



Open Source Used In Cisco Meeting Server (formerly Acano Server) 3.7

Cisco Systems, Inc.

www.cisco.com

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco website at www.cisco.com/go/offices.

Text Part Number: 78EE117C99-1539250589

This document contains licenses and notices for open source software used in this product. With respect to the free/open source software listed in this document, if you have any questions or wish to receive a copy of any source code to which you may be entitled under the applicable free/open source license(s) (such as the GNU Lesser/General Public License), please submit this [form](#).

In your requests please include the following reference number 78EE117C99-1539250589

Contents

1.1 systemd 241-7~deb10u8

1.1.1 Available under license

1.2 hd-parm 9.38

1.2.1 Available under license

1.3 libdrm 2.4.45

1.3.1 Available under license

1.4 txw2 2.3.3

1.4.1 Available under license

1.5 util-linux 2.20.0

1.5.1 Available under license

1.6 cairo 1.14.2

1.6.1 Available under license

1.7 coreutils 8.30 3ubuntu2

1.7.1 Available under license

1.8 nlohmann-json 3.9.1

1.8.1 Available under license

1.9 attr 2.4.47

1.9.1 Available under license

1.10 rsyslog 7.6.7

1.10.1 Available under license

1.11 spring-jcl 5.2.20.RELEASE

1.11.1 Available under license

1.12 dash 0.5.10.2 6

1.12.1 Available under license

1.13 libtasn 4.16.0-2

1.13.1 Available under license

- 1.14 coreutils 8.30 3**
 - 1.14.1 Available under license
- 1.15 sizeof 0.3.0**
 - 1.15.1 Available under license
- 1.16 @tensorflow/tfjs-core 3.11.0**
 - 1.16.1 Available under license
- 1.17 spring-framework 5.2.20.RELEASE**
 - 1.17.1 Available under license
- 1.18 jansi-native 1.8**
 - 1.18.1 Available under license
- 1.19 lcms 2.11**
 - 1.19.1 Available under license
- 1.20 jq 1.6-1**
 - 1.20.1 Available under license
- 1.21 log4j-to-slf4j 2.13.3**
 - 1.21.1 Available under license
- 1.22 speex 1.2**
 - 1.22.1 Available under license
- 1.23 openssh 8.8**
 - 1.23.1 Available under license
- 1.24 netty-codec 4.1.51.Final**
 - 1.24.1 Available under license
- 1.25 gnutls 3.6.13 2ubuntu1.7**
 - 1.25.1 Available under license
- 1.26 cryptsetup 2.3.6**
 - 1.26.1 Available under license
- 1.27 jakarta-mail 1.6.5**
 - 1.27.1 Available under license
- 1.28 apr-util 1.6.1**
 - 1.28.1 Available under license
- 1.29 open-ldap 2.4.58**
 - 1.29.1 Available under license
- 1.30 dhcp 4.1**
 - 1.30.1 Available under license
- 1.31 jakarta-transaction-api 1.3.3**
 - 1.31.1 Available under license
- 1.32 pcre 10.34-7ubuntu0.1**
 - 1.32.1 Available under license
- 1.33 acpid 2.0.11**

- 1.33.1 Available under license
- 1.34 postgres-sql 42.2.14**
 - 1.34.1 Available under license
- 1.35 attrs 19.1.0**
 - 1.35.1 Available under license
- 1.36 iproute 3.14.0**
 - 1.36.1 Available under license
- 1.37 jakarta-persistence-api 2.2.3**
 - 1.37.1 Available under license
- 1.38 libglib2 2.48.1**
 - 1.38.1 Available under license
- 1.39 ipmi-tool 1.8.16**
 - 1.39.1 Available under license
- 1.40 libidn 2.2.0 2**
 - 1.40.1 Available under license
- 1.41 python 3.9.12**
 - 1.41.1 Available under license
- 1.42 commons-pool 1.6**
 - 1.42.1 Available under license
- 1.43 attr 2.4.48-5**
 - 1.43.1 Available under license
- 1.44 netty-transport-native-unix-common 4.1.51.Final**
 - 1.44.1 Available under license
- 1.45 jaxb-runtime 2.3.3**
 - 1.45.1 Available under license
- 1.46 netty-handler-proxy 4.1.51.Final**
 - 1.46.1 Available under license
- 1.47 hibernate-commons-annotations 5.1.0.Final**
 - 1.47.1 Available under license
- 1.48 mail 1.6.5**
 - 1.48.1 Available under license
- 1.49 bridgeutils 1.5**
 - 1.49.1 Available under license
- 1.50 net-snmp 5.9**
 - 1.50.1 Available under license
- 1.51 e2fsprogs 1.43.1**
 - 1.51.1 Available under license
- 1.52 json-c 0.12.1**
 - 1.52.1 Available under license

1.53 jq 1.4

1.53.1 Available under license

1.54 linux-kernel 4.4.225

1.54.1 Available under license

1.55 base-files 10.3+deb10u12

1.55.1 Available under license

1.56 cryptsetup 2.1.0

1.56.1 Available under license

1.57 dhcp 4.1-ESV-R9

1.57.1 Available under license

1.58 bridgeutils 1.5

1.58.1 Available under license

1.59 cglib 3.3.0

1.59.1 Available under license

1.60 spring-data-commons 2.3.3.RELEASE

1.60.1 Available under license

1.61 bolt 1.2.1

1.61.1 Available under license

1.62 reactor-netty 0.9.11.RELEASE

1.62.1 Available under license

1.63 json-c 0.12.1

1.63.1 Available under license

1.64 gettext 0.16.1

1.64.1 Available under license

1.65 expat 2.2.0

1.65.1 Available under license

1.66 react-day-picker 7.4.8

1.66.1 Available under license

1.67 urllib3 1.25.3

1.67.1 Available under license

1.68 luafilesystem 1.5.0

1.68.1 Available under license

1.69 pam 1.3.1 5ubuntu4.3

1.69.1 Available under license

1.70 docker-engine 19.03.5

1.70.1 Available under license

1.71 libmnl 1.0.3

1.71.1 Available under license

1.72 libnfnetlink 1.0.1

- 1.72.1 Available under license
- 1.73 acl 2.2.53 6**
- 1.73.1 Available under license
- 1.74 zstd 1.4.4+dfsg-3ubuntu0.1**
- 1.74.1 Available under license
- 1.75 stunnel 5.56**
- 1.75.1 Available under license
- 1.76 swagger 2.1.9**
- 1.76.1 Available under license
- 1.77 springdoc-openapi-common 1.5.9**
- 1.77.1 Available under license
- 1.78 x-crypto 0.0.0-20200302210943-78000ba7a073**
- 1.78.1 Available under license
- 1.79 free-type 2.5.5**
- 1.79.1 Available under license
- 1.80 tcpdump 4.9.2**
- 1.80.1 Available under license
- 1.81 keyutils 1.6 6ubuntu1**
- 1.81.1 Available under license
- 1.82 ipmi-tool 1.8.18**
- 1.82.1 Available under license
- 1.83 boost 1.67.0**
- 1.83.1 Available under license
- 1.84 libxml2 2.9.4**
- 1.84.1 Available under license
- 1.85 libxml2 2.9.10+dfsg-5ubuntu0.20.04.5**
- 1.85.1 Available under license
- 1.86 curl 7.50.1**
- 1.86.1 Available under license
- 1.87 swagger-models 2.1.9**
- 1.87.1 Available under license
- 1.88 procs 3.2.8**
- 1.88.1 Available under license
- 1.89 busybox 1.30.1**
- 1.89.1 Available under license
- 1.90 pcre 8.39**
- 1.90.1 Available under license
- 1.91 keyutils 1.6-6ubuntu1.1**
- 1.91.1 Available under license

1.92 flyway-core 7.3.1

1.92.1 Available under license

1.93 swagger-annotations 2.1.9

1.93.1 Available under license

1.94 ntp 4.2.8p15

1.94.1 Available under license

1.95 brotli 1.0.7-6ubuntu0.1

1.95.1 Available under license

1.96 lvm2 2.02.79

1.96.1 Available under license

1.97 flyway-spring5-test 6.4.0

1.97.1 Available under license

1.98 xmltooling 3.0.5-1build1

1.98.1 Available under license

1.99 luxon 1.25.1

1.99.1 Available under license

1.100 syslinux 4.07

1.100.1 Available under license

1.101 libiconv 1.14

1.101.1 Available under license

1.102 acpid 2.0.11

1.102.1 Available under license

1.103 jandex 2.1.3.Final

1.103.1 Available under license

1.104 pytest 4.6.3

1.104.1 Available under license

1.105 webrtc m44

1.105.1 Available under license

1.106 jackson-annotations 2.11.2

1.106.1 Available under license

1.107 mongodb 5.0.6

1.107.1 Available under license

1.108 netty-transport 4.1.51.Final

1.108.1 Available under license

1.109 hibernate-validator 6.1.5.Final

1.109.1 Available under license

1.110 dhcpd 9.1.1

1.110.1 Available under license

1.111 c-ares 1.12.1-DEV

- 1.111.1 Available under license
- 1.112 d-bus 1.10.8**
 - 1.112.1 Available under license
- 1.113 libcap 2.22**
 - 1.113.1 Available under license
- 1.114 spring-data-jpa 2.3.3.RELEASE**
 - 1.114.1 Available under license
- 1.115 bzip2 1.0.8 2**
 - 1.115.1 Available under license
- 1.116 pkix-ssh 13.2.3**
 - 1.116.1 Available under license
- 1.117 spring-context-support 5.2.20.RELEASE**
 - 1.117.1 Available under license
- 1.118 commons-codec 1.14**
 - 1.118.1 Available under license
- 1.119 spring-orm 5.2.20.RELEASE**
 - 1.119.1 Available under license
- 1.120 spring-aspects 5.2.20.RELEASE**
 - 1.120.1 Available under license
- 1.121 jackson 2.11.2**
 - 1.121.1 Available under license
- 1.122 xmlsecurityforc++ 2.0.2-3build1**
 - 1.122.1 Available under license
- 1.123 spring-security-web 5.4.10**
 - 1.123.1 Available under license
- 1.124 pxelinux 6.03**
 - 1.124.1 Available under license
- 1.125 libpciaccess 0.11.0**
 - 1.125.1 Available under license
- 1.126 goprotobuf 2.4.1**
 - 1.126.1 Available under license
- 1.127 pcre 8.39-12ubuntu0.1**
 - 1.127.1 Available under license
- 1.128 spring-test 5.2.20.RELEASE**
 - 1.128.1 Available under license
- 1.129 dav1d 0.6.0**
 - 1.129.1 Available under license
- 1.130 tomcat-embed-websocket 9.0.37**
 - 1.130.1 Available under license

1.131 netty-transport-native-epoll 4.1.51.Final

1.131.1 Available under license

1.132 ehcache-core 3.8.1

1.132.1 Available under license

1.133 management-model 5.7.3

1.133.1 Available under license

1.134 importlib-metadata 0.18

1.134.1 Available under license

1.135 hd-parm 9.48

1.135.1 Available under license

1.136 expat 2.2.4

1.136.1 Available under license

1.137 libcap 2.25

1.137.1 Available under license

1.138 glibc 2.31-0ubuntu9.9

1.138.1 Available under license

1.139 activation-api 1.1

1.139.1 Available under license

1.140 libnfnetwork 1.0.1

1.140.1 Available under license

1.141 opus 1.1.2

1.141.1 Available under license

1.142 hibernate 5.4.20.Final

1.142.1 Available under license

1.143 luaposix 5.1.28

1.143.1 Available under license

1.144 servlet-api 4.0.0

1.144.1 Available under license

1.145 activation-api 1.2.2

1.145.1 Available under license

1.146 commons-dbcp 1.4

1.146.1 Available under license

1.147 lvm2 2.02.79

1.147.1 Available under license

1.148 inotify-tools 3.14

1.148.1 Available under license

1.149 libatomic-ops 1.2

1.149.1 Available under license

1.150 kerberos 1.17-6ubuntu4.1

- 1.150.1 Available under license
- 1.151 glibc 2.23**
 - 1.151.1 Available under license
- 1.152 selinux 2.8-1+b1**
 - 1.152.1 Available under license
- 1.153 inja 3.1.0**
 - 1.153.1 Available under license
- 1.154 hdrhistogram 2.1.12**
 - 1.154.1 Available under license
- 1.155 jboss-logging 3.4.1.Final**
 - 1.155.1 Available under license
- 1.156 ethtool 4.6**
 - 1.156.1 Available under license
- 1.157 stunnel 5.56**
 - 1.157.1 Available under license
- 1.158 lm-sensors 3.3.1**
 - 1.158.1 Available under license
- 1.159 pluggy 0.13.1**
 - 1.159.1 Available under license
- 1.160 react-zoom-pan-pinch 1.6.1**
 - 1.160.1 Available under license
- 1.161 nettle 3.4.1-1+deb10u1**
 - 1.161.1 Available under license
- 1.162 netty-codec-socks 4.1.51.Final**
 - 1.162.1 Available under license
- 1.163 ldns 1.7.1**
 - 1.163.1 Available under license
- 1.164 ethtool 3.2**
 - 1.164.1 Available under license
- 1.165 net-snmp 5.8.1.pre2**
 - 1.165.1 Available under license
- 1.166 iptables 1.4.20**
 - 1.166.1 Available under license
- 1.167 jackson-databind-nullable 0.2.1**
 - 1.167.1 Available under license
- 1.168 python-setuptools 8.8.0**
 - 1.168.1 Available under license
- 1.169 gnulib 2019-09-23**
 - 1.169.1 Available under license

1.170 rpcbind 6.0

1.170.1 Available under license

1.171 classgraph 4.8.69

1.171.1 Available under license

1.172 pam 1.5.2

1.172.1 Available under license

1.173 zlib 1.2.8

1.173.1 Available under license

1.174 pam 1.1.5

1.174.1 Available under license

1.175 hd-parm 9.38

1.175.1 Available under license

1.176 isof 4.85

1.176.1 Available under license

1.177 lua 5.1.5

1.177.1 Available under license

1.178 @tensorflow-models/body-pix 2.2

1.178.1 Available under license

1.179 xorg-randr 1.5.0

1.179.1 Available under license

1.180 @tensorflow/tfjs-backend-wasm 3.11.0

1.180.1 Available under license

1.181 libjpeg 6b

1.181.1 Notifications

1.181.2 Available under license

1.182 jansi 1.8

1.182.1 Available under license

1.183 apache-http-server 2.4.53

1.183.1 Available under license

1.184 jackson-databind 2.11.2

1.184.1 Available under license

1.185 libjpeg-turbo 2.0.3

1.185.1 Available under license

1.186 swagger-annotations 1.5.22

1.186.1 Available under license

1.187 pytz 2022.1

1.187.1 Available under license

1.188 jakarta-validation-api 2.0.2

1.188.1 Available under license

1.189 ehcache-107 3.8.1

1.189.1 Available under license

1.190 openssl 1.1.1m

1.190.1 Available under license

1.191 luuid 1.0

1.191.1 Available under license

1.192 libpng 1.6.37

1.192.1 Available under license

1.193 e2fsprogs 1.43.7

1.193.1 Available under license

1.194 tzdata 2022.1

1.194.1 Available under license

1.195 classmate 1.5.1

1.195.1 Available under license

1.196 iostat 2.2

1.196.1 Available under license

1.197 systemd 231

1.197.1 Available under license

1.198 acpid 2.0.27

1.198.1 Available under license

1.199 log4j-api 2.13.3

1.199.1 Available under license

1.200 gmp 5.0.2

1.200.1 Available under license

1.201 linux-kernel 4.4.245

1.201.1 Available under license

1.202 offheap-store 2.4.3

1.202.1 Available under license

1.203 icu 66.1 2ubuntu2.1

1.203.1 Available under license

1.204 lsof 4.89

1.204.1 Available under license

1.205 spring-security 2.3.3.RELEASE

1.205.1 Available under license

1.206 jackson-datatype-jsr310 2.11.2

1.206.1 Available under license

1.207 libvmtools 9.4.0.25793

1.207.1 Available under license

1.208 ffmpeg 4.3.1

1.208.1 Available under license
1.209 commons-lang3 3.10
1.209.1 Available under license
1.210 libnetfilter-contrack 1.0.5
1.210.1 Available under license
1.211 springdoc-openapi-webmvc-core 1.5.9
1.211.1 Available under license
1.212 gvfs 1.28.2
1.212.1 Available under license
1.213 slf4j 1.7.30
1.213.1 Available under license
1.214 springdoc-openapi-ui 1.5.9
1.214.1 Available under license
1.215 motor 2.5.1
1.215.1 Available under license
1.216 glib 2.28.8
1.217 nghttp2 1.40.0-1build1
1.217.1 Available under license
1.218 jul-to-slf4j 1.7.30
1.218.1 Available under license
1.219 linenoise 1.0
1.219.1 Available under license
1.220 protobuf 3.6.1.3-2ubuntu5
1.220.1 Available under license
1.221 unbound 1.13.2
1.221.1 Available under license
1.222 speex 1.2beta3
1.222.1 Available under license
1.223 syslinux 6.03
1.223.1 Available under license
1.224 selinux 3.0-1build2
1.224.1 Available under license
1.225 glib 2.48.1
1.225.1 Available under license
1.226 fribidi 1.0.11
1.226.1 Available under license
1.227 fastapi 0.68.2
1.227.1 Available under license
1.228 busybox 1.30.1

- 1.228.1 Available under license
- 1.229 libestr 0.1.9**
 - 1.229.1 Available under license
- 1.230 popt 1.16**
 - 1.230.1 Available under license
- 1.231 berkeley-db 4.4.20**
 - 1.231.1 Available under license
- 1.232 spring-tx 5.2.20.RELEASE**
 - 1.232.1 Available under license
- 1.233 spring-web-mvc 5.2.20.RELEASE**
 - 1.233.1 Available under license
- 1.234 ethtool 3.2**
 - 1.234.1 Available under license
- 1.235 bean-validation-api 2.0.1.Final**
 - 1.235.1 Available under license
- 1.236 heimdal 7.7.0**
 - 1.236.1 Available under license
- 1.237 xz 5.2.2**
 - 1.237.1 Available under license
- 1.238 opencv 4.1.1**
 - 1.238.1 Available under license
- 1.239 asm 5.0.4**
 - 1.239.1 Available under license
- 1.240 spring-security-config 5.3.4.RELEASE**
 - 1.240.1 Available under license
- 1.241 sequence-generator 5.7.3**
 - 1.241.1 Available under license
- 1.242 runc 1.0.0-rc9**
 - 1.242.1 Available under license
- 1.243 grpc-go 1.9.1**
 - 1.243.1 Available under license
- 1.244 ical4j 3.0.19**
 - 1.244.1 Available under license
- 1.245 curl 7.68.0**
 - 1.245.1 Available under license
- 1.246 jakarta-el 3.0.3**
 - 1.246.1 Available under license
- 1.247 grpc 1.9.1**
 - 1.247.1 Available under license

- 1.248 shared-mime-info 1.6**
 - 1.248.1 Available under license
- 1.249 docker-cli v19.03.5**
 - 1.249.1 Available under license
- 1.250 open-ldap 2.4.58**
 - 1.250.1 Available under license
- 1.251 libjpeg 8d**
 - 1.251.1 Available under license
- 1.252 libpgp-error 1.37 1**
 - 1.252.1 Available under license
- 1.253 icu 69**
 - 1.253.1 Available under license
- 1.254 activation 1.2.2**
 - 1.254.1 Available under license
- 1.255 jackson-dataformat-yaml 2.11.2**
 - 1.255.1 Available under license
- 1.256 flyway-test 6.4.0**
 - 1.256.1 Available under license
- 1.257 python-requests 2.22.0**
 - 1.257.1 Available under license
- 1.258 json-c 0.12**
 - 1.258.1 Available under license
- 1.259 nettle 3.5.1+really3.5.1-2ubuntu0.2**
 - 1.259.1 Available under license
- 1.260 statistics 2.1**
 - 1.260.1 Available under license
- 1.261 python-pip 22.0.4**
 - 1.261.1 Available under license
- 1.262 libffi 3.2.1**
 - 1.262.1 Available under license
- 1.263 docker-containerd 1.3.2**
 - 1.263.1 Available under license
- 1.264 unbound 1.5.10**
 - 1.264.1 Available under license
- 1.265 jaxb-core 2.3.3**
 - 1.265.1 Available under license
- 1.266 lombok 1.18.12**
 - 1.266.1 Available under license
- 1.267 jansi-osx 1.8**

1.267.1 Available under license
1.268 apr 1.6.5
1.268.1 Available under license
1.269 p11-kit 0.23.20-1ubuntu0.1
1.269.1 Available under license
1.270 lua 5.1.4
1.270.1 Available under license
1.271 pcre 8.42
1.271.1 Available under license
1.272 swagger-core 2.1.9
1.272.1 Available under license
1.273 openssl 1.1.1d
1.273.1 Available under license
1.274 flyway-core 6.4.4
1.274.1 Available under license
1.275 libestr 0.1.9
1.275.1 Available under license
1.276 byte-buddy 1.10.14
1.276.1 Available under license
1.277 libpcap 1.7.4
1.277.1 Available under license
1.278 libusrctp 1.0
1.278.1 Available under license
1.279 nginx 1.18.0
1.279.1 Available under license
1.280 @tensorflow/tfjs 3.11.0
1.280.1 Available under license
1.281 golang 1.8
1.281.1 Available under license
1.282 freefont-ttf 20100919
1.282.1 Available under license
1.283 libva 1.0.15
1.283.1 Available under license
1.284 tomcat 9.0.37
1.284.1 Available under license
1.285 fileutil 1.13.0
1.285.1 Available under license
1.286 objenesis 3.1
1.286.1 Available under license

1.287 atomicwrites 1.3.0

1.287.1 Available under license

1.288 Isof 4.85

1.288.1 Available under license

1.289 icu 65

1.289.1 Available under license

1.290 spring-security-core 5.4.10

1.290.1 Available under license

1.291 activation 1.2.2

1.291.1 Available under license

1.292 rrule 2.6.8

1.292.1 Available under license

1.293 pyjwt 2.3.0

1.293.1 Available under license

1.294 cairo 1.14.2

1.294.1 Available under license

1.295 util-linux 2.28

1.295.1 Available under license

1.296 golang 1.13.4

1.296.1 Available under license

1.297 iptables 1.6.0

1.297.1 Available under license

1.298 freerdp 2.1.2

1.298.1 Available under license

1.299 pm-utils 1.4.1

1.299.1 Available under license

1.300 dom4j 2.1.3

1.300.1 Available under license

1.301 spring-jdbc 5.2.20.RELEASE

1.301.1 Available under license

1.302 istack-commons 3.0.11

1.302.1 Available under license

1.303 ldns 1.7.1

1.303.1 Available under license

1.304 py 1.11.0

1.304.1 Available under license

1.305 ntp 4.2.8p15

1.305.1 Available under license

1.306 aspect-j 1.9.6

- 1.306.1 Available under license
- 1.307 libevent 2.1.12**
 - 1.307.1 Available under license
- 1.308 nio-stream-storage 1.1.3**
 - 1.308.1 Available under license
- 1.309 @tensorflow/tfjs-backend-cpu 3.11.0**
 - 1.309.1 Available under license
- 1.310 cyrus-sasl 2.1.27+dfsg-2ubuntu0.1**
 - 1.310.1 Available under license
- 1.311 spring-web 5.2.20.RELEASE**
 - 1.311.1 Available under license
- 1.312 host-ninja 1.10.0**
 - 1.312.1 Available under license
- 1.313 busybox 1.25.0**
 - 1.313.1 Available under license
- 1.314 python-dotenv 0.20.0**
 - 1.314.1 Available under license
- 1.315 loguru 0.6.0**
 - 1.315.1 Available under license
- 1.316 sqlite 3.13.0**
 - 1.316.1 Available under license
- 1.317 zlib 1.2.11**
 - 1.317.1 Available under license
- 1.318 spring-security-config 5.4.10**
 - 1.318.1 Available under license
- 1.319 opencore-amr 0.1.3**
 - 1.319.1 Available under license
- 1.320 libunistring 0.9.10 2**
 - 1.320.1 Available under license
- 1.321 uvicorn 0.15.0**
 - 1.321.1 Available under license
- 1.322 flyway-commandline 7.3.1**
 - 1.322.1 Available under license
- 1.323 hibernate-core 5.4.20**
 - 1.323.1 Available under license
- 1.324 cryptsetup 1.7.5**
 - 1.324.1 Available under license
- 1.325 swagger-integration 2.1.9**
 - 1.325.1 Available under license

1.326 containerd 1.3.0

1.326.1 Available under license

1.327 tftp-hpa 5.2

1.327.1 Available under license

1.328 spring-security-web 5.3.4.RELEASE

1.328.1 Available under license

1.329 libssh 0.9.3 2ubuntu2.2

1.329.1 Available under license

1.330 glibc 2.31-0ubuntu9

1.330.1 Available under license

1.331 hikaricp 3.4.5

1.331.1 Available under license

1.332 libpcap 1.2.1

1.332.1 Available under license

1.333 glibc 2.31

1.333.1 Available under license

1.334 bzip2 1.0.6

1.334.1 Available under license

1.335 nss-pam-ldapd 0.9.11

1.335.1 Available under license

1.336 jline 3.11.0

1.336.1 Available under license

1.337 protobuf 2.4.1

1.337.1 Available under license

1.338 kubernetes-api 1.8.11

1.338.1 Available under license

1.339 nio-multipart-parser 1.1.0

1.339.1 Available under license

1.340 boost 1.71.0-6ubuntu6

1.340.1 Available under license

1.341 giflib 5.2.1

1.341.1 Available under license

1.342 openjdk-jre 11.0.11u9

1.342.1 Available under license

1.343 lz4 1.9.2 2ubuntu0.20.04.1

1.343.1 Available under license

1.344 docker 1.9.1

1.344.1 Available under license

1.345 @tensorflow/tfjs-backend-webgl 3.11.0

- 1.345.1 Available under license
- 1.346 netty-handler 4.1.51.Final**
- 1.346.1 Available under license
- 1.347 docker 19.03.5-r1**
- 1.347.1 Available under license
- 1.348 chardet 3.0.4**
- 1.348.1 Available under license
- 1.349 libarchive 3.4.0-2ubuntu1.2**
- 1.349.1 Available under license
- 1.350 libffi 3.3 4**
- 1.350.1 Available under license
- 1.351 rsyslog 7.6.7**
- 1.351.1 Available under license
- 1.352 dmidecode 2.12**
- 1.352.1 Available under license
- 1.353 opencv 4.1.1**
- 1.353.1 Available under license
- 1.354 glibc 2.27**
- 1.354.1 Available under license
- 1.355 dmidecode 3.5**
- 1.355.1 Available under license
- 1.356 syslinux 6.03**
- 1.356.1 Available under license
- 1.357 ehcache 3.8.1**
- 1.357.1 Available under license
- 1.358 libcap-ng 0.7.9 2.1build1**
- 1.358.1 Available under license
- 1.359 spring-webflux 5.2.20.RELEASE**
- 1.359.1 Available under license
- 1.360 ehcache-impl 3.8.1**
- 1.360.1 Available under license
- 1.361 util-linux 2.22.2**
- 1.361.1 Available under license
- 1.362 postgresql-jdbc 42.2.14**
- 1.362.1 Available under license
- 1.363 kmod 23**
- 1.363.1 Available under license
- 1.364 libvpx 1.4.0**
- 1.364.1 Available under license

1.365 libatomic 10.3.0-1ubuntu1~20.04

1.365.1 Available under license

1.366 popt 1.16

1.366.1 Available under license

1.367 x264 0.155.2917+git0a84d98-2

1.367.1 Available under license

1.368 mail 1.6.2

1.368.1 Available under license

1.369 mpdecimal 2.4.2

1.369.1 Available under license

1.370 logback-core 1.2.3

1.370.1 Available under license

1.371 jakarta-annotation-api 1.3.5

1.371.1 Available under license

1.372 lvm2 2.02.162

1.372.1 Available under license

1.373 audit 2.8.4 3

1.373.1 Available under license

1.374 cache-api 1.1.1

1.374.1 Available under license

1.375 hd-parm 9.38

1.375.1 Available under license

1.376 pydantic 1.9.0

1.376.1 Available under license

1.377 lm-sensors 3.3.1

1.377.1 Available under license

1.378 lua 5.1.4

1.378.1 Available under license

1.379 nss-pam-ldapd 0.9.11

1.379.1 Available under license

1.380 libarchive 3.3.3

1.380.1 Available under license

1.381 netty-resolver 4.1.51.Final

1.381.1 Available under license

1.382 reactive-streams 1.0.3

1.382.1 Available under license

1.383 dhcpd 9.1.1

1.383.1 Available under license

1.384 kubernetes-client 1.8.11

1.384.1 Available under license
1.385 libmnl 1.0.3
1.385.1 Available under license
1.386 audit 2.8.5-2ubuntu6
1.386.1 Available under license
1.387 fdisk 1.1.0
1.387.1 Available under license
1.388 inotify-tools 3.14
1.388.1 Available under license
1.389 snake-yaml 1.26
1.389.1 Available under license
1.390 hawtjni-runtime 1.17
1.390.1 Available under license
1.391 liblogging 1.0.3
1.391.1 Available under license
1.392 pcre 10.34-7
1.392.1 Available under license
1.393 freerdp 2.0.0-rc4
1.393.1 Available under license
1.394 spring-boot 2.3.3.RELEASE
1.394.1 Available under license
1.395 libsrtp 2.2.0
1.395.1 Available under license
1.396 bzip2 1.0.8
1.397 libbsd 0.4.1
1.397.1 Available under license
1.398 xerces-c 3.2.2+debian-1build3
1.398.1 Available under license
1.399 jakarta.xml.bind.api 2.3.3
1.399.1 Available under license
1.400 jansi 1.18
1.400.1 Available under license
1.401 webjars-locator-core 0.45
1.401.1 Available under license
1.402 micrometer-core 1.5.4
1.402.1 Available under license
1.403 ipmi-tool 1.8.18
1.403.1 Available under license
1.404 spring-beans 5.2.20.RELEASE

1.404.1 Available under license
1.405 spring-security-core 5.3.4.RELEASE
1.405.1 Available under license
1.406 python-multipart 0.0.5
1.406.1 Available under license
1.407 tar 1.30+dfsg 7ubuntu0.20.04.2
1.407.1 Available under license
1.408 junixsocket-common 2.3.2
1.408.1 Available under license
1.409 fribidi 1.0.11
1.409.1 Available under license
1.410 commons-fileupload 6.2
1.410.1 Available under license
1.411 postgresql 12.12
1.411.1 Available under license
1.412 commons-collections 4.4
1.412.1 Available under license
1.413 fontconfig 2.6.0
1.413.1 Available under license
1.414 berkeley-db 4.4.20
1.414.1 Available under license
1.415 expat 2.2.9
1.415.1 Available under license
1.416 netty-codec-http 4.1.51.Final
1.416.1 Available under license
1.417 kubernetes-apimachinery 1.8.11
1.417.1 Available under license
1.418 libevent 2.1.11-stable-1
1.418.1 Available under license
1.419 coturn 4.5.1.3
1.419.1 Notifications
1.419.2 Available under license
1.420 spring-retry 1.2.5.RELEASE
1.420.1 Available under license
1.421 opus 1.3.1
1.421.1 Available under license
1.422 curl 7.62.0-DEV
1.422.1 Available under license
1.423 jackson-datatype-jdk8 2.11.2

- 1.423.1 Available under license
- 1.424 tzlocal 4.2**
 - 1.424.1 Available under license
- 1.425 ipmiutil 2.9.9**
 - 1.425.1 Available under license
- 1.426 poco 1.9.2-3ubuntu3**
 - 1.426.1 Available under license
- 1.427 databases 0.5.5**
 - 1.427.1 Available under license
- 1.428 spring-context 5.2.20.RELEASE**
 - 1.428.1 Available under license
- 1.429 click 8.1.2**
 - 1.429.1 Available under license
- 1.430 spring-aop 5.2.20.RELEASE**
 - 1.430.1 Available under license
- 1.431 jctools-core 3.0.0**
 - 1.431.1 Available under license
- 1.432 jackson-module-parameter-names 2.11.2**
 - 1.432.1 Available under license
- 1.433 pixman 0.32.6**
 - 1.433.1 Available under license
- 1.434 postgresql 12.12**
 - 1.434.1 Available under license
- 1.435 packaging 19.0**
 - 1.435.1 Available under license
- 1.436 pymongo 3.12.3**
 - 1.436.1 Available under license
- 1.437 dash 0.5.7**
 - 1.437.1 Available under license
- 1.438 gnutls 3.7**
 - 1.438.1 Available under license
- 1.439 rtmpdump 2.4+20151223.gitfa8646d.1-2build1**
 - 1.439.1 Available under license
- 1.440 gzip 1.10 0ubuntu4**
 - 1.440.1 Available under license
- 1.441 open-vm-tools 9.4.0**
 - 1.441.1 Available under license
- 1.442 sysv-init 2.93-8**
 - 1.442.1 Available under license

1.443 lua 5.2.3

1.444 tcpdump 4.9.2

1.444.1 Available under license

1.445 p11-kit 0.23.15-2+deb10u1

1.445.1 Available under license

1.446 junixsocket-core 2.3.2

1.446.1 Available under license

1.447 openssl 1.1.1n

1.447.1 Available under license

1.448 libiconv 1.14

1.448.1 Available under license

1.449 flex 2.5.35

1.449.1 Available under license

1.450 gvfs 1.28.2-1ubuntu1~16.04.2

1.450.1 Available under license

1.451 expat 2.2.5

1.451.1 Available under license

1.452 jq 1.4

1.452.1 Available under license

1.453 antlr 2.7.7

1.453.1 Available under license

1.454 sqlalchemy 1.4.34

1.454.1 Available under license

1.455 bzip2 1.0.8

1.455.1 Available under license

1.456 ehcache-api 3.8.1

1.456.1 Available under license

1.457 golang 1.15.15

1.457.1 Available under license

1.458 sqlite 3.31.1-4ubuntu0.5

1.458.1 Available under license

1.459 oniguruma 6.9.4-1

1.459.1 Available under license

1.460 activation 1.1

1.460.1 Available under license

1.461 python 3.7.3

1.461.1 Available under license

1.462 gson 2.8.6

1.462.1 Available under license

1.463 sqlite 3071401

1.463.1 Available under license

1.464 xalan-c 1.11-9build1

1.464.1 Available under license

1.465 latencyutils 2.0.3

1.466 libgcrypt 1.8.5 5ubuntu1.1

1.466.1 Available under license

1.467 sqlite 3.7.14.1

1.467.1 Available under license

1.468 netty 4.1.51.Final

1.468.1 Available under license

1.469 ehcache-xml 3.8.1

1.469.1 Available under license

1.470 jquery 3.5.1

1.470.1 Available under license

1.471 gmp 6.2.0

1.471.1 Available under license

1.472 javassist 3.24.0-GA

1.472.1 Available under license

1.473 spring-expression 5.2.20.RELEASE

1.473.1 Available under license

1.474 junixsocket-native-common 2.3.2

1.474.1 Available under license

1.475 libpcap 1.2.1

1.475.1 Available under license

1.476 libbsd 0.10.0 1

1.476.1 Available under license

1.477 syslinux 4.07

1.477.1 Available under license

1.1 systemd 241-7~deb10u8

1.1.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and

modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such

interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such

an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify

it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.2 hd-parm 9.38

1.2.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so

that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

- b) Accompany it with a written offer, valid for at least three

years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the

original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

This package was debianized by Christopher L Cheney <ccheney@debian.org> on Wed, 21 Nov 2001 15:51:14 -0600.

It was downloaded from <http://www.ibiblio.org/pub/Linux/system/hardware>

Upstream Author: Mark S. Lord <mlord@pobox.com>

Copyright:

```
/* hdparm.c - Command line interface to get/set hard disk parameters */  
/*      - by Mark Lord 1994-2008 -- freely distributable */
```

You are free to distribute this software under the terms of the BSD License. On Debian systems, the complete text of the BSD License can be found in `/usr/share/common-licenses/BSD`
BSD-Style Open Source License:

You may freely use, modify, and redistribute the hdparm program, as either binary or source, or both.

The only condition is that my name and copyright notice remain in the source code as-is.

Mark Lord (mlord@pobox.com)

1.3 libdrm 2.4.45

1.3.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.4 txw2 2.3.3

1.4.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Notices for Eclipse Implementation of JAXB

This content is produced and maintained by the Eclipse Implementation of JAXB project.

* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb-impl>

Trademarks

Eclipse Implementation of JAXB is a trademark of the Eclipse Foundation.

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

Source Code

The project maintains the following source code repositories:

- * <https://github.com/eclipse-ee4j/jaxb-ri>
- * <https://github.com/eclipse-ee4j/jaxb-istack-commons>
- * <https://github.com/eclipse-ee4j/jaxb-dtd-parser>
- * <https://github.com/eclipse-ee4j/jaxb-fi>
- * <https://github.com/eclipse-ee4j/jaxb-stax-ex>
- * <https://github.com/eclipse-ee4j/jax-rpc-ri>

Third-party Content

This project leverages the following third party content.

Apache Ant (1.10.2)

- * License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Ant (1.10.2)

- * License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Felix (1.2.0)

- * License: Apache License, 2.0

args4j (2.33)

- * License: MIT License

dom4j (1.6.1)

- * License: Custom license based on Apache 1.1

file-management (3.0.0)

* License: Apache-2.0

* Project: <https://maven.apache.org/shared/file-management/>

* Source:

<https://svn.apache.org/viewvc/maven/shared/tags/file-management-3.0.0/>

JUnit (4.12)

* License: Eclipse Public License

JUnit (4.12)

* License: Eclipse Public License

maven-compat (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-compat/>

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-compat/3.5.2>

maven-core (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-core/index.html>

* Source: <https://mvnrepository.com/artifact/org.apache.maven/maven-core/3.5.2>

maven-plugin-annotations (3.5)

* License: Apache-2.0

* Project: <https://maven.apache.org/plugin-tools/maven-plugin-annotations/>

* Source:

<https://github.com/apache/maven-plugin-tools/tree/master/maven-plugin-annotations>

maven-plugin-api (3.5.2)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-connector-basic (1.1.1)

* License: Apache-2.0

maven-resolver-impl (1.1.1)

* License: Apache-2.0

maven-resolver-spi (1.1.1)

* License: Apache-2.0

maven-resolver-transport-file (1.1.1)

* License: Apache-2.0

* Project: <https://maven.apache.org/resolver/maven-resolver-transport-file/>

* Source:

<https://github.com/apache/maven-resolver/tree/master/maven-resolver-transport-file>

maven-resolver-util (1.1.1)

* License: Apache-2.0

maven-settings (3.5.2)

* License: Apache-2.0

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-settings/3.5.2>

OSGi Service Platform Core Companion Code (6.0)

* License: Apache License, 2.0

plexus-archiver (3.5)

* License: Apache-2.0

* Project: <https://codehaus-plexus.github.io/plexus-archiver/>

* Source: <https://github.com/codehaus-plexus/plexus-archiver>

plexus-io (3.0.0)

* License: Apache-2.0

plexus-utils (3.1.0)

* License: Apache- 2.0 or Apache- 1.1 or BSD or Public Domain or Indiana University Extreme! Lab Software License V1.1.1 (Apache 1.1 style)

relaxng-datatype (1.0)

* License: New BSD license

Sax (0.2)

* License: SAX-PD

* Project: <http://www.megginson.com/downloads/SAX/>

* Source: http://sourceforge.net/project/showfiles.php?group_id=29449

testng (6.14.2)

* License: Apache-2.0 AND (MIT OR GPL-1.0+)

* Project: <https://testng.org/doc/index.html>

* Source: <https://github.com/cbeust/testng>

wagon-http-lightweight (3.0.0)

* License: Pending

* Project: <https://maven.apache.org/wagon/>

* Source:

<https://mvnrepository.com/artifact/org.apache.maven.wagon/wagon-http-lightweight/3.0.0>

xz for java (1.8)

* License: LicenseRef-Public-Domain

Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

1.5 util-linux 2.20.0

1.5.1 Available under license :

/*

* Copyright (c) 1989 The Regents of the University of California.

* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
 - * This product includes software developed by the University of California, Berkeley and its contributors.
- * 4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.
- *
 - * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

*/

NR START END SECTORS SIZE NAME UUID

```
1 32 7679 7648 3.7M 8f8378c0-01
2 7680 16383 8704 4.3M 8f8378c0-02
5 7936 12799 4864 2.4M
6 12544 16127 3584 1.8M
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The complete text of the license is available in the `../Documentation/licenses/COPYING.LGPL-2.1-or-later` file.

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does

not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a

covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <https://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/licenses/why-not-lgpl.html>.

```
WEV @@ WEV[B "1
```

```
GNU GENERAL PUBLIC LICENSE
```

```
Version 2, June 1991
```

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and

modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such

interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such

an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify

it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is

modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating

system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood

that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library

facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO

WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

x ?"U@,5 @mISmIN<GimCN7g1u|E
43mI,5WEV @@ WEV @mImImIAmImImI0mImImI*mImI
A0mImImI...
lost+found...

;9GimCN7g

!"#\$%&'()*+,-
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()*+,-
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()*+,-
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()*+,-
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~WEV @@
WEV[B "1

This library is free software; you can redistribute it and/or
modify it under the terms of the Modified BSD License.

The complete text of the license is available in the
../Documentation/licenses/COPYING.BSD-3-Clause file.

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later
version.

The complete text of the license is available in the
../Documentation/licenses/COPYING.LGPL-2.1-or-later
Permission to use, copy, modify, and/or distribute this software for any
purpose with or without fee is hereby granted, provided that the above
copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES
WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR
ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

1.6 cairo 1.14.2

1.6.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Rcairo is copyrighted free software by the persons listed in AUTHORS distributed under the same conditions as ruby; which follow:

Ruby is copyrighted free software by Yukihiro Matsumoto <matz@netlab.jp>. You can redistribute it and/or modify it under either the terms of the GPL (see the file GPL), or the conditions below:

1. You may make and give away verbatim copies of the source form of the software without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may modify your copy of the software in any way, provided that you do at least ONE of the following:
 - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or by allowing the author to include your modifications in the software.
 - b) use the modified software only within your corporation or organization.
 - c) give non-standard binaries non-standard names, with instructions on where to get the original software distribution.
 - d) make other distribution arrangements with the author.
3. You may distribute the software in object code or binary form, provided that you do at least ONE of the following:
 - a) distribute the binaries and library files of the software, together with instructions (in the manual page or equivalent) on where to get the original distribution.
 - b) accompany the distribution with the machine-readable source of the software.
 - c) give non-standard binaries non-standard names, with instructions on where to get the original software distribution.
 - d) make other distribution arrangements with the author.
4. You may modify and include the part of the software into any other software (possibly commercial). But some files in the distribution are not written by the author, so that they are not under these terms.

For the list of those files and their copying conditions, see the file LEGAL.

5. The scripts and library files supplied as input to or produced as

output from the software do not automatically fall under the copyright of the software, but belong to whomever generated them, and may be sold commercially, and may be aggregated with this software.

6. THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

1.7 coreutils 8.30 3ubuntu2

1.7.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether

gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system

(if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no

permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the

Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright

holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation

(including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a

covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

1.8 nlohmann-json 3.9.1

1.8.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <https://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other

than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction

and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because

modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under

this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the

Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have

actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed

under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS

THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program. If not, see <https://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/licenses/why-not-lgpl.html>.

amalgamate.py - Amalgamate C source and header files
Copyright (c) 2012, Erik Edlund <erik.edlund@32767.se>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Erik Edlund, nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2015-2017 Niels Lohmann

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

People who have agreed to one of the CLAs and can contribute patches.

The AUTHORS file lists the copyright holders; this file
lists people. For example, Google employees are listed here
but not in AUTHORS, because Google holds the copyright.
#

Names should be added to this file only after verifying that
the individual or the individual's organization has agreed to
the appropriate Contributor License Agreement, found here:
#

<https://developers.google.com/open-source/cla/individual>
<https://developers.google.com/open-source/cla/corporate>
#

The agreement for individuals can be filled out on the web.
#

When adding J Random Contributor's name to this file,
either J's name or J's organization's name should be
added to the AUTHORS file, depending on whether the
individual or corporate CLA was used.
#

Names should be added to this file as:

Name <email address>
#

Please keep the list sorted.

Albert Pretorius <pretoalb@gmail.com>

Arne Beer <arne@twobeer.de>
Billy Robert O'Neal III <billy.oneal@gmail.com> <bion@microsoft.com>
Chris Kennelly <ckennelly@google.com> <ckennelly@ckennelly.com>
Christopher Seymour <chris.j.seymour@hotmail.com>
David Coeurjolly <david.coeurjolly@liris.cnrs.fr>
Deniz Evrenci <denizevrenci@gmail.com>
Dominic Hamon <dma@stripysock.com> <dominic@google.com>
Dominik Czarnota <dominik.b.czarnota@gmail.com>
Eric Fiselier <eric@efcs.ca>
Eugene Zhuk <eugene.zhuk@gmail.com>
Evgeny Safronov <division494@gmail.com>
Felix Homann <linuxaudio@showlabor.de>
Ismael Jimenez Martinez <ismael.jimenez.martinez@gmail.com>
Jern-Kuan Leong <jernkuan@gmail.com>
JianXiong Zhou <zhoujianxiong2@gmail.com>
Joao Paulo Magalhaes <joaoppmagalhaes@gmail.com>
John Millikin <jmillikin@stripe.com>
Jussi Knuutila <jussi.knuutila@gmail.com>
Kai Wolf <kai.wolf@gmail.com>
Kishan Kumar <kumar.kishan@outlook.com>
Kaito Udagawa <umireon@gmail.com>
Lei Xu <eddyxu@gmail.com>
Matt Clarkson <mattyclarkson@gmail.com>
Maxim Vafin <maxvafin@gmail.com>
Nick Hutchinson <nshutchinson@gmail.com>
Oleksandr Sochka <sasha.sochka@gmail.com>
Pascal Leroy <phl@google.com>
Paul Redmond <paul.redmond@gmail.com>
Pierre Phaneuf <pphaneuf@google.com>
Radoslav Yovchev <radoslav.tm@gmail.com>
Raul Marin <rmrodriguez@cartodb.com>
Ray Glover <ray.glover@uk.ibm.com>
Robert Guo <robert.guo@mongodb.com>
Roman Lebedev <lebedev.ri@gmail.com>
Shuo Chen <chenshuo@chenshuo.com>
Tobias Ulvgrd <tobias.ulvgard@dirac.se>
Tom Madams <tom.ej.madams@gmail.com> <tmadams@google.com>
Yixuan Qiu <yixuanq@gmail.com>
Yusuke Suzuki <utatane.tea@gmail.com>
Zbigniew Skowron <zbychs@gmail.com>
The MIT License (MIT)

Copyright (c) 2016-2019 Viktor Kirilov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell

copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

License

The class is licensed under the [MIT License](http://opensource.org/licenses/MIT):

Copyright © 2013-2020 [Niels Lohmann](http://nlohmann.me)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the Software), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED AS IS, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

* * *

The class contains the UTF-8 Decoder from Bjoern Hoehrmann which is licensed under the [MIT License](http://opensource.org/licenses/MIT) (see above). Copyright © 2008-2009 [Bjrn Hoehrmann](http://bjoern.hoehrmann.de/) <bjoern@hoehrmann.de>

The class contains a slightly modified version of the Grisu2 algorithm from Florian Loitsch which is licensed under the [MIT License](http://opensource.org/licenses/MIT) (see above). Copyright © 2009 [Florian Loitsch](http://florian.loitsch.com/)

The class contains a copy of [Hedley](https://nemequ.github.io/hedley/) from Evan Nemerson which is licensed as [CC0-1.0](http://creativecommons.org/publicdomain/zero/1.0/).

cpplint.py and its corresponding unit tests are Copyright (C) 2009 Google Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2013-2020 Niels Lohmann

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.9 attr 2.4.47

1.9.1 Available under license :

This package was debianized by Nathan Scott nathans@debian.org on Sun, 19 Nov 2000 07:37:09 -0500.

It can be downloaded from <ftp://oss.sgi.com/projects/xfs/download/>

Copyright:

Copyright (C) 2001-2002 Silicon Graphics, Inc. All Rights Reserved.
Copyright (C) 2001 Andreas Gruenbacher.

You are free to distribute this software under Version 2.1 of the GNU Lesser General Public License.
On Debian systems, refer to `/usr/share/common-licenses/LGPL-2.1` for the complete text of the GNU Lesser General Public License.

Certain components (as annotated in the source) are licensed under version 2 of the terms of the GNU General Public License.
On Debian systems, the complete text of the GNU General Public License can be found in `/usr/share/common-licenses/GPL` file.
Most components of the "attr" package are licensed under Version 2.1 of the GNU Lesser General Public License (see below).
below.

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see COPYING).

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is

modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating

system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood

that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library

facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO

WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

Most components of the "attr" package are licensed under Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see below),

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for

this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any

patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED

OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.10 rsyslog 7.6.7

1.10.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser

General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer

system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free

programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain

clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates

for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after

your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The

work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is

conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the

Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a

copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see

<<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to

control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such

measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your

work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source

may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or

authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have

received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates

an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,

if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read
<<http://www.gnu.org/philosophy/why-not-lgpl.html>>.
Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

1. You must give any other recipients of the Work or Derivative Works a copy of this License; and
2. You must cause any modified files to carry prominent notices stating that You changed the files; and
3. You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
4. If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License. You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

1.11 spring-jcl 5.2.20.RELEASE

1.11.1 Available under license :

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by

the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be

liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

SPRING FRAMEWORK 5.2.20.RELEASE SUBCOMPONENTS:

Spring Framework 5.2.20.RELEASE includes a number of subcomponents with separate copyright notices and license terms. The product that includes this file does not necessarily use all the open source subcomponents referred to below. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

>>> ASM 7.3 (org.ow2.asm:asm:7.3, org.ow2.asm:asm-commons:7.3):

Copyright (c) 2000-2011 INRIA, France Telecom
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2009, OW2 Consortium <<https://www.ow2.org/>>

>>> CGLIB 3.3 (cglib:cglib:3.3):

Per the LICENSE file in the CGLIB JAR distribution downloaded from

https://github.com/cglib/cglib/releases/download/RELEASE_3_3_0/cglib-3.3.0.jar,
CGLIB 3.3 is licensed under the Apache License, version 2.0, the text of which
is included above.

>>> Objenesis 3.1 (org.objenesis:objenesis:3.1):

Per the LICENSE file in the Objenesis ZIP distribution downloaded from
<http://objenesis.org/download.html>, Objenesis 3.1 is licensed under the
Apache License, version 2.0, the text of which is included above.

Per the NOTICE file in the Objenesis ZIP distribution downloaded from
<http://objenesis.org/download.html> and corresponding to section 4d of the
Apache License, Version 2.0, in this case for Objenesis:

Objenesis

Copyright 2006-2019 Joe Walnes, Henri Tremblay, Leonardo Mesquita

=====

To the extent any open source components are licensed under the EPL and/or
other similar licenses that require the source code and/or modifications to
source code to be made available (as would be noted above), you may obtain a
copy of the source code corresponding to the binaries for such open source
components and modifications thereto, if any, (the "Source Files"), by
downloading the Source Files from <https://spring.io/projects>, Pivotal's website
at <https://network.pivotal.io/open-source>, or by sending a request, with your
name and address to: Pivotal Software, Inc., 875 Howard Street, 5th floor, San
Francisco, CA 94103, Attention: General Counsel. All such requests should
clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. Pivotal
can mail a copy of the Source Files to you on a CD or equivalent physical
medium.

This offer to obtain a copy of the Source Files is valid for three years from
the date you acquired this Software product. Alternatively, the Source Files
may accompany the Software.

Spring Framework 5.2.20.RELEASE

Copyright (c) 2002-2022 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0
(the "License"). You may not use this product except in compliance with
the License.

This product may include a number of subcomponents with separate
copyright notices and license terms. Your use of the source code for
these subcomponents is subject to the terms and conditions of the
subcomponent's license, as noted in the license.txt file.

1.12 dash 0.5.10.2 6

1.12.1 Available under license :

Copyright jQuery Foundation and other contributors <<https://jquery.org/>>

Based on Underscore.js, copyright Jeremy Ashkenas,
DocumentCloud and Investigative Reporters & Editors <<http://underscorejs.org/>>

This software consists of voluntary contributions made by many individuals. For exact contribution history, see the revision history available at <https://github.com/lodash/lodash>

The following license applies to all parts of this software except as documented below:

====

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

====

Copyright and related rights for sample code are waived via CC0. Sample code is defined as all source code displayed within the prose of the documentation.

CC0: <http://creativecommons.org/publicdomain/zero/1.0/>

====

Files located in the `node_modules` and `vendor` directories are externally maintained libraries used by this software which have their own licenses; we recommend you read them, as their terms may differ from the terms above.

1.13 libtasn 4.16.0-2

1.13.1 Available under license :

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input

to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, La@TeX{ } input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG@. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

VERBATIM COPYING

You may copy and distribute the Document in any medium, either

commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give

them a chance to provide you with an updated version of the Document.

@item

MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice.

These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements.''

@item

COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License ``or any later version'' applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the

Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

RELICENSING

``Massive Multiauthor Collaboration Site" (or ``MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A ``Massive Multiauthor Collaboration" (or ``MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that

any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a

"work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy,

and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library

with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not.

Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if

the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any

attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to

control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such

measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your

work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source

may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or

authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have

received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates

an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,

if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read
<<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

LICENSING

=====

The libtasn1 library is released under the GNU Lesser General Public License (LGPL) version 2.1 or later; see [COPYING.LESSER](doc/COPYING.LESSER) for the license terms.

The GNU LGPL applies to the main libtasn1 library, while the included applications library are under the GNU GPL version 3. The libtasn1 library is located in the lib directory, while the applications in src/.

The documentation in doc/ is under the GNU FDL license 1.3.

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

1.14 coreutils 8.30 3

1.14.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the

GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that

patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your

rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product

is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and

propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this

License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY

OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program
into proprietary programs. If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License. But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.

1.15 sizeof 0.3.0

1.15.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.16 @tensorflow/tfjs-core 3.11.0

1.16.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic

mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of

any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: HOW TO APPLY THE APACHE LICENSE TO YOUR WORK

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

1.17 spring-framework 5.2.20.RELEASE

1.17.1 Available under license :

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the

editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the

same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

SPRING FRAMEWORK 5.2.20.RELEASE SUBCOMPONENTS:

Spring Framework 5.2.20.RELEASE includes a number of subcomponents with separate copyright notices and license terms. The product that includes this file does not necessarily use all the open source subcomponents referred to below. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

>>> ASM 7.3 (org.ow2.asm:asm:7.3, org.ow2.asm:asm-commons:7.3):

Copyright (c) 2000-2011 INRIA, France Telecom
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2009, OW2 Consortium <<https://www.ow2.org/>>

>>> CGLIB 3.3 (cglib:cglib:3.3):

Per the LICENSE file in the CGLIB JAR distribution downloaded from https://github.com/cglib/cglib/releases/download/RELEASE_3_3_0/cglib-3.3.0.jar, CGLIB 3.3 is licensed under the Apache License, version 2.0, the text of which is included above.

>>> Objenesis 3.1 (org.objenesis:objenesis:3.1):

Per the LICENSE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html>, Objenesis 3.1 is licensed under the Apache License, version 2.0, the text of which is included above.

Per the NOTICE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html> and corresponding to section 4d of the Apache License, Version 2.0, in this case for Objenesis:

Objenesis

Copyright 2006-2019 Joe Walnes, Henri Tremblay, Leonardo Mesquita

=====

To the extent any open source components are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://spring.io/projects>, Pivotal's website at <https://network.pivotal.io/open-source>, or by sending a request, with your name and address to: Pivotal Software, Inc., 875 Howard Street, 5th floor, San

Francisco, CA 94103, Attention: General Counsel. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. Pivotal can mail a copy of the Source Files to you on a CD or equivalent physical medium.

This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product. Alternatively, the Source Files may accompany the Software.

Spring Framework 5.2.20.RELEASE

Copyright (c) 2002-2022 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the license.txt file.

1.18 jansi-native 1.8

1.18.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2009-2017 the original author(s).
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1257860186_1643019499.32/0/jansi-native-1-8-sources-
jar/org/fusesource/jansi/internal/WindowsSupport.java
* /opt/cola/permits/1257860186_1643019499.32/0/jansi-native-1-8-sources-
jar/org/fusesource/jansi/internal/CLibrary.java
* /opt/cola/permits/1257860186_1643019499.32/0/jansi-native-1-8-sources-
```

1.19 Icms 2.11

1.19.1 Available under license :

Little CMS

Copyright (c) 1998-2011 Marti Maria Saguer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

THIS LICENSE APPLIES ONLY TO iccjpeg.c file

In plain English:

1. We don't promise that this software works. (But if you find any bugs, please let us know!)
2. You can use this software for whatever you want. You don't have to pay us.
3. You may not pretend that you wrote this software. If you use it in a program, you must acknowledge somewhere in your documentation that you've used the IJG code.

In legalese:

The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy.

This software is copyright (C) 1991-2013, Thomas G. Lane, Guido Vollbeding.
All Rights Reserved except as specified below.

Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:

(1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.

(2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".

(3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us.

Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software".

We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltmain.sh). Another support script, install-sh, is copyright by X Consortium but is also freely distributable.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

"The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

1.20 jq 1.6-1

1.20.1 Available under license :

jq is copyright (C) 2012 Stephen Dolan

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

jq's documentation (everything found under the docs/ subdirectory in the source tree) is licensed under the Creative Commons CC BY 3.0 license, which can be found at:

<https://creativecommons.org/licenses/by/3.0/>

The documentation website includes a copy of Twitter's Bootstrap and relies on Bonsai, Liquid templates and various other projects, look them up for detailed licensing conditions.

jq incorporates David M. Gay's `dtoa.c` and `g_fmt.c`, which bear the following notices:

`dtoa.c`:

The author of this software is David M. Gay.

Copyright (c) 1991, 2000, 2001 by Lucent Technologies.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting

documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

g_fmt.c:

The author of this software is David M. Gay.

Copyright (c) 1991, 1996 by Lucent Technologies.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

1.21 log4j-to-slf4j 2.13.3

1.21.1 Available under license :

Apache Log4j to SLF4J Adapter
Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.22 speex 1.2

1.22.1 Available under license :

Copyright 2002-2008 Xiph.org Foundation
Copyright 2002-2008 Jean-Marc Valin
Copyright 2005-2007 Analog Devices Inc.
Copyright 2005-2008 Commonwealth Scientific and Industrial Research
Organisation (CSIRO)
Copyright 1993, 2002, 2006 David Rowe
Copyright 2003 EpicGames
Copyright 1992-1994 Jutta Degener, Carsten Bormann

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Xiph.org Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.23 openssh 8.8

1.23.1 Available under license :

This file is part of the OpenSSH software.

The licences which components of this software fall under are as follows. First, we will summarize and say that all components are under a BSD licence, or a licence more free than that.

OpenSSH contains no GPL code.

1)

- * Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland
- * All rights reserved
- *
- * As far as I am concerned, the code I have written for this software
- * can be used freely for any purpose. Any derived versions of this
- * software must be clearly marked as such, and if the derived work is
- * incompatible with the protocol description in the RFC file, it must be
- * called by a name other than "ssh" or "Secure Shell".

[Tatu continues]

- * However, I am not implying to give any licenses to any patents or
- * copyrights held by third parties, and the software includes parts that
- * are not under my direct control. As far as I know, all included
- * source code is used in accordance with the relevant license agreements
- * and can be used freely for any purpose (the GNU license being the most
- * restrictive); see below for details.

[However, none of that term is relevant at this point in time. All of these restrictively licenced software components which he talks about have been removed from OpenSSH, i.e.,

- RSA is no longer included, found in the OpenSSL library
- IDEA is no longer included, its use is deprecated
- DES is now external, in the OpenSSL library
- GMP is no longer used, and instead we call BN code from OpenSSL
- Zlib is now external, in a library
- The make-ssh-known-hosts script is no longer included
- TSS has been removed
- MD5 is now external, in the OpenSSL library
- RC4 support has been replaced with ARC4 support from OpenSSL
- Blowfish is now external, in the OpenSSL library

[The licence continues]

Note that any information and cryptographic algorithms used in this software are publicly available on the Internet and at any major bookstore, scientific library, and patent office worldwide. More information can be found e.g. at "<http://www.cs.hut.fi/crypto>".

The legal status of this program is some combination of all these permissions and restrictions. Use only at your own responsibility. You will be responsible for any legal consequences yourself; I am not making any claims whether possessing or using this is legal or not in your country, and I am not taking any responsibility on your behalf.

NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

3)

ssh-keyscan was contributed by David Mazieres under a BSD-style license.

* Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>.

*

* Modification and redistribution in source and binary forms is permitted provided that due credit is given to the author and the OpenBSD project by leaving this copyright notice intact.

4)

The Rijndael implementation by Vincent Rijmen, Antoon Bosselaers and Paulo Barreto is in the public domain and distributed with the following license:

* @version 3.0 (December 2000)

*

* Optimised ANSI C code for the Rijndael cipher (now AES)

*

* @author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>

* @author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>

* @author Paulo Barreto <paulo.barreto@terra.com.br>

*

* This code is hereby placed in the public domain.

*

* THIS SOFTWARE IS PROVIDED BY THE AUTHORS "AS IS" AND ANY EXPRESS

* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
* WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
* EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

5)

One component of the ssh source code is under a 3-clause BSD license,
held by the University of California, since we pulled these parts from
original Berkeley code.

* Copyright (c) 1983, 1990, 1992, 1993, 1995
* The Regents of the University of California. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the University nor the names of its contributors
* may be used to endorse or promote products derived from this software
* without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.

6)

Remaining components of the software are provided under a standard
2-term BSD licence with the following names as copyright holders:

Markus Friedl

Theo de Raadt
Niels Provos
Dug Song
Aaron Campbell
Damien Miller
Kevin Steves
Daniel Kouril
Wesley Griffin
Per Allansson
Nils Nordman
Simon Wilkinson
Roumen Petrov

Portable OpenSSH additionally includes code from the following copyright holders, also under the 2-term BSD license:

Ben Lindstrom
Tim Rice
Andre Lucas
Chris Adams
Corinna Vinschen
Cray Inc.
Denis Parker
Gert Doering
Jakob Schlyter
Jason Downs
Juha Yrjl
Michael Stone
Networks Associates Technology, Inc.
Solar Designer
Todd C. Miller
Wayne Schroeder
William Jones
Darren Tucker
Sun Microsystems
The SCO Group
Daniel Walsh
Red Hat, Inc
Simon Vallet / Genoscope

- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.

*

* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

8) Portable OpenSSH contains the following additional licenses:

a) md5crypt.c, md5crypt.h

* "THE BEER-WARE LICENSE" (Revision 42):
* <phk@login.dknet.dk> wrote this file. As long as you retain this
* notice you can do whatever you want with this stuff. If we meet
* some day, and you think this stuff is worth it, you can buy me a
* beer in return. Poul-Henning Kamp

b) snprintf replacement

* Copyright Patrick Powell 1995
* This code is based on code written by Patrick Powell
* (papowell@astart.com) It may be used for any purpose as long as this
* notice remains intact on all source code distributions

c) Compatibility code (openbsd-compat)

Apart from the previously mentioned licenses, various pieces of code
in the openbsd-compat/ subdirectory are licensed as follows:

Some code is licensed under a 3-term BSD license, to the following
copyright holders:

Todd C. Miller
Theo de Raadt
Damien Miller
Eric P. Allman
The Regents of the University of California
Constantin S. Svintsoff

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright

- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. Neither the name of the University nor the names of its contributors
- * may be used to endorse or promote products derived from this software
- * without specific prior written permission.

* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.

Some code is licensed under an ISC-style license, to the following
 copyright holders:

Internet Software Consortium.

Todd C. Miller

Reyk Floeter

Chad Mynhier

- * Permission to use, copy, modify, and distribute this software for any
- * purpose with or without fee is hereby granted, provided that the above
- * copyright notice and this permission notice appear in all copies.

* THE SOFTWARE IS PROVIDED "AS IS" AND TODD C. MILLER DISCLAIMS ALL
 * WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
 * OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL TODD C. MILLER BE LIABLE
 * FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
 * WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION
 * OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN
 * CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Some code is licensed under a MIT-style license to the following
 copyright holders:

Free Software Foundation, Inc.

- * Permission is hereby granted, free of charge, to any person obtaining a *
- * copy of this software and associated documentation files (the *
- * "Software"), to deal in the Software without restriction, including *

```

* without limitation the rights to use, copy, modify, merge, publish,
* distribute, distribute with modifications, sublicense, and/or sell
* copies of the Software, and to permit persons to whom the Software is
* furnished to do so, subject to the following conditions:
*
* The above copyright notice and this permission notice shall be included
* in all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
* OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
* IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
* DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
* OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
* THE USE OR OTHER DEALINGS IN THE SOFTWARE.
*
* Except as contained in this notice, the name(s) of the above copyright
* holders shall not be used in advertising or otherwise to promote the
* sale, use or other dealings in this Software without prior written
* authorization.
*****/

```

The Blowfish cipher implementation is licensed by Niels Provis under a 4-clause BSD license:

```

* Blowfish - a fast block cipher designed by Bruce Schneier
*
* Copyright 1997 Niels Provos <provos@physnet.uni-hamburg.de>
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* This product includes software developed by Niels Provos.
* 4. The name of the author may not be used to endorse or promote products
* derived from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,

```

* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Some replacement code is licensed by the NetBSD foundation under a
2-clause BSD license:

* Copyright (c) 2001 The NetBSD Foundation, Inc.
* All rights reserved.
*
* This code is derived from software contributed to The NetBSD Foundation
* by Todd Vierling.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
*
* THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS
* ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
* TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS
* BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
* POSSIBILITY OF SUCH DAMAGE.

\$OpenBSD: LICENCE,v 1.20 2017/04/30 23:26:16 djm Exp \$

1.24 netty-codec 4.1.51.Final

1.24.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2015 The Netty Project

*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufVarint32FrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ProtocolDetectionResult.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufVarint32LengthFieldPrepender.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufDecoderNano.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/UnsupportedValueConverter.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ProtocolDetectionState.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/HeadersUtils.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java

No license file was found, but licenses were detected in source scan.

/*
* Copyright 2014 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License, version 2.0 (the
* "License"); you may not use this file except in compliance with the License. You may obtain a
* copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software distributed under the License
* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either

express

* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/DefaultHeaders.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/EmptyHeaders.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/Headers.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2013 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/compression/Crc32c.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/compression/JdkZlibDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/xml/XmlFrameDecoder.java

No license file was found, but licenses were detected in source scan.

~ Copyright 2012 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-codec/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/AsciiHeadersEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/FastLzFrameDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Lz4FrameEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2HuffmanStageDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/FastLz.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2MoveToFrontTable.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2BlockCompressor.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/FastLzFrameEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/MessageAggregationException.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Crc32.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/json/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2HuffmanStageEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2Decoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/LzfEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2MTFAndRLE2StageEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2BlockDecompressor.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Lz4Constants.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/DecoderResultProvider.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Lz4FrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2Encoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/LzfDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitWriter.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2Constants.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2HuffmanAllocator.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/json/JsonObjectDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2Rand.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Bzip2BitReader.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2019 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Lz4XXHash32.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2012 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ReferenceMap.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/MarshallerProvider.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/base64/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/TooLongFrameException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/PrematureChannelClosureException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/JdkZlibEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/LimitingByteInput.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/DecompressionException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/CodecException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ReplayingDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/MessageToMessageEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/EncoderException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ClassResolver.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/MessageToMessageDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/LineBasedFrameDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/ZlibEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/UnsupportedMessageTypeException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/ContextBoundUnmarshallerProvider.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/ZlibUtil.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/ZlibWrapper.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/ZlibCodecFactory.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ByteToMessageCodec.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/CorruptedFrameException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/string/StringEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/ClassResolvers.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/JZlibDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/MessageAggregator.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/base64/Base64Decoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/protobuf/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/DefaultUnmarshallerProvider.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/xml/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/ZlibDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/CompressionException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/base64/Base64Encoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ByteToMessageDecoder.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/DecoderException.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/LengthFieldPrepender.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/SoftReferenceMap.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/MessageToMessageCodec.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/bytes/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/MessageToByteEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/string/StringDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/DecoderResult.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/Delimiters.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/JZlibEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/FixedLengthFrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/string/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/CachingClassResolver.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/compression/Snappy.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalMarshallerProvider.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/serialization/WeakReferenceMap.java
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2016 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/string/LineSeparator.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/compression/ByteBufChecksum.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/DatagramPacketDecoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/string/LineEncoder.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/CodecOutputList.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/compression/CompressionUtil.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/DateFormatter.java
* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/DatagramPacketEncoder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
```

```

* under the License.
*/
/**
* A decoder that splits the received { @link ByteBuf}s dynamically by the
* value of the length field in the message. It is particularly useful when you
* decode a binary message which has an integer header field that represents the
* length of the message body or the whole message.
* <p>
* { @link LengthFieldBasedFrameDecoder} has many configuration parameters so
* that it can decode any message with a length field, which is often seen in
* proprietary client-server protocols. Here are some example that will give
* you the basic idea on which option does what.
*
* <h3>2 bytes length field at offset 0, do not strip header</h3>
*
* The value of the length field in this example is <tt>12 (0x0C)</tt> which
* represents the length of "HELLO, WORLD". By default, the decoder assumes
* that the length field represents the number of the bytes that follows the
* length field. Therefore, it can be decoded with the simplistic parameter
* combination.
* <pre>
* <b>lengthFieldOffset</b> = <b>0</b>
* <b>lengthFieldLength</b> = <b>2</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0 (= do not strip header)
*
* BEFORE DECODE (14 bytes)      AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" |    | 0x000C | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 0, strip header</h3>
*
* Because we can get the length of the content by calling
* { @link ByteBuf#readableBytes()}, you might want to strip the length
* field by specifying <tt>initialBytesToStrip</tt>. In this example, we
* specified <tt>2</tt>, that is same with the length of the length field, to
* strip the first two bytes.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* <b>initialBytesToStrip</b> = <b>2</b> (= the length of the Length field)
*
* BEFORE DECODE (14 bytes)      AFTER DECODE (12 bytes)
* +-----+-----+ +-----+

```



```

* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" | | "HELLO, WORLD" |
* +-----+-----+ +-----+
* </pre>
*
* <h3>2 bytes length field at offset 0, do not strip header, the length field
* represents the length of the whole message</h3>
*
* In most cases, the length field represents the length of the message body
* only, as shown in the previous examples. However, in some protocols, the
* length field represents the length of the whole message, including the
* message header. In such a case, we specify a non-zero
* <tt>lengthAdjustment</tt>. Because the length value in this example message
* is always greater than the body length by <tt>2</tt>, we specify <tt>-2</tt>
* as <tt>lengthAdjustment</tt> for compensation.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-2</b> (= the length of the Length field)
* initialBytesToStrip = 0
*
* BEFORE DECODE (14 bytes)      AFTER DECODE (14 bytes)
* +-----+-----+ +-----+
* | Length | Actual Content |---->| Length | Actual Content |
* | 0x000E | "HELLO, WORLD" | | 0x000E | "HELLO, WORLD" |
* +-----+-----+ +-----+
* </pre>
*
* <h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>
*
* The following message is a simple variation of the first example. An extra
* header value is prepended to the message. <tt>lengthAdjustment</tt> is zero
* again because the decoder always takes the length of the prepended data into
* account during frame length calculation.
* <pre>
* <b>lengthFieldOffset</b> = <b>2</b> (= the length of Header 1)
* <b>lengthFieldLength</b> = <b>3</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)      AFTER DECODE (17 bytes)
* +-----+-----+-----+ +-----+-----+-----+
* | Header 1 | Length | Actual Content |---->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" | | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+ +-----+-----+-----+
* </pre>
*
* <h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>

```

```

*
* This is an advanced example that shows the case where there is an extra
* header between the length field and the message body. You have to specify a
* positive <tt>lengthAdjustment</tt> so that the decoder counts the extra
* header into the frame length calculation.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* <b>lengthAdjustment</b> = <b>2</b> (= the length of Header 1)
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)                AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+-----+ +-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |----->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+ +-----+-----+-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,
* strip the first header field and the length field</h3>
*
* This is a combination of all the examples above. There are the prepended
* header before the length field and the extra header after the length field.
* The prepended header affects the <tt>lengthFieldOffset</tt> and the extra
* header affects the <tt>lengthAdjustment</tt>. We also specified a non-zero
* <tt>initialBytesToStrip</tt> to strip the length field and the prepended
* header from the frame. If you don't want to strip the prepended header, you
* could specify <tt>0</tt> for <tt>initialBytesToSkip</tt>.
* <pre>
* lengthFieldOffset = 1 (= the length of HDR1)
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>1</b> (= the length of HDR2)
* <b>initialBytesToStrip</b> = <b>3</b> (= the length of HDR1 + LEN)
*
* BEFORE DECODE (16 bytes)                AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+-----+ +-----+-----+-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |----->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" | | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+ +-----+-----+-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,
* strip the first header field and the length field, the length field
* represents the length of the whole message</h3>
*
* Let's give another twist to the previous example. The only difference from
* the previous example is that the length field represents the length of the
* whole message instead of the message body, just like the third example.

```

```

* We have to count the length of HDR1 and Length into <tt>lengthAdjustment</tt>.
* Please note that we don't need to take the length of HDR2 into account
* because the length field already includes the whole header length.
* <pre>
* lengthFieldOffset = 1
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-3</b> (= the length of HDR1 + LEN, negative)
* <b>initialBytesToStrip</b> = <b> 3</b>
*
* BEFORE DECODE (16 bytes)           AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+
* </pre>
* @see LengthFieldPrepender
*/

```

Found in path(s):

```

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java
No license file was found, but licenses were detected in source scan.

```

```

/*
* Copyright 2012 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
/*
* Written by Robert Harder and released to the public domain, as explained at
* http://creativecommons.org/licenses/publicdomain
*/
/**
* Enumeration of supported Base64 dialects.
*
* <p>
* The internal lookup tables in this class has been derived from
* <a href="http://iharder.sourceforge.net/current/java/base64/">Robert Harder's Public Domain
* Base64 Encoder/Decoder</a>.

```

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/base64/Base64Dialect.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2015 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License, version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/DefaultHeadersImpl.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/CharSequenceValueConverter.java

* /opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-jar/io/netty/handler/codec/ValueConverter.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2012 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License, version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

*/

/*

```
* Written by Robert Harder and released to the public domain, as explained at
* http://creativecommons.org/licenses/publicdomain
*/
/**
* Utility class for { @link ByteBuffer } that encodes and decodes to and from
* Base64 notation.
* <p>
* The encoding and decoding algorithm in this class has been derived from
* Robert Harder's Public Domain
* Base64 Encoder/Decoder</a>.
*/
```

Found in path(s):

```
*/opt/ws_local/PERMITS_SQL/1072948336_1595240763.12/0/netty-codec-4-1-51-final-sources-
jar/io/netty/handler/codec/base64/Base64.java
```

1.25 gnutls 3.6.13 2ubuntu1.7

1.25.1 Available under license :

The "inih" library is distributed under the New BSD license:

Copyright (c) 2009, Ben Hoyt

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Ben Hoyt nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY BEN HOYT "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL BEN HOYT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This package was debianized by Ivo Timmermans <ivo@debian.org> on Fri, 3 Aug 2001 10:00:42 +0200.

It was later taken over by Matthias Urlichs <smurf@debian.org> and is now maintained by Andreas Metzler <ametzler@debian.org> Eric Dorland <eric@debian.org>, James Westby <jw+debian@jameswestby.net>

It was downloaded from <https://www.gnupg.org/ftp/gcrypt/gnutls/>

Upstream Authors (from AUTHORS file):

The authors list is autogenerated from the git history; sorted by number of commits

Nikos Mavrogiannopoulos <nnav at gnutls.org>
Simon Josefsson <jas at josefsson.org>
Dmitry Baryshkov <dbaryshkov at gmail.com>
Tim Rhsen <tim.ruehsen at gmx.de>
Daiki Ueno <ueno at gnu.org>
Ludovic Courts <ludo at gnu.org>
Timo Schulz <twoaday at gnutls.org>
Jonathan Bastien-Filiatrault <joe at x2a.org>
Alon Bar-Lev <alon.barlev at gmail.com>
Andreas Metzler <ametzler at debian.org>
Tom Vrancken <dev at tomvrancken.nl>
Martin Storsjo <martin at martin.st>
Tim Kosse <tim.kosse at filezilla-project.org>
Simo Sorce <simo at redhat.com>
Daniel Kahn Gillmor <dkg at fifthhorseman.net>
Fabian Keil <fk at fabiankeil.de>
Fabio Fiorina <fiorinaf at gnutls.org>
Stef Walter <stefw at redhat.com>
Armin Burgmeier <armin at arbur.net>
Andrew McDonald <admcd at gnutls.org>
Alex Gaynor <alex.gaynor at gmail.com>
Martin Ukrop <mukrop at redhat.com>
Jaak Ristioja <jaak.ristioja at cyber.ee>
Anderson Toshiyuki Sasaki <ansasaki at redhat.com>
Attila Molnar <attilamolnar at hush.com>
Hugo Beauze-Luyssen <hugo at beauzee.fr>
Jakub Jelen <jjelen at redhat.com>
Martin Sucha <anty.sk+git at gmail.com>
Stefan Berger <stefanb at linux.ibm.com>
Ander Juaristi <a at juaristi.eus>
David Woodhouse <dwmw2 at infradead.org>
Jan Vcelak <jan.vcelak at nic.cz>
Kevin Cernekee <cernekee at gmail.com>
Stefan Srensen <stefan.sorensen at spectralink.com>
Adam Sampson <ats at offog.org>

Alfredo Pironti <alfredo at pironti.eu>
Brad Hards <bradh at frogmouth.net>
Daniel Lenski <dlenski at gmail.com>
Dimitri John Ledkov <xnox at ubuntu.com>
Fiona Klute <fiona.klute at gmx.de>
Michael Weiser <michael.weiser at gmx.de>
Patrick Pelletier <code at funwithsoftware.org>
Rolf Eike Beer <eike at sf-mail.de>
Sjoerd Simons <sjoerd.simons at collabora.co.uk>
Stefan Bhler <stbuehler at web.de>
Thomas Klute <thomas2.klute at uni-dortmund.de>
Wolfgang Meyer zu Bergsten <w.bergsten at sirrix.com>
Christian Grothoff <christian at grothoff.org>
Daniel P. Berrange <berrange at redhat.com>
Gustavo Zacarias <gustavo at zacarias.com.ar>
Ji Klime <jklimes at redhat.com>
Karsten Ohme <k_o_ at users.sourceforge.net>
Kurt Roeckx <kurt at roeckx.be>
Peter Wu <peter at lekensteyn.nl>
Thierry Quemerai <tquemerai at awox.com>
Alessandro Ghedini <alessandro at ghedini.me>
Alex Monk <krenair at gmail.com>
David Caldwell <david at porkrind.org>
Diego Elio Petten <flameeyes at flameeyes.eu>
Elta Koepp <alexi_2019 at protonmail.com>
Fabrice Fontaine <fontaine.fabrice at gmail.com>
Giuseppe Scrivano <gscrivano at gnu.org>
Hubert Kario <hkario at redhat.com>
Ilya Tumaykin <itumaykin at gmail.com>
James Bottomley <James.Bottomley at HansenPartnership.com>
Karl Tarbe <karl.tarbe at cyber.ee>
Ke Zhao <kzhao at redhat.com>
Mark Brand <mabrand at mabrand.nl>
Matthias-Christian Ott <ott at mirix.org>
Maya Rashish <coypu at sdf.org>
Michael Catanzaro <mcatanzaro at gnome.org>
Michael Catanzaro <mcatanzaro at igalia.com>
Micha Grny <mgorny at gentoo.org>
Petr Psa <petr.pisar at atlas.cz>
Roman Bogorodskiy <bogorodskiy at gmail.com>
Stephan Mueller <smueller at chronox.de>
Steve Dispensa <dispensa at phonefactor.com>
Vitezslav Cizek <vcizek at suse.com>
nia <nia at NetBSD.org>
raspa0 <raspa0 at protonmail.com>
Alban Crequy <alban.crequy at collabora.co.uk>
Aleksi Nikiforov <darktemplar at basealt.ru>
Alexander Kanavin <alex.kanavin at gmail.com>

Alexandre Bique <bique.alexandre at gmail.com>
Andreas Metzler <gitlab at bebt.de>
Andreas Schneider <asn at samba.org>
Andreas Schwab <schwab at suse.de>
Avinash Sonawane <rootkea at gmail.com>
Bas van Schaik <gitlab.com at s.traiectum.net>
Bernhard M. Wiedemann <bwiedemann at suse.de>
Bjoern Jacke <bjacke at samba.org>
Bjrn Jacke <bjacke at samba.org>
Bjrn Christensen <bhc at insight.dk>
Carolin Latze <latze at angry-red-pla.net>
Chen Hongzhi <hongzhi.chen at me.com>
Chris Barry <chris at barry.im>
Colin Walters <walters at verbum.org>
Dan Fandrich <dan at coneharvesters.com>
Daniel Schaefer <git at danielschaefer.me>
David Walker <david.walker at vcatechnology.com>
David Weber <dave at veryflatcat.com>
Edward Stangler <estangler at bradmark.com>
Elias Pipping <pipping at exherbo.org>
Elta Koepp <elta_koepp at gmail.com>
Frank Morgner <morgner at informatik.hu-berlin.de>
Gnther Deschner <gd at samba.org>
Hani Benhabiles <kroosec at gmail.com>
Ilya V. Matveychikov <i.matveychikov at securitycode.ru>
Jared Wong <jaredlwong at gmail.com>
Jason Spafford <>nullprogrammer at gmail.com>
Jay Foad <jay.foad at gmail.com>
Jeffrey Walton <noloder at gmail.com>
Jens Lechtenboerger <jens.lechtenboerger at fsfe.org>
Jussi Kukkonen <jussi.kukkonen at intel.com>
Kenneth J. Miller <ken at miller.ec>
Lili Quan <13132239506 at 163.com>
Lucas Fisher <lucas.fisher at gmail.com>
Ludwig Nussel <ludwig.nussel at suse.de>
Luis G.F <luisgf at gmail.com>
Luke Dashjr <luke-jr+git at utopios.org>
Maciej S. Szmigiero <mail at maciej.szmigiero.name>
Maks Naumov <maksqwe1 at ukr.net>
Marcin Cielak <saper at saper.info>
Marcus Meissner <meissner at suse.de>
Marga Manterola <marga at google.com>
Marius Bakke <mbakke at fastmail.com>
Marti Raudsepp <marti at juffo.org>
Matt Turner <mattst88 at gmail.com>
Matt Whitlock <matt at whitlock.name>
Micah Anderson <micah at riseup.net>
Miroslav Lichvar <mlichvar at redhat.com>

Nick Alcock <nick.alcock at oracle.com>
Nicolas Dufresne <nicolas.dufresne at collabora.com>
Nils Maier <maierman at web.de>
Olga <olyasib12 at gmail.com>
Philippe Proulx <eppeliteloop at gmail.com>
Philippe Widmer <pw at earthwave.ch>
R. Andrew Bailey <bailey at akamai.com>
Raj Raman <rajramanca at gmail.com>
Rical Jasan <ricaljasan at pacific.net>
Ricardo M. Correia <rcorreia at wizy.org>
Rickard Bellgrim <rickard at opensssec.org>
Robert Scheck <robert at fedoraproject.org>
Roberto Newmon <robertonewmon at fake-box.com>
Ross Nicholson <phunkyfish at gmail.com>
Rowan Thorpe <rowan at rowanthorpe.com>
SUMIT AGGARWAL <aggarwal.s at samsung.com>
Saurav Babu <saurav.babu at samsung.com>
Sebastian Drge <sebastian at centricular.com>
Simon Arlott <sa.me.uk>
Steve Lhomme <robux4 at ycbcr.xyz>
Thomas Klausner <wiz at NetBSD.org>
Tobias Polzer <tobias.polzer at fau.de>
Tomas Hoger <thoger at redhat.com>
Tristan Matthews <le.businessman at gmail.com>
Werner Koch <wk at gnupg.org>
Yuriy M. Kaminskiy <yumkam at gmail.com>
sskaje <sskaje at gmail.com>
ukasz Stelmach <stlman at poczta.fm>

The translators list is autogenerated from po file history

Anders Jonsson
Benno Schulenberg
Felipe Castro
Francisco Javier Serrador
Jakub Bogusz
Jorma Karvonen
Milo Casagrande
Mingye Wang (Arthur2e5)
Petr Pisar
Rafael Fontenelle
Roland Illig
Sharuzzaman Ahmat Raslan
Stphane Aulery
Trn Ngc Qun
Yuri Chornoivan

License: The main library is licensed under GNU Lesser
General Public License (LGPL) version 2.1+, Gnutls Extra (which is currently
just the openssl wrapper library), build system, testsuite and commandline
utilities are licenced under the GNU General Public License version 3+. The
Guile bindings use the same license as the respective underlying library,
i.e. LGPLv2.1+ for the main library and GPLv3+ for Gnutls extra.

However to be able to use and link against libgnutls a program needs to be
available under a license compatible with LGPLv3+ or GPLv2+ since GnuTLS
requires nettle which requires GMP. GMP (>= 6.0.0) is dual licensed
LGPLv3+ or GPLv2+. Starting with 3.5.7 libunistring is needed, too. It also
is dual licensed LGPLv3+ or GPLv2+ (libunistring 0.9.7 and above, earlier
version were LGPLv3+ only.)

Copyright:

/* *_- c *_-
* Copyright (C) 2000-2019 Free Software Foundation, Inc.
*
* Author: Nikos Mavrogiannopoulos
*
* This file is part of GnuTLS.
*
* The GnuTLS is free software; you can redistribute it and/or
* modify it under the terms of the GNU Lesser General Public License
* as published by the Free Software Foundation; either version 2.1 of
* the License, or (at your option) any later version.
*
* This library is distributed in the hope that it will be useful, but
* WITHOUT ANY WARRANTY; without even the implied warranty of
* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
* Lesser General Public License for more details.
*
* You should have received a copy of the GNU Lesser General Public License
* along with this program. If not, see <<http://www.gnu.org/licenses/>>
*
*/

/*
* Copyright (C) 2004-2015 Free Software Foundation, Inc.
* Copyright (c) 2002 Andrew McDonald <andrew@mcdonald.org.uk>
*
* This file is part of GnuTLS-EXTRA.
*
* GnuTLS-extra is free software: you can redistribute it and/or modify
* it under the terms of the GNU General Public License as published by

- * the Free Software Foundation, either version 3 of the License, or
- * (at your option) any later version.
- *
- * GnuTLS-extra is distributed in the hope that it will be useful,
- * but WITHOUT ANY WARRANTY; without even the implied warranty of
- * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
- * GNU General Public License for more details.
- *
- * You should have received a copy of the GNU General Public License
- * along with this program. If not, see <<http://www.gnu.org/licenses/>>.
- */

The documentation is distributed under the terms of the GNU Free Documentation License (FDL):

Copyright (C) 2001-2020 Free Software Foundation, Inc.
 Copyright (C) 2001-2020 Nikos Mavrogiannopoulos

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

From December 2012 onwards FSF is not the sole copyright holder of GnuTLS anymore (See <<http://article.gmane.org/gmane.network.gnutls.general/3026>>), the headers currently also list these authors/copyright holders::

- * Nikos Mavrogiannopoulos
- * KU Leuven
- * INRIA Paris-Rocquencourt
- * Lucas Fisher
- * Sean Buckheister
- * Frank Morgner
- * Bardenheuer GmbH, Munich and Bundesdruckerei GmbH, Berlin
- * Adam Sampson
- * Christian Grothoff
- * Andrew McDonald <andrew@mcdonald.org.uk>
- * Red Hat
- * Paul Sheer
- * Dyalog Ltd.
- * Tim Rhsen
- * Red Hat, Inc.
- * Thomas Klute
- * Dmitry Eremin-Solenikov

- * ARPA2 project
- * Hugo Beauze-Luyssen

On Debian GNU/Linux systems, the complete text of the latest version of the GNU Lesser General Public License can be found in ``usr/share/common-licenses/LGPL' v3` of the license in ``usr/share/common-licenses/LGPL-3'`; the GNU General Public License can be found in ``usr/share/common-licenses/GPL'` (version 3 in `/usr/share/common-licenses/GPL-3`) The GNU Free Documentation License is available under `/usr/share/common-licenses/GFDL-1.3`.

=====

Excerpt from upstream's README:

LICENSING

=====

Since GnuTLS version 3.1.10, the core library has been released under the GNU Lesser General Public License (LGPL) version 2.1 or later.

Note, however, that version 6.0.0 and later of the gmplib library used by GnuTLS are distributed under a LGPLv3+ or GPLv2+ dual license, and as such binaries of this library need to adhere to either LGPLv3+ or GPLv2+ license.

The GNU LGPL applies to the main GnuTLS library, while the included applications as well as gnutls-openssl library are under the GNU GPL version 3. The gnutls library is located in the lib/ and libdane/ directories, while the applications in src/ and, the gnutls-openssl library is at extra/.

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

=====

Non FSF code

=====

lib/accelerated/x86 contains code by Andy Polyakov <appro@openssl.org>.

copyright is not assigned to the FSF. The code is licensed under the CRYPTOGAMS license.

```
-----
# Copyright (c) 2011-2016, Andy Polyakov by <appro@openssl.org>
# All rights reserved.
#
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions
# are met:
#
# * Redistributions of source code must retain copyright notices,
#   this list of conditions and the following disclaimer.
#
# * Redistributions in binary form must reproduce the above
#   copyright notice, this list of conditions and the following
#   disclaimer in the documentation and/or other materials
#   provided with the distribution.
#
# * Neither the name of the Andy Polyakov nor the names of its
#   copyright holder and contributors may be used to endorse or
#   promote products derived from this software without specific
#   prior written permission.
#
# ALTERNATIVELY, provided that this notice is retained in full, this
# product may be distributed under the terms of the GNU General Public
# License (GPL), in which case the provisions of the GPL apply INSTEAD OF
# those given above.
#
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS
# "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
# LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
# A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
# OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
# SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
# LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
# DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
# THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
# (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
# OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-----
```

```
=====
lib/extras/randomart.*
```

Upstream Authors: Markus Friedl

Copyright:

- * Copyright (c) 2000, 2001 Markus Friedl. All rights reserved.
- * Copyright (c) 2008 Alexander von Gernler. All rights reserved.

License:

- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- *
- * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR
- * IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
- * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
- * IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
- * INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
- * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
- * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
- * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
- * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
- * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

lib/accelerated/x86/elf/aes-ssse3-x86.s
lib/accelerated/x86/macosx/aes-ssse3-x86.s

Upstream Authors: Mike Hamburg (Stanford University)

Copyright:

- * Mike Hamburg (Stanford University), 2009.

License:

Public domain.

=====

lib/system/inet_pton.c

Upstream Authors: Internet Software Consortium

Copyright/License:

- * Copyright (c) 1996,1999 by Internet Software Consortium.
- *
- * Permission to use, copy, modify, and distribute this software for any

* purpose with or without fee is hereby granted, provided that the above
* copyright notice and this permission notice appear in all copies.
*
* THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS
* ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE
* CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL
* DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR
* PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS
* ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS
* SOFTWARE.

=====

lib/extras/hex.*

Author: Rusty Russell <rusty@rustcorp.com.au>

Comment: <http://cocodearchive.net/info/str/hex.html>

License: CC0 license

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- moral rights retained by the original author(s) and/or performer(s);
- publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- rights protecting the extraction, dissemination, use and reuse of data in a Work;
- database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of

11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and

other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

=====

doc/examples/tlsproxy/

Copyright: Copyright (c) 2016 Wrymouth Innovation Ltd

License: Expat

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Files: tests/pkcs11/pkcs11-mock.*

Copyright: 2011-2016 The Pkcs11Interop Project

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

X-Comment: Written originally for the Pkcs11Interop project by:

Jaroslav IMRICH <jimrich@jimrich.sk>

License: Apache-2.0

On Debian systems the complete text of the license can be found in
/usr/share/common-licenses/Apache-2.0

=====

lib/unistring/*

Author: Bruno Haible <bruno@clisp.org>

Copyright (C) 2009-2020 Free Software Foundation, Inc.

Comment: Debian package is built against libunistring-dev package.

License: LGPLv3+_or_GPLv2+

fuzz/gnutls_base64_decoder_fuzzer.c fuzz/gnutls_base64_encoder_fuzzer.c
fuzz/gnutls_ocsp_req_parser_fuzzer.c
fuzz/gnutls_ocsp_resp_parser_fuzzer.c fuzz/gnutls_server_fuzzer.c
fuzz/gnutls_set_trust_file_fuzzer.c

Copyright 2017 Red Hat, Inc.

Comment: On Debian systems the complete license text is available in
/usr/share/common-licenses/Apache-2.0

License

```
# Licensed under the Apache License, Version 2.0 (the "License");  
# you may not use this file except in compliance with the License.  
# You may obtain a copy of the License at  
#  
# http://www.apache.org/licenses/LICENSE-2.0  
#  
# Unless required by applicable law or agreed to in writing, software  
# distributed under the License is distributed on an "AS IS" BASIS,  
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
# See the License for the specific language governing permissions and  
# limitations under the License.
```

fuzz/gnutls_dn_parser_fuzzer.c fuzz/gnutls_idna_parser_fuzzer.c
fuzz/gnutls_pkcs12_key_parser_fuzzer.c fuzz/gnutls_pkcs8_key_parser_fuzzer.c
fuzz/gnutls_reverse_idna_parser_fuzzer.c

Copyright 2016 Nikos Mavrogiannopoulos

Comment: On Debian systems the complete license text is available in
/usr/share/common-licenses/Apache-2.0

License

```
# Licensed under the Apache License, Version 2.0 (the "License");  
# you may not use this file except in compliance with the License.  
# You may obtain a copy of the License at  
#  
# http://www.apache.org/licenses/LICENSE-2.0  
#  
# Unless required by applicable law or agreed to in writing, software  
# distributed under the License is distributed on an "AS IS" BASIS,  
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
# See the License for the specific language governing permissions and  
# limitations under the License.
```

fuzz/gnutls_pkcs7_parser_fuzzer.c fuzz/gnutls_private_key_parser_fuzzer.c
fuzz/gnutls_x509_parser_fuzzer.c

Copyright 2016 Google Inc.

Comment: On Debian systems the complete license text is available in
/usr/share/common-licenses/Apache-2.0

License

```
# Licensed under the Apache License, Version 2.0 (the "License");
# you may not use this file except in compliance with the License.
# You may obtain a copy of the License at
#
#   http://www.apache.org/licenses/LICENSE-2.0
#
# Unless required by applicable law or agreed to in writing, software
# distributed under the License is distributed on an "AS IS" BASIS,
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
# See the License for the specific language governing permissions and
# limitations under the License.
```

fuzz/gnutls_client_fuzzer.c

Copyright 2016 Google Inc.

Copyright 2017 Red Hat, Inc.

Comment: On Debian systems the complete license text is available in
/usr/share/common-licenses/Apache-2.0

License

```
# Licensed under the Apache License, Version 2.0 (the "License");
# you may not use this file except in compliance with the License.
# You may obtain a copy of the License at
#
#   http://www.apache.org/licenses/LICENSE-2.0
#
# Unless required by applicable law or agreed to in writing, software
# distributed under the License is distributed on an "AS IS" BASIS,
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
# See the License for the specific language governing permissions and
# limitations under the License.
```

Files: fuzz/main.c

Copyright: 2017 Tim Ruehsen

License: Expat

```
* Permission is hereby granted, free of charge, to any person obtaining a
* copy of this software and associated documentation files (the "Software"),
* to deal in the Software without restriction, including without limitation
* the rights to use, copy, modify, merge, publish, distribute, sublicense,
* and/or sell copies of the Software, and to permit persons to whom the
* Software is furnished to do so, subject to the following conditions:
*
* The above copyright notice and this permission notice shall be included in
* all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
* IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
```

* FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
* AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
* LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
* FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
* DEALINGS IN THE SOFTWARE.

Files: fuzz/mem.h fuzz/psk.h fuzz/srp.h fuzz/certs.h
fuzz/gnutls_psk_server_fuzzer.c
fuzz/gnutls_psk_client_fuzzer.c fuzz/gnutls_srp_client_fuzzer.c
fuzz/gnutls_srp_server_fuzzer.c tests/cert-tests/certtool-verify-profiles
Copyright: 2017 Nikos Mavrogiannopoulos

License: Expat

* Permission is hereby granted, free of charge, to any person obtaining a
* copy of this software and associated documentation files (the "Software"),
* to deal in the Software without restriction, including without limitation
* the rights to use, copy, modify, merge, publish, distribute, sublicense,
* and/or sell copies of the Software, and to permit persons to whom the
* Software is furnished to do so, subject to the following conditions:
*
* The above copyright notice and this permission notice shall be included in
* all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
* IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
* FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
* AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
* LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
* FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
* DEALINGS IN THE SOFTWARE.

Files: fuzz/gnutls_client_rawpk_fuzzer.c fuzz/gnutls_server_rawpk_fuzzer.c
Copyright: 2017 Nikos Mavrogiannopoulos
2019 Tom Vrancken (dev@tomvrancken.nl)

License: Expat

* Permission is hereby granted, free of charge, to any person obtaining a
* copy of this software and associated documentation files (the "Software"),
* to deal in the Software without restriction, including without limitation
* the rights to use, copy, modify, merge, publish, distribute, sublicense,
* and/or sell copies of the Software, and to permit persons to whom the
* Software is furnished to do so, subject to the following conditions:
*
* The above copyright notice and this permission notice shall be included in
* all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
* IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
* FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

* AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
* LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
* FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
* DEALINGS IN THE SOFTWARE.

Files: fuzz/gnutls_x509_crq_parser_fuzzer.c

Copyright: 2020 Dmitry Baryshkov

License: LGPLv2.1+

Files: lib/nettle/int/drbg-aes.h lib/nettle/int/dsa-fips.h

lib/nettle/int/dsa-keygen-fips186.c lib/nettle/int/dsa-validate.c

lib/nettle/int/provable-prime.c

Copyright: 2013 Red Hat | Copyright 2013, 2014 Red Hat

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/int/drbg-aes-self-test.c

Copyright: 2013 Red Hat

2008 Free Software Foundation, Inc.

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/int/rsa-keygen-fips186.c

Copyright: 2002 Niels Mller

2014 Red Hat

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/bignum-le.c lib/nettle/gost/bignum-le.h

Copyright: 2001 Niels Mller

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/chacha/chacha-core-internal.c

Copyright: 2013 Joachim Strmbergson

2012 Simon Josefsson, Niels Mller

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/chacha/chacha-crypt.c lib/nettle/chacha/chacha.h

lib/nettle/chacha/chacha-internal.h lib/nettle/chacha/chacha-set-nonce.c

Copyright: 2014 Niels Mller

2013 Joachim Strmbergson

2012 Simon Josefsson

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/chacha/chacha-poly1305.c lib/nettle/chacha/chacha-poly1305.h

lib/nettle/chacha/chacha-set-key.c

Copyright: 2014, 2015 Niels Mller

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/nettle-write.h
Copyright: 2010 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/sha3-256.c lib/nettle/curve448/sha3.c
lib/nettle/curve448/sha3.h lib/nettle/curve448/sha3-internal.h
lib/nettle/curve448/sha3-permute.c
Copyright: 2012 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/ecc-gost256cpa.c lib/nettle/gost/ecc-gost512a.c
lib/nettle/gost/ecc-internal.h lib/nettle/curve448/ecc-internal.h
lib/nettle/curve448/ecc-mod-arith.c lib/nettle/curve448/ecc-mod.c
lib/nettle/curve448/ecc-mod-inv.c lib/nettle/curve448/ecc-mul-a-eh.c
lib/nettle/curve448/ecc-mul-g-eh.c
Copyright: 2013, 2014 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/ecc-gost-curve.h lib/nettle/gost/ecc-gost-hash.c
lib/nettle/curve448/cnd-copy.c lib/nettle/curve448/ecc-a-to-j.c
lib/nettle/curve448/sec-add-1.c lib/nettle/curve448/sec-tabselect.c
Copyright: 2013 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/ecc-add-eh.c lib/nettle/curve448/ecc-add-ehh.c
lib/nettle/curve448/ecc-dup-eh.c lib/nettle/curve448/ecc-eh-to-a.c
lib/nettle/curve448/ecc-mul-m.c lib/nettle/curve448/eddsa-compress.c
lib/nettle/curve448/eddsa-decompress.c lib/nettle/curve448/eddsa-expand.c
lib/nettle/curve448/eddsa.h lib/nettle/curve448/eddsa-internal.h
lib/nettle/curve448/eddsa-sign.c lib/nettle/curve448/eddsa-verify.c
Copyright: 2014 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/eddsa-pubkey.c
Copyright: 2015 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/ed448-shake256.c
Copyright: 2019 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/ecc-gostdsa-sign.c lib/nettle/gost/ecc-gostdsa-verify.c
Copyright: 2015 Dmitry Eremin-Solenikov
2013, 2014 Niels Miller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gmp-gluе.h lib/nettle/int/mpn-base256.c

lib/nettle/int/mpn-base256.h lib/nettle/curve448/gmp-glue.c
lib/nettle/curve448/gmp-glue.h
Copyright: 2013 Niels Mller
2013 Red Hat
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gost28147.h
Copyright: 2015 Dmitry Eremin-Solenikov
2012 Nikos Mavrogiannopoulos, Niels Mller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gostdsa.h lib/nettle/gost/gostdsa-sign.c
lib/nettle/gost/gostdsa-verify.c
Copyright: 2015 Dmitry Eremin-Solenikov
2013 Niels Mller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gosthash94.h lib/nettle/gost/gosthash94-meta.c
lib/nettle/gost/streebog-meta.c
Copyright: 2012 Nikos Mavrogiannopoulos, Niels Mller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/hmac-gost.h
Copyright: 2001, 2002 Niels Mller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/hmac-gosthash94.c lib/nettle/gost/hmac-streebog.c
Copyright: 2016 Dmitry Eremin-Solenikov
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/nettle-internal.h
Copyright: 2002, 2014 Niels Mller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/nettle-write.h
Copyright: 2010 Niels Mller
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/streebog.c
Copyright: 2013-2015 Dmitry Eremin-Solenikov
Comment: Based on my code in libgrypt.
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/streebog.h
Copyright: 2015 Dmitry Eremin-Solenikov
License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gostdsa2.h

Copyright: 2015 Dmitry Eremin-Solenikov

2013 Niels Mller

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/backport/cfb8.c lib/nettle/backport/cfb8.h

Copyright: 2015, 2017 Dmitry Eremin-Solenikov

2001, 2011 Niels Mller

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/backport/cmac.c

Copyright: Stefan Metzmacher 2012

Jeremy Allison 2012

Michael Adam 2012

2017, Red Hat Inc.

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/backport/cmac.h

Copyright: 2017 Red Hat, Inc.

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gostdsa-mask.c

Copyright: 2018 Dmitry Eremin-Solenikov

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/gost/gostdsa-vko.c

Copyright: 2016 Dmitry Eremin-Solenikov

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/curve448-eh-to-x.c lib/nettle/curve448/curve448.h

lib/nettle/curve448/curve448-mul.c lib/nettle/curve448/curve448-mul-g.c

lib/nettle/curve448/ecc-curve448.c lib/nettle/curve448/ed448-shake256-pubkey.c

lib/nettle/curve448/ed448-shake256-sign.c

lib/nettle/curve448/ed448-shake256-verify.c lib/nettle/curve448/shake256.c

Copyright: 2017 Daiki Ueno

2017 Red Hat, Inc.

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/eccdata.c

Copyright (C) 2013, 2014, 2017 Niels Mller

2017 Daiki Ueno

2017 Red Hat, Inc.

License: LGPLv3+_or_GPLv2+

Files: lib/nettle/curve448/eddsa-hash.c

Copyright: 2014, 2019 Niels Mller

2017 Daiki Ueno

2017 Red Hat, Inc.

Files: lib/nettle/gost/gost-wrap.c

Copyright: 2015, 2016 Dmitry Eremin-Solenikov <dbaryshkov@gmail.com>

2009-2012 Aleksey Kravchenko <rhash.admin@gmail.com>

License: LGPLv3+_or_GPLv2+

- * Permission is hereby granted, free of charge, to any person obtaining a
- * copy of this software and associated documentation files (the
- * "Software"), to deal in the Software without restriction, including
- * without limitation the rights to use, copy, modify, merge, publish,
- * distribute, sublicense, and/or sell copies of the Software, and to
- * permit persons to whom the Software is furnished to do so, subject to
- * the following conditions:
- *
- * The above copyright notice and this permission notice shall be included
- * in all copies or substantial portions of the Software.
- *
- * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
- * OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
- * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
- * IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
- * CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
- * TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
- * SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Files: lib/nettle/gost/gost28147.c

Copyright: 2015-2015 Dmitry Eremin-Solenikov <dbaryshkov@gmail.com>

Copyright: 2009-2012 Aleksey Kravchenko <rhash.admin@gmail.com>

License:

based on Russian standard GOST 28147-89

- * For English description, check RFC 5830.
- * S-Boxes are expanded from the tables defined in RFC4357:
- * <https://tools.ietf.org/html/rfc4357>
- *
- * Permission is hereby granted, free of charge, to any person obtaining a
- * copy of this software and associated documentation files (the
- * "Software"), to deal in the Software without restriction, including
- * without limitation the rights to use, copy, modify, merge, publish,
- * distribute, sublicense, and/or sell copies of the Software, and to
- * permit persons to whom the Software is furnished to do so, subject to
- * the following conditions:
- *
- * The above copyright notice and this permission notice shall be included
- * in all copies or substantial portions of the Software.
- *
- * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
- * OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
- * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
- * IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY

- * CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
- * TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
- * SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Files: lib/nettle/gost/gosthash94.c

Copyright: 2009-2012 Aleksey Kravchenko <rhash.admin@gmail.com>

- * based on the Russian Standard GOST R 34.11-94.

- * English description in RFC 5831.

- * See also RFC 4357.

*

- * Permission is hereby granted, free of charge, to any person obtaining a

- * copy of this software and associated documentation files (the

- * "Software"), to deal in the Software without restriction, including

- * without limitation the rights to use, copy, modify, merge, publish,

- * distribute, sublicense, and/or sell copies of the Software, and to

- * permit persons to whom the Software is furnished to do so, subject to

- * the following conditions:

*

- * The above copyright notice and this permission notice shall be included

- * in all copies or substantial portions of the Software.

*

- * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS

- * OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

- * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

- * IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY

- * CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,

- * TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE

- * SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Files: lib/nettle/rnd-fuzzer.c

Copyright 2017 Red Hat

Copyright 1995-2017 Free Software Foundation, Inc.

License

- * This file is part of the GNU C Library.

- * Contributed by Ulrich Drepper <drepper@gnu.ai.mit.edu>, August 1995.

*

- * This file is part of GnuTLS.

*

- * Libgcrypt is free software; you can redistribute it and/or modify

- * it under the terms of the GNU Lesser General Public License as

- * published by the Free Software Foundation; either version 2.1 of

- * the License, or (at your option) any later version.

*

- * Libgcrypt is distributed in the hope that it will be useful,

- * but WITHOUT ANY WARRANTY; without even the implied warranty of

- * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the

- * GNU Lesser General Public License for more details.

- *
- * You should have received a copy of the GNU Lesser General Public
- * License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

Files: lib/name_val_array.h
License: LGPLv3+_or_GPLv2+
Copyright: 2011-2019 Free Software Foundation, Inc.
2019 Red Hat, Inc

- License: LGPLv3+_or_GPLv2+
- * This program is free software: you can redistribute it and/or
 - * modify it under the terms of either:
 - *
 - * * the GNU Lesser General Public License as published by the Free
 - * Software Foundation; either version 3 of the License, or (at your
 - * option) any later version.
 - *
 - * or
 - *
 - * * the GNU General Public License as published by the Free
 - * Software Foundation; either version 2 of the License, or (at your
 - * option) any later version.
 - *
 - * or both in parallel, as here.
 - *
 - * This program is distributed in the hope that it will be useful,
 - * but WITHOUT ANY WARRANTY; without even the implied warranty of
 - * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
 - * General Public License for more details.
 - *
 - * You should have received copies of the GNU General Public License and
 - * the GNU Lesser General Public License along with this program. If
 - * not, see <http://www.gnu.org/licenses/>.

Files: tests/resume-lifetime.c
License: GPLv3+
Copyright: 2016-2018 Red Hat, Inc

Files: tests/no-extensions.c tests/system-override-curves.sh
tests/system-override-hash.c
tests/system-override-kx.sh tests/system-override-profiles.sh
tests/system-override-sig.c tests/system-override-sig-hash.sh
tests/system-override-tls.sh tests/system-override-versions.sh
tests/iov.c tests/tls13-without-timeout-func.c
License: GPLv3+
Copyright: 2019 Red Hat, Inc

Files: tests/server-weak-keys.sh

License: GPLv3+
Copyright: 2017 Nikos Mavrogiannopoulos

Files: tests/openconnect-dtls12.c tests/system-override-invalid.sh
tests/system-override-sig-hash.sh tests/cert-tests/x509-duplicate-ext
License: GPLv3+
Copyright: 2019 Nikos Mavrogiannopoulos

Files: tests/rfc7633-ok.c
License: GPLv3+
Copyright: 2016-2019 Tim Kosse
2019 Nikos Mavrogiannopoulos

Files: tests/rfc7633-missing.c
License: GPLv3+
Copyright: 2016 Tim Kosse

Files: tests/pkcs11/list-objects.c
License: GPLv3+
Copyright: 2016-2017 Red Hat, Inc.

Files: tests/sign-verify-data-newapi.c tests/cert-tests/cert-non-digits-time
tests/cert-tests/reject-invalid-time tests/cert-tests/tolerate-invalid-time
tests/gnutls-ids.c
License: GPLv3+
Copyright: 2017 Red Hat, Inc.

Files: tests/set_x509_ocsp_multi_cli.c tests/kdf-api.c
License: LGPLv2.1+
Copyright: 2020 Red Hat, Inc.

Files: tests/status-request-revoked.c
License: GPLv3+
Copyright: 2015 Nikos Mavrogiannopoulos
2020 Red Hat, Inc.

Files: tests/resume-with-record-size-limit.c
License: GPLv3+
Copyright: 2004-2016 Free Software Foundation, Inc.
2013 Adam Sampson <ats@offog.org>
2016-2019 Red Hat, Inc.

Files: tests/cipher-alignment.c
License: GPLv3+
Copyright: 2004-2015 Free Software Foundation, Inc.
2013 Adam Sampson <ats@offog.org>
2015 Red Hat, Inc

Files: tests/x509-server-verify.c
License: GPLv3+
Copyright: 2015 Red Hat, Inc.
2019 Nikos Mavrogiannopoulos

Files: tests/tls13/key_update_multiple.c tests/sign-verify-deterministic.c
License: GPLv3+
Copyright: 2017-2019 Red Hat, Inc.

Files: tests/dtls_hello_random_value.c
License: GPLv3+
Copyright: 2017-2020 Red Hat, Inc.

Files: tests/sign-verify-newapi.c tests/tls_hello_random_value.c
License: GPLv3+
Copyright: 2004-2012 Free Software Foundation, Inc.
2017-2019 Red Hat, Inc.

Files: tests/buffer.c
License: GPLv3+
Copyright: 2019 Tim Rhsen

Files: tests/gnutls-cli-rawpk.sh
License: GPLv3+
Copyright: 2019 Tom Vrancken (dev@tomvrancken.nl)

Files: tests/system-override-default-priority-string.sh
License: GPLv3+
Copyright: 2019 Canonical, Ltd.

Files: fuzz/gnutls_ext_raw_parse_fuzzer.c tests/keylog-func.c
License: LGPLv2.1+
Copyright: 2019 Red Hat, Inc.

Files: tests/pskself2.c
Copyright: 2004-2012 Free Software Foundation, Inc.
2013 Adam Sampson <ats@offog.org>
2019 Free Software Foundation, Inc.
License: GPLv3+

Files: lib/inih/*
Copyright: 2009-2019, Ben Hoyt
License: BSD-3-Clause
All rights reserved.

.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Ben Hoyt nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY BEN HOYT "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL BEN HOYT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Comment: <https://github.com/benhoyt/inih>

~

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no

charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the Combined Work with a copy of the GNU GPL and this license document.

c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form

suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====
Written by Andy Polyakov <appro@fy.chalmers.se> for the OpenSSL project. The module is, however, dual licensed under OpenSSL and CRYPTOGAMS licenses depending on where you obtain it. For further details see <https://www.openssl.org/~appro/cryptogams/>.
=====

Copyright (c) 2006-2012, CRYPTOGRAMS by <appro@openssl.org>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain copyright notices, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the CRYPTOGRAMS nor the names of its copyright holder and contributors may be used to endorse or promote products derived from this software without specific prior written permission.

ALTERNATIVELY, provided that this notice is retained in full, this product may be distributed under the terms of the GNU General Public License (GPL), in which case the provisions of the GPL apply INSTEAD OF those given above.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#####

Constant-time SSSE3 AES core implementation.

version 0.1

##

By Mike Hamburg (Stanford University), 2009

Public domain.

##

For details see https://shiftright.org/papers/vector_aes/ and

<https://crypto.stanford.edu/vpaes/>.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the

public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those

subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of

technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users

beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for

any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same

material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version,

but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the

parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published

by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) by Bruce Korb - all rights reserved
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program. If not, see <https://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) by Bruce Korb - all rights reserved  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General

Public License instead of this License. But first, please read

<<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

LICENSING

=====

Since GnuTLS version 3.1.10, the core library is released under the GNU Lesser General Public License (LGPL) version 2.1 or later (see doc/COPYING.LESSER for the license terms).

The GNU LGPL applies to the main GnuTLS library, while the included applications as well as gnutls-openssl library are under the GNU GPL version 3. The gnutls library is located in the lib/ and libdane/ directories, while the applications in src/ and, the gnutls-openssl library is at extra/.

The documentation in doc/ is under the GNU FDL license 1.3.

Note, however, that the nettle and the gmp libraries which are GnuTLS dependencies, they are distributed under a LGPLv3+ or GPLv2+ dual license. As such binaries linking to them need to adhere to either LGPLv3+ or the GPLv2+ license.

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

The MIT License (MIT)

Copyright (c) 2016 Wrymouth Innovation Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- moral rights retained by the original author(s) and/or performer(s);
- publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- rights protecting the extraction, dissemination, use and reuse of data in a Work;
- database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
- other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to

each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<https://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

1.26 cryptsetup 2.3.6

1.26.1 Available under license :

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS DOCUMENT DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of

infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- moral rights retained by the original author(s) and/or performer(s);
- publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- rights protecting the extraction, dissemination, use and reuse of data in a Work;
- database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
- other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be

judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge

for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General

Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs

(which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all

subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new

versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU Lesser General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy,

distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the

Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding

those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

In addition, as a special exception, the copyright holders give
permission to link the code of portions of this program with the
OpenSSL library under certain conditions as described in each
individual source file, and distribute linked combinations
including the two.

You must obey the GNU General Public License in all respects
for all of the code used other than OpenSSL. If you modify
file(s) with this exception, you may extend this exception to your
version of the file(s), but you are not obligated to do so. If you
do not wish to do so, delete this exception statement from your
version. If you delete this exception statement from all source
files in the program, then also delete it here.

1.27 jakarta-mail 1.6.5

1.27.1 Available under license :

Eclipse Public License - v 2.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE
PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION
OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial content
Distributed under this Agreement, and

b) in the case of each subsequent Contributor:

- i) changes to the Program, and
- ii) additions to the Program;

where such changes and/or additions to the Program originate from

and are Distributed by that particular Contributor. A Contribution "originates" from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include changes or additions to the Program that are not Modified Works.

"Contributor" means any person or entity that Distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions Distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement or any Secondary License (as applicable), including Contributors.

"Derivative Works" shall mean any work, whether in Source Code or other form, that is based on (or derived from) the Program and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship.

"Modified Works" shall mean any work in Source Code or other form that results from an addition to, deletion from, or modification of the contents of the Program, including, for purposes of clarity any new file in Source Code form that contains any contents of the Program. Modified Works shall not include works that contain only declarations, interfaces, types, classes, structures, or files of the Program solely in each case in order to link to, bind by name, or subclass the Program or Modified Works thereof.

"Distribute" means the acts of a) distributing or b) making available in any manner that enables the transfer of a copy.

"Source Code" means the form of a Program preferred for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Secondary License" means either the GNU General Public License, Version 2.0, or any later versions of that license, including any exceptions or additional permissions as identified by the initial Contributor.

2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright

license to reproduce, prepare Derivative Works of, publicly display, publicly perform, Distribute and sublicense the Contribution of such Contributor, if any, and such Derivative Works.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in Source Code or other form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to Distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

e) Notwithstanding the terms of any Secondary License, no Contributor makes additional grants to any Recipient (other than those set forth in this Agreement) as a result of such Recipient's receipt of the Program under the terms of a Secondary License (if permitted under the terms of Section 3).

3. REQUIREMENTS

3.1 If a Contributor Distributes the Program in any form, then:

a) the Program must also be made available as Source Code, in accordance with section 3.2, and the Contributor must accompany the Program with a statement that the Source Code for the Program is available under this Agreement, and informs Recipients how to

obtain it in a reasonable manner on or through a medium customarily used for software exchange; and

b) the Contributor may Distribute the Program under a license different than this Agreement, provided that such license:

i) effectively disclaims on behalf of all other Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all other Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) does not attempt to limit or alter the recipients' rights in the Source Code under section 3.2; and

iv) requires any subsequent distribution of the Program by any party to be under a license that satisfies the requirements of this section 3.

3.2 When the Program is Distributed as Source Code:

a) it must be made available under this Agreement, or if the Program (i) is combined with other material in a separate file or files made available under a Secondary License, and (ii) the initial Contributor attached to the Source Code the notice described in Exhibit A of this Agreement, then the Program may be made available under the terms of such Secondary Licenses, and

b) a copy of this Agreement must be included with each copy of the Program.

3.3 Contributors may not remove or alter any copyright, patent, trademark, attribution notices, disclaimers of warranty, or limitations of liability ("notices") contained within the Program from any copy of the Program which they Distribute, provided that Contributors may add their own appropriate notices.

4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes

the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be Distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to Distribute the Program (including its Contributions) under the new version.

Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted

under this Agreement are reserved. Nothing in this Agreement is intended to be enforceable by any entity that is not a Contributor or Recipient. No third-party beneficiary rights are created under this Agreement.

Exhibit A - Form of Secondary Licenses Notice

"This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License, v. 2.0 are satisfied: {name license(s), version(s), and exceptions or additional permissions here}."

Simply including a copy of this Agreement, including this Exhibit A is not sufficient to license the Source Code under Secondary Licenses.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor
Boston, MA 02110-1335
USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you

want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is

covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that

system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1335 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type
`show w'. This is free software, and you are welcome to redistribute
```

it under certain conditions; type ``show c'` for details.

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program ``Gnomovision'` (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

CLASSPATH EXCEPTION

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

1.28 apr-util 1.6.1

1.28.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain

separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the

origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

APACHE PORTABLE RUNTIME SUBCOMPONENTS:

The Apache Portable Runtime includes a number of subcomponents with
separate copyright notices and license terms. Your use of the source
code for these subcomponents is subject to the terms and
conditions of the following licenses.

For the include\apr_md5.h component:

/*

* This work is derived from material Copyright RSA Data Security, Inc.

*

* The RSA copyright statement and Licence for that original material is
* included below. This is followed by the Apache copyright statement and
* licence for the modifications made to that material.

*/

/* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All
rights reserved.

License to copy and use this software is granted provided that it
is identified as the "RSA Data Security, Inc. MD5 Message-Digest
Algorithm" in all material mentioning or referencing this software
or this function.

License is also granted to make and use derivative works provided
that such works are identified as "derived from the RSA Data
Security, Inc. MD5 Message-Digest Algorithm" in all material
mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either
the merchantability of this software or the suitability of this
software for any particular purpose. It is provided "as is"

without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

*/

For the passwd\apr_md5.c component:

/*

* This work is derived from material Copyright RSA Data Security, Inc.

*

* The RSA copyright statement and Licence for that original material is included below. This is followed by the Apache copyright statement and licence for the modifications made to that material.

*/

/* MD5C.C - RSA Data Security, Inc., MD5 message-digest algorithm

*/

/* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All rights reserved.

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

*/

/*

* The apr_md5_encode() routine uses much code obtained from the FreeBSD 3.0

* MD5 crypt() function, which is licenced as follows:

* -----

* "THE BEER-WARE LICENSE" (Revision 42):

* <phk@login.dknet.dk> wrote this file. As long as you retain this notice you

* can do whatever you want with this stuff. If we meet some day, and you think

* this stuff is worth it, you can buy me a beer in return. Poul-Henning Kamp

* -----
*/

For the crypto\apr_md4.c component:

* This is derived from material copyright RSA Data Security, Inc.
* Their notice is reproduced below in its entirety.
*
* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All
* rights reserved.
*
* License to copy and use this software is granted provided that it
* is identified as the "RSA Data Security, Inc. MD4 Message-Digest
* Algorithm" in all material mentioning or referencing this software
* or this function.
*
* License is also granted to make and use derivative works provided
* that such works are identified as "derived from the RSA Data
* Security, Inc. MD4 Message-Digest Algorithm" in all material
* mentioning or referencing the derived work.
*
* RSA Data Security, Inc. makes no representations concerning either
* the merchantability of this software or the suitability of this
* software for any particular purpose. It is provided "as is"
* without express or implied warranty of any kind.
*
* These notices must be retained in any copies of any part of this
* documentation and/or software.
*/

For the crypto\crypt_blowfish.c(h) component:

* Written by Solar Designer <solar at openwall.com> in 1998-2011.
* No copyright is claimed, and the software is hereby placed in the public
* domain. In case this attempt to disclaim copyright and place the software
* in the public domain is deemed null and void, then the software is
* Copyright (c) 1998-2011 Solar Designer and it is hereby released to the
* general public under the following terms:
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted.
*
* There's ABSOLUTELY NO WARRANTY, express or implied.

See crypto/crypt_blowfish.c for more information.

For the include\apr_md4.h component:

*
* This is derived from material copyright RSA Data Security, Inc.
* Their notice is reproduced below in its entirety.
*
* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All
* rights reserved.
*
* License to copy and use this software is granted provided that it
* is identified as the "RSA Data Security, Inc. MD4 Message-Digest
* Algorithm" in all material mentioning or referencing this software
* or this function.
*
* License is also granted to make and use derivative works provided
* that such works are identified as "derived from the RSA Data
* Security, Inc. MD4 Message-Digest Algorithm" in all material
* mentioning or referencing the derived work.
*
* RSA Data Security, Inc. makes no representations concerning either
* the merchantability of this software or the suitability of this
* software for any particular purpose. It is provided "as is"
* without express or implied warranty of any kind.
*
* These notices must be retained in any copies of any part of this
* documentation and/or software.
*/

For the test\testmd4.c component:

*
* This is derived from material copyright RSA Data Security, Inc.
* Their notice is reproduced below in its entirety.
*
* Copyright (C) 1990-2, RSA Data Security, Inc. Created 1990. All
* rights reserved.
*
* RSA Data Security, Inc. makes no representations concerning either
* the merchantability of this software or the suitability of this
* software for any particular purpose. It is provided "as is"
* without express or implied warranty of any kind.
*
* These notices must be retained in any copies of any part of this
* documentation and/or software.
*/

For the xml\expat\conftools\install-sh component:

install - install a program, script, or datafile

```
# This comes from X11R5 (mit/util/scripts/install.sh).
#
# Copyright 1991 by the Massachusetts Institute of Technology
#
# Permission to use, copy, modify, distribute, and sell this software and its
# documentation for any purpose is hereby granted without fee, provided that
# the above copyright notice appear in all copies and that both that
# copyright notice and this permission notice appear in supporting
# documentation, and that the name of M.I.T. not be used in advertising or
# publicity pertaining to distribution of the software without specific,
# written prior permission. M.I.T. makes no representations about the
# suitability of this software for any purpose. It is provided "as is"
# without express or implied warranty.
#
```

For the expat xml parser component:

Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd
and Clark Cooper

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

For the ldap/apr_ldap_url.c component:

```
/* Portions Copyright 1998-2002 The OpenLDAP Foundation
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted only as authorized by the OpenLDAP
```

* Public License. A copy of this license is available at
* <http://www.OpenLDAP.org/license.html> or in file LICENSE in the
* top-level directory of the distribution.
*
* OpenLDAP is a registered trademark of the OpenLDAP Foundation.
*
* Individual files and/or contributed packages may be copyright by
* other parties and subject to additional restrictions.
*
* This work is derived from the University of Michigan LDAP v3.3
* distribution. Information concerning this software is available
* at: <http://www.umich.edu/~dirsvcs/ldap/>
*
* This work also contains materials derived from public sources.
*
* Additional information about OpenLDAP can be obtained at:
* <http://www.openldap.org/>
*/

/*

* Portions Copyright (c) 1992-1996 Regents of the University of Michigan.
* All rights reserved.
*
* Redistribution and use in source and binary forms are permitted
* provided that this notice is preserved and that due credit is given
* to the University of Michigan at Ann Arbor. The name of the University
* may not be used to endorse or promote products derived from this
* software without specific prior written permission. This software
* is provided ``as is" without express or implied warranty.
*/

Apache Portable Runtime Utility Library
Copyright (c) 2000-2016 The Apache Software Foundation.

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were developed at the National Center
for Supercomputing Applications (NCSA) at the University of
Illinois at Urbana-Champaign.

This software contains code derived from the RSA Data Security
Inc. MD5 Message-Digest Algorithm, including various
modifications by Spyglass Inc., Carnegie Mellon University, and
Bell Communications Research, Inc (Bellcore).

1.29 open-ldap 2.4.58

1.29.1 Available under license :

```
/*
 *
 * Copyright (C) 2000 Pierangelo Masarati, <ando@sys-net.it>
 * All rights reserved.
 *
 * Permission is granted to anyone to use this software for any purpose
 * on any computer system, and to alter it and redistribute it, subject
 * to the following restrictions:
 *
 * 1. The author is not responsible for the consequences of use of this
 * software, no matter how awful, even if they arise from flaws in it.
 *
 * 2. The origin of this software must not be misrepresented, either by
 * explicit claim or by omission. Since few users ever read sources,
 * credits should appear in the documentation.
 *
 * 3. Altered versions must be plainly marked as such, and must not be
 * misrepresented as being the original software. Since few users
 * ever read sources, credits should appear in the documentation.
 *
 * 4. This notice may not be removed or altered.
 *
 */
```

Copyright 2011-2020 Howard Chu, Symas Corp.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted only as authorized by the OpenLDAP
Public License.

A copy of this license is available in the file LICENSE in the
top-level directory of the distribution or, alternatively, at
<<http://www.OpenLDAP.org/license.html>>.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by
other parties and/or subject to additional restrictions.

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at
<<http://www.openldap.org/>>.

Copyright 1998-2021 The OpenLDAP Foundation. All rights reserved.

COPYING RESTRICTIONS APPLY.

See COPYRIGHT and LICENSE files in the top-level directory of this distribution (i.e., ../COPYRIGHT and ../LICENSE, respectively).

NeoSoft Tcl client extensions to Lightweight Directory Access Protocol.

Copyright (c) 1998-1999 NeoSoft, Inc.

All Rights Reserved.

This software may be used, modified, copied, distributed, and sold, in both source and binary form provided that these copyrights are retained and their terms are followed.

Under no circumstances are the authors or NeoSoft Inc. responsible for the proper functioning of this software, nor do the authors assume any liability for damages incurred with its use.

Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given to NeoSoft, Inc.

NeoSoft, Inc. may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided ``as is" without express or implied warranty.

Requests for permission may be sent to NeoSoft Inc, 1770 St. James Place, Suite 500, Houston, TX, 77056.

Copyright 1998-2021 The OpenLDAP Foundation. All rights reserved.

COPYING RESTRICTIONS APPLY.

See COPYRIGHT and LICENSE files in the top-level directory of this distribution (i.e., ../COPYRIGHT and ../LICENSE, respectively).

Copyright 1998-2021 The OpenLDAP Foundation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

A copy of this license is available in the file LICENSE in the top-level directory of the distribution or, alternatively, at <http://www.OpenLDAP.org/license.html>.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by other parties and/or subject to additional restrictions.

This work is derived from the University of Michigan LDAP v3.3 distribution. Information concerning this software is available at <http://www.umich.edu/~dirsvcs/ldap/ldap.html>.

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at <http://www.openldap.org/>.

Portions Copyright 1998-2012 Kurt D. Zeilenga.
Portions Copyright 1998-2006 Net Boolean Incorporated.
Portions Copyright 2001-2006 IBM Corporation.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

Portions Copyright 1999-2008 Howard Y.H. Chu.
Portions Copyright 1999-2008 Symas Corporation.
Portions Copyright 1998-2003 Hallvard B. Furuseth.
Portions Copyright 2007-2011 Gavin Henry.
Portions Copyright 2007-2011 Suretec Systems Ltd.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that this notice is preserved. The names of the copyright holders may not be used to endorse or promote products derived from this software without their specific prior written permission. This software is provided ``as is'' without express or implied warranty.

Portions Copyright (c) 1992-1996 Regents of the University of Michigan.
All rights reserved.

Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given

to the University of Michigan at Ann Arbor. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided ``as is" without express or implied warranty.
The OpenLDAP Public License
Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,
2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and
3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distribute verbatim copies of this document is granted.

1.30 dhcp 4.1

1.30.1 Available under license :

```
# Copyright (c) 2004-2018 by Internet Systems Consortium, Inc. ("ISC")
# Copyright (c) 1995-2003 by Internet Software Consortium
#
# THE SOFTWARE IS PROVIDED "AS IS" AND ISC DISCLAIMS ALL WARRANTIES
# WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
# MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ISC BE LIABLE FOR
# ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
# WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
# ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT
# OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
#
# Internet Systems Consortium, Inc.
# 950 Charter Street
# Redwood City, CA 94063
# <info@isc.org>
# https://www.isc.org/
#
# This Source Code Form is subject to the terms of the Mozilla Public
# License, v. 2.0, included below.
#
# See the specific source files for any additional copyright or
# license statements.
```

Mozilla Public License, version 2.0

1. Definitions

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first

distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License.

Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be

unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a

notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.
Mozilla Public License, version 2.0

1. Definitions

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause

the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with

the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under

this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including

negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Redistribution terms Automated Testing Framework

=====

License

Copyright (c) 2007, 2008, 2009, 2010, 2011, 2012 The NetBSD Foundation, Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2011, 2012 Google Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Relicensed code

The following code snippets have been taken from other projects. Even though they were not originally licensed under the terms above, the original authors have agreed to relicense their work so that this project can be distributed under a single license. This section is put here just to clarify this fact.

* configure.ac, Makefile.am: The original versions were derived from the ones in the XML Catalog Manager project, version 2.2.

Author: Julio Merino <jmmv@users.sourceforge.net>

* atf-c/ui.c: The format_paragraph and format_text functions were derived from the ones in the Monotone project, revision 3a0982da308228d796df35f98d787c5cff2bb5b6.

Author: Julio Merino <jmmv@NetBSD.org>

* atf-c++/detail/io.hpp, atf-c++/detail/io.cpp, atf-c++/detail/io_test.cpp: These files were derived from the file_handle, systembuf, pipe and pistream classes and tests found in the Boost.Process library.

Author: Julio Merino <jmmv84@gmail.com>

* admin/check-style.sh, admin/check-style-common.awk, admin/check-style-cpp.awk, admin/check-style-shell.awk: These files, except the first one, were first implemented in the Buildtool project. They were later adapted to be part of Boost.Process and, during that process, the shell script was created.

Author: Julio Merino <jmmv84@gmail.com>

=====
vim: filetype=text:textwidth=75:expandtab:shiftwidth=2:softtabstop=2

<!--

- Copyright (C) 2005, 2007, 2009, 2015, 2016 Internet Systems Consortium, Inc. ("ISC")

-

- This Source Code Form is subject to the terms of the Mozilla Public

- License, v. 2.0. If a copy of the MPL was not distributed with this

- file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

-->

<!-- \$Id\$ -->

```
<!-- Generate ISC copyright comments from Docbook copyright metadata. -->
```

```
<xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:xi="http://www.w3.org/2001/XInclude"
xmlns:db="http://docbook.org/ns/docbook">

<xsl:template name="isc.copyright.format">
  <xsl:param name="text"/>
  <xsl:value-of select="$isc.copyright.leader"/>
  <xsl:value-of select="normalize-space(substring-before($text, '&#10;'))"/>
  <xsl:text>&#10;</xsl:text>
  <xsl:variable name="rest" select="substring-after($text, '&#10;')"/>
  <xsl:if test="translate($rest, '&#9;&#32;', '')">
    <xsl:call-template name="isc.copyright.format">
      <xsl:with-param name="text" select="$rest"/>
    </xsl:call-template>
  </xsl:if>
</xsl:template>

<xsl:variable name="isc.copyright.text">
  <xsl:text>
    This Source Code Form is subject to the terms of the Mozilla Public
    License, v. 2.0. If a copy of the MPL was not distributed with this
    file, You can obtain one at http://mozilla.org/MPL/2.0/.
  </xsl:text>
</xsl:variable>

<xsl:variable name="isc.copyright">
  <xsl:call-template name="isc.copyright.format">
    <xsl:with-param name="text">
      <xsl:for-each select="book/info/copyright | refentry/docinfo/copyright">
        <xsl:text>Copyright (C) </xsl:text>
        <xsl:call-template name="copyright.years">
          <xsl:with-param name="years" select="year"/>
        </xsl:call-template>
        <xsl:text> </xsl:text>
        <xsl:value-of select="holder"/>
        <xsl:value-of select="$isc.copyright.breakline"/>
        <xsl:text>&#10;</xsl:text>
      </xsl:for-each>
    <xsl:value-of select="$isc.copyright.text"/>
    </xsl:with-param>
  </xsl:call-template>
</xsl:variable>
</xsl:stylesheet>
```

<!--

- Local variables:

- mode: sgml

- End:

-->

Copyright (C) 1999-2014 Internet Systems Consortium, Inc. ("ISC")

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

Copyright (C) 2009-2015 Red Hat

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND AUTHORS DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ISC BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 2005 - 2008, Holger Zuleger HZnet. All rights reserved.

This software is open source.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Holger Zuleger HZnet nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) 1996-2017 Internet Systems Consortium, Inc. ("ISC")

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

Portions of this code release fall under one or more of the following Copyright notices. Please see individual source files for details.

For binary releases also see: OpenSSL-LICENSE.

Copyright (C) 1996-2001 Nominum, Inc.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND NOMINUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL NOMINUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (C) 1995-2000 by Network Associates, Inc.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND ISC AND NETWORK ASSOCIATES DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ISC BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR

IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (C) 2002 Stichting NLnet, Netherlands, stichting@nlnet.nl.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND STICHTING NLNET DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL STICHTING NLNET BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The development of Dynamically Loadable Zones (DLZ) for Bind 9 was conceived and contributed by Rob Butler.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND ROB BUTLER DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ROB BUTLER BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 1987, 1990, 1993, 1994

The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) The Internet Society 2005. This version of this module is part of RFC 4178; see the RFC itself for full legal notices.

(The above copyright notice is per RFC 3978 5.6 (a), q.v.)

Copyright (c) 2004 Masarykova universita
(Masaryk University, Brno, Czech Republic)
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1997 - 2003 Kungliga Tekniska Hgskolan
(Royal Institute of Technology, Stockholm, Sweden).
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1998 Doug Rabson
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright ((c)) 2002, Rice University
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Rice University (RICE) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

This software is provided by RICE and the contributors on an "as is" basis, without any representations or warranties of any kind, express or implied including, but not limited to, representations or warranties of non-infringement, merchantability or fitness for a particular purpose. In no event shall RICE or contributors be liable

for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

Copyright (c) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED "AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright 2000 Aaron D. Gifford. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR(S) AND CONTRIBUTOR(S) "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) OR CONTRIBUTOR(S) BE LIABLE

FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1998 Doug Rabson.
Copyright (c) 2001 Jake Burkholder.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) 1995, 1996, 1997, and 1998 WIDE Project.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2000 by Nortel Networks Corporation

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND NORTEL NETWORKS DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL NORTEL NETWORKS BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 2000-2002 Japan Network Information Center. All rights reserved.

By using this file, you agree to the terms and conditions set forth below.

LICENSE TERMS AND CONDITIONS

The following License Terms and Conditions apply, unless a different license is obtained from Japan Network Information Center ("JPNIC"), a Japanese association, Kokusai-Kougyou-Kanda Bldg 6F, 2-3-4 Uchi-Kanda, Chiyoda-ku, Tokyo 101-0047, Japan.

1. Use, Modification and Redistribution (including distribution of any modified or derived work) in source and/or binary forms is permitted

under this License Terms and Conditions.

2. Redistribution of source code must retain the copyright notices as they appear in each source code file, this License Terms and Conditions.
3. Redistribution in binary form must reproduce the Copyright Notice, this License Terms and Conditions, in the documentation and/or other materials provided with the distribution. For the purposes of binary distribution the "Copyright Notice" refers to the following language:
"Copyright (c) 2000-2002 Japan Network Information Center. All rights reserved."
4. The name of JPNIC may not be used to endorse or promote products derived from this Software without specific prior written approval of JPNIC.
5. Disclaimer/Limitation of Liability: THIS SOFTWARE IS PROVIDED BY JPNIC "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL JPNIC BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Copyright (C) 2004 Nominet, Ltd.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND NOMINET DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ISC BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Portions Copyright RSA Security Inc.

License to copy and use this software is granted provided that it is identified as "RSA Security Inc. PKCS #11 Cryptographic Token Interface (Cryptoki)" in all material mentioning or referencing this software.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Security Inc. PKCS #11 Cryptographic Token Interface (Cryptoki)" in all material mentioning or referencing the derived work.

RSA Security Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

Copyright (c) 1996, David Mazieres <dm@uun.org>
Copyright (c) 2008, Damien Miller <djm@openbsd.org>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 2000-2001 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this

software must display the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.OpenSSL.org/>)"

4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact licensing@OpenSSL.org.

5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.

6. Redistributions of any form whatsoever must retain the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.OpenSSL.org/>)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1995, 1997, 1998 The NetBSD Foundation, Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) 2008-2011 Red Hat, Inc.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND Red Hat DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL Red Hat BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 2013-2014, Farsight Security, Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 by Farsight Security, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2000-2002 Japan Network Information Center. All rights reserved.

By using this file, you agree to the terms and conditions set forth below.

LICENSE TERMS AND CONDITIONS

The following License Terms and Conditions apply, unless a different license is obtained from Japan Network Information Center ("JPNIC"), a Japanese association, Kokusai-Kogyo-Kanda Bldg 6F, 2-3-4 Uchi-Kanda, Chiyoda-ku, Tokyo 101-0047, Japan.

1. Use, Modification and Redistribution (including distribution of any modified or derived work) in source and/or binary forms is permitted under this License Terms and Conditions.
2. Redistribution of source code must retain the copyright notices as they appear in each source code file, this License Terms and Conditions.
3. Redistribution in binary form must reproduce the Copyright Notice, this License Terms and Conditions, in the documentation and/or other materials provided with the distribution. For the purposes of binary distribution the "Copyright Notice" refers to the following language:
"Copyright (c) 2000-2002 Japan Network Information Center. All rights reserved."

4. The name of JPNIC may not be used to endorse or promote products derived from this Software without specific prior written approval of JPNIC.

5. Disclaimer/Limitation of Liability: THIS SOFTWARE IS PROVIDED BY JPNIC "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL JPNIC BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1.31 jakarta-transaction-api 1.3.3

1.31.1 Available under license :

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2012, 2018 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0, which is available at Eclipse Public License v. 2.0 are satisfied: GNU General Public License, <![CDATA[Copyright © 2019 Eclipse Foundation. All Rights Reserved.'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2010, 2018 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0, which is available at Eclipse Public License v. 2.0 are satisfied: GNU General Public License,'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2013, 2018 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0, which is available at Eclipse Public License v. 2.0 are satisfied: GNU General Public License,'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 1997, 2018 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0, which is available at Eclipse Public License v. 2.0 are satisfied: GNU General Public License,'

1.32 pcre 10.34-7ubuntu0.1

1.32.1 Available under license :

PCRE2 LICENCE

Please see the file LICENCE in the PCRE2 distribution for licensing details.

End

PCRE2 LICENCE

PCRE2 is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Releases 10.00 and above of PCRE2 are distributed under the terms of the "BSD" licence, as specified below, with one exemption for certain binary redistributions. The documentation for PCRE2, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a just-in-time compiler that can be used to optimize pattern matching. This is an optional feature that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel
Email local part: ph10
Email domain: cam.ac.uk

University of Cambridge Computing Service,
Cambridge, England.

Copyright (c) 1997-2019 University of Cambridge
All rights reserved.

PCRE2 JUST-IN-TIME COMPILATION SUPPORT

Written by: Zoltan Herczeg
Email local part: hzmester
Email domain: freemail.hu

Copyright(c) 2010-2019 Zoltan Herczeg
All rights reserved.

STACK-LESS JUST-IN-TIME COMPILER

Written by: Zoltan Herczeg
Email local part: hzmester
Email domain: freemail.hu

Copyright(c) 2009-2019 Zoltan Herczeg
All rights reserved.

THE "BSD" LICENCE

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notices, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notices, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the University of Cambridge nor the names of any contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

EXEMPTION FOR BINARY LIBRARY-LIKE PACKAGES

The second condition in the BSD licence (covering binary redistributions) does not apply all the way down a chain of software. If binary package A includes PCRE2, it must respect the condition, but if package B is software that includes package A, the condition is not imposed on package B unless it uses PCRE2 independently.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.33 acpid 2.0.11

1.33.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
675 Mass Ave, Cambridge, MA 02139, USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid

anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program

except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program; if not, write to the Free Software  
Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
```

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.34 postgresql 42.2.14

1.34.1 Available under license :

Copyright (c) 1997, PostgreSQL Global Development Group
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.35 attrs 19.1.0

1.35.1 Available under license :

The MIT License (MIT)

Copyright (c) 2015 Hynek Schlawack

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.36 iproute 3.14.0

1.36.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of
```

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.37 jakarta-persistence-api 2.2.3

1.37.1 Available under license :

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2018, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at <name>Eclipse Public License v. 2.0</name> <name>Eclipse Distribution License v. 1.0</name> <comments>Standard Eclipse Distribution License</comments> Copyright © 2019 Eclipse Foundation. All rights reserved.
'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2013, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2017, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2008, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2006, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2011, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at'

Found license 'Eclipse Public License 1.0' in 'Copyright (c) 2008, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at Copyright (c) 2008, 2019 Oracle and/or its affiliates. All rights reserved. This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at or the Eclipse Distribution License v. 1.0 which is available at'

1.38 libglib2 2.48.1

1.38.1 Available under license :

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a

program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a

portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or

table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or

derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse

engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this

License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these,

write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307 USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

This work may be reproduced and distributed in whole or in part, in any medium, physical or electronic, so as long as this copyright notice remains intact and unchanged on all copies. Commercial redistribution is permitted and encouraged, but you may not redistribute, in whole or in part, under terms more restrictive than those under which you received it. If you redistribute a modified or translated version of this work, you must also make the source code to the modified or translated version available in electronic form without charge. However, mere aggregation as part of a larger work shall not count as a modification for this purpose.

All code examples in this work are placed into the public domain, and may be used, modified and redistributed without restriction.

BECAUSE THIS WORK IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE WORK, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE WORK "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE. SHOULD THE WORK PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE WORK AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE WORK, EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End

1.39 ipmi-tool 1.8.16

1.39.1 Available under license :

Copyright (c) 2003 Sun Microsystems, Inc. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistribution of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Sun Microsystems, Inc. or the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

This software is provided "AS IS," without a warranty of any kind. ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE,

EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1.40 libidn 2.2.0 2

1.40.1 Available under license :

Libidn2 COPYING -- Licensing information. -*- outline -*-

Copyright (C) 2011-2016 Simon Josefsson

See the end for copying conditions.

The source code for the C library (libidn2.a or libidn.so) are licensed under the terms of either the GNU General Public License version 2.0 or later (see the file COPYINGv2) or the GNU Lesser General Public License version 3.0 or later (see the file COPYING.LESSERv3), or both in parallel as here.

The command line tool, self tests, examples, and other auxiliary files, are licensed under the GNU General Public License version 3.0 or later.

The license of the Unicode character data files (which are parsed into static storage in the library) are documented in COPYING.unicode.

Other files are licensed as indicated in each file.

There may be exceptions to these general rules, see each file for precise information.

This file is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this file. If not, see <<http://www.gnu.org/licenses/>>.

A. Unicode Copyright.

Copyright 1991-2016 Unicode, Inc. All rights reserved.

Certain documents and files on this website contain a legend indicating that "Modification is permitted." Any person is hereby authorized, without fee, to modify such documents and files to create derivative works conforming to the Unicode Standard, subject to Terms and Conditions herein.

Any person is hereby authorized, without fee, to view, use, reproduce, and distribute all documents and files solely

for informational purposes and in the creation of products supporting the Unicode Standard, subject to the Terms and Conditions herein.

Further specifications of rights and restrictions pertaining to the use of the particular set of data files known as the "Unicode Character Database" can be found in the License.

Each version of the Unicode Standard has further specifications of rights and restrictions of use. For the book editions (Unicode 5.0 and earlier), these are found on the back of the title page. The online code charts carry specific restrictions. All other files, including online documentation of the core specification for Unicode 6.0 and later, are covered under these general Terms of Use.

No license is granted to "mirror" the Unicode website where a fee is charged for access to the "mirror" site.

Modification is not permitted with respect to this document. All copies of this document must be verbatim.

B. Restricted Rights Legend.

Any technical data or software which is licensed to the United States of America, its agencies and/or instrumentalities under this Agreement is commercial technical data or commercial computer software developed exclusively at private expense as defined in FAR 2.101, or DFARS 252.227-7014 (June 1995), as applicable. For technical data, use, duplication, or disclosure by the Government is subject to restrictions as set forth in DFARS 202.227-7015 Technical Data, Commercial and Items (Nov 1995) and this Agreement. For Software, in accordance with FAR 12-212 or DFARS 227-7202, as applicable, use, duplication or disclosure by the Government is subject to the restrictions set forth in this Agreement.

C. Warranties and Disclaimers.

This publication and/or website may include technical or typographical errors or other inaccuracies. Changes are periodically added to the information herein; these changes will be incorporated in new editions of the publication and/or website. Unicode may make improvements and/or changes in the product(s) and/or program(s) described in this publication and/or website at any time.

If this file has been purchased on magnetic or optical media from Unicode, Inc. the sole and exclusive remedy for any claim will be exchange of the defective media within ninety (90) days of original purchase.

EXCEPT AS PROVIDED IN SECTION C.2, THIS PUBLICATION AND/OR SOFTWARE IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND EITHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. UNICODE AND ITS LICENSORS ASSUME NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN THIS PUBLICATION AND/OR SOFTWARE OR OTHER DOCUMENTS WHICH ARE REFERENCED BY OR LINKED TO THIS PUBLICATION OR THE UNICODE WEBSITE.

D. Waiver of Damages.

In no event shall Unicode or its licensors be liable for any special, incidental, indirect or consequential damages of any kind, or any damages whatsoever, whether or not Unicode was advised of the possibility of the damage, including, without limitation, those resulting from the following: loss of use, data or profits, in connection with the use, modification or distribution of this information or its derivatives.

E. Trademarks & Logos.

The Unicode Word Mark and the Unicode Logo are trademarks of Unicode, Inc. The Unicode Consortium and Unicode, Inc. are trade names of Unicode, Inc. Use of the information and materials found on this website indicates your acknowledgement of Unicode, Inc.'s exclusive worldwide rights in the Unicode Word Mark, the Unicode Logo, and the Unicode trade names.

The Unicode Consortium Name and Trademark Usage Policy (Trademark Policy) are incorporated herein by reference and you agree to abide by the provisions of the Trademark Policy, which may be changed from time to time in the sole discretion of Unicode, Inc.

All third party trademarks referenced herein are the property of their respective owners.

F. Miscellaneous.

Jurisdiction and Venue. This server is operated from a location in the State of California, United States of America. Unicode makes no representation that the materials are appropriate for use in other locations. If you access this server from other locations, you are responsible for compliance with local laws. This Agreement, all use of this site and any claims and damages resulting from use of this site are governed solely by the laws of the State of California without regard to any principles which would apply the laws of a different jurisdiction. The user agrees that any disputes regarding this site shall be resolved solely in the courts located in Santa Clara County, California. The user agrees said courts have personal jurisdiction and agree to waive any right to transfer the dispute to any other forum.

Modification by Unicode Unicode shall have the right to modify this Agreement at any time by posting it to this site. The user may not assign any part of this Agreement without Unicodes prior written consent.

Taxes. The user agrees to pay any taxes arising from access to this website or use of the information herein, except for those based on Unicodes net income.

Severability. If any provision of this Agreement is declared invalid or unenforceable, the remaining provisions of this Agreement shall remain in effect.

Entire Agreement. This Agreement constitutes the entire agreement between the parties.

EXHIBIT 1

Unicode Data Files include all data files under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,
<http://www.unicode.org/cldr/data/>, <http://source.icu-project.org/repos/icu/>, and
<http://www.unicode.org/utility/trac/browser/>.

Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>.

Software includes any source code published in the Unicode Standard or under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,
<http://www.unicode.org/cldr/data/>, <http://source.icu-project.org/repos/icu/>, and
<http://www.unicode.org/utility/trac/browser/>.

NOTICE TO USER: Carefully read the following legal agreement.

BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT.
IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2016 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either (a) this copyright and permission notice appear with all copies of the Data Files or Software, or (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it,

either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program,

and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component

itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to

apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc.,

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free

software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could

make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its

content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user

actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating

where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically

receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a

patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a

covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT

HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program
into proprietary programs. If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License. But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time

a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser

General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

1.41 python 3.9.12

1.41.1 Available under license :

Copyright (c) 2002 Jorge Acereda <jacereda@users.sourceforge.net> &
Peter O'Gorman <ogorman@users.sourceforge.net>

Portions may be copyright others, see the AUTHORS file included with this distribution.

Maintained by Peter O'Gorman <ogorman@users.sourceforge.net>

Bug Reports and other queries should go to <ogorman@users.sourceforge.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Additional Conditions for this Windows binary build

This program is linked with and uses Microsoft Distributable Code, copyrighted by Microsoft Corporation. The Microsoft Distributable Code

is embedded in each .exe, .dll and .pyd file as a result of running the code through a linker.

If you further distribute programs that include the Microsoft Distributable Code, you must comply with the restrictions on distribution specified by Microsoft. In particular, you must require distributors and external end users to agree to terms that protect the Microsoft Distributable Code at least as much as Microsoft's own requirements for the Distributable Code. See Microsoft's documentation (included in its developer tools and on its website at microsoft.com) for specific details.

Redistribution of the Windows binary build of the Python interpreter complies with this agreement, provided that you do not:

- alter any copyright, trademark or patent notice in Microsoft's Distributable Code;
- use Microsoft's trademarks in your programs' names or in a way that suggests your programs come from or are endorsed by Microsoft;
- distribute Microsoft's Distributable Code to run on a platform other than Microsoft operating systems, run-time technologies or application platforms; or
- include Microsoft Distributable Code in malicious, deceptive or unlawful programs.

These restrictions apply only to the Microsoft Distributable Code as defined above, not to Python itself or any programs running on the Python interpreter. The redistribution of the Python interpreter and libraries is governed by the Python Software License included with this file, or by other licenses as marked.

A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same

year, the PythonLabs team moved to Digital Creations, which became Zope Corporation. In 2001, the Python Software Foundation (PSF, see <https://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation was a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2 and above	2.1.1	2001-now	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

=====

Python software and documentation are licensed under the Python Software Foundation License Version 2.

Starting with Python 3.8.6, examples, recipes, and other code in the documentation are dual licensed under the PSF License Version 2 and the Zero-Clause BSD license.

Some software incorporated into Python is under different licenses. The licenses are listed with code falling under that license.

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to

create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND

DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to

distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

X Window System License - X11R6.4

Copyright (c) 1998 The Open Group

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of The Open Group shall

not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from The Open Group.

X Window System is a trademark of The Open Group
libffi - Copyright (c) 1996-2003 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL CYGNUS SOLUTIONS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper
Copyright (c) 2001-2019 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This license applies to the bootstrapper application that is embedded within the installer. It has no impact on the licensing for the rest of the installer or Python itself, as no code covered by this license exists in any other part of the

product.

Microsoft Reciprocal License (MS-RL)

This license governs use of the accompanying software. If you use the software, you accept this license. If you do not accept the license, do not use the software.

1. Definitions

The terms "reproduce," "reproduction," "derivative works," and "distribution" have the same meaning here as under U.S. copyright law.

A "contribution" is the original software, or any additions or changes to the software.

A "contributor" is any person that distributes its contribution under this license.

"Licensed patents" are a contributor's patent claims that read directly on its contribution.

2. Grant of Rights

(A) Copyright Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free copyright license to reproduce its contribution, prepare derivative works of its contribution, and distribute its contribution or any derivative works that you create.

(B) Patent Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free license under its licensed patents to make, have made, use, sell, offer for sale, import, and/or otherwise dispose of its contribution in the software or derivative works of the contribution in the software.

3. Conditions and Limitations

(A) Reciprocal Grants- For any file you distribute that contains code from the software (in source code or binary format), you must provide recipients the source code to that file along with a copy of this license, which license will govern that file. You may license other files that are entirely your own work and do not contain code from the software under any terms you choose.

(B) No Trademark License- This license does not grant you rights to use any contributors' name, logo, or trademarks.

(C) If you bring a patent claim against any contributor over patents that you claim are infringed by the software, your patent license from such contributor to the software ends automatically.

(D) If you distribute any portion of the software, you must retain all copyright, patent, trademark, and attribution notices that are present in the software.

(E) If you distribute any portion of the software in source code form, you may do so only under this license by including a complete copy of this license with your distribution. If you distribute any portion of the software in compiled or object code form, you may only do so under a license that complies with this license.

(F) The software is licensed "as-is." You bear the risk of using it. The contributors give no express warranties, guarantees or conditions. You may have additional consumer rights under your local laws which this license cannot change. To the extent permitted under your local laws, the contributors exclude the implied warranties of merchantability, fitness for a particular purpose and non-infringement.

1.42 commons-pool 1.6

1.42.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Apache Commons Pool

Copyright 2001-2012 The Apache Software Foundation

This product includes software developed by
The Apache Software Foundation (<http://www.apache.org/>).

1.43 attr 2.4.48-5

1.43.1 Available under license :

Most components of the "attr" package are licensed under
Version 2.1 of the GNU Lesser General Public License (see below).
below.

Some components (as annotated in the source) are licensed
under Version 2 of the GNU General Public License (see COPYING).

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your

freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be

consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The

former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a

fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be

linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is

interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN

WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!
Most components of the "attr" package are licensed under Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see below),

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether

gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate

copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program

with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such

parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING

OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may

be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.44 netty-transport-native-unix-common

4.1.51.Final

1.44.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2014 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/IovArray.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/UnixChannelOption.java
```


* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/package-info.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2018 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/PreferredDirectByteBufferAllocator.java

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/Buffer.java

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_buffer.c

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_buffer.h

No license file was found, but licenses were detected in source scan.

~ Copyright 2016 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,

~ version 2.0 (the "License"); you may not use this file except in compliance

~ with the License. You may obtain a copy of the License at:

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software

~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

~ License for the specific language governing permissions and limitations

~ under the License.

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-

sources-jar/META-INF/maven/io.netty/netty-transport-native-unix-common/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2017 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_jni.h

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/UnixChannelUtil.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2015 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/DomainSocketChannel.java

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/ServerDomainSocketChannel.java

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-

sources-jar/netty_unix_socket.c
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/DomainSocketAddress.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/DatagramSocketAddress.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_filedescriptor.h
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_filedescriptor.c
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/NativeInetAddress.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/DomainSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_socket.h
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_errors.h
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/Socket.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_errors.c
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/FileDescriptor.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/DomainSocketReadMode.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/Errors.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/UnixChannel.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2016 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/PeerCredentials.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/SocketWritableByteChannel.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_util.c
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_limits.h
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_util.h
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/ErrorsStaticallyReferencedJniMethods.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/netty_unix_limits.c
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/Limits.java
* /opt/ws_local/PERMITS_SQL/1075084034_1596044782.67/0/netty-transport-native-unix-common-4-1-51-final-sources-jar/io/netty/channel/unix/LimitsStaticallyReferencedJniMethods.java

1.45 jaxb-runtime 2.3.3

1.45.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF

LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Notices for Eclipse Implementation of JAXB

This content is produced and maintained by the Eclipse Implementation of JAXB project.

* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb-impl>

Trademarks

Eclipse Implementation of JAXB is a trademark of the Eclipse Foundation.

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

Source Code

The project maintains the following source code repositories:

- * <https://github.com/eclipse-ee4j/jaxb-ri>
- * <https://github.com/eclipse-ee4j/jaxb-istack-commons>
- * <https://github.com/eclipse-ee4j/jaxb-dtd-parser>
- * <https://github.com/eclipse-ee4j/jaxb-fi>
- * <https://github.com/eclipse-ee4j/jaxb-stax-ex>
- * <https://github.com/eclipse-ee4j/jax-rpc-ri>

Third-party Content

This project leverages the following third party content.

Apache Ant (1.10.2)

* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Ant (1.10.2)

* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Felix (1.2.0)

* License: Apache License, 2.0

args4j (2.33)

* License: MIT License

dom4j (1.6.1)

* License: Custom license based on Apache 1.1

file-management (3.0.0)

* License: Apache-2.0

* Project: <https://maven.apache.org/shared/file-management/>

* Source:

<https://svn.apache.org/viewvc/maven/shared/tags/file-management-3.0.0/>

JUnit (4.12)

* License: Eclipse Public License

JUnit (4.12)

* License: Eclipse Public License

maven-compat (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-compat/>

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-compat/3.5.2>

maven-core (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-core/index.html>

* Source: <https://mvnrepository.com/artifact/org.apache.maven/maven-core/3.5.2>

maven-plugin-annotations (3.5)

* License: Apache-2.0

* Project: <https://maven.apache.org/plugin-tools/maven-plugin-annotations/>

* Source:

<https://github.com/apache/maven-plugin-tools/tree/master/maven-plugin-annotations>

maven-plugin-api (3.5.2)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-connector-basic (1.1.1)

* License: Apache-2.0

maven-resolver-impl (1.1.1)

* License: Apache-2.0

maven-resolver-spi (1.1.1)

* License: Apache-2.0

maven-resolver-transport-file (1.1.1)

* License: Apache-2.0

* Project: <https://maven.apache.org/resolver/maven-resolver-transport-file/>

* Source:

<https://github.com/apache/maven-resolver/tree/master/maven-resolver-transport-file>

maven-resolver-util (1.1.1)

* License: Apache-2.0

maven-settings (3.5.2)

* License: Apache-2.0

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-settings/3.5.2>

OSGi Service Platform Core Companion Code (6.0)

* License: Apache License, 2.0

plexus-archiver (3.5)

- * License: Apache-2.0
- * Project: <https://codehaus-plexus.github.io/plexus-archiver/>
- * Source: <https://github.com/codehaus-plexus/plexus-archiver>

plexus-io (3.0.0)

- * License: Apache-2.0

plexus-utils (3.1.0)

- * License: Apache- 2.0 or Apache- 1.1 or BSD or Public Domain or Indiana University Extreme! Lab Software License V1.1.1 (Apache 1.1 style)

relaxng-datatype (1.0)

- * License: New BSD license

Sax (0.2)

- * License: SAX-PD
- * Project: <http://www.megginson.com/downloads/SAX/>
- * Source: http://sourceforge.net/project/showfiles.php?group_id=29449

testng (6.14.2)

- * License: Apache-2.0 AND (MIT OR GPL-1.0+)
- * Project: <https://testng.org/doc/index.html>
- * Source: <https://github.com/cbeust/testng>

wagon-http-lightweight (3.0.0)

- * License: Pending
- * Project: <https://maven.apache.org/wagon/>
- * Source:
<https://mvnrepository.com/artifact/org.apache.maven.wagon/wagon-http-lightweight/3.0.0>

xz for java (1.8)

- * License: LicenseRef-Public-Domain

Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is

permitted.

1.46 netty-handler-proxy 4.1.51.Final

1.46.1 Available under license :

No license file was found, but licenses were detected in source scan.

~ Copyright 2014 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-handler-proxy/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-jar/io.netty.handler.proxy.HttpProxyHandler.java

* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-

```
jar/io/netty/handler/proxy/ProxyHandler.java
* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-
jar/io/netty/handler/proxy/package-info.java
* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-
jar/io/netty/handler/proxy/Socks4ProxyHandler.java
* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-
jar/io/netty/handler/proxy/ProxyConnectionEvent.java
* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-
jar/io/netty/handler/proxy/Socks5ProxyHandler.java
* /opt/ws_local/PERMITS_SQL/1077639653_1597066896.9/0/netty-handler-proxy-4-1-51-final-sources-
jar/io/netty/handler/proxy/ProxyConnectException.java
```

1.47 hibernate-commons-annotations

5.1.0.Final

1.47.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get

it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with

the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the

Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the

Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time.

Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest

possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

1.48 mail 1.6.5

1.48.1 Available under license :

Eclipse Public License - v 2.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE

PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial content Distributed under this Agreement, and

b) in the case of each subsequent Contributor:

- i) changes to the Program, and
- ii) additions to the Program;

where such changes and/or additions to the Program originate from and are Distributed by that particular Contributor. A Contribution "originates" from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include changes or additions to the Program that are not Modified Works.

"Contributor" means any person or entity that Distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions Distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement or any Secondary License (as applicable), including Contributors.

"Derivative Works" shall mean any work, whether in Source Code or other form, that is based on (or derived from) the Program and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship.

"Modified Works" shall mean any work in Source Code or other form that results from an addition to, deletion from, or modification of the contents of the Program, including, for purposes of clarity any new file in Source Code form that contains any contents of the Program. Modified Works shall not include works that contain only declarations, interfaces, types, classes, structures, or files of the Program solely in each case in order to link to, bind by name, or subclass the Program or Modified Works thereof.

"Distribute" means the acts of a) distributing or b) making available in any manner that enables the transfer of a copy.

"Source Code" means the form of a Program preferred for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Secondary License" means either the GNU General Public License, Version 2.0, or any later versions of that license, including any exceptions or additional permissions as identified by the initial Contributor.

2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, Distribute and sublicense the Contribution of such Contributor, if any, and such Derivative Works.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in Source Code or other form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to Distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

e) Notwithstanding the terms of any Secondary License, no Contributor makes additional grants to any Recipient (other than those set forth in this Agreement) as a result of such Recipient's receipt of the Program under the terms of a Secondary License (if permitted under the terms of Section 3).

3. REQUIREMENTS

3.1 If a Contributor Distributes the Program in any form, then:

a) the Program must also be made available as Source Code, in accordance with section 3.2, and the Contributor must accompany the Program with a statement that the Source Code for the Program is available under this Agreement, and informs Recipients how to obtain it in a reasonable manner on or through a medium customarily used for software exchange; and

b) the Contributor may Distribute the Program under a license different than this Agreement, provided that such license:

i) effectively disclaims on behalf of all other Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all other Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) does not attempt to limit or alter the recipients' rights in the Source Code under section 3.2; and

iv) requires any subsequent distribution of the Program by any party to be under a license that satisfies the requirements of this section 3.

3.2 When the Program is Distributed as Source Code:

a) it must be made available under this Agreement, or if the Program (i) is combined with other material in a separate file or files made available under a Secondary License, and (ii) the initial Contributor attached to the Source Code the notice described in Exhibit A of this Agreement, then the Program may be made available under the terms of such Secondary Licenses, and

b) a copy of this Agreement must be included with each copy of the Program.

3.3 Contributors may not remove or alter any copyright, patent, trademark, attribution notices, disclaimers of warranty, or limitations of liability ("notices") contained within the Program from any copy of the Program which they Distribute, provided that Contributors may add their own appropriate notices.

4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR

PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement

Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be Distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to Distribute the Program (including its Contributions) under the new version.

Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved. Nothing in this Agreement is intended to be enforceable by any entity that is not a Contributor or Recipient. No third-party beneficiary rights are created under this Agreement.

Exhibit A - Form of Secondary Licenses Notice

"This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License, v. 2.0 are satisfied: {name license(s), version(s), and exceptions or additional permissions here}."

Simply including a copy of this Agreement, including this Exhibit A is not sufficient to license the Source Code under Secondary Licenses.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor
Boston, MA 02110-1335
USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License.

(Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any

associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you

could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free

software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1335 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type
`show w'. This is free software, and you are welcome to redistribute
it under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
program `Gnomovision' (which makes passes at compilers) written by
James Hacker.
```

```
signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

```
## CLASSPATH EXCEPTION
```

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you

permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

Apache Commons Lang

Copyright 2001-2016 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

This product includes software from the Spring Framework,
under the Apache License 2.0 (see: `StringUtils.containsWhitespace()`)
Notices for Jakarta Mail

This content is produced and maintained by the Jakarta Mail project.

* Project home: <https://projects.eclipse.org/projects/ee4j.mail>

Trademarks

Jakarta Mail is a trademark of the Eclipse Foundation.

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at <http://www.eclipse.org/legal/epl-2.0>. This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License v. 2.0 are satisfied: GNU General Public License, version 2 with the GNU Classpath Exception which is available at <https://www.gnu.org/software/classpath/license.html>.

SPDX-License-Identifier: EPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0

Source Code

The project maintains the following source code repositories:

* <https://github.com/eclipse-ee4j/mail>

Third-party Content

This project leverages the following third party content.

None

Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

The MIT License

2009-2017, Jonathan Hedley <jonathan@hedley.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

1.49 bridgeutils 1.5

1.49.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion

of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable

source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying

the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates

the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
```

`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.50 net-snmp 5.9

1.50.1 Available under license :

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: Sparta, Inc (BSD) ----

Copyright (c) 2003-2010, Sparta, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 2: ScienceLogic, LLC (BSD) ----

Copyright (c) 2006, ScienceLogic, LLC
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: CMU/UCD copyright notice: (BSD like) -----

Copyright 1989, 1991, 1992 by Carnegie Mellon University

Derivative Work - 1996, 1998-2000
Copyright 1996, 1998-2000 The Regents of the University of California

All Rights Reserved

Permission to use, copy, modify and distribute this software and its documentation for any purpose and without fee is hereby granted,

provided that the above copyright notice appears in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of CMU and The Regents of the University of California not be used in advertising or publicity pertaining to distribution of the software without specific written permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL CMU OR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM THE LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

---- Part 2: Networks Associates Technology, Inc copyright notice (BSD) ----

Copyright (c) 2001-2003, Networks Associates Technology, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the Networks Associates Technology, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) ----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
- * The name of Cambridge Broadband Ltd. may not be used to endorse or
promote products derived from this software without specific prior
written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) ----

Copyright (c) 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara,
California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered
trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Sun Microsystems, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 5: Sparta, Inc copyright notice (BSD) ----

Copyright (c) 2003-2013, Sparta, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,

EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) ----

Copyright (c) 2004, Cisco, Inc and Information Network
Center of Beijing University of Posts and Telecommunications.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Cisco, Inc, Beijing University of Posts and Telecommunications, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) ----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003
oss@fabasoft.com
Author: Bernhard Penz <bernhard.penz@fabasoft.com>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries, brand or product names may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 8: Apple Inc. copyright notice (BSD) ----

Copyright (c) 2007 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Apple Inc. ("Apple") nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY APPLE AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL APPLE OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT

LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 9: ScienceLogic, LLC copyright notice (BSD) ----

Copyright (c) 2009, ScienceLogic, LLC
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 10: Lennart Poettering copyright notice (BSD-like) ----

Copyright 2010 Lennart Poettering

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge,

publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

---- Part 11: IETF copyright notice (BSD) ----

Copyright (c) 2013 IETF Trust and the persons identified as authors of the code. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Internet Society, IETF or IETF Trust, nor the names of specific contributors, may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 12: Arista Networks copyright notice (BSD) ----

Copyright (c) 2013, Arista Networks, Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Arista Networks, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 13: VMware, Inc. copyright notice (BSD) -----

Copyright (c) 2016, VMware, Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of VMware, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 14: USC/Information Sciences Institute copyright notice (BSD) ----

Copyright (c) 2017-2018, Information Sciences Institute
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Information Sciences Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

```
/* =====
```

```
* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.
```

```
*
```

```
* Redistribution and use in source and binary forms, with or without  
* modification, are permitted provided that the following conditions  
* are met:
```

```
*
```

```
* 1. Redistributions of source code must retain the above copyright  
* notice, this list of conditions and the following disclaimer.
```

```
*
```

```
* 2. Redistributions in binary form must reproduce the above copyright  
* notice, this list of conditions and the following disclaimer in  
* the documentation and/or other materials provided with the  
* distribution.
```

```
*
```

```
* 3. All advertising materials mentioning features or use of this  
* software must display the following acknowledgment:  
* "This product includes software developed by the OpenSSL Project  
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
```

```
*
```

```
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to  
* endorse or promote products derived from this software without  
* prior written permission. For written permission, please contact  
* openssl-core@openssl.org.
```

```
*
```

```
* 5. Products derived from this software may not be called "OpenSSL"  
* nor may "OpenSSL" appear in their names without prior written  
* permission of the OpenSSL Project.
```

```
*
```

```
* 6. Redistributions of any form whatsoever must retain the following  
* acknowledgment:  
* "This product includes software developed by the OpenSSL Project  
* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
```

```
*
```

```
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
```

* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.

* =====

*

* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).

*

*/

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

* All rights reserved.

*

* This package is an SSL implementation written

* by Eric Young (eay@cryptsoft.com).

* The implementation was written so as to conform with Netscapes SSL.

*

* This library is free for commercial and non-commercial use as long as

* the following conditions are aheared to. The following conditions

* apply to all code found in this distribution, be it the RC4, RSA,

* lhash, DES, etc., code; not just the SSL code. The SSL documentation

* included with this distribution is covered by the same copyright terms

* except that the holder is Tim Hudson (tjh@cryptsoft.com).

*

* Copyright remains Eric Young's, and as such any Copyright notices in

* the code are not to be removed.

* If this package is used in a product, Eric Young should be given attribution

* as the author of the parts of the library used.

* This can be in the form of a textual message at program startup or

* in documentation (online or textual) provided with the package.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the copyright

* notice, this list of conditions and the following disclaimer.

- * 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
 - * "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)"
 - * The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related :-).
- * 4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement:
 - * "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
- * The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]
- */

1.51 e2fsprogs 1.43.1

1.51.1 Available under license :

This is the Debian GNU/Linux prepackaged version of the static EXT2 file system consistency checker (e2fsck.static). The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2006 Theodore Ts'o <tytso@mit.edu>
 Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>
 Copyright (c) 2001 Alcove <<http://www.alcove.com/>>
 Copyright (c) 1997 Klee Dienes
 Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, is protected by the GNU General Public License.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in `/usr/share/common-licenses/GPL-2`. This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2001 by Andries Brouwer
Copyright (C) 1999, 2000, 2003 by Theodore Ts'o

You are free to distribute this software under the terms of the GNU Lesser (Library) General Public License.

On Debian systems, the complete text of the GNU Lesser (Library) General Public License can be found in `/usr/share/common-licenses/LGPL-2`. This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Fri Dec 14 22:24:35 EST 2007

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 by Theodore Ts'o

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This is the Debian GNU/Linux prepackaged version of the translation files of the EXT2 file system utilities. The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2006 Theodore Ts'o <tytso@mit.edu>
Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>
Copyright (c) 2001 Alcove <<http://www.alcove.com/>>
Copyright (c) 1997 Klee Dienes
Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, is protected by the GNU General Public License.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in `~/usr/share/common-licenses/GPL-2'`.
/*

Copyright 1987 by the Student Information Processing Board of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

*/

Index: tdbsa/tdb.c

=====

--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

*/

/*

- Unix SMB/CIFS implementation.
- + trivial database library - standalone version

- trivial database library - private includes
-
- Copyright (C) Andrew Tridgell 2005
- + Copyright (C) Andrew Tridgell 1999-2005
- + Copyright (C) Jeremy Allison 2000-2006
- + Copyright (C) Paul 'Rusty' Russell 2000

** NOTE! The following LGPL license applies to the tdb
** library. This does NOT imply that all of Samba is released
This is the Debian GNU/Linux prepackaged version of the EXT2 file
system utilities (e2fsck, mke2fs, etc.). The EXT2 utilities were
written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2007 Theodore Ts'o <tytso@mit.edu>
Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>
Copyright (c) 2001 Alcove <<http://www.alcove.com/>>
Copyright (c) 1997 Klee Dienes
Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, are made available under
the GNU General Public License version 2, with the exception of the
lib/ext2fs and lib/e2p libraries, which are made available under the
GNU Library General Public License Version 2, the lib/uuid library
which is made available under a BSD-style license and the lib/et and
lib/ss libraries which are made available under an MIT-style license.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000,
2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public
License can be found in `~/usr/share/common-licenses/GPL-2'`. The
complete text of the GNU Library General Public License can be found
in `~/usr/share/common-licenses/LGPL-2'`.

The license used for lib/et and lib/ss libraries is:

Copyright 1987 by the Student Information Processing Board
of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose is hereby granted, provided that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

The license used for lib/uuid is:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This package, the EXT2 filesystem utilities, are made available under the GNU Public License version 2, with the exception of the lib/ext2fs and lib/e2p libraries, which are made available under the GNU Library General Public License Version 2, the lib/uuid library which is made available under a BSD-style license and the lib/et and lib/ss libraries which are made available under an MIT-style license. Please see lib/uuid/COPYING for more details for the license for the files comprising the libuuid library, and the source file headers of the

libet and libss libraries for more information.

The most recent officially distributed version can be found at <http://e2fsprogs.sourceforge.net>. If you need to make a distribution, that's the one you should use. If there is some reason why you'd like a more recent version that is still in ALPHA testing (i.e., either using the "WIP" test distributions or one from the hg or git repository from the development branch, please contact me (tytso@mit.edu) before you ship. The release schedules for this package are flexible, if you give me enough lead time.

Theodore Ts'o
23-June-2007

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's

source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR

REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```


The hypothetical commands `show w` and `show c` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU LIBRARY GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is
numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is

analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is

included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany

it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the

Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent

license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free

Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or  
modify it under the terms of the GNU Library General Public
```

License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2000, 2003, 2004 by Theodore Ts'o

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote

products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This is the Debian GNU/Linux prepackaged version of the ss command-line interface parsing library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

From the original distribution:

Copyright 1987, 1988 by the Student Information Processing Board of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

#

This is a Makefile stub which handles the creation of BSD shared libraries.

#

In order to use this stub, the following makefile variables must be defined.

#

BSDLIB_VERSION = 1.0

BSDLIB_IMAGE = libce

```

# BSDLIB_MYDIR = et
# BSDLIB_INSTALL_DIR = $(SHLIBDIR)
#

all:: image

real-subdirs:: Makefile
@echo " MKDIR pic"
@mkdir -p pic

BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)
BSDLIB_PIC_FLAG = -fpic

image: $(BSD_LIB)

$(BSD_LIB): $(OBJS)
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LD_FLAGS_SHLIB) $(OBJS))
$(MV) pic/$(BSD_LIB) .
$(RM) -f ../$(BSD_LIB)
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \
`echo $(my_dir) | sed -e 's;lib/;;' /$(BSD_LIB) $(BSD_LIB))

install-shlibs install:: $(BSD_LIB)
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
@$(INSTALL_PROGRAM) $(BSD_LIB) \
$(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)
@-$(LDCONFIG)

install-strip: install

install-shlibs-strip: install-shlibs

uninstall-shlibs uninstall::
$(RM) -f $(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)

clean::
$(RM) -rf pic
$(RM) -f $(BSD_LIB)
$(RM) -f ../$(BSD_LIB)

```

This is the Debian GNU/Linux prepackaged version of the Common Error Description library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
tsx-11.mit.edu/pub/linux/packages/ext2fs/

From the original distribution:

Copyright 1987, 1988 by the Student Information Processing Board
of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software
and its documentation for any purpose and without fee is
hereby granted, provided that the above copyright notice
appear in all copies and that both that copyright notice and
this permission notice appear in supporting documentation,
and that the names of M.I.T. and the M.I.T. S.I.P.B. not be
used in advertising or publicity pertaining to distribution
of the software without specific, written prior permission.
M.I.T. and the M.I.T. S.I.P.B. make no representations about
the suitability of this software for any purpose. It is
provided "as is" without express or implied warranty.
EXT2ED is hereby placed under the terms of the GNU General Public License.
Follows the GNU license.

Gadi Oxman, August 1995

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
675 Mass Ave, Cambridge, MA 02139, USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program

is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is

implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE

PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.52 json-c 0.12.1

1.52.1 Available under license :

Copyright (c) 2009-2012 Eric Haszlkiewicz

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2004, 2005 Metaparadigm Pte Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.53 jq 1.4

1.53.1 Available under license :

Oniguruma LICENSE

/*-

* Copyright (c) 2002-2015 K.Kosako <kkosako0@gmail.com>

* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

*

* THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.

*/

jq is copyright (C) 2012 Stephen Dolan

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

jq's documentation (everything found under the docs/ subdirectory in
the source tree) is licensed under the Creative Commons CC BY 3.0
license, which can be found at:

<https://creativecommons.org/licenses/by/3.0/>

The documentation website includes a copy of Twitter's Bootstrap and
relies on Bonsai, Liquid templates and various other projects, look
them up for detailed licensing conditions.

jq incorporates David M. Gay's `dtoa.c` and `g_fmt.c`, which bear the
following notices:

`dtoa.c`:

The author of this software is David M. Gay.

Copyright (c) 1991, 2000, 2001 by Lucent Technologies.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

g_fmt.c:

The author of this software is David M. Gay.

Copyright (c) 1991, 1996 by Lucent Technologies.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

1.54 linux-kernel 4.4.225

1.54.1 Available under license :

FlashPoint Driver Developer's Kit
Version 1.0

Copyright 1995-1996 by Mylex Corporation
All Rights Reserved

This program is free software; you may redistribute and/or modify it under the terms of either:

a) the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version,

or

b) the "BSD-style License" included below.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See either the GNU General Public License or the BSD-style License below for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

The BSD-style License is as follows:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain this LICENSE.FlashPoint file, without modification, this list of conditions, and the following disclaimer. The following copyright notice must appear immediately at the beginning of all source files:

Copyright 1995-1996 by Mylex Corporation. All Rights Reserved

This file is available under both the GNU General Public License and a BSD-style copyright; see LICENSE.FlashPoint for details.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of Mylex Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY MYLEX CORP. ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further

restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2009-2013 QLogic Corporation
QLogic Linux qlcnic NIC Driver

You may modify and redistribute the device driver code under the GNU General Public License (a copy of which is attached hereto as Exhibit A) published by the Free Software Foundation (version 2).

EXHIBIT A

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that

you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the

notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED

TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Contributors to bttv:

Michael Chu <mmchu@pobox.com>
AverMedia fix and more flexible card recognition

Alan Cox <alan@lxorguk.ukuu.org.uk>
Video4Linux interface and 2.1.x kernel adaptation

Chris Kleitsch
Hardware I2C

Gerd Knorr <kraxel@cs.tu-berlin.de>
Radio card (ITT sound processor)

bigfoot <bigfoot@net-way.net>
Ragnar Hojland Espinosa <ragnar@macula.net>
ConferenceTV card

+ many more (please mail me if you are missing in this list and would like to be mentioned)

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without

changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated

straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of

its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form

under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is

copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or

modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you

distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering

access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES

PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2003-2013 QLogic Corporation
QLogic Linux iSCSI Driver

This program includes a device driver for Linux 3.x.
You may modify and redistribute the device driver code under the GNU General Public License (a copy of which is attached hereto as Exhibit A) published by the Free Software Foundation (version 2).

EXHIBIT A

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively

when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you

received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software

Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

/* nicstar.c v0.22 Jawaid Bazyar (bazyar@hypermall.com)

* nicstar.c, M. Welsh (matt.welsh@cl.cam.ac.uk)

*

* Hacked October, 1997 by Jawaid Bazyar, Interlink Advertising Services Inc.

* <http://www.hypermall.com/>

* 10/1/97 - commented out CFG_PHYIE bit - we don't care when the PHY

* interrupts us (except possibly for removal/insertion of the cable?)

* 10/4/97 - began heavy inline documentation of the code. Corrected typos

* and spelling mistakes.

* 10/5/97 - added code to handle PHY interrupts, disable PHY on

* loss of link, and correctly re-enable PHY when link is

* re-established. (put back CFG_PHYIE)

*

* Modified to work with the IDT7721 nicstar -- AAL5 (tested) only.

*

* R. D. Rechenmacher <ron@fnal.gov>, Aug. 6, 1997

*

```

* Linux driver for the IDT77201 NICStAR PCI ATM controller.
* PHY component is expected to be 155 Mbps S/UNI-Lite or IDT 77155;
* see init_nicstar() for PHY initialization to change this. This driver
* expects the Linux ATM stack to support scatter-gather lists
* (skb->atm.iovcnt != 0) for Rx skb's passed to vcc->push.
*
* Implementing minimal-copy of received data:
* IDT always receives data into a small buffer, then large buffers
* as needed. This means that data must always be copied to create
* the linear buffer needed by most non-ATM protocol stacks (e.g. IP)
* Fix is simple: make large buffers large enough to hold entire
* SDU, and leave <small_buffer_data> bytes empty at the start. Then
* copy small buffer contents to head of large buffer.
* Trick is to avoid fragmenting Linux, due to need for a lot of large
* buffers. This is done by 2 things:
* 1) skb->destructor / skb->atm.recycle_buffer
*    combined, allow nicstar_free_rx_skb to be called to
*    recycle large data buffers
* 2) skb_clone of received buffers
* See nicstar_free_rx_skb and linearize_buffer for implementation
* details.
*
*
*
* Copyright (c) 1996 University of Cambridge Computer Laboratory
*
* This program is free software; you can redistribute it and/or modify
* it under the terms of the GNU General Public License as published by
* the Free Software Foundation; either version 2 of the License, or
* (at your option) any later version.
*
* This program is distributed in the hope that it will be useful,
* but WITHOUT ANY WARRANTY; without even the implied warranty of
* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
* GNU General Public License for more details.
*
* You should have received a copy of the GNU General Public License
* along with this program; if not, write to the Free Software
* Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.
*
* M. Welsh, 6 July 1996
*
*
*/

```

Code in this directory written at the IDA Supercomputing Research Center carries the following copyright and license.

Copyright 1993 United States Government as represented by the

Director, National Security Agency. This software may be used and distributed according to the terms of the GNU General Public License, incorporated herein by reference.

In addition to the disclaimers in the GPL, SRC expressly disclaims any and all warranties, expressed or implied, concerning the enclosed software. This software was developed at SRC for use in internal research, and the intent in sharing this software is to promote the productive interchange of ideas throughout the research community. All software is furnished on an "as-is" basis. No further updates to this software should be expected. Although updates may occur, no commitment exists.

Copyright (c) 2003-2006, Marvell International Ltd.

All Rights Reserved

This program is free software; you can redistribute it and/or modify it under the terms of version 2 of the GNU General Public License as published by the Free Software Foundation.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

"This software program is licensed subject to the GNU General Public License (GPL). Version 2, June 1991, available at <<http://www.gnu.org/licenses/gpl.html>>

GNU General Public License

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place - Suite 330, Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program

whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a

work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- * a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- * b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- * c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be

reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- * a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- * b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- * c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the

executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES

PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the program's name and an idea of what it does.

Copyright (C) yyyy name of author

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2003-2006 QLogic Corporation
QLogic Linux Networking HBA Driver

This program includes a device driver for Linux 2.6 that may be distributed with QLogic hardware specific firmware binary file. You may modify and redistribute the device driver code under the GNU General Public License as published by the Free Software Foundation (version 2 or a later version).

You may redistribute the hardware specific firmware binary file under the following terms:

1. Redistribution of source code (only if applicable), must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other

materials provided with the distribution.

3. The name of QLogic Corporation may not be used to endorse or promote products derived from this software without specific prior written permission

REGARDLESS OF WHAT LICENSING MECHANISM IS USED OR APPLICABLE, THIS PROGRAM IS PROVIDED BY QLOGIC CORPORATION "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

USER ACKNOWLEDGES AND AGREES THAT USE OF THIS PROGRAM WILL NOT CREATE OR GIVE GROUNDS FOR A LICENSE BY IMPLICATION, ESTOPPEL, OR OTHERWISE IN ANY INTELLECTUAL PROPERTY RIGHTS (PATENT, COPYRIGHT, TRADE SECRET, MASK WORK, OR OTHER PROPRIETARY RIGHT) EMBODIED IN ANY OTHER QLOGIC HARDWARE OR SOFTWARE EITHER SOLELY OR IN COMBINATION WITH THIS PROGRAM.

The files in this directory and elsewhere which refer to this LICENCE file are part of JFFS2, the Journalling Flash File System v2.

Copyright 2001-2007 Red Hat, Inc. and others

JFFS2 is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 or (at your option) any later version.

JFFS2 is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with JFFS2; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.

As a special exception, if other files instantiate templates or use macros or inline functions from these files, or you compile these files and link them with other works to produce a work based on these

files, these files do not by themselves cause the resulting work to be covered by the GNU General Public License. However the source code for these files must still be made available in accordance with section (3) of the GNU General Public License.

This exception does not invalidate any other reasons why a work based on this file might be covered by the GNU General Public License.

NOTE! This copyright does **not** cover user programs that use kernel services by normal system calls - this is merely considered normal use of the kernel, and does **not** fall under the heading of "derived work". Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the Linux kernel) is copyrighted by me and others who actually wrote it.

Also note that the only valid version of the GPL as far as the kernel is concerned is *_this_* particular version of the license (ie v2, not v2.2 or v3.x or whatever), unless explicitly otherwise stated.

Linus Torvalds

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Thanks go to the following people for patches and contributions:

Michael Hunold <m.hunold@gmx.de>
for the initial saa7146 driver and its recent overhaul

Christian Theiss
for his work on the initial Linux DVB driver

Marcus Metzler <mocm@metzlerbros.de>
Ralph Metzler <rjkm@metzlerbros.de>
for their continuing work on the DVB driver

Michael Holzt <kju@debian.org>
for his contributions to the dvb-net driver

Diego Picciani <d.picciani@novacomp.it>
for CyberLogin for Linux which allows logging onto EON
(in case you are wondering where CyberLogin is, EON changed its login procedure and CyberLogin is no longer used.)

Martin Schaller <martin@smurf.franken.de>

for patching the cable card decoder driver

Klaus Schmidinger <Klaus.Schmidinger@cadsoft.de>
for various fixes regarding tuning, OSD and CI stuff and his work on VDR

Steve Brown <sbrown@cortland.com>
for his AFC kernel thread

Christoph Martin <martin@uni-mainz.de>
for his LIRC infrared handler

Andreas Oberritter <obi@linuxtv.org>
Dennis Noermann <dennis.noermann@noernet.de>
Felix Domke <tmbinc@elitedvb.net>
Florian Schirmer <jolt@tuxbox.org>
Ronny Strutz <3des@elitedvb.de>
Wolfram Joost <dbox2@frokaschwei.de>
...and all the other dbox2 people
for many bugfixes in the generic DVB Core, frontend drivers and
their work on the dbox2 port of the DVB driver

Oliver Endriss <o.endriss@gmx.de>
for many bugfixes

Andrew de Quincey <adq_dvb@lidskialf.net>
for the tda1004x frontend driver, and various bugfixes

Peter Schildmann <peter.schildmann@web.de>
for the driver for the Technisat SkyStar2 PCI DVB card

Vadim Catana <skystar@moldova.cc>
Roberto Ragusa <r.ragusa@libero.it>
Augusto Cardoso <augusto@carhil.net>
for all the work for the FlexCopII chipset by B2C2,Inc.

Davor Emard <emard@softhome.net>
for his work on the budget drivers, the demux code,
the module unloading problems, ...

Hans-Frieder Vogt <hfvogt@arcor.de>
for his work on calculating and checking the crc's for the
TechnoTrend/Hauppage DEC driver firmware

Michael Dreher <michael@5dot1.de>
Andreas 'randy' Weinberger
for the support of the Fujitsu-Siemens Activy budget DVB-S

Kenneth Aafly <ke-aa@frisurf.no>

for adding support for Typhoon DVB-S budget card

Ernst Peinlich <e.peinlich@inode.at>
for tuning/DiSEqC support for the DEC 3000-s

Peter Beutner <p.beutner@gmx.net>
for the IR code for the ttusb-dec driver

Wilson Michaels <wilsonmichaels@earthlink.net>
for the lgdt330x frontend driver, and various bugfixes

Michael Krufky <mkrufky@linuxtv.org>
for maintaining v4l/dvb inter-tree dependencies

Taylor Jacob <rtjacob@earthlink.net>
for the nxt2002 frontend driver

Jean-Francois Thibert <jeanfrancois@sagetv.com>
for the nxt2004 frontend driver

Kirk Lapray <kirk.lapray@gmail.com>
for the or51211 and or51132 frontend drivers, and
for merging the nxt2002 and nxt2004 modules into a
single nxt200x frontend driver.

(If you think you should be in this list, but you are not, drop a
line to the DVB mailing list)

Copyright (c) 2003-2014 QLogic Corporation
QLogic Linux FC-FCoE Driver

This program includes a device driver for Linux 3.x.
You may modify and redistribute the device driver code under the
GNU General Public License (a copy of which is attached hereto as
Exhibit A) published by the Free Software Foundation (version 2).

EXHIBIT A

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an

announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Copyright (c) 2003-2011 QLogic Corporation
QLogic Linux qlge NIC Driver

You may modify and redistribute the device driver code under the GNU General Public License (a copy of which is attached hereto as Exhibit A) published by the Free Software Foundation (version 2).

EXHIBIT A

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an

announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1.55 base-files 10.3+deb10u12

1.55.1 Available under license :

Copyright (c) The Regents of the University of California.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is
numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis

or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the

libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based

on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or

linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked

with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact

that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the

source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY

YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License along  
with this program; if not, write to the Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE
Version 1, February 1989

Copyright (C) 1989 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The license agreements of most software companies try to keep users at the mercy of those companies. By contrast, our General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. The General Public License applies to the Free Software Foundation's software and to any other program whose authors commit to using it. You can use it for your programs, too.

When we speak of free software, we are referring to freedom, not price. Specifically, the General Public License is designed to make sure that you have the freedom to give away or sell copies of free software, that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of a such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must tell them their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any work containing the Program or a portion of it, either verbatim or with modifications. Each licensee is addressed as "you".

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this General Public License and to the absence of any warranty; and give any other recipients of the Program a copy of this General Public License along with the Program. You may charge a fee for the physical act of transferring a copy.

2. You may modify your copy or copies of the Program or any portion of it, and copy and distribute such modifications under the terms of Paragraph 1 above, provided that you also do the following:

a) cause the modified files to carry prominent notices stating that you changed the files and the date of any change; and

b) cause the whole of any work that you distribute or publish, that in whole or in part contains the Program or any part thereof, either

with or without modifications, to be licensed at no charge to all third parties under the terms of this General Public License (except that you may choose to grant warranty protection to some or all third parties, at your option).

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the simplest and most usual way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this General Public License.

d) You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

Mere aggregation of another independent work with the Program (or its derivative) on a volume of a storage or distribution medium does not bring the other work under the scope of these terms.

3. You may copy and distribute the Program (or a portion or derivative of it, under Paragraph 2) in object code or executable form under the terms of Paragraphs 1 and 2 above provided that you also do one of the following:

a) accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Paragraphs 1 and 2 above; or,

b) accompany it with a written offer, valid for at least three years, to give any third party free (except for a nominal charge for the cost of distribution) a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Paragraphs 1 and 2 above; or,

c) accompany it with the information you received as to where the corresponding source code may be obtained. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form alone.)

Source code for a work means the preferred form of the work for making modifications to it. For an executable file, complete source code means all the source code for all modules it contains; but, as a special exception, it need not include source code for modules which are standard libraries that accompany the operating system on which the executable file runs, or for standard header files or definitions files that accompany that operating system.

4. You may not copy, modify, sublicense, distribute or transfer the Program except as expressly provided under this General Public License. Any attempt otherwise to copy, modify, sublicense, distribute or transfer the Program is void, and will automatically terminate your rights to use the Program under this License. However, parties who have received copies, or rights to use copies, from you under this General Public License will not have their licenses terminated so long as such parties remain in full compliance.

5. By copying, distributing or modifying the Program (or any work based on the Program) you indicate your acceptance of this license to do so, and all its terms and conditions.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

7. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of the license which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the license, you may choose any version ever published by the Free Software Foundation.

8. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

9. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

10. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to humanity, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 1, or (at your option)  
any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19xx name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
program `Gnomovision' (a program to direct compilers to make passes
at assemblers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains

in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a

copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place

additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an

organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a

publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this

License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF

ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

The "Artistic License"

Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

Definitions:

"Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files

created through textual modification.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder as specified below.

"Copyright Holder" is whoever is named in the copyright or copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
 - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
 - b) use the modified Package only within your corporation or organization.
 - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.

- d) make other distribution arrangements with the Copyright Holder.
4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
- a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.
 - b) accompany the distribution with the machine-readable source of the Package with your modifications.
 - c) give non-standard executables non-standard names, and clearly document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.
 - d) make other distribution arrangements with the Copyright Holder.
5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the interpreter is so embedded.
6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.
7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the

regression tests for the language.

8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.

9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the

Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
 - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
 - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

1.56 cryptsetup 2.1.0

1.56.1 Available under license :

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS DOCUMENT DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS

PROVIDED HEREUNDER.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- moral rights retained by the original author(s) and/or performer(s);
- publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- rights protecting the extraction, dissemination, use and reuse of data in a Work;
- database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
- other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser

General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data

structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials

specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE

LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU Lesser General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you

distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is

void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License along  
with this program; if not, write to the Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

1.57 dhcp 4.1-ESV-R9

1.57.1 Available under license :

```
# Copyright (c) 2004-2014 by Internet Systems Consortium, Inc. ("ISC")
# Copyright (c) 1995-2003 by Internet Software Consortium
#
# Permission to use, copy, modify, and distribute this software for any
# purpose with or without fee is hereby granted, provided that the above
# copyright notice and this permission notice appear in all copies.
#
```

```
# THE SOFTWARE IS PROVIDED "AS IS" AND ISC DISCLAIMS ALL WARRANTIES
# WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
# MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL ISC BE LIABLE FOR
# ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
# WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
# ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT
# OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
#
# Internet Systems Consortium, Inc.
# 950 Charter Street
# Redwood City, CA 94063
# <info@isc.org>
# https://www.isc.org/
```

See the specific source files for any additional copyright or license statements.

1.58 bridgeutils 1.5

1.58.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the

Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.59 cglib 3.3.0

1.59.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the

direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and

wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor

has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This product includes software developed by
The Apache Software Foundation (<http://www.apache.org/>).

1.60 spring-data-commons 2.3.3.RELEASE

1.60.1 Available under license :

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

To the extent any open source subcomponents are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://www.springsource.org/download>, or by sending a request, with your name and address to: VMware, Inc., 3401 Hillview Avenue, Palo Alto, CA 94304, United States of America or email info@vmware.com. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. VMware shall mail a copy of the Source Files to you on a CD or equivalent physical medium. This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product.

Spring Data Commons 2.3.3 (Neumann SR3)

Copyright (c) [2010-2019] Pivotal Software, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the LICENSE file.

1.61 bolt 1.2.1

1.61.1 Available under license :

Copyright (c) 2015 GraphAware Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.62 reactor-netty 0.9.11.RELEASE

1.62.1 Available under license :

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2006, Ivan Sagalaev

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of highlight.js nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS AND CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.63 json-c 0.12.1

1.63.1 Available under license :

Copyright (c) 2009-2012 Eric Haszlakiewicz

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2004, 2005 Metaparadigm Pte Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.64 gettext 0.16.1

1.64.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain

that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections

1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.65 expat 2.2.0

1.65.1 Available under license :

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper

Copyright (c) 2001-2016 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.66 react-day-picker 7.4.8

1.66.1 Available under license :

The MIT License (MIT)

Copyright (c) 2014-2019 Giampaolo Bellavite

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.67 urllib3 1.25.3

1.67.1 Available under license :

MIT License

Copyright (c) 2008-2019 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Contributions to the urllib3 project

Creator & Maintainer

* Andrey Petrov <andrey.petrov@shazow.net>

Contributors

In chronological order:

- * victor.vde <<http://code.google.com/u/victor.vde/>>
- * HTTPS patch (which inspired HTTPSConnectionPool)

- * erikcederstrand <<http://code.google.com/u/erikcederstrand/>>
- * NTLM-authenticated HTTPSConnectionPool
- * Basic-authenticated HTTPSConnectionPool (merged into make_headers)

- * niphlod <niphlod@gmail.com>
- * Client-verified SSL certificates for HTTPSConnectionPool
- * Response gzip and deflate encoding support
- * Better unicode support for filepost using StringIO buffers

- * btoconnor <brian@btoconnor.net>
- * Non-multipart encoding for POST requests

- * p.dobrogost <<http://code.google.com/u/@WBRSRIBZDhBFXQB6/>>
- * Code review, PEP8 compliance, benchmark fix

- * kennethreitz <me@kennethreitz.com>
- * Bugfixes, suggestions, Requests integration

- * georgemarshall <<https://github.com/georgemarshall>>
- * Bugfixes, Improvements and Test coverage

- * Thomas Kluyver <thomas@kluyver.me.uk>
- * Python 3 support

- * brandon-rhodes <<http://rhodesmill.org/brandon>>
- * Design review, bugfixes, test coverage.

- * studer <theo.studer@gmail.com>
- * IPv6 url support and test coverage

- * Shivaram Lingamneni <slingamn@cs.stanford.edu>
- * Support for explicitly closing pooled connections

- * hartator <hartator@gmail.com>
- * Corrected multipart behavior for params

- * Thomas Weischuh <thomas@t-8ch.de>
- * Support for TLS SNI
- * API unification of ssl_version/cert_reqs
- * SSL fingerprint and alternative hostname verification
- * Bugfixes in testsuite

- * Sune Kirkeby <mig@ibofobi.dk>
- * Optional SNI-support for Python 2 via PyOpenSSL.

- * Marc Schlaich <marc.schlaich@gmail.com>
- * Various bugfixes and test improvements.

- * Bryce Boe <bbzbryce@gmail.com>
- * Correct six.moves conflict
- * Fixed pickle support of some exceptions

- * Boris Figovsky <boris.figovsky@ravellosystems.com>
- * Allowed to skip SSL hostname verification

- * Cory Benfield <<https://lukasa.co.uk/about/>>
- * Stream method for Response objects.
- * Return native strings in header values.
- * Generate 'Host' header when using proxies.

- * Jason Robinson <jaywink@basshero.org>
- * Add missing WrappedSocket.fileno method in PyOpenSSL

- * Audrius Butkevicius <audrius.butkevicius@elastichosts.com>
- * Fixed a race condition

- * Stanislav Vitkovskiy <stas.vitkovsky@gmail.com>
- * Added HTTPS (CONNECT) proxy support

- * Stephen Holsapple <sholsapp@gmail.com>
- * Added abstraction for granular control of request fields

- * Martin von Gagern <Martin.vGagern@gmx.net>
- * Support for non-ASCII header parameters

- * Kevin Burke <kev@inburke.com> and Pavel Kirichenko <juanych@yandex-team.ru>
- * Support for separate connect and request timeouts

- * Peter Waller <p@pwaller.net>
- * HTTPResponse.tell() for determining amount received over the wire

- * Nipunn Koorapati <nipunn1313@gmail.com>
- * Ignore default ports when comparing hosts for equality

- * Danilo @dbrgn <<https://dbrgn.ch/>>
- * Disabled TLS compression by default on Python 3.2+
- * Disabled TLS compression in pyopenssl contrib module
- * Configurable cipher suites in pyopenssl contrib module

- * Roman Bogorodskiy <roman.bogorodskiy@ericsson.com>
- * Account retries on proxy errors

- * Nicolas Delaby <nicolas.delaby@ezeep.com>
- * Use the platform-specific CA certificate locations

- * Josh Schneier <https://github.com/jschneier>
- * HTTPHeaderDict and associated tests and docs
- * Bugfixes, docs, test coverage

- * Tahia Khan <http://tahia.tk/>
- * Added Timeout examples in docs

- * Arthur Grunseid <https://grunseid.com>
- * source_address support and tests (with https://github.com/bui)

- * Ian Cordasco <graffatcolmingov@gmail.com>
- * PEP8 Compliance and Linting
- * Add ability to pass socket options to an HTTP Connection

- * Erik Tollerud <erik.tollerud@gmail.com>
- * Support for standard library io module.

- * Krishna Prasad <kprasad.iitd@gmail.com>
- * Google App Engine documentation

- * Aaron Meurer <asmeurer@gmail.com>
- * Added Url.url, which unparses a Url

- * Evgeny Kapun <abacabadabacaba@gmail.com>
- * Bugfixes

- * Benjamin Meyer <bm_witness@yahoo.com>
- * Security Warning Documentation update for proper capture

- * Shivan Sornarajah <github@sornars.com>
- * Support for using ConnectionPool and PoolManager as context managers.

- * Alex Gaynor <alex.gaynor@gmail.com>
- * Updates to the default SSL configuration

- * Tomas Tomecek <ttomecek@redhat.com>
- * Implemented generator for getting chunks from chunked responses.

- * tlynn <https://github.com/tlynn>
- * Respect the warning preferences at import.

- * David D. Riddle <ddriddle@illinois.edu>
- * IPv6 bugfixes in testsuite

- * Thea Flowers <magicalgirl@google.com>

- * App Engine environment tests.
- * Documentation re-write.

- * John Krauss <<https://github.com/talos>>
- * Clues to debugging problems with `cryptography` dependency in docs

- * Disassem <<https://github.com/Disassem>>
- * Fix pool-default headers not applying for url-encoded requests like GET.

- * James Atherfold <jlatherfold@hotmail.com>
- * Bugfixes relating to cleanup of connections during errors.

- * Christian Pedersen <<https://github.com/chripede>>
- * IPv6 HTTPS proxy bugfix

- * Jordan Moldow <<https://github.com/jmoldow>>
- * Fix low-level exceptions leaking from ``HTTPResponse.stream()``.
- * Bugfix for ``ConnectionPool.urlopen(release_conn=False)``.
- * Creation of ``HTTPConnectionPool.ResponseCls``.

- * Predrag Gruevski <<https://github.com/obi1kenobi>>
- * Made cert digest comparison use a constant-time algorithm.

- * Adam Talsma <<https://github.com/a-tal>>
- * Bugfix to ca_cert file paths.

- * Evan Meagher <<https://evanmeagher.net>>
- * Bugfix related to `memoryview` usage in PyOpenSSL adapter

- * John Vandenberg <jayvdb@gmail.com>
- * Python 2.6 fixes; pyflakes and pep8 compliance

- * Andy Caldwell <andy.m.caldwell@gmail.com>
- * Bugfix related to reusing connections in indeterminate states.

- * Ville Skytt <ville.skytta@iki.fi>
- * Logging efficiency improvements, spelling fixes, Travis config.

- * Shige Takeda <smtakeda@gmail.com>
- * Started Recipes documentation and added a recipe about handling concatenated gzip data in HTTP response

- * Jess Shapiro <jesse@jesseshapiro.net>
- * Various character-encoding fixes/tweaks
- * Disabling IPv6 DNS when IPv6 connections not supported

- * David Foster <<http://dafoster.net/>>
- * Ensure order of request and response headers are preserved.

- * Jeremy Cline <jeremy@jcline.org>
- * Added connection pool keys by scheme

- * Aviv Palivoda <palaviv@gmail.com>
- * History list to Retry object.
- * HTTPResponse contains the last Retry object.

- * Nate Prewitt <nate.prewitt@gmail.com>
- * Ensure timeouts are not booleans and greater than zero.
- * Fixed infinite loop in ``stream`` when amt=None.
- * Added length_remaining to determine remaining data to be read.
- * Added enforce_content_length to raise exception when incorrect content-length received.

- * Seth Michael Larson <sethmichaellarson@protonmail.com>
- * Created selectors backport that supports PEP 475.

- * Alexandre Dias <alex.dias@smarkets.com>
- * Don't retry on timeout if method not in whitelist

- * Moinuddin Quadri <moin18@gmail.com>
- * Lazily load idna package

- * Tom White <s6yg1ez3@mail2tor.com>
- * Made SOCKS handler differentiate socks5h from socks5 and socks4a from socks4.

- * Tim Burke <tim.burke@gmail.com>
- * Stop buffering entire deflate-encoded responses.

- * Tuukka Mustonen <tuukka.mustonen@gmail.com>
- * Add counter for status_forcelist retries.

- * Erik Rose <erik@mozilla.com>
- * Bugfix to pyopenssl vendoring

- * Wolfgang Richter <wolfgang.richter@gmail.com>
- * Bugfix related to loading full certificate chains with PyOpenSSL backend.

- * Mike Miller <github@mikeage.net>
- * Logging improvements to include the HTTP(S) port when opening a new connection

- * Ioannis Tziakos <mail@itziakos.gr>
- * Fix ``util.selectors._fileobj_to_fd`` to accept ``long``.
- * Update appveyor tox setup to use the 64bit python.

- * Akamai (through Jess Shapiro) <jshapiro@akamai.com>
- * Ongoing maintenance; 2017-2018

- * Dominique Leuenberger <dimstar@opensuse.org>

- * Minor fixes in the test suite
- * Will Bond <will@wbond.net>
- * Add Python 2.6 support to ``contrib.securetransport``
- * Aleksei Alekseev <alekseev.yeskela@gmail.com>
- * using auth info for socks proxy
- * Chris Wilcox <git@crwilcox.com>
- * Improve contribution guide
- * Add ``HTTPResponse.geturl`` method to provide ``urllib2.urlopen().geturl()`` behavior
- * Bruce Merry <https://www.brucemerry.org.za>
- * Fix leaking exceptions when system calls are interrupted with zero timeout
- * Hugo van Kemenade <https://github.com/hugovk>
- * Drop support for EOL Python 2.6
- * Tim Bell <https://github.com/timb07>
- * Bugfix for responses with Content-Type: message/* logging warnings
- * Justin Bramley <https://github.com/jbramleycl>
- * Add ability to handle multiple Content-Encodings
- * Katsuhiko YOSHIDA <https://github.com/kyoshidajp>
- * Remove Authorization header regardless of case when redirecting to cross-site
- * [Your name or handle] <[email or website]>
- * [Brief summary of your changes]

1.68 luafilesystem 1.5.0

1.68.1 Available under license :

No license file was found, but licenses were detected in source scan.

<p>LuaFileSystem is free software and uses the same

Found in path(s):

* /opt/cola/permits/1547565634_1675069559.2011814/0/lunarmodules-luafilesystem-v1-5-0-0-g8ff2013-tar-gz/lunarmodules-luafilesystem-8ff2013/doc/us/index.html

No license file was found, but licenses were detected in source scan.

LuaFileSystem is free software: it can be used for both academic

GPL.

LuaFileSystem is not in the public domain and the

<p>The spirit of the license is that you are free to use

<p>Permission is hereby granted, free of charge, to any person

furnished to do so, subject to the following conditions:</p>
<p>The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.</p>

Found in path(s):

* /opt/cola/permits/1547565634_1675069559.2011814/0/lunarmodules-luafilesystem-v1-5-0-0-g8ff2013-tar-gz/lunarmodules-luafilesystem-8ff2013/doc/us/license.html

No license file was found, but licenses were detected in source scan.

LuaFileSystem - File System Library for Lua

Copyright 2003 Kepler Project

<http://www.keplerproject.org/luafilename>

Description

LuaFileSystem is a Lua library developed to complement the set of functions related to file systems offered by the standard Lua distribution.

LuaFileSystem offers a portable way to access the underlying directory structure and file attributes.

LuaFileSystem is free software and uses the same license as Lua 5.1

LuaRocks Installation

luarocks install luafilename

Documentation

Please check the documentation at doc/us/ for more information.

History

Version 1.5.0 [20/Oct/2009]

* added explicit next and close methods to second return value of lfs.dir (the directory object), for explicit iteration or explicit closing.

* added directory locking via lfs.lock_dir function (see the manual).

Version 1.4.2 [03/Feb/2009]

* fixed bug [#13198] lfs.attributes(filename, 'size') overflow on files > 2 Gb again (bug report and patch by KUBO Takehiro).

* fixed bug [#39794] Compile error on Solaris 10 (bug report and patch by Aaron B).

* fixed compilation problems with Borland C.

Version 1.4.1 [07/May/2008]

* documentation review

- * fixed Windows compilation issues
- * fixed bug in the Windows tests (patch by Shmuel Zeigerman)
- * fixed bug [#2185] lfs.attributes(filename, 'size') overflow on files > 2 Gb

Version 1.4.0 [13/Feb/2008]

- * added function lfs.setmode (works only in Windows systems).
- * lfs.attributes raises an error if attribute does not exist

Version 1.3.0 [26/Oct/2007]

- * added function lfs.symlinkattributes (works only in non Windows systems).

Version 1.2.1 [08/May/2007]

- * compatible only with Lua 5.1 (Lua 5.0 support was dropped)

Version 1.2 [15/Mar/2006]

- * added optional argument to lfs.attributes
- * added function lfs.rmdir
- * bug correction on lfs.dir

Version 1.1 [30/May/2005]

- * added function lfs.touch.

Version 1.0 [21/Jan/2005]

Version 1.0 Beta [10/Nov/2004]

Found in path(s):

* /opt/cola/permits/1547565634_1675069559.2011814/0/lunarmodules-luafilesystem-v1-5-0-0-g8ff2013-tar-gz/lunarmodules-luafilesystem-8ff2013/README

1.69 pam 1.3.1 Subuntu4.3

1.69.1 Available under license :

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this libpamc release may be distributed:

Redistribution and use in source and binary forms of libpamc, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright

notice, and this entire permission notice in its entirety,
including the disclaimer of warranties.

2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Library General Public License (LGPL), in which case the provisions of the GNU LGPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU LGPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this Linux-PAM release may be distributed:

Redistribution and use in source and binary forms of Linux-PAM, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License, in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Patch for Ubuntu bug #399071

Display the contents of /etc/legal as part of the MOTD, the first time the user logs in, and set a flag in the user's homedir if possible to prevent repeat displays.

Authors: Dustin Kirkland <kirkland@canonical.com>

Upstream status: Ubuntu-specific, maybe submit to Debian

Index: pam/modules/pam_motd/pam_motd.c

```
=====
--- pam.orig/modules/pam_motd/pam_motd.c
+++ pam/modules/pam_motd/pam_motd.c
@@ -97,6 +97,65 @@
     }
 }
```

```
+int display_legal(pam_handle_t *pamh)
+{
+  int retval = PAM_IGNORE, rc;
+  char *user = NULL;
+  char *dir = NULL;
+  char *flag = NULL;
+  struct passwd *pwd = NULL;
```

```

+ struct stat s;
+ int f;
+ /* Get the user name to determine if we need to print the disclaimer */
+ rc = pam_get_item(pamh, PAM_USER, &user);
+ if (rc == PAM_SUCCESS && user != NULL && *(const char *)user != '\0')
+ {
+     PAM_MODUTIL_DEF_PRIVS(privs);
+
+     /* Get the password entry */
+     pwd = pam_modutil_getpwnam (pamh, user);
+     if (pwd != NULL)
+     {
+         if (pam_modutil_drop_priv(pamh, &privs, pwd)) {
+             pam_syslog(pamh, LOG_ERR,
+                 "Unable to change UID to %d temporarily\n",
+                 pwd->pw_uid);
+             retval = PAM_SESSION_ERR;
+             goto finished;
+         }
+
+         if (asprintf(&dir, "%s/.cache", pwd->pw_dir) == -1 || !dir)
+             goto finished;
+         if (asprintf(&flag, "%s/motd.legal-displayed", dir) == -1 || !flag)
+             goto finished;
+
+         if (stat(flag, &s) != 0)
+         {
+             int fd = open("/etc/legal", O_RDONLY, 0);
+             if (fd >= 0) {
+                 try_to_display_fd(pamh, fd);
+                 close(fd);
+             }
+             mkdir(dir, 0700);
+             f = open(flag, O_WRONLY|O_CREAT|O_EXCL,
+                 S_IRUSR|S_IWUSR|S_IRGRP|S_IROTH);
+             if (f>=0) close(f);
+         }
+
+     +finished:
+         if (pam_modutil_regain_priv(pamh, &privs)) {
+             pam_syslog(pamh, LOG_ERR,
+                 "Unable to change UID back to %d\n", privs.old_uid);
+             retval = PAM_SESSION_ERR;
+         }
+
+         _pam_drop(flag);
+         _pam_drop(dir);
+     }

```



```

+ }
+ return retval;
+}
+
int pam_sm_open_session(pam_handle_t *pamh, int flags,
    int argc, const char **argv)
{
@@ -170,6 +229,9 @@
    if (motd_dir_path != NULL)
try_to_display_directory(pamh, motd_dir_path);

+ /* Display the legal disclaimer only if necessary */
+ retval = display_legal(pamh);
+
    return retval;
}

```

This package was debianized by J.H.M. Dassen (Ray) jdassen@debian.org on Wed, 23 Sep 1998 20:29:32 +0200.

It was downloaded from <ftp://ftp.kernel.org/pub/linux/libs/pam/pre/>

Copyright (C) 1994, 1995, 1996 Olaf Kirch, <okir@monad.swb.de>
 Copyright (C) 1995 Wietse Venema
 Copyright (C) 1995, 2001-2008 Red Hat, Inc.
 Copyright (C) 1996-1999, 2000-2003, 2005 Andrew G. Morgan <morgan@kernel.org>
 Copyright (C) 1996, 1997, 1999 Cristian Gafton <gafton@redhat.com>
 Copyright (C) 1996, 1999 Theodore Ts'o
 Copyright (C) 1996 Alexander O. Yuriev
 Copyright (C) 1996 Elliot Lee
 Copyright (C) 1997 Philip W. Dalrymple <pwd@mdtsoft.com>
 Copyright (C) 1999 Jan Rkorajski
 Copyright (C) 1999 Ben Collins <bcollins@debian.org>
 Copyright (C) 2000-2001, 2003, 2005, 2007 Steve Langasek
 Copyright (C) 2003, 2005 IBM Corporation
 Copyright (C) 2003, 2006 SuSE Linux AG.
 Copyright (C) 2003 Nalin Dahyabhai <nalin@redhat.com>
 Copyright (C) 2005-2008 Thorsten Kukuk <kukuk@thkukuk.de>
 Copyright (C) 2005 Darren Tucker

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this Linux-PAM release may be distributed:

 Redistribution and use in source and binary forms of Linux-PAM, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License, in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

On Debian GNU/Linux systems, the complete text of the GNU General Public License can be found in `~/usr/share/common-licenses/GPL`.

1.70 docker-engine 19.03.5

1.70.1 Available under license :

Copyright (c) 2014-2015, Philip Hofer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the

Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) Microsoft Corporation. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012-2018 The Gorilla Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a

cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,

any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of
this software and associated documentation files (the "Software"), to deal in
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of
the Software, and to permit persons to whom the Software is furnished to do so,
subject to the following conditions:

The above copyright notice and this permission notice shall be included in all
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Attribution-ShareAlike 4.0 International

=====

Creative Commons Corporation ("Creative Commons") is not a law firm and
does not provide legal services or legal advice. Distribution of
Creative Commons public licenses does not create a lawyer-client or
other relationship. Creative Commons makes its licenses and related
information available on an "as-is" basis. Creative Commons gives no
warranties regarding its licenses, any material licensed under their
terms and conditions, or any related information. Creative Commons
disclaims all liability for damages resulting from their use to the
fullest extent possible.

Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: wiki.creativecommons.org/Considerations_for_licensors

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public: wiki.creativecommons.org/Considerations_for_licensees

=====

Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your

acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at creativecommons.org/compatiblelicenses, approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.
- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.

- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.
- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.
- m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

Section 2 -- Scope.

a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
 - a. reproduce and Share the Licensed Material, in whole or in part; and
 - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.

3. Term. The term of this Public License is specified in Section 6(a).

4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a)(4) never produces Adapted Material.

5. Downstream recipients.

a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.

b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.

c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity,

privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.
3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.

2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.

3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;

b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database

Rights (but not its individual contents) is Adapted Material,

including for purposes of Section 3(b); and

- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.
- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.
- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under

Section 6(a), it reinstates:

1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or
2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

- c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.
- d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.
- b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.

d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at creativecommons.org/policies, Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at creativecommons.org.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the

Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside

or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer,

and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2017 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,

DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the

Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside

or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer,

and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Mozilla Public License Version 2.0

=====

1. Definitions

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software;
- or

(b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or

(c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any

jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

* * * * *
* 6. Disclaimer of Warranty *
* ----- *

*

* Covered Software is provided under this License on an "as is"

* basis, without warranty of any kind, either expressed, implied, or

* statutory, including, without limitation, warranties that the

* Covered Software is free of defects, merchantable, fit for a

* particular purpose or non-infringing. The entire risk as to the

* quality and performance of the Covered Software is with You.

* Should any Covered Software prove defective in any respect, You

* (not any Contributor) assume the cost of any necessary servicing,

* repair, or correction. This disclaimer of warranty constitutes an

* essential part of this License. No use of any Covered Software is

* authorized under this License except under this disclaimer.

*

*

* 7. Limitation of Liability

* -----

*

* Under no circumstances and under no legal theory, whether tort

* (including negligence), contract, or otherwise, shall any

* Contributor, or anyone who distributes Covered Software as

* permitted above, be liable to You for any direct, indirect,

* special, incidental, or consequential damages of any character

* including, without limitation, damages for lost profits, loss of

* goodwill, work stoppage, computer failure or malfunction, or any

* and all other commercial damages or losses, even if such party

* shall have been informed of the possibility of such damages. This

* limitation of liability shall not apply to liability for death or

* personal injury resulting from such party's negligence to the

* extent applicable law prohibits such limitation. Some

* jurisdictions do not allow the exclusion or limitation of

* incidental or consequential damages, so this exclusion and

* limitation may not apply to You.

*

8. Litigation

Any litigation relating to this License may be brought only in the
 courts of a jurisdiction where the defendant maintains its principal
 place of business and such litigation shall be governed by laws of that
 jurisdiction, without reference to its conflict-of-law provisions.
 Nothing in this Section shall prevent a party's ability to bring
 cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2014-2018 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common

control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,

work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015-Present CloudFoundry.org Foundation, Inc. All Rights Reserved.

This project contains software that is Copyright (c) 2015 Pivotal Software, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This project may include a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of each subcomponent's license, as noted in the LICENSE file.

Docker

Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/creack/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND

ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate

comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016-2018 Docker Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Tim Heckman
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of linode-netint nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE

SOFTWARE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Gal Ben-Haim

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

AWS SDK for Go

Copyright 2015 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Copyright 2014-2015 Stripe, Inc.

The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer

in the documentation and/or other materials provided with the distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner

or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2016, opentracing-contrib
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of go-stdlib nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the

distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT

LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work

(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses

granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]"

replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Taihei Morikuni

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.
Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012, 2013 Ugorji Nwoke.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE

FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications

represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without

modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade

names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier

identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and
limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

MIT

Copyright 2017 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions,

annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof

in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Copyright (c) 2011 Keith Rarick

Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated
documentation files (the "Software"), to deal in the
Software without restriction, including without limitation
the rights to use, copy, modify, merge, publish, distribute,
sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so,
subject to the following conditions:

The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the
Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and

limitations under the License.
Prometheus instrumentation library for Go applications
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>
<https://github.com/beorn7/perks>
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein
See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format
<http://github.com/golang/protobuf/>
Copyright 2010 The Go Authors
See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).
https://github.com/matttproud/golang_protobuf_extensions
Copyright 2013 Matt T. Proud
Licensed under the Apache License, Version 2.0
CoreOS Project
Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc.
(<http://www.coreos.com/>).
procfs provides functions to retrieve system, kernel and process
metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at
SoundCloud Ltd. (<http://soundcloud.com/>).
Copyright (c) 2013 Dario Casta. All rights reserved.
Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the

distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE

FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

1. Definitions

1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. Contribution

means Covered Software of a particular Contributor.

1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. Executable Form

means any form of the work other than Source Code Form.

1.7. Larger Work

means a work that combines Covered Software with other material, in a separate

file or files, that is not Covered Software.

1.8. License

means this document.

1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. Source Code Form

means the form of the work preferred for making modifications.

1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You

fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such

partys negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a partys ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With

Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible With Secondary Licenses, as defined by the Mozilla Public License, v. 2.0.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Patrick Mezard

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING

NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

1. Definitions

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if

permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You

fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability

shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Common libraries shared by Prometheus Go components.
Copyright 2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).
The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH (open-source@konsorten.de)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 The OpenTracing Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2016, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016, gRPC Ecosystem

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of grpc-opentracing nor the names of its contributors may be used to endorse or promote products derived from

this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2012-2018 Mat Ryer and Tyler Bunnell

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Sean Chittenden

Copyright (c) 2016 Alex Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Bits of Go-lang's `once.Do()` were cribbed and reused here, too.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.71 libmnl 1.0.3

1.71.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know

that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's

complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote

it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library

creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the

Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the

Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public

License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.72 libnfnlink 1.0.1

1.72.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
675 Mass Ave, Cambridge, MA 02139, USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the

Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
```

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

1.73 acl 2.2.53 6

1.73.1 Available under license :

Most components of the "acl" package are licensed under
Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed
under Version 2 of the GNU General Public License (see below),

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your

freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide

a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for

making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author

to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Files:

*

Copyright:

Copyright 2000-2008 Silicon Graphics, Inc.

Copyright 1999-2001,2007-2009 Andreas Gruenbacher

License: GPL-2+

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 2 of the License, or (at your option) any later version.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Comment:

On Debian systems, the full text of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'.

Files:

exports

include/*.h

libacl/*.c

libacl/*.h

libmisc/*.c

tools/do_set.*

tools/parse.*

tools/sequence.c

tools/setfacl.c

tools/user_group.h

Copyright:

Copyright 2001-2002 Silicon Graphics, Inc.

Copyright 1999-2003,2007,2009,2011 Andreas Gruenbacher

License: LGPL-2+

This program is free software: you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation, either version 2.1 of the License, or (at your option) any later version.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

.

You should have received a copy of the GNU Lesser General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Comment:

On Debian systems, the full text of the GNU Lesser General Public License can be found in '/usr/share/common-licenses/LGPL-2.1'.

Most components of the "acl" package are licensed under

Version 2.1 of the GNU Lesser General Public License (see below).

below.

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see COPYING).

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means

all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any

application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the

copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot

use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.74 zstd 1.4.4+dfsg-3ubuntu0.1

1.74.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

BSD License

For Zstandard software

Copyright (c) 2016-present, Facebook, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name Facebook nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

/*

* Copyright (c) 2018-present, Yann Collet, Facebook, Inc.

* All rights reserved.

*

* This source code is licensed under both the BSD-style license (found in the

* LICENSE file in the root directory of this source tree) and the GPLv2 (found

* in the COPYING file in the root directory of this source tree).

* You may select, at your option, one of the above-listed licenses.

*/

/* checkTag : validation tool for libzstd

* command :

* \$./checkTag tag

* checkTag validates tags of following format : v[0-9].[0-9].[0-9]{any}

* The tag is then compared to zstd version number.

* They are compatible if first 3 digits are identical.

* Anything beyond that is free, and doesn't impact validation.

* Example : tag v1.8.1.2 is compatible with version 1.8.1

* When tag and version are not compatible, program exits with error code 1.

* When they are compatible, it exists with a code 0.

* checkTag is intended to be used in automated testing environment.

*/

1.75 stunnel 5.56

1.75.1 Available under license :

stunnel license (see COPYRIGHT.md for detailed GPL conditions)

Copyright (C) 1998-2019 Michal Trojnara

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<http://www.gnu.org/licenses>>.

Linking stunnel statically or dynamically with other modules is making a combined work based on stunnel. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

In addition, as a special exception, the copyright holder of stunnel gives you permission to combine stunnel with free software programs or libraries that are released under the GNU LGPL and with code included in the standard release of OpenSSL under the OpenSSL License (or modified versions of such code, with unchanged license). You may copy and distribute such a system following the terms of the GNU GPL for stunnel and the licenses of the other code concerned.

Note that people who make modified versions of stunnel are not obligated to grant this special exception for their modified versions; it is their choice whether to do so. The GNU General Public License gives permission to release a modified version without this exception; this exception also makes it possible to release a modified version which carries forward this exception.

Copyright (C) 1998-2019 Michal Trojnara

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<http://www.gnu.org/licenses>>.

Linking stunnel statically or dynamically with other modules is making a combined work based on stunnel. Thus,

the terms and conditions of the GNU General Public License cover the whole combination.

In addition, as a special exception, the copyright holder of stunnel gives you permission to combine stunnel with free software programs or libraries that are released under the GNU LGPL and with code included in the standard release of OpenSSL under the OpenSSL License (or modified versions of such code, with unchanged license). You may copy and distribute such a system following the terms of the GNU GPL for stunnel and the licenses of the other code concerned.

Note that people who make modified versions of stunnel are not obligated to grant this special exception for their modified versions; it is their choice whether to do so. The GNU General Public License gives permission to release a modified version without this exception; this exception also makes it possible to release a modified version which carries forward this exception.

GNU General Public License

=====

Version 2, June 1991

Copyright 1989, 1991 Free Software Foundation, Inc.,

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that

you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: **(1)** copyright the software, and **(2)** offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The Program, below, refers to any such program or work, and a work based on the Program means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term modification.) Each licensee is addressed as you.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

****2.**** You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

****a)**** You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

****b)**** You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

****c)**** If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

****3.**** You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

****a)**** Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

****b)**** Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

****c)**** Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

****4.**** You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

****5.**** You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

****6.**** Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

****7.**** If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

****8.**** If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License

may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

****9.**** The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and any later version, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

****10.**** If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

****11.**** BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM AS IS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

****12.**** IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the copyright line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w` and `show c` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a copyright disclaimer for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
SimpleFC - NSIS Firewall Control Plugin - License Agreement

This plugin is subject to the Mozilla Public License Version 1.1 (the "License");
You may not use this plugin except in compliance with the License. You may
obtain a copy of the License at <http://www.mozilla.org/MPL>.

Alternatively, you may redistribute this library, use and/or modify it
under the terms of the GNU Lesser General Public License as published
by the Free Software Foundation; either version 2.1 of the License,
or (at your option) any later version. You may obtain a copy
of the LGPL at www.gnu.org/copyleft.

Software distributed under the License is distributed on an "AS IS" basis,
WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License
for the specific language governing rights and limitations under the License.

Copyright

Portions of this software are Copyright (C) 2001 - Peter Windridge, 2003 by
Bernhard Mayer, Fixed and formatted by Brett Dever <http://editor.nfscheats.com/>

The original code is FirewallControl.pas, released April 16, 2007.

The initial developer of the original code is Rainer Budde (<http://www.speed-soft.de>).

SimpleFC - NSIS Firewall Plugin is written, published and maintained by
Rainer Budde (rainer@speed-soft.de).

1.76 swagger 2.1.9

1.76.1 Available under license :

No license file was found, but licenses were detected in source scan.

/**

* Copyright 2017 SmartBear Software

* <p>
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
* <p>
* <http://www.apache.org/licenses/LICENSE-2.0>
* <p>
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/SecuritySchemes.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/headers/Header.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/responses/ApiResponse.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/Encoding.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/Hidden.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/OAuthScope.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/Schema.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/DiscriminatorMapping.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/SecurityRequirement.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/links/Link.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/ExternalDocumentation.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/servers/Servers.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/OAuthFlow.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/servers/Server.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/ExampleObject.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/callbacks/Callbacks.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-

jar/io/swagger/v3/oas/annotations/security/SecurityRequirements.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/OpenAPIDefinition.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/tags/Tags.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/security/SecurityScheme.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/info/Info.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/Operation.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/Parameter.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/Parameters.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/media/Content.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/responses/ApiResponse.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/info/Contact.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/security/OAuthFlows.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/info/License.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/tags/Tag.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/parameters/RequestBody.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/callbacks/Callback.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/links/LinkParameter.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/extensions/Extensions.java
* /opt/cola/permits/1165124373_1631713413.68/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/servers/ServerVariable.java

1.77 springdoc-openapi-common 1.5.9

1.77.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

1.78 x-crypto 0.0.0-20200302210943-78000ba7a073

1.78.1 Available under license :

```
# This source code was written by the Go contributors.  
# The master list of contributors is in the main Go distribution,  
# visible at https://tip.golang.org/CONTRIBUTORS.  
Copyright (c) 2009 The Go Authors. All rights reserved.
```

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
- * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.79 free-type 2.5.5

1.79.1 Available under license :

The FreeType 2 font engine is copyrighted work and cannot be used
legally without a software license. In order to make this project

usable to a vast majority of developers, we distribute it under two mutually exclusive open-source licenses.

This means that *you* must choose *one* of the two licenses described below, then obey all its terms and conditions when using FreeType 2 in any of your projects or products.

- The FreeType License, found in the file `FTL.TXT`, which is similar to the original BSD license *with* an advertising clause that forces you to explicitly cite the FreeType project in your product's documentation. All details are in the license file. This license is suited to products which don't use the GNU General Public License.

Note that this license is compatible to the GNU General Public License version 3, but not version 2.

- The GNU General Public License version 2, found in `GPLv2.TXT` (any later version can be used also), for programs which already use the GPL. Note that the FTL is incompatible with GPLv2 due to its advertisement clause.

The contributed BDF and PCF drivers come with a license similar to that of the X Window System. It is compatible to the above two licenses (see file `src/bdf/README` and `src/pcf/README`).

The gzip module uses the zlib license (see `src/gzip/zlib.h`) which too is compatible to the above two licenses.

The MD5 checksum support (only used for debugging in development builds) is in the public domain.

--- end of LICENSE.TXT ---

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The FreeType Project LICENSE

2006-Jan-27

Copyright 1996-2002, 2006 by
David Turner, Robert Wilhelm, and Werner Lemberg

Introduction

=====

The FreeType Project is distributed in several archive packages; some of them may contain, in addition to the FreeType font engine, various tools and contributions which rely on, or relate to, the FreeType Project.

This license applies to all files found in such packages, and which do not fall under their own explicit license. The license affects thus the FreeType font engine, the test programs, documentation and makefiles, at the very least.

This license was inspired by the BSD, Artistic, and IJG (Independent JPEG Group) licenses, which all encourage inclusion and use of free software in commercial and freeware products alike. As a consequence, its main points are that:

- o We don't promise that this software works. However, we will be interested in any kind of bug reports. (^ as is' distribution)
- o You can use this software for whatever you want, in parts or full form, without having to pay us. (^ royalty-free' usage)
- o You may not pretend that you wrote this software. If you use it, or only parts of it, in a program, you must acknowledge somewhere in your documentation that you have used the FreeType code. (^ credits')

We specifically permit and encourage the inclusion of this software, with or without modifications, in commercial products. We disclaim all warranties covering The FreeType Project and assume no liability related to The FreeType Project.

Finally, many people asked us for a preferred form for a credit/disclaimer to use in compliance with this license. We thus encourage you to use the following text:

""""

Portions of this software are copyright <year> The FreeType Project (www.freetype.org). All rights reserved.

""""

Please replace <year> with the value from the FreeType version you actually use.

Legal Terms

=====

0. Definitions

Throughout this license, the terms `package`, `FreeType Project`, and `FreeType archive` refer to the set of files originally distributed by the authors (David Turner, Robert Wilhelm, and Werner Lemberg) as the `FreeType Project`, be they named as alpha, beta or final release.

`You' refers to the licensee, or person using the project, where `using' is a generic term including compiling the project's source code as well as linking it to form a `program' or `executable'. This program is referred to as `a program using the FreeType engine'.

This license applies to all files distributed in the original FreeType Project, including all source code, binaries and documentation, unless otherwise stated in the file in its original, unmodified form as distributed in the original archive. If you are unsure whether or not a particular file is covered by this license, you must contact us to verify this.

The FreeType Project is copyright (C) 1996-2000 by David Turner, Robert Wilhelm, and Werner Lemberg. All rights reserved except as specified below.

1. No Warranty

THE FREETYPE PROJECT IS PROVIDED `AS IS' WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL ANY OF THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY DAMAGES CAUSED BY THE USE OR THE INABILITY TO USE, OF THE FREETYPE PROJECT.

2. Redistribution

This license grants a worldwide, royalty-free, perpetual and irrevocable right and license to use, execute, perform, compile, display, copy, create derivative works of, distribute and sublicense the FreeType Project (in both source and object code forms) and derivative works thereof for any purpose; and to authorize others to exercise some or all of the rights granted

herein, subject to the following conditions:

- o Redistribution of source code must retain this license file ('FTL.TXT') unaltered; any additions, deletions or changes to the original files must be clearly indicated in accompanying documentation. The copyright notices of the unaltered, original files must be preserved in all copies of source files.

- o Redistribution in binary form must provide a disclaimer that states that the software is based in part of the work of the FreeType Team, in the distribution documentation. We also encourage you to put an URL to the FreeType web page in your documentation, though this isn't mandatory.

These conditions apply to any software derived from or based on the FreeType Project, not just the unmodified files. If you use our work, you must acknowledge us. However, no fee need be paid to us.

3. Advertising

Neither the FreeType authors and contributors nor you shall use the name of the other for commercial, advertising, or promotional purposes without specific prior written permission.

We suggest, but do not require, that you use one or more of the following phrases to refer to this software in your documentation or advertising materials: 'FreeType Project', 'FreeType Engine', 'FreeType library', or 'FreeType Distribution'.

As you have not signed this license, you are not required to accept it. However, as the FreeType Project is copyrighted material, only this license, or another one contracted with the authors, grants you the right to use, distribute, and modify it. Therefore, by using, distributing, or modifying the FreeType Project, you indicate that you understand and accept all the terms of this license.

4. Contacts

There are two mailing lists related to FreeType:

- o freetype@nongnu.org

Discusses general use and applications of FreeType, as well as

future and wanted additions to the library and distribution.
If you are looking for support, start in this list if you haven't found anything to help you in the documentation.

o freetype-devel@nongnu.org

Discusses bugs, as well as engine internals, design issues, specific licenses, porting, etc.

Our home page can be found at

<http://www.freetype.org>

--- end of FTL.TXT ---

1.80 tcpdump 4.9.2

1.80.1 Available under license :

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

1.81 keyutils 1.6 6ubuntu1

1.81.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. <<http://fsf.org/>>

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that

there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU

operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified

executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work

based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply,

and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. <<http://fsf.org/>>
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you

distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is

void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w` and `show c` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: keyutils

Upstream-Contact: David Howells <dhowells@redhat.com>

Source: <http://people.redhat.com/~dhowells/keyutils/>

Files: *

Copyright: 2005-2018, Red Hat <<http://www.redhat.com/>>

License: GPL-2+

Files: keyutils.*

Copyright: 2005-2018, Red Hat <<http://www.redhat.com/>>

License: LGPL-2+

Files: debian/*

Copyright: 2006-2013, Daniel Baumann <mail@daniel-baumann.ch>

2013, Luk Claes <luk@debian.org>

2014-2019, Christian Kastner <cck@debian.org>

License: LGPL-2+

License: GPL-2+

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 2 of the License, or (at your option) any later version.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

The complete text of the GNU General Public License can be found in /usr/share/common-licenses/GPL-2 file.

License: LGPL-2+

This program is free software: you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation, either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

The complete text of the GNU Lesser General Public License can be found in /usr/share/common-licenses/LGPL-2 file.

1.82 ipmi-tool 1.8.18

1.82.1 Available under license :

Copyright (c) 2003 Sun Microsystems, Inc. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistribution of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Sun Microsystems, Inc. or the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

This software is provided "AS IS," without a warranty of any kind.

ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1.83 boost 1.67.0

1.83.1 Available under license :

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.84 libxml2 2.9.4

1.84.1 Available under license :

Except where otherwise noted in the source code (e.g. the files hash.c, list.c and the trio files, which are covered by a similar licence but with different Copyright notices) all the files are:

Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

/*

* hash.c: chained hash tables

*

* Reference: Your favorite introductory book on algorithms

*

* Copyright (C) 2000,2012 Bjorn Reese and Daniel Veillard.

*

* Permission to use, copy, modify, and distribute this software for any

* purpose with or without fee is hereby granted, provided that the above

* copyright notice and this permission notice appear in all copies.

*

* THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED

* WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF

* MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE AUTHORS AND

* CONTRIBUTORS ACCEPT NO RESPONSIBILITY IN ANY CONCEIVABLE MANNER.

*

* Author: breese@users.sourceforge.net

*/

/******

*

* \$Id\$

*

* Copyright (C) 1998 Bjorn Reese and Daniel Stenberg.

*

* Permission to use, copy, modify, and distribute this software for any

* purpose with or without fee is hereby granted, provided that the above

* copyright notice and this permission notice appear in all copies.

*

* THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED

* WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF
* MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE AUTHORS AND
* CONTRIBUTORS ACCEPT NO RESPONSIBILITY IN ANY CONCEIVABLE MANNER.
*

*

1.85 libxml2 2.9.10+dfsg-5ubuntu0.20.04.5

1.85.1 Available under license :

Except where otherwise noted in the source code (e.g. the files hash.c, list.c and the trio files, which are covered by a similar licence but with different Copyright notices) all the files are:

Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.86 curl 7.50.1

1.86.1 Available under license :

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2021, Daniel Stenberg, <daniel@haxx.se>, and many contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright

notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

1.87 swagger-models 2.1.9

1.87.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2017 SmartBear Software
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * http://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/security/Scopes.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/ByteArraySchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/security/OAuthFlows.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/Paths.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/ComposedSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
```

jar/io/swagger/v3/oas/models/media/DateTimeSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/tags/Tag.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/EncodingProperty.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/parameters/CookieParameter.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/security/SecurityScheme.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/servers/ServerVariable.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/Content.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/examples/Example.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/security/OAuthFlow.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/StringSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/Operation.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/UUIDSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/info/License.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/XML.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/info/Info.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/DateSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/MediaType.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/servers/ServerVariables.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/parameters/PathParameter.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/info/Contact.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/responses/ApiResponse.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/ExternalDocumentation.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/links/Link.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/MapSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-

jar/io/swagger/v3/oas/models/responses/ApiResponse.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/parameters/RequestBody.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/NumberSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/parameters/Parameter.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/servers/Server.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/callbacks/Callback.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/FileSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/BinarySchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/headers/Header.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/Encoding.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/PasswordSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/parameters/HeaderParameter.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/links/LinkParameter.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/BooleanSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/EmailSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/Components.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/OpenAPI.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/ObjectSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/PathItem.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/IntegerSchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/Schema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/parameters/QueryParameter.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/media/ArraySchema.java
* /opt/cola/permits/1165124349_1620941204.65/0/swagger-models-2-1-9-sources-
jar/io/swagger/v3/oas/models/security/SecurityRequirement.java

1.88 procps 3.2.8

1.88.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain

that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections

1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide

complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free

libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified

executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME

THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.89 busybox 1.30.1

1.89.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether

gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate

copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program

with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such

parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING

OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

The application is an BusyBox installer for Android.
Copyright (C) 2015 Anton Skshidlevsky

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
BusyBox Copyright (C) 2012 Anton Skshidlevsky
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands

might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

1.90 pcre 8.39

1.90.1 Available under license :

PCRE LICENCE

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel
Email local part: ph10
Email domain: cam.ac.uk

University of Cambridge Computing Service,
Cambridge, England.

Copyright (c) 1997-2016 University of Cambridge
All rights reserved.

PCRE JUST-IN-TIME COMPILATION SUPPORT

Written by: Zoltan Herczeg

Email local part: hzmester

Email domain: freemail.hu

Copyright(c) 2010-2016 Zoltan Herczeg

All rights reserved.

STACK-LESS JUST-IN-TIME COMPILER

Written by: Zoltan Herczeg

Email local part: hzmester

Email domain: freemail.hu

Copyright(c) 2009-2016 Zoltan Herczeg

All rights reserved.

THE C++ WRAPPER FUNCTIONS

Contributed by: Google Inc.

Copyright (c) 2007-2012, Google Inc.

All rights reserved.

THE "BSD" LICENCE

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the University of Cambridge nor the name of Google Inc. nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior

written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

End

PCRE LICENCE

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel

Email local part: ph10

Email domain: cam.ac.uk

University of Cambridge Computing Service,
Cambridge, England.

Copyright (c) 1997-2012 University of Cambridge
All rights reserved.

PCRE JUST-IN-TIME COMPILATION SUPPORT

Written by: Zoltan Herczeg

Email local part: hzmester

Email domain: freemail.hu

Copyright(c) 2010-2012 Zoltan Herczeg

All rights reserved.

STACK-LESS JUST-IN-TIME COMPILER

Written by: Zoltan Herczeg

Email local part: hzmester

Email domain: freemail.hu

Copyright(c) 2009-2012 Zoltan Herczeg

All rights reserved.

THE C++ WRAPPER FUNCTIONS

Contributed by: Google Inc.

Copyright (c) 2007-2012, Google Inc.

All rights reserved.

THE "BSD" LICENCE

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the University of Cambridge nor the name of Google Inc. nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

End

PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.91 keyutils 1.6-6ubuntu1.1

1.91.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. <<http://fsf.org/>>

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is

modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating

system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood

that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library

facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO

WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. <<http://fsf.org/>>
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's

source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR

REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.92 flyway-core 7.3.1

1.92.1 Available under license :

No license file was found, but licenses were detected in source scan.

2020

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Found in path(s):

* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/META-INF/maven/org.flywaydb/flyway-core/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Copyright © Red Gate Software Ltd 2010-2020
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/configuration/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/license/VersionPrinter.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/command/DbRepair.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/informix/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/InsertRowLock.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/oracle/OracleDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/parser/PlaceholderReplacingReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/clazz/NoopClassProvider.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/MigrateResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/classpath/ClassPathScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/base/SchemaObject.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/jdbc/JdbcNullTypes.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/strategy/BackoffStrategy.java

* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sqlserver/synapse/SynapseDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/util/Locations.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptExecutorFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/ResourceNameCache.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/oracle/OracleParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/redshift/RedshiftDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/classpath/jboss/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/base/DatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/informix/InformixDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/logging/LogFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sqlserver/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/sqlscript/SqlStatement.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/util/DateUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/logging/log4j2/Log4j2Log.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/redshift/RedshiftDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/db2/DB2Table.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/BaselineResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/parser/PositionTrackingReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/ClasspathClassScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/Location.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/oracle/OracleSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/callback/Warning.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/util/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/callback/SimpleContext.java

* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/OperationResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sybasease/SybaseASETTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/configuration/ConfigUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/jdbc/WarningImpl.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/db2/DB2Connection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/parser/Recorder.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/logging/apachecommons/ApacheCommonsLogCreator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/logging/apachecommons/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/derby/DerbyParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/ErrorOutput.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/classpath/JarUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/android/ContextHolder.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sqlite/SQLiteParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/oracle/OracleResults.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/ValidateOutput.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/filesystem/FileSystemScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/ValidateResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/authentication/ExternalAuthPropertiesProvider.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/callback/SqlScriptCallbackFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/parser/ParsingContext.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/redshift/RedshiftType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/logging/slf4j/Slf4jLog.java

* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/authentication/postgres/PgpassFileReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sqlite/SQLiteDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/migration/Context.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/resolver/ResolvedMigrationImpl.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/logging/javautil/JavaUtilLog.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/resolver/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/resource/s3/AwsS3Resource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/util/CloseableIterator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/exception/FlywayDbUpgradeRequiredException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/h2/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/cockroachdb/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/h2/H2DatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/derby/DerbyDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sybasease/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/configuration/Configuration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/util/AsciiTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/jdbc/ExecutionTemplateFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/resolver/sql/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/util/SqlCallable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/RepairOutput.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/sybasease/SybaseASEJConnectDatabaseType.java

* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/db2/DB2Type.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/resolver/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptMetadata.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/authentication/ExternalAuthFileReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/MigrationPattern.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/info/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/saphana/SAPHANADatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/Flyway.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/resource/classpath/ClassPathResource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/resource/classpath/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/FlywayException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/callback/Context.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/migration/JavaMigration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/output/RepairResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/schemahistory/SchemaHistory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/logging/android/AndroidLogCreator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/informix/InformixTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/scanner/classpath/JarFileClassPathLocationScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/database/derby/DerbyDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/exception/FlywayValidateException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/jdbc/StatementInterceptor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/redshift/RedshiftSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/info/MigrationInfoContext.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/ParserSqlScript.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/resolver/ChecksumMatcher.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/BomFilter.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/callback/Statement.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/ErrorImpl.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/LogCreatorFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/migration/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/slf4j/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/MigrateOutput.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/ParserContext.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/logging/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/saphana/SAPHANAParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/CommandResultFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/java/JavaMigrationExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/snowflake/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/Database.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/FileCopyUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/MySQLNamedLockTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/BooleanEvaluator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/scanner/classpath/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/callback/CallbackExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/derby/DerbyTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/cloud/s3/AwsS3Scanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/db2/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/sql/DefaultSqlMigrationExecutorFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/snowflake/SnowflakeParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/javautil/JavaUtilLogCreator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/oracle/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/redshift/RedshiftParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/StringResource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/gcs/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/PositionTracker.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/PlainExecutionTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/CompositeMigrationResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/jboss/JBossVFSv2UrlResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/h2/H2Database.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/Statement.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/callback/BaseCallback.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/resolver/ResolvedMigration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLCopyParsedStatement.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/database/db2/DB2Parser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/FirebirdTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/ResourceAndClassScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/oracle/OracleConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/DefaultExecutionStrategy.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/LoadableResource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/MigrationType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/CleanResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/ClassUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/apachecommons/ApacheCommonsLog.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/api/package-
info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/h2/H2Table.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/callback/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/license/FlywayTeamsUpgradeMessage.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/ErrorDetails.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/FirebirdDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/db2/DB2DatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/synapse/SynapseDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/Function.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/ResourceType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/TokenType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/AbbreviationUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/api/ErrorCode.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/JdbcConnectionFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/Connection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/FirebirdConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/callback/Event.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/executor/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/ParsedSqlStatement.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/Delimiter.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/TestContainersDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/ExceptionUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/saphana/SAPHANAConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/RecordingReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/Scanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/jboss/JBossVFSv3ClassPathLocationScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/authentication/mysql/MySQLOptionFileReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/IOUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/UrlUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/exception/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/android/AndroidResource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/PeekingReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/resolver/ChecksumCalculator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerApplicationLockTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/InfoOutput.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/callback/Error.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/Resource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/gcs/GCSResource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/OsgiClassPathLocationScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/InfoOutputProvider.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/license/FlywayEditionUpgradeRequiredException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/resolver/Context.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/BomStrippingReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/UndoOutput.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/license/FlywayTeamsUpgradeRequiredException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/DatabaseTypeRegister.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sybasease/SybaseASESchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/TableLockingExecutionTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/TimeFormat.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/StopWatch.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/android/AndroidLog.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/s3/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/info/MigrationInfoServiceImpl.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/database/base/Schema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/configuration/S3ClientFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/derby/DerbyConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/UrlResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/logging/LogCreator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/RowMapper.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/redshift/RedshiftConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/ResourceNameValidator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/executor/MigrationExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/StringUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/android/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/ClassPathLocationScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/SqlScript.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/MySQLConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/FeatureDetector.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/ResourceNameParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlite/SQLiteSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/executor/Context.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/ResourceName.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/oracle/OracleDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/command/DbClean.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/database/snowflake/SnowflakeSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/java/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/h2/H2Connection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/postgresql/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-jar/org/flywaydb/core/package-
info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/MigrationInfo.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/MigrationState.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/DatabaseExecutionStrategy.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/DriverDataSource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/mariadb/MariaDBDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sybasease/SybaseASEJTDSDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/mariadb/MariaDBDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/configuration/ConfigurationValidator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/license/Edition.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/license/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlite/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/callback/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/FirebirdSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/FirebirdParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/db2/DB2Database.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/configuration/FluentConfiguration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/database/h2/H2Schema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/logging/Log.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sybasease/SybaseASEParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/snowflake/SnowflakeDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/schemahistory/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sybasease/SybaseASEConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/filesystem/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/NoopResourceProvider.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/sql/SqlMigrationExecutorFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/classpath/DefaultUriResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/Results.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerEngineEdition.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/util/Pair.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/oracle/OracleTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/informix/InformixConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/snowflake/SnowflakeDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/Type.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/callback/Callback.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/callback/NoopCallbackExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/Result.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/snowflake/SnowflakeConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/synapse/SynapseTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/command/DbValidate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlite/SQLiteTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/resolver/MigrationResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/command/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/callback/DefaultCallbackExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/android/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlite/SQLiteDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/hsqldb/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sybasease/SybaseASEDatabase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/JdbcTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/slf4j/Slf4jLogCreator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/configuration/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/derby/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/callback/NoopCallback.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/migration/BaseJavaMigration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/redshift/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/MySQLSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlite/SQLiteConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/sql/SqlMigrationResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/Parser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/java/FixedJavaMigrationResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/InfoResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/informix/InformixSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachRetryingTransactionalExecutionTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/api/MigrationInfoService.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/saphana/SAPHANADatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/SqlScriptExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/clazz/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/StatementType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/configuration/ClassicConfiguration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/informix/InformixDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/saphana/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/synapse/SynapseConnection.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/schemahistory/JdbcTableSchemaHistory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/DefaultSqlScriptExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/command/DbBaseline.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/SqlStatementIterator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/snowflake/SnowflakeTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/strategy/RetryStrategy.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/java/ResolvedJavaMigration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/db2/DB2Schema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/info/MigrationInfoDumper.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/JdbcUtils.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/sqlserver/synapse/SynapseSchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/java/ScanningJavaMigrationResolver.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLAdvisoryLockTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/scanner/classpath/FileSystemClassPathLocationScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/cloud/CloudScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/OperationResultBase.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/oracle/OracleSqlScriptExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/db2/DB2Function.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/schemahistory/SchemaHistoryFactory.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/info/AppliedMigrationAttributes.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/saphana/SAPHANATable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/javautil/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/ResourceProvider.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBRetryingStrategy.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/TransactionalExecutionTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/firebird/FirebirdDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/MySQLDatabaseType.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/filesystem/FileSystemResource.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/ClassProvider.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/ResolvedMigrationComparator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/sql/SqlMigrationExecutor.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/h2/H2Parser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/cloud/gcs/GCSScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/LocationScannerCache.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/info/MigrationInfoImpl.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-

jar/org/flywaydb/core/internal/sqlscript/FlywaySqlScriptException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/mysql/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/derby/DerbySchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/command/DbMigrate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/scanner/android/AndroidScanner.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/schemahistory/AppliedMigration.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/exception/FlywaySqlException.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/jdbc/ExecutionTemplate.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/sqlscript/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/command/DbSchemas.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/UnboundedReadAheadReader.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/CompositeResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/informix/InformixParser.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/saphana/SAPHANASchema.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/command/DbInfo.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/MigrationVersion.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/base/Table.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resolver/MigrationInfoHelper.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/parser/Token.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/api/output/UndoResult.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/logging/log4j2/Log4j2LogCreator.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/redshift/RedshiftTable.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/resource/android/package-info.java
* /opt/cola/permits/1129909879_1612394249.98/0/flyway-core-7-3-1-sources-
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBSchema.java

1.93 swagger-annotations 2.1.9

1.93.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2017 SmartBear Software
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * http://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/servers/Servers.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/media/Encoding.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/callbacks/Callback.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/security/SecuritySchemes.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/info/Info.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/security/SecurityRequirement.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/security/SecurityScheme.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/callbacks/Callbacks.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/headers/Header.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/info/Contact.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/tags/Tag.java
* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-
jar/io/swagger/v3/oas/annotations/security/OAuthFlow.java
```

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/Operation.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/Parameter.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/servers/Server.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/Parameters.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/OAuthFlows.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/OAuthScope.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/servers/ServerVariable.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/extensions/Extensions.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/ExampleObject.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/info/License.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/OpenAPIDefinition.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/Schema.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/tags/Tags.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/security/SecurityRequirements.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/links/Link.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/responses/ApiResponse.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/ExternalDocumentation.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/DiscriminatorMapping.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/responses/ApiResponses.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/parameters/RequestBody.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/links/LinkParameter.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/Hidden.java

* /opt/cola/permits/1165124384_1620941199.55/0/swagger-annotations-2-1-9-sources-jar/io/swagger/v3/oas/annotations/media/Content.java

1.94 ntp 4.2.8p15

1.94.1 Available under license :

This file is automatically generated from html/copyright.html
Copyright Notice

jpg "Clone me," says Dolly sheepishly.

Last update: 4-Feb-2020 23:47 UTC

The following copyright notice applies to all files collectively called the Network Time Protocol Version 4 Distribution. Unless specifically declared otherwise in an individual file, this entire notice applies as if the text was explicitly included in the file.

```
*****
*
* Copyright (c) University of Delaware 1992-2015 *
*
* Permission to use, copy, modify, and distribute this software and *
* its documentation for any purpose with or without fee is hereby *
* granted, provided that the above copyright notice appears in all *
* copies and that both the copyright notice and this permission *
* notice appear in supporting documentation, and that the name *
* University of Delaware not be used in advertising or publicity *
* pertaining to distribution of the software without specific, *
* written prior permission. The University of Delaware makes no *
* representations about the suitability this software for any *
* purpose. It is provided "as is" without express or implied *
* warranty. *
*
*****
```

Content starting in 2011 from Harlan Stenn, Danny Mayer, and Martin Burnicki is:

```
*****
*
* Copyright (c) Network Time Foundation 2011-2020 *
*
* All Rights Reserved *
*
* Redistribution and use in source and binary forms, with or without *
* modification, are permitted provided that the following conditions *
* are met: *
* 1. Redistributions of source code must retain the above copyright *
* notice, this list of conditions and the following disclaimer. *
* 2. Redistributions in binary form must reproduce the above *
```

* copyright notice, this list of conditions and the following *
 * disclaimer in the documentation and/or other materials provided *
 * with the distribution. *
 *
 * THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS" AND ANY EXPRESS *
 * OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED *
 * WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE *
 * ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE *
 * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR *
 * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT *
 * OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR *
 * BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF *
 * LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT *
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE *
 * USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH *
 * DAMAGE. *

The following individuals contributed in part to the Network Time Protocol Distribution Version 4 and are acknowledged as authors of this work.

1. [1]Takao Abe <takao_abe@xurb.jp> Clock driver for JJY receivers
2. [2]Mark Andrews <mark_andrews@isc.org> Leitch atomic clock controller
3. [3]Bernd Altmeier <altmeier@atlsoft.de> hopf Elektronik serial line and PCI-bus devices
4. [4]Viraj Bais <vbais@mailman1.intel.com> and [5]Clayton Kirkwood <kirkwood@striderfm.intel.com> port to WindowsNT 3.5
5. [6]Michael Barone <michael,barone@lmco.com> GPSVME fixes
6. [7]Karl Berry <karl@owl.HQ.ileaf.com> syslog to file option
7. [8]Greg Brackley <greg.brackley@bigfoot.com> Major rework of WINNT port. Clean up recvbuf and iosignal code into separate modules.
8. [9]Marc Brett <Marc.Brett@westgeo.com> Magnavox GPS clock driver
9. [10]Piete Brooks <Piete.Brooks@cl.cam.ac.uk> MSF clock driver, Trimble PARSE support
10. [11]Nelson B Bolyard <nelson@bolyard.me> update and complete broadcast and crypto features in sntp
11. [12]Jean-Francois Boudreault <Jean-Francois.Boudreault@viagenie.qc.ca> IPv6 support
12. [13]Reg Clemens <reg@dwf.com> Oncore driver (Current maintainer)
13. [14]Steve Clift <clift@ml.csiro.au> OMEGA clock driver
14. [15]Casey Crellin <casey@csc.co.za> vxWorks (Tornado) port and help with target configuration
15. [16]Sven Dietrich <sven_dietrich@trimble.com> Palisade reference clock driver, NT adj. residuals, integrated Greg's Winnt port.
16. [17]John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX port
17. [18]Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Linux port
18. [19]Dennis Ferguson <dennis@mrbill.canet.ca> foundation code for

NTP Version 2 as specified in RFC-1119

19. [20]John Hay <jhay@icomtek.csir.co.za> IPv6 support and testing
20. [21]Dave Hart <davehart@davehart.com> General maintenance, Windows port interpolation rewrite
21. [22]Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X clock driver
22. [23]Glenn Hollinger <glenn@herald.usask.ca> GOES clock driver
23. [24]Mike Iglesias <iglesias@uci.edu> DEC Alpha port
24. [25]Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX port
25. [26]Jeff Johnson <jbj@chatham.usdesign.com> massive prototyping overhaul
26. [27]Hans Lambermont <Hans.Lambermont@nl.origin-it.com> or
[28]<H.Lambermont@chello.nl> ntpsweep
27. [29]Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver (Original author)
28. [30]Frank Kardel [31]<kardel (at) ntp (dot) org> PARSE <GENERIC> (driver 14 reference clocks), STREAMS modules for PARSE, support scripts, syslog cleanup, dynamic interface handling
29. [32]Johannes Maximilian Kuehn <kuehn@ntp.org> Rewrote sntp to comply with NTPv4 specification, ntpq saveconfig
30. [33]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX modifications, HPUX modifications
31. [34]Dave Katz <dkatz@cisco.com> RS/6000 AIX port
32. [35]Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
33. [36]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
34. [37]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
35. [38]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
36. [39]Danny Mayer <mayer@ntp.org>Network I/O, Windows Port, Code Maintenance
37. [40]David L. Mills <mills@udel.edu> Version 4 foundation, precision kernel; clock drivers: 1, 3, 4, 6, 7, 11, 13, 18, 19, 22, 36
38. [41]Wolfgang Moeller <moeller@gwdgv1.dnet.gwdg.de> VMS port
39. [42]Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility
40. [43]Tom Moore <tmoores@fivel.daytonoh.ncr.com> i386 svr4 port
41. [44]Kamal A Mostafa <kamal@whence.com> SCO OpenServer port
42. [45]Derek Mulcahy <derek@toybox.demon.co.uk> and [46]Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver
43. [47]Rob Neal <neal@ntp.org> Bancomm refclock and config/parse code maintenance
44. [48]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
45. [49]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port
46. [50]Wilfredo Sanchez <wsanchez@apple.com> added support for NetInfo
47. [51]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
48. [52]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
49. [53]Ray Schnitzler <schnitz@unipress.com> Unixware1 port

50. [54]Michael Shields <shields@tembel.org> USNO clock driver
 51. [55]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
 52. [56]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure makeover, various other bits (see the ChangeLog)
 53. [57]Kenneth Stone <ken@sdd.hp.com> HP-UX port
 54. [58]Ajit Thyagarajan <ajit@ee.udel.edu>IP multicast/anycast support
 55. [59]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp>TRAK clock driver
 56. [60]Brian Utterback <brian.utterback@oracle.com> General codebase, Solaris issues
 57. [61]Loganaden Velvindron <loganaden@gmail.com> Sandboxing (libseccomp) support
 58. [62]Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver
 59. [63]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD
-

References

1. mailto:%20takao_abe@xurb.jp
2. mailto:%20mark_andrews@isc.org
3. <mailto:%20altmeier@atsoft.de>
4. <mailto:%20vbais@mailman1.intel.co>
5. <mailto:%20kirkwood@striderfm.intel.com>
6. <mailto:%20michael.barone@lmco.com>
7. <mailto:%20karl@owl.HQ.ileaf.com>
8. <mailto:%20greg.brackley@bigfoot.com>
9. <mailto:%20Marc.Brett@westgeo.com>
10. <mailto:%20Piete.Brooks@cl.cam.ac.uk>
11. <mailto:%20nelson@bolyard.me>
12. <mailto:%20Jean-Francois.Boudreault@viagenie.qc.ca>
13. <mailto:%20reg@dwf.com>
14. <mailto:%20clift@ml.csiro.au>
15. <mailto:%20casey@csc.co.za>
16. mailto:%20Sven_Dietrich@trimble.COM
17. <mailto:%20dundas@salt.jpl.nasa.gov>
18. <mailto:%20duwe@immd4.informatik.uni-erlangen.de>
19. <mailto:%20dennis@mrbill.canet.ca>
20. <mailto:%20jhay@icomtek.csir.co.za>
21. <mailto:%20davehart@davehart.com>
22. <mailto:%20neoclock4x@linum.com>
23. <mailto:%20glenn@herald.usask.ca>
24. <mailto:%20iglesias@uci.edu>
25. <mailto:%20jagubox.gsfc.nasa.gov>
26. <mailto:%20jbj@chatham.usdesign.com>
27. <mailto:%20Hans.Lambermont@nl.origin-it.com>
28. <mailto:H.Lambermont@chello.nl>
29. <mailto:%20phk@FreeBSD.ORG>

30. <http://www4.informatik.uni-erlangen.de/%7ekardel>
31. <mailto:%20kardel%20%28at%29%20ntp%20%28dot%29%20org>
32. <mailto:kuehn@ntp.org>
33. <mailto:%20jones@hermes.chpc.utexas.edu>
34. <mailto:%20dkatz@cisco.com>
35. <mailto:%20leres@ee.lbl.gov>
36. <mailto:%20lindholm@ucs.ubc.ca>
37. <mailto:%20louie@ni.umd.edu>
38. <mailto:%20thorinn@diku.dk>
39. <mailto:%20mayer@ntp.org>
40. <mailto:%20mills@udel.edu>
41. <mailto:%20moeller@gwdgv1.dnet.gwdg.de>
42. <mailto:%20mogul@pa.dec.com>
43. <mailto:%20tmoore@fielvel.daytonoh.ncr.com>
44. <mailto:%20kamal@whence.com>
45. <mailto:%20derek@toybox.demon.co.uk>
46. <mailto:%20d@hd.org>
47. <mailto:%20neal@ntp.org>
48. <mailto:%20Rainer.Pruy@informatik.uni-erlangen.de>
49. <mailto:%20dirce@zk3.dec.com>
50. <mailto:%20wsanchez@apple.com>
51. <mailto:%20mrapple@quack.kfu.com>
52. <mailto:%20jack@innovativeinternet.com>
53. <mailto:%20schnittz@unipress.com>
54. <mailto:%20shields@tembel.org>
55. <mailto:%20pebbles.jpl.nasa.gov>
56. <mailto:%20harlan@pfcs.com>
57. <mailto:%20ken@sdd.hp.com>
58. <mailto:%20ajit@ee.udel.edu>
59. <mailto:%20tsuruoka@nc.fukuoka-u.ac.jp>
60. <mailto:%20brian.utterback@oracle.com>
61. <mailto:%20loganaden@gmail.com>
62. <mailto:%20vixie@vix.com>
63. <mailto:%20Ulrich.Windl@rz.uni-regensburg.de>

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time

a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser

General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Libevent is available for use under the following license, commonly known as the 3-clause (or "modified") BSD license:

=====

Copyright (c) 2000-2007 Niels Provos <provos@citi.umich.edu>
Copyright (c) 2007-2012 Niels Provos and Nick Mathewson

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the

documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions of Libevent are based on works by others, also made available by them under the three-clause BSD license above. The copyright notices are available in the corresponding source files; the license is as above. Here's a list:

log.c:

Copyright (c) 2000 Dug Song <dugsong@monkey.org>
Copyright (c) 1993 The Regents of the University of California.

strlcpy.c:

Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>

win32select.c:

Copyright (c) 2003 Michael A. Davis <mike@datanerds.net>

evport.c:

Copyright (c) 2007 Sun Microsystems

ht-internal.h:

Copyright (c) 2002 Christopher Clark

minheap-internal.h:

Copyright (c) 2006 Maxim Yegorushkin <maxim.yegorushkin@gmail.com>

=====

The arc4module is available under the following, sometimes called the "OpenBSD" license:

Copyright (c) 1996, David Mazieres <dm@uun.org>
Copyright (c) 2008, Damien Miller <djm@openbsd.org>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====

The Windows timer code is based on code from libutp, which is distributed under this license, sometimes called the "MIT" license.

Copyright (c) 2010 BitTorrent, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does

not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a

covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) by Bruce Korb - all rights reserved

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) by Bruce Korb - all rights reserved
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.
Copyright (c) 2010 Serge A. Zaitsev

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.95 brotli 1.0.7-6ubuntu0.1

1.95.1 Available under license :

Copyright (c) 2009, 2010, 2013-2016 by the Brotli Authors.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.96 lvm2 2.02.79

1.96.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts

as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is

linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact

all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact

that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the

source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY

YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be

mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.97 flyway-spring5-test 6.4.0

1.97.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
# Licensed under the Apache License, Version 2.0 (the "License");  
# you may not use this file except in compliance with the License.  
# You may obtain a copy of the License at  
#   http://www.apache.org/licenses/LICENSE-2.0  
# distributed under the License is distributed on an "AS IS" BASIS,
```

Found in path(s):

```
* /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/flyway.default.properties
```

No license file was found, but licenses were detected in source scan.

```
/**
```

```
* Copyright (C) 2011-2020 the original author or authors.
```

```
*
```

```
* Licensed under the Apache License, Version 2.0 (the "License");
```

```
* you may not use this file except in compliance with the License.
```

```
* You may obtain a copy of the License at
```

```
*
```

```
*   http://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
```

```
* distributed under the License is distributed on an "AS IS" BASIS,
```

```
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
* See the License for the specific language governing permissions and
```

```
* limitations under the License.
```

*/

Found in path(s):

- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/junit5/annotation/FlywayTestExtension.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/junit5/FlywayTestExtension.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/junit/FlywayTestExecutionListener.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/ExecutionListenerHelper.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/junit/FlywayHelperFactory.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/junit5/annotation/package-info.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/package-info.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/junit/package-info.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/FlywayTestExecutionListener.java
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/org/flywaydb/test/FlywayHelperFactory.java

No license file was found, but licenses were detected in source scan.

2020 the original author or authors.

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Found in path(s):

- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/context/dataSourceSingleContext.xml
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/context/simple_applicationContext.xml
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-jar/context/flywayContainerContext.xml
- * /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-

```
jar/context/flywaySingleContext.xml
* /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-
jar/context/secondFlywayContainerContext.xml
* /opt/cola/permits/1129909886_1612394261.4/0/flyway-spring5-test-6-4-0-sources-
jar/context/flywayPropertiesContext.xml
```

1.98 xmltooling 3.0.5-1build1

1.98.1 Available under license :

OpenSAML XMLTooling C++ Library

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>).

This project uses libraries covered by the Lesser GNU Public License. Source code for these libraries is available on request.

This product includes software developed, copyrighted, and contributed by:

The Ohio State University
SWITCH, Zurich, CH

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether

this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or

other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the

ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add

an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH

DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including

the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each

Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

/* =====

- * Copyright (c) 1998-2004 The OpenSSL Project. All rights reserved.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- *
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- *
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in
- * the documentation and/or other materials provided with the
- * distribution.
- *
- * 3. All advertising materials mentioning features or use of this
- * software must display the following acknowledgment:
- * "This product includes software developed by the OpenSSL Project
- * for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
- *
- * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
- * endorse or promote products derived from this software without
- * prior written permission. For written permission, please contact
- * openssl-core@openssl.org.
- *
- * 5. Products derived from this software may not be called "OpenSSL"

* nor may "OpenSSL" appear in their names without prior written
 * permission of the OpenSSL Project.
 *
 * 6. Redistributions of any form whatsoever must retain the following
 * acknowledgment:
 * "This product includes software developed by the OpenSSL Project
 * for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"
 *
 * THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
 * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 * PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
 * ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
 * OF THE POSSIBILITY OF SUCH DAMAGE.
 * =====
 *
 * This product includes cryptographic software written by Eric Young
 * (eay@cryptsoft.com). This product includes software written by Tim
 * Hudson (tjh@cryptsoft.com).
 *
 */

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
 * All rights reserved.
 *
 * This package is an SSL implementation written
 * by Eric Young (eay@cryptsoft.com).
 * The implementation was written so as to conform with Netscapes SSL.
 *
 * This library is free for commercial and non-commercial use as long as
 * the following conditions are aheared to. The following conditions
 * apply to all code found in this distribution, be it the RC4, RSA,
 * lhash, DES, etc., code; not just the SSL code. The SSL documentation
 * included with this distribution is covered by the same copyright terms
 * except that the holder is Tim Hudson (tjh@cryptsoft.com).
 *
 * Copyright remains Eric Young's, and as such any Copyright notices in
 * the code are not to be removed.
 * If this package is used in a product, Eric Young should be given attribution

- * as the author of the parts of the library used.
- * This can be in the form of a textual message at program startup or
- * in documentation (online or textual) provided with the package.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software
- * must display the following acknowledgement:
- * "This product includes cryptographic software written by
- * Eric Young (eay@cryptsoft.com)"
- * The word 'cryptographic' can be left out if the routines from the library
- * being used are not cryptographic related :-).
- * 4. If you include any Windows specific code (or a derivative thereof) from
- * the apps directory (application code) you must include an acknowledgement:
- * "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- *
- * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND
- * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- * ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- * SUCH DAMAGE.
- *
- * The licence and distribution terms for any publically available version or
- * derivative of this code cannot be changed. i.e. this code cannot simply be
- * copied and put under another distribution licence
- * [including the GNU Public Licence.]
- */

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2004, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

1.99 luxon 1.25.1

1.99.1 Available under license :

MIT License

Copyright (c) Microsoft Corporation.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

1.100 syslinux 4.07

1.100.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further

restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may

consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Lua License

Lua is licensed under the terms of the MIT license reproduced below. This means that Lua is free software and can be used for both academic and commercial purposes at absolutely no cost.

For details and rationale, see <http://www.lua.org/license.html> .

=====

Copyright (C) 1994-2008 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

(end of COPYRIGHT)

The Syslinux logo is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license.

libpng versions 1.2.6, August 15, 2004, through 1.2.44, June 26, 2010, are Copyright (c) 2004, 2006-2009 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux

Eric S. Raymond

Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane

Glenn Randers-Pehrson

Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger
Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler

Kevin Bracey

Sam Bushell

Magnus Holmgren
Greg Roelofs
Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are
Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors"
is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors
and Group 42, Inc. disclaim all warranties, expressed or implied,
including, without limitation, the warranties of merchantability and of
fitness for any purpose. The Contributing Authors and Group 42, Inc.
assume no liability for direct, indirect, incidental, special, exemplary,
or consequential damages, which may result from the use of the PNG
Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this
source code, or portions hereof, for any purpose, without fee, subject
to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not
be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any
source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without
fee, and encourage the use of this source code as a component to
supporting the PNG file format in commercial products. If you use this
source code in a product, acknowledgment is not required but would be
appreciated.

A "png_get_copyright" function is available, for convenient use in "about"
boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31) and "pngnow.png" (98x31).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson

glennrp at users.sourceforge.net

June 26, 2010

libcom32 and libutil are licensed under the MIT license:

```
## -----  
##  
## Copyright 2004-2009 H. Peter Anvin - All Rights Reserved  
## Portions Copyright 2009 Intel Corporation; author: H. Peter Anvin  
##  
## Permission is hereby granted, free of charge, to any person  
## obtaining a copy of this software and associated documentation  
## files (the "Software"), to deal in the Software without  
## restriction, including without limitation the rights to use,  
## copy, modify, merge, publish, distribute, sublicense, and/or  
## sell copies of the Software, and to permit persons to whom  
## the Software is furnished to do so, subject to the following  
## conditions:  
##  
## The above copyright notice and this permission notice shall  
## be included in all copies or substantial portions of the Software.  
##  
## THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
## EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES  
## OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
## NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT  
## HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,  
## WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING  
## FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR  
## OTHER DEALINGS IN THE SOFTWARE.  
##  
## -----
```

The files in the sample, modules and libgpl directories are mostly under the GNU GPL (see the file COPYING in the directory above.)

In general gPXE files are licensed under the GPL. GPLed files are in general either from Linux or have been explicitly put under GPL by the authors. The license for a file is usually documented at the top of the file.

A few files are inherited from FreeBSD netboot and therefore can be

used under BSD or GPL. Documented in this file are some of the non-GPL'ed files. If the internal documentation for a file disagrees with what is documented in this file, the internal documentation for the file shall be override this file.

File Copyright status

src/core/misc.c BSD
src/drivers/net/3c509.c BSD
src/drivers/net/3c509.h BSD
src/drivers/net/3c595.c BSD
src/drivers/net/3c595.h BSD
src/drivers/net/3c90x.c Open Source
src/drivers/net/epic100.c None
src/drivers/net/epic100.h None
src/drivers/net/ns8390.c BSD
src/drivers/net/ns8390.h BSD
src/arch/i386/include/bits/string.h None

The EFI headers contained herein are copied from the EFI Development Kit, available from <http://www.tianocore.org> and published under the following licence:

BSD License from Intel
Copyright (c) 2004, Intel Corporation
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This licence applies only to files that are part of the EFI Development Kit. Other files may contain their own licence terms, or may fall under the standard gPXE GPL licence.

1.101 libiconv 1.14

1.101.1 Available under license :

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if

you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not

covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If

identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding

machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the

Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public

License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library 'Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!
GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if

you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an

implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under

the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This

License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and

only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as

part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your

license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the

rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License,

section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD

PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
```

This program comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

GNU LIBICONV - character set conversion library

This library provides an iconv() implementation, for use on systems which don't have one, or whose implementation cannot convert from/to Unicode.

It provides support for the encodings:

European languages

ASCII, ISO-8859-{1,2,3,4,5,7,9,10,13,14,15,16},
KOI8-R, KOI8-U, KOI8-RU,
CP{1250,1251,1252,1253,1254,1257}, CP{850,866,1131},
Mac{Roman,CentralEurope,Iceland,Croatian,Romania},
Mac{Cyrillic,Ukraine,Greek,Turkish},
Macintosh

Semitic languages

ISO-8859-{6,8}, CP{1255,1256}, CP862, Mac{Hebrew,Arabic}

Japanese

EUC-JP, SHIFT_JIS, CP932, ISO-2022-JP, ISO-2022-JP-2, ISO-2022-JP-1

Chinese

EUC-CN, HZ, GBK, CP936, GB18030, EUC-TW, BIG5, CP950, BIG5-HKSCS,
BIG5-HKSCS:2004, BIG5-HKSCS:2001, BIG5-HKSCS:1999, ISO-2022-CN,
ISO-2022-CN-EXT

Korean

EUC-KR, CP949, ISO-2022-KR, JOHAB

Armenian

ARMSCII-8

Georgian

Georgian-Academy, Georgian-PS

Tajik

KOI8-T
Kazakh
PT154, RK1048
Thai
ISO-8859-11, TIS-620, CP874, MacThai
Laotian
MuleLao-1, CP1133
Vietnamese
VISCII, TCVN, CP1258
Platform specifics
HP-ROMAN8, NEXTSTEP
Full Unicode
UTF-8
UCS-2, UCS-2BE, UCS-2LE
UCS-4, UCS-4BE, UCS-4LE
UTF-16, UTF-16BE, UTF-16LE
UTF-32, UTF-32BE, UTF-32LE
UTF-7
C99, JAVA
Full Unicode, in terms of 'uint16_t' or 'uint32_t'
(with machine dependent endianness and alignment)
UCS-2-INTERNAL, UCS-4-INTERNAL
Locale dependent, in terms of 'char' or 'wchar_t'
(with machine dependent endianness and alignment, and with OS and
locale dependent semantics)
char, wchar_t
The empty encoding name "" is equivalent to "char": it denotes the
locale dependent character encoding.

When configured with the option `--enable-extra-encodings`, it also provides support for a few extra encodings:

European languages
CP{437,737,775,852,853,855,857,858,860,861,863,865,869,1125}
Semitic languages
CP864
Japanese
EUC-JISX0213, Shift_JISX0213, ISO-2022-JP-3
Chinese
BIG5-2003 (experimental)
Turkmen
TDS565
Platform specifics
ATARIST, RISCOS-LATIN1

It can convert from any of these encodings to any other, through Unicode conversion.

It has also some limited support for transliteration, i.e. when a character cannot be represented in the target character set, it can be approximated through one or several similarly looking characters. Transliteration is activated when `//TRANSLIT` is appended to the target encoding name.

`libiconv` is for you if your application needs to support multiple character encodings, but that support lacks from your system.

Installation

As usual for GNU packages:

```
$ ./configure --prefix=/usr/local
$ make
$ make install
```

After installing GNU `libiconv` for the first time, it is recommended to recompile and reinstall GNU `gettext`, so that it can take advantage of `libiconv`.

On systems other than GNU/Linux, the `iconv` program will be internationalized only if GNU `gettext` has been built and installed before GNU `libiconv`. This means that the first time GNU `libiconv` is installed, we have a circular dependency between the GNU `libiconv` and GNU `gettext` packages, which can be resolved by building and installing either

- first `libiconv`, then `gettext`, then `libiconv` again,

or (on systems supporting shared libraries, excluding AIX)

- first `gettext`, then `libiconv`, then `gettext` again.

Recall that before building a package for the second time, you need to erase the traces of the first build by running `"make distclean"`.

This library can be built and installed in two variants:

- The library mode. This works on all systems, and uses a library `'libiconv.so'` and a header file `'<iconv.h>'`. (Both are installed through `"make install"`.)

To use it, simply `#include <iconv.h>` and use the functions.

To use it in an autoconfiguring package:

- If you don't use `automake`, append `m4/iconv.m4` to your `aclocal.m4` file.
- If you do use `automake`, add `m4/iconv.m4` to your `m4` macro repository.
- Add to the link command line of libraries and executables that use the functions the placeholder `@LIBICONV@` (or, if using `libtool` for the link, `@LTLIBICONV@`). If you use `automake`, the right place for

these additions are the *_LDADD variables.

Note that 'iconv.m4' is also part of the GNU gettext package, which installs it in /usr/local/share/aclocal/iconv.m4.

- The libc plug/override mode. This works on GNU/Linux, Solaris and OSF/1 systems only. It is a way to get good iconv support without having glibc-2.1.

It installs a library 'preloadable_libiconv.so'. This library can be used with LD_PRELOAD, to override the iconv* functions present in the C library.

On GNU/Linux and Solaris:

```
$ export LD_PRELOAD=/usr/local/lib/preloadable_libiconv.so
```

On OSF/1:

```
$ export _RLD_LIST=/usr/local/lib/preloadable_libiconv.so:DEFAULT
```

A program's source need not be modified, the program need not even be recompiled. Just set the LD_PRELOAD environment variable, that's it!

Copyright

The libiconv and libcharset _libraries_ and their header files are under LGPL, see file COPYING.LIB.

The iconv _program_ and the documentation are under GPL, see file COPYING.

Download

<http://ftp.gnu.org/gnu/libiconv/libiconv-1.14.tar.gz>

Homepage

<http://www.gnu.org/software/libiconv/>

Bug reports to

<bug-gnu-libiconv@gnu.org>

Bruno Haible <bruno@clisp.org>

1.102 acpid 2.0.11

1.102.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free

software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program; if not, write to the Free Software  
Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.103 jandex 2.1.3.Final

1.103.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * JBoss, Home of Professional Open Source.
 * Copyright 2014 Red Hat, Inc., and individual contributors
 * as indicated by the @author tags.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/ParameterizedType.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/Utils.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/FieldInfoGenerator.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/MethodInfoGenerator.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/ThrowsTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/TypeParameterBoundTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/EmptyTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
```

jar/org/jboss/jandex/PositionBasedTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/TypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/AnnotationTargetFilterCollection.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/IndexWriterImpl.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/TypeParameterTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/VoidType.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/IndexReaderImpl.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/ArrayType.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/IndexWriterV2.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/ClassExtendsTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/MethodParameterTypeTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/MethodInternal.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/WildcardType.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/GenericSignatureParser.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/TypeVariable.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/UnresolvedTypeVariable.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-
jar/org/jboss/jandex/IndexReaderV2.java

No license file was found, but licenses were detected in source scan.

/*

- * JBoss, Home of Professional Open Source.
- * Copyright 2013 Red Hat, Inc., and individual contributors
- * as indicated by the @author tags.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <http://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,

- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/PackedDataOutputStream.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/ClassInfo.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/IndexWriter.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/DotName.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/FieldInternal.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/FieldInfo.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/NameTable.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/CompositeIndex.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/IndexWriterV1.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/IndexView.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/StrongInternPool.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/Indexer.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/JarIndexer.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/JandexAntTask.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/MethodInfo.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/ClassType.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/IndexReaderV1.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/Result.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/Index.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/MethodParameterInfo.java
- * /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/UnsupportedVersion.java

* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/AnnotationValue.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/AnnotationTarget.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/PrimitiveType.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/Main.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/PackedDataInputStream.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/AnnotationInstance.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/IndexReader.java
* /opt/ws_local/PERMITS_SQL/1063930911_1593103343.43/0/jandex-2-1-3-final-sources-jar/org/jboss/jandex/Type.java

1.104 pytest 4.6.3

1.104.1 Available under license :

Copyright (c) 2010 by Armin Ronacher.

Some rights reserved.

Redistribution and use in source and binary forms of the theme, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * The names of the contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

We kindly ask you to only use these themes in an unmodified manner just for Flask and Flask-related products, not for unrelated projects. If you like the visual style and want to use it for your own projects, please consider making some larger changes to the themes (such as changing font faces, sizes, colors or margins).

THIS THEME IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS THEME, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2004-2019 Holger Krekel and others

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.105 webrtc m44

1.105.1 Available under license :

Copyright (c) 2011, The WebRTC project authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the

distribution.

* Neither the name of Google nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This source tree contains third party source code which is governed by third party licenses. Paths to the files and associated licenses are collected here.

Files governed by third party licenses:

common_audio/fft4g.c
common_audio/signal_processing/spl_sqrt_floor.c
common_audio/signal_processing/spl_sqrt_floor_arm.S
modules/audio_coding/codecs/g711/main/source/g711.c
modules/audio_coding/codecs/g711/main/source/g711.h
modules/audio_coding/codecs/g722/main/source/g722_decode.c
modules/audio_coding/codecs/g722/main/source/g722_enc_dec.h
modules/audio_coding/codecs/g722/main/source/g722_encode.c
modules/audio_coding/codecs/isac/main/source/fft.c
modules/audio_device/mac/portaudio/pa_memorybarrier.h
modules/audio_device/mac/portaudio/pa_ringbuffer.c
modules/audio_device/mac/portaudio/pa_ringbuffer.h
modules/audio_processing/aec/aec_rdfc.c
system_wrappers/source/condition_variable_event_win.cc
system_wrappers/source/set_thread_name_win.h
system_wrappers/source/spreadsortlib/constants.hpp
system_wrappers/source/spreadsortlib/spreadsort.hpp

Individual licenses for each file:

Files:

common_audio/signal_processing/spl_sqrt_floor.c
common_audio/signal_processing/spl_sqrt_floor_arm.S

License:

/*

* Written by Wilco Dijkstra, 1996. The following email exchange establishes the

* license.
*
* From: Wilco Dijkstra <Wilco.Dijkstra@ntlworld.com>
* Date: Fri, Jun 24, 2011 at 3:20 AM
* Subject: Re: sqrt routine
* To: Kevin Ma <kma@google.com>
* Hi Kevin,
* Thanks for asking. Those routines are public domain (originally posted to
* comp.sys.arm a long time ago), so you can use them freely for any purpose.
* Cheers,
* Wilco

* ----- Original Message -----

* From: "Kevin Ma" <kma@google.com>
* To: <Wilco.Dijkstra@ntlworld.com>
* Sent: Thursday, June 23, 2011 11:44 PM
* Subject: Fwd: sqrt routine
* Hi Wilco,
* I saw your sqrt routine from several web sites, including
* <http://www.finesse.demon.co.uk/steven/sqrt.html>.
* Just wonder if there's any copyright information with your Successive
* approximation routines, or if I can freely use it for any purpose.
* Thanks.
* Kevin
*/

Files:

modules/audio_coding/codecs/g711/main/source/g711.c
modules/audio_coding/codecs/g711/main/source/g711.h

License:

/*
* SpanDSP - a series of DSP components for telephony
*
* g711.h - In line A-law and u-law conversion routines
*
* Written by Steve Underwood <steveu@coppice.org>
*
* Copyright (C) 2001 Steve Underwood
*
* Despite my general liking of the GPL, I place this code in the
* public domain for the benefit of all mankind - even the slimy
* ones who might try to propertize my work and use it to my
* detriment.
*/

Files:

modules/audio_coding/codecs/g722/main/source/g722_decode.c

modules/audio_coding/codecs/g722/main/source/g722_enc_dec.h
modules/audio_coding/codecs/g722/main/source/g722_encode.c

License:

```
/*  
* SpanDSP - a series of DSP components for telephony  
*  
* g722_decode.c - The ITU G.722 codec, decode part.  
*  
* Written by Steve Underwood <steveu@coppice.org>  
*  
* Copyright (C) 2005 Steve Underwood  
*  
* Despite my general liking of the GPL, I place my own contributions  
* to this code in the public domain for the benefit of all mankind -  
* even the slimy ones who might try to propertize my work and use it  
* to my detriment.  
*  
* Based in part on a single channel G.722 codec which is:  
*  
* Copyright (c) CMU 1993  
* Computer Science, Speech Group  
* Chengxiang Lu and Alex Hauptmann  
*/
```

Files:

modules/audio_coding/codecs/isac/main/source/fft.c

License:

```
/*  
* Copyright(c)1995,97 Mark Olesen <olesen@me.QueensU.CA>  
* Queen's Univ at Kingston (Canada)  
*  
* Permission to use, copy, modify, and distribute this software for  
* any purpose without fee is hereby granted, provided that this  
* entire notice is included in all copies of any software which is  
* or includes a copy or modification of this software and in all  
* copies of the supporting documentation for such software.  
*  
* THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR  
* IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR QUEEN'S  
* UNIVERSITY AT KINGSTON MAKES ANY REPRESENTATION OR WARRANTY OF ANY  
* KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS  
* FITNESS FOR ANY PARTICULAR PURPOSE.  
*  
* All of which is to say that you can do what you like with this  
* source code provided you don't try to sell it as your own and you  
* include an unaltered copy of this message (including the
```

* copyright).
*
* It is also implicitly understood that bug fixes and improvements
* should make their way back to the general Internet community so
* that everyone benefits.
*/

Files:

modules/audio_device/mac/portaudio/pa_memorybarrier.h
modules/audio_device/mac/portaudio/pa_ringbuffer.c
modules/audio_device/mac/portaudio/pa_ringbuffer.h

License:

/*
* \$Id: pa_memorybarrier.h 1240 2007-07-17 13:05:07Z bjornroche \$
* Portable Audio I/O Library
* Memory barrier utilities
*
* Author: Bjorn Roche, XO Audio, LLC
*
* This program uses the PortAudio Portable Audio Library.
* For more information see: <http://www.portaudio.com>
* Copyright (c) 1999-2000 Ross Bencina and Phil Burk
*
* Permission is hereby granted, free of charge, to any person obtaining
* a copy of this software and associated documentation files
* (the "Software"), to deal in the Software without restriction,
* including without limitation the rights to use, copy, modify, merge,
* publish, distribute, sublicense, and/or sell copies of the Software,
* and to permit persons to whom the Software is furnished to do so,
* subject to the following conditions:
*
* The above copyright notice and this permission notice shall be
* included in all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR
* ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF
* CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
*/

/*
* The text above constitutes the entire PortAudio license; however,
* the PortAudio community also makes the following non-binding requests:
*

* Any person wishing to distribute modifications to the Software is
* requested to send the modifications to the original developer so that
* they can be incorporated into the canonical version. It is also
* requested that these non-binding requests be included along with the
* license above.

*/

/*

* \$Id: pa_ringbuffer.c 1421 2009-11-18 16:09:05Z bjornroche \$

* Portable Audio I/O Library

* Ring Buffer utility.

*

* Author: Phil Burk, <http://www.softsynth.com>

* modified for SMP safety on Mac OS X by Bjorn Roche

* modified for SMP safety on Linux by Leland Lucius

* also, allowed for const where possible

* modified for multiple-byte-sized data elements by Sven Fischer

*

* Note that this is safe only for a single-thread reader and a

* single-thread writer.

*

* This program uses the PortAudio Portable Audio Library.

* For more information see: <http://www.portaudio.com>

* Copyright (c) 1999-2000 Ross Bencina and Phil Burk

*

* Permission is hereby granted, free of charge, to any person obtaining

* a copy of this software and associated documentation files

* (the "Software"), to deal in the Software without restriction,

* including without limitation the rights to use, copy, modify, merge,

* publish, distribute, sublicense, and/or sell copies of the Software,

* and to permit persons to whom the Software is furnished to do so,

* subject to the following conditions:

*

* The above copyright notice and this permission notice shall be

* included in all copies or substantial portions of the Software.

*

* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR

* ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF

* CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION

* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

*/

/*

* The text above constitutes the entire PortAudio license; however,

* the PortAudio community also makes the following non-binding requests:

*
* Any person wishing to distribute modifications to the Software is
* requested to send the modifications to the original developer so that
* they can be incorporated into the canonical version. It is also
* requested that these non-binding requests be included along with the
* license above.
*/

Files:

common_audio/fft4g.c
modules/audio_processing/aec/aec_rdfc.c

License:

/*
* <http://www.kurims.kyoto-u.ac.jp/~ooura/fft.html>
* Copyright Takuya OOURA, 1996-2001
*
* You may use, copy, modify and distribute this code for any purpose (include
* commercial use) and without fee. Please refer to this package when you modify
* this code.
*/

Files:

system_wrappers/source/condition_variable_event_win.cc

Source:

<http://www1.cse.wustl.edu/~schmidt/ACE-copying.html>

License:

Copyright and Licensing Information for ACE(TM), TAO(TM), CIAO(TM), DAnCE(TM),
and CoSMIC(TM)

ACE(TM), TAO(TM), CIAO(TM), DAnCE(TM), and CoSMIC(TM) (henceforth referred to
as "DOC software") are copyrighted by Douglas C. Schmidt and his research
group at Washington University, University of California, Irvine, and
Vanderbilt University, Copyright (c) 1993-2009, all rights reserved. Since DOC
software is open-source, freely available software, you are free to use,
modify, copy, and distribute--perpetually and irrevocably--the DOC software
source code and object code produced from the source, as well as copy and
distribute modified versions of this software. You must, however, include this
copyright statement along with any code built using DOC software that you
release. No copyright statement needs to be provided if you just ship binary
executables of your software products.

You can use DOC software in commercial and/or binary software releases and are
under no obligation to redistribute any of your source code that is built
using DOC software. Note, however, that you may not misappropriate the DOC
software code, such as copyrighting it yourself or claiming authorship of the
DOC software code, in a way that will prevent DOC software from being

distributed freely using an open-source development model. You needn't inform anyone that you're using DOC software in your software, though we encourage you to let us know so we can promote your project in the DOC software success stories.

The ACE, TAO, CIAO, DAnCE, and CoSMIC web sites are maintained by the DOC Group at the Institute for Software Integrated Systems (ISIS) and the Center for Distributed Object Computing of Washington University, St. Louis for the development of open-source software as part of the open-source software community. Submissions are provided by the submitter ``as is" with no warranties whatsoever, including any warranty of merchantability, noninfringement of third party intellectual property, or fitness for any particular purpose. In no event shall the submitter be liable for any direct, indirect, special, exemplary, punitive, or consequential damages, including without limitation, lost profits, even if advised of the possibility of such damages. Likewise, DOC software is provided as is with no warranties of any kind, including the warranties of design, merchantability, and fitness for a particular purpose, noninfringement, or arising from a course of dealing, usage or trade practice. Washington University, UC Irvine, Vanderbilt University, their employees, and students shall have no liability with respect to the infringement of copyrights, trade secrets or any patents by DOC software or any part thereof. Moreover, in no event will Washington University, UC Irvine, or Vanderbilt University, their employees, or students be liable for any lost revenue or profits or other special, indirect and consequential damages.

DOC software is provided with no support and without any obligation on the part of Washington University, UC Irvine, Vanderbilt University, their employees, or students to assist in its use, correction, modification, or enhancement. A number of companies around the world provide commercial support for DOC software, however. DOC software is Y2K-compliant, as long as the underlying OS platform is Y2K-compliant. Likewise, DOC software is compliant with the new US daylight savings rule passed by Congress as "The Energy Policy Act of 2005," which established new daylight savings times (DST) rules for the United States that expand DST as of March 2007. Since DOC software obtains time/date and calendaring information from operating systems users will not be affected by the new DST rules as long as they upgrade their operating systems accordingly.

The names ACE(TM), TAO(TM), CIAO(TM), DAnCE(TM), CoSMIC(TM), Washington University, UC Irvine, and Vanderbilt University, may not be used to endorse or promote products or services derived from this source without express written permission from Washington University, UC Irvine, or Vanderbilt University. This license grants no permission to call products or services derived from this source ACE(TM), TAO(TM), CIAO(TM), DAnCE(TM), or CoSMIC(TM), nor does it grant permission for the name Washington University, UC Irvine, or Vanderbilt University to appear in their names.

Files:

system_wrappers/source/set_thread_name_win.h

Source:

<http://msdn.microsoft.com/en-us/cc300389.aspx#P>

License:

This license governs use of code marked as sample or example available on this web site without a license agreement, as provided under the section above titled NOTICE SPECIFIC TO SOFTWARE AVAILABLE ON THIS WEB SITE. If you use such code (the software), you accept this license. If you do not accept the license, do not use the software.

1. Definitions

The terms reproduce, reproduction, derivative works, and distribution have the same meaning here as under U.S. copyright law.

A contribution is the original software, or any additions or changes to the software.

A contributor is any person that distributes its contribution under this license.

Licensed patents are a contributors patent claims that read directly on its contribution.

2. Grant of Rights

(A) Copyright Grant - Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free copyright license to reproduce its contribution, prepare derivative works of its contribution, and distribute its contribution or any derivative works that you create.

(B) Patent Grant - Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free license under its licensed patents to make, have made, use, sell, offer for sale, import, and/or otherwise dispose of its contribution in the software or derivative works of the contribution in the software.

3. Conditions and Limitations

(A) No Trademark License- This license does not grant you rights to use any contributors name, logo, or trademarks.

(B) If you bring a patent claim against any contributor over patents that you

claim are infringed by the software, your patent license from such contributor to the software ends automatically.

(C) If you distribute any portion of the software, you must retain all copyright, patent, trademark, and attribution notices that are present in the software.

(D) If you distribute any portion of the software in source code form, you may do so only under this license by including a complete copy of this license with your distribution. If you distribute any portion of the software in compiled or object code form, you may only do so under a license that complies with this license.

(E) The software is licensed as-is. You bear the risk of using it. The contributors give no express warranties, guarantees or conditions. You may have additional consumer rights under your local laws which this license cannot change. To the extent permitted under your local laws, the contributors exclude the implied warranties of merchantability, fitness for a particular purpose and non-infringement.

(F) Platform Limitation - The licenses granted in sections 2(A) and 2(B) extend only to the software or derivative works that you create that run on a Microsoft Windows operating system product.

Files:

system_wrappers/source/spreadsortlib/constants.hpp
system_wrappers/source/spreadsortlib/spreadsort.hpp

License:

/*Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT

SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.*/

1.106 jackson-annotations 2.11.2

1.106.1 Available under license :

This copy of Jackson JSON processor annotations is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

1.107 mongodb 5.0.6

1.107.1 Available under license :

Server Side Public License
VERSION 1, OCTOBER 16, 2018

Copyright © 2018 MongoDB, Inc.

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

TERMS AND CONDITIONS

0. Definitions.

“This License” refers to Server Side Public License.

“Copyright” also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

“The Program” refers to any copyrightable work licensed under this License. Each licensee is addressed as “you”. “Licensees” and “recipients” may be individuals or organizations.

To “modify” a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a “modified version” of the earlier work or a work “based on” the earlier work.

A “covered work” means either the unmodified Program or a work based on the Program.

To “propagate” a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To “convey” a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays “Appropriate Legal Notices” to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language. The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System

Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program, subject to section 13. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law. Subject to section 13, you may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is

effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program. You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to “keep intact all notices”.
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on

a volume of a storage or distribution medium, is called an “aggregate” if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you

inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A “User Product” is either (1) a “consumer product”, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, “normally used” refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

“Installation Information” for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions. When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those

licensors and authors.

All other non-permissive additional terms are considered “further restrictions” within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms. Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An “entity transaction” is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A “contributor” is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's “contributor version”.

A contributor's “essential patent claims” are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, “control” includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a “patent license” is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To “grant” such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. “Knowingly relying” means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is “discriminatory” if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior

to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot use, propagate or convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not use, propagate or convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Offering the Program as a Service.

If you make the functionality of the Program or a modified version available to third parties as a service, you must make the Service Source Code available via network download to everyone at no charge, under the terms of this License. Making the functionality of the Program or modified version available to third parties as a service includes, without limitation, enabling third parties to interact with the functionality of the Program or modified version remotely through a computer network, offering a service the value of which entirely or primarily derives from the value of the Program or modified version, or offering a service that accomplishes for users the primary purpose of the Program or modified version.

“Service Source Code” means the Corresponding Source for the Program or the modified version, and the Corresponding Source for all programs that you use to make the Program or modified version available as a service, including, without limitation, management software, user interfaces, application program interfaces, automation software, monitoring software, backup software, storage software and hosting software, all such that a user could run an instance of the service using the Service Source Code you make available.

14. Revised Versions of this License.

MongoDB, Inc. may publish revised and/or new versions of the Server Side Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the Server Side Public License “or any later version” applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by MongoDB, Inc. If the Program does not specify a version number of the Server Side Public License, you may choose any version ever published by MongoDB, Inc.

If the Program specifies that a proxy can decide which future versions of the Server Side Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in

return for a fee.

END OF TERMS AND CONDITIONS

1.108 netty-transport 4.1.51.Final

1.108.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/oio/AbstractOioMessageChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/bootstrap/Bootstrap.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/MultithreadEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelInboundHandlerAdapter.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/local/LocalAddress.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/DefaultSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/AbstractNioMessageChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/oio/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelDuplexHandler.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
```

jar/io/netty/channel/socket/DefaultServerSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/nio/NioDatagramChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/DatagramPacket.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/DefaultEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/Channel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/oio/AbstractOioChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/bootstrap/AbstractBootstrap.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/SingleThreadEventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/EventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/NioEventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/local/LocalChannelRegistry.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/nio/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/AdaptiveRecvByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/oio/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/RecvByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelFlushPromiseNotifier.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelPromiseAggregator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/DatagramChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/oio/OioServerSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelPromiseNotifier.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/oio/AbstractOioByteChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/oio/OioSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/local/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-

jar/io/netty/channel/ChannelPipelineException.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/local/LocalChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/InternetProtocolFamily.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/local/LocalServerChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/VoidChannelPromise.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/AbstractChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/bootstrap/ServerBootstrap.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/FailedChannelFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/embedded/EmbeddedEventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/AbstractServerChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelOutboundHandler.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelException.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/nio/NioDatagramChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/DefaultChannelPipeline.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/AbstractChannelHandlerContext.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/CompleteChannelFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ThreadPerChannelEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ThreadPerChannelEventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/DefaultDatagramChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelInboundHandler.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/SocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelOption.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-

jar/io/netty/channel/socket/nio/NioServerSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ServerChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelMetadata.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/ServerSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/CombinedChannelDuplexHandler.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/nio/NioSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelPipeline.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/nio/ProtocolFamilyConverter.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/AbstractNioChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/group/CombinedIterator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/oio/OioEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/AbstractNioByteChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/ChannelInputShutdownEvent.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/NioTask.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/group/DefaultChannelGroupFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelHandlerContext.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelInitializer.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/EventLoopException.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/group/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/embedded/EmbeddedSocketAddress.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/DefaultEventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/FixedRecvByteBufAllocator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/SocketChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-

jar/io/netty/channel/embedded/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/embedded/EmbeddedChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/oio/OioDatagramChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/FileRegion.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/DefaultFileRegion.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/nio/NioEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/group/ChannelGroupFutureListener.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/EventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/group/ChannelGroupFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/SucceededChannelFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelFutureListener.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelPromise.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelOutboundHandlerAdapter.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/bootstrap/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/DefaultChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/DefaultChannelPromise.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/ServerSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/local/LocalEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/socket/DatagramChannelConfig.java

No license file was found, but licenses were detected in source scan.

~ Copyright 2012 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-transport/pom.xml

No license file was found, but licenses were detected in source scan.

The Netty Project licenses this file to you under the Apache License,
version 2.0 (the "License"); you may not use this file except in compliance
with the License. You may obtain a copy of the License at:
<http://www.apache.org/licenses/LICENSE-2.0>
distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/META-INF/native-image/io.netty/transport/native-image.properties

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2013 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io.netty/channel/oio/OioByteStreamChannel.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2017 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/PendingBytesTracker.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/oio/DefaultOioDatagramChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DelegatingChannelPromiseNotifier.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/bootstrap/FailedChannel.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownEvent.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/internal/package-info.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/nio/SelectedSelectionKeySetSelector.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/oio/OioDatagramChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/ChannelInputShutdownReadComplete.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/internal/ChannelUtils.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownException.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2015 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License, version 2.0 (the
* "License"); you may not use this file except in compliance with the License. You may obtain a
* copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software distributed under the License
* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
* express

* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/CoalescingBufferQueue.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2019 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/EventLoopTaskQueueFactory.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelHandlerMask.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ExtendedClosedChannelException.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultChannelHandlerContext.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2012 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

/**

* Handles an I/O event or intercepts an I/O operation, and forwards it to its next handler in
* its { @link ChannelPipeline }.

*

* <h3>Sub-types</h3>

* <p>

* { @link ChannelHandler } itself does not provide many methods, but you usually have to implement one of its
subtypes:

*

* { @link ChannelInboundHandler } to handle inbound I/O events, and

* { @link ChannelOutboundHandler } to handle outbound I/O operations.

*

* </p>

* <p>

* Alternatively, the following adapter classes are provided for your convenience:

*

* { @link ChannelInboundHandlerAdapter } to handle inbound I/O events,

* { @link ChannelOutboundHandlerAdapter } to handle outbound I/O operations, and

* { @link ChannelDuplexHandler } to handle both inbound and outbound events

*

* </p>

* <p>

* For more information, please refer to the documentation of each subtype.

* </p>

*

* <h3>The context object</h3>

```

* <p>
* A {@link ChannelHandler} is provided with a {@link ChannelHandlerContext}
* object. A {@link ChannelHandler} is supposed to interact with the
* {@link ChannelPipeline} it belongs to via a context object. Using the
* context object, the {@link ChannelHandler} can pass events upstream or
* downstream, modify the pipeline dynamically, or store the information
* (using {@link AttributeKey}s) which is specific to the handler.
*
* <h3>State management</h3>
*
* A {@link ChannelHandler} often needs to store some stateful information.
* The simplest and recommended approach is to use member variables:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* public class DataServerHandler extends {@link SimpleChannelInboundHandler}&lt;Message&gt; {
*
*     <b>private boolean loggedIn;</b>
*
*     {@code @Override}
*     public void channelRead0({@link ChannelHandlerContext} ctx, Message message) {
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) message);
*             <b>loggedIn = true;</b>
*         } else (message instanceof GetDataMessage) {
*             if (<b>loggedIn</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) message));
*             } else {
*                 fail();
*             }
*         }
*     }
*     ...
* }
* </pre>
*
* Because the handler instance has a state variable which is dedicated to
* one connection, you have to create a new handler instance for each new
* channel to avoid a race condition where a unauthenticated client can get
* the confidential information:
* <pre>
* // Create a new handler instance per channel.
* // See {@link ChannelInitializer#initChannel(Channel)}.
* public class DataServerInitializer extends {@link ChannelInitializer}&lt;{@link Channel}&gt; {
*     {@code @Override}
*     public void initChannel({@link Channel} channel) {
*         channel.pipeline().addLast("handler", <b>new DataServerHandler()</b>);

```



```

* }
* }
*
* </pre>
*
* <h4>Using { @link AttributeKey}s</h4>
*
* Although it's recommended to use member variables to store the state of a
* handler, for some reason you might not want to create many handler instances.
* In such a case, you can use { @link AttributeKey}s which is provided by
* { @link ChannelHandlerContext}:
* <pre>
* public interface Message {
*     // your methods here
* }
*
* { @code @Sharable}
* public class DataServerHandler extends { @link SimpleChannelInboundHandler}&lt;Message&gt; {
*     private final { @link AttributeKey}&lt;Boolean&gt; auth =
*         { @link AttributeKey#valueOf(String) AttributeKey.valueOf("auth")};
*
*     { @code @Override}
*     public void channelRead({ @link ChannelHandlerContext} ctx, Message message) {
*         { @link Attribute}&lt;Boolean&gt; attr = ctx.attr(auth);
*         if (message instanceof LoginMessage) {
*             authenticate((LoginMessage) o);
*             <b>attr.set(true)</b>;
*         } else (message instanceof GetDataMessage) {
*             if (<b>Boolean.TRUE.equals(attr.get())</b>) {
*                 ctx.writeAndFlush(fetchSecret((GetDataMessage) o));
*             } else {
*                 fail();
*             }
*         }
*     }
* }
* ...
* </pre>
*
* Now that the state of the handler is attached to the { @link ChannelHandlerContext}, you can add the
* same handler instance to different pipelines:
* <pre>
* public class DataServerInitializer extends { @link ChannelInitializer}&lt;Channel&gt; {
*
*     private static final DataServerHandler <b>SHARED</b> = new DataServerHandler();
*
*     { @code @Override}
*     public void initChannel({ @link Channel} channel) {
*         channel.pipeline().addLast("handler", <b>SHARED</b>);

```

```

*   }
* }
* </pre>
*
*
* <h4>The { @code @Sharable} annotation</h4>
* <p>
* In the example above which used an { @link AttributeKey},
* you might have noticed the { @code @Sharable} annotation.
* <p>
* If a { @link ChannelHandler} is annotated with the { @code @Sharable}
* annotation, it means you can create an instance of the handler just once and
* add it to one or more { @link ChannelPipeline}s multiple times without
* a race condition.
* <p>
* If this annotation is not specified, you have to create a new handler
* instance every time you add it to a pipeline because it has unshared state
* such as member variables.
* <p>
* This annotation is provided for documentation purpose, just like
* <a href="http://www.javaconcurrencyinpractice.com/annotations/doc/">the JCIP annotations</a>.
*
* <h3>Additional resources worth reading</h3>
* <p>
* Please refer to the { @link ChannelHandler}, and
* { @link ChannelPipeline} to find out more about inbound and outbound operations,
* what fundamental differences they have, how they flow in a pipeline, and how to handle
* the operation in your application.
*/

```

Found in path(s):

```

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-
jar/io/netty/channel/ChannelHandler.java

```

No license file was found, but licenses were detected in source scan.

```

/*

```

```

* Copyright 2018 The Netty Project

```

```

*

```

```

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

```

```

*

```

```

* http://www.apache.org/licenses/LICENSE-2.0

```

```

*

```

```

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations

```

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/nio/NioChannelOption.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/SimpleUserEventChannelHandler.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2017 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License, version 2.0 (the

* "License"); you may not use this file except in compliance with the License. You may obtain a

* copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software distributed under the License

* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express

* or implied. See the License for the specific language governing permissions and limitations under

* the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/AbstractCoalescingBufferQueue.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2013 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultMessageSizeEstimator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelHandlerAdapter.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/group/DefaultChannelGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultAddressedEnvelope.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelProgressivePromise.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/group/ChannelGroupException.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelOutboundBuffer.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelId.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/MessageSizeEstimator.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/AbstractEventLoopGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/group/ChannelGroup.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultChannelId.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/group/ChannelMatcher.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/oio/DefaultOioSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/group/ChannelMatchers.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ConnectTimeoutException.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/bootstrap/ChannelFactory.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/oio/OioServerSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/AddressedEnvelope.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelProgressiveFutureListener.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/oio/OioSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelProgressiveFuture.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/SimpleChannelInboundHandler.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultChannelProgressivePromise.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/oio/DefaultOioServerSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/nio/SelectedSelectionKeySet.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/PendingWriteQueue.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelFactory.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/embedded/EmbeddedChannelId.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/AbstractEventLoop.java
* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ReflectiveChannelFactory.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2015 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/MaxMessagesRecvByteBufAllocator.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/SimpleChannelPool.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/package-info.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/AbstractChannelPoolHandler.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultMaxBytesRecvByteBufAllocator.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/ChannelPoolMap.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/ChannelPoolHandler.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/ChannelPool.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/FixedChannelPool.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/AbstractChannelPoolMap.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/pool/ChannelHealthChecker.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/MaxBytesRecvByteBufAllocator.java

* /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultMaxMessagesRecvByteBufAllocator.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2016 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/PreferHeapByteBufAllocator.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/socket/DuplexChannel.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelOutboundInvoker.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/WriteBufferWaterMark.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultSelectStrategyFactory.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/group/VoidChannelGroupFuture.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/SelectStrategyFactory.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/ChannelInboundInvoker.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/bootstrap/BootstrapConfig.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/bootstrap/ServerBootstrapConfig.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/bootstrap/AbstractBootstrapConfig.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/DefaultSelectStrategy.java
- * /opt/ws_local/PERMITS_SQL/1072948476_1595240756.51/0/netty-transport-4-1-51-final-sources-jar/io/netty/channel/SelectStrategy.java

1.109 hibernate-validator 6.1.5.Final

1.109.1 Available under license :

Hibernate Validator, declare and validate application constraints

License: Apache License, Version 2.0

See the license.txt file in the root directory or <<http://www.apache.org/licenses/LICENSE-2.0>>.

Adam Stawicki

Ahmed Al Hafoudh

Alaa Nassef

Andrey Derevyanko

Andrey Rodionov

Asutosh Pandya

Benson Margulies

Brent Douglas

Carlos Vara

Carlo de Wolf

Chris Beckey

Christian Ivan

Dag Hovland
Damir Alibegovic
Dario Seidl
Davide D'Alto
Davide Marchignoli
Denis Tiago
Doug Lea
Emmanuel Bernard
Efthymis Sarbanis
Federico
Federico Mancini
Gavin King
George Gastaldi
Gerhard Petracek
Guillaume Husta
Guillaume Smet
Gunnar Morling
Hardy Ferentschik
Henno Vermeulen
Hillmer Chona
Jan-Willem Willebrands
Jason T. Greene
Jesper Preuss
Jiri Bilek
Julien Furgerot
Julien May
Juraci Krohling
Justin Nauman
Kathryn Killebrew
Kazuki Shimizu
Kevin Pollet
Khalid Alqinyah
Lee KyoungIl
Leonardo Loch Zanivan
Lucas Pouzac
Lukas Niemeier
Mark Hobson
Marko Bekhta
Matthias Kurz
Mert Caliskan
Michal Fotyga
Nicola Ferraro
Nicolas Franois
Paolo Perrotta
Pete Muir
Rob Dickinson
Sanne Grinovero
Sebastian Bayerl

Shahram Goodarzi
Shane Bryzak
Shelly McGowan
Sjaak Derksen
Steve Ebersole
Strong Liu
Tadhg Pearson
Takashi Aoe
Tomaz Cerar
Tommy Johansen
Victor Rezende dos Santos
Willi Schnborn
Xavier Sosnovsky
Yanming Zhou
Yoann Rodire

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.110 dhcpd 9.1.1

1.110.1 Available under license :

Copyright (c) 2006-2020 Roy Marples <roy@marples.name>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.111 c-ares 1.12.1-DEV

1.111.1 Available under license :

c-ares license

Copyright (c) 2007 - 2018, Daniel Stenberg with many contributors, see AUTHORS file.

Copyright 1998 by the Massachusetts Institute of Technology.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

1.112 d-bus 1.10.8

1.112.1 Available under license :

D-Bus is licensed to you under your choice of the Academic Free License version 2.1, or the GNU General Public License version 2 (or, at your option any later version).

Both licenses are included here. Some of the standalone binaries are under the GPL only; in particular, but not limited to, tools/dbus-cleanup-sockets.c and test/decode-gcov.c. Each source code file is marked with the proper copyright information - if you find a file that isn't marked please bring it to our attention.

The Academic Free License
v. 2.1

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written

agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial

ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

--

END OF ACADEMIC FREE LICENSE. The following is intended to describe the essential differences between the Academic Free License (AFL) version 1.0 and other open source licenses:

The Academic Free License is similar to the BSD, MIT, UoI/NCSA and Apache licenses in many respects but it is intended to solve a few problems with those licenses.

* The AFL is written so as to make it clear what software is being licensed (by the inclusion of a statement following the copyright notice in the software). This way, the license functions better than a template license. The BSD, MIT and UoI/NCSA licenses apply to unidentified software.

* The AFL contains a complete copyright grant to the software. The BSD and Apache licenses are vague and incomplete in that respect.

* The AFL contains a complete patent grant to the software. The BSD, MIT, UoI/NCSA and Apache licenses rely on an implied patent license and contain no explicit patent grant.

* The AFL makes it clear that no trademark rights are granted to the licensor's trademarks. The Apache license contains such a provision, but the BSD, MIT and UoI/NCSA licenses do not.

* The AFL includes the warranty by the licensor that it either owns the copyright or that it is distributing the software under a license. None of the other licenses contain that warranty. All other warranties are disclaimed, as is the case for the other licenses.

* The AFL is itself copyrighted (with the right granted to copy and distribute without modification). This ensures that the owner of the copyright to the license will control changes. The Apache license contains a copyright notice, but the BSD, MIT and UoI/NCSA licenses do not.

--

START OF GNU GENERAL PUBLIC LICENSE

--

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free

software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.113 libcap 2.22

1.113.1 Available under license :

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this module release may be distributed:

Redistribution and use in source and binary forms of this module, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.

2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Library General Public License, in which case the provisions of the GNU LGPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU LGPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Unless otherwise *explicitly* stated, the following text describes the licensed conditions under which the contents of this libcap release may be used and distributed:

Redistribution and use in source and binary forms of libcap, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License (v2.0 - see below), in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Full text of gpl-2.0.txt:

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for

this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any

patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED

OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.114 spring-data-jpa 2.3.3.RELEASE

1.114.1 Available under license :

Spring Data JPA 2.3.3 (Neumann SR3)
Copyright (c) [2011-2019] Pivotal Software, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the LICENSE file.

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

=====

To the extent any open source subcomponents are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://www.springsource.org/download>, or by sending a request, with your name and address to: VMware, Inc., 3401 Hillview Avenue, Palo Alto, CA 94304, United States of America or email info@vmware.com. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. VMware shall mail a copy of the Source Files to you on a CD or equivalent physical medium. This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product.

1.115 bzip2 1.0.8 2

1.115.1 Available under license :

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: bzip2

Source: <http://www.bzip.org/>

Files: *

Copyright: 1996-2010 Julian R Seward <jseward@bzip.org>

License: BSD-variant

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- .
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- .
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- .
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- .
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written

permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files: debian/*

Copyright: 2018 Nicolas Boulenguez <nicolas.boulenguez@free.fr>

2012-2015 Santiago Ruano Rincn <santiago@debian.org>

2014 Canonical Ltd.

2004-2011 Anibal Monsalve Salazar <anibal@debian.org>

1999-2002 Philippe Troin <phil@fifi.org>

1997-1999 Anthony Fok <foka@debian.org>

License: GPL-2

The full text of the GNU General Public License version 2 can be found in /usr/share/common-licenses/GPL-2.

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2019 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written

permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@acm.org
bzip2/libbzip2 version 1.0.8 of 13 July 2019

1.116 pkix-ssh 13.2.3

1.116.1 Available under license :

This file is part of the OpenSSH software.

The licences which components of this software fall under are as follows. First, we will summarize and say that all components are under a BSD licence, or a licence more free than that.

OpenSSH contains no GPL code.

1)

- * Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland
- * All rights reserved
- *
- * As far as I am concerned, the code I have written for this software
- * can be used freely for any purpose. Any derived versions of this
- * software must be clearly marked as such, and if the derived work is
- * incompatible with the protocol description in the RFC file, it must be
- * called by a name other than "ssh" or "Secure Shell".

[Tatu continues]

- * However, I am not implying to give any licenses to any patents or
- * copyrights held by third parties, and the software includes parts that
- * are not under my direct control. As far as I know, all included
- * source code is used in accordance with the relevant license agreements
- * and can be used freely for any purpose (the GNU license being the most
- * restrictive); see below for details.

[However, none of that term is relevant at this point in time. All of these restrictively licenced software components which he talks about have been removed from OpenSSH, i.e.,

- RSA is no longer included, found in the OpenSSL library
- IDEA is no longer included, its use is deprecated
- DES is now external, in the OpenSSL library
- GMP is no longer used, and instead we call BN code from OpenSSL
- Zlib is now external, in a library
- The make-ssh-known-hosts script is no longer included
- TSS has been removed
- MD5 is now external, in the OpenSSL library
- RC4 support has been replaced with ARC4 support from OpenSSL
- Blowfish is now external, in the OpenSSL library

[The licence continues]

Note that any information and cryptographic algorithms used in this software are publicly available on the Internet and at any major bookstore, scientific library, and patent office worldwide. More information can be found e.g. at "<http://www.cs.hut.fi/crypto>".

The legal status of this program is some combination of all these permissions and restrictions. Use only at your own responsibility. You will be responsible for any legal consequences yourself; I am not making any claims whether possessing or using this is legal or not in your country, and I am not taking any responsibility on your behalf.

NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY

YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

3)

ssh-keyscan was contributed by David Mazieres under a BSD-style license.

- * Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>.
- *
- * Modification and redistribution in source and binary forms is
- * permitted provided that due credit is given to the author and the
- * OpenBSD project by leaving this copyright notice intact.

4)

The Rijndael implementation by Vincent Rijmen, Antoon Bosselaers and Paulo Barreto is in the public domain and distributed with the following license:

- * @version 3.0 (December 2000)
- *
- * Optimised ANSI C code for the Rijndael cipher (now AES)
- *
- * @author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>
- * @author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>
- * @author Paulo Barreto <paulo.barreto@terra.com.br>
- *
- * This code is hereby placed in the public domain.
- *
- * THIS SOFTWARE IS PROVIDED BY THE AUTHORS "AS IS" AND ANY EXPRESS
- * OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
- * WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- * ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE
- * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
- * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
- * SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
- * BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
- * WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
- * OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
- * EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

5)

One component of the ssh source code is under a 3-clause BSD license, held by the University of California, since we pulled these parts from original Berkeley code.

- * Copyright (c) 1983, 1990, 1992, 1993, 1995
- * The Regents of the University of California. All rights reserved.

*

- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. Neither the name of the University nor the names of its contributors
- * may be used to endorse or promote products derived from this software
- * without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.

6)

Remaining components of the software are provided under a standard
2-term BSD licence with the following names as copyright holders:

Markus Friedl
Theo de Raadt
Niels Provos
Dug Song
Aaron Campbell
Damien Miller
Kevin Steves
Daniel Kouril
Wesley Griffin
Per Allansson
Nils Nordman
Simon Wilkinson
Roumen Petrov

Portable OpenSSH additionally includes code from the following copyright
holders, also under the 2-term BSD license:

Ben Lindstrom
Tim Rice

Andre Lucas
Chris Adams
Corinna Vinschen
Cray Inc.
Denis Parker
Gert Doering
Jakob Schlyter
Jason Downs
Juha Yrjl
Michael Stone
Networks Associates Technology, Inc.
Solar Designer
Todd C. Miller
Wayne Schroeder
William Jones
Darren Tucker
Sun Microsystems
The SCO Group
Daniel Walsh
Red Hat, Inc
Simon Vallet / Genoscope

- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.

* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

8) Portable OpenSSH contains the following additional licenses:

a) md5crypt.c, md5crypt.h

- * "THE BEER-WARE LICENSE" (Revision 42):
- * <phk@login.dknet.dk> wrote this file. As long as you retain this

- * notice you can do whatever you want with this stuff. If we meet
- * some day, and you think this stuff is worth it, you can buy me a
- * beer in return. Poul-Henning Kamp

b) snprintf replacement

- * Copyright Patrick Powell 1995
- * This code is based on code written by Patrick Powell
- * (papowell@astart.com) It may be used for any purpose as long as this
- * notice remains intact on all source code distributions

c) Compatibility code (openbsd-compat)

Apart from the previously mentioned licenses, various pieces of code in the openbsd-compat/ subdirectory are licensed as follows:

Some code is licensed under a 3-term BSD license, to the following copyright holders:

Todd C. Miller
Theo de Raadt
Damien Miller
Eric P. Allman
The Regents of the University of California
Constantin S. Svintsoff

- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. Neither the name of the University nor the names of its contributors
- * may be used to endorse or promote products derived from this software
- * without specific prior written permission.

- * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
- * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- * ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
- * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

* SUCH DAMAGE.

Some code is licensed under an ISC-style license, to the following
copyright holders:

Internet Software Consortium.

Todd C. Miller

Reyk Floeter

Chad Mynhier

* Permission to use, copy, modify, and distribute this software for any
* purpose with or without fee is hereby granted, provided that the above
* copyright notice and this permission notice appear in all copies.

*

* THE SOFTWARE IS PROVIDED "AS IS" AND TODD C. MILLER DISCLAIMS ALL
* WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL TODD C. MILLER BE LIABLE
* FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION
* OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN
* CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Some code is licensed under a MIT-style license to the following
copyright holders:

Free Software Foundation, Inc.

* Permission is hereby granted, free of charge, to any person obtaining a *
* copy of this software and associated documentation files (the *
* "Software"), to deal in the Software without restriction, including *
* without limitation the rights to use, copy, modify, merge, publish, *
* distribute, distribute with modifications, sublicense, and/or sell *
* copies of the Software, and to permit persons to whom the Software is *
* furnished to do so, subject to the following conditions: *

*

*

* The above copyright notice and this permission notice shall be included *
* in all copies or substantial portions of the Software. *

*

*

* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS *
* OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF *
* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. *
* IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, *
* DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR *
* OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR *
* THE USE OR OTHER DEALINGS IN THE SOFTWARE. *

*

*

* Except as contained in this notice, the name(s) of the above copyright *
* holders shall not be used in advertising or otherwise to promote the *

* sale, use or other dealings in this Software without prior written *
* authorization. *
*****/

The Blowfish cipher implementation is licensed by Niels Provis under a 4-clause BSD license:

* Blowfish - a fast block cipher designed by Bruce Schneier
*
* Copyright 1997 Niels Provos <provos@physnet.uni-hamburg.de>
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* This product includes software developed by Niels Provos.
* 4. The name of the author may not be used to endorse or promote products
* derived from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Some replacement code is licensed by the NetBSD foundation under a 2-clause BSD license:

* Copyright (c) 2001 The NetBSD Foundation, Inc.
* All rights reserved.
*
* This code is derived from software contributed to The NetBSD Foundation
* by Todd Vierling.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions

* are met:

- * 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

*
* THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS
* ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
* TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS
* BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
* POSSIBILITY OF SUCH DAMAGE.

\$OpenBSD: LICENCE,v 1.20 2017/04/30 23:26:16 djm Exp \$

1.117 spring-context-support

5.2.20.RELEASE

1.117.1 Available under license :

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

SPRING FRAMEWORK 5.2.20.RELEASE SUBCOMPONENTS:

Spring Framework 5.2.20.RELEASE includes a number of subcomponents with separate copyright notices and license terms. The product that includes this file does not necessarily use all the open source subcomponents referred to below. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

>>> ASM 7.3 (org.ow2.asm:asm:7.3, org.ow2.asm:asm-commons:7.3):

Copyright (c) 2000-2011 INRIA, France Telecom
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2009, OW2 Consortium <<https://www.ow2.org/>>

>>> CGLIB 3.3 (cglib:cglib:3.3):

Per the LICENSE file in the CGLIB JAR distribution downloaded from https://github.com/cglib/cglib/releases/download/RELEASE_3_3_0/cglib-3.3.0.jar, CGLIB 3.3 is licensed under the Apache License, version 2.0, the text of which is included above.

>>> Objenesis 3.1 (org.objenesis:objenesis:3.1):

Per the LICENSE file in the Objenesis ZIP distribution downloaded from

<http://objenesis.org/download.html>, Objenesis 3.1 is licensed under the Apache License, version 2.0, the text of which is included above.

Per the NOTICE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html> and corresponding to section 4d of the Apache License, Version 2.0, in this case for Objenesis:

Objenesis

Copyright 2006-2019 Joe Walnes, Henri Tremblay, Leonardo Mesquita

=====

To the extent any open source components are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://spring.io/projects>, Pivotal's website at <https://network.pivotal.io/open-source>, or by sending a request, with your name and address to: Pivotal Software, Inc., 875 Howard Street, 5th floor, San Francisco, CA 94103, Attention: General Counsel. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. Pivotal can mail a copy of the Source Files to you on a CD or equivalent physical medium.

This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product. Alternatively, the Source Files may accompany the Software.

Spring Framework 5.2.20.RELEASE

Copyright (c) 2002-2022 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the license.txt file.

1.118 commons-codec 1.14

1.118.1 Available under license :

Apache License
Version 2.0, January 2004

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally

submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Commons Codec
Copyright 2002-2019 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<https://www.apache.org/>).

src/test/org/apache/commons/codec/language/DoubleMetaphoneTest.java
contains test data from <http://aspell.net/test/orig/batch0.tab>.
Copyright (C) 2002 Kevin Atkinson (kevina@gnu.org)

=====

The content of package org.apache.commons.codec.language.bm has been translated from the original php source code available at <http://stevemorse.org/phoneticinfo.htm> with permission from the original authors.
Original source copyright:
Copyright (c) 2008 Alexander Beider & Stephen P. Morse.

1.119 spring-orm 5.2.20.RELEASE

1.119.1 Available under license :

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

SPRING FRAMEWORK 5.2.20.RELEASE SUBCOMPONENTS:

Spring Framework 5.2.20.RELEASE includes a number of subcomponents with separate copyright notices and license terms. The product that includes this file does not necessarily use all the open source subcomponents referred to below. Your use of the source code for these subcomponents is subject to the terms and

conditions of the following licenses.

>>> ASM 7.3 (org.ow2.asm:asm:7.3, org.ow2.asm:asm-commons:7.3):

Copyright (c) 2000-2011 INRIA, France Telecom

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2009, OW2 Consortium <<https://www.ow2.org/>>

>>> CGLIB 3.3 (cglib:cglib:3.3):

Per the LICENSE file in the CGLIB JAR distribution downloaded from https://github.com/cglib/cglib/releases/download/RELEASE_3_3_0/cglib-3.3.0.jar, CGLIB 3.3 is licensed under the Apache License, version 2.0, the text of which is included above.

>>> Objenesis 3.1 (org.objenesis:objenesis:3.1):

Per the LICENSE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html>, Objenesis 3.1 is licensed under the Apache License, version 2.0, the text of which is included above.

Per the NOTICE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html> and corresponding to section 4d of the Apache License, Version 2.0, in this case for Objenesis:

Objenesis

Copyright 2006-2019 Joe Walnes, Henri Tremblay, Leonardo Mesquita

To the extent any open source components are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://spring.io/projects>, Pivotal's website at <https://network.pivotal.io/open-source>, or by sending a request, with your name and address to: Pivotal Software, Inc., 875 Howard Street, 5th floor, San Francisco, CA 94103, Attention: General Counsel. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. Pivotal can mail a copy of the Source Files to you on a CD or equivalent physical medium.

This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product. Alternatively, the Source Files may accompany the Software.

Spring Framework 5.2.20.RELEASE

Copyright (c) 2002-2022 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the license.txt file.

1.120 spring-aspects 5.2.20.RELEASE

1.120.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2014 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-
jar/org/springframework/cache/aspectj/JCacheCacheAspect.aj
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-
jar/org/springframework/beans/factory/aspectj/AbstractDependencyInjectionAspect.aj
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-
jar/org/springframework/cache/aspectj/AbstractCacheAspect.aj
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2017 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-
jar/org/springframework/beans/factory/aspectj/GenericInterfaceDrivenDependencyInjectionAspect.aj
```

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/scheduling/aspectj/AbstractAsyncExecutionAspect.aj
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/scheduling/aspectj/AnnotationAsyncExecutionAspect.aj

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/transaction/aspectj/AbstractTransactionAspect.aj
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/transaction/aspectj/AspectJtaTransactionManagementConfiguration.java
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/beans/factory/aspectj/AbstractInterfaceDrivenDependencyInjectionAspect.aj

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/scheduling/aspectj/AspectJAsyncConfiguration.java
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/beans/factory/aspectj/AnnotationBeanConfigurerAspect.aj
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/transaction/aspectj/AspectJTransactionManagementConfiguration.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2012 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/context/annotation/aspectj/EnableSpringConfigured.java

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/beans/factory/aspectj/ConfigurableObject.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2018 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/context/annotation/aspectj/SpringConfiguredConfiguration.java
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/cache/aspectj/AspectJCCachingConfiguration.java
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/cache/aspectj/AspectJCCacheConfiguration.java
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/cache/aspectj/AnyThrow.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2013 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/cache/aspectj/AnnotationCacheAspect.aj

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2015 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/transaction/aspectj/AnnotationTransactionAspect.aj
* /opt/cola/permits/1301010865_1649210177.59/0/spring-aspects-5-2-20-release-sources-jar/org/springframework/transaction/aspectj/JtaAnnotationTransactionAspect.aj

1.121 jackson 2.11.2

1.121.1 Available under license :

```
=====
== NOTICE file corresponding to the section 4 d of      ==
== the Apache License, Version 2.0,                    ==
== in this case for the Apache Camel distribution.      ==
=====
```

This product includes software developed by
The Apache Software Foundation (<http://www.apache.org/>).

Please read the different LICENSE files present in the licenses directory of
this distribution.

Camel :: Jackson
Copyright 2007-2013 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all
other entities that control, are controlled by, or are under common
control with that entity. For the purposes of this definition,
"control" means (i) the power, direct or indirect, to cause the
direction or management of such entity, whether by contract or
otherwise, or (ii) ownership of fifty percent (50%) or more of the
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.122 xmlsecurityforc++ 2.0.2-3build1

1.122.1 Available under license :

Apache Santuario XML-Security-C Library
Copyright 2010-2018 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

This product includes software developed by the OpenSSL Project

for use in the OpenSSL Toolkit. (<http://www.openssl.org/>).

This product also includes software developed, copyrighted, and contributed by The Ohio State University.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain

separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the

origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Source: <http://santuario.apache.org/cindex.html>

Upstream-Name: Apache Santuario XML-Security-C library

Files: *

Copyright: 2010-2018 The Apache Software Foundation

License: Apache-2.0

Files: */Makefile.in

Copyright: 2006-2011 The Apache Software Foundation

1994-2014 Free Software Foundation, Inc.

License: Apache-2.0 and FSF-unlimited

Files: aclocal.m4 m4/libtool.m4 m4/ltoptions.m4 m4/ltugar.m4 m4/ltversion.m4
m4/lt~obsolete.m4

Copyright: 1996-2014 Free Software Foundation, Inc.

License: FSF-unlimited

Files: build-aux/config.guess build-aux/config.sub

Copyright: 1992-2013 Free Software Foundation, Inc.

License: GPL-3+ with autoconf exception

This file is free software; you can redistribute it and/or modify it
under the terms of the GNU General Public License as published by the
Free Software Foundation; either version 3 of the License, or (at your
option) any later version.

.

This program is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General
Public License for more details.

.

The full text of the GNU General Public License version 3 is available on
Debian systems in /usr/share/common-licenses/GPL-3.

.

As a special exception to the GNU General Public License, if you

distribute this file as part of a program that contains a configuration script generated by Autoconf, you may include it under the same distribution terms that you use for the rest of that program. This Exception is an additional permission under section 7 of the GNU General Public License, version 3 ("GPLv3").

Files: build-aux/compile build-aux/depcomp build-aux/missing

Copyright: 1999-2014 Free Software Foundation, Inc.

License: GPL-2+ with autoconf exception

This file is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

The full text of the GNU General Public License version 2 is available on Debian systems in /usr/share/common-licenses/GPL-2.

.

As a special exception to the GNU General Public License, if you distribute this file as part of a program that contains a configuration script generated by Autoconf, you may include it under the same distribution terms that you use for the rest of that program.

Files: build-aux/install-sh

Copyright: (C) 1994 X Consortium

License: Expat

Files: build-aux/ltmain.sh

Copyright: 1996-2015 Free Software Foundation, Inc.

License: GPL-2+ with libtool exception

GNU Libtool is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.

As a special exception to the GNU General Public License, if you distribute this file as part of a program or library that is built using GNU Libtool, you may include this file under the same distribution terms that you use for the rest of that program.

.

GNU Libtool is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.
The full text of the GNU General Public License version 2 is available on Debian systems in /usr/share/common-licenses/GPL-2.

Files: configure

Copyright: 1992-1996, 1998-2012 Free Software Foundation, Inc.

License: FSF-configure-unlimited

This configure script is free software; the Free Software Foundation gives unlimited permission to copy, distribute and modify it.

Files: debian/*

Copyright: 2006-2013

The Board of Trustees of the Leland Stanford Junior University

2015-2018 Ferenc Wgner <wferi@debian.org>

License: Expat

Files: m4/ax_pthread.m4

Copyright: 2008 Steven G. Johnson <stevenj@alum.mit.edu>

2011 Daniel Richard G. <skunk@iSKUNK.ORG>

License: GPL-3+ with autoconf-macro-package exception

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

.
This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.
The full text of the GNU General Public License version 3 is available on Debian systems in /usr/share/common-licenses/GPL-3.

.
As a special exception, the respective Autoconf Macro's copyright owner gives unlimited permission to copy, distribute and modify the configure scripts that are the output of Autoconf when processing the Macro. You need not follow the terms of the GNU General Public License when using or distributing such scripts, even though portions of the text of the Macro appear in them. The GNU General Public License (GPL) does govern all other use of the material that constitutes the Autoconf Macro.

.
This special exception to the GPL applies to versions of the Autoconf Macro released by the Autoconf Archive. When you make and distribute a modified version of the Autoconf Macro, you may extend this special exception to the GPL to apply to your modified version as well.

License: Apache-2.0

Licensed to the Apache Software Foundation (ASF) under one or more

contributor license agreements. See the NOTICE file distributed with this work for additional information regarding copyright ownership. The ASF licenses this file to you under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

.
<http://www.apache.org/licenses/LICENSE-2.0>

.
Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

.
On Debian systems, the complete text of the Apache 2.0 license can be found in the file /usr/share/common-licenses/Apache-2.0.

License: FSF-unlimited

This file is free software; the Free Software Foundation gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

.
This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

License: Expat

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

.
The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

.
Except as contained in this notice, the name of the X Consortium shall not

be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

1.123 spring-security-web 5.4.10

1.123.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2010-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/matcher/RequestMatcherEditor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/DelegatingAuthenticationEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/matcher/ELRequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jaasapi/JaasApiIntegrationFilter.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2004, 2005, 2006 Acegi Technology Pty Limited
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
```

- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/FilterChainProxy.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/SecureChannelProcessor.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/AccessDeniedHandler.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/intercept/DefaultFilterInvocationSecurityMetadataSource.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/DefaultSavedRequest.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/PortResolverImpl.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/SimpleSavedRequest.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/RetryWithHttpEntryPoint.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/ChannelDecisionManager.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/PortMapper.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/RememberMeAuthenticationFilter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/ChannelEntryPoint.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/switchuser/SwitchUserFilter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/LogoutFilter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/HttpSessionCreatedEvent.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/LoginUrlAuthenticationEntryPoint.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/switchuser/AuthenticationSwitchUserEvent.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/PortResolver.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/RetryWithHttpsEntryPoint.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/RememberMeServices.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/UsernamePasswordAuthenticationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/AuthenticationEntryPoint.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/SavedRequestAwareWrapper.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/servletapi/SecurityContextHolderAwareRequestWrapper.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/ChannelProcessingFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/FastDateFormat.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/WebAuthenticationDetailsSource.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/SecurityContextLogoutHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/DigestAuthenticationEntryPoint.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/WebAuthenticationDetails.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/BasicAuthenticationEntryPoint.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/intercept/FilterInvocationSecurityMetadataSource.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/WebInvocationPrivilegeEvaluator.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/NullRememberMeServices.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/AccessDeniedHandlerImpl.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/BasicAuthenticationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/HttpSessionEventPublisher.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/Enumerator.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/servletapi/SecurityContextHolderAwareRequestFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/PortMapperImpl.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AnonymousAuthenticationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/TokenBasedRememberMeServices.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/LogoutHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/switchuser/SwitchUserGrantedAuthority.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/NonceExpiredException.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/HttpSessionDestroyedEvent.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/ChannelDecisionManagerImpl.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/intercept/FilterSecurityInterceptor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AbstractAuthenticationProcessingFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/ChannelProcessor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/InsecureChannelProcessor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/UrlUtils.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2018 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/csrf/CsrfServerLogoutHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/AbstractPreAuthenticatedProcessingFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/ExceptionMappingAuthenticationFailureHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/ReferrerPolicyServerHttpHeadersWriter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/http/SecurityHeaders.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/request/async/SecurityContextCallableProcessingInterceptor.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/HttpStatusServerEntryPoint.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/server/header/ContentSecurityPolicyServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/ServerHttpBasicAuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/access/RequestMatcherDelegatingAccessDeniedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/reactive/result/method/annotation/AuthenticationPrincipalArgumentResolver.
java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/ForwardAuthenticationFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/header/FeaturePolicyServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/DelegatingServerAuthenticationSuccessHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/ForwardAuthenticationSuccessHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/ui/DefaultLoginPageGeneratingFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/ServerX509AuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/MatcherSecurityWebFilterChain.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/logout/HttpStatusReturningServerLogoutSuccessHandle
r.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/firewall/FirewalledResponse.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/ServerAuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/SimpleUrlAuthenticationFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/ui/DefaultLogoutPageGeneratingFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/header/writers/CacheControlHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/header/XXssProtectionServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/reactive/result/view/CsrfRequestDataValueProcessor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/ServerFormLoginAuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authorization/ServerWebExchangeDelegatingServerAccessDeniedHan
dler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/logout/DelegatingServerLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/logout/ForwardLogoutSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/ServerHttpBasicAuthenticationConverter.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2015-2018 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/jackson2/PreAuthenticatedAuthenticationTokenDeserializer.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/jackson2/DefaultCsrfServerTokenMixin.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/jackson2/WebServerJackson2Module.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2013 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/servlet/support/csrf/CsrfRequestDataValueProcessor.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/CsrfAuthenticationStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/CsrfToken.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/method/annotation/CsrfTokenArgumentResolver.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/bind/annotation/AuthenticationPrincipal.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/bind/support/AuthenticationPrincipalArgumentResolver.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/AbstractSessionFixationProtectionStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/HttpSessionCsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/CompositeSessionAuthenticationStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/DelegatingRequestMatcherHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/HeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/CsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/XContentTypeOptionsHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/method/annotation/AuthenticationPrincipalArgumentResolver.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/AnyRequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/SessionFixationProtectionEvent.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/CsrfException.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/AbstractSecurityWebApplicationInitializer.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/CsrfLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/InvalidSessionAccessDeniedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/InvalidCsrfTokenException.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/DefaultCsrfToken.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/ChangeSessionIdAuthenticationStrategy.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2019 the original author or authors.

*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/expression/ExpressionBasedFilterInvocationSecurityMetadataSource.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/IpAddressMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/LogoutSuccessEventPublishingLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/csrf/CookieServerCsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/BasicAuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/HeaderWriterFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/ConcurrentSessionFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/intercept/RequestKey.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AuthenticationEntryPointFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/MediaTypeRequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/AntPathRequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/FeaturePolicyHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/ClearSiteDataServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/logout/HeaderWriterServerLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/ConcurrentSessionControlAuthenticationStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/CompositeHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/ReferrerPolicyHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AbstractAuthenticationTargetUrlRequestHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/ReactivePreAuthenticatedAuthenticationManager.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/HstsHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/XXssProtectionHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/RequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/CookieClearingLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/transport/HttpsRedirectWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/HpkpHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/ClearSiteDataHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/StaticHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/reactive/result/method/annotation/CurrentSecurityContextArgumentResolver.java
java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AuthenticationFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/method/annotation/CurrentSecurityContextArgumentResolver.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/ContentSecurityPolicyHeaderWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/HeaderWriterLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/frameoptions/XFrameOptionsHeaderWriter.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2021 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*

- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.

*/

Found in path(s):

- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/StaticServerHttpHeadersWriter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/FilterInvocation.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/DefaultWebInvocationPrivilegeEvaluator.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/MissingCsrfTokenException.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/HttpSessionSecurityContextRepository.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/csrf/CsrfWebFilter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/csrf/CsrfFilter.java

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2004, 2005, 2006, 2009 Acegi Technology Pty Limited

*

- * Licensed under the Apache License, Version 2.0 (the "License");

- * you may not use this file except in compliance with the License.

- * You may obtain a copy of the License at

*

- * <https://www.apache.org/licenses/LICENSE-2.0>

*

- * Unless required by applicable law or agreed to in writing, software

- * distributed under the License is distributed on an "AS IS" BASIS,

- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- * See the License for the specific language governing permissions and

- * limitations under the License.

*/

Found in path(s):

- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/DigestAuthenticationFilter.java

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2012 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/JdbcTokenRepositoryImpl.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2015 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/expression/EvaluationContextPostProcessor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/expression/AbstractVariableEvaluationContextPostProcessor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/DelegatingAuthenticationFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/DelegatingAccessDeniedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/support/SecurityWebApplicationContextUtils.java
No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2017 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/StrictTransportSecurityServerHttpHeadersWriter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/CacheControlServerHttpHeadersWriter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/util/matcher/MediaTypeServerWebExchangeMatcher.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/ServerHttpHeadersWriter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/savedrequest/ServerRequestCache.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/XContentTypeOptionsServerHttpHeadersWriter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/ServerAuthenticationEntryPointFailureHandler.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/logout/ServerLogoutHandler.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/csrf/CsrfException.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/ui/LoginPageGeneratingWebFilter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/header/HTTPHeaderWriterWebFilter.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/WebFilterChainServerAuthenticationSuccessHandler.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/ServerRedirectStrategy.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/util/matcher/ServerWebExchangeMatchers.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/AbstractRememberMeServices.java
- * /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/server/context/ReactorContextWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/context/SecurityContextServerWebExchange.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authorization/ServerAccessDeniedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/csrf/WebSessionServerCsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/WebFilterChainProxy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/HttpBasicServerAuthenticationEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/context/SecurityContextServerWebExchangeWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/savedrequest/ServerRequestCacheWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/ServerAuthenticationFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/util/matcher/ServerWebExchangeMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/logout/RedirectServerLogoutSuccessHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/header/ContentTypeOptionsServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/logout/ServerLogoutSuccessHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authorization/ExceptionTranslationWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/ServerFormLoginAuthenticationConverter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authorization/AuthorizationContext.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/RedirectServerAuthenticationFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/csrf/DefaultCsrfToken.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authorization/HttpStatusServerAccessDeniedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/context/NoOpServerSecurityContextRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/ui/LogoutPageGeneratingWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/SecurityWebFilterChain.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/header/XFrameOptionsServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/util/matcher/ServerWebExchangeMatcherEntry.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/server/header/CompositeServerHttpHeadersWriter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/RedirectServerAuthenticationSuccessHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/ServerAuthenticationSuccessHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/ServerAuthenticationEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/logout/SecurityContextServerLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/csrf/CsrfToken.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/context/ServerSecurityContextRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/rememberme/PersistentTokenBasedRememberMeServices.java
a
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/WebFilterExchange.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/RedirectServerAuthenticationEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/csrf/ServerCsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/savedrequest/NoOpServerRequestCache.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2015-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/WebJackson2Module.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/session/SessionInformationExpiredStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/jackson2/SavedCookieMixin.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/CookieMixin.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/DefaultCsrfTokenMixin.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/DefaultSavedRequestMixin.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/PreAuthenticatedAuthenticationTokenMixin.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/WebServletJackson2Module.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/WebAuthenticationDetailsMixin.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/jackson2/CookieDeserializer.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2016 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/access/expression/WebExpressionVoter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/preauth/RequestAttributeAuthenticationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/context/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/logout/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/session/SessionAuthenticationStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedCredentialsNotFoundException.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedGrantedAuthoritiesWebAuthenticatio

nDetails.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/SecurityContextRepository.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/ui/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/DefaultHttpFirewall.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/x509/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/WebAttributes.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/frameoptions/WhiteListedAllowFromStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/jackson2/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/HttpFirewall.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/SimpleUrlAuthenticationSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/expression/WebExpressionConfigAttribute.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/request/async/WebAsyncManagerIntegrationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/j2ee/WebXmlMappableAttributesRetriever.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/channel/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/ThrowableAnalyzer.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/j2ee/J2eeBasedPreAuthenticatedWebAuthenticationDetailsSource.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/DigestAuthUtils.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/SimpleUrlLogoutSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/NegatedRequestMatcher.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/j2ee/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/PersistentTokenRepository.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/HttpStatusReturningLogoutSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/DelegatingLogoutSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/SecurityFilterChain.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/logout/LogoutSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/RequestHeaderAuthenticationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/websphere/WebSpherePreAuthenticatedWebAuthenticationDetailsSource.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/websphere/WebSpherePreAuthenticatedProcessingFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/context/SaveContextOnUpdateOrErrorResponseWrapper.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/switchuser/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/DefaultSecurityFilterChain.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/CookieTheftException.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/debug/Logger.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/SavedRequestAwareAuthenticationSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/HttpStatusEntryPoint.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/www/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/jaasapi/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/frameoptions/AllowFromStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/websphere/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/servletapi/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/debug/DebugFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/ThrowableCauseExtractor.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/RequestWrapper.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/SessionAuthenticationException.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/OrRequestMatcher.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/websphere/WASUsernameAndGroupsExtractor.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/rememberme/RememberMeAuthenticationException.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/websphere/DefaultWASUsernameAndGroupsExtractor.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/j2ee/J2eePreAuthenticatedProcessingFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/x509/SubjectDnX509PrincipalExtractor.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/frameoptions/RegExpAllowFromStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/writers/frameoptions/StaticAllowFromStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/NullAuthenticatedSessionStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/SavedCookie.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/AuthenticationSuccessHandler.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/header/Header.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/preauth/x509/X509AuthenticationFilter.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/HttpSessionRequestCache.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/NullRequestCache.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/expression/package-info.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/RegexRequestMatcher.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/SimpleRedirectInvalidSessionStrategy.java

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/firewall/RequestRejectedException.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedGrantedAuthoritiesUserDetailsService.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/savedrequest/RequestCache.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/rememberme/PersistentRememberMeToken.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/matcher/AndRequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/firewall/FirewalledRequest.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/session/SimpleRedirectSessionInformationExpiredStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/servletapi/HttpServletRequestFactory.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/access/expression/WebSecurityExpressionRoot.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/header/writers/frameoptions/AbstractRequestParameterAllowFromStrategy.java
va
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/Http403ForbiddenEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/context/HttpRequestResponseHolder.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/access/expression/DefaultWebSecurityExpressionHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/servletapi/HttpServletRequest3RequestFactory.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/OnCommittedResponseWrapper.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedAuthenticationProvider.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/context/NullSecurityContextRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/session/InvalidSessionStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/session/RegisterSessionAuthenticationStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/TextEscapeUtils.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/logout/CompositeLogoutHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/rememberme/InvalidCookieException.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/RedirectStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedAuthenticationToken.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/switchuser/SwitchUserAuthorityChanger.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/savedrequest/RequestCacheAwareFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/access/channel/AbstractRetryEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/context/SecurityContextPersistenceFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/access/intercept/package-info.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/savedrequest/SavedRequest.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/session/SessionManagementFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/preauth/x509/X509PrincipalExtractor.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/rememberme/InMemoryTokenRepositoryImpl.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/savedrequest/package-info.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/authentication/AuthenticationFailureHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/RedirectUrlBuilder.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/DefaultRedirectStrategy.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2004-2016 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-

jar/org/springframework/security/web/access/ExceptionTranslationFilter.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/servlet/util/matcher/MvcRequestMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/matcher/RequestVariablesExtractor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/csrf/LazyCsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/csrf/CookieCsrfTokenRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/session/SessionInformationExpiredEvent.java
```

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/access/expression/DelegatingEvaluationContext.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2012-2021 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/StrictHttpFirewall.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2009-2016 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/util/matcher/ELRequestMatcherContext.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2014 the original author or authors.

```
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
*   https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/util/matcher/RequestHeaderRequestMatcher.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
*   https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/util/matcher/NegatedServerWebExchangeMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authorization/AuthorizationWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/authentication/logout/LogoutWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/DefaultServerRedirectStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/util/matcher/AndServerWebExchangeMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-
jar/org/springframework/security/web/server/savedrequest/CookieServerRequestCache.java
```

* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/context/WebSessionServerSecurityContextRepository.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/RequestRejectedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/session/HttpSessionIdChangedEvent.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/AuthenticationConverterServerWebExchangeMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/DelegatingServerAuthenticationEntryPoint.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/authentication/session/SessionFixationProtectionStrategy.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/savedrequest/WebSessionServerRequestCache.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/HttpStatusRequestRejectedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/firewall/DefaultRequestRejectedHandler.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authorization/DelegatingReactiveAuthorizationManager.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/util/matcher/PathPatternParserServerWebExchangeMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/SwitchUserWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/AnonymousAuthenticationWebFilter.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/savedrequest/CookieRequestCache.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/util/matcher/OrServerWebExchangeMatcher.java
* /opt/cola/permits/1351887195_1656319607.7368119/0/spring-security-web-5-4-10-sources-jar/org/springframework/security/web/server/authentication/AuthenticationWebFilter.java

1.124 pxelinux 6.03

1.124.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a

notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this

License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free

programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or

(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
675 Mass Ave, Cambridge, MA 02139, USA
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

```
/*
```

```
* Copyright (c) 2001, 2002 Swedish Institute of Computer Science.
```

```
* All rights reserved.
```

*
* Redistribution and use in source and binary forms, with or without modification,
* are permitted provided that the following conditions are met:
*
* 1. Redistributions of source code must retain the above copyright notice,
* this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright notice,
* this list of conditions and the following disclaimer in the documentation
* and/or other materials provided with the distribution.
* 3. The name of the author may not be used to endorse or promote products
* derived from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED
* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
* MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT

* SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
* EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING
* IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
* OF SUCH DAMAGE.
*
* This file is part of the lwIP TCP/IP stack.
*
* Author: Adam Dunkels <adam@sics.se>
*
*/

The Syslinux logo is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license.

libpng versions 1.2.6, August 15, 2004, through 1.2.44, June 26, 2010, are

Copyright (c) 2004, 2006-2009 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux
Eric S. Raymond
Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane
Glenn Randers-Pehrson
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger
Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler
Kevin Bracey
Sam Bushell
Magnus Holmgren
Greg Roelofs
Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

A "png_get_copyright" function is available, for convenient use in "about" boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31) and "pngnow.png" (98x31).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson

glennrp at users.sourceforge.net

June 26, 2010

In general gPXE files are licensed under the GPL. GPLed files are in general either from Linux or have been explicitly put under GPL by the authors. The license for a file is usually documented at the top of the file.

A few files are inherited from FreeBSD netboot and therefore can be used under BSD or GPL. Documented in this file are some of the non-GPL'ed files. If the internal documentation for a file disagrees with what is documented in this file, the internal documentation for the file shall be override this file.

File Copyright status

src/core/misc.c BSD
src/drivers/net/3c509.c BSD
src/drivers/net/3c509.h BSD
src/drivers/net/3c595.c BSD
src/drivers/net/3c595.h BSD
src/drivers/net/3c90x.c Open Source
src/drivers/net/epic100.c None
src/drivers/net/epic100.h None
src/drivers/net/ns8390.c BSD
src/drivers/net/ns8390.h BSD
src/arch/i386/include/bits/string.h None
libcom32 and libutil are licensed under the MIT license:

```
## -----  
##  
## Copyright 2004-2009 H. Peter Anvin - All Rights Reserved  
## Portions Copyright 2009 Intel Corporation; author: H. Peter Anvin  
##  
## Permission is hereby granted, free of charge, to any person  
## obtaining a copy of this software and associated documentation  
## files (the "Software"), to deal in the Software without  
## restriction, including without limitation the rights to use,  
## copy, modify, merge, publish, distribute, sublicense, and/or  
## sell copies of the Software, and to permit persons to whom  
## the Software is furnished to do so, subject to the following  
## conditions:  
##  
## The above copyright notice and this permission notice shall  
## be included in all copies or substantial portions of the Software.  
##  
## THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
## EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
```

```
## OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
## NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
## HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
## WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
## FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
## OTHER DEALINGS IN THE SOFTWARE.
##
## -----
```

The files in the sample, modules and libgpl directories are mostly under the GNU GPL (see the file COPYING in the directory above.)

This package was debianized by Nigel Croxon <nigel.croxon@hp.com> using sources obtained from

<http://sourceforge.net/projects/gnu-efi>

Copyright:

Copyright (c) 1999-2007 Hewlett-Packard Development Company, L.P.

Contributed by David Mosberger <davidm@hpl.hp.com>

Contributed by Stephane Eranian <eranian@hpl.hp.com>

GNU-EFI is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version.

GNU-EFI is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with GNU-EFI; see the file COPYING. If not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA.

On a Debian system, the GPL can be found in /usr/share/common-licenses/GPL.

The files in the "lib" and "inc" subdirectories are using the EFI Application Toolkit distributed by Intel at <http://developer.intel.com/technology/efi>

This code is covered by the following agreement:

Copyright (c) 1999-2007 Intel Corporation

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. THE EFI SPECIFICATION AND ALL OTHER INFORMATION ON THIS WEB SITE ARE PROVIDED "AS IS" WITH NO WARRANTIES, AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

The EFI headers contained herein are copied from the EFI Development Kit, available from <http://www.tianocore.org> and published under the following licence:

BSD License from Intel
Copyright (c) 2004, Intel Corporation
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE

COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This licence applies only to files that are part of the EFI Development Kit. Other files may contain their own licence terms, or may fall under the standard gPXE GPL licence.

1.125 libpciaccess 0.11.0

1.125.1 Available under license :

(C) Copyright IBM Corporation 2006, 2007

(C) Copyright Eric Anholt 2006

All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation on the rights to use, copy, modify, merge, publish, distribute, sub license, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IN NO EVENT SHALL IBM AND/OR THEIR SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2007, 2008, 2009 Sun Microsystems, Inc. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including

without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

Copyright (c) 2008 Juan Romero Pardines
Copyright (c) 2008 Mark Kettenis

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (C) 2000 The XFree86 Project, Inc. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE XFREE86 PROJECT BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the XFree86 Project shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the XFree86 Project.

1.126 goprotobuf 2.4.1

1.126.1 Available under license :

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY

THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This source code was written by the Go contributors.

The master list of contributors is in the main Go distribution,

visible at <http://tip.golang.org/CONTRIBUTORS>.

1.127 pcre 8.39-12ubuntu0.1

1.127.1 Available under license :

PCRE LICENCE

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel

Email local part: ph10

Email domain: cam.ac.uk

University of Cambridge Computing Service,
Cambridge, England.

Copyright (c) 1997-2016 University of Cambridge
All rights reserved.

PCRE JUST-IN-TIME COMPILATION SUPPORT

Written by: Zoltan Herczeg

Email local part: hzmester

Email domain: freemail.hu

Copyright(c) 2010-2016 Zoltan Herczeg
All rights reserved.

STACK-LESS JUST-IN-TIME COMPILER

Written by: Zoltan Herczeg
Email local part: hzmester
Email domain: freemail.hu

Copyright(c) 2009-2016 Zoltan Herczeg
All rights reserved.

THE C++ WRAPPER FUNCTIONS

Contributed by: Google Inc.

Copyright (c) 2007-2012, Google Inc.
All rights reserved.

THE "BSD" LICENCE

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
- * Neither the name of the University of Cambridge nor the name of Google
Inc. nor the names of their contributors may be used to endorse or
promote products derived from this software without specific prior
written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

End

PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.128 spring-test 5.2.20.RELEASE

1.128.1 Available under license :

Apache License
Version 2.0, January 2004
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

SPRING FRAMEWORK 5.2.20.RELEASE SUBCOMPONENTS:

Spring Framework 5.2.20.RELEASE includes a number of subcomponents with separate copyright notices and license terms. The product that includes this file does not necessarily use all the open source subcomponents referred to below. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

>>> ASM 7.3 (org.ow2.asm:asm:7.3, org.ow2.asm:asm-commons:7.3):

Copyright (c) 2000-2011 INRIA, France Telecom
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2009, OW2 Consortium <<https://www.ow2.org/>>

>>> CGLIB 3.3 (cglib:cglib:3.3):

Per the LICENSE file in the CGLIB JAR distribution downloaded from https://github.com/cglib/cglib/releases/download/RELEASE_3_3_0/cglib-3.3.0.jar, CGLIB 3.3 is licensed under the Apache License, version 2.0, the text of which is included above.

>>> Objenesis 3.1 (org.objenesis:objenesis:3.1):

Per the LICENSE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html>, Objenesis 3.1 is licensed under the Apache License, version 2.0, the text of which is included above.

Per the NOTICE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html> and corresponding to section 4d of the Apache License, Version 2.0, in this case for Objenesis:

Objenesis

Copyright 2006-2019 Joe Walnes, Henri Tremblay, Leonardo Mesquita

=====

To the extent any open source components are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://spring.io/projects>, Pivotal's website at <https://network.pivotal.io/open-source>, or by sending a request, with your name and address to: Pivotal Software, Inc., 875 Howard Street, 5th floor, San Francisco, CA 94103, Attention: General Counsel. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. Pivotal can mail a copy of the Source Files to you on a CD or equivalent physical medium.

This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product. Alternatively, the Source Files may accompany the Software.

Spring Framework 5.2.20.RELEASE

Copyright (c) 2002-2022 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the license.txt file.

1.129 dav1d 0.6.0

1.129.1 Available under license :

Copyright 2018-2019, VideoLAN and dav1d authors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.130 tomcat-embed-websocket 9.0.37

1.130.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

1.131 netty-transport-native-epoll 4.1.51.Final

1.131.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2015 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/AbstractEpollStreamChannel.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollDomainSocketChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollEventArray.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollServerDomainSocketChannel.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollMode.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/TcpMd5Util.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorStreamingHandle.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/AbstractEpollServerChannel.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
```

```
jar/io/netty/channel/epoll/EpollServerChannelConfig.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorHandle.java
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollDomainSocketChannel.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2014 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-
jar/io/netty/channel/epoll/EpollServerSocketChannelConfig.java
No license file was found, but licenses were detected in source scan.
```

```
~ Copyright 2014 The Netty Project
~
~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:
~
~ http://www.apache.org/licenses/LICENSE
2.0
~
~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.
```

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-transport-native-epoll/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.

*/

/**

* Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.

* Keys can only be set on, not read to prevent a potential leak, as they are confidential.

* Allowing them being read would mean anyone with access to the channel could get them.

*/

/**

* Set the {@code TCP_QUICKACK} option on the socket. See [TCP_QUICKACK](http://linux.die.net/man/7/tcp)

* for more details.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io.netty/channel/epoll/EpollSocketChannelConfig.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

- * License for the specific language governing permissions and limitations
- * under the License.
- */

Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/NativeDatagramPacketArray.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollDatagramChannel.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/Epoll.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/package-info.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollServerSocketChannel.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollEventLoop.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollEventLoopGroup.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollChannelOption.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/AbstractEpollChannel.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollSocketChannel.java
- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollTcpInfo.java

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2013 The Netty Project
- *
- * The Netty Project licenses this file to you under the Apache License,
- * version 2.0 (the "License"); you may not use this file except in compliance
- * with the License. You may obtain a copy of the License at:
- *
- * <http://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- * License for the specific language governing permissions and limitations
- * under the License.
- */

Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/Native.java

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/netty_epoll_native.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2012 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/EpollDatagramChannelConfig.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2016 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/netty_epoll_linuxsocket.c

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/netty_epoll_linuxsocket.h

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/LinuxSocket.java

* /opt/ws_local/PERMITS_SQL/1075084041_1596044813.39/0/netty-transport-native-epoll-4-1-51-final-sources-jar/io/netty/channel/epoll/NativeStaticallyReferencedJniMethods.java

1.132 ehcache-core 3.8.1

1.132.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright Terracotta, Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/ZeroOperationStatistic.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/EhcacheManager.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/time/TimeSource.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/PersistentUserManagedEhcache.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/exceptions/ExceptionFactory.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/LifeCycledAdapter.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/events/StoreEventFilter.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/time/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/InternalStatus.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/LatencyHistogramConfiguration.java
```

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/package-info.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/EventListenerWrapper.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/config/store/StoreEventSourceConfiguration.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/store/StoreConfigurationImpl.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/package-info.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/CacheOperationOutcomes.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/osgi/EhcacheActivator.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/service/CacheManagerProviderService.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/StoreEventSink.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/CacheEvents.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/Jsr107Cache.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/Jsr107LatencyMonitor.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/internal/util/ValueSuppliers.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/DefaultStatisticsServiceFactory.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/CacheEventDispatcher.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/CacheEventDispatcherFactory.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/internal/resilience/ThrowingResilienceStrategy.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/config/DefaultConfiguration.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/OperationStatistic.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/package-info.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/ValueStatistic.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/util/CollectionUtil.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/tiering/package-info.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/tiering/LowerCachingTier.java

* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/EhcacheBase.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/config/store/StoreStatisticsConfiguration.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/StatsUtils.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/ConfigurationChangeSupport.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/TierStatistics.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/HumanReadable.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/service/LocalPersistenceService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/service/StatisticsService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/CacheEventListenerConfiguration.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/exceptions/StorePassThroughException.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/StatusTransitioner.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/Ehcache.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/time/TickingTimeSource.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/CacheEventListenerProvider.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/SpecIterator.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/heap/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/LowerCachingTierOperationsOutcome.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/statistics/HigherCachingTierOperationOutcomes.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/CacheManagerListener.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/heap/SizeOfEngineProvider.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/events/StateChangeListener.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/CacheConfigurationProperty.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-jar/org/ehcache/core/spi/store/Store.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-

jar/org/ehcache/core/InternalCache.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/tiering/HigherCachingTier.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/config/CoreConfigurationBuilder.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/service/FileBasedPersistenceContext.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/tiering/AuthoritativeTier.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/events/NullStoreEventDispatcher.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/DefaultStatisticsService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/WrapperStore.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/CachingTierOperationOutcomes.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/service/ExecutionService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/collections/ConcurrentWeakIdentityHashMap.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/events/StoreEventDispatcher.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/config/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/LifeCycled.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/service/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/InternalRuntimeConfiguration.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/heap/LimitExceededException.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/OperationObserver.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/SourceStatistic.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/TierOperationOutcomes.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/CacheStatistics.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/DefaultCacheStatistics.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/service/DiskResourceService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/EhcacheRuntimeConfiguration.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-

jar/org/ehcache/core/statistics/StoreOperationOutcomes.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/resilience/DefaultRecoveryStore.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/exceptions/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/CacheConfigurationChangeEvent.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/BulkOps.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/DelegatingOperationStatistic.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/events/StoreEventSource.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/service/ServiceUtils.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/ServiceLocator.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/events/StoreEvent.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/AuthoritativeTierOperationOutcomes.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/osgi/SafeOsgi.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/DelegatingOperationObserver.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/CacheConfigurationChangeListener.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/util/ClassLoading.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/util/ByteBufferInputStream.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/InternalCacheManager.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/SuppliedValueStatistic.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/DefaultTierStatistics.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/events/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/DefaultCacheManagerProviderService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/config/store/package-info.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/ChainedObserver.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/config/ExpiryUtils.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-

jar/org/ehcache/core/spi/store/AbstractWrapperStoreProvider.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/ChainedOperationObserver.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/store/StoreSupport.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/tiering/CachingTier.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/service/ServiceFactory.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/AbstractValueHolder.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/time/SystemTimeSource.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/heap/SizeOfEngine.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/osgi/OsgiServiceLoader.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/time/TimeSourceService.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/spi/store/events/StoreEventListener.java
* /opt/cola/permits/1258059284_1643027245.56/0/ehcache-core-3-8-1-sources-
jar/org/ehcache/core/statistics/DelegatedMappedOperationStatistics.java

1.133 management-model 5.7.3

1.133.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright Terracotta, Inc.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* http://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-

jar/org/terracotta/management/model/message/DefaultManagementCallMessage.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/stats/Sample.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/call/ContextualCall.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/stats/DelegatingStatistic.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/descriptors/Descriptor.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/stats/Statistic.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/context/CapabilityContext.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/call/Parameter.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/descriptors/CallDescriptor.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/stats/ContextualStatistics.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/descriptors/StatisticDescriptor.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/DefaultCapability.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/context/ContextContainer.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/context/Context.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/Capability.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/message/ManagementCallMessage.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/stats/StatisticRegistry.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/message/DefaultMessage.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/call/ContextualReturn.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/message/Message.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/cluster/ClientIdentifier.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/capabilities/descriptors/Settings.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/notification/ContextualNotification.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/context/Contextual.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-

jar/org/terracotta/management/model/stats/StatisticType.java
* /opt/cola/permits/1258059149_1643027380.56/0/management-model-5-7-3-sources-
jar/org/terracotta/management/model/stats/DelegatingSample.java

1.134 importlib-metadata 0.18

1.134.1 Available under license :

Copyright 2017-2019 Jason R. Coombs, Barry Warsaw

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

1.135 hd-parm 9.48

1.135.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in

the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN

OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

This package was debianized by Christopher L Cheney <ccheney@debian.org> on Wed, 21 Nov 2001 15:51:14 -0600.

It was downloaded from <http://www.ibiblio.org/pub/Linux/system/hardware>

Upstream Author: Mark S. Lord <mlord@pobox.com>

Copyright:

```
/* hdparm.c - Command line interface to get/set hard disk parameters */
/*      - by Mark Lord 1994-2008 -- freely distributable */
```

You are free to distribute this software under the terms of the BSD License. On Debian systems, the complete text of the BSD License can be found in /usr/share/common-licenses/BSD
BSD-Style Open Source License:

You may freely use, modify, and redistribute the hdparm program, as either binary or source, or both.

The only condition is that my name and copyright notice remain in the source code as-is.

Mark Lord (mlord@pobox.com)

1.136 expat 2.2.4

1.136.1 Available under license :

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper
Copyright (c) 2001-2019 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.137 libcap 2.25

1.137.1 Available under license :

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this module release may be distributed:

Redistribution and use in source and binary forms of this module, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright

notice, and this entire permission notice in its entirety,
including the disclaimer of warranties.

2. Redistributions in binary form must reproduce all prior and current
copyright notices, this list of conditions, and the following
disclaimer in the documentation and/or other materials provided
with the distribution.

3. The name of any author may not be used to endorse or promote
products derived from this software without their specific prior
written permission.

ALTERNATIVELY, this product may be distributed under the terms of the
GNU Library General Public License, in which case the provisions of
the GNU LGPL are required INSTEAD OF the above restrictions. (This
clause is necessary due to a potential conflict between the GNU LGPL
and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Unless otherwise *explicitly* stated, the following text describes the
licensed conditions under which the contents of this libcap release
may be used and distributed:

Redistribution and use in source and binary forms of libcap, with
or without modification, are permitted provided that the following
conditions are met:

1. Redistributions of source code must retain any existing copyright
notice, and this entire permission notice in its entirety,
including the disclaimer of warranties.

2. Redistributions in binary form must reproduce all prior and current
copyright notices, this list of conditions, and the following
disclaimer in the documentation and/or other materials provided
with the distribution.

3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License (v2.0 - see below), in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Full text of gpl-2.0.txt:

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another

language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other

circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY

FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.138 glibc 2.31-0ubuntu9.9

1.138.1 Available under license :

```
/* Test program for the gcc interface.
Copyright (C) 2000-2020 Free Software Foundation, Inc.
This file is part of the GNU C Library.
Contributed by Ulrich Drepper <drepper@cygnus.com>.
```

The GNU C Library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The GNU C Library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with the GNU C Library; if not, see

[<https://www.gnu.org/licenses/>](https://www.gnu.org/licenses/). */

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.

This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you

distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering

access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES

PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser

General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data

structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials

specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE

LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

This file contains the copying permission notices for various files in the GNU C Library distribution that have copyright owners other than the Free Software Foundation. These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

All code incorporated from 4.4 BSD is distributed under the following license:

Copyright (C) 1991 Regents of the University of California.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials

provided with the distribution.

* Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach, derived from Mach 3.0:

Mach Operating System
Copyright (C) 1991,1990,1989 Carnegie Mellon University
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS "AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator
School of Computer Science
Carnegie Mellon University
Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

The file if_ppp.h is under the following CMU license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written

permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files `inet/getnameinfo.c` and `sysdeps/posix/getaddrinfo.c` are copyright (C) by Craig Metz and are distributed under the following license:

```
/* The Inner Net License, Version 2.00
```

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.
2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
4. [The copyright holder has authorized the removal of this clause.]
5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. */

The file sunrpc/des_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<https://www.gnu.org/licenses/>> to obtain a copy.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file posix/PCRE.tests is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful,

but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

2. The origin of this software must not be misrepresented, either by explicit claim or by omission. In practice, this means that if you use PCRE in software that you distribute to others, commercially or otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant files or online help data or similar. A reference to the ftp site for the source, that is, to

<ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/>

should also be given in the documentation. However, this condition is not intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL), then the terms of that licence shall supersede any condition above with which it is incompatible.

Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either

version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, see
<<https://www.gnu.org/licenses/>>. */
UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories
<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and
<http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF
online code charts under the directory <http://www.unicode.org/Public/>.
Software includes any source code published in the Unicode Standard or under
the directories <http://www.unicode.org/Public/>,
<http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY
DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES
("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND
AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF
YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA
FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under
the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a
copy of the Unicode data files and any associated documentation (the "Data
Files") or Unicode software and any associated documentation (the "Software")
to deal in the Data Files or Software without restriction, including without
limitation the rights to use, copy, modify, merge, publish, distribute, and/or
sell copies of the Data Files or Software, and to permit persons to whom the
Data Files or Software are furnished to do so, provided that (a) the above
copyright notice(s) and this permission notice appear with all copies of the
Data Files or Software, (b) both the above copyright notice(s) and this
permission notice appear in associated documentation, and (c) there is clear
notice in each modified Data File or in the Software as well as in the
documentation associated with the Data File(s) or Software that the data or
software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

1.139 activation-api 1.1

1.139.1 Available under license :

Notices for Eclipse Project for JAF

This content is produced and maintained by the Eclipse Project for JAF project.

* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

Source Code

The project maintains the following source code repositories:

* <https://github.com/eclipse-ee4j/jaf>

Third-party Content

This project leverages the following third party content.

JUnit (4.12)

* License: Eclipse Public License

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.140 libnfnetlink 1.0.1

1.140.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public

License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under

these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source

code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent

license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free

Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than ``show w'` and ``show c'`; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

1.141 opus 1.1.2

1.141.1 Available under license :

Copyright 2001-2011 Xiph.Org, Skype Limited, Octasic,
Jean-Marc Valin, Timothy B. Terriberry,
CSIRO, Gregory Maxwell, Mark Borgerding,
Erik de Castro Lopo

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of Internet Society, IETF or IETF Trust, nor the names of specific contributors, may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Opus is subject to the royalty-free patent licenses which are specified at:

Xiph.Org Foundation:
<https://datatracker.ietf.org/ipr/1524/>

Microsoft Corporation:
<https://datatracker.ietf.org/ipr/1914/>

Broadcom Corporation:
<https://datatracker.ietf.org/ipr/1526/>

Contributions to the collaboration shall not be considered confidential.

Each contributor represents and warrants that it has the right and authority to license copyright in its contributions to the collaboration.

Each contributor agrees to license the copyright in the contributions under the Modified (2-clause or 3-clause) BSD License or the Clear BSD License.

Please see the IPR statements submitted to the IETF for the complete patent licensing details:

Xiph.Org Foundation:

<https://datatracker.ietf.org/ipr/1524/>

Microsoft Corporation:

<https://datatracker.ietf.org/ipr/1914/>

Skype Limited:

<https://datatracker.ietf.org/ipr/1602/>

Broadcom Corporation:

<https://datatracker.ietf.org/ipr/1526/>

1.142 hibernate 5.4.20.Final

1.142.1 Available under license :

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> * version.'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegionTemplate(public DomainDataStorageAccess getCacheStorageAccess() {'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html>'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegionConfigImpl build() {'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. // "proprietary" methods is better (this class is "proprietary" too).'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegion buildDomainDataRegion('

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. "5.3 in upgrading. It will be removed in a later version."

Found license 'GNU Lesser General Public License' in '# License: GNU Lesser General Public License (LGPL), version 2.1 or later. # See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. * Instead, for common transaction-related tasks users must utilize a proprietary API known as ExtendedJTATransaction.'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.

public DomainDataRegion buildDomainDataRegion('

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. *

Expert Group and released to the public domain, as explained at * released to the public domain, as explained at'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. *

Expert Group and released to the public domain, as explained at'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegionImpl('

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later * See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegion getRegion() {'

Found license 'GNU Lesser General Public License' in '~ License: GNU Lesser General Public License (LGPL), version 2.1 or later ~ See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html>'

Found license 'GNU Lesser General Public License' in '* License: GNU Lesser General Public License (LGPL), version 2.1 or later. * See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. * *

a proprietary CDI extension SPI (that we have proposed to'

Found license 'GNU Lesser General Public License' in '* indicated by the @author tags or express copyright attribution * distributed under license by Red Hat Middleware LLC. * This copyrighted material is made available to anyone wishing to use, modify, * copy, or redistribute it subject to the terms and conditions of the GNU * Lesser General Public License, as published by the Free Software Foundation. * This program is distributed in the hope that it will be useful, * but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY * or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License * for more details. * You should have received a copy of the GNU Lesser General Public License * Boston, MA 02110-1301 USA'

Found license 'GNU Lesser General Public License' in '~ License: GNU Lesser General Public License (LGPL), version 2.1 or later. ~ See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.'

1.143 luaposix 5.1.28

1.143.1 Available under license :

Copyright (C) 2006-2013 luaposix authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.144 servlet-api 4.0.0

1.144.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright (c) 2013 - 2018 Lijun Liao
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/HttpServlet.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/AbstractHttpServlet.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/SimpleLruCache.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/ServletURIPool.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/TlsHelper.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/ServletURI.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-
jar/org/xipki/http/servlet/SslReverseProxyMode.java
* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-jar/org/xipki/http/servlet/package-
```

info.java

No license file was found, but licenses were detected in source scan.

2018 Lijun Liao

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

Found in path(s):

* /opt/cola/permits/1320304756_1651519748.12/0/servlet-api-4-0-0-sources-4-jar/META-
INF/maven/org.xipki/servlet-api/pom.xml

1.145 activation-api 1.2.2

1.145.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

- Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR

CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Notices for Jakarta Activation

This content is produced and maintained by Jakarta Activation project.

* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

Source Code

The project maintains the following source code repositories:

* <https://github.com/eclipse-ee4j/jaf>

Third-party Content

This project leverages the following third party content.

JUnit (4.12)

* License: Eclipse Public License

1.146 commons-dbcp 1.4

1.146.1 Available under license :

Apache Commons DBCP

Copyright 2001-2010 The Apache Software Foundation

This product includes software developed by
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

1.147 Ivm2 2.02.79

1.147.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of

it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a

table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or

link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for

reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the

original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version,

but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that

everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an

announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by

the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than ``show w'` and ``show c'`; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

1.148 inotify-tools 3.14

1.148.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original

authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.149 libatomic-ops 1.2

1.149.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it,

under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.150 kerberos 1.17-6ubuntu4.1

1.150.1 Available under license :

Apache Commons BCEL
Copyright 2004-2020 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<https://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.151 glibc 2.23

1.151.1 Available under license :

@c The GNU Lesser General Public License.

@center Version 2.1, February 1999

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

@end display

@subheading Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software---typically libraries---of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in

non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for

writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square

root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a ``work that uses the Library''. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a ``work that uses the Library'' with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a ``work that uses the library''. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a ``work that uses the Library'' uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library'' with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the

Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library'', as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the ``work that uses the Library'' must include any data and utility programs needed for

reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item

Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center @b{NO WARRANTY}

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU

FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
@smallexample
```

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the library
`Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
@var{signature of Ty Coon}, 1 April 1990
```

```
Ty Coon, President of Vice
```

```
@end smallexample
```

That's all there is to it!

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.
This software is not subject to any license of the American Telephone
and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on
any computer system, and to alter it and redistribute it, subject
to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public

Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must

be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The

threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your

rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY

AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the

library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion

of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable

source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying

the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates

the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD

PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

© The GNU Free Documentation License.

Version 1.3, 3 November 2008

This file is intended to be included within another document,

hence no sectioning command or @node.

display

Copyright © 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

<http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

end display

enumerate 0

item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document *free* in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License

principally for works whose purpose is instruction or reference.

@item

APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts'' are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent'' copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available

drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, La@TeX{ } input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all

of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements.''

@item

COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between

the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of

following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

RELICENSING

``Massive Multiauthor Collaboration Site" (or ``MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A ``Massive Multiauthor Collaboration" (or ``MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

```
@smallexample
@group
Copyright (C) @var{year} @var{your name}.
Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU Free Documentation License, Version 1.3
or any later version published by the Free Software Foundation;
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover
Texts. A copy of the license is included in the section entitled ``GNU
Free Documentation License".
@end group
@end smallexample
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

```
@smallexample
@group
with the Invariant Sections being @var{list their titles}, with
the Front-Cover Texts being @var{list}, and with the Back-Cover Texts
being @var{list}.
@end group
@end smallexample
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
This file contains the copying permission notices for various files in the
GNU C Library distribution that have copyright owners other than the Free
Software Foundation. These notices all require that a copy of the notice
be included in the accompanying documentation and be distributed with
binary distributions of the code, so be sure to include this file along
with any binary distributions derived from the GNU C Library.
```

All code incorporated from 4.4 BSD is distributed under the following license:

Copyright (C) 1991 Regents of the University of California.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION

WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING

NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach, derived from Mach 3.0:

Mach Operating System
Copyright (C) 1991,1990,1989 Carnegie Mellon University
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS ``AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator
School of Computer Science
Carnegie Mellon University
Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

The file `if_ppp.h` is under the following CMU license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,

INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files inet/getnameinfo.c and sysdeps/posix/getaddrinfo.c are copyright

(C) by Craig Metz and are distributed under the following license:

/* The Inner Net License, Version 2.00

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.
2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
4. [The copyright holder has authorized the removal of this clause.]
5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. */

The file sunrpc/des_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General

Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<http://www.gnu.org/licenses/>> to obtain a copy.

The libidn code is copyright Simon Josefsson, with portions copyright

The Internet Society, Tom Tromey and Red Hat, Inc.:

Copyright (C) 2002, 2003, 2004, 2011 Simon Josefsson

This file is part of GNU Libidn.

GNU Libidn is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

GNU Libidn is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with GNU Libidn; if not, see <<http://www.gnu.org/licenses/>>.

The following notice applies to portions of libidn/nfkc.c:

This file contains functions from GLIB, including gutf8.c and gunidecomp.c, all licensed under LGPL and copyright hold by:

Copyright (C) 1999, 2000 Tom Tromey
Copyright 2000 Red Hat, Inc.

The following applies to portions of libidn/punycode.c and libidn/punycode.h:

This file is derived from RFC 3492bis written by Adam M. Costello.

Disclaimer and license: Regarding this entire document or any portion of it (including the pseudocode and C code), the author makes no guarantees and is not responsible for any damage resulting from its use. The author grants irrevocable permission to anyone to use, modify, and distribute it in any way that does not diminish the rights of anyone else to use, modify, and distribute it, provided that redistributed derivative works do not contain misleading author or version information. Derivative works need not be licensed under similar terms.

Copyright (C) The Internet Society (2003). All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are

included on all such copies and derivative works. However, this document itself may not be modified in any way, such as by removing the copyright notice or references to the Internet Society or other Internet organizations, except as needed for the purpose of developing Internet standards in which case the procedures for copyrights defined in the Internet Standards process must be followed, or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file posix/PCRE.tests is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful, but **WITHOUT ANY WARRANTY**; without even the implied warranty of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. In practice, this means that if you use PCRE in software that you distribute to others, commercially or otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant files or online help data or similar. A reference to the ftp site for the source, that is, to

`ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/`

should also be given in the documentation. However, this condition is not intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL), then the terms of that licence shall supersede any condition above with which it is incompatible.

Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.
Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Part of stdio-common/tst-printf.c is copyright C E Chew:

(C) Copyright C E Chew

Feel free to copy, use and distribute this software provided:

1. you do not pretend that you wrote it
2. you leave this copyright notice intact.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, see <<http://www.gnu.org/licenses/>>. */

1.152 selinux 2.8-1+b1

1.152.1 Available under license :

NOTE! This copyright does **not** cover user programs that use kernel services by normal system calls - this is merely considered normal use of the kernel, and does **not** fall under the heading of "derived work". Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the Linux kernel) is copyrighted by me and others who actually wrote it.

Also note that the only valid version of the GPL as far as the kernel is concerned is `_this_` particular version of the license (ie v2, not v2.2 or v3.x or whatever), unless explicitly otherwise stated.

Linus Torvalds

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software

patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in

whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium

customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to

this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program

specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the

library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.153 inja 3.1.0

1.153.1 Available under license :

amalgamate.py - Amalgamate C source and header files
Copyright (c) 2012, Erik Edlund <erik.edlund@32767.se>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Erik Edlund, nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2016-2019 Viktor Kirilov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2018 Ibersch

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2009-2018 FIRST

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the FIRST nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY FIRST AND CONTRIBUTORS ``AS IS'' AND ANY

EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL FIRST OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2013-2017 Niels Lohmann

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011 - Nick Bruun.

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. If you meet (any of) the author(s), you're encouraged to buy them a beer, a drink or whatever is suited to the situation, given that you like the

software.

4. This notice may not be removed or altered from any source distribution.

1.154 hdrhistogram 2.1.12

1.154.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
```

```
* Written by Gil Tene of Azul Systems, and released to the public domain,  
* as explained at http://creativecommons.org/publicdomain/zero/1.0/  
*/
```

Found in path(s):

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/WriterReaderPhaser.java
```

No license file was found, but licenses were detected in source scan.

```
/**
```

```
* Written by Gil Tene of Azul Systems, and released to the public domain,  
* as explained at http://creativecommons.org/publicdomain/zero/1.0/  
*
```

```
* @author Gil Tene
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/DoublePercentileIterator.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/ZigZagEncoding.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/AllValuesIterator.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/Base64Helper.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/IntCountsHistogram.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/DoubleLinearIterator.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/PackedConcurrentDoubleHistogram.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/SynchronizedHistogram.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/packedarray/PackedArraySingleWriterRecorder.java
```

```
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-  
jar/org/HdrHistogram/Histogram.java
```


* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/LogarithmicIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/Version.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/RecordedValuesIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/LinearIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/PackedDoubleHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/AtomicHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/HistogramIterationValue.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/Recorder.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/ConcurrentDoubleHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/HistogramLogReader.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/HistogramLogProcessor.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/PackedHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/SingleWriterDoubleRecorder.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/DoubleRecorder.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/DoubleHistogramIterationValue.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/AbstractHistogramIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/SynchronizedDoubleHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/PercentileIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/PackedConcurrentHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/DoubleRecordedValuesIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/DoubleAllValuesIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/SingleWriterRecorder.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/DoubleLogarithmicIterator.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/ShortCountsHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-

```
jar/org/HdrHistogram/EncodableHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-
jar/org/HdrHistogram/HistogramLogScanner.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-
jar/org/HdrHistogram/packedarray/PackedArrayRecorder.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-
jar/org/HdrHistogram/ConcurrentHistogram.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Written by Gil Tene of Azul Systems, and released to the public domain,
* as explained at http://creativecommons.org/publicdomain/zero/1.0/
*
* @author Gil Tene
*/
```

```
Found in path(s):
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-
jar/org/HdrHistogram/AbstractHistogram.java
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-
jar/org/HdrHistogram/DoubleHistogram.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* package-info.java
* Written by Gil Tene of Azul Systems, and released to the public domain,
* as explained at http://creativecommons.org/publicdomain/zero/1.0/
*/
```

```
Found in path(s):
* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/package-
info.java
No license file was found, but licenses were detected in source scan.
```

```
/**
* Written by Gil Tene of Azul Systems, and released to the public domain,
* as explained at http://creativecommons.org/publicdomain/zero/1.0/
*
* @author Gil Tene
*/
```

```
package org.HdrHistogram;
```

```
final class Version {
    public static final String version="$VERSION$";
    public static final String build_time="$BUILD_TIMES$";
}
```

Found in path(s):

* /opt/cola/permits/1257203437_1642787675.09/0/hdrhistogram-2-1-12-sources-jar/org/HdrHistogram/Version.java.template

1.155 jboss-logging 3.4.1.Final

1.155.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate

comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.156 ethtool 4.6

1.156.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.157 stunnel 5.56

1.157.1 Available under license :

stunnel license (see COPYRIGHT.md for detailed GPL conditions)

Copyright (C) 1998-2019 Michal Trojnara

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<http://www.gnu.org/licenses>>.

Linking stunnel statically or dynamically with other modules is making a combined work based on stunnel. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

In addition, as a special exception, the copyright holder of stunnel gives you permission to combine stunnel with free software programs or libraries that are released under the GNU LGPL and with code included in the standard release of OpenSSL under the OpenSSL License (or modified versions of such code, with unchanged license). You may copy and distribute such a system following the terms of the GNU GPL for stunnel and the licenses of the other code concerned.

Note that people who make modified versions of stunnel are not obligated to grant this special exception for their modified versions; it is their choice

whether to do so. The GNU General Public License gives permission to release a modified version without this exception; this exception also makes it possible to release a modified version which carries forward this exception.
Copyright (C) 1998-2019 Michal Trojnara

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<http://www.gnu.org/licenses>>.

Linking stunnel statically or dynamically with other modules is making a combined work based on stunnel. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

In addition, as a special exception, the copyright holder of stunnel gives you permission to combine stunnel with free software programs or libraries that are released under the GNU LGPL and with code included in the standard release of OpenSSL under the OpenSSL License (or modified versions of such code, with unchanged license). You may copy and distribute such a system following the terms of the GNU GPL for stunnel and the licenses of the other code concerned.

Note that people who make modified versions of stunnel are not obligated to grant this special exception for their modified versions; it is their choice whether to do so. The GNU General Public License gives permission to release a modified version without this exception; this exception also makes it possible to release a modified version which carries forward this exception.

GNU General Public License

=====

Version 2, June 1991
Copyright 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by

the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: **(1)** copyright the software, and **(2)** offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The Program, below, refers to any such program or work, and a work based on the Program means either the Program or any derivative work under copyright law:

that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term modification.) Each licensee is addressed as you.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

****1.**** You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

****2.**** You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

****a)**** You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

****b)**** You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

****c)**** If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

****3.**** You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

* ****a)**** Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

* ****b)**** Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

* ****c)**** Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering

access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

****4.**** You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

****5.**** You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

****6.**** Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

****7.**** If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

****8.**** If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

****9.**** The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and any later version, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

****10.**** If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

****11.**** BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES

PROVIDE THE PROGRAM AS IS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

****12.**** IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the copyright line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w`` and ``show c`` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w`` and ``show c``; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a copyright disclaimer for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.
SimpleFC - NSIS Firewall Control Plugin - License Agreement

This plugin is subject to the Mozilla Public License Version 1.1 (the "License"); You may not use this plugin except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL>.

Alternatively, you may redistribute this library, use and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version. You may obtain a copy of the LGPL at www.gnu.org/copyleft.

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

Copyright

Portions of this software are Copyright (C) 2001 - Peter Windridge, 2003 by

Bernhard Mayer, Fixed and formatted by Brett Dever <http://editor.nfscheats.com/>

The original code is FirewallControl.pas, released April 16, 2007.

The initial developer of the original code is Rainer Budde (<http://www.speed-soft.de>).

SimpleFC - NSIS Firewall Plugin is written, published and maintained by Rainer Budde (rainer@speed-soft.de).

1.158 Im-sensors 3.3.1

1.158.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the

source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY

YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do

these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work

which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses

the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of

the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a

work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception,

the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library

subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting

redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!
Here is a list of the main contributors to lm-sensors version 3.

- * Frodo Looijaard
Original author of libsensors, sensors-detect, sensors and isadump.
- * Merlin Hughes
Original author of sensord.
- * Bob Schlaermann
Dynamic chip feature detection (a.k.a. generic chip support) in libsensors and sensors.
- * Mark M. Hoffman

Many improvements to the libsensors configuration file scanner.
* Jean Delvare
New libsensors API, and migration of sensors and sensor there to.
Many optimizations in libsensors and sensors.
Configuration file converter.
Rewrite of sensors-detect.
Support for multiple configuration files in libsensors.

1.159 pluggy 0.13.1

1.159.1 Available under license :

The MIT License (MIT)

Copyright (c) 2015 holger krekel (rather uses bitbucket/hpk42)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.160 react-zoom-pan-pinch 1.6.1

1.160.1 Available under license :

MIT License

Copyright (c) 2019 prc5

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.161 nettle 3.4.1-1+deb10u1

1.161.1 Available under license :

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: Nettle

Upstream-Contact: Niels Miller <nisse@lysator.liu.se>

Source: <http://www.lysator.liu.se/~nisse/nettle/>

Copyright: 2001-2011 Niels Miller

Some parts are Copyright the Free Software Foundation and various people. See below and source code comments for details.

License: LGPL-2.1+

Comment:

Nettle is distributed under the GNU Lesser General Public License (LGPL). A few of the individual files are in the public domain. To find the current status of particular files, you have to read the copyright notices at the top of the files.

.

A list of the supported algorithms, their origins and licenses (from the manual):

.

AES

The implementation of the AES cipher (also known as rijndael) is written by Rafael Sevilla. Assembler for x86 by Rafael Sevilla and Niels Miller, Sparc assembler by Niels Miller. Released under the LGPL.

.

ARCFOUR

The implementation of the ARCFOUR (also known as RC4) cipher is written by Niels Miller. Released under the LGPL.

.

ARCTWO

The implementation of the ARCTWO (also known as RC2) cipher is written by Nikos Mavroyanopoulos and modified by Werner Koch and Simon Josefsson. Released under the LGPL.

.

BLOWFISH

The implementation of the BLOWFISH cipher is written by Werner Koch, copyright owned by the Free Software Foundation. Also hacked by Simon Josefsson and Niels Mller. Released under the LGPL.

CAMELLIA

The C implementation is by Nippon Telegraph and Telephone Corporation (NTT), heavily modified by Niels Mller. Assembler for x86 and x86_64 by Niels Mller. Released under the LGPL.

CAST128

The implementation of the CAST128 cipher is written by Steve Reid. Released into the public domain.

DES

The implementation of the DES cipher is written by Dana L. How, and released under the LGPL.

MD2

The implementation of MD2 is written by Andrew Kuchling, and hacked some by Andreas Sigfridsson and Niels Mller. Python Cryptography Toolkit license (essentially public domain).

MD4

This is almost the same code as for MD5 below, with modifications by Marcus Comstedt. Released into the public domain.

MD5

The implementation of the MD5 message digest is written by Colin Plumb. It has been hacked some more by Andrew Kuchling and Niels Mller. Released into the public domain.

SERPENT

The implementation of the SERPENT is based on the code in libgrypt, copyright owned by the Free Software Foundation. Adapted to Nettle by Simon Josefsson and heavily modified by Niels Mller. Assembly for x86_64 by Niels Mller. Released under the LGPL.

SHA1

The C implementation of the SHA1 message digest is written by Peter Gutmann, and hacked some more by Andrew Kuchling and Niels Mller. Released into the public domain. Assembler for x86 by Niels Mller, released under the LGPL.

SHA224, SHA256, SHA384, and SHA512

Written by Niels Mller, using Peter Gutmann's SHA1 code as a model. Released under the LGPL.

.

TWOFISH

The implementation of the TWOFISH cipher is written by Ruud de Rooij. Released under the LGPL.

.

RSA

Written by Niels Mller, released under the LGPL. Uses the GMP library for bignum operations.

.

DSA

Written by Niels Mller, released under the LGPL. Uses the GMP library for bignum operations.

Files: *

Copyright: 2001-2011 Niels Mller

License: LGPL-2.1+

Files: aes-set-*

Copyright: 2000, 2001, 2002 Rafael R. Sevilla, Niels Mller

License: LGPL-2.1+

Files: arctwo*

Copyright: 2003 Nikos Mavroyanopoulos

2004 Simon Josefsson

2004 Free Software Foundation, Inc.

2002, 2004 Niels Mller

License: LGPL-2.1+

Files: base64.h base64-meta.c

Copyright: 2002 Dan Egnor

2002 Niels Mller

License: LGPL-2.1+

Files: blowfish.c

Copyright: 1998, 2001, 2002, 2003 Free Software Foundation, Inc.

2010 Simon Josefsson

License: LGPL-2.1+

Files: blowfish.h

Copyright: 1998, 2001 Free Software Foundation, Inc.

1998, 2001 Ray Dassen

1998, 2001 Niels Mller

License: LGPL-2.1+

Files: camellia-table.c camellia-crypt-internal.c

Copyright: 2006, 2007 NTT (Nippon Telegraph and Telephone Corporation)

2010 Niels Mller

License: LGPL-2.1+

Files: der2dsa.c
Copyright: 2005, 2009 Niels Mller
 2009 Magnus Holmgren
License: LGPL-2.1+

Files: desCode.h descode.README desdata.c desinfo.c
Copyright: 2002 Dana L. How
License: LGPL-2+
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU Library General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

.
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU Library General Public License for more details.

.
You should have received a copy of the GNU Library General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA.

.
On Debian GNU/Linux systems, the complete text of the GNU Library
General Public License, version 2, can be found in
/usr/share/common-licenses/LGPL-2.

Files: des.c des.h
Copyright: 1992 Dana L. How
 1997, 2001 Niels Mller
License: LGPL-2.1+

Files: gcm.c gcm.h
Copyright: 2011 Katholieke Universiteit Leuven
 2011 Niels Mller
License: LGPL-2.1+

Files: md2.c
Copyright: ? Andrew Kuchling
 2003 Andreas Sigfridsson
 2003 Niels Mller
License: LGPL-2.1+

Files: md4.c
Copyright: 2003 Marcus Comstedt
 2003 Niels Mller
License: LGPL-2.1+

Files: md5.c md5-compress.c
Copyright: Colin Plumb, Andrew Kuchling
2001 Niels Mller
License: LGPL-2.1+

Files: memxor.c
Copyright: 1991,1993, 1995 Free Software Foundation, Inc.
2010 Niels Mller
License: LGPL-2.1+

Files: ripemd160.c ripemd160-compress.c
Copyright: 1998, 2001, 2002, 2003 Free Software Foundation, Inc.
License: LGPL-2.1+

Files: ripemd160-meta.c ripemd160.h
Copyright: 2011 Andres Mejia
License: LGPL-2.1+

Files: serpent-encrypt.c serpent-decrypt.c serpent-set-key.c
Copyright: 1998 Ross Anderson, Eli Biham, Lars Knudsen
2003, 2004, 2005 Free Software Foundation, Inc.
2010, 2011 Simon Josefsson
2011 Niels Mller
License: LGPL-2.1+

Files: sha*
Copyright: 2001, 2004 Peter Gutmann, Andrew Kuchling, Niels Mller
License: LGPL-2.1+

Files: twofish*
Copyright: 1999 Ruud de Rooij <ruud@debian.org>
1999 J.H.M. Dassen (Ray) <jdassen@wi.LeidenUniv.nl>
2001 Niels Mller
License: LGPL-2.1+

Files: dsa2sexp.c
Copyright: 2002, 2009 Niels Mller
2009 Magnus Holmgren
License: LGPL-2.1+

Files: testsuite/des-compat-test.c
Copyright: 1995-1997 Eric Young (eay@cryptsoft.com)
License: other

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the copyright
notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
"This product includes cryptographic software written by
Eric Young (eay@cryptsoft.com)"
The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related :-).
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement:
"This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files: tools/pkcs1-conv.c

Copyright: 2005, 2009 Niels Miller
2009 Magnus Holmgren

License: LGPL-2.1+

Files: x86*/aes-*-internal.asm

Copyright: 2001, 2002, 2005, 2008 Rafael R. Sevilla
2001, 2002, 2005, 2008 Niels Miller

License: LGPL-2.1+

Files: tools/getopt*

Copyright: 1987-2001 Free Software Foundation, Inc.

License: GPL-2+

Files: config.guess config.sub

Copyright: 1992-2003 Free Software Foundation, Inc.

License: GPL-2+ with Autoconf exception

As a special exception to the GNU General Public License, if you distribute this file as part of a program that contains a configuration script generated by Autoconf, you may include it under the same distribution terms that you use for the rest of that program.

Files: debian/*

Copyright: none

License: public-domain

I believe that most files in debian/ hardly contains any creative expression eligible for copyright.

Files: debian/sexp-conv.1

Copyright: 2002 Timshel Knoll <timshel@debian.org>

2007 Magnus Holmgren

License: GPL-2

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; version 2 dated June. 1991.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

.

On Debian GNU/Linux systems, the complete text of the GNU General Public License, version 2, can be found in /usr/share/common-licenses/GPL-2.

Comment:

This manpage was copied from the lsh-utils package. Timshel didn't explicitly select a license for his packaging work, but I think that it can be considered released under the same license as LSH itself.

Files: debian/pkcs1-conv.1 debian/nettle-lfib-stream.1

Copyright: 2007 Magnus Holmgren

License: GAP

Copying and distribution of this file, with or without modification, are permitted in any medium without royalty provided the copyright notice and this notice are preserved.

License: LGPL-2.1+

The nettle library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

.

The nettle library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

.
You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

.
On Debian GNU/Linux systems, the complete text of the newest version of the GNU Lesser General Public License can be found in /usr/share/common-licenses/LGPL.

License: GPL-2+

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.
This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.
You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

.
On Debian GNU/Linux systems, the complete text of the newest version of the GNU General Public License can be found in /usr/share/common-licenses/GPL.

1.162 netty-codec-socks 4.1.51.Final

1.162.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2013 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License, version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksSubnegotiationVersion.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksAuthScheme.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksCmdStatus.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksRequestType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksCmdType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksResponseType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksMessageType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksAddressType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksAuthStatus.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5AuthMethod.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5CommandStatus.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksProtocolVersion.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5CommandType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5AddressType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/SocksVersion.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthStatus.java

No license file was found, but licenses were detected in source scan.

~ Copyright 2012 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software

~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-codec-socks/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2014 The Netty Project

*

* The Netty Project licenses this file to you under the Apache License,

* version 2.0 (the "License"); you may not use this file except in compliance

* with the License. You may obtain a copy of the License at:

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

* License for the specific language governing permissions and limitations

* under the License.

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/package-info.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5InitialRequestDecoder.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5CommandResponseDecoder.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4Message.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5Message.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/AbstractSocksMessage.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/AbstractSocks5Message.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthRequestDecoder.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/package-info.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5InitialResponseDecoder.java

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-

jar/io/netty/handler/codec/socksx/v4/AbstractSocks4Message.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4ServerEncoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5ClientEncoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5CommandRequestDecoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5ServerEncoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4ClientEncoder.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2015 The Netty Project  
*  
* The Netty Project licenses this file to you under the Apache License,  
* version 2.0 (the "License"); you may not use this file except in compliance  
* with the License. You may obtain a copy of the License at:  
*  
* http://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
* License for the specific language governing permissions and limitations  
* under the License.  
*/
```

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5AddressEncoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/SocksPortUnificationServerHandler.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5AddressDecoder.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2012 The Netty Project  
*  
* The Netty Project licenses this file to you under the Apache License,  
* version 2.0 (the "License"); you may not use this file except in compliance  
* with the License. You may obtain a copy of the License at:  
*  
* http://www.apache.org/licenses/LICENSE-2.0
```

- *
 - * Unless required by applicable law or agreed to in writing, software
 - * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 - * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 - * License for the specific language governing permissions and limitations
 - * under the License.
- */

Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4ServerDecoder.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksInitRequestDecoder.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/DefaultSocks5PasswordAuthResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/UnknownSocksRequest.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/DefaultSocks5InitialResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4CommandRequest.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/DefaultSocks5CommandResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4CommandResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksMessage.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/DefaultSocks5PasswordAuthRequest.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksInitResponseDecoder.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksCmdRequestDecoder.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5InitialRequest.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/Socks4ClientDecoder.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksAuthRequest.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v4/DefaultSocks4CommandResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socksx/v5/DefaultSocks5CommandRequest.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-jar/io/netty/handler/codec/socks/SocksResponse.java
- * /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-

jar/io/netty/handler/codec/socks/UnknownSocksResponse.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksCommonUtils.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5CommandRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v4/Socks4CommandType.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksCmdResponse.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksAuthResponse.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v4/DefaultSocks4CommandRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksInitResponse.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksInitRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksCmdResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5PasswordAuthRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5CommandResponse.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v5/Socks5InitialResponse.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v5/package-info.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksAuthRequestDecoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksCmdRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksAuthResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/SocksMessage.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v5/DefaultSocks5InitialRequest.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/SocksMessageEncoder.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socksx/v4/Socks4CommandStatus.java
* /opt/ws_local/PERMITS_SQL/1077639554_1597066895.65/0/netty-codec-socks-4-1-51-final-sources-
jar/io/netty/handler/codec/socks/package-info.java

1.163 Idns 1.7.1

1.163.1 Available under license :

This software is copyright (c) 2013 by UNINETT Norid AS. No license is granted to other entities.

All rights reserved.

Copyright (c) 2005,2006, NLnetLabs

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of NLnetLabs nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009, Zdenek Vasicek (vasicek AT fit.vutbr.cz)

Karel Slany (slany AT fit.vutbr.cz)

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the organization nor the names of its contributors may be used to endorse or promote products derived from this

software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2011, Xelerance

Author: Christopher Olah <chris@xelerance.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Xelerance nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.164 ethtool 3.2

1.164.1 Available under license :

ethtool is available under the terms of the GNU Public License version 2.

See COPYING for details.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free

software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```


<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.165 net-snmp 5.8.1.pre2

1.165.1 Available under license :

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: Sparta, Inc (BSD) ----

Copyright (c) 2003-2010, Sparta, Inc

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 2: ScienceLogic, LLC (BSD) ----

Copyright (c) 2006, ScienceLogic, LLC

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: CMU/UCD copyright notice: (BSD like) ----

Copyright 1989, 1991, 1992 by Carnegie Mellon University

Derivative Work - 1996, 1998-2000

Copyright 1996, 1998-2000 The Regents of the University of California

All Rights Reserved

Permission to use, copy, modify and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both that copyright notice and this permission notice appear in

supporting documentation, and that the name of CMU and The Regents of the University of California not be used in advertising or publicity pertaining to distribution of the software without specific written permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL CMU OR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM THE LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

---- Part 2: Networks Associates Technology, Inc copyright notice (BSD) ----

Copyright (c) 2001-2003, Networks Associates Technology, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the Networks Associates Technology, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) ----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
- * The name of Cambridge Broadband Ltd. may not be used to endorse or
promote products derived from this software without specific prior
written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) ----

Copyright (c) 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara,
California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered
trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Sun Microsystems, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 5: Sparta, Inc copyright notice (BSD) ----

Copyright (c) 2003-2013, Sparta, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;

OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) ----

Copyright (c) 2004, Cisco, Inc and Information Network
Center of Beijing University of Posts and Telecommunications.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Cisco, Inc, Beijing University of Posts and Telecommunications, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) ----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003
oss@fabasoft.com
Author: Bernhard Penz <bernhard.penz@fabasoft.com>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice,

this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries, brand or product names may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 8: Apple Inc. copyright notice (BSD) ----

Copyright (c) 2007 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Apple Inc. ("Apple") nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY APPLE AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL APPLE OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND

ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 9: ScienceLogic, LLC copyright notice (BSD) ----

Copyright (c) 2009, ScienceLogic, LLC
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 10: Lennart Poettering copyright notice (BSD-like) ----

Copyright 2010 Lennart Poettering

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so,

subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

---- Part 11: IETF copyright notice (BSD) ----

Copyright (c) 2013 IETF Trust and the persons identified as authors of the code. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Internet Society, IETF or IETF Trust, nor the names of specific contributors, may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 12: Arista Networks copyright notice (BSD) ----

Copyright (c) 2013, Arista Networks, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Arista Networks, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 13: VMware, Inc. copyright notice (BSD) ----

Copyright (c) 2016, VMware, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of VMware, Inc. nor the names of its contributors

may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 14: USC/Information Sciences Institute copyright notice (BSD) ----

Copyright (c) 2017-2018, Information Sciences Institute
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Information Sciences Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

/* =====

- * Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- *
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- *
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in
- * the documentation and/or other materials provided with the
- * distribution.
- *
- * 3. All advertising materials mentioning features or use of this
- * software must display the following acknowledgment:
- * "This product includes software developed by the OpenSSL Project
- * for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
- *
- * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
- * endorse or promote products derived from this software without
- * prior written permission. For written permission, please contact
- * openssl-core@openssl.org.
- *
- * 5. Products derived from this software may not be called "OpenSSL"
- * nor may "OpenSSL" appear in their names without prior written
- * permission of the OpenSSL Project.
- *
- * 6. Redistributions of any form whatsoever must retain the following
- * acknowledgment:
- * "This product includes software developed by the OpenSSL Project
- * for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"
- *
- * THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
- * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
- * PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR

* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.

* =====

*

* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).

*

*/

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

* All rights reserved.

*

* This package is an SSL implementation written

* by Eric Young (eay@cryptsoft.com).

* The implementation was written so as to conform with Netscapes SSL.

*

* This library is free for commercial and non-commercial use as long as

* the following conditions are aheared to. The following conditions

* apply to all code found in this distribution, be it the RC4, RSA,

* lhash, DES, etc., code; not just the SSL code. The SSL documentation

* included with this distribution is covered by the same copyright terms

* except that the holder is Tim Hudson (tjh@cryptsoft.com).

*

* Copyright remains Eric Young's, and as such any Copyright notices in

* the code are not to be removed.

* If this package is used in a product, Eric Young should be given attribution

* as the author of the parts of the library used.

* This can be in the form of a textual message at program startup or

* in documentation (online or textual) provided with the package.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

- * 3. All advertising materials mentioning features or use of this software
- * must display the following acknowledgement:
- * "This product includes cryptographic software written by
- * Eric Young (eay@cryptsoft.com)"
- * The word 'cryptographic' can be left out if the routines from the library
- * being used are not cryptographic related :-).
- * 4. If you include any Windows specific code (or a derivative thereof) from
- * the apps directory (application code) you must include an acknowledgement:
- * "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- *
- * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
- * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- * ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- * SUCH DAMAGE.
- *
- * The licence and distribution terms for any publically available version or
- * derivative of this code cannot be changed. i.e. this code cannot simply be
- * copied and put under another distribution licence
- * [including the GNU Public Licence.]
- */

1.166 iptables 1.4.20

1.166.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to

using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below,

refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include

anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

```
# SYN signatures. Those signatures work for SYN packets only (duh!).
#
# (C) Copyright 2000-2003 by Michal Zalewski <lcamtuf@coredump.cx>
# (C) Copyright 2003 by Mike Frantzen <frantzen@w4g.org>
#
# Permission to use, copy, modify, and distribute this software for any
# purpose with or without fee is hereby granted, provided that the above
# copyright notice and this permission notice appear in all copies.
#
# THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES
# WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
# MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR
```

ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
#

1.167 jackson-databind-nullable 0.2.1

1.167.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include

the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.168 python-setuptools 8.8.0

1.168.1 Available under license :

This package was debianized by Matthias Klose <m@klose.in-berlin.de> on Tue, 14 Dec 2004 12:45:14 +0100.

It was downloaded from
<http://pypi.python.org/pypi/distribute/>

Copyright:

Upstream Author: Phillip J. Eby, Tarek Ziade and the distutils SIG

License:

PSF or ZPL (both appended in this file)

PSF

A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's

principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release from	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible,

because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

PSF LICENSE AGREEMENT FOR PYTHON 2.3

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 2.3 software in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 2.3 alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002 Python Software Foundation; All Rights Reserved" are retained in Python 2.3 alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on or incorporates Python 2.3 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 2.3.
4. PSF is making Python 2.3 available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 2.3 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 2.3 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 2.3, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material

breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python 2.3, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all

respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS"

basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in

supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Zope Public License (ZPL) Version 2.1

A copyright notice accompanies this license document that identifies the copyright holders.

This license has been certified as open source. It has also been designated as GPL compatible by the Free Software Foundation (FSF).

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source code must retain the accompanying copyright notice, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the accompanying copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Names of the copyright holders must not be used to endorse or promote products derived from this software without prior written permission from the copyright holders.
4. The right to distribute this software or to use it for any purpose does not give you the right to use Servicemarks (sm) or Trademarks (tm) of the copyright holders. Use of them is covered by separate agreement with the copyright holders.

5. If any files are modified, you must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

Disclaimer

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.169 gnulib 2019-09-23

1.169.1 Available under license :

Please email the following information to fsf-records@gnu.org, and we will send you the assignment form that covers your program.

Please use your full legal name (in ASCII characters) as the subject line of the message.

[What is the name of the program or package you're contributing?]

[Will this become part of a larger GNU package? If so, what package?]

[Did you copy any files or text written by someone else into the program? Even if that material is free software, we need to know about it.]

[Do you have an employer who might have a basis to claim to own your changes? Do you attend a school which might make such a claim?]

[What country are you a citizen of?]

[What year were you born?]

[Please write your email address here.]

[Please write your postal address here.]

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the

earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered

work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided

above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see [<https://www.gnu.org/licenses/>](https://www.gnu.org/licenses/).

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/licenses/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <https://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of

the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
 - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
 - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this

License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Files:

tests/test-update-copyright.sh

Depends-on:

configure.ac:

```
abs_aux_dir=`cd "$ac_aux_dir"; pwd`  
AC_SUBST([abs_aux_dir])
```

Makefile.am:

```
TESTS += test-update-copyright.sh  
TESTS_ENVIRONMENT += abs_aux_dir='${abs_aux_dir}'  
@c The GNU Lesser General Public License.  
@center Version 2.1, February 1999
```

@c This file is intended to be included within another document,
@c hence no sectioning command or @node.

@display

Copyright © 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence the
version number 2.1.]

@end display

@subheading Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software---typically libraries---of the Free
Software Foundation and other authors who decide to use it. You can use
it too, but we suggest you first think carefully about whether this
license or the ordinary General Public License is the better strategy to
use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of it
in new free programs; and that you are informed that you can do these
things.

To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you. You must make sure that they, too, receive or can get the source
code. If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling

it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this

case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a ``work that uses the Library''. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a ``work that uses the Library'' with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a ``work that uses the library''. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a ``work that uses the Library'' uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library'' with the Library to produce a

work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library'', as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item

Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center @b{NO WARRANTY}

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME

THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301,

USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

@smallexample

Yoyodyne, Inc., hereby disclaims all copyright interest in the library
`Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

That's all there is to it!

Files:

tests/test-canonicalize-lgpl.c

tests/signature.h

tests/null-ptr.h

tests/macros.h

Depends-on:

ignore-value

same-inode

symlink

configure.ac:

Makefile.am:

TESTS += test-canonicalize-lgpl

check_PROGRAMS += test-canonicalize-lgpl

\$Id: COPYING,v 1.3 2006-10-26 16:20:28 eggert Exp \$

The files in here are mostly copyright (C) Free Software Foundation, and are under assorted licenses. Mostly, but not entirely, GPL.

Many modules are provided dual-license, either GPL or LGPL at your option. The headers of files in the lib directory (e.g., lib/error.c) state GPL for convenience, since the bulk of current gnuilib users are GPL'd programs. But the files in the modules directory (e.g., modules/error) state the true license of each file, and when you use 'gnuilib-tool --lgpl --import <modules>', gnuilib-tool either rewrites the files to have an LGPL header as part of copying them from gnuilib to your project directory, or fails because the modules you requested were not licensed under LGPL.

Some of the source files in lib/ have different licenses. Also, the copy of maintain.texi in doc/ has a verbatim-copying license, and doc/standards.texi and make-stds.texi are GFDL. Most (but not all) m4/*.m4 files have nearly unlimited licenses.

@c The GNU General Public License.

@center Version 2, June 1991

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@heading Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software---to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

@heading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The ``Program'', below, refers to any such program or work, and a ``work based on the Program'' means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term ``modification''.) Each licensee is addressed as ``you''.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

@item

You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License

along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

@item

If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

@enumerate a

@item

Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

@item

Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

@item

Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

@end enumerate

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as

distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

@item

You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

@item

Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other

circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@iftex
@heading NO WARRANTY
@end iftex
@ifinfo
@center NO WARRANTY

@end ifinfo

@item
BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item
IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@iftex
@heading END OF TERMS AND CONDITIONS
@end iftex
@ifinfo
@center END OF TERMS AND CONDITIONS

@end ifinfo

@page
@heading Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively

convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the program's name and a brief idea of what it does.}
Copyright (C) @var{yyyy} @var{name of author}

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
@end smallexample

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

@smallexample

Gnomovision version 69, Copyright (C) @var{year} @var{name of author}
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.
@end smallexample

The hypothetical commands @samp{show w} and @samp{show c} should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than @samp{show w} and @samp{show c}; they could even be mouse-clicks or menu items---whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

@example

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

@var{signature of Ty Coon}, 1 April 1989

Ty Coon, President of Vice

@end example

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Description:

Concatenate two arbitrary file names.

Files:

lib/filenamecat.h

lib/filenamecat-lgpl.c

m4/filenamecat.m4

Depends-on:

dirname-lgpl

configure.ac:

gl_FILE_NAME_CONCAT_LGPL

Makefile.am:

lib_SOURCES += filenamecat-lgpl.c

Include:

"filenamecat.h"

License:

LGPLv2+

Maintainer:

Jim Meyering

Please email the following information to assign@gnu.org, and we will send you the assignment form for your past and future changes.

Please use your full legal name (in ASCII characters) as the subject line of the message.

REQUEST: SEND FORM FOR PAST AND FUTURE CHANGES

[What is the name of the program or package you're contributing to?]

[Did you copy any files or text written by someone else in these changes?
Even if that material is free software, we need to know about it.]

[Do you have an employer who might have a basis to claim to own your changes? Do you attend a school which might make such a claim?]

[For the copyright registration, what country are you a citizen of?]

[What year were you born?]

[Please write your email address here.]

[Please write your postal address here.]

[Which files have you changed so far, and which new files have you written so far?]

Description:

Provide the GNU Free Documentation License in Texinfo format.

Files:

doc/fdl.texi

Depends-on:

configure.ac:

Makefile.am:

Include:

License:

unmodifiable license text

Maintainer:

all

Description:

Help make libraries relocatable, that is, to allow them to function properly when copied to an arbitrary directory.

Files:

doc/relocatable.texi

lib/relocatable.h

lib/relocatable.c
lib/relocatable.valgrind
m4/relocatable-lib.m4

Depends-on:

strdup

configure.ac:

```
gl_RELOCATABLE_LIBRARY
if test $RELOCATABLE = yes; then
  AC_LIBOBJ([relocatable])
fi
```

Makefile.am:

```
DEFS += -DNO_XMALLOC
```

Include:

```
"relocatable.h"
```

License:

GPLv2+

Maintainer:

Ben Pfaff

Description:

Ensure getcwd(NULL, 0) returns a buffer allocated by the malloc() function.

Files:

lib/getcwd-lgpl.c
m4/getcwd.m4

Depends-on:

unistd

strdup [test \$REPLACE_GETCWD = 1]

configure.ac:

```
gl_FUNC_GETCWD_LGPL
if test $REPLACE_GETCWD = 1; then
  AC_LIBOBJ([getcwd-lgpl])
fi
gl_UNISTD_MODULE_INDICATOR([getcwd])
```

Makefile.am:

Include:

```
<unistd.h>
```

License:

LGPLv2+

Maintainer:

Eric Blake

Legal Issues about Contributing Code to GNU last updated 14 July 2015

Project GNU has to be careful to obey copyright laws, even though these laws are wrong when they stop people from sharing generally useful published information such as software, because we are in the public eye. We also use copyright to defend users' freedom, by means of copyleft (though this does not excuse copyright law for helping to make software proprietary).

This means that if you want to contribute software to GNU, you have to do something to give us legal permission to use it. There are three ways this can be done:

* Assign the copyright to the Free Software Foundation.

This allows the FSF to act to stop violations of the GPL.

* Keep the copyright and release the program yourself under the GNU GPL. (This alternative is too impractical for contributions to a preexisting FSF-copyrighted GNU program.)

* Put the code in the public domain. Then there is nothing to stop hoarding of modified versions, but we can still use the program in GNU.

Most of these alternatives require a signed piece of paper, or in some cases a digital signature, to make it happen.

* Assigning copyright.

Assigning the copyright means signing a contract that makes the Free Software Foundation the "owner" of the program according to the law. As the copyright holder, the Foundation can sue anyone who tries to distribute the program as a proprietary product. We are willing to keep your name on the program as the author for as long as the program remains recognizably distinct. ("Owner" is in quotes to show that we don't really believe in this kind of ownership.)

The assignment contract commits the foundation to setting distribution terms that permit free redistribution.

Often we don't want to do the work of starting to distribute a program right away. There are many things which we will need in order to have a complete system but which aren't really useful until the rest of the system is done. But signing the assignment does not stop you from distributing the program yourself--as long as you do so under the GNU

terms. You don't have to wait for us to start distributing. You can start distributing as soon as you attach our standard copyleft to the files. (Ask for our advice on how to do this.)

The assignment contract we normally use has a clause that permits you to use your code in proprietary programs, on 30 days' notice. (The 30 days' notice is there because, through a legal technicality, it would improve our position in a suit against a hoarder.) Although we believe that proprietary software is wrong, we include this clause because it would serve no purpose to ask you to promise not to do it. You're giving us a gift in the first place.

You don't need to invoke this clause in order to distribute copies as free software under the GNU GPL, since everyone is allowed to do that.

* Releasing it yourself.

You can release a program yourself under copyleft distribution terms such as the GNU GPL. (In order to accept the program as GNU software, we would have to be happy with your choice of terms.) This does not require a contract between you and the FSF, but we would appreciate having a signed piece of paper to confirm your decision.

If someone violates your terms--for example, if someone gets a copy from us, and uses it as a basis for a proprietary product in violation of the terms--we cannot sue him. You would have to sue, or he gets away with it.

* Public domain.

If you put the program in the public domain, we prefer to have a signed piece of paper--a disclaimer of rights--from you confirming this. If the program is not very important, we can do without one; the worst that could happen is that we might some day be forced to stop using it.

The law says that anyone can copyright a modified version of the public domain work. (This doesn't restrict the original, which remains in the public domain; only the changes are copyrighted.) If we make extensive changes, we will probably do this and add our usual copyleft. If we make small changes, we will leave the version we distribute in the public domain.

* What about your employer?

If you are employed to do programming, or have made an agreement with your employer that says it owns programs you write, we need a signed piece of paper from your employer disclaiming rights to the program. It should be signed by a vice president or general manager of the company. If you

can't get at them, it is almost as good to find someone who signs licenses for software that is purchased. Here is a sample wording:

Digital Simulation Corporation hereby disclaims all copyright interest in the program "sample.el" (a program to direct assemblers to make passes at compilers under GNU Emacs) written by Hugh Hacker.

<signature of Mo Ghoul>, 1 April 1987

Mo Ghoul, President of Vice, Digital Simulation Corp.

The description of what the program does is just to make it clearer what the disclaimer covers.

If what you did was change an existing program, it should say this:

...in the changes and enhancements made by Hugh Hacker to the program "sample.el".

* Did anyone else contribute?

If someone else contributed more than a few lines here or there to the program, then that person too is an author, and that person too needs to sign papers just as you do. So may that person's employer. However, if his contribution is just a fraction of the whole work, it is satisfactory if he disclaims his own rights, even if you are assigning yours. (If just the minor contributors' work goes in the public domain, that doesn't leave much of a loophole for hoarders.)

If you incorporated packages which you found floating around as "public domain", we might still want to track down their authors, to get disclaimers to reassure us that they really are in the public domain. So keep track of what these packages are and who wrote them.

* A reminder:

In working on a project for GNU, DO NOT study and follow any Unix sources or other non-free software that might have any bearing on the project. Don't refer to them at all, unless you are forced to for non-GNU reasons.

It is not considered a serious problem if you have read Unix sources or other non-free source code in the past for other purposes, provided you don't copy anything in particular from them. However, referring to them while you do the work could cause us legal problems later.

Description:

Locating a program in PATH (LGPLed version).

Files:

lib/findprog.h
lib/findprog.c
lib/findprog-lgpl.c
m4/findprog.m4
m4/eaccess.m4

Depends-on:

stdbool
strdup
concat-filename
access
unistd

configure.ac:

gl_FINDPROG
gl_MODULE_INDICATOR([findprog-lgpl])

Makefile.am:

lib_SOURCES += findprog.h findprog.c

Include:

"findprog.h"

License:

GPLv2+

Maintainer:

all

The files in this directory describe the gnu lib modules.
The following copyright notice applies to each of these
description files.

Copyright (C) 2002-2019 Free Software Foundation, Inc.
This file is free software; the Free Software Foundation
gives unlimited permission to copy and/or distribute it,
with or without modifications, as long as this notice is preserved.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public

License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under

these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source

code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent

license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free

Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts

as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is

linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact

all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact

that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

Please email the following information to assign@gnu.org, and we will send you the assignment form that covers the changes you have already written. That form will cover subsequent corrections to those changes, but it will not cover other unrelated future changes to the same program.

Please use your full legal name (in ASCII characters) as the subject line of the message.

REQUEST: SEND FORM FOR CHANGES ALREADY MADE

[What is the name of the program or package you're contributing to?]

[Did you copy any files or text written by someone else in these changes?
Even if that material is free software, we need to know about it.]

[Do you have an employer who might have a basis to claim to own your changes? Do you attend a school which might make such a claim?]

[For the copyright registration, what country are you a citizen of?]

[What year were you born?]

[Please write your email address here.]

[Please write your postal address here.]

[Which files have you changed so far, and which new files have you written so far?]

Please email the following information to assign@gnu.org, and we will send you the disclaimer form for your changes. This form is preferred when your changes are small, they do not add any nontrivial new files, and you are finished making them (aside perhaps from small bug fixes).

If you would like to make further contributions to the same package, and you would like to avoid the need to sign more papers when you contribute them, you have another option: to sign a copyright assignment covering your future changes. If that is what you want to do, please tell the maintainer you would prefer to sign an assignment of past and future changes.

Please use your full legal name (in ASCII characters) as the subject line of the message.

REQUEST: SEND DISCLAIMER FORM

[What is the name of the program or package you're contributing to?]

[Did you copy any files or text written by someone else in these changes? Even if that material is free software, we need to know about it.]

[Do you have an employer who might have a basis to claim to own your changes?]

[Please write your email address here.]

[Please write your snail address here.]

[Please list the files involved, or give a brief description of the changes being disclaimed.]

Files:

tests/test-getcwd-lgpl.c

tests/signature.h

tests/macros.h

Depends-on:

configure.ac:

Makefile.am:

TESTS += test-getcwd-lgpl

check_PROGRAMS += test-getcwd-lgpl

test_getcwd-lgpl_LDADD = \$(LDADD) \$(LIBINTL)

Description:

realpath, canonicalize_file_name: Provide canonical absolute file name

Files:

lib/canonicalize-lgpl.c

m4/canonicalize.m4

m4/double-slash-root.m4

Depends-on:

extensions

stdlib

nocrash

alloca-opt [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

errno [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

lstat [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test \$REPLACE_CANONICALIZE_FILE_NAME
= 1]

malloca [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

memmove [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

pathmax [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

readlink [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

sys_stat [test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test
\$REPLACE_CANONICALIZE_FILE_NAME = 1]

configure.ac:

gl_CANONICALIZE_LGPL

if test \$HAVE_CANONICALIZE_FILE_NAME = 0 || test \$REPLACE_CANONICALIZE_FILE_NAME = 1; then
AC_LIBOBJ([canonicalize-lgpl])

fi

gl_MODULE_INDICATOR([canonicalize-lgpl])

gl_STDLIB_MODULE_INDICATOR([canonicalize_file_name])

gl_STDLIB_MODULE_INDICATOR([realpath])

Makefile.am:

Include:
<stdlib.h>

License:
LGPLv2+

Maintainer:
all

Description:
Extract specific portions of filenames.

Files:
lib/dirname.h
lib/dirname-lgpl.c
lib/basename-lgpl.c
lib/stripslash.c
m4/dirname.m4

Depends-on:
dosname
double-slash-root
malloc-posix
stdbool

configure.ac:
gl_DIRNAME_LGPL

Makefile.am:
lib_SOURCES += dirname-lgpl.c basename-lgpl.c stripslash.c

Include:
"dirname.h"

License:
LGPLv2+

Maintainer:
Jim Meyering, Eric Blake

1.170 rpcbind 6.0

1.170.1 Available under license :

/*

- * Copyright (c) Copyright (c) Bull S.A. 2005 All Rights Reserved.
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions

- * are met:
- * 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * 3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.
- *
- * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
- */

1.171 classgraph 4.8.69

1.171.1 Available under license :

The MIT License (MIT)

Copyright (c) 2019 Luke Hutchison

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.172 pam 1.5.2

1.172.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source

code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it

becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated

interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must

be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy

from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference

directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you

distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

^L

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

Copyright (c) 2000,2001,2002,2003 Takaaki Tateishi <ttate@users.sourceforge.jp>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

Please see LICENSE for distribution license.

1.173 zlib 1.2.8

1.173.1 Available under license :

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.11, January 15th, 2017

Copyright (C) 1995-2017 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

*/

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.174 pam 1.1.5

1.174.1 Available under license :

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this libpamc release may be distributed:

Redistribution and use in source and binary forms of libpamc, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Library General Public License (LGPL), in which case the provisions of the GNU LGPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU LGPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE

USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this Linux-PAM release may be distributed:

Redistribution and use in source and binary forms of Linux-PAM, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License, in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.175 hd-parm 9.38

1.175.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so

that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
 - a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

 - b) Accompany it with a written offer, valid for at least three

years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the

original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

This package was debianized by Christopher L Cheney <ccheney@debian.org> on Wed, 21 Nov 2001 15:51:14 -0600.

It was downloaded from <http://www.ibiblio.org/pub/Linux/system/hardware>

Upstream Author: Mark S. Lord <mlord@pobox.com>

Copyright:

```
/* hdparm.c - Command line interface to get/set hard disk parameters */
/*          - by Mark Lord 1994-2008 -- freely distributable */
```

You are free to distribute this software under the terms of the BSD License. On Debian systems, the complete text of the BSD License can be found in `/usr/share/common-licenses/BSD`
BSD-Style Open Source License:

You may freely use, modify, and redistribute the hdparm program, as either binary or source, or both.

The only condition is that my name and copyright notice remain in the source code as-is.

Mark Lord (mlord@pobox.com)

1.176 isof 4.85

1.176.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002 Purdue Research Foundation, West Lafayette, Indiana
 * 47907. All rights reserved.
 *
 * Written by V. Abell.
 *
 * This software is not subject to any license of the American Telephone
 * and Telegraph Company or the Regents of the University of California.
 *
 * Permission is granted to anyone to use this software for any purpose on
 * any computer system, and to alter it and redistribute it freely, subject
```

- * to the following restrictions:
- *
- * 1. Neither the authors nor Purdue University are responsible for any
- * consequences of the use of this software.
- *
- * 2. The origin of this software must not be misrepresented, either by
- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.

*/

/*

* GetOpt() -- Local get option

*

* Borrowed from lsof's main.c source file.

*

* Liberally adapted from the public domain AT&T getopt() source,
* distributed at the 1985 UNIFORM conference in Dallas

*

* The modifications allow '?' to be an option character and allow

* the caller to decide that an option that may be followed by a

* value doesn't have one -- e.g., has a default instead.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTlib.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2001 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on

* any computer system, and to alter it and redistribute it freely, subject

* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any

* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by

- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/uw/uw7/fs/nsc_cfs/cnode.h
 No license file was found, but licenses were detected in source scan.

/*-

- * Copyright (c) 1980, 1983, 1988 Regents of the University of California.
- * All rights reserved.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software
- * must display the following acknowledgement:
- * This product includes software developed by the University of
- * California, Berkeley and its contributors.
- * 4. Neither the name of the University nor the names of its contributors
- * may be used to endorse or promote products derived from this software
- * without specific prior written permission.
- *
- * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
- * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- * ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
- * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- * SUCH DAMAGE.
- *
- * @(#)netdb.h 5.15 (Berkeley) 4/3/91
- */

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/osr/include/netdb.h

No license file was found, but licenses were detected in source scan.

Frequently Asked Questions about lsof

```
*****
| The latest release of lsof is always available via anonymous ftp |
| from lsof.itap.purdue.edu. Look in pub/lsof.README for its    |
| location.                                                    |
*****
```

This file contains frequently asked questions about lsof and answers to them.

Vic Abell <abe@purdue.edu>

September 27, 2011

Table of Contents:

- 1.0 General Concepts
 - 1.1 Lsof -- what is it?
 - 1.2 Where do I get lsof?
 - 1.2.1 Are there mirror sites?
 - 1.2.2 Are lsof executables available?
 - 1.2.3 How do I check the validity of an lsof distribution?
 - 1.2.4 Why can't I get the sum(1) result reported in README.lsof_<revision>?
 - 1.2.5 Why won't gpg accept the lsof-signing PGP public key?
 - 1.3 Where can I get more lsof documentation?
 - 1.4 How do I report an lsof bug?
 - 1.5 Where can I get the lsof FAQ?
 - 1.5.1 How timely is the on-line FAQ?
 - 1.6 Is there a test suite?
 - 1.7 Is lsof vulnerable to the standard I/O descriptor attack?
 - 1.8 Can I alter lsof's make(1) behavior?
 - 1.9 Is there an lsof license?
 - 1.10 Language locale support
 - 1.10.1 Does lsof support language locales? How do I use the support?
 - 1.10.2 Does lsof support wide characters in language locales?
 - 1.11 Are any files in the lsof distribution copyrighted?
 - 1.12 Are there other lsof-related resources?
 - 1.13 What does the "WARNING: unsupported dialect or version" mean?
- 2.0 Lsof Ports

- 2.1 What ports exist?
- 2.2 What about a new port?
 - 2.2.1 User-contributed Ports
- 2.3 Why isn't there an AT&T SVR4 port?
- 2.4 Why isn't there an SGI IRIX port?
- 2.5 Why does lsof's Configure script report "WARNING: unsupported dialect or version"?

- 3.0 Lsof Problems
 - 3.1 Configuration Problems
 - 3.1.1 Why can't Configure determine the UNIX dialect version?
 - 3.2 Compilation Problems
 - 3.2.1 Why does the compiler complain about missing header files?
 - 3.2.2 Why does gcc complain about the contents of header files distributed by the system's vendor?
 - 3.2.3 Other header file problems
 - 3.3 Why doesn't lsof report full path names?
 - 3.3.1 Why do lsof -r reports show different path names?
 - 3.3.2 Why does lsof report the wrong path names?
 - 3.3.3 Why doesn't lsof report path names for unlinked (rm'd) files?
 - 3.3.4 Why doesn't lsof report the "correct" hard linked file path name?
 - 3.3.5 When will lsof report path names for deleted files?
 - 3.4 Why is lsof so slow?
 - 3.5 Why doesn't lsof's setgid or setuid permission work?
 - 3.6 Does lsof have security problems?
 - 3.7 Will lsof show remote hosts using files via NFS?
 - 3.8 Why doesn't lsof report locks held on NFS files?
 - 3.8.1 Why does lsof report a one byte lock on byte zero as a full file lock?
 - 3.9 Why does lsof report different values for open files on the same file system (the automounter phenomenon)?
 - 3.10 Why don't lsof and netstat output match?
 - 3.10.1 Why can't lsof find accesses to some TCP and UDP ports?
 - 3.11 Why does lsof update the device cache file?
 - 3.12 Why doesn't lsof report state for UDP socket files?
 - 3.13 I am editing a file with vi; why doesn't lsof find the file?
 - 3.14 Why doesn't lsof report TCP/TPI window and queue sizes for my dialect?
 - 3.14.1 Why doesn't lsof report socket options, socket states, and TCP flags and values for my dialect?
 - 3.14.2 Why doesn't lsof report the partial listen queue connection count for my dialect?
 - 3.15 What does "no more information" in the NAME column mean?
 - 3.16 Why doesn't lsof find a process that ps finds?
 - 3.17 Why doesn't -V report a search failure?
 - 3.18 Portmap problems
 - 3.18.1 Why isn't a name displayed for the portmap registration?

- 3.18.2 How can I display only portmap registrations?
- 3.18.3 Why doesn't lsof report portmap registrations for some ports?
- 3.19 Why is `lsof | wc` bigger than my system's open file limit?
- 3.20 Why doesn't lsof report file offset (position)?
 - 3.20.1 What does lsof report for size when the file doesn't really have one?
- 3.21 Problems with path name arguments
 - 3.21.1 How do I ask lsof to search a file system?
 - 3.21.2 Why doesn't lsof find all the open files in a file system?
 - 3.21.3 Why does the lsof exit code report it didn't find open files when some files were listed?
 - 3.21.4 Why won't lsof find all the open files in a directory?
 - 3.21.5 Why are the +D and +d options so slow?
 - 3.21.6 Why do the +D and +d options produce warning messages?
- 3.22 Why can't my C compiler find the rpcnt structure definition?
- 3.23 Why doesn't lsof report fully on file "foo" on UNIX dialect "bar"?
- 3.24 Why do I get a complaint when I execute lsof that some library file can't be found?
- 3.25 Why does lsof complain it can't open files?
- 3.26 Why does lsof warn "compiled for x ... y; this is z."?
- 3.27 How can I disable the kernel identity check?
- 3.28 Why don't ps(1) and lsof agree on the owner of a process?
- 3.29 Why doesn't lsof find an open socket file whose connection state is past CLOSE_WAIT?
- 3.30 Why don't machine.h definitions work when the surrounding comments are removed?
- 3.31 What do "can't read inpcb at 0x...", "no protocol control block", "no PCB, CANTSENDMORE, CANTRCVMORE", etc. mean?
- 3.32 What do the "unknown file system type" warnings mean?
- 3.33 Installation
 - 3.33.1 How do I install lsof?
 - 3.33.2 How do I install a common lsof when I have machines that need differently constructed lsof binaries?
- 3.34 Why do lsof 4.53 and above reject device cache files built by earlier lsof revisions?
- 3.35 What do "like block special" and "like character special" mean in the NAME column?
- 3.36 Why does an lsof make fail because of undefined symbols?
- 3.37 Command Regular Expressions (REs)
 - 3.37.1 What are basic and extended regular expressions?
 - 3.37.2 Why can't I put a slash in a command regular expression?
 - 3.37.3 Why does lsof say my command regular expression wasn't found?
- 3.38 Why doesn't lsof report on shared memory segments?
- 3.39 Why does lsof report two instances of itself?
- 3.40 Why does lsof report '\n' in device cache file error messages?
- 3.41 Kernel Symbol and Address Problems
 - 3.41.1 What does "lsof: WARNING: name cache hash size length error: 0"

- mean?
- 3.41.2 Why does lsof produce "garbage" output?
- 3.42 Why does lsof report open files when run as super user that it doesn't report when run with lesser privileges?
- 3.43 Test Suite Problems
 - 3.43.1 Errors all tests can report:
 - 3.43.1.1 Why do tests complain "ERROR!!! can't execute ../lsof"?
 - 3.43.1.2 Why do tests complain "ERROR!!! can't find ..." a file?
 - 3.43.1.3 Why do some tests fail to compile?
 - 3.43.1.4 Why do some tests always fail?
 - 3.43.1.5 Why does the test suite say it hasn't been validated on my dialect?
 - 3.43.1.6 Why do the tests complain they can't stat() or open() /dev/mem or /dev/kmem?
 - 3.43.2 LTbigf test issues
 - 3.43.2.1 Why does the LTbigf test say that the dialect doesn't support large files?
 - 3.43.2.2 Why does LTbigf complain about operations on its config.LTbigf* file?
 - 3.43.2.3 Why does LTbigf warn that lsof doesn't return file offsets?
 - 3.43.3 Why does the LTbasic test complain "ERROR!!! lsof this ..." and "ERROR!!! lsof that ..."?
 - 3.43.4 LTnfs test issues
 - 3.43.4.1 Why does the LTnfs test complain "couldn't find NFS file ..."?
 - 3.43.5 LTnlink test issues
 - 3.43.5.1 Why does the LTnlink test complain that its test file is on an NFS file system?
 - 3.43.5.2 Why does LTnlink delay and report "waiting for link count update: ..."?
 - 3.43.5.3 Why does LTnlink fail because of an unlink error?
 - 3.43.6 LTdnlc test issues
 - 3.43.6.1 Why won't the LTdnlc test run?
 - 3.43.6.2 What does the LTdnlc test mean by "... <path> found: 100.00%"?
 - 3.43.6.3 Why does the DNLC test fail?
 - 3.43.7 Why hasn't the test suite been qualified for 64 bit HP-UX 11 when lsof is compiled with gcc?
 - 3.43.8 LTszoff test issues
 - 3.43.8.1 Why does LTszoff warn that lsof doesn't return file offsets?
 - 3.43.9 LTlock test issues
- 3.44 File descriptor list (the ``-d" option) problems
 - 3.44.1 Why does lsof reject a ``-d" FD list?
 - 3.44.2 Why are file descriptors other than those in my FD list reported?
- 3.45 How can I supply device numbers for inaccessible NFS file systems?
- 3.46 Why won't lsof find open files on over-mounted file systems?
- 3.47 What can be done when lsof reports no more space?
- 3.48 What if the lsof build encounters ar and ld problems?

4.0 AIX Problems

4.1 What is the Stale Segment ID bug and why is -X needed?

4.1.1 Stale Segment ID APAR

4.2 Gcc Work-around for AIX 4.1x

4.3 Gcc and AIX 4.2

4.4 Why won't lsof's Configure allow the use of gcc for AIX below 4.1?

4.5 What is an AIX SMT file type?

4.6 Why does AIX lsof start so slowly?

4.7 Why does exec complain it can't find libc.a[shr.o]?

4.8 What does lsof mean when it says, "TCP no PCB, CANTSENDMORE, CANTRCVMORE" in a socket file's NAME column?

4.9 When the -X option is used on AIX 4.3.3, why does lsof disable it, saying "WARNING: user struct mismatch; -X option disabled?"

4.10 Why doesn't the -X option work on my AIX 5L or 5.[123] system?

4.11 Why doesn't /usr/bin/oslevel report the correct AIX version?

4.11.1 Why doesn't /usr/bin/oslevel report the correct AIX version on AIX 5.1?

4.12 Why does lsof for AIX 5.1 or above Power architecture complain about kernel bit size?

4.13 What can't gcc be used to compile lsof on the ia64 architecture for AIX 5 and above?

4.14 Why does lsof get a segmentation fault when compiled with gcc for a 64 bit Power architecture AIX 5.1 kernel?

4.15 Why does lsof ignore AFS on my AIX system?

4.16 Why does lsof report "system paging space is low" and exit?

4.17 Why does lsof have compilation and execution problems on AIX 5.3 above maintenance level 1?

5.0 Apple Darwin Problems

5.1 What do /dev/kmem-based and libproc-based mean?

5.2 /dev/kmem-based Apple Darwin Questions

5.2.1 Why does Configure ask for a path to the Darwin XNU kernel header files?

5.2.1.1 Why does Configure complain that Darwin XNU kernel header files are missing?

5.2.2 Why doesn't Apple Darwin lsof report text file information?

5.2.3 Why doesn't Apple Darwin lsof support IPv6?

5.2.4 Why does lsof complain about a mismatch between the release for which lsof was compiled and the booted Mac OS X release?

5.2.5 Why does lsof for Apple Darwin 8 and higher report "stat(...): ..." in the NAME column?

5.2.6 What are the limitations of Apple Darwin lsof link count reporting?

5.3 Libproc-based Apple Darwin Questions

6.0 BSD/OS BSDI Problems

6.0.5 Statement of deprecation

7.0 DEC OSF/1, Digital UNIX, and Tru64 UNIX Problems

- 7.1 Why does lsof complain about non-existent /dev/fd entries?
- 7.2 Why does the Digital UNIX V3.2 ld complain about Ots* symbols?
- 7.3 Why can't lsof locate named pipes (FIFOs) under V3.2?
- 7.4 Why does lsof use the wrong configuration header files?
For example, why can't the lsof compilation find cpus.h?
- 7.5 Why does lsof indicate incomplete paths with "--" for Tru64 UNIX 5.1 files?
- 7.6 Why doesn't lsof report link count, node number, and size for some Tru64 5.x CFS files?
- 7.7 Why does lsof say it can't read the kernel name list or proc table on Digital UNIX 4.x or Tru64 UNIX?

8.0 FreeBSD Problems

- 8.1 Why doesn't lsof report on open kernfs files?
- 8.2 Why doesn't lsof work on my FreeBSD system?
- 8.3 Why doesn't lsof work on the RELEASE version of CURRENT?
- 8.4 Why can't kvm_open() can't find some file?
- 8.5 FreeBSD ZFS Problems
 - 8.5.1 Why does FreeBSD lsof report "WARNING: no ZFS support has been
- 8.6 Why can't Configure create lsof_owner.h for FreeBSD 6 and above?
 - 8.6.1 Why are there lockf structure compiler errors for FreeBSD 6.0 and higher lsof?
 - 8.6.2 Why don't /usr/src/sys/sys/lockf.h and /usr/include/sys/lockf.h match?

9.0 HP-UX Problems

- 9.1 What do /dev/kmem-based and PSTAT-based mean?
- 9.2 /dev/kmem-based HP-UX lsof Questions
 - 9.2.1 Why doesn't a /dev/kmem-based HP-UX lsof compilation use -O?
 - 9.2.2 Why doesn't the /dev/kmem-based CCITT support work under 10.x?
 - 9.2.3 Why can't /dev/kmem-based lsof be compiled with `cc -Aa` or `gcc -ansi` under HP-UX 10.x?
 - 9.2.4 Why does /dev/kmem-based lsof complain about no C compiler?
 - 9.2.5 Why does Configure complain about q4 for /dev/kmem-based lsof for HP-UX 11?
 - 9.2.6 When compiling /dev/kmem-based lsof for HP-UX 11 what do the "aCC runtime: ERROR..." messages mean?
 - 9.2.7 Why doesn't /dev/kmem-based lsof for HP-UX 11 report VxFS file link counts, node numbers, and sizes correctly?
 - 9.2.8 Why can't /dev/kmem-based lsof be built with gcc for 64 bit HP-UX 11?
 - 9.2.8.1 How can I acquire a gcc for building lsof for 64 bit HP-UX 11?
 - 9.2.9 Why does /dev/kmem-based lsof for HP-UX 11 report "unknown file system type" for VxFS files?
 - 9.2.10 Why does the ANSI-C compiler complain about comments in HP-UX

11 header files?

9.2.11 Why does `dnodel.c` cause the HP-UX 11 compiler to complain that `<sys/fs/vx_inode.h>` is missing or incorrect?

9.3 PSTAT-based HP-UX lsof Questions

9.3.1 Why does PSTAT-based lsof complain about `pst_static` and other PSTAT structures?

9.3.2 Why does PSTAT-based lsof complain it can't read `pst_*` structures?

9.3.3 Why does PSTAT-based lsof rebuild the device cache file after each reboot?

9.3.4 Why doesn't PSTAT-based lsof report TCP addresses for telnetd's open socket files?

9.3.5 Why does PSTAT-based lsof cause an HP-UX 11.11 kernel panic?

9.3.6 Why doesn't PSTAT-based lsof report a CWD that is on a loopback (LOFS) file system?

9.3.7 Why do some `swinstall` packages for PSTAT-based HP-UX 11.11 packages complain about `setgid` and `setuid` bits?

9.3.8 Why won't the bundled C compiler build PSTAT-based lsof for PA-RISC HP-UX 11.23?

9.3.9 Why won't `gcc` build PSTAT-based lsof for PA-RISC HP-UX 11.23?

9.3.10 Why does PSTAT-based lsof complain, "FATAL: `pst_stream_size` should be: 672; is 72" on HP-UX 11.11 and above?

9.4 Why won't the HP-UX depot install?

10.0 Linux Problems

10.1 What do `/dev/kmem`-based and `/proc`-based lsof mean?

10.2 `/proc`-based Linux lsof Questions

10.2.1 Why doesn't `/proc`-based lsof report file offsets (positions)?

10.2.2 Why does `/proc`-based lsof report "can't identify protocol" for some socket files?

10.2.3 Why does `/proc`-based lsof warn about unsupported formats?

10.2.4 Why does `/proc`-based lsof report "(deleted)" after a path name?

10.2.5 Why doesn't `/proc`-based lsof report full open file information for all processes?

10.2.6 Why won't `Customize` offer to change `HASDCACHE` or `WARNDEVACCESS` for `/proc`-based lsof?

10.2.7 `/proc`-based lsof Linux NFS questions

10.2.7.1 Why can't lsof find files on an accessible NFS file system?

10.2.7.2 Why can't lsof find files on an inaccessible NFS file system?

10.2.8 Why doesn't `/proc`-based Linux lsof report socket options and values, socket state flags, and TCP options and values?

10.2.9 Does `/proc`-based Linux lsof use a device cache?

10.2.10 Why doesn't `/proc`-based Linux lsof report any or all file structure values for its `+fcfgGn` option?

10.3 Special Linux file types

10.3.1 Why is ```DEL``` reported as a Linux file type?

10.3.2 Why is ```unknown``` reported as a Linux file type?

10.4 Linux ```mem``` Entry Problems

10.4.1 What do ``path dev=xxx" and ``path inode=yyy" mean in the NAME column of Linux ``mem" file types?

10.4.2 Why is neither link count nor size reported for some Linux ``DEL" and ``mem" file types?

10.5 Special Linux NAME column messages

10.5.1 What does ``(stat: xxx)" mean in the NAME column of Linux files?

10.5.2 What does ``(readlink: xxx)" mean in the NAME column of Linux files?

10.6 Why is ``NOFD" reported as a Linux file type?

10.7 Why does Linux lsof report a NAME column value that begins with ``/proc"?

10.8 Linux /proc/net/tcp* and /proc/net/udp* issues

10.8.1 Why use the Linux -X option?

10.8.2 Why does lsof say ``-i is useless when -X is specified"?

10.8.3 Why does lsof say ``can't identify protocol (-X specified)"?

11.0 NetBSD Problems

11.1 Why doesn't lsof report on open kernfs files?

11.2 Why doesn't lsof report on open files on: file descriptor file systems; /proc file systems; 9660 (CD-ROM) file systems; MS-DOS (floppy disk) file systems; or kernel file systems?

11.3 Why does lsof produce confusing results for nullfs file systems?

11.4 NetBSD header file problems

11.4.1 Why can't the compiler find some NetBSD header files?

11.4.2 Why does NetBSD lsof produce incorrect output?

11.5 Why isn't lsof feature xxx enabled for NetBSD?

12.0 NEXTSTEP and OPENSTEP Problems

12.1 Why can't lsof report on 3.1 lockf() or fcntl(F_SETLK) locks?

12.2 Why doesn't lsof compile for NEXTSTEP with AFS?

13.0 OpenBSD Problems

13.1 Why doesn't lsof support kernfs on my OpenBSD system?

13.2 Will lsof work on OpenBSD on non-x86-based architectures?

13.3 <sys/pipe.h> problems

13.3.1 Why does the compiler claim nbpg isn't defined?

13.3.2 What value should I assign to nbpg?

13.4 Why doesn't lsof report on open MS-DOS file system (floppy disk) files?

13.5 Why isn't lsof feature xxx enabled for OpenBSD?

14.0 Output problems

14.1 Why do the lsof column sizes change?

14.2 Why does the offset have ``0t' and ``0x" prefixes?

14.3 What are the values printed in the FILE_FLAG column

- and why is 0x<value> sometimes included?
- 14.3.1 Why doesn't lsof display FILE_FLAG values for my dialect?
- 14.4 Network Addresses
 - 14.4.1 Why does lsof's -n option cause IPv4 addresses, mapped to IPv6, to be displayed in IPv6 notation?
- 14.5 Why does lsof output \x, ^x, or \xnn for characters sometimes?
 - 14.5.1 Why is space considered a non-printable character in command names?
- 14.6 Why doesn't lsof print all the characters of a command name?
- 14.7 Why does lsof reject some -c command names, saying their lengths are "> what system provides (nn)"?
- 14.8 Why does lsof sometimes print TYPE numbers instead of names?
- 14.9 Marker line format problems
 - 14.9.1 Why won't lsof accept a marker line format?
 - 14.9.2 Why does lsof reject the NL (%n) marker line format?
- 14.10 How are protocol state name exclusion and inclusion used?
 - 14.10.1 Why doesn't my dialect support state name exclusion and inclusion?

15.0 Pyramid Version Problems

15.0.5 Statement of deprecation

16.0 SCO Problems

16.1 SCO OpenServer Problems

- 16.1.1 How can I avoid segmentation faults when compiling lsof?
- 16.1.2 Where is libsocket.a?
- 16.1.3 Why do I get "warning C4200" messages when I compile lsof?

16.2 SCO|Caldera UnixWare Problems

- 16.2.1 Why doesn't lsof compile on my UnixWare 7.1.1 or above system?
- 16.2.2 Why does lsof complain about node_self() on my UnixWare 7.1.1 or above system?
- 16.2.3 Why does UnixWare 7.1.1 or above complain about -lcluster, node_self(), or libcluster.so?
- 16.2.4 Why does UnixWare 7.1.1 or above lsof complain it can't read the kernel name list?
- 16.2.5 Why doesn't lsof report link count, node number, and size for some UnixWare 7.1.1 or above CFS files?
- 16.2.6 Why doesn't lsof report open files on all UnixWare 7.1.1 NonStop Cluster (NSC) nodes?
- 16.2.7 Why doesn't lsof report the UnixWare 7.1.1 NonStop Cluster (NSC) node a process is using?
- 16.2.8 Why does the compiler complain about missing UnixWare 2.1[.x] header files?

17.0 Sun Problems

17.0.5 Statement of deprecation

- 17.1 My Sun gcc-compiled lsof doesn't work -- why?

- 17.2 How can I make lsof compile with gcc under Solaris 2.[456], 2.5.1, 7, 8 or 9?
- 17.3 Why does Solaris Sun C complain about system header files?
- 17.4 Why doesn't lsof work under my Solaris 2.4 system?
- 17.5 Where are the Solaris header files?
- 17.6 Where is the Solaris /usr/src/uts/<architecture>/sys/machparam.h?
- 17.7 Why does Solaris lsof say "can't read proc table"?
- 17.8 Why does Solaris lsof complain about a bad cached clone device?
- 17.9 Why doesn't Solaris make generate .o files?
- 17.10 Why does lsof report some Solaris 2.3 and 2.4 lock types as `N`?
- 17.11 Why does lsof Configure say "WARNING: no cc in ..."?
- 17.12 Solaris 7, 8 and 9 Problems
 - 17.12.1 Why does lsof say the compiler isn't adequate for Solaris 7, 8 or 9?
 - 17.12.2 Why does Solaris 7, 8 or 9 lsof say "FATAL: lsof was compiled for..."?
 - 17.12.3 How do I build lsof for a 64 bit Solaris kernel under a 32 bit Solaris kernel?
 - 17.12.4 How do I install lsof for Solaris 7, 8 or 9?
 - 17.12.5 Why does my Solaris 7, 8 or 9 system say it cannot execute lsof?
 - 17.12.6 What gcc will produce 64 bit Solaris 7, 8 and 9 executables?
 - 17.12.7 Why does lsof on my Solaris 7, 8 or 9 system say, "can't read namelist from /dev/ksyms?"
- 17.13 Solaris and COMMON
 - 17.13.1 What does COMMON mean in the NAME column for a Solaris VCHR file?
 - 17.13.2 Why does a COMMON Solaris VCHR file sometimes seem to have an incorrect minor device number?
- 17.14 Why don't lsof and Solaris pfiles reports always match?
- 17.15 Why does lsof say, "kvm_open(namelist=default, core=default): Permission denied?"
- 17.16 Why is lsof slow on my busy Solaris UFS file system?
- 17.17 Why is lsof so slow on my Solaris 8 or 9 system?
- 17.18 Solaris and VxFS
 - 17.18.1 Why doesn't lsof support VxFS 3.4 on Solaris 2.6, and above?
 - 17.18.2 Why does lsof report "vx_inode: vxfsu_get_iooffsets error" for open Solaris 2.6 and above VxFS 3.4 and above files?
 - 17.18.3 Why does Solaris Configure claim there is no VxFS library?
 - 17.18.4 Why doesn't Solaris lsof report VxFS path name components?
 - 17.18.5 Why does Solaris 10 lsof report scrambled VxFS paths?
- 17.19 Large file problems
 - 17.19.1 Why does lsof complain it can't stat(2) a Solaris 2.5.1 large file?
- 17.20 Why does lsof get a segmentation fault on 64 bit Solaris 8 using NIS+?
- 17.21 Will lsof crash the Solaris kernel?
- 17.22 Why does lsof on Solaris 7, 8, or 9 report a kvm_open()

failure?

17.23 Solaris and SAM-FS

17.23.1 Why does Solaris lsof report "(limited SAM-FS info)"?

17.23.2 Why can't lsof locate named SAM-FS files?

17.24 Lsof and Solaris 10 zones

17.24.1 How can I make lsof list the Solaris zone?

17.24.2 Why doesn't lsof work in a Solaris 10 zone?

17.24.3 Why does lsof complain it can't stat() Solaris 10 zone file systems?

17.25 Solaris 10 problems

17.25.1 Why does Solaris 10 lsof sometimes report the wrong path name?

17.25.2 Why does Solaris 10 lsof sometimes report only the mounted-on directory and device?

17.25.3 What does "(deleted)" mean in the NAME column of a Solaris 10 open file?

17.25.4 What does "(?)" mean in the NAME column of a Solaris 10 open file?

17.26 Solaris contract file problems

17.26.1 Why doesn't lsof report size, link count and node number for Solaris 10 contract files?

17.26.2 Why can't lsof locate a Solaris 10 contract file by path name?

17.27 Solaris 10 ZFS problems

17.27.1 Why does Configure ask for the location of ZFS header files?

17.27.2 Why do -h and -v output warn about possibly inaccurate ZFS structure definitions?

17.27.3 Why don't the Open Solaris ZFS header files provide correct ZFS kernel structure definitions?

17.28 Problems with Solaris 9 and above

17.28.1 Why does the compiler complain about lgrp_root on Solaris 9 and above?

18.0 Lsof Features

18.1 Why doesn't lsof report on /proc entries on my system?

18.2 How do I disable the device cache file feature or alter its behavior?

18.2.1 What's the risk with a perverted device cache file?

18.2.2 How do I put the full host name in a personal device cache file path?

18.2.3 How do I put the personal device cache file in /tmp?

18.3 Why doesn't lsof know about AFS files on my favorite dialect?

18.3.1 Why doesn't lsof report node numbers for all AFS volume files, or how do I reveal dynamic module addresses to lsof?

1.0 General Concepts

1.1 Lsof -- what is it?

Lsof is a UNIX-specific tool. Its name stands for LiSt Open Files, and it does just that. It lists information about files that are open by the processes running on a UNIX system.

See the lsof man page, the 00DIST file, the 00QUICKSTART file, and the 00README file of the lsof distribution for more information.

1.2 Where do I get lsof?

Lsof is available via anonymous ftp from [lsof.itap.purdue.edu](ftp://lsof.itap.purdue.edu). Look in the `pub/tools/unix/lsof` sub-directory.

`ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof`

Bzip2'd, compressed and gzip'd tar files with GPG certificates are available.

1.2.1 Are there mirror sites?

On April 28, 2009 these sites appeared to have the latest lsof revision:

`ftp://ftp.fu-berlin.de/pub/unix/tools/lsof`

`ftp://sunsite.ualberta.ca/pub/Mirror/lsof`

1.2.2 Are lsof executables available?

Some lsof executables are available in the subdirectory tree `pub/tools/unix/lsof/binaries`. These are neither guaranteed to be current nor cover every dialect and machine architecture.

I don't recommend you use pre-compiled lsof binaries; I recommend you obtain the sources and build your own binary. Even if you're a Sun user without a Sun C compiler, you can use gcc to compile lsof.

If you must use a binary file, please be conscious of the security and configuration implications in using an executable of unknown or different origin. The lsof binaries are accompanied by GPG certificates. Please use them!

Three additional cautions apply to executables:

1. Don't try to use an lsof executable, compiled for one

version of a UNIX dialect, on another. Patches can make the dialect version different.

2. If you want to use an lsof binary on multiple systems, they must be running the same dialect OS version and have the same patches and feature support.

1.2.3 How do I check the validity of an lsof distribution?

There are two ways to check the validity of an lsof distribution:

1. Follow the instructions in the CHECKSUMS_<revision> file found with the lsof distribution.

Checking with GPG is the best method.

2. Follow the instructions in the "Security" section of the README.lsof_<revision> file found inside the lsof distribution.

Again, checking with GPG is the best method.

1.2.4 Why can't I get the sum(1) result reported in README.lsof_<revision>?

The "Security" section of the README.lsof_<revision> file found inside the lsof distribution gives md5, sum, and GPG certificate information.

The simplest, the sum(1) signature, seems to be the trickiest. That's because there are different sum(1) methods, BSD systems usually have cksum(1) instead of sum(1), and different systems compute the block size value differently.

First, the lsof sum results are computed with the old, "alternate" algorithm. On newer systems, you can use sum's "-r" option to get that computation result.

Second, on BSD systems you usually must use cksum(1) instead of sum(1), because they have no sum(1). To tell cksum(1) to use the old, "alternate" algorithm, use its "-o1" option.

Third, the second value that sum reports, the block count, may be computed differently on different systems -- usually block size is considered to be 512 or 1,024. The lsof block counts were computed on a system with a sum(1) option that considers block size to be 512. The BSD system cksum(1) -o1 option

considers block size to be 1,024. If your `sum(1)` or `cksum(1)` doesn't report a block count that matches the `sum(1)` signature given in `README.lsof_<revision>`, check its man page to see what block size it uses, then adjust its reported block count appropriately.

1.2.5 Why won't gpg accept the lsof-signing PGP public key?

An older PGP key that once signed lsof distributions is included in lsof revisions prior to 4.70. The PGP key is indeed my key, but is incompatible with GPG. It was created about ten years ago and is still acceptable to PGP versions 2.6.2 through 6.5.2.

Lsof revisions 4.70 and above are signed with a copy of my PGP key that has been made acceptable for use with GPG by importing it under GPG's "`--allow-non-selfsigned-uid`" option.

You can find my GPG compatible key in lsof revisions 4.70 and above and at:

```
ftp://lsof.itap.purdue.edu/pub/Victor_A_Abell.gpg
```

If you have an older lsof revision with my PGP key, there are two possible ways to use it:

- * Use it with a PGP version from 2.6.2 through 6.5.2.

- * Use GPG's "`--allow-non-selfsigned-uid`" option when you import my PGP key into your GPG key ring.

```
$ gpg --allow-non-selfsigned-uid --import Victor_A_Abell.gpg
```

1.3 Where can I get more lsof documentation?

A significant set of documentation may be found in the lsof distribution (See "Where can I get lsof?"). There is a manual page, copious documentation in files whose names begin with 00, and a copy of this FAQ in the file 00FAQ (perhaps slightly less recent than this file if you're reading it via a web browser.)

Two URLs provide some documentation that appears in the lsof distribution:

FAQ: <ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ>

man page: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof_man

1.4 How do I report an lsof bug?

If you believe you have discovered a bug in lsof, you can report it via e-mail to <abe@purdue.edu>. Do NOT report lsof bugs to the UNIX dialect vendor. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

Before you send me a bug report, please read the "Bug Reports" section of the 00README file of the lsof distribution. It lists the steps you should take before and when reporting a suspected bug.

1.5 Where can I get the lsof FAQ?

This lsof FAQ is available in the file 00FAQ in the lsof distribution and at the URL:

`ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ`

1.5.1 How timely is the on-line FAQ?

The on-line FAQ is sometimes too timely. :-)

I update it as soon as new information is available. That may include information about support that won't appear in the lsof source distribution until the next revision. If you encounter something like that, please send me e-mail at <abe@purdue.edu>. I may be able to point you at a pre-release distribution that contains the support of interest. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

1.6 Is there a test suite?

Yes, as of lsof revision 4.63 there's an automated lsof test suite in the tests/ sub-directory of the lsof top-level directory.

More information on using the test suite, what it does, how to use it and how to configure it may be found in the 00TEST file of the lsof distribution. That file also explains where the test suite has been tested.

Frequently asked questions about the test suite will be asked and answered here in the FAQ. (See "Test Suite Problems.")

After lsof has been configured with the Configure script, lsof can be made and tested with:

```
$ make
$ cd tests
$ make
```

Under normal conditions -- i.e., unless the lsof tree has been cleaned or purged severely -- all tests or individual tests may be run by:

```
$ cd test
$ make
or
$ <run a single test> (See 00TEST.)
```

1.7 Is lsof vulnerable to the standard I/O descriptor attack?

Lsof revisions 4.63 and above are not vulnerable.

Lsof revisions 4.62 and below are vulnerable, but no damage scenarios have so far been demonstrated.

The standard I/O descriptor attack is a local programmed assault on setuid and setgid programs that tricks them into opening a sensitive file with write access on a standard descriptor, usually stderr (2), and writing error messages to stderr. If the attacker can control the content of the error message, the attacker may gain elevated privileges.

The attack was first described in Pine Internet Advisory PINE-CERT-20020401, available at:

<http://www.pine.nl/advisories/pine-cert-20020401.txt>

If you are using an lsof revision below 4.63, you should remove any setuid or setgid permissions you might have given its executable. Then you should upgrade to lsof revision 4.63.

1.8 Can I alter lsof's make(1) behavior?

Yes. There are at least two ways to do that.

You can put replacements for lsof Makefile strings in your environment. If you specify the -e make option, make will give environment variable values precedence over strings from the Makefile. For example, to change the compiler

string CC from the environment, you might do this with the Bourne shell:

```
$ CC=foobar; export CC
$ make -e
```

You can also replace Isof Makefile strings in the make command invocation. Here's the previous example done that way:

```
$ make CC=foobar
```

Changing the CFGF, CFGL, and DEBUG strings used in Isof Makefiles, either from the environment or from the make invocation, can significantly alter Isof make(1) behavior. I commonly use DEBUG to change the -O option to -g so I can build an Isof executable for debugging -- e.g.,

```
$ make DEBUG=-g
```

(Look for DEBUG in this FAQ for other examples of its use.)

Consult the Makefiles to see what CFGL, CFGL, and other Isof Makefile strings contain, and to see what influence their alteration might have on Isof make(1) behavior.

1.9 Is there an Isof license?

No.

The only restriction on the use or redistribution of Isof is contained in this copyright statement, found in every Isof source file. (The copyright year in or format of the notice may vary slightly.)

```
/*
 * Copyright 2002 Purdue Research Foundation, West Lafayette,
 * Indiana 47907. All rights reserved.
 *
 * Written by Victor A. Abell
 *
 * This software is not subject to any license of the American
 * Telephone and Telegraph Company or the Regents of the
 * University of California.
 *
 * Permission is granted to anyone to use this software for
 * any purpose on any computer system, and to alter it and
 * redistribute it freely, subject to the following
```

* restrictions:

*

* 1. Neither the authors nor Purdue University are responsible
* for any consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented,
* either by explicit claim or by omission. Credit to the
* authors and Purdue University must appear in documentation
* and sources.

*

* 3. Altered versions must be plainly marked as such, and must
* not be misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

1.10 Language locale support

1.10.1 Does lsof support language locales? How do I use the support?

Most UNIX dialect versions of lsof support 8 bit language locale characters -- e.g., the ability to print 8 bit characters that have accents and other marks over them.

See the answer to the "Does lsof support wide characters in language locales?" question for information on when lsof's language locale support covers characters wider than 8 bits.

To see if lsof supports language locales for your dialect, look in the dialect's machine.h header file for the HASSETLOCALE definition. If it is present and not disabled, then lsof has language locale support for the dialect.

To enable lsof's language locale support, you must specify in a locale environment variable (e.g., LANG) a language locale known to your system that supports the printing of marked characters -- e.g, en_US. (On some dialects locale(1) may be used to list the known language locales.)

Note that LANG=C and LANG=POSIX are NOT language locales that support the printing of marked characters.

If the language locale doesn't support the printing of marked characters, lsof's OUTPUT of them follows the rules for non-printable characters described in the OUTPUT section of lsof(8).

Consult your dialect's setlocale(3) man page for the names of

environment variables other than LANG -- e.g., LC_ALL, LC_TYPE, etc. -- which may be used to define language locales.

1.10.2 Does lsof support wide characters in language locales?

When lsof's language locale support is enabled with the HASSETLOCALE definition, for selected dialects lsof will also print wide characters (e.g., from UTF-8) when iswprint(3) reports them to be printable.

Wide character support is available when HASWIDECHAR is defined in a dialect's machine.h header file. As of this writing on July 22, 2004, the following dialect versions have wide character support:

- AIX >= 4.3.2
- Apple Darwin >= 7.3.0
- FreeBSD >= 5.2
- HP-UX >= 11.00
- /proc-based Linux
- NetBSD >= 1.6
- SCO OpenServer >= 5.0.6
- Solaris >= 2.6
- Tru64 UNIX 5.1

1.11 Are any files in the lsof distribution copyrighted?

Yes. Most files carry the copyright of the Purdue Research Foundation and may be redistributed under the terms that accompany the copyright notice. Those terms may also be found in the answer to the question, "Is there an lsof license?")

A few files carry other copyright notices. Some are BSD notices and they explain the terms under which they are included in the lsof distribution.

Those that carry vendor copyright notices have been reproduced in their original or modified forms with permission from the copyright owners. That permission is indicated in the README files that accompany the files.

1.12 Are there other lsof-related resources?

There are other resources available, connected to lsof. Among them are FreeBSD and Linux packages whose products use lsof and two particularly interesting resources.

The two interesting resources are a Gnome Tool Kit (GTK) GUI

for lsof and a Perl wrapper module.

The GTK GUI is called Glsof and was developed by Gnele. It can be found at:

<http://www.sourceforge.net>

The Perl wrapper module by Marc Beyer can be found at:

<http://search.cpan.org/dist/Unix-Lsof/>

1.13 What does the "WARNING: unsupported dialect or version" mean?

The lsof configure script issues that message for UNIX dialects or their versions where I have been unable to test the current revision of lsof. The message doesn't mean that lsof won't work, just that I have no direct evidence that it will.

If the COnfigure script succeeds, except for the warning, try compiling lsof. If that succeeds, try the lsof test suite.

2.0 Lsof Ports

2.1 What ports exist?

The pub/lsof.README file carries the latest port information:

- AIX 5.[23] and 5.3
- FreeBSD 4.9 and 6.4 for x86-based systems
- FreeBSD 8.[02] for AMD64-based systems
- Linux 2.1.72 and above for x86-based systems
- Solaris 9, 10 and 11

In the above list the only UNIX dialects present are ones for which I test the current lsof revision. Lsof may still support unlisted dialect versions -- e.g., HP-UX 10.20, Solaris 7, etc. -- but I don't have access to systems where I could test lsof on them, so I can't claim lsof works on them. If your dialect isn't in the list, you should try building lsof on it anyway.

Lsof version 4 predecessors, versions 2 and 3, may support older version of some dialects. Contact me via e-mail at <abe@purdue.edu> if you're interested in their distributions. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

2.2 What about a new port?

The 00PORTING file in the distribution gives hints on doing a port. I will consider doing a port in exchange for permanent access to a test host. I require permanent access so I can test new lsof revisions, because I will not offer distributions of dialect ports I cannot upgrade and test.

2.2.1 User-contributed Ports

Sometimes I receive contributions of ports of lsof to systems where I can't test future revisions of lsof. Hence, I don't incorporate these contributions into my lsof distribution.

However, I do make descriptions of these contributions available. You can find them in the 00INDEX and README files at:

`ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/contrib`

Consult the 00INDEX file in the contrib/ directory for a list of the available contributions and consult README there for information on how to obtain them.

2.3 Why isn't there an AT&T SVR4 port?

I haven't produced an AT&T SVR4 port because I haven't seen a UNIX dialect that is strictly limited to the AT&T System V, Release 4 source code. Every one I have seen is a derivative with vendor additions.

The vendor additions are significant to lsof because they affect the internal kernel structures with which lsof does business. While some vendor derivatives of SVR4 are similar, each one I have encountered so far has been different enough from its siblings to require special source code.

If you're interested in an SVR4 version of lsof, here are some existing ports you might consider:

DC/OSx (This obsolete port is only available upon special request.)

Reliant UNIX (This obsolete port is only available upon special request.)

SCO|Caldera UnixWare (This is the most likely choice.)

Solaris

2.4 Why isn't there an SGI IRIX port?

Lsof support for IRIX was terminated at lsof revision 4.36, because it had become increasingly difficult for me to obtain information on the IRIX kernel structures lsof needs to access.

At IRIX 6.5 I decided the obstacles were too large for me to overcome, and I stopped supporting lsof on IRIX. I have sources to the last revision of lsof (4.36) for IRIX, but that version of lsof does not work on IRIX 6.5 and is vulnerable to the standard I/O descriptor attack. (See the "Is lsof vulnerable to the standard I/O descriptor attack?" Q&A for more information.) Contact me to discuss obtaining those sources.

If you wish to pursue the issue, don't contact me, contact SGI. This case was opened with SGI on the subject:

Case ID: 0982584
Category: Unix
Priority: 30-Moderate Impact

Problem Summary:
kernel structure header files needed for continued lsof support

Problem Description:
Email In 07/17/98 19:09:23

2.5 Why does lsof's Configure script report "WARNING: unsupported dialect or version"?

Lsof's Configure script issues this message when it encounters a dialect or its version that lsof once supported, but no longer does. Usually I drop support for a dialect or version when I can no longer test lsof on it.

However, it's worth trying to compile and use lsof. Be sure to run the test suite. (See the answer to the "Is there a test suite?" question for information on the test suite.)

If you have problems with an unsupported dialect or version, contact me via e-mail at <abe@purdue.edu> and I may be able to help. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

3.0 Lsof Problems

3.1 Configuration Problems

3.1.1 Why can't Configure determine the UNIX dialect version?

The lsof Configure script uses UNIX shell commands, often in a command pipeline, to determine the UNIX dialect version. (Consult the dialect stanza in Configure to determine which commands are used.) If Configure can't determine the dialect version, probably one of the commands is not behaving as Configure expects.

Symptoms of the failure include Configure warning messages and incorrect version definitions in the Makefile CFLAGS.

If you suspect that the lsof Configure script is failing to determine the dialect version correctly, try running the commands from Configure stanza one at a time. That will usually reveal the source of the problem. Be particularly mindful that the PATH environment variable can cause commands to be executed from non-standard directories.

If you can't determine the source of the problem, there is a work-around. You can supply the UNIX dialect version in the LSOF_VSTR environment variable. Use Configure as a guide to forming what it expects in LSOF_VSTR. There is also some information on LSOF_VSTR in the 00XCONFIG documentation file of the lsof distribution.

3.2 Compilation Problems

3.2.1 Why does the compiler complain about missing header files?

When you use make to build lsof, the compiler may complain that it can't find header files -- e.g.,

```
$ make
(cd lib; make DEBUG="-O" CFGF="-DAIXA=0 -DAIXV=4330 \
-DLSOF_VSTR=\"4.3.3.0\"")
gcc -DAIXA=0 -DAIXV=4330 -DLSOF_VSTR="4.3.3.0" -O \
-c ckkv.c
In file included from ckkv.c:33: ../machine.h:70: \
sys/types.h: A file or directory in the path name \
does not exist. \
```

That type of complaint doesn't represent an lsof problem. It represents a problem with a missing system header file that probably should be found in /usr/include or in the system source tree.

As a first step try using `find(1)` to locate the problem header file. If it's a system header file and can't be found, here are some possible causes:

1. The file set, RPM or package containing the header files has not been installed. Instructions for doing that are specific to the UNIX dialect and beyond the scope of this document.

2. If the compiler is `gcc`, the private `gcc` header files:

- * May not have been installed;

- * May have been installed incorrectly;

- * May not have been updated properly after the last compiler or system update;

- * Ones from a previous installation may not have been removed.

A path leading to the `gcc` private header files can be found with ``gcc -v``. Consult the `gcc` documentation for instructions on proper installation of the private `gcc` header files.

3. On some dialects -- e.g., FreeBSD, NetBSD, OpenBSD -- `lsof` may need to use header files that are located in the system source tree -- `/sys` or `/usr/src/sys`, for example. Make sure the system source tree has been installed.

3.2.2 Why does `gcc` complain about the contents of header files distributed by the system's vendor?

When you use `make` to build `lsof` and `gcc` to compile it, `gcc` may complain that it finds errors in system header files

-- e.g.,

```
$ make
(cd lib; make DEBUG="-O" CFGF="-Dsolaris=80000 \
-DHASPR_GWINDOWS -m64 -DHASIPv6 -DHAS_VSOCK \
-DLSOF_VSTR=\"5.8\"")
gcc -Dsolaris=80000 -DHASPR_GWINDOWS -m64 -DHASIPv6 \
-DHAS_VSOCK -DLSOF_VSTR="5.8" -O -c dvch.c
In file included from /usr/include/sys/proc.h:31, \
from /homes/abe/gnu/gcc-3.2.1/lib/gcc-lib/sparcv9-sun-solaris2/\
```

```
3.2.1/include/sys/user.h:267, from /usr/include/kvm.h:13, \
from ../dlsf.h:53, from ../lsof.h:172, from dvch.c:43: \
/homes/abe/gnu/gcc-3.2.1/lib/gcc-lib/sparcv9-sun-solaris2/\
3.2.1/include/sys/task.h:59: parse error before "uint_t"
```

Errors like the above are most likely not problems in the system's header files, but in the private copies of them that were created when gcc was made or installed. Note the presence of
"../gcc-3.2.1/lib/gcc-lib/sparcv9-sun-solaris2/3.2.1/include/..."
in the paths for user.h and task.h. It indicates both header files are gcc-specific.

To solve errors like this requires comparing the header files in the vendor's /usr/include tree to the gcc-specific ones in gcc's private gcc-lib/.../include tree. It may be necessary to regenerate gcc-specific header files, correct them or remove them. See the gcc distribution for the appropriate tools.

A possible temporary work-around is to direct gcc to use the vendor's header files instead of its temporary ones by declaring `-I/usr/include` in the compilation flags.

3.2.3 Other header file problems

Don't overlook any vendor tools that might validate the vendor header files installed on the system -- e.g., the Solaris `pkgchk` tool can be used to check the header files that were installed from the SUNWhea package.

For other header file problems contact me at <abe@purdue.edu>. Please follow the reporting guidelines in the "How do I report an lsof bug?" section of this FAQ.

3.3 Why doesn't lsof report full path names?

Lsof reports the full path name when it is specified as a search argument for open files that match the argument. However, if the argument is a file system mounted-on directory, and lsof finds additional path name components from the kernel name cache, it will report them.

Lsof reports path name for file system types that have path name lookup features -- e.g., some versions of AdvFS for Digital and Tru64 UNIX. The Linux /proc-based lsof reports full path names, because the Linux /proc file system provides them. Lsof on recent builds of Solaris 10 also report full

path names, because those Solaris kernels record the full path name in the vnode structure.

Otherwise, lsof uses the kernel name cache, where it exists and can be accessed, and reports some or all path name components (e.g., the sys and proc.h components of /usr/include/sys/proc.h) for these dialects:

Apple Darwin
DC/OSx
FreeBSD
HP-UX, /dev/kmem and PSTAT based
Linux, /dev/kmem-based
NetBSD
NEXTSTEP
OpenBSD
OPENSTEP
Reliant UNIX
SCO OpenServer
SCO|Caldera UnixWare
Solaris 2.x, 7, 8 and 9 (except for some VxFS versions; see the "Why doesn't Solaris lsof report VxFS path name components?" section for more information)
Solaris 10 (early builds) Tru64 UNIX

As far as I can determine, AFS path lookups don't share in kernel name cache operations, so lsof can't identify open AFS path name components. Apparently Solaris VxFS versions 4 and above don't share in kernel name cache operations, either, so lsof can't display path name components for those open files.

Since the size of the kernel name cache is limited and the cache is in constant flux, it does not always contain the names of all components in an open file's path; sometimes it contains none of them.

Lsof reports the file system directory name and whatever components of the file's path it finds in the cache, starting with the last component and working backwards through the directories that contain it. If lsof finds no path components, lsof reports the file system device name instead.

When lsof does report some path components in the NAME column, it prefixes them with the file system directory name, followed by " -- ", followed by the components -- e.g., /usr -- sys/path.h for /usr/include/sys/path.h. The

" -- " is omitted when lsof finds all the path name components of a file's name.

The PSTAT-based HP-UX lsof relies on kernel name cache contents, too, even though its information comes to lsof via pstat() function calls. Consequently, PSTAT-based HP-UX lsof won't always report full paths, but may use the " -- " partial path name notation, or may occasionally report no path name at all but just the file system mounted-on directory and device names.

Lsof can't obtain path name components from the kernel name caches of the following dialects:

AIX

Only the Linux kernel records full path names in the structures it maintains about open files; instead, most kernels convert path names to device and node number doublets and use them for subsequent file references once files have been opened.

To convert the device and node number doublet into a complete path name, lsof would have to start at the root node (root directory) of the file system on which the node resides, and search every branch for the node, building possible path names along the way. That would be a time consuming operation and require access to the raw disk device (usually implying setuid-root permission).

If the prospect of all that local disk activity doesn't concern you, think about the cost when the device is NFS-mounted.

Try using the file system mount point and node number lsof reports as parameters to find -- e.g.,

```
$ find <mount_point> -inum <node_number> -print
```

and you may get an appreciation of what a file system directory tree search would cost.

3.3.1 Why do lsof -r reports show different path names?

When you run lsof with its repeat (`-r") option, you may notice that the extent to which it reports path names for the same files may vary from cycle to cycle. That happens because other processes are making kernel calls affecting

the cache and causing entries to be removed from and added to it.

3.3.2 Why does lsof report the wrong path names?

Under some circumstances lsof may report an incorrect path name component, especially for files in a rapidly changing directory like /tmp.

In a rapidly changing directory, like /tmp, if the kernel doesn't clear the cache entry when it removes a file, a new file may be given the same keys and lead lsof to believe that the old cache entry with the same keys belongs to the new file.

Lsof tries to avoid this error by purging duplicate entries from its copy of the kernel name cache when they have the same device and inode number, but different names.

This error is less likely to occur in UNIX dialects where the keys to the name cache are node address and possibly a capability ID. The Apple Darwin, Digital UNIX, FreeBSD, HP-UX, NEXTSTEP, OPENSTEP, Solaris, Tru64 UNIX, and UnixWare dialects use node address. Apple Darwin, FreeBSD, NetBSD, OpenBSD, Tru64 UNIX, and also use a capability ID to further identify name cache entries.

3.3.3 Why doesn't lsof report path names for unlinked (rm'd) files?

When lsof gets path name components from the kernel's name cache, it does not report the path names of a file that has been unlinked from its parent directory -- e.g., deleted via rm, or the unlink() system call -- even when some process may still hold the file open; lsof reports only the file system's mounted-on directory and device. That's because path name components are removed from the kernel name cache when the file is unlinked.

Unlinked open files are sometimes used by applications for temporary, but invisible storage (i.e., ls won't show them, and no other process can open them.) However, they may occasionally consume disk space to excess and cause concern for a system administrator, who will be unable to locate them with find, ls, du, or other tools that rely on finding files by examining the directory tree.

By using lsof's +L option you can see the link count of open files -- in the NLINK column. An unlinked file will

have an NLINK value of zero. By using the option +L1 you can tell lsof to display only files whose link count is less than one (i.e., zero).

There are some UNIX dialect-specific exceptions to lsof's inability to report unlinked path names. They are described in the answer to the "When will lsof report path names for deleted files?" question.

3.3.4 Why doesn't lsof report the "correct" hard linked file path name?

When lsof reports a rightmost path name component for a file with hard links, the component may come from the kernel's name cache. Since the key which connects an open file to the kernel name cache may be the same for each differently named hard link, lsof may report only one name for all open hard-linked files. Sometimes that will be "correct" in the eye of the beholder; sometimes it will not. Remember, the file identification keys significant to the kernel are the device and node numbers, and they're the same for all the hard linked names.

3.3.5 When will lsof report path names for deleted files?

lsof will report path names for deleted files for two dialects: Linux and later builds of Solaris 10.

Deleted Linux path names are reported by default and have "(deleted)" at their ends.

The display of Solaris 10 deleted path names may be selected with the -X option. When selected they are also reported with "(deleted)" at their ends.

3.4 Why is lsof so slow?

lsof may appear to be slow if network address to host name resolution is slow. This can happen, for example, when the name server is unreachable, or when a Solaris PPP cache daemon is malfunctioning.

To see if name lookup is causing lsof to be slow, turn it off with the ``-n" option.

Port service name lookup or portmap registration lookup may also be causes of slow-down. To suppress port service name lookup, specify the ``-P" option.

Lsof doesn't usually make direct portmap calls -- only when +M is specified, or when HASPMAPENABLED is defined during lsof construction. (The lsof help panel, produced with `lsof -h` will display the default portmap registration reporting state.) The quickest first step in checking if lsof is slow because of the portmapper is to use lsof's ``-M" option.

Lsof may be slow if UID to login name lookups are slow. Suppress them with ``-l".

On dialects where lsof uses the kernel name cache, try disabling its use with ``-C". (You can tell if lsof uses the kernel name cache by looking for ``-C" in lsof's ``-h" output.) Of course, disabling kernel name cache use will mean that lsof won't report full or partial path names, just file system and character device names.

If you're just interested in the open files of one process, try using the ``-p <Process-ID>" option to limit lsof to that process. (The ``-p" option may also be followed with a list of Process-IDs.)

If you're interested in including or excluding certain commands, try lsof's "-c[[^]]cmd" option.

If you're interested in certain Internet TCP and UDP states (e.g., ESTABLISHED) or in excluding some (e.g., CLOSE_WAIT), try lsof's "-s p:s" option. More information on it may be found in the answer to the "How are protocol state name exclusion and inclusion used?" question.

Your UNIX dialect may not support "-s p:s" and its associated performance improvements to Internet-only file processing. You can find more information on those topics in the answer to the "Why doesn't my dialect support state name exclusion and inclusion?" question.

Older AIX lsof may be slow to start because of its oslevel identity comparison. (Newer AIX lsof uses uname(2).) See the "Why does AIX lsof start so slowly?" and "Why does lsof warn "compiled for x ... y; this is z.?" sections for more information.

3.5 Why doesn't lsof's setgid or setuid permission work?

If you install lsof on an NFS file system that has been mounted with the nosuid option, lsof may not be able to

use the setgid or setuid permission you give it, complaining it can't open the kernel memory device -- e.g., /dev/kmem.

The only solution is to install lsof on a file system that doesn't inhibit setgid or setuid permission.

3.6 Does lsof have security problems?

I don't think so. However, lsof does usually start with setgid permission, and sometimes with setuid-root permission. Any program that has setgid or setuid-root permission, should always be regarded with suspicion.

Lsof drops setgid power, holding it only while it opens access to kernel memory devices (e.g., /dev/kmem, /dev/mem, /dev/swap). That allows lsof to bypass the weaker security of access(2) in favor of the stronger checks the kernel makes when it examines the right of the lsof process to open files declared with -k and -m. Lsof also restricts some device cache file naming options when it senses the process has setuid-root power.

On a few dialects lsof requires setuid-root permission during its full execution in order to access files in the /proc file system. These dialects include:

DC/OSx 1.1 for Pyramid systems

Reliant UNIX 5.4[34] for Pyramid systems

When lsof runs with setuid-root permission it severely restricts all file accesses it might be asked to make with its options.

The device cache file (typically .lsof_hostname in the home directory of the real user ID that executes lsof) has 0600 modes. (The suffix, hostname, is the first component of the host's name returned by gethostname(2).) However, even when lsof runs setuid-root, it makes sure the file's ownerships are changed to that of the real user and group. In addition, lsof checks the file carefully before using it (See the question "How do I disable the device cache file feature or alter its behavior?" for a description of the checks.); discards the file if it fails the scrutiny; complains about the condition of the file; then rebuilds the file.

See the 00DCACHE file of the lsof distribution for more information about device cache file handling and the risks

associated with the file.

3.7 Will lsof show remote hosts using files via NFS?

No. Remember, lsof displays open files for the processes of the host on which it runs. If the host on which lsof is running is an NFS server, the remote NFS client processes that are accessing files on the server leave no process records on the server for lsof to examine.

3.8 Why doesn't lsof report locks held on NFS files?

Generally lock information held by local processes on remote NFS files is not recorded by the UNIX dialect kernel. Hence, lsof can't report it.

One exception is some patch levels of Solaris 2.3, and all versions of Solaris 2.4 and above. Lsof for those dialects does report on locks held by local processes on remotely mounted NFS files.

3.8.1 Why does lsof report a one byte lock on byte zero as a full file lock?

When a process has a lock of length one, starting at byte zero, lsof can't distinguish it from a full file lock.

That's because most UNIX dialects represent both locks the same way in their file lock (flock or eflock) structures.

3.9 Why does lsof report different values for open files on the same file system (the automounter phenomenon)?

On UNIX dialects where file systems may be mounted by an automounter with the ``direct" type, lsof may sometimes report difference DEVICE, SIZE/OFF, INODE and NAME values when asked to report files open on the file system.

This happens because some files open on the file system -- e.g., the current directory of a shell that changed its directory to the file system as the file system's first reference -- may be characterized in the kernel with temporary automounter node information. The cd doesn't cause the file system to be mounted.

A subsequent reference to the file system -- e.g., an ls of any place in it -- will cause the file system to be mounted. Processes with files open to the mounted file system are characterized in the kernel with data that

reflects the mounted file system's parameters.

Unfortunately some kernels (e.g., some versions of Solaris 2.x) don't revisit the process that did only a change-directory for the purpose of updating the data associated with the open directory file. The file continues to be characterized with temporary automounter information until it does another directory change, even a trivial ``cd .".

Lsof will report on both reference types, when supplied the file system name as an argument, but the data lsof reports will reflect what it finds in the kernel. For the different types lsof will display different data, including different major and minor device numbers in the DEVICE column, different lengths in the SIZE/OFF column, different node numbers in the INODE column, and slightly different file system names in the NAME column.

In contrast, fuser, where available, can only report on one reference type when supplied the file system name as an argument. Usually it will report on the one that is associated with the mounted file system information. If the only reference type is the temporary automounter one, fuser will often be silent about it.

3.10 Why don't lsof and netstat output match?

Lsof and netstat output don't match because lsof reports the network information it finds in open file system objects -- e.g., socket files -- while netstat often gets its information from separate kernel tables.

The information available to netstat may describe network activities never or no longer associated with open files, but necessary for proper network state machine operation.

For example, a TCP connection in the FIN_WAIT_[12] state may no longer have an associated open file, because the connection has been closed at the application layer and is now being closed at the TCP/IP protocol layer.

3.10.1 Why can't lsof find accesses to some TCP and UDP ports?

Lsof stands for LiSt Open Files. If there is no open file connected to a TCP or UDP port, lsof won't find it. That's the most common reason why lsof doesn't find a port netstat might report open.

One reason I've found on some UNIX dialects is that their kernels set aside TCP and UDP ports for communicating with support activities, running in application layer servers -- the automounter daemons, and the NFS biod and nfsd daemons are examples. Netstat may report the ports are in use, but lsof doesn't.

Another reason is that netstat may also be able to report a port is open on a particular dialect, because it uses a source of data different from what lsof uses -- e.g., netstat might examine kernel tables or use streams messages to MIB2, while lsof relies on the information it finds in open file structures and their descendants.

Sometimes it's possible to search the data netstat and lsof use. For example, on Linux /proc/tcp and /proc/udp can be examined. There might be an entry there for a particular protocol and port, but if the line on which the port appears doesn't have an inode number that matches an inode number of an open file, lsof won't be able to identify the process using the port.

This is a tough question to which there is no easy answer.

3.11 Why does lsof update the device cache file?

At the end of the lsof output you may see the message:

```
lsof: WARNING: /Homes/abe/.lsof_vic was updated.
```

In this message /Homes/abe/.lsof_vic is the path to the private device cache file for login abe. (See 00DCACHE.)

Lsof issues this message when it finds it necessary to recheck the system device directory (e.g., /dev or /devices) and rebuild the device cache file during the open file scan. Lsof may need to do these things if it finds that a device directory node has changed, or if it cannot find a device in the cache.

3.12 Why doesn't lsof report state for UDP socket files?

Lsof reports UDP TPI connection state -- TS_IDLE (Idle), TS_BOUND (Bound), etc. -- for some, but not all dialects. TPI state is stream-based TCP/IP information that isn't available in many dialects.

A fairly weak general rule is if netstat(1) reports UDP

TPI state, lsof may be able to report it, too. But don't be surprised if lsof fails to report UDP TPI state for your dialect. Other factors influence lsof's ability to report UDP TPI state, including the availability of state number data in kernel structures, and state number to state name conversion data.

3.13 I am editing a file with vi; why doesn't lsof find the file?

Classic implementations of vi usually don't keep open the file being edited. (Newer ones may do so in order to maintain an advisory lock.) Instead classic vi opens the file, makes a temporary copy (usually in /tmp or /usr/tmp), and does its work in that file. When you save the file being edited from a classic vi implementation, it reopens and rewrites the file.

During a classic vi session, except for the brief periods when vi is reading or rewriting the file, lsof won't find an open reference to the file from the vi process, because there is none.

3.14 Why doesn't lsof report TCP/TPI window and queue sizes for my dialect?

Lsof only reports TCP/TPI window sizes for Solaris, because only its netstat reports them. The intent of providing TCP/TPI information in lsof NAME column output is to make it easier to match netstat output to lsof output.

In general lsof only reports queue sizes for both TCP and UDP (TPI) connections on BSD-derived UNIX dialects, where both sets of values appear in kernel socket queue structures. SYSV-derived UNIX dialects whose TCP/IP implementations are based on streams generally provide only TCP queue sizes, not UDP (TPI) ones.

While you may find that netstat on some SYSV-derived UNIX dialects with streams TCP/IP may report UDP (TPI) queue sizes, you will probably also find that the sizes are always zero -- netstat supplies a constant zero for UDP (TPI) queue sizes to make its headers align the same for TCP and UDP (TPI) connections. Solaris seems to get it right -- i.e., its netstat does not report UDP (TPI) queue sizes.

When in doubt, I chose to avoid reporting UDP (TPI) queue sizes for UNIX dialects whose netstat-reported values I knew to be a constant zero or whose origin I couldn't determine. OSR is a dialect in this category.

3.14.1 Why doesn't lsof report socket options, socket states, and TCP flags and values for my dialect?

The lsof -T argument, 'f', that selects the reporting of socket options, socket states and TCP flags was implemented at lsof revision 4.71 for the following UNIX dialects, providing the indicated information:

AIX 4.3.2 and 5.1 and above

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

Apple Darwin 7.2 and above

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

Digital UNIX and Tru64 UNIX 4.0

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

FreeBSD 4.9 and above

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

HP-UX 11.00 (/dev/kmem-based lsof)

All socket options and values are reported. No socket states are reported. Only the TF_NODELAY TCP flag and the TF_MSS value are reported.

HP-UX 11.11 and iiv2 (PSTAT-based lsof)

All socket options and values, and socket states are reported. No TCP flags or values are reported.

Linux

No socket options and values, socket states, or TCP flags and values are reported. The support for "-Tf" could not be added to Linux, because socket options, socket states, and TCP flags and values are not available via the /proc file system.

NetBSD 1.6G and above

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

OpenBSD 3.4 and above

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

OPENSTEP 4.2

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

OpenUNIX 8

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

SCO OpenServer Release 5.0.6

All socket options and values, socket states, and TCP

flags and values described in lsof(8) are reported.

Solaris 2.6, 8 and above

The socket option display is limited to BROADCAST, DEBUG, DGRAM_ERRIND, DONTRROUTE and OOBINLINE. Socket values are limited to KEEPALIVE and LINGER. No socket states are reported. The TCP DELACK, NODELAY and SENTFIN flags are reported. The TCP MSS value is reported.

UnixWare 7.1.[134]

All socket options and values, socket states, and TCP flags and values described in lsof(8) are reported.

3.14.2 Why doesn't lsof report the partial listen queue connection count for my dialect?

The reporting of partial listen queue connections was added to -Tf processing at lsof revision 4.76. Currently it is reported for these dialects:

AIX 4.3.2

This dialect is no longer supported, so no attempt was made to add partial listen queue length support for it.

AIX 5.1 and above

Partial listen queue information is available.

Apple Darwin 7.2 and above

Partial listen queue information is available.

Digital UNIX 4.0

This dialect is no longer supported, so no attempt was made to add partial listen queue length support for it.

FreeBSD 4.9 and above

Partial listen queue information is available.

HP-UX 11.00 (/dev/kmem-based lsof)

No partial listen queue information is available.

HP-UX 11.11 and iiiiv2 (PSTAT-based lsof)

No partial listen queue information is available.

Linux

No partial listen queue information is available.

NetBSD 1.6G and above

Partial listen queue information is available.

OpenBSD 3.4 and above

Partial listen queue information is available.

OPENSTEP 4.2

Partial listen queue information is available.

OpenUNIX 8

This dialect is no longer supported, so no attempt was made to add partial listen queue length support

for it.

SCO OpenServer Release 5.0.6

No partial listen queue information is available.

Solaris 2.6, 8 and above

Partial listen queue information is available.

Tru64 UNIX 5.0

This dialect is no longer supported, so no attempt was made to add partial listen queue length support for it.

Tru64 UNIX 5.1

Partial listen queue information is available.

UnixWare 7.1.[134]

Partial listen queue information is available.

3.15 What does "no more information" in the NAME column mean?

When lsof can find no successor structures -- a gnode, inode, socket, or vnode -- connected to the file structure of an open descriptor of a process, it reports "no more information" in the NAME column. The TYPE, DEVICE, SIZE/OFF, and INODE columns will be blank.

Because the file structure is supposed to contain a pointer to the next structure of a file's processing support, if the pointer is NUL, lsof can go no further.

Some UNIX dialects have file structures for system processes -- e.g., the sched process -- that have no successor structure pointers. The "no more information" NAME will commonly appear for these processes in lsof output.

It may also be the case that lsof has read the file structure while it is being assembled and before a successor structure pointer value has been set. The "no more information" NAME will again result.

Unless lsof output is filled with "no more information" NAME column messages, the appearance of a few should be no cause for alarm.

3.16 Why doesn't lsof find a process that ps finds?

If lsof fails to display open files for a process that ps indicates exists, there may be several reasons for the difference.

The process may be a "zombie" for which ps displays the

"(defunct)" state. In that case, the process has exited and has no open file information lsof can display. It does still have a process structure, sufficient for the needs of ps.

Another possible explanation is that kernel tables and structures may have been changing when lsof looked for the process, making lsof unable to find all relevant process structures. Try repeating the lsof request.

3.17 Why doesn't -V report a search failure?

The usual reason that -V won't report a search failure is that lsof located the search item, but was prevented from listing it by an option that doesn't participate in search failure reporting.

For example, this lsof invocation:

```
$ lsof -V -i TCP@foobar -a -d 999
```

won't report it can't find the Internet address TCP@foobar, even if there is an open file connected to that address, unless the open file also has a file descriptor number of 999 (the ``-a -d 999" options).

Compile-time options can also affect -V results in much the same way. For example, if HASSECURITY and HASNOSOCKSECURITY are defined at compile time, this lsof invocation, run by a non-root user:

```
$ lsof -V -c inetd
```

won't report that it can't find the inetd command, even if there is a process running the inetd command, because the HASSECURITY and HASNOSOCKSECURITY options prevent the listing of all but the socket files of another user, and no socket file selector (e.g., "-i") was specified.

3.18 Portmap problems

3.18.1 Why isn't a name displayed for the portmap registration?

When portmap registration reporting is enabled, any time there is a registration for a local TCP or UDP port, lsof displays it in square brackets, following the port number or service name -- e.g., ``:1234[name]" or ``:name[100083]".

The TCP or UDP port number or service number (what follows the `:') is displayed under the control of the `lsof -P` option. The registration identity is held by the portmapper and may be a name or a number, depending on how the registration's owner declared it. `lsof` reports what the port map holds and cannot derive a registration name from a registration number.

`lsof` can be compiled with registration reporting enabled or disabled by default, under the control of the `HASPMAPENABLED` `#define` (usually in `machine.h`). The `lsof` help panel (`lsof -h`) will show the default. `lsof` is distributed with reporting disabled by default.

3.18.2 How can I display only portmap registrations?

`lsof` doesn't have an option that will display only TCP or UDP ports with portmap registrations. The `+M` option only enables the reporting of registration information when Internet socket files are displayed; `+M` doesn't select the displaying of Internet socket files -- the `-i` option does that.

This simple `lsof` pipe to `grep` will do the job:

```
$ lsof -i +M | grep "\["
```

This works because `-i` selects Internet socket files, `+M` enables portmap registration reporting, and only output lines with opening square brackets will have registrations.

When portmap registration reporting is enabled by default, because the `lsof` builder constructed it that way, `+M` is not necessary. (The `lsof` help panel, produced with `lsof -h` will display the default portmapper registration reporting state.) However, specifying `+M` when reporting is already enabled is acceptable, as is specifying `-M` when reporting is already disabled.

Digression: `lsof` will accept `+'` or ``-'` as a prefix to most options. (That isn't documented in the man page or help panel to reduce confusion and complexity.) The `-i` option is as acceptable as `+i`, so the above example could be written a little more tersely as:

```
$ lsof +Mi | grep "\["
```

But be careful to use the ``Mi'' ordering, since ``iM'' implies M is an address argument to `i'.

3.18.3 Why doesn't lsof report portmap registrations for some ports?

Lsof reports portmap registrations for local TCP and UDP ports only. It identifies local ports this way:

- * The port appears in the local address section of the kernel structure that contains it.
- * The port appears in the foreign address section of a kernel structure whose local and foreign Internet addresses are the same.
- * The port appears in the foreign address section of a kernel address structure whose Internet address is INADDR_LOOPBACK (127.0.0.1).

Following these rules, lsof ignores foreign portmapped ports. That's done for reasons of efficiency and possible security prohibitions. Contacting all remote portmappers could take a long time and be blocked by network difficulties (i.e., be inefficient). Many firewalls block portmapper access for security reasons.

Lsof may occasionally ignore portmap registration information for a legitimate local port by virtue of its local port rules. This can happen when a port appears in the foreign part of its kernel structure and the local and foreign Internet addresses don't match (perhaps because they're on different interfaces), and the foreign Internet address isn't INADDR_LOOPBACK (127.0.0.1).

3.19 Why is `lsof | wc` bigger than my system's open file limit?

There is a strong temptation to count open files by piping lsof output to wc. If your purpose is to compare the number you get to some Unix system parameter that defines the number of open files your system can have, resist the temptation.

One reason is that lsof reports a number of "files" that don't occupy Unix file table space -- current working directories, root directories, jail directories, text files, library files, memory mapped files are some. Another reason is that lsof can report a file shared by more than one process that itself occupies only one file table slot.

If you want to know the number of open files that occupy file table slots, use the `+ff` option and process the `lsof` output's `FILE_ADDR` column information with standard Unix tools like `cut`, `grep`, `sed`, and `sort`.

You might also consider using `lsof`'s field output with `+ff`, selecting the file struct address with `-FF`, and processing the output with an `AWK` or `Perl` script. See the `list_fields.awk`, `list_fields.perl`, and `shared.perl5` scripts in the `scripts/` subdirectory of the `lsof` distribution for hints on file struct post-processing filters.

3.20 Why doesn't `lsof` report file offset (position)?

`lsof` won't report a file offset (position) value if the `-s` option has been specified, or if the dialect doesn't support the displaying of file offset (position).

That `lsof` is reporting only file size is indicated by the fact that the appropriate column header says `SIZE` instead of `SIZE/OFF`.

If `lsof` doesn't support the displaying of file offset (position) -- e.g., for Linux /proc-based `lsof` -- the `-h` or `-?` output panel won't list the `-o` option.

Sometimes the availability of file offset information depends on the dialect's kernel. This is particularly true for socket file offsets.

Maintenance of offsets for pseudo-terminal devices varies by UNIX dialect and is related to how the dialect kernel implements pseudo-terminal support. Kernels like AIX, for example, that short-circuit the transfer of data between socket and pseudo devices to reduce TCP/IP daemon interrupt rates won't advance offsets in the TCP/IP daemon socket files. Instead they will advance offsets in the open standard I/O files of the shell child process where the pseudo-terminal devices are used.

When in doubt about the behavior of `lsof` in reporting file offset information, do some carefully measured experiments, consult the `lsof` sources, or contact me at [<abe@purdue.edu>](mailto:abe@purdue.edu) to discuss the matter. Please follow the reporting guidelines in the "How do I report an `lsof` bug?" section of this FAQ.

3.20.1 What does `lsof` report for size when the file doesn't really have

one?

When a file has no true size -- e.g., it's a socket, a FIFO, or a pipe -- lsof tries to report the information it finds in the kernel that describes the contents of associated kernel buffers.

Thus, for example, size for most TCP/IP files is socket buffer size. The size of the socket read buffer is reported for read-only files; the size of the write buffer for write-only files; and the sum of the buffers sizes for read-write files.

3.21 Problems with path name arguments

3.21.1 How do I ask lsof to search a file system?

You can ask lsof to search for all open files on a file system by specifying its mounted path name as an lsof argument -- e.g.,

```
$ lsof /
```

Output of the mount command will show file system mounted path names. It will also show the mounted-on device path for the file system.

If the mounted-on device is a block device (the permission field in output of `ls -l <device>` starts with a `b/`), you can specify its name, too -- e.g.,

```
$ lsof /dev/sd0a
```

If the mounted-on device isn't a block device -- for example, some UNIX dialects call a CD-ROM device a character device (ls output starts with a `c'`) -- you can force lsof to assume that the specified device names a file system with the `+f` option -- e.g.,

```
$ lsof +f -- /dev/sd0a
```

(Note: you must use `--` after `+f` or `-f` if a file name follows immediately, because `+f` and `-f` can be followed by characters that specify flag output selections.)

When you use `+f` and lsof can't match the device to a file system, lsof will issue a complaint.

The +f option may be used in some dialects to ask lsof to search for an NFS file system by its server name and server mount point. If the mount application reports an NFS file system mounted-on value that way, then this sample lsof request should work.

```
$ lsof +f -- fleet:/home/fleet/u5
```

Finally, you can use -f if you don't want a mounted file system path name to be considered a request to report all open files on the file system. This is useful when you want to know if anyone is using the file system's mounted path name. This example directs lsof to report on open access to the '/' directory, including when it's being used as a current working or root directory.

```
$ lsof -f -- /
```

The lsof -f option performs the same function as -f does in some fuser implementations. However, since the lsof -c option was chosen for another purpose before the -f option was added to lsof, +f was selected as the analogue to the fuser -c option. (Sorry for the potential confusion.)

3.21.2 Why doesn't lsof find all the open files in a file system?

Lsof may not find all the open files in a file system for several reasons.

First, some processes with files open on the file system may have been changing status when lsof examined the process table, and lsof "missed" them. Remember, the kernel changes much faster than lsof can respond to the changes.

Second, be sure you have specified the file system correctly. Perhaps you specified a file instead. You can use lsof's -V option to have lsof report in detail on what it couldn't find. Make sure the report for the file system you specified says "file system." Here's some -V output:

```
$ /lsof -V /tmp ./lsof.h ./lsof
COMMAND PID USER  FD  TYPE DEVICE SIZE/OFF INODE NAME
lsof   2688  abe  txt  VREG 18,1,7 1428583 226641 ./lsof
lsof   2689  abe  txt  VREG 18,1,7 1428583 226641 ./lsof
lsof: no file use located: ./lsof.h
```

You can also use lsof's +f option to force it to consider a path name as a file system. If lsof can't find a file

system by the specified name, it will issue a complaint --
e.g.,

```
$ lsof +f -- /usr  
lsof: not a file system: /usr
```

(/usr is a directory in the / file system.)

3.21.3 Why does the lsof exit code report it didn't find open files when some files were listed?

Sometimes lsof will list some open files, yet return a non-zero exit code, suggesting it hasn't found all the specified files.

The first thing you should when you suspect lsof is incorrect is to repeat the request, adding the -V option. In the resulting report you may find that your file system specification really wasn't a file system specification, just a file specification.

Finally, if you specify two files or two file systems twice, lsof will credit all matches to the first of the two and believe that there were no matches for the second. It's possible to specify a single file system twice with different path names by using both its mounted directory path name and mounted-one device name.

```
$ lsof +f -V spcuna:/sysprog /sysprog  
COMMAND PID USER FD TYPE DEVICE SIZE/OFF INODE NAME  
ksh 11092 abe cwd VDIR 39,0,1 1536 226562 /sysprog  
(spcuna:/sysprog)  
...  
lsof: no file system use located: spcuna:/sysprog
```

All matches were credited to /sysprog; none to spcuna:/sysprog.

3.21.4 Why won't lsof find all the open files in a directory?

When you give lsof a simple directory path name argument (not a file system mounted-on name), you are asking it to search for processes that have the directory open as a file, or as a process-specific directory -- e.g., root or current working directory.

If you want to list instances of open files inside the directory, you need to specify the individual path names of those files, or use the lsof +D and +d options.

See the answer to the question "Why are the +D and +d options so slow?" before you use +D or +d casually.

See the answer to the question "Why do the +D and +d options produce warning messages?" for an explanation of some process authority limitations of +D and +d.

3.21.5 Why are the +D and +d options so slow?

The +D and +d options cause lsof to build a path name search list for a specified directory. +D causes lsof to descend the directory to its furthest subdirectory, while +d restricts it to the top level. In both cases, the specified directory itself is included in the search list. In both symbolic links are ignored.

Building such a search list can take considerable time, especially when the specified directory contains many files and subdirectories -- lsof must call the system readlink() and stat() functions for each file and directory. Storing the search list can cause lsof to use more than its normal amount of dynamic memory -- each file recorded in the search list consumes dynamic memory for its path name, characteristics, and search linkages. Using the list means lsof must search it for every open file in the system.

Building the search list for a directory specified on some file systems can be slow -- e.g., for an NFS directory with many files. Some file systems have special logging features that can introduce additional delays to the building of the search list -- e.g., NFS logging, or logging on a Solaris UFS file system. The bottom line is that slow search list construction may not be so much an lsof problem as a file system problem. (Hint: if you're using Solaris UFS logging, consider specifying the "logging,noatime" option pair to reduce the number of atime writes to the UFS logging queue and disk.)

A somewhat risky way to speed up lsof's building of the search list is to use lsof's "-O" option. It forces lsof to do all system calls needed to build the search list directly, rather than in a child process. While direct system calls are much faster, they can block in the kernel -- e.g., when an NFS server stops responding -- stopping lsof until the kernel operation unblocks.

As an example of the load +D can impose, consider that an

`ls -lR` on a lightly loaded NeXT '040 cube with a 1GB root file system disk took 4+ minutes of real time. It also generated several hundred error messages about files and directories the `ls` process didn't have permission to access with `stat(2)`.

The bottom line is that `+D` and `+d` should be used cautiously. `+D` is more costly than `+d` for deeply nested directory trees, because of the full directory descent it causes. So use `+d` where possible. And you might need to consider the performance of the file system that holds the directory you name with `+d` or `+D`.

In view of these warnings, when is it appropriate to use `+D` or `+d`? Probably the most appropriate time is when you would specify the directory's contents to `ls` with a shell globbing construct -- e.g., `ls *`. If that's what you need to do, `ls +d .` is probably more efficient than having the shell produce a directory list, form it into an argument vector, and pass the vector to `ls` for it to unravel.

See the answer to the question "Why do the `+D` and `+d` options produce warning messages?" for an explanation of some process authority limitations of `+D` and `+d`.

3.21.6 Why do the `+D` and `+d` options produce warning messages?

`+D` and `+d` option processing is limited by the authority of the `ls` process -- i.e., `ls` can only examine (with `lstat(2)` and `stat(2)`) files the owner of the process can access.

If the ownership, group membership, or permissions of the specified directory, file within it, or directory within it prevents the owner of the `ls` process from using `lstat(2)` or `stat(2)` on it, `ls` will issue a warning message, naming the path and giving the system's (`lstat(2)`'s or `stat(2)`'s) reason (errno explanation text) for refusing access.

As an example, assume user `abc` has a subdirectory in `/tmp`, owned by `abc` and readable, writable and searchable by only its owner. If user `def` asks `ls` to search for all `/tmp` references with `+D` or `+d`, `ls` will be unable to `lstat(2)` or `stat(2)` anything in `abc`'s private subdirectory, and will issue an appropriate warning.

`ls` warnings can usually be suppressed with the `-w` option.

However, using `-w` with `+D` or `+d` means that there will be no indication why `lsof` couldn't find an open reference to a restricted directory or something contained in it.

Hint: if you need to use `+D` or `+d` and avoid authority warnings, and if you have super-user power, `su` and use `lsof` with `+D` or `+d` as root.

3.22 Why can't my C compiler find the `rpcent` structure definition?

When you try to compile `lsof` your compiler may complain that the `rpcent` structure is undefined. The complaints may look like this:

```
>print.c: In function `fill_portmap':  
>print.c:213: dereferencing pointer to incomplete type  
>...
```

The most likely cause is that someone has allowed a BIND installation to update `/usr/include/netdb.h` (or perhaps `/usr/include/rpc/netdb.h`), removing the `rpcent` structure definition that `lsof` expects to find there.

Only Solaris has an automatic work-around. (See `dlsof.h` in `dialects/sun.`) The Solaris work-around succeeds because there is another header file, `<rpc/rpcent.h>`, with the `rpcent` structure definition, and there is a Solaris C pre-processor test that can tell when the BIND `<netdb.h>` is in place and hence `<rpc/rpcent.h>` must be included.

Doubtlessly there are similar work-arounds possible in other UNIX dialects whose header files have been "touched" by BIND, but in general I recommend restoration of the vendor's `<netdb.h>` and any other header files BIND might have replaced. (I think BIND replaces `<resolv.h>`, `<sys/bitypes.h>`, `<sys/cdefs.h>` -- and maybe others.)

3.23 Why doesn't `lsof` report fully on file "foo" on UNIX dialect "bar?"

`lsof` sometimes won't report much information on a given file, or may even report an error message in its `NAME` column. That's usually because the file is of a special type -- e.g., in a file system specific to the UNIX dialect -- and I haven't used a system where the file appeared during my testing.

If you encounter such a situation, send me e-mail at

<abe@purdue.edu> and we may be able to devise an addition to lsof that will report on the file in question. Please follow the reporting guidelines in the "How do I report an lsof bug?" section of this FAQ. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

3.24 Why do I get a complaint when I execute lsof that some library file can't be found?

On systems where the LIBPATH (or the equivalent) environment variable is used to record the library search path in executable files when they are built, an incorrect value may make it impossible for the system to find the shared libraries needed to load lsof for execution.

This may be particularly true on systems like AIX >= 4.1.4, where the lsof Makefile takes the precautionary step of using the -bnolibpath loader flag to insure that the path to the private static lsof library is not recorded in the lsof binary. Should LIBPATH be invalid when lsof is built, it will be recorded in the lsof binary as the default library path search order and lead to an inability to find libraries when lsof is executed.

So, if you get missing library complaints when you try to execute lsof, check LIBPATH, or whatever environment variable is used on your system to define library search order in executable files. Use the tools at your disposal to look at the library paths recorded in the lsof binary -- e.g., chatr on HP-UX, dump on AIX, ldd on Solaris.

Make sure, too, that when the correct library search path has been recorded in the executable file, the required library files exist at one or more of the search paths.

3.25 Why does lsof complain it can't open files?

When lsof begins execution, unless it has been asked to report only help or version information, typically it will attempt to access kernel memory and symbol files -- e.g., /unix, /dev/kmem. Even though lsof needs only permission to open these files for reading, read access to them might be restricted by ownerships and permission modes.

So the first step to diagnosing lsof problems with opening files is to use ls(1) to examine the ownerships and permission

modes of the files that lsof wants to open. You may find that lsof needs to be installed with some type of special ownership or permission modes to enable it to open the necessary files for reading. See the "Installing lsof" section of OOREADME for more information.

3.26 Why does lsof warn "compiled for x ... y; this is z."?

Unless warnings are suppressed (with `-w`) or the kernel identity check symbol (`HASKERNIDCK`) definition has been deleted, all but one lsof dialect version (exception: /proc-based Linux lsof) compare the identity of the running kernel to that of the one for which lsof was constructed. If the identities don't match, lsof issues a warning like this:

```
lsof: WARNING: compiled for Solaris release 5.7; this is 5.6.
```

Two kernel identity differences can generate this warning -- the version number and the release number.

Build and running identity differences are usually significant, because they usually indicate kernels whose structures are different -- kernel structures commonly change at dialect version releases. Since lsof reads data from the kernel in the form of structures, it is sensitive to changes in them. The general rule is that an lsof compiled for one UNIX dialect version will not work correctly when run on a different version.

There are three work-arounds: 1) use `-w` to suppress the warning -- and risk missing other warnings; 2) permanently disable the identity check by deleting the definition of `HASKERNIDCK` in the dialect's `machine.h` header file -- with the same risk; or 3) rebuild lsof on the system where it is to be run. (Deleting `HASKERNIDCK` can be done with the `Customize` script or by editing `machine.h`.)

Generally checking kernel identity is a quick operation for lsof. However, it is potentially slow under AIX, where lsof must run `/usr/bin/oslevel`. To speed up lsof, use `-w` to suppress the `/usr/bin/oslevel` test. See "Why does AIX lsof start so slowly?" for more information.

3.27 How can I disable the kernel identity check?

The kernel identity check is controlled by the `HASKERNIDCK` definition. When it is defined, most dialects (exclusion:

/proc-based Linux lsof) will compare the build-time kernel identity with the run-time one.

To disable the kernel identity check, disable the HASKERNIDCK definition in the dialect's machine.h header file. The Customize script can be used to do that in its section about the kernel identity check.

Caution: while disabling the kernel identity check may result in smaller lsof startup overhead, it comes with the risk of executing an lsof that may produce warning messages, error messages, incorrect output, or no output at all.

3.28 Why don't ps(1) and lsof agree on the owner of a process?

Generally the user ID lsof reports in its USER column is the process effective user ID, as found in the process structure. Sometimes that may not agree with what ps(1) reports for the same process.

There are sundry reasons for the difference. Sometimes ps(1) uses a different source for process information, e.g., the /proc file system or the psinfo structure. Sometimes the kernel is lax or confused (e.g., Solaris 2.5.1) about what ID to report as the effective user ID. Sometimes the system carries only one user ID in its process structure (some BSD derivatives), leaving lsof no choice.

The differences between lsof and ps(1) user identifications should be small and normally it will be apparent that the confusion is over a process whose application has changed to an effective user ID different from the real one.

3.29 Why doesn't lsof find an open socket file whose connection state is past CLOSE_WAIT?

TCP/IP connections in states past CLOSE_WAIT -- e.g., FIN_WAIT_1, CLOSING, LAST_ACK, FIN_WAIT_2, and TIME_WAIT -- don't always have open files associated with them. When they don't, lsof can't identify them. When the connection state advances from CLOSE_WAIT, sometimes the open file associated with the connection is deleted.

3.30 Why don't machine.h definitions work when the surrounding comments are removed?

The machine.h header files in dialect subdirectories have some commented-out definitions like:

```
/* #define HASSYSDC "/your/choice/of/path */
```

You can't simply remove the comments and expect the definition to work. That's intended to make you think about what value you are assigning to the symbol. The assigned value might have a system-specific convention. HASSYSDC, for example, might be `/var/db/lsof.dc` for FreeBSD, but it might be `/var/adm/lsof.dc` for Solaris.

Symbols defined in the `lsof` documentation are described in `00PORTING`, other `machine.h` comments, and other `lsof` documentation files. HASSYSDC, for example, is discussed in `00DCACHE`. When comments and documentation don't suffice, consult the source code for hints on how the symbol is used.

3.31 What do "can't read inpcb at 0x...", "no protocol control block", "no PCB, CANTSENDMORE, CANTRCVMORE", etc. mean?

Sometimes `lsof` will report "can't read inpcb at 0x00000000", "no protocol control block", "no PCB, CANTSENDMORE, CANTRCVMORE" or a similar message in the NAME column for open TCP socket files. These messages mean the file's socket structure lacks a pointer to the Internet Protocol Control Block (inpcb) where `lsof` expects to find connection addresses -- local and foreign ports, local and foreign IP addresses. The socket file has probably been submitted to the `shutdown(2)` function for processing.

In some implementations `lsof` issues the "no PCB, CANTSENDMORE, CANTRCVMORE" message, which tries to explain the absence of a protocol control block by showing the socket state settings that have been made by the `shutdown(2)` function.

If a non-zero address follows the "0x" in the "can't read inpcb" message, it means `lsof` couldn't read inpcb contents from the indicated address in kernel memory.

3.32 What do the "unknown file system type" warnings mean?

`lsof` may report a message similar to"

```
unknown file system type, v_op: 0x10472f10
```

in the NAME column for some files.

This means that `lsof` has encountered a vnode for the file

whose operation switch address (from v_op) references a file system type for which there is no support in lsof.

After lsof identifies the file system type, it uses pre-compiled code to locate the file system specific node for the file where lsof finds information like file size, device number, node number, etc.

To get some idea of what the file system type might be, use nm on your kernel symbol file to locate the symbol name that corresponds to the v_op address -- e.g., on Solaris do:

```
$ nm -x /dev/ksyms | grep 0x10472f10
0x10472f10 ... |file_system_name_vnodeops
```

Where "file_system_name" is the clue to the unsupported file system.

Lsof doesn't use the v_op address to identify file system types on all dialects. Sometimes it uses an index number it finds in the vnode. It will translate that symbol to a short name in the warning message -- e.g., "nfs3" -- if possible.

3.33 Installation

3.33.1 How do I install lsof?

There is no "standard" way to install lsof. Too much depends on local conditions for me to be able to provide working install rules in the lsof make files. (The skeleton install rules you will find just give "hints.") See the "Installing Lsof" section of 00README for a fuller explanation.

To install lsof you will need to consider these questions:

- * Who should be able to use lsof? (See HASSECURITY and HASNOSOCKSECURITY in the "Security" section of 00README.)
- * Where should lsof be installed? This is a decision mostly dictated by local conditions. Somewhere in /usr/local -- etc/ or sbin/ -- is a common choice.
- * What permissions should I give the lsof executable? The answer to this varies by dialect. The make files have install rules that give hints. The "Installing Lsof" section of 00README gives information, too.

* What if I want to install lsof in a shared file system for machines that require different lsof configurations? See the next question and answer, "How do I install a common lsof when I have machines that need differently constructed lsof binaries?"

3.33.2 How do I install a common lsof when I have machines that need differently constructed lsof binaries?

A dilemma that faces some system administrators when they install lsof in a shared file system -- e.g., NFS -- is that they must have different lsof executables for different systems.

The answer is to build an lsof wrapper script that is executed in place of lsof. The script can use system commands to determine which lsof binary should be executed.

Consider this example. You have HP-UX machines with 32 and 64 bit kernels that share the /usr/local/sbin directory where you want to install lsof. Consequently, on each system you must use a different lsof executable, built for the system's bit size. (That's because lsof reads kernel structures, sized by the kernel's bit size.)

One answer is to install three things in /usr/local/sbin:

1) a 32 bit lsof as lsof32; 2) a 64 bit lsof as lsof64; and 3) an lsof script. The script might look like this one, based on work by Amir J. Katz:

```
#!/bin/sh
x=`/usr/bin/getconf KERNEL_BITS` # returns 32 or 64
if /usr/bin/test "X$x" = "X32"
then
  lsof32 $*
else
  if /usr/bin/test "X$x" = "X64"
  then
    lsof64 $*
  else
    echo "Can't determine which lsof executable to use;"
    echo "getconf KERNEL_BITS says: $x"
  fi
fi
```

Solaris users should consult "How do I install lsof for Solaris 7, 8 or 9?" for information on a similar trick

using the Solaris isaexec command.

Users of other dialects might be able to use a command like `uname(1)` that can identify a distinguishing feature of the system to be incorporated in pre-installed lsof executable names. For example, use ``uname -r`` and install binaries with suffixes that match ``uname -r`` output.

3.34 Why do lsof 4.53 and above reject device cache files built by earlier lsof revisions?

When lsof revisions 4.53 run and encounter a device cache file built by an earlier revision, it will reject the file and build a new one. The rejection will be advertised with these messages:

```
lsof: WARNING: no /dev device in <name>: 2 sections
...
lsof: WARNING: created device cache file: <name>
```

This happens because the header line of the device cache file was changed at revision 4.53 to contain the number of the device on which the device directory resides. The old device cache file header line -- the "2 sections" line in the above warning message, now reads "2 sections, dev=600".

This is not a serious problem, since lsof automatically rebuilds the device cache file with the correct header line.

3.35 What do "like block special" and "like character special" mean in the NAME column?

When lsof comes across an open block or character file whose device, raw device and inode place it somewhere other than /dev (or /devices), lsof doesn't report the /dev (or /devices) name in the NAME column. Instead lsof reports the file system name and device or path name in the NAME column and parenthetically adds "like block special <path>" or "like character special <path>".

The value for <path> will point to a block or character device in /dev (or /devices) whose raw device number matches that of the open file being reported, but whose device number or node number (or both) don't match.

Such an open file is connected to a device node that has been created in a directory other than /dev (or /devices.)

See `mknod(8)` for information on how such nodes are created. (Generally one needs root power to create device nodes with `mknod`.)

3.36 Why does an `lsof` make fail because of undefined symbols?

When `lsof` is compiled via the `make` step and the final load step fails because of missing symbols, the problem may not be `lsof`. The problem may be that `ld`, called by the compiler as part of the `make` step, can't find some library that `lsof` needs.

First check the last compiler line of the make operation -- e.g., the last line with `cc` or `gcc` in it before the undefined symbol report -- for loader arguments, i.e., ones beginning with `-l`. Except for `-llsof` the rest name system libraries. (`-L./lib` precedes `-llsof` to tell the loader its location.)

Check that all the named system libraries exist. Look in `/lib` and `/usr/lib` as a start, but that may not be the only place system libraries live. Consult your dialect's documentation, e.g., the compiler and loader man pages, for other possible locations.

If some system library doesn't exist, that may mean it was never installed or was removed. You'll have to re-install the missing library.

You may find that all the system libraries `lsof` uses exist. Your next step might be to use `nm` and `grep` to see if any of them contain the undefined symbols.

```
$ nm library | grep symbol
```

If the undefined symbol exists in some library named by the `lsof` make step, then you might have a problem with some environment variable that controls the load step. The most common is `LD_LIBRARY_PATH`. It may have a setting that causes `ld` to ignore a directory containing a library `lsof` names. If this is the case, try unsetting `LD_LIBRARY_PATH` in the environment of the `ld` process -- e.g., do:

```
$ unset LD_LIBRARY_PATH  
or  
% unsetenv LD_LIBRARY_PATH
```

Consult your `ld` man page for other environment variables

that might affect library searching -- e.g., LIBPATH, LPATH, SHLIB_PATH, etc.

If the undefined function doesn't exist in any libraries lsof names, check other libraries. See if the function has a man page that names its library. If the latter is true, please let me know, because that is an lsof problem I need to fix.

If none of these solutions work for you, send me some documentation via e-mail at <abe@purdue.edu>. Include ``uname -a`` output, the output of the lsof ``Configure ...`` and ``make`` steps, and the contents of the environment in force when the ``make`` step was executed -- e.g., ``env`` or ``printenv`` output. If you've located the libraries lsof names, send me that information, too. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

3.37 Command Regular Expressions (REs)

3.37.1 What are basic and extended regular expressions?

Lsof's ```-c`` option allows the specification of regular expressions (REs), enclosed in two slash (`/`) characters and followed by these modifiers:

- `b` the RE is a basic RE.
- `i` ignore case.
- `x` the RE is an extended RE (the default).

Note: the characters of the regular expression may need to be quoted to prevent their expansion by the shell.

Example: this RE is an extended RE that matches exactly four characters, whose third may be an upper (`'O'`) or lower case (`'o'`) oh:

```
-c /^..o.$/i
```

For simplicity's sake, an RE that is acceptable to `egrep(1)` is usually called an extended RE.

REs suitable for the old line editor, `ed(1)`, are often called basic REs (and sometimes also called obsolete).

These are some ways basic REs usually differ from extended REs. (There are other differences.)

- * '|, `+', `?', '{', and '}' are ordinary characters.
- * `^' is an ordinary character except at the beginning of the RE.
- * `\$' is an ordinary character except at the end of the RE.
- * `*' is an ordinary character if it appears at the beginning of the RE.

For more information on REs and the distinction between basic and extended REs, consult your dialect's man pages for `ed(1)`, `egrep(1)`, `sed(1)`, and possibly `regex(5)` or `regex(7)`.

3.37.2 Why can't I put a slash in a command regular expression?

Since a UNIX command name is the last part of a path to the command's executable, the `lsof` command regular expression (RE) syntax uses slash (/) to mark the beginning and end of an RE. Slash may not appear in the RE and the back-slash escape is ineffective for "hiding" it.

More likely than not, if you try to put a slash in an `lsof` command RE, you'll get this response:

```
$ lsof -s/.\/ / ...
lsof: invalid regexp modifier: /
```

`lsof` is complaining the the first character it found after the second slash isn't an `lsof` command RE modifier -- 'b', 'i', or 'x'.

3.37.3 Why does `lsof` say my command regular expression wasn't found?

When you use both forms of `lsof`'s `-c` option -- ``-c <command>" and ``-c /RE/[m]" -- and ask that `lsof` do a verbose search (``-V"), you may be surprised that `lsof` will say that the regular expression wasn't found.

This can happen if the ``-c <command>" form matches first, because then the ``-c/RE/[m]" test will never have been applied. For example:

```
$ ./lsof -clsof -c/^..o.$/ -V -adcwd
COMMAND PID USER  FD  TYPE DEVICE SIZE/OFF  NODE NAME
lsof  7850  abe  cwd  VDIR  6,0  2048 96442 / (/dev/sd0a)
```

lsof: no command found for regex: ^..o.\$

The `--clsof` option matched first, so the `--c/^..o.$/` option wasn't tested.

3.38 Why doesn't lsof report on shared memory segments?

Lsof reports on shared memory segments only if they're associated with an open file. That's consistent with lsof's mission -- to List Open Files. Shared memory segments with no file associations aren't open files.

That's not to say that a report on shared memory segments and their associated processes wouldn't be useful. But it calls for a new tool, not more baggage for lsof.

3.39 Why does lsof report two instances of itself?

When you ask lsof to report all open files and it has permission to do so, you may see two lsof processes in the output. The processes are connected via pipes -- e.g., here's an HP-UX 11 example.

```
COMMAND  PID USER  FD  TYPE  DEVICE ...
...
lsof    29450  abe   7w  PIPE 0x48732408 ...
lsof    29450  abe   8r  PIPE 0x48970808 ...
...
lsof    29451  abe   6r  PIPE 0x48732408 ...
lsof    29451  abe   9w  PIPE 0x48970808 ...
```

The first process will usually be the lsof you initiated; the second, an lsof child process that is used to isolate its parent process from kernel functions that can block -- e.g., `readlink()` or `stat()`.

Information to and from the kernel functions is exchanged via the two pipes. When the parent process detects that the child process has become blocked, it attempts to kill the child. Depending on the UNIX dialect that may succeed or fail, but the parent won't be blocked in any event.

See the "BLOCKS AND TIMEOUTS" and "AVOIDING KERNEL BLOCKS" sections of the lsof man page for more information on why the child process is used and how you can specify lsof options to avoid it. (Caution: that may be risky.)

3.40 Why does lsof report '\n' in device cache file error messages?

Lsof revisions prior to 4.58 may report '\n' in error messages it delivers about problems in the device cache file -- e.g.,

```
lsof: WARNING: no ...: 4 sections\n
```

That's deliberately done to show the exact contents of the device cache file line about which lsof is complaining, including its terminating NL (New Line) '\n' character. In the above example the line in the device cache file causing the lsof complaint contains "4 sections" and ends with a '\n'.

At revision 4.58 and above, device cache error messages like the one in the above example have been changed to read:

```
lsof: WARNING: no ...: line "4 sections"
```

The terminal '\n' is no longer reported, the line contents are enclosed in double quote marks (""), and the word "line" has been added as a prefix to denote that what follows is a line from the device cache file.

3.41 Kernel Symbol and Address Problems

3.41.1 What does "lsof: WARNING: name cache hash size length error: 0" mean?

When run on some systems, lsof may issue this warning:

```
lsof: WARNING: name cache hash size length error: 0
```

That is an example from a FreeBSD system where lsof reads the kernel's `_nchash` variable and finds its value is zero.

Similar warnings include:

```
WARNING: kernel name cache size:
```

```
WARNING: can't read kernel's name cache:
```

```
WARNING: no name cache address
```

```
WARNING: name cache hash size length error:
```

```
WARNING: unusable name cache size:
```

These warnings are issued when lsof is attempting to read the kernel's name cache information. They are usually the result of a mis-match between the addresses for kernel

symbols lsof gets via nlist(2) and the addresses in use by the kernel.

Lsof usually gets kernel symbol addresses from what it believes to be the kernel boot file. In FreeBSD, for example, that's the path returned by getbootfile(3), usually /kernel. The boot file can have other names in other UNIX dialects -- /unix, /vmunix, /bsd, /netbsd, /mach, /stand/vmunix, etc.

Lsof will get incorrect (mismatched) addresses from the boot file if it has been replaced by a newer one which hasn't yet been booted -- e.g., if this is done in FreeBSD:

```
# mv /kernel /kernel.OLD
# mv /kernel.NEW /kernel
```

Until the FreeBSD system is rebooted, the booted kernel is /kernel.OLD, but getbootfile() says it is /kernel. If symbol addresses important to lsof in /kernel.OLD and /kernel don't match, the lsof WARNING messages result.

3.41.2 Why does lsof produce "garbage" output?

Kernel name cache warnings may not be the only sign that lsof is using incorrect symbol addresses to read kernel values. If there's no reasonable test lsof can make on what it reads from the kernel, it may issue other warnings or even report nonsensical results.

The warnings may appear on STDERR, such as:

```
lsof: can't read proc table info
```

Or the warnings may appear in the NAME column as messages saying lsof can't read or interpret some kernel structure -- e.g.,

```
... NAME
... can't read file struct from 0x12345
```

One possible work-around is to point lsof's kernel symbol address gathering at the proper boot file. That can be done with lsof's -k option -- e.g.,

```
$ lsof -k /kernel.OLD
```

The best work-around is to make sure the standard boot file

is properly sited -- e.g., if you've moved a new /kernel in place, boot it.

3.42 Why does lsof report open files when run as super user that it doesn't report when run with lesser privileges?

The most likely cause is that the HASSECURITY option was selected when the lsof executable was built.

If HASSECURITY is defined when lsof is built, and lsof is run with the privileges of a non-ROOT user, it will only list open files belonging to the user. The same lsof executable, when run with root user privileges, will list all open files.

However, if HASSECURITY and HASNOSOCKSECURITY are both defined when lsof is built, lsof will list open files belonging to the user and will also list anyone else's open socket files, provided their listing is selected with the "-i" option.

So first ask yourself if the process whose open files lsof won't list belong to a user other than the one under which you're running lsof, and are not open socket files. If either is true, use lsof's help (-h or -?) option and look for a line near the bottom of the help panel that says:

```
"... can list all files..."
```

If the leading "..." says "Only root" then HASSECURITY was defined when lsof was built. If the trailing "..." says ", but anyone can list socket files" then HASNOSOCKSECURITY was also defined.

Should you want an lsof not built with HASSECURITY defined, rerun the lsof Configure script. If you let Configure do customization, make sure you answer 'n' when it asks if you want to enable HASSECURITY and HASNOSOCKSECURITY. If you don't need to do customization, you can rebuild lsof with the "-n" option to Configure. Here's an example of such a rebuild sequence:

```
$ Configure -clean
$ Configure -n <dialect-abbreviation>
$ make
```

More information on the HASSECURITY and HASNOSOCKSECURITY options may be found in the "Security" section of the

00README file of the lsof distribution.

3.43 Test Suite Problems

3.43.1 Errors all tests can report:

3.43.1.1 Why do tests complain "ERROR!!! can't execute ../lsof"?

All tests in the test suite expect an executable lsof file to exist in the tests parent directory, ../lsof.

If there's none there, the tests/Makefile has a rule to make it, but there are probably circumstances where that rule may fail.

The work-around is to re-Configure and re-make lsof, then run the test suite.

3.43.1.2 Why do tests complain "ERROR!!! can't find ..." a file?

Many tests create (or use from a supplied environment variable path) a test file and use lsof to find it. When lsof can't find the file, the tests report the error with messages of the form:

```
ERROR!!! can't find ... : <some file path>
```

or

```
ERROR!!! lsof couldn't find ...
```

These type of error messages mean that the lsof field output delivered to the test didn't contain a file that the test could identify as the one it intended lsof to find. It might also mean that the process information -- command name, PID or parent PID -- didn't match what the test expected.

This could imply a bug in the test or a bug in lsof. Try using lsof to find a known file that is open. For example, while in the tests sub-directory, do this:

```
$ sleep 30 < Makefile
$ ../lsof Makefile
```

If lsof doesn't report that Makefile is open, then the fault may be with lsof. If lsof reports the file is open, search further in the test code for the failure cause.

3.43.1.3 Why do some tests fail to compile?

If a test suite program fails to compile, it may be because I've never had an opportunity to compile the test on the particular UNIX version you are using.

See Appendix B in 00TEST for a list of the UNIX dialects where the test suite has been validate.

3.43.1.4 Why do some tests always fail?

There are several tests in the optional group that have conflicting or special requirements:

LTbigf needs a dialect and file system that support large files.

LTlock won't work if the tests/ sub-directory is on an NFS file system.

LTnfs won't work if the tests/ sub-directory is not on an NFS file system.

So for two tests in particular, LTlock and LTnfs, one will generally fail.

Some failing tests can be run successfully by supplying to them a path to the appropriate type of file system with the -p option.

3.43.1.5 Why does the test suite say it hasn't been validated on my dialect?

When you use the default rule of the test suite's Makefile, it may issue this complaint:

```
$ cd tests
$ make
!!!WARNING!!!
```

This dialect or its particular version may not have been validated with the lsof test suite. Consequently some tests may fail or may not even compile.

```
!!!WARNING!!!
```

You are then given the opportunity to answer 'y' to have the test suite operation continue.

This message means that the tests/TestDB file in the tests sub-directory doesn't show that the test suite has been run with the combination of compiler flags found in tests/config.cflags. The tests might not run; they may encounter compiler failures.

See 00TEST for more information on the UNIX dialects where the test suite has been validated and on the workings of TestDB and its supporting scripts.

When the tests/Makefile "auto" rule is used, the message is more terse and the condition is fatal.

This suite has not been validated on:

<dialect_description>

No opportunity to continue is offered.

The tests/Makefile "silent" rule will skip checking for the validation footprint.

3.43.1.6 Why do the tests complain they can't stat() or open() /dev/mem or /dev/kmem?

When the tests detect that lsof for the dialect reads its information from kernel memory (i.e., the LT_KMEM definition is present in tests/config.cflags), and when the lsof executable path is ../lsof, the tests make sure they can stat() and open() for read access the relevant kernel memory devices, /dev/kmem and possibly /dev/mem.

If those stat() or open() operations fail, the tests issue an error message and quit. The message explains why the system rejected the operation in terms of system "errno" symbols and messages. More often than not the explanation will be that the process lacks permission to access the indicated device node.

One work-around is to give the lsof executable being tested the necessary permission -- e.g., via chgrp, chmod, etc. -- and set its path in the LT_LSOF_PATH environment variable. (See 00TEST.)

Another work-around is to make sure the process that runs the tests has the necessary permissions -- e.g., run it as root, or enable the process login to access the resources. For example, I can run the tests on my personal work-station

because /dev/kmem and /dev/mem are readable by the "kmem" group and my login is in that group.

3.43.2 LTbigf test issues

3.43.2.1 Why does the LTbigf test say that the dialect doesn't support large files?

Large file support is defined dialect by dialect in the lsof source files and Configure script. If large file support isn't defined there, it isn't defined in the LTbigf test.

If you think that's wrong for a particular dialect, contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

3.43.2.2 Why does LTbigf complain about operations on its config.LTbigf* file?

The LTbigf must be able to write a large file test (size > 32 bits) and seek within it and the process file ulimit size must permit the operation. If the default location for the test file, tests/, isn't on a file system enabled for large file operations or if the process ulimit file block size is too small, lsof will get file operation errors, particularly when seeking

There may be a work-around. Specify the path to a file LTbigf can write in a file system enabled for large file operations a the -poption. Make sure that the ulimit file block size permits writing a large file. For example, presuming /scratch23 is large-file-enabled, and presuming you have permission to raise the ulimit file block size, this shell commands will allow the LTbigf test to run on AIX:

```
$ ./LTbigf -p /scratch23/abe/bigfile
```

(Note: syntax for the ulimit command varies by dialect and by shell. Discovering the proper variant is left to the reader.)

More information on this subject can be found in the LTbigf description in the 00TEST file. If course, the LTbigf.c source file in tests/ is the ultimate source of information,

3.43.2.3 Why does LTbigf warn that lsof doesn't return file offsets?

On some dialects (e.g., Linux) lsof can't report file offsets, because the data access method underlying lsof doesn't provide them. If LTbigf knows that lsof can't report file offsets for the dialect, it issues this warning:

```
LTbigf ... WARNING!!! lsof can't return file offsets
for this dialect, so offset tests have
been disabled.
```

LTbigf then performs the size test and skips the offset tests.

For more information see 00TEST and the "Why doesn't /proc-based lsof report file offsets (positions)?" Q&A of this file.

3.43.3 Why does the LTbasic test complain "ERROR!!! lsof this ..." and "ERROR!!! lsof that ..."?

The LTbasic test program uses lsof to examine a running lsof process. It looks for the lsof current working directory, executable (if possible), and kernel memory file (if applicable).

Failures to find those things result in the LTbasic error messages. More information on how LTbasic produces the error messages may be found in the LTbasic.c source file.

On HP-UX 11.11 and higher, for example, if the test's current working directory is on a loopback (LOFS) file system, LTbasic won't be able to find the current working directory of the lsof process because of a bug in the HP-UX kernel.

The solution for that HP-UX problem is to install an HP-UX patch. See the answer to the "Why doesn't PSTAT-based lsof report a CWD that is on a loopback (LOFS) file system?" question for more information on the patch.

3.43.4 NFS test issues

3.43.4.1 Why does the LTnfs test complain "couldn't find NFS file ..."?

The LTnfs test must work with an NFS test file. After it opens the file it asks lsof to find it on an NFS file system. If the file isn't on an NFS file system, lsof won't find it,

and the NFS test script complains and fails.

The work-around is to use -p option to supply a path to a regular NFS file (not a directory) that is on an NFS file system that LTnfs can read. Presuming /share/bin/file is such a file and can be opened for reading by the LTnfs test, this sample shell command could be used to run the LTnfs test successfully:

```
$ ./LTnfs -p /share/bin/file
```

(If the NFS file system is enabled for large files, the NFS test will produce the error message described in the following Q&A.)

3.43.5 LTnlink test issues

3.43.5.1 Why does the LTnlink test complain that its test file is on an NFS file system?

The LTnlink test may complain:

```
LTnlink ... WARNING!!! test file <path> is NFS mounted.
```

and then issue an explanation and a hint about using the -p option.

The LTnlist test does this because of the way NFS file links are managed when an NFS file is unlinked and the unlinking process still has the file open. Unlike with files on a local file system, when an NFS file that is still open is unlinked, its link count is not reduced.

The file name is changed to a name of the form .nfsxxxx and the link count is left unchanged until the process holding the file open closes it. That's done by NFS so it can keep proper track of the file on NFS clients and servers.

Since the link count isn't reduced when the LTnlink test program closes the NFS test file it still has open, lsof won't find it for LTnlink with a link count of zero. Consequently, LTnlink disables that test section and issues its warning.

The warning suggests that the unlink test section can be run by giving LTnlink a path to a test file with the -p option. That path must name a file LTnlink can write and unlink. Presuming /scratch23/abe/nlinkfile is on a local

file system and the LTnlink test can write to it and unlink it, this sample shell command can be used to run the complete LTnlink test successfully:

```
$ LTnlink -p /scratch23/abe/nlinkfile
```

3.43.5.2 Why does LTnlink delay and report "waiting for link count update: ..."?

On some UNIX dialects and file system combinations the updating of link count after a file has been unlinked can be delayed. Consequently, lsof won't be able to report the updated link count to LTnlink for a while.

When lsof doesn't report the proper link count to LTnlink, it sleeps and repeats the lsof call, using the "waiting for link count update: ..." message as a signal that it is waiting for the expected lsof response. The wait cycle duration is limited to approximately one minute.

3.43.5.3 Why does LTnlink fail because of an unlink error?

LTnlink may fail with an error similar to:

```
LTnlink ... ERROR!! unlink(<name>) failed: (Permission denied).
```

That message will be followed by a short explanation.

The error means that the kernel support for the file system on which the file <name> resides does not allow a process to unlink a file while it has the file open. (When LTnlink is run without the "-p path" option, it creates a <name> that begins with "./config.LTnlink" and ends with the LTnlink process ID number.)

An unlink failure of this type runs counter to original UNIX file system behavior, but it has been observed on some file system types, especially on the ZFS file system.

The work-around is to run LTnlink on a file system that allows a process to unlink a file it has open. Usually /tmp has that support. So, try running LTnlink this way:

```
$ ./LTnlink -p /tmp/<name>
```

where <name> is a unique name in /tmp of your choosing. To be safe, create a subdirectory in /tmp, named by your login:

```
$ rm -f /tmp/<login>
$ mkdir /tmp/<login>
$ ./LTnlink -p /tmp/<login>/<name>
```

3.43.6 LTdnlc test issues

3.43.6.1 Why won't the LTdnlc test run?

Lsof is unable to access the DNLC cache on AIX, because the kernel symbols for the DNLC aren't exported. Contact IBM to learn why that decision was made.

The LTdnlc test won't work on Apple Darwin because lsof can't obtain reliable DNLC information.

The LTdnlc test may fail on other dialects. Failure causes include: a busy system with a DNLC that is changing rapidly; path name components too large for the DNLC; a file system -- e.g., NFS, /tmp, loopback -- which doesn't fully participate in the DNLC; or DNLC limitations (Many DNLC implementations will only store path name components if they are 31 characters or less.)

If you suspect the file system doesn't fully participate in kernel DNLC processing, as a work-around rebuild and test lsof on one that does.

3.43.6.2 What does the LTdnlc test mean by "... <path> found: 100.00% "?

Even when it succeeds the LTdnlc test will report:

```
LTdnlc ... /export/home/abe/src/lsof4/tests found: 100.00%
```

This message means that the LTdnlc test asked lsof to find the file at the indicated path five times and lsof found the full path name in the indicated percentage of calls. The LTdnlc test considers it a failure if the percentage falls below 50.0%

3.43.6.3 Why does the DNLC test fail?

The DNLC test may fail when some component of the lsof tests/ sub-directory can't be cached by the kernel DNLC. Some kernels have a limit on the length of individual components (typically) 32.

3.43.7 Why hasn't the test suite been qualified for 64 bit HP-UX

11 when lsof is compiled with gcc?

When I attempted to qualify lsof for HP-UX 11, compiled with gcc 3.0, the LTsock test failed. I traced the failure to a gcc compilation error. Because LTsock is an important test, I didn't feel that the test suite was qualified if it failed.

LTsock compiles and runs correctly on 64 bit HP-UX 11 when compiled with HP's ANSI-C.

3.43.8 LTzsoff test issues

3.43.8.1 Why does LTzsoff warn that lsof doesn't return file offsets?

On some dialects (e.g., Linux) lsof can't report file offsets, because the data access method underlying lsof doesn't provide them. If LTzsoff knows that lsof can't report file offsets for the dialect, it issues this warning:

```
LTzsoff ... WARNING!!! lsof can't return file offsets
for this dialect, so offset tests have
been disabled.
```

LTzsoff then performs the size test and skips the offset tests.

For more information see 00TEST and the "Why doesn't /proc-based lsof report file offsets (positions)?" Q&A of this file.

3.43.9 LTlock test issues

3.44 File descriptor list (the ``-d" option) problems

3.44.1 Why does lsof reject a ``-d" FD list?

Lsof rejects ``-d" FD lists that contain both exclusions and inclusions with messages like:

```
lsof: exclude in an include list: ^1
lsof: include in an exclude list: 2
```

That's because ``-d" FD lists are processed as ORed lists, so it makes no sense for them to contain both exclusions and inclusions.

I.e., if a ``-d" FD list were to contain ``^cwd,1", the ``^cwd" member is useless, because the ``1" member

dominates by saying "include only FD 1". That effectively excludes ``cwd" FD.

Note that lists may have multiple members of the same type, exclude or include. They are processed as an ORed set. If an FD isn't excluded by any member of an exclude list, it is selected. If an FD is included by any member of an include list, it is selected.

3.44.2 Why are file descriptors other than those in my FD list reported?

The FD list that follows ``-d" excludes or includes file descriptors, but unless the ``-a" (AND) option is specified, the FD list selections are ORed to the other selections.

For example, the following lsof command will cause all file descriptors to be listed for the lsof command, and all but the cwd descriptor for all other commands, probably not what was intended.

```
$ lsof -clsof -d^cwd
```

Hint: use ``-a" -- e.g.,

```
$ lsof -clsof -a -d^cwd
```

3.45 How can I supply device numbers for inaccessible NFS file systems?

When lsof can't get device numbers for inaccessible NFS file systems via stat(2) or lstat(2), it attempts to get them from the mount table's dev=xxx options. Successes are reported with a warning message that indicates the source of the device number and that output might be incomplete as a consequence of the warnings.

Some system mount tables -- e.g., Linux /proc/mounts -- don't have a dev=xxx option. In that case, and provided lsof for the dialect supports them, you can use the +m option to create a mount table supplement file and the "+m m" option to use it.

First check the lsof -h (help) output to see if the +m and "+m m" options are supported. If they are, use +m to create a mount table supplement file when all mounted file systems are accessible. Use "+m m" later to make the supplement available when some mounted file systems might not be available.

Here's an example that creates a mount supplement file in \$HOME/mnt-sup and later makes it available to lsof.

```
$ rm -f $HOME/mnt-sup
$ lsof +m > $HOME/mnt-sup
...
$ lsof +m $HOME/mnt-sup <other lsof options>
```

If lsof has to get the device number from the supplement, it will issue an informative warning message. The warning can be suppressed with lsof's -w option.

Caution! Since the mount table supplement file is static, it is its supplier's responsibility to update it as file system mounts change.

For more information, consult the lsof man page. The "ALTERNATE DEVICE NUMBERS" section has useful information on how lsof acquires device numbers when stat(2) or lstat(2) fail.

3.46 Why won't lsof find open files on over-mounted file systems?

When a file system, /xyz for example, is mounted on the same mount point as another file system, /abc for example, running lsof with an argument of the path of the first file system's mount point -- the over-mounted one, /abc -- probably will not reveal any files open on /abc.

That's because lsof looks for open files on a file system by looking for files with the file system's device number. The two file systems usually have different device numbers and lsof determines the device number search key from the supplied name of the second file system.

A general work-around exists only for Linux. On that UNIX dialect, when you know the over-mounted file system's mount point path, you can ask lsof to report on all open files and grep that output for the path of the over-mounted file system mount point.

3.47 What can be done when lsof reports no more space?

Many lsof methods cache information in memory, using the dialects malloc() library function. When malloc() can't allocate the requested amount of memory, lsof exits with warning messages similar to this AIX message:

lsof: no more dev-ch space at pid 2257750: 0x82a8e600

Lsof then exits immediately and produces no more output.

A possible work-around is to increase the memory footprint of the shell that runs lsof. That is often done with the `ulimit(1)` shell command.

3.48 What if the lsof build encounters ar and ld problems?

The lsof main and library Makefiles use the library archiver, `ar`, and the system loader, `ld`, applications. Improperly located, installed or configured versions of them may cause the lsof build to encounter errors with them.

The application producing the error should identify itself in its error messages.

The first thing to check is the path of the application that is being used. Try `which ar` or `which ld` to see if perhaps the `PATH` used during the build might be causing the wrong archiver or loader to be used.

If the problem is with the use of the wrong archiver, and it's not possible to correct the `PATH` to it, try using the `LSOF_AR` environment variable to specify the path to and arguments for the correct archiver. See `OOXCONFIG` for more information and note that `LSOF_AR` must specify the path to the archive application and the arguments for it, less the terminating library and module name arguments.

If the problem is with the loader, there is no lsof work-around. That's because lsof calls the loader via the C compiler, so the problem must be fixed at the compiler (system) level.

4.0 AIX Problems

4.1 What is the Stale Segment ID bug and why is `-X` needed?

Kevin Ruderman reports that he has been informed by IBM that processes using the AIX 3.2.x, 4.1[.12345], 4.2[.1], and 4.3.x kernel's `readx()` function can cause other AIX processes to hang because of what appears to be file system corruption.

This failure, known as the Stale Segment ID bug, is caused

by an error in the AIX kernel's journaled segment memory handler that causes the kernel's `dir_search()` function erroneously to believe directory entries contain zeroes. The process using the `readx()` call need not be doing anything wrong. Usually the system must be under such heavy load that the segment ID being used in the `readx()` call has been freed and then reallocated to another process since it was obtained from kernel memory.

Lsof uses the `readx()` function to access library entry structures, based on the segment ID it finds in the `proc` structure of a process. Since IBM probably will never fix the kernel bug, I've added an AIX-specific option to lsof that controls its use of the `readx()` function.

By default lsof `readx()` use is disabled; specifying the `--X` option enables `readx()` use.

If you want to change the default `readx()` behavior of AIX lsof, change the `HASXOPT`, `HASXOPT_ROOT`, and `HASXOPT_VALUE` definitions in `dialects/aix/machine.h`. You can also use these definitions to enable or disable `readx()` -- consult the comments in `machine.h`. You may want to disable `readx()` use permanently if you plan to make lsof publicly executable.

When `HASXOPT_ROOT` is defined, lsof will restrict use of the `-X` option to processes whose real UID is root; if `HASXOPT_ROOT` isn't defined, any user may specify the `-X` option. The `Customize` script offers the option to change `HASXOPT_ROOT` when `HASXOPT` is defined and `HASXOPT_ROOT` is named in any dialect's `machine.h` header file.

I have never seen lsof cause a problem with its use of `readx()`, but I believe there is some chance it could, given the right circumstances.

4.1.1 Stale Segment ID APAR

Here are the details of the Stale Segment ID bug and IBM's response, provided by Kevin Ruderman.

AIX V3

APAR=ix49183

user process hangs forever in kernel due to file system corruption

STAT=closed prs TID=tx2527 ISEV=2 SEV=2

(A "closed prs" is one closed with a Permanent Restriction.)

RCOMP=575603001 aix v3 for rs/6 RREL=r320

AIX V4 (internal defect, no apar #)

prefix p
name 175671
abstract KERMP: loop for ever in dir_search()

Problem description:

1. Some user application -- e.g., lsof -- gets the segment ID (SID) for the process private segment of a target process from the process table.
2. The target process exits, deleting the process private segment.
3. The SID is reallocated for use as a persistent segment.
4. The user application runs again and tries to read the user area structure from /dev/mem, using the SID it read from the process table.
5. The loads done by the driver for /dev/mem cause faults in the directory; new blocks are allocated; the size changed; and zero pages created.
6. The next application that looks for a file in the affected directory hangs in the kernel's dir_search() function because of the zero pages. This occurs because the kernel's dir_search() function loops through the variable length entries one at a time, moving from one to the next by adding the length of the current entry to its address to get the address of the next entry. This process should end when the current pointer passes the end of the known directory length.

However, while the directory length has increased, the entry length data has not, so when dir_search() reaches the zero pages, it loops forever, adding a length of zero to the current pointer, never passing the end of the directory length. The application process is hung; it can't be killed or stopped.

IBM closed the problem with a PRS code (Permanent Restriction) under AIX Version 3 and had targeted a fix for AIX 4.2. They have recently (I became aware of it September 10, 1996) cancelled the defect report altogether and have indicated they are not going to fix the defect.

4.2 Gcc Work-around for AIX 4.1x

When gcc is used to compile lsof for AIX 4.1x, it doesn't align one element of the user structure correctly. Xlc sees the U_irss element as a type "long long" and aligns it on an 8 byte boundary. That's because the default mode of xlc is -qlonglong; when -qlonglong is enabled, the _LONG_LONG symbol is also defined.

Gcc sees U_irss as a two element array of type long, because _LONG_LONG isn't defined. Hence gcc aligns the U_irss element array on a 4 byte boundary, rather than an 8 byte one, making the gcc incantation of the user structure 4 bytes shorter than xlc's.

When the length of gcc's user structure is supplied as argument 4 to the undocumented getuser() function of the AIX kernel, getuser() rejects it as an incorrect size and returns EINVAL.

Lsof has a work-around for this problem. It involves a special test in the Configure script when the "aixgcc" Configure abbreviation is used -- e.g.,

```
$ Configure -n aixgcc
```

The test is to compile a small program with gcc and check the alignment of U_irss. If it's not aligned on an 8 byte boundary, the Configure script makes a special copy of <sys/user.h> in ./dialects/aix/aix<AIX_version> whose U_irss will align properly, and generates compile time options to use it.

While I have tested this work-around only with 4.1.4, it should work with earlier versions of AIX 4.1. It does not work for AIX 4.2; a different work-around is employed there. (See the next section.)

If you want to use this technique to compile other AIX 4.1x programs with gcc for using getuser(), check the Configure script.

Stuart D. Gathman identified this gcc AIX alignment problem.

4.3 Gcc and AIX 4.2[.1]

Alignment problems with gcc and AIX 4.2[.1] inside the user

structure are more severe, because there are some new 64 bit types in AIX that gcc doesn't yet (as of 2.7.x) support. The `<sys/user.h>` `U_irss` element problem, discussed in 4.3 above, doesn't exist in 4.2[.1].

The AIX `lsof` `machine.h` header file has a work-around, provided by Henry Grebler, that bypasses gcc alignment problems. Later versions of gcc (e.g., 2.8.x) will probably bypass the problems as well.

4.4 Why won't `lsof`'s `Configure` allow the use of gcc for AIX below 4.1?

Gcc can't reliably be used to compile `lsof` for AIX versions below AIX 4.1 because of possible kernel structure element alignment differences between it and `xlC`.

4.5 What is an AIX SMT file type?

When you run AIX X clients with the `DISPLAY` environment variable set to ```:0.0`" they communicate with the AIX X server via files whose kernel file structure has an undefined type (`f_type == 0xf`) -- at least there's no definition for it in `<sys/file.h>`.

These are Shared Memory Transport (SMT) sockets, an artifact of AIXWindows, designed for more efficient data transfers between the X server and its clients.

Henry Grebler and David J. Wilson alerted me to the existence of these files. Mike Feldman and others helped me identify them as SMT sockets.

The curious reader can find more about SMT sockets in `/usr/lpp/X11/README.SMT`.

4.6 Why does AIX `lsof` start so slowly?

When AIX `lsof` starts it compares the running kernel's identity to the one for which it was built, using `/usr/bin/oslevel`. That comparison can sometimes take a long time to complete, depending on the system's maintenance level and how recently it was examined with `oslevel`.

AIX revisions 4.67 and above for AIX 5 and above don't use `oslevel` to determine the kernel identity. They use `uname(2)` instead, and it is much faster.

You can skip the oslevel test by suppressing warning messages with lsof's -w option. Doing that carries with it the risk of missing other warning messages, however.

You can also disable the kernel identity check by disabling the definition of the HASKERNIDCK symbol by editing AIX machine.h header file or by using the Customize script to disable it.

See the "Why does lsof warn "compiled for x ... y; this is z.?" section for more information.

4.7 Why does exec complain it can't find libc.a[shr.o]?

When you try to execute lsof you may get this complaint:

```
exec(): 0509-036 Cannot load program ./lsof because of
the following errors:
0509-022 Cannot load library libc.a[shr.o].
0509-026 System error: A file or directory in
the path name does not exist.
```

This is probably the result of making lsof when the LIBPATH environment variable contained a directory path that doesn't contain libc.a. You can see what LIBPATH contained when lsof was made by using the dump application on lsof. For example, if LIBPATH contained /foo/bar when lsof was made, you will see this (partial) dump output:

```
$ dump -H lsof
...
***Import File Strings***
INDEX PATH          BASE      ...
0    /foo/bar
```

To correct the problem, revisit the lsof source directory and remake lsof this way:

```
$ unset LIBPATH; make (sh or ksh)
or
% unsetenv LIBPATH; make (csh or tcsh)
```

4.8 What does lsof mean when it says, "no PCB, CANTSENDMORE, CANTRCVMORE" in a socket file's NAME column?

When an AIX application calls shutdown(2) on an open socket file, but hasn't called close(2) on the file, the file will remain visible to lsof as an open socket file without any

extended protocol information.

Lsof reports that state in the NAME column by saying that there is "no PCB" (Protocol Control Block) for the protocol (e.g., TCP in the NODE column). If the open socket file has the state variables SO_CANTSENDMORE and SO_CANTRCVMORE set -- i.e., from the shutdown(2) call -- lsof reports them with the CANTSENDMORE and CANTRCVMORE notes in the NAME column.

4.9 When the -X option is used on AIX 4.3.3, why does lsof disable it, saying "WARNING: user struct mismatch; -X option disabled?"

The -X option causes lsof to read the loader information of the user structure from virtual memory via the readx() system call. It does that with the user structure definition from <sys/user.h> that was compiled into the lsof executable.

On AIX 4.3.3 there are two different user structure definitions in two separate <sys/user.h> header files, distributed at different times by IBM. If lsof was compiled with one and the kernel on which lsof is being run was compiled with the other, lsof normally won't get correct loader information when it calls readx().

In an attempt to compensate for that difference, lsof makes an independent check of the loader information by getting the user structure's open file count via readx() and comparing it to the open file count obtained independently via getprocs(). When the two counts don't match, lsof tries to read the count (and re-read the loader information) with two offsets, based on observed differences between the two user structures.

When one of the three attempts produces a correct open file count, lsof uses its corresponding offset on subsequent readings of the loader information.

When none of the three attempts produces a correct open file count, lsof issues the WARNING message and disables -X processing.

To eliminate this problem, obtain an lsof binary that matches the kernel of the AIX 4.3.3 system where you want to run lsof. Compiling lsof on the target system is the preferred way to get a matching binary.

4.10 Why doesn't the -X option work on my AIX 5L or 5.[123] system?

If your AIX 5L or 5.[123] system uses the ia64 architecture, lsof needs setuid-root permission to be able to do the processing that -X requires.

Check the output of `uname -a` to determine the architecture type.

The work-around is to give lsof setuid-root permission.

4.11 Why doesn't /usr/bin/oslevel report the correct AIX version?

The oslevel man page says, "The oslevel command reports the level of the operating system using a subset of all filesets installed on your system."

You can see which fileset is below the expected level with oslevel's -l option. For example, if you believe your system is at AIX level 4.3.3, but oslevel reports 4.3.2, use this oslevel command to find the filesets below 4.3.3:

```
$ /usr/bin/oslevel -l 4.3.3.0
```

If you don't know what level argument to supply to oslevel's -l option, use oslevel's -q option first.

4.11.1 Why doesn't /usr/bin/oslevel report the correct AIX version on AIX 5.1?

The subset list for oslevel on AIX 5.1 seems to include at least two filesets, xlsmp.msg.en_US.rte and xlsmp.rte, that do not install from AIX 5.1 media with a 5.1.0.0 level. Hence, oslevel reports 5.0.0.0 instead of the expected 5.1.0.0.

If either xlsmp.msg.en_US.rte or xlsmp.rte is installed, lsof's Configure script and run-time tests will identify the AIX version incorrectly. The run-time test will issue a complaint message of this form:

```
lsof: WARNING: compiled for AIX version xxx; this is yyy.
```

You can correct the Configure test by pre-defining the oslevel value, setting the correct value in the LSOF_VSTR environment variable before running the Configure script -- e.g., to pre-define AIX 5.1 when using ksh, do this:

```
$ LSOF_VSTR=5.1.0.0 Configure -n aix
```

You can't affect oslevel output without uninstalling `xlsmp.msg.en_US.rte` and `xlsmp.rte`. If you can't do that, you'll have to put up with the run-time complaint.

4.12 Why does lsof for AIX 5.1 or above Power architecture complain about kernel bit size?

When you run an lsof binary on an AIX 5.1 or above Power system, it might complain:

```
lsof: FATAL: compiled for a 32 bit kernel.  
The bit size of this kernel is 64.
```

or

```
exec: 0509-036 Cannot load program ./lsof because of  
the following errors:  
0509-032 Cannot run a 64-bit program on a 32-bit  
machine.
```

Starting at lsof revision 4.61, lsof binaries for Power architecture systems running AIX 5.1 or above are closely tied to the kernel bit size. lsof must do that so it can read and understand kernel structures.

lsof's Configure script tunes the lsof configuration so that the binary built in the `make(1)` step is adjusted to the kernel bit size.

An lsof binary knows the bit size for which it was constructed, tests the bit size of the kernel under which it is running, and objects if the two sizes don't match. To see the bit size for which lsof was constructed, run it with its `-v` option and look for these lines in the output:

```
configuration info: 32 bit kernel
```

or

```
configuration info: 64 bit kernel
```

(Note: these lines will appear only in `-v` output for AIX 5.1 and above lsof binaries, built for Power architecture.)

You can see the kernel bit size test method in the `aix` stanza of the lsof Configure script and in the `get_kernel_access()` function of the lsof `.../dialects/aix/dproc.c` source file.

There is more information on pre-defining the kernel bit size when building lsof in `Configure`, `00PORTING`, and `00XCONFIG`.

The only work-around is to use an lsof binary built to match the running kernel bit size.

4.13 What can't gcc be used to compile lsof on the ia64 architecture for AIX 5 and above?

Gcc can't be used to compile lsof on the ia64 architecture for AIX 5 and above because I haven't had access to a system that has a working gcc compiler. The gcc compiler on my one and only ia64 AIX 5.1 test system, provided by IBM, didn't work at all.

4.14 Why does lsof get a segmentation fault when compiled with gcc for a 64 bit Power architecture AIX 5.1 kernel?

When lsof is configured with the lsof "aixgcc" Configure abbreviation, the resulting lsof executable may cause a segmentation violation when it is run. I've observed this with gcc version 2.9-aix43-010414-7.

As far as I have been able to tell, the segmentation fault is the result of a gcc compilation, loading, or library error. Watching lsof run with gcc's companion debugger, gdb, shows no error in the lsof source code that might explain the fault.

The only work-around I know is to use the IBM C compiler in place of gcc -- i.e., use the "aix" lsof Configure abbreviation.

4.15 Why does lsof ignore AFS on my AIX system?

The lsof Configure script quits on AIX when AFS is present, the AIX version is greater than 4.3.3.0 or the AFS version is greater than 3.5. That's because I have no test systems available for those AIX and AFS version combinations.

When the lsof Configure script detects an AIX and AFS version combination that is unsupported, it will report:

```
!!!FATAL: Lsof does not support AFS on this combination of
AIX and AFS versions. To disable AFS, set the
value of the AIX_HAS_AFS environment variable to
"no".
```

The only work-around is to set the AIX_HAS_AFS environment variable as explained in the error message:

```
$ AIX_HAS_NSF=no; export AIX_HAS_NFS
$ ./Configure -n aix
```

4.16 Why does lsof report "system paging space is low" and exit?

When AIX paging space runs low, the AIX kernel sends a SIGDANGER signal to processes, warning them that they should reduce their memory usage.

When lsof receives that signal, it issues the following fatal error message and exits:

```
lsof: FATAL: system paging space is low.
```

A possible work-around is to limit the amount of information lsof must cache in its process memory with the "-c", "-g", "-l" and "-p" options.

Also see the answer to the "What can be done when lsof reports no more space?" question.

4.17 Why does lsof have a compilation problem on AIX 5.3 above maintenance level 1?

On some AIX 5.3 systems with maintenance levels 2 and higher installed, lsof 4.77 and below may not compile properly. The compiler complains the snapshotObject structure definition, needed by <j2/j2_inode.h>, is missing.

That problem is fixed in the 4.78 revision.

5.0 Apple Darwin Problems

5.1 What do /dev/kmem-based and libproc-based mean?

Lsof for Apple Darwin currently uses /dev/kmem to read kernel data structures from which it gathers and reports open file information. That version of lsof is called /dev/kmem-based lsof.

At an upcoming release lsof will use a library called libproc to obtain information about open files. That version of lsof will be called libproc-based lsof.

The /dev/kmem-based lsof sources may be found in the kmem subdirectory of the dialects/darwin branch of the lsof source

tree. When the supporting version of Apple Darwin is released, the libproc-based lsof sources will be found in .../dialects/darwin/libproc.

5.2 /dev/kmem-based Apple Darwin Questions

5.2.1 Why does Configure ask for a path to the Darwin XNU kernel header files?

When lsof was ported to Apple Darwin by Allan Nathanson at revision 4.53, some kernel header files needed by lsof weren't being exported by the developers. (That's still true at lsof revision 4.76.)

At first a shell script that Allan provided would get the missing header files by checking them out from the CVS root. Although the script was updated from time to time, eventually the re-organization of Darwin sources has made it impossible to update the script to do an automatic download of the missing header files.

At lsof revision 4.69 and above it is necessary for the Darwin lsof builder to download the Darwin XNU kernel headers before attempting to build lsof. The download may be done via a web browser, starting at this URL:

<http://www.opensource.apple.com/darwinsource/index.html>

Once there, select the link to the Mac OS X version that matches the one on the system where lsof is to be built.

Follow that link's "[Source]" link. Once there, select the tar.gz link of the xnu* entry near the bottom of the page. That entry should have a name that matches the xnu* name shown by ``uname -a`` -- e.g., if `uname` reports:

```
$ uname -a
... root:xnu/xnu-517.7.21 ...
```

Then the appropriate xnu* entry is xnu-517.7.21. Clicking its link should lead to an "Apple Open Source" page requesting an Apple ID and password.

Enter them if they're available. If an Apple ID and password are not available, get them by following the instructions on the page -- i.e., follow the signin.apple.com link.

Once a valid Apple ID and its password have been entered,

the download will begin. Select the saving of the downloaded xnu*.tar.gz file in an appropriate place on the Mac OS X system.

Once the download completes, install it. Use gunzip to decompress the download and tar to extract the archive -- e.g.,

```
$ gunzip -c xnu-517.7.21.tar.gz | tar xf -
```

Remember the absolute path to the extracted archive. That is its installed place. E.g., if the xnu-517.7.21.tar archive was extracted to the lsof builder's home directory, its full installation path will be something like:

```
~/xnu-517.7.21
```

Now run the lsof Configure script. When it asks for the path to the installed Darwin XNU kernel header files, supply the path to the gunzip'd and extracted xnu* archive -- e.g., ~/xnu-517.7.21.

The path to the Darwin XNU kernel headers may also be supplied to the Configure script in the DARWIN_XNUDIR environment variable, eliminating the need to enter it interactively -- e.g.,

```
$ DARWIN_XNUDIR=~/xnu-344.49 ./Configure -n darwin
```

5.2.1.1 Why does Configure complain that Darwin XNU kernel header files are missing?

These are some reasons why the lsof Configure script might claim that Darwin XNU header files are missing:

- * The wrong path to them was specified.
- * The files and directories in the path are not readable and searchable -- i.e., check the modes and ownerships.
- * The downloaded archive doesn't match the Mac OS X version of the system.

If in doubt, revisit the Darwin XNU kernel header file download instructions in the answer to the question "Why does Configure ask for a path to the Darwin XNU kernel header files?"

If Configure still can't find Darwin XNU kernel header

files, contact me via e-mail at <abe@purdue.edu> for help.
Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

5.2.2 Why doesn't Apple Darwin lsof report text file information?

At the first port of lsof to Apple Darwin, revision 4.53, insufficient information was available -- logic and header files -- to permit the installation of VM space scanning for text files. As of lsof 4.70 it is still not available.

Text file support will be added to Apple Darwin lsof after the necessary information becomes available.

5.2.3 Why doesn't Apple Darwin lsof support IPv6?

At the first port of lsof to Apple Darwin, revision 4.53, Apple Darwin lacked IPv6 support. IPv6 became available in Apple Darwin version 1.5 and support for it was added to lsof then.

5.2.4 Why does lsof complain about a mismatch between the release for which lsof was compiled and the booted Mac OS X release?

When lsof is started on the "Gold Master" Darwin release (aka Mac OS X), it complains:

```
lsof: compiled for 1.0 release; this is 1.3.2.
```

This happens because the lsof binary released with Mac OS X was built on a system whose release number (1.0) doesn't match that of the released system -- usually 1.3.x. Lsof makes this check because UNIX dialect OS changes are often accompanied by header file changes that affect lsof.

In this specific case, this error can be ignored. If you don't want to do that, get the lsof distribution and build lsof so its built-on and running-on Mac OS X release numbers match.

5.2.5 Why does lsof for Apple Darwin 8 and higher report "stat(...): ..." in the NAME column?

Lsof for Apple Darwin 8 may report messages like these in the NAME column:

```
stat(/private/var/run/asl_prune): No such file or directory  
or
```

stat(/private/var/db/netinfo/local.nidb/Config): Permission denied

Those messages indicate that lsof was unable to collect open file information for the paths enclosed in "stat(...)" with the stat(2) function, because the function encountered the reported error.

A work-around for the "Permission denied" error is to run lsof with elevated privileges -- e.g., when logged on as the super user.

If the stat(2) error message is "No such file or directory", the file probably has been unlinked (removed) and there is no lsof work-around.

5.2.6 What are the limitations of Apple Darwin lsof link count reporting?

Lsof for Apple Darwin cannot report link count information reliably.

For Apple Darwin below 8 link count information is not always available in the kernel node structures available to lsof.

When link count information is available, however, it includes link counts of zero. Thus, using lsof's +L1 option may result in the finding of some files whose link counts are zero.

Lsof can report only some link count information for Apple Darwin 8 and above. Link count information is only available for files where lsof can assemble the full file path and has permission to apply stat(2) to it. (See the answer to the "Why does lsof for Apple Darwin 8 and higher report "stat(...): ..." in the NAME column?" question for more information on stat(2) failures.)

Apple Darwin 8 and above files that have been unlinked and thus have a link count of zero cannot be found by stat(2) -- i.e., stat(2) returns a "No such file or directory" error. As a result lsof never displays link counts of zero and the use of lsof's +L1 option to find them always fails.

5.3 Libproc-based Apple Darwin Questions

6.0 BSD/OS BSDI Problems

6.0.5 Statement of deprecation

As of lsof revision 4.76 support for BSDI BSD/OS has been dropped. The 4.76 distribution of lsof for BSDI BSD/OS may be found on lsof.itap.purdue.edu in `pub/tools/unix/lsof/OLD/src`.

7.0 DEC OSF/1, Digital UNIX, and Tru64 UNIX Problems

7.1 Why does lsof complain about non-existent /dev/fd entries?

When you run lsof for Digital UNIX 3.2, lsof may complain:

```
lsof: can't lstat /dev/fd/xxx: No such file or directory
lsof: can't lstat /dev/fd/yyy: No such file or directory
```

(Or it may warn about other missing /dev/fd paths.) When you do an `ls /dev/fd` none of the missing paths are listed.

This is caused by a bug in the DEC library function `getdirentries()`. For some reason, when /dev/fd is a file system mount point, `getdirentries()` returns an incorrect size for it to `readdir()`. (Lsof calls `readdir()` in its `ddev.c readdev()` function.) Because of the incorrect size, `readdir()` goes past the end of the /dev/fd directory buffer, encounters random paths and returns them to lsof. Lsof then attempts to `lstat(2)` the random paths, gets error replies from `lstat(2)`, and complains about the paths.

Duncan McEwan discovered this error and has reported it to DEC. Duncan also supplied an alternate `readdir()` function as a work-around. I've incorporated his `readdir()` in `dialects/osf/ddev.c` (as the static `ReadDir()` function) with some slight modifications, and enabled its use when the `USELOCALREADDIR` symbol is defined.

The `Configure` script defines `USELOCALREADDIR` for Digital UNIX version and 3.2. If you don't want to use Duncan's local `readdir()` function, edit the `Makefile` and remove `-DUSELOCALREADDIR` from the `CFGF` string. When DEC releases a corrected `getdirentries()` function, I'll modify the `Configure` script to stop defining `USELOCALREADDIR`.

7.2 Why does the Digital UNIX V3.2 ld complain about Ots* symbols?

When you compile lsof on your Digital UNIX V3.2 system, `ld` may complain:

```
ld:
Unresolved:
```

```
knlist
_OtsRemainder32Unsigned
_OtsDivide64Unsigned
_OtsRemainder64Unsigned
_OtsDivide32Unsigned
_OtsMove
_OtsDivide32
_OtsRemainder32
*** Exit 1
```

Chris Eleveld reports this happens on Digital UNIX V3.2 systems after the Fortran compiler has been installed.

The best work-around seems to be to remove -lml from the CFGL string in the Makefile produced by Configure -- i.e., change:

```
CFGL= -lml
to
CFGL=
```

According to the V3.2 man page for nlist(3), this shouldn't work, but my testing shows that it does. Although I haven't been able to test this second work-around, you might try adding -lots to CFGL, rather than removing -lml -- i.e., change:

```
CFGL= -lml
to
CFGL= -lml -lots
```

WARNING: my testing also shows that the V2.0 nlist(3) man page means what it says when it calls for -lml -- lsof loaded without -lml under V2.0 can't locate the proc (process) table address.

DON'T REMOVE -lml FROM THE DIGITAL UNIX V2.0 MAKEFILE.

If you run into this problem, please let me know what problem you encountered and how you solved it.

7.3 Why can't lsof locate named pipes (FIFOs) under V3.2?

While lsof for V3.2 can report on named pipes (FIFOs), it can't find them by name. That appears to happen because of the way the V3.2 kernel lstat(2) function reports named pipe device numbers.

The V3.2 kernel reports the device number as 0xffffffff, while the kernel structures for named pipes that lsof examines contain the device number of the file system on which the named pipe resides.

Consequently, lsof can't match the device and inode number pair it receives from applying lstat(2) to the named pipe with any device and inode number pair it finds when scanning kernel structures.

I don't have a work-around. You can, of course, ask for full lsof output and use a post-processing filter (e.g., grep) to locate the named pipe of interest.

This problem doesn't exist under V2.0.

7.4 Why does lsof use the wrong configuration header files? For example, why can't the lsof compilation find cpus.h?

DEC OSF/1, Digital UNIX, and Tru64 UNIX configuration header files describe the hardware and software environment for which your kernel boot file was constructed. For example, /sys/<name>/cpus.h defines the number of CPUs in its NCPUS #define.

Lsof searches for the configuration header file subdirectory in /sys (/usr/sys for Digital UNIX version 4.0 and Tru64 UNIX) by converting the first host name component to capital letters -- e.g., TOMIS is derived from tomis.bio.purdue.edu. If that subdirectory exists, lsof uses header files from it. (Configure reports what subdirectory is being used.)

If Configure doesn't find a host-name derived subdirectory, it prompts you for the entry of a subdirectory name. If you can't find one, quit Configure and run the kernel generation process to create a proper configuration subdirectory. If you don't identify a proper configuration subdirectory and you try to compile lsof, the compiler will complain about missing header files -- e.g., a missing cpus.h.

Once you have located or generated a proper configuration subdirectory, rerun Configure. If you have generated a configuration subdirectory whose name is derived from the host name, Configure will find and use it. If not, you will have to specify its name to Configure.

7.5 Why does lsof indicate incomplete paths with " -- " for Tru64

UNIX 5.1 files?

When lsof can't find a component of a path in the kernel's name cache (aka DNLC), or can't determine that the left-most component has as its parent the file system root, it uses an "incomplete path" notation. That notation begins with the file system root name, followed by "--", followed by the consecutive path name components lsof was able to find in the DNLC -- e.g., "/ -- init".

Because the DNLC was significantly redesigned in Tru64 UNIX 5.1, lsof's handling of the cache had to be completely redone. As part of the DNLC redesign a name cache entry parameter lsof formerly used to locate the file system root of a path was removed. With help from Chang Song I've been able to implement an alternate method for detecting the root of these file system types: AdvFS (MSFS), CDFS, DVDFS, FDFS, NFS, NFS3, and UFS.

When lsof doesn't know how to identify the root for a file system type, it will resort to the "--" incomplete path notation.

7.6 Why doesn't lsof report link count, node number, and size for some Tru64 5.x CFS files?

lsof reports link count, node number, and size for open CFS files as recorded in their kernel node structure's cached attributes. Sometimes not all attributes are cached on the system where lsof runs, so lsof cannot report them.

7.7 Why does lsof say it can't read the kernel name list or proc table on Digital UNIX 4.x or Tru64 UNIX?

By default on Digital UNIX 4 and Tru64 UNIX lsof reads the addresses for kernel symbols with the knlist(3) function. That function can fail, for example, when the kloadsrv daemon isn't running or is malfunctioning. When that happens, lsof may abort with one of these error messages:

lsof: can't read kernel name list from knlist(3): ...

or

lsof: can't read proc table info

The first message suggests a complete knlist(3) or kloadsrv failure; the second, a partial one.

If you know the name of the file from which the running

system was booted, e.g., /vmunix, you can use lsof's -k option to direct it to read kernel symbol addresses from the name list of that file --

```
$ lsof -k /vmunix ...
```

If that works, then knlist(3) is malfunctioning and you need to fix it.

8.0 FreeBSD Problems

8.1 Why doesn't lsof report on open kernfs files?

Lsof doesn't report on open FreeBSD kernfs files because the structures lsof needs aren't defined in the kernfs.h header file in /sys/misc/kernfs.

8.2 Why doesn't lsof work on my FreeBSD system?

If lsof doesn't work on your FreeBSD system, first make sure you have the latest lsof revision. See the answer to the "Where do I get lsof?" question for information on how to get the latest lsof revision.

Once you have gotten the latest lsof revision, Configure and make it. If Configure fails -- e.g., it complains about an unknown FreeBSD version -- then lsof probably hasn't been ported to your FreeBSD version yet, and there's no need to go any further. Follow the answer to the "How do I report an lsof bug" to report the Configure complaint to me.

If you are able to Configure and make lsof, run its test suite. (See the answer to the "Is there a test suite?" question for more information on how to use lsof's test suite.)

If lsof still fails, make sure your kernel sources, kernel header files, kernel boot file, standard header files and libraries are synchronized. They should all be built from the same CVS refresh. (Don't forget to do a "make buildworld" followed by a "make installworld".) If they aren't, then the KVM library or lsof may be using kernel structure definitions that don't match the booted kernel; or lsof may fail to compile properly because of header files in /usr/src/sys/sys and /usr/include/sys that don't match.

If you have synchronized your kernel, header files and libraries, and still can't get lsof to work, follow the steps in the answer to the "How do I report an lsof bug" question to report the problem to me.

8.3 Why doesn't lsof work on the RELEASE version of CURRENT?

Lsof tracks the CURRENT release of the current leading edge FreeBSD version, because my access to leading edge FreeBSD is limited to FreeBSD.org reference systems, all running the CURRENT release.

Sometimes that tracking leads to changes in lsof that won't work on an earlier RELEASE version of the current leading edge version.

When that happens, please send e-mail to me <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

8.4 Why does kvm_open() complain it can't find some file?

If lsof issues this complaint:

```
lsof: kvm_open(execfile=/boot/kernel/kernel,  
corefile=/dev/mem: No such file or directory
```

Your FreeBSD system might not have a /dev/mem device. If not, create one -- e.g., as root do:

```
# mknod /dev/mem c <major> 0  
# chmod 440 /dev/mem  
# chgrp kmem /dev/mem
```

For <major> use /dev/kmem's major device number.

You may have to run kldload, too -- again as root do:

```
# kldload mem
```

8.5 FreeBSD ZFS Problems

8.5.1 Why does FreeBSD lsof report "WARNING: no ZFS support has been defined."?

Lsof issues that message when it detects a file on a ZFS file system, but has not been built with support for ZFS. Lsof's Configure script detects support can be added for ZFS when it

finds this file:

```
/usr/src/sys/contrib/opensolaris/uts/common/fs/zfs/sys/zfs_znode.h
```

That header file and others in the OpenSolaris files in
/usr/src enable lsof to extract information about ZFS files
from the kernel structures associated with them.

8.6 Why can't Configure create lsof_owner.h for FreeBSD 6 and above?

Lsof may report:

```
Creating ./lockf_owner.h from /usr/src/sys/kern/kern_lockf.c  
FATAL ERROR: can't read /usr/src/sys/kern/kern_lockf.c  
FATAL ERROR: ./lockf_owner.h creation failed (see 00FAQ)
```

or

```
Creating ./lockf_owner.h from /usr/src/sys/kern/kern_lockf.c  
FATAL ERROR: ./lockf_owner.h creation failed (see 00FAQ)
```

Those messages mean that lsof's Configure script failed to
create a local header file, ./lockf_owner.h, needed to use the
new kernel file locking code of some versions of FreeBSD 6 and
above.

The changes that implement that new locking code alter the
lockf structure in <sys/lockf.h> and introduce a new structure,
lockf_entry, to that header file. When Configure detects the
presence of the lockf_entry definition in <sys/lockf.h>, it
tries to construct the local header file, ./lockf_owner.h.

Configure has to do that because an unfortunate side effect of
the new kernel file locking code is that <sys/lockf.h> doesn't
contain the lockf_owner structure definition referenced in its
own lockf structure. Lsof needs to access elements of that
lockf_owner structure to determine if a lock belongs to the
process that has a file open.

The missing lockf_owner structure definition is in the kernel
source file, typically /usr/src/sys/kern/kern_lockf.c.
Configure tries to extract the lockf_owner structure definition
from kern_lockf.c into lsof's local header file, ./lockf_owner.h.
If Configure can't do that, it reports:

```
FATAL ERROR: ./lockf_owner.h creation failed
```

If Configure can't even read kern_lockf.c, it first reports:

```
FATAL ERROR: can't read /usr/src/sys/kern/kern_lockf.c
```

The work-around for this problem is to update the FreeBSD kernel /usr/src tree (e.g., do a CVSup or csup) on the system where lsof is to be built and then do a "make buildworld" followed by a "make installworld".

8.6.1 Why are there lockf structure compiler errors for FreeBSD 6.0 and higher lsof?

If, when compiling lsof, the compiler complains with error messages like:

```
dnode.c: In function 'get_lock_state':
dnode.c:113: error: 'struct lockf' has no member named 'lf_flags'
dnode.c:115: error: 'struct lockf' has no member named 'lf_id'
...
```

Then lsof is being built on a system that has new kernel file locking code and lsof's Configure script failed to build a local lockf_owner.h header file with a structure definition lsof needs.

See the "Why can't Configure create lsof_owner.h for FreeBSD 6 and above?" section for more information and a work-around.

8.6.2 Why don't /usr/src/sys/sys/lockf.h and /usr/include/sys/lockf.h match?

This mismatch can cause the errors explained in the answer to the "Why are there lockf structure compiler errors for FreeBSD 6.0 and higher lsof?" question.

If /usr/src/sys/sys/lockf.h has been updated with a CVSup or csup, the new lockf.h won't be propagated to /usr/include/sys until the "make buildworld" and "make installworld" steps have been completed.

9.0 HP-UX Problems

9.1 What do /dev/kmem-based and PSTAT-based mean?

Lsof for HP-UX 11.0 and below uses /dev/kmem to read kernel data structures from which it gathers and reports open file information. That version of lsof is called /dev/kmem-based lsof.

Starting with HP-UX 10.10, finding definitions for the

necessary kernel structures became more difficult as HP no longer distributed header files in /usr/include that defined all kernel structures. So I started "inventing" structure definitions by using Q4 to display them.

By HP-UX 11, the process of invention became extremely intensive to support. Following a patch to the ipc_s structure in early 1999, my invented definition of that structure became incorrect. Although I was able to devise a work-around test for the patch with Q4, it was clear that my inventions were bound to cause more problems.

Discussion with HP about the patch led to my proposing that an lsof API in the HP-UX kernel was the proper solution. Much to my surprise, HP agreed. I believe Carl Davidson was the prime mover behind that decision, but I know others participated, among them Louis Huemiller, Rich Rauenzahn, and Sailu Yallapragada. I am indebted to these folks and HP for their willingness to do this work.

The API was added to the PSTAT interface in a project named PEGLE, Pstat Enhancements for Glance and Lsof. Louis and Sailu did the bulk of the design and implementation work and testing began in March, 2000

HP-UX 11.11 is the first version that provides PSTAT support for lsof. HP-UX versions in between 11.0 and 11.11 -- all Beta versions as far as I can determine -- have no lsof support.

See the "PSTAT-based HP-UX lsof Questions" section for questions and answers specific to PSTAT-based HP-UX lsof. The next section, "Why doesn't a /dev/kmem-based HP-UX lsof compilation use -O?" covers /dev/kmem-based HP-UX lsof.

The /dev/kmem-based lsof sources may be found in the kmem subdirectory of the dialects/hpux branch of the lsof source tree. The PSTAT-based lsof sources may be found in .../dialects/hpux/pstat.

9.2 /dev/kmem-based HP-UX lsof Questions

The sources for /dev/kmem-based lsof for HP-UX may be found in lsof_<revision>/dialects/hpux/kmem.

Lsof's Configure shell script decides to use these sources when it finds that the /usr/include/sys/pstat subdirectory doesn't exist.

Lsof can be forced to use the /dev/kmem sources by setting "/dev/kmem" in the HPUX_BASE environment variable. Consult the Configure shell script and 00XPORTING for more information.

9.2.1 Why doesn't a /dev/kmem-based HP-UX lsof compilation use -O?

If you only have the standard (bundled) HP-UX C compiler and haven't purchased and installed the optional one, then you can't use cc's -O option. The HP-UX cc(1) man page says this:

"Options

Note that in the following list, the cc and c89 options -A , -G , -g , -O , -p , -v , -y , +z , and +Z are not supported by the C compiler provided as part of the standard HP-UX operating system. They are supported by the C compiler sold as an optional separate product."

Lsof's Configure script tries to detect what C compiler product you have installed by examining your compiler. If that examination reveals a standard (bundled) compiler, lsof avoids using -O.

If the Configure compiler test fails, the C compiler will complain that it doesn't support -O. You can suppress that complaint with this make invocation:

```
$ make DEBUG=""
```

9.2.2 Why doesn't the /dev/kmem-based CCITT support work under 10.x?

Pasi Kaara, who originally provided the HP-UX CCITT support, reports that it no longer works under HP-UX 10.x. Consequently, at lsof revision 4.02 it has been disabled.

9.2.3 Why can't /dev/kmem-based lsof be compiled with `cc -Aa` or `gcc -ansi` under HP-UX 10.x?

Some HP-UX 10.x header files, needed by lsof, can't be compiled properly in ANSI_C mode; structure element definition and alignment problems result. The f_offset member of the file structure, for example, is incorrect.

This ANSI-C obstacle extends to using the -Aa option of the HP C compiler and the -ansi option of gcc.

9.2.4 Why does /dev/kmem-based lsof complain about no C compiler?

Lsof's Configure script looks in /bin and /usr/ccs/bin for an HP C compiler, because it needs to know if the compiler is the standard (bundled) one or the optional separate product. If it finds no compiler in either place, Configure quits after complaining:

```
No executable cc in /bin or /usr/ccs/bin
```

If you don't have a C compiler in either of these standard places, you should consider installing it. If you have gcc installed, you can use it by declaring the ``hpuxgcc'' abbreviation to Lsof's Configure script.

If you have a C compiler in a non-standard location, you can use the HPUX_CCDIR[12] environment variables to name the path to it. Consult the 00XCONFIG file of the Lsof distribution for more information.

9.2.5 Why does Configure complain about q4 for /dev/kmem-based Lsof for HP-UX 11?

When you run Configure on an HP-UX 11 system, it may complain:

```
!!!ERROR!!!  !!!ERROR!!!  !!!ERROR!!!  !!!ERROR!!!  
Configure can't use /usr/contrib/bin/q4 to examine the ipis_s  
structure. You must do that yourself, report the result in  
the HPUX_IPC_S_PATCH environment variable, then repeat the  
Configure step. Consult the Configure script's use of  
/usr/contrib/bin/q4 and the 00XCONFIG file for information  
on ipis_s testing and the setting of HPUX_IPC_S_PATCH.  
!!!ERROR!!!  !!!ERROR!!!  !!!ERROR!!!  !!!ERROR!!!
```

This message states that Configure cannot use q4 from /usr/contrib/bin to examine the kernel's boot image for the ipis_s structure. Maybe q4 hasn't been installed, or perhaps Configure can't execute it.

Lsof needs to gather information about ipis_s to determine if the ipis_s structure is defined in the kernel boot image, if the ipis_s structure of the kernel boot image has an ipis_msgsqueued member, and if the ipc_s structure of the kernel boot image uses has an ipc_ipis member.

The ipis_s structure isn't described in any header file HP-UX releases with HP-UX 11. It appears in the private Lsof header file ../dialects/hpux/kmem/hpux11/ipc_s.h. Lsof gets local and remote connection addresses (IP and

port numbers) from `ipc_s`, so an incorrect `ipc_s` definition may cause incorrect reporting of TCP/IP connection addresses. It definitely will cause incorrect reporting on 32 bit kernels. In any case `lsof` should be compiled with a correct `ipc_s` definition no matter the kernel bit size, so the `Configure` script always tests for it when the HP-UX version is 11.

For `lsof`'s `Configure` script to gather the necessary `ipis_s` information `q4` needs to be installed in `/usr/contrib/bin` and the kernel boot image, `/stand/vmunix`, needs to have been processed with `pxdb`. If either is untrue, `lsof` issues the above error message, perhaps preceded by `q4` messages. (Note: `lsof`'s use of `q4` may also fail if `q4` can't execute `nm --` e.g., it can't find `/usr/bin/nm`, or there is a conflicting, private version of `nm` earlier in the path.)

If `/stand/vmunix` hasn't been processed by `pxdb`, the `q4` messages will include:

```
q4: (error) vmunix not pxdb'd
or
q4: (warning) /stand/vmunix has not been processed by pxdb.
```

It's possible to make a suitable private copy of `/stand/vmunix` for configuring `lsof`. That requires `/opt/langtools/bin/pxdb` or the `q4` version of `pxdb` from `/usr/contrib/bin/q4pxdb`. The path to the result is supplied to the `lsof` `Configure` script in the `HPUX_BOOTFILE` environment variable. `Configure` still requires `/usr/contrib/bin/q4`.

The following sample Bourne shell commands make a private copy of `/stand/vmunix` in `/tmp`, process it with `pxdb` or `q4pxdb`, and supply its path to `lsof`'s `Configure` script in `HPUX_BOOTFILE`.

```
$ cp /stand/vmunix /tmp/vmunix.lsof

$ /opt/langtools/bin/pxdb /tmp/vmunix.lsof
or
$ /usr/contrib/bin/q4pxdb /tmp/vmunix.lsof

... pxdb messages ...
$ HPUX_BOOTFILE=/tmp/vmunix.lsof Configure -n hpux
```

It may also be necessary to use `q4` outside the `lsof` `Configure` script. In that case `q4` can be to determine the state of `ipis_s` and `ipc_s` with these `q4` commands:


```
$ /usr/contrib/bin/q4 /stand/vmunix
```

```
...
```

```
q4> fields -c struct ipc_s
```

```
...
```

```
q4> fields -c struct ipis_s
```

Look in the q4 output for the ipc_ipis member of the ipc_s structure, and look in the q4 output for the ipis_s structure for the ipis_msgsqueued member. If ipc_s has ipc_ipis but ipis_s lacks ipis_msgsqueued, set HPUX_IPC_S_PATCH environment variable to "1". If ipc_s has ipc_ipis and ipis_s has ipis_msgsqueued, set HPUX_IPC_S_PATCH to "2" -- e.g.,

```
$ HPUX_IPC_S_PATCH=1 Configure -n hpux
```

```
or
```

```
$ HPUX_IPC_S_PATCH=2 Configure -n hpux
```

If ipc_s has no ipc_ipis member, set HPUX_IPC_S_PATCH to "N" -- e.g., use this Configure step:

```
$ HPUX_IPC_S_PATCH=N Configure -n hpux
```

9.2.6 When compiling /dev/kmem-based lsof for HP-UX 11 what do the "aCC runtime: ERROR..." messages mean?

When the lsof Makefile asks the HP-UX unbundled compiler to load lsof, it may complain:

```
/bin/cc -o lsof -DHPUXV=1100 -DHASVXFS -DHPUXKERNBITS=64 \  
-I/home/abe/src/lsof4/dialects/hpux/kmem/hpux11 +DD64 \  
-DHAS_IPC_S_PATCH=2 -I/home/abe/src/lsof4/dialects/hpux/kmem \  
-DLSOF_VSTR="B.11.00" -g dfile.o dmnt.o dnode.o dnode1.o \  
dnode2.o dproc.o dsock.o dstore.o arg.o main.o misc.o \  
node.o print.o proc.o store.o usage.o -L./lib -llsof -lelf \  
-lnsl  
aCC runtime: ERROR: Unexpected use of shared libraries  
aCC runtime: ERROR: Read aCC manpage, +A option  
/usr/lib/nls/loc/locales.1//is_IS.iso88591
```

This is a bug in the HP-UX national language support. (Notice the last message with "locales" in it?) Complain to HP -- then use this work-around before executing make:

```
$ unset LANG
```

```
$ make
```

9.2.7 Why doesn't /dev/kmem-based lsof for HP-UX 11 report VxFS file

link counts, node numbers, and sizes correctly?

This is usually the result of running an lsof binary whose revision number is less than 4.57 on a system that has OnlineJFS support installed. It can also happen with lsof 4.57 binaries when the OnlineJFS support with which they were built doesn't match the OnlineJFS status of the system on which they are run.

The OnlineJFS status of lsof 4.57 and higher binaries can be determined by running:

```
$ lsof -v 2>&1 | grep HASONLINEJFS
```

If that shell pipe produces output, lsof was compiled with OnlineJFS support enabled; no output, disabled.

If OnlineJFS is installed on an HP-UX 11 system the /sbin/fs/vxfs/subtype executable exists and outputs "vxfs3.3" when run.

The problem occurs because the optional OnlineJFS support installation doesn't update <sys/fs/vx_inode.h>. Consequently lsof can be compiled with an incorrect definition of the vx_inode structure and look for link counts, node numbers, and sizes in the wrong places in the structure.

The current response I have gotten from HP is that no <sys/fs/vx_inode.h> update will be provided for OnlineJFS.

I've addressed this problem temporarily with a work-around (hack) in lsof revision 4.57.

9.2.8 Why can't /dev/kmem-based lsof be built with gcc for 64 bit HP-UX 11?

When Configure is given the "hpuxgcc" abbreviation, the HP-UX version is 11, and the kernel bit size is 64, the lsof Configure script may abort with the messages:

```
!!!!!!!!!!!!!!!!!!!! FATAL ERROR !!!!!!!!!!!!!!!!!!!!!
```

```
APPARENTLY GCC CANNOT BUILD 64 BIT EXECUTABLES.  
A COMPILER MUST BE USED THAT CAN. SEE 00FAQ  
FOR MORE INFORMATION.
```

(This is the "more information" in 00FAQ.)

This means the Configure script compiled a test program with gcc the result wasn't an ELF-64 binary. Lsof tries two gcc modes, one with no options and another with the -mlp64 option, before it concludes gcc can't be used.

See the "How can I acquire a gcc for building lsof for 64 bit HP-UX 11?" answer for information on where you might be able to get a gcc for HP-UX 11 that can produce ELF-64 executables.

9.2.8.1 How can I acquire a gcc for building lsof for 64 bit HP-UX 11?

Check this HP URL:

http://h21007.www2.hp.com/dspp/tech/tech_TechSoftwareDetailPage_IDX/1,1703,547,00.html

(That's one very long link; be careful you cut 'n paste it all.)

In November 2001 that URL led to a web page whose title was "gcc for hp-ux 11." The page offered a link for downloading a 64 bit gcc 3.0 compiler for HP-UX 11.0 and 11i. Rich Rauenzahn of HP installed that compiler on an HP test system he allows me to use and I successfully built a 64 bit lsof with it.

The HP package may install the 64 bit capable gcc in /usr/local/pa20_64/bin/gcc, so you may have to adjust your path or set the LSOF_CC environment variable to compensate.

9.2.9 Why does /dev/kmem-based lsof for HP-UX 11 report "unknown file system type" for some open files?

The lsof binary being used probably doesn't have support for the VxFS file system.

To confirm that, check `lsof -v` output for "-DHASVXFS". If it's not present, lsof doesn't have VxFS support.

You also need to establish that lsof really is complaining about VxFS files by checking the kernel boot file for the symbol associated with the hexadecimal address reported in the "unknown file system type" message -- e.g., "v_op: 0x8711c8." Use nm(1) to do that:

```
$ nm -x /stand/vmunix | grep 8711c8
```

If nm reports the symbol associated with the address is

vx_vnodeops, then lsof is complaining about an open VxFS file.

The solution in that case is to build lsof yourself (The bundled C compiler will do it.), making sure that lsof's Configure script detects the presence of VxFS. Configure does that by finding these two header files:

```
/usr/include/sys/fs/vx_hpux.h  
/usr/include/sys/fs/vx_inode.h
```

If the system where you are building lsof doesn't have those header files, but does have VxFS, you might be able to install the header files by installing the HP JournalFS package from the CoreOS CD -- in particular the file set JournalFS.VXFS-PRG and its associated patch, PHKL_18543. (My thanks to Steve Bonds for that information.)

Finally, if you find that lsof isn't complaining about VxFS when it complains about an unknown file system type, send e-mail to me <abe@purdue.edu> for further assistance. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

9.2.10 Why does the ANSI-C compiler complain about comments in HP-UX 11 header files?

When compiling lsof on HP-UX 11, the HP ANSI-C compiler's pre-processor, cpp, may complain about comments in HP-UX header files -- e.g.,

```
cpp: "/usr/include/sys/cdfs.h", line 232: warning 2028:  
Found comment inside comment started on line 232.  
cpp: "/usr/include/sys/cdnode.h", line 196: warning 2028:  
Found comment inside comment started on line 196.  
cpp: "/usr/include/nfs/snnode.h", line 30: warning 2028:  
Found comment inside comment started on line 30
```

This is not a problem with lsof. It is a problem with the HP-UX header files; they have non-compliant ANSI-C comment sequences in them -- e.g.,

```
<sys/cdfs.h>: 232  
/* struct cdfs *cdfs_link; /* linked list of file systems */
```

The initial "/*" is not terminated by an ending "*/" before the appearance of a second "/*".

9.2.11 Why does dnodel.c cause the HP-UX 11 compiler to complain that

<sys/fs/vx_inode.h> is missing or incorrect?

If CFLAGS in the lsof Makefile for an HP-UX 11 compilation includes HASONLINEJFS, indicating the system has OnlineJFS support, lsof needs the <sys/fs/vx_inode.h> header file. Sometimes it is missing from /usr/include/sys/fs.

<sys/fs/vx_inode.h> is a header file that must be obtained from Veritas. If that proves impossible, please contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

9.3 PSTAT-based HP-UX lsof Questions

The sources for PSTAT-based lsof for HP-UX may be found in lsof_<revision>/dialects/hpux/pstat.

lsof's Configure shell script decides to use these sources when it finds that the /usr/include/sys/pstat subdirectory exists.

lsof can be forced to use the PSTAT-based sources by setting "pstat" in the HPUX_BASE environment variable. Consult the Configure shell script and 00XPORTING for more information.

9.3.1 Why does PSTAT-based lsof complain about pst_static and other PSTAT structures?

When lsof starts it may issue one of these fatal error messages:

```
lsof: FATAL: can't determine PSTAT static size
lsof: FATAL: can't read <n> bytes of pst_static
lsof: FATAL: pst_static doesn't contain <name>_size
lsof: FATAL: <name>_size should be <n>
```

These messages indicate that lsof's tests for the proper level of PSTAT support have failed. The structure names, given in <name>, and sizes, given in <n>, identify the support deficiency more precisely.

You may need to upgrade the PSTAT support in your kernel to be able to use PSTAT-based lsof.

9.3.2 Why does PSTAT-based lsof complain it can't read pst_* structures?

Lsof may put messages like the following in the NAME column of its output.

```
can't read cwd pst_filedetails: Permission denied
can't read mem pst_filedetails: Permission denied
can't read rtd pst_filedetails: Permission denied
can't read txt pst_filedetails: Permission denied
can't read pst_filedetails: Permission denied
can't read 3 stream structures: Permission denied
can't read pst_socket: Permission denied
```

These messages indicate that the lsof binary lacks the authority to read the name structures for processes other than ones belonging to the UID under which lsof is running. Authority to read the structures of other processes is limited to root processes -- i.e., lsof must have setuid-root permission if it is to list open files for arbitrary processes.

If you want to eliminate these errors, you must run lsof as root or install it with setuid-root permission.

9.3.3 Why does PSTAT-based lsof rebuild the device cache file after each reboot?

After each HP-UX rebuild, the first time a user runs lsof it will report:

```
lsof: WARNING: device cache mismatch: /dev/tun...
lsof: WARNING: created device cache file: /<user_path>
```

This happens because the device numbers on /dev/tun* device nodes are recalculated at each reboot. When lsof detects a change in the device number of a /dev/tun* file, it rebuilds its local device cache file.

9.3.4 Why doesn't PSTAT-based lsof report TCP addresses for telnetd's open socket files?

When lsof can't report TCP addresses for telnetd's open socket files it is because an unpatched PSTAT kernel interface doesn't report the addresses to lsof.

This has been addressed in PSTAT kernel patch PHKL_24047. It is available from the HP IT Resource Center at:

<http://itrc.hp.com>

In the page's "maintenance / support" box select the "individual patches" link. Once at its page, select the "hp-ux" link. On that page select the "Series 800" or "Series 700" radio button and select "11.11" from the pull-down list to the right of the button. Under "search or browse the path list" select "Search by Patch IDs" from the pull down list, enter PHKL_24047 in the following text box, and select search. That should lead to information about PHKL_24047 and a link for downloading it. (You may have to log in first and you may have to create a login identity by registering before you can log in.)

Some time in March 2006 the PHKL_24047 patch was "lost" by the HP-UX networking lab. It has been "found" again in August 2006 and will be re-released as a GRO patch "some time." I don't yet know when that will be. You must contact HP to learn about the availability of the GRO patch.

9.3.5 Why does PSTAT-based lsof cause an HP-UX 11.11 kernel panic?

When PSTAT-based lsof runs on some HP-UX 11.11 kernels, the kernel may panic. Symptoms include:

Console message:

```
0xFBE000301100EF00 00000000 0000EF00 -  
type 31 = legacy PA HEX chassis-code
```

/var/adm/syslog:

```
... vmunix: Trap Type 15 (Data page fault)  
... vmunix: Instruction Address (pcsq.pcoq) = 0x...
```

The panic is caused by a bug in the way PSTAT's pstat_getstream() function obtains module names from streams managed by the otsam stream driver (part of OSI Transport Services). lsof calls pstat_getstream() when it encounters an open otsam stream file. An HP-UX 11.11 system uses otsam if otsam appears in /stand/system.

HP-UX 11.11 patch PHKL_24507 (available some time after July 15, 2001) fixes the pstat_getstream() bug. See the information in the answer to the "Why doesn't PSTAT-based lsof report TCP addresses for telnetd's open socket files?" question for information on how to obtain the patch.

9.3.6 Why doesn't PSTAT-based lsof report a CWD that is on a loopback (LOFS) file system?

When PSTAT-based lsof reports on processes whose current working directory (CWD) is on a loopback file system, lsof can't report the open CWD file. The reason is that the HP-UX 11.11 and above kernel's loopback file system code is not passing the CWD file ID to the kernel's pstat(2) code. Hence lsof is given no information on the lsof's CWD.

The problem was first reported to me by Ermin Borovac and an internal bug report was filed with the HP-UX file system group on October 26, 2004. That report has now been answered by the patch PHKL_33200 -- s700_800 11.11 lsof cumulative patch. The HP IT Resource Center (<http://itrc.hp.com>) is a source for the patch.

9.3.7 Why do some swinstall packages for PSTAT-based HP-UX 11.11 packages complain about setgid and setuid bits?

First, let me explain that I do not provide lsof swinstall packages for lsof. Others provide them and they should be contacted about problems with their packages.

However, I have become aware of a problem with one package about which I have some information I can share. The problem shows up in these swinstall messages:

```
ERROR: Unknown owner and/or group for file
"/usr/local/bin/lsof". SUID and/or SGID bit was
not set.
ERROR: Failed installing fileset "lsof.lsof-RUN,r=4.73".
Check the above output for details.
```

The swpackage SUID/SGID functionality was restricted by changes for POSIX compliance, breaking backward compatibility. The patch PHCO_27671 allows SUID/SGID for uid/gid of 0 only, as a compromise between backward compatibility and POSIX conformance.

If the setuid bit is to be set on the executable, the UID and GID of the executable must be 0 (zero).

9.3.8 Why won't the bundled C compiler build PSTAT-based lsof for PA-RISC HP-UX 11.23?

A PA-RISC HP-UX 11.23 bundled C compiler dated May 2005 or later will not build PSTAT-based lsof. It will deliver error messages related to the system's <gssapi/gssapi.h> header file.

There is nothing wrong with that header file or lsof. The problem is that the bundled C compiler can't cope with the gssapi.h header file.

The work-around is to use the HP ANSI C compiler. Using gcc is not a satisfactory work-around. See the answer to the "Why won't gcc build PSTAT-based lsof for PA-RISC HP-UX 11.23?" question for more information.

9.3.9 Why won't gcc build PSTAT-based lsof for PA-RISC HP-UX 11.23?

Gcc will not even compile PSTAT-based lsof revisions below 4.77 for PA-RISC HP-UX 11.23 dated May 2005 or later. It reports errors in lsof's print.c fill_portmap() function about missing members of the rpercent structure. That happens because gcc defines _XOPEN_SOURCE_EXTENDED which disables the definition of the rpercent structure in <netdb.h>.

Using the HP bundled C compiler is not a viable work-around. That is explained in the answer to the "Why won't the bundled C compiler build PSTAT-based lsof for PA-RISC HP-UX 11.23?"

While an lsof revision 4.77 or higher can be compiled with gcc, the results are unreliable. Lsof will compile, but it occasionally produces segment faults when it runs. I have not been able to reproduce the failure reliably or locate a debugger that will work with the gcc-compiled lsof.

The only reliable work-around is to use the HP ANSI C compiler.

9.3.10 Why does PSTAT-based lsof complain, "FATAL: pst_stream_size should be: 672; is 72" on HP-UX 11.11 and above?

This message indicates a mismatch between the PSTAT header files used to build lsof (<sys/pstat.h> and those in the /usr/include/sys/pstat subdirectory), and those that built the running kernel.

Unfortunately the June 2008 patch set for HP-UX 11.23 creates this inconsistency, because it does not contain all the patches needed to match the kernel with the PSTAT header files. Even more serious is that the missing patches update the kernel's PSTAT support to provide TCP/UDP endpoint information to lsof from TCP/TLI streams.

The patch inconsistency comes about because, while the following patch is installed,

PHKL_36577 1.0 PM-PSTAT section 2 manpage changes

other kernel patches are not.

The PHKL_36577 patch updates the PSTAT header files and manual pages to match kernel changes that other patches with the following numbers (or patches that contain or supersede them) contain:

PHNE_36575 1.0 Cumulative STREAMS Patch
PHNE_37670 1.0 cumulative ARPA Transport patch
PHNE_37851 1.0 NFS cumulative patch

Those patches implement the kernel changes that support the delivery of information promised in patch PHKL_36577.

The work-around is to install the missing patches.

9.4 Why won't the HP-UX depot install?

I don't distribute lsof depots, so I can't support them.

From time to time depots prepared by various sites -- e.g., usually HP-UX software collection sites -- will contain errors that cause installation of the depot to fail.

Do not contact me when this happens. Instead, contact the administrator of the site that prepared the depot.

As should be clear from the bulk of the lsof documentation, I do not recommend you use pre-built lsof binaries in any form. Instead, I recommend you obtain the lsof source distribution and build lsof yourself.

10.0 Linux

10.1 What do /dev/kmem-based and /proc-based lsof mean?

At approximately Linux 2.1.72 and exactly at lsof revision 4.23 support for Linux forks. The first fork, containing the oldest lsof form is based on access to kernel memory structures, and is called /dev/kmem-based lsof. A /dev/kmem-based lsof is heavily intertwined with the Linux kernel version, its header files, and its system map file. Typically a /dev/kmem-based lsof needs only setgid permission to local all open file information.

After approximately Linux 2.1.72 and at revision 4.23 lsof obtains all its information from the /proc file system. That lsof is called the /proc-based lsof. A /proc-based lsof does not read kernel memory, needs neither kernel header files nor the system map file, and is less likely to be affected by Linux kernel changes. However, it does require setuid-root permission to list all open files, and it can't report file offsets (positions).

After revision 4.52 the /dev/kmem-based Linux sources for lsof are no longer distributed. Information about them may be found in the 00INDEX and README files at:

`ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/OLD/src`

10.2 /proc-based Linux lsof Questions

10.2.1 Why doesn't /proc-based lsof report file offsets (positions)?

/proc-based lsof revisions 4.79 and above can only report file offsets (positions) for the files of Linux kernels 2.6.22 and above.

During its initialization /proc-based lsof tests to see if offset information can be obtained. If it cannot, lsof disables offset reporting. If the -o option was selected, lsof also issues this warning:

```
lsof: WARNING: can't report offset; disregarding -o.
```

10.2.2 Why does /proc-based lsof report "can't identify protocol" for some socket files?

/proc-based lsof may report:

```
COMMAND PID ... TYPE ... NODE NAME
pump 226 ... sock ... 309 can't identify protocol
```

This means that it can't identify the protocol (i.e., the AF_* designation) being used by the open socket file. Lsof identifies protocols by matching the node number associated with the /proc/<PID>/fd entry to the node numbers found in selected files of the /proc/net sub-directory. Currently /proc-based lsof examines these protocol files:

```
/proc/net/ax25 (untested)
```

```
/proc/net/ipx (needs kernel patch)
/proc/net/raw
/proc/net/raw6
/proc/net/tcp
/proc/net/tcp6
/proc/net/udp
/proc/net/udp6
/proc/net/unix
```

If /proc-based lsof says it can't identify the protocol for an open socket file, you may be able to identify the protocol yourself by using `grep` to look for the specific node number in the files of /proc/net -- e.g.,

```
$ grep <node_number> /proc/net/*
```

You may not be able to find the desired node number, because not all kernel protocol modules fully support /proc/net information.

If you find a matching node number in a /proc/net file that is not currently being processed by lsof, contact me via e-mail at <abe@purdue.edu>. I'll discuss adding support to /proc-based lsof for the protocol of the /proc/net file with you. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

The code that matches node numbers of open IPX protocol socket files to those in /proc/net/ipx requires Jonathan Sargent's Linux 2.1.79 patch to /usr/src/linux/net/ipx/af_ipx.c. The patch, suitable for input to Larry Wall's patch program, may be found in the lsof distribution file:

```
.../dialects/linux/proc/patches/net_ipx_af_ipx.c.patch
```

10.2.3 Why does /proc-based lsof warn about unsupported formats?

Lsof may issue the following warning:

```
lsof: WARNING: unsupported format: /proc/net/<file>
```

if the header line of the indicated <file> in /proc/net -- ax25, ipx, raw, tcp, udp, or unix -- doesn't match what lsof expects to find.

When the header line of a /proc/net file isn't what lsof expects, lsof probably can't parse the rest of the file correctly and doesn't try. As a result, lsof can't report

any NAME column information (e.g., local and remote addresses) for socket files bound to the indicated network protocol.

If you get this warning, please send me e-mail at <abe@purdue.edu>. Include the contents of the file lsof claims has an unsupported format. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

10.2.4 Why does /proc-based lsof report "(deleted)" after a path name?

The "(deleted)" notation following a path name in /proc-based lsof's NAME column comes from the /proc/<PID>/fd/<FD> entry for the open file. It's the Linux kernel's way of indicating the file is open but has been unlinked (rm'd).

10.2.5 Why doesn't /proc-based lsof report full open file information for all processes?

/proc-based lsof can only report on processes whose /proc files it has permission to read. /proc normally grants permission to read all its files only to root or to the owning user ID.

Without permission to read most /proc files, lsof can only report full information for processes belonging to the user who is running lsof. /proc-based lsof may be able to report some information for all processes, depending on the permissions of their associated /proc files, but usually /proc-based lsof won't be able to access the files in /proc/<PID>/fd/ that describe regular open files.

If you want /proc-based lsof to report on all processes, you must install it with setuid-root permission.

10.2.6 Why won't Customize offer to change HASDCACHE or WARNDEVACCESS for /proc-based lsof?

/proc-based lsof doesn't read device information from /dev or the device cache file, so it makes no sense to change the state of device cache processing or /dev node accessibility warnings.

10.2.7 /proc-based lsof Linux NFS questions

10.2.7.1 Why can't lsof find files on an accessible NFS file system?

On occasion lsof may be unable to identify that an open file is on an NFS file system. This is most likely the

result of a bug in the way the Linux kernel supplies information to the reader of /proc/mounts (lsdf) -- sometimes that pseudo-file is truncated by the kernel.

One way to see if this is the case is to search for the NFS file system in /proc/mounts -- e.g.,

```
$ grep <NFS_file_system_mount_point> /proc/mounts
```

If you get no output or the third word of the output isn't "nfs", then lsdf won't consider the file system an NFS file system.

A second test is to look at the end of /proc/mounts -- e.g.,

```
$ tail /proc/mounts
```

If tail reports "# truncated" then /proc/mounts is incomplete because of a Linux kernel bug. The bug is documented at:

<http://www.xss.co.at/sysinfo/mounts.html>

The bug is fixed in Linux kernel 2.4.18, and possibly in some earlier Linux kernel versions.

10.2.7.2 Why can't lsdf find files on an inaccessible NFS file system?

If lsdf issues this message about a Linux file system, mounted from an NFS server:

```
lsdf: WARNING: can't stat() nfs file system /xxx/yyy
```

Then lsdf won't be able to find any open files on the file system.

That's because of an inadequacy in the Linux /proc file system. Its /proc/mounts file doesn't give the device doublet (major and minor numbers) of the file system as do many UNIX systems (e.g., Solaris). The only way lsdf can get the device doublet for a Linux file system is to call stat(2) on the file system path, which fails if the NFS server isn't accessible.

When lsdf doesn't know the device doublet of a file system, it can't find open files on the inaccessible file system, because it can't match the doublets of open files to the doublet of the inaccessible file system.

This topic is covered extensively in lsof(8) in its ALTERNATE DEVICE NUMBERS and BLOCKS AND TIMEOUTS sections.

10.2.8 Why doesn't /proc-based Linux lsof report socket options and values, socket state flags, and TCP options and values?

The Linux /proc file system doesn't report socket options and values, socket states, and TCP options and values to lsof.

10.2.9 Does /proc-based Linux lsof use a device cache?

No. The Linux /proc/<PID>/fd/* entries provide device names to lsof via readlink(2). It is not necessary to enable device cache processing for /proc-based Linux lsof via the Customize script or modifications to the Linux machine.h header file.

10.2.10 Why doesn't /proc-based Linux lsof report any or all file structure values for its +fcfgGn option?

/proc-based lsof revisions 4.79 and above can only report some file structure values for Linux kernels below 2.6.22.

When running on Linux kernels at 2.6.22 and above lsof 4.79 can report some file flag values -- i.e., in response to the +fg or +fG options. The flag values are obtained from the /proc/<PID>/fdinfo/ files introduced at Linux kernel 2.6.22.

/proc-based Linux lsof tests its availability to obtain file flag values at initialization. If values are not available, lsof disables file flag reporting. If the flags were requested with +fg or +fG, lsof displays this warning:

```
lsof: WARNING: can't report file flags; disregarding +f.
```

As a special note, when Linux lsof can report flag bits, it will not report 'R' for a read-only file. There is no read-only flag bit O_* symbol in <fcntl.h> (or <bits/fcntl.h>) and lsof reports only bits that are set. The absence of O_RDWR and O_WRONLY flag bits implies the file is read-only.

10.3 Special Linux file types

10.3.1 Why is ``DEL" reported as a Linux file type?

Lsof usually reports entries from the Linux /proc/<PID>/maps file with ``mem" in the TYPE column. However, when lsof can't

stat(2) a path in the process' ``maps" file and the ``maps" file entry contains ``(deleted)", indicating the file was deleted after it had been opened, lsof reports the file type as ``DEL".

10.3.2 Why is ``unknown" reported as a Linux file type?

Lsof may report a Linux file's type as ``unknown" in the TYPE column when lsof can't obtain complete stat(2) results for the file.

Usually the NAME column will contain a ``(stat: xxx)" error message, but that could have been suppressed with the lsof ``-w" option.

10.4 Linux ``mem" Entry Problems

10.4.1 What do ``path dev=xxx" and ``path inode=yyy" mean in the NAME column of Linux ``mem" file types?

When the device or inode number in the process' ``maps" file entry doesn't match the stat(2) results from the file path, lsof reports the inconsistent information from the stat(2) of the path parenthetically after the path in the NAME column in one of these forms:

(path dev=xxx) only the device number,
``xxx", from a stat(2) of the
``maps" file entry path
differs from the ``maps" file
entry value reported in the
DEVICE column.

(path inode=yyy) only the inode number,
``yyy", from a stat(2) of the
``maps" file entry path
differs from the ``maps" file
entry value reported in the
NODE column.

(path dev=xxx inode=yyy) Both device and inode numbers
differ.

Lsof reports the ``maps" file device number in the DEVICE column and the inode number in the NODE column.

When device and inode mismatches occur, lsof suppresses the reporting of link count and size. See the answer to the "Why

is neither link count nor size reported for some Linux ``DEL" and ``mem" file types?" question for more information.

Device and inode inconsistencies can occur when a file at a ``maps" path is replaced after the process has started, or when a different file system with similar path names is mounted on top of the original file system.

The device inconsistency parenthetical messages can be suppressed with lsof's ``-w" option.

10.4.2 Why is neither link count nor size reported for some Linux ``DEL" and ``mem" file types?

Link count and size are not reported for some entries from the process' ``maps" file because a stat(2) of the entry file path failed or stat(2) delivered device or inode numbers that don't match the ones in the ``maps" entry.

When the stat(2) device or inode numbers don't match those in the ``maps" file entry, it is likely that the stat(2) results don't apply to the file that was originally mapped by the process and whose path appears in the ``maps" file entry, so lsof tries to avoid reporting possibly incorrect information.

See the answer to the "What do ``path dev=xxx" and ``path inode=yyy" mean in the NAME column of Linux ``mem" file types?" for more information on how mismatched stat(2) device and inode numbers are reported.

10.5 Special Linux NAME column messages

10.5.1 What does ``(stat: xxx)" mean in the NAME column of Linux files?

When lsof tried to stat(2) the path in the NAME column, the stat(2) system call failed and produced an error message of ``xxx".

This situation usually occurs if the lsof process lacks permission to stat(2) the path -- e.g., the lsof executable lacks root permission, or lsof is attempting to stat(2) a path on an NFS device mounted with the root_squash option.

The message can be suppressed with lsof's ``-w" option.

10.5.2 What does ``(readlink: xxx)" mean in the NAME column of Linux files?

When lsof tried to convert the /proc/<PID>/fd path, reported in the NAME column, to its full and more meaningful path, the readlink(2) system call used to do the conversion failed. The readlink(2) failure message is ``xxx".

This situation usually occurs if the lsof process lacks permission to readlink(2) some part of the path -- e.g., the lsof executable lacks root permission, or lsof is attempting to stat(2) a path on an NFS device mounted with the root_squash option.

The message can be suppressed with lsof's ``-w" option.

10.6 Why is ``NOFD" reported as a Linux file type?

When lsof lacks permission to use opendir() on the fd/ subdirectory of a process' /proc/<PID> directory, it reports a single file of the type ``NOFD" (for no file descriptors).

Lsof reports the the /proc/<PID>/path in the NAME column, followed by "(opendir: xxx)", where ``xxx" is the error message returned by opendir().

The ``NOFD" entry can be suppressed with lsof's ``-w" option.

10.7 Why does Linux lsof report a NAME column value that begins with ``/proc"?

When lsof has problems processing a ``/proc/<PID>" entry -- e.g., it can't convert the entry to a full and more meaningful path name, or it can't access the /proc/<PID>/fd subdirectory with opendir() -- it will report the /proc/<PID> path in the NAME column.

10.8 Linux /proc/net/tcp* and /proc/net/udp* issues

10.8.1 Why use the Linux -X option?

If you're not interested in TCP/IP socket information for a particular use of lsof, adding the -X option will make lsof run more quickly, because -X inhibits the reading of the /proc/net/tcp* and /proc/net/udp* files. For example, you may only be interested in knowing what process has a particular file open.

When the Linux system has a large number of open TCP/IP socket files, the time savings provided by -X can be significant.

10.8.2 Why does lsof say ``-i is useless when -X is specified"?

If -X is specified, lsof can't report much information on open TCP/IP socket files. However, lsof's -i option requests that information. Hence, the two options conflict and can't be used together.

10.8.3 Why does lsof say ``can't identify protocol (-X specified)"?

If the Linux lsof -X option is specified and an open socket file can't be identified without accessing the /proc/net/tcp* and /proc/net/udp* files, lsof will report that it can't identify the socket's protocol and that the failure may be caused by the -X specification

11.0 NetBSD Problems

11.1 Why doesn't lsof report on open kernfs files?

Lsof doesn't report on open NetBSD kernfs files because the structures lsof needs aren't defined in the kernfs.h header file in /sys/misc/kernfs.

11.2 Why doesn't lsof report on open files on: file descriptor file systems; /proc file systems; 9660 (CD-ROM) file systems; MS-DOS (floppy disk) file systems; or kernel file systems?

Lsof is not able to report on open files on certain file system if /usr/src/sys/msdosfs didn't exist when the lsof Configure script ran and lsof was made. /usr/src/sys/msdosfs contains header files lsof needs for collecting data on certain file system files.

You can tell if an lsof executable above) lacks support for a file system if the following test of `lsof -v` produces nothing:

```
$ lsof -v 2>&1 | grep <support_enabled_definition>
```

The <support-enabled_definition> will be:

```
File System Type Definition Note
-----
File descriptor HASFDESCFS
/proc HASPROCFS
9660 HAS9660FS
```

MS-DOS HASMSDOSFS (Isof 4.61 and above)

Kernel HASKERNFS

The work-around is to install /usr/src/sys, rerun the Isof Configure script, and remake Isof.

11.3 Why does Isof produce confusing results for nullfs file systems?

Consider this report from /sbin/mount:

```
/usr/home on /home type null (local)
```

(According to /sbin/mount /usr/home is the mounted-on device and /home is the mounted-on directory.)

When Isof is asked to report on open files on /home, it will report them as files on /usr/home instead. That's an artifact of the NetBSD kernel's dynamic name lookup cache (DNLC) and the way the kernel handles nullfs mounted-on directories.

While Isof will report all open files on /home when given /home as a file system directory argument, even though reporting them as located on /usr/home, Isof will not find the same files when asked to report on all open files on /usr/home when given /usr/home as a file system device argument. That's because from the mount perspective /usr/home is equivalent to a device, but from the device perspective it is still a directory.

So, what this Isof command reports:

```
$ Isof /home
... NAME
... /usr/home/...
```

Won't be duplicated by this Isof command:

```
$ Isof /usr/home
```

Another way to look at this confusing /home and /usr/home example is to consider what stat(2) reports. For /home stat(2) reports a device doublet that matches what Isof finds in open file node structures, while the device doublet stat(2) reports for /usr/home won't match what Isof finds. Nor does the mode reported by stat(2) indicate a block devices, as is the expected case.

There is no simple answer to this confusion, nor is there even a simple explanation. Simply be aware that when supplying file system arguments to `lsnf` on NetBSD, use the mounted-on directory name for a nullfs as the `lsnf` argument, and don't be surprised when the `NAME` column reports the mounted-on device name.

11.4 NetBSD header file problems

11.4.1 Why can't the compiler find some NetBSD header files?

If the compiler's pre-processor complains it can't find some header files when it compiles `lsnf` source files, `/usr/include` and `/usr/src` may not have all the header files `lsnf` needs.

As a work-around use the `NETBSD_SYS` environment variable to specify to `lsnf` the location of the additional header files -- e.g.,

```
% setenv NETBSD_SYS /my_source
% ./Configure -n netbsd
```

or

```
$ NETBSD_SYS=/mys_source ./Configure -n netbsd
```

Caution: using this work-around may cause the `lsnf` `Configure` script to activate or omit different features, depending on where it finds the header files that determine the state of the features.

11.4.2 Why does NetBSD `lsnf` produce incorrect output?

If the NetBSD system's kernel was built from header files that don't match those in `/usr/include` -- e.g., `/usr/src` has the ones from which the kernel was built -- `lsnf` may build, but won't produce correct output.

As a possible work-around, try directing the C compiler to select header files from `/usr/src` before it selects them from `/usr/include`. That can be done with the `DEBUG` make string -- e.g.,

```
$ make DEBUG="-I/usr/src -I/usr/include"
```

If that work-around fails, try using the `LSOF_INCLUDE` and `NETBSD_SYS` environment variables to swap `/usr/include` and `/usr/src` when running the `Configure` script, then use the `make`

DEBUG string when running make -- e.g.,

```
$ LSOF_INCLUDE=/usr/src; export LSOF_INCLUDE
$ NETBSD_SYS=/usr/include; export NETBSD_SYS
$ ./Configure -n netbsd
$ make DEBUG="-I/usr/src -I/usr/include"
```

11.5 Why isn't lsof feature xxx enabled for NetBSD?

Lsof's Configure script enables NetBSD features by locating and examining header files associated with the features, and based on what it finds, setting compile-time definitions in Makefiles. (See 00PORTING for a list of the definitions.)

When Configure doesn't find header files or doesn't find appropriate values in header files, that may mean the header file tree lsof is searching is incomplete or out of date.

Lsof normally looks for NetBSD header files in /usr/include. It can also be directed to look in other directories -- e.g., /sys -- if told to do so with the contents of the LSOF_INCLUDE and NETBSD_SYS environment variables.

To determine what header file enables a missing feature, check the NetBSD stanza in the Configure script. Then check the locations it checks for the indicated header files and contents.

See 00XCONFIG for more information on LSOF_INCLUDE and NETBSD_SYS.

12.0 NEXTSTEP and OPENSTEP Problems

12.1 Why can't lsof report on 3.1 lockf() or fcntl(F_SETLK) locks?

Lsof has code to test for locks defined with lockf() or fcntl(F_SETLK) under NEXTSTEP 3.1, but that code has never been tested. I couldn't test it, because my NEXTSTEP 3.1 lockf() and fcntl(F_SETLK) functions return "Invalid argument" every way I have tried to invoke them.

If your NEXTSTEP 3.1 system does allow you to use lockf() and fcntl(F_SETLK) and lsof doesn't report locks set with them, then the code in ../dialects/next/dnode.c probably isn't correct. Please contact me via e-mail at <abe@purdue.edu> and tell me how you got your lockf() and fcntl(F_SETLK) system

calls to work. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

12.2 Why doesn't lsof compile for NEXTSTEP with AFS?

I no longer have a NEXTSTEP test system that has AFS. Changes to lsof since I once had a test system have caused me to change the AFS code in NEXTSTEP without being able to test the changes.

If you need AFS support for NEXTSTEP and can't get it to compile, please contact me. Perhaps we can jointly fix the problems.

13.0 OpenBSD Problems

13.1 Why doesn't lsof support kernfs on my OpenBSD system?

Lsof supports the kernel file system on OpenBSD versions whose `/sys/miscfs/kernfs/kernfs.h` (or `<miscfs/kernfs/kernfs.h>` header file correctly defines the `kern_target` structure. The lsof Configure script's `openbsd` stanza checks for the presence of the structure's `kt_name` element and activates kernfs support for the `CFLAGS -DHASKERNFS` definition only when it finds `kt_name`.

The `kernfs.h` header file is scheduled to be updated in the OpenBSD 2.1 release, according to Kenneth Stailey, who authored its changes.

13.2 Will lsof work on OpenBSD on non-x86-based architectures?

I've not tested lsof on an OpenBSD system that uses a non-x86-based architecture, but I've had one report that lsof 4.33 compiles and works on OpenBSD for the `pmax` architecture (decstation 3100).

13.3 `<sys/pipe.h>` problems

13.3.1 Why does the compiler claim `nbp` isn't defined?

When compiling lsof on some (older) OpenBSD SPARC versions, the compiler may complain:

```
In file included from ../dlsof.h:191,  
from ../lsof.h:166,  
from fino.c:52:
```

```
/usr/include/sys/pipe.h:83: `nbpkg' undeclared here
(not in a function)
/usr/include/sys/pipe.h:83: size of array `ms' has
non-integer type
```

This happens because `<sys/pipe.h>` uses `NBPG` from `<machine/param.h>` to size the ``ms'` array, and some OpenBSD systems define `NBPG` in terms of a kernel integer variable, `nbpkg`.

Lsof revisions 4.46 and above have a hack to `dlsof.h`, developed by Volker Borchert that avoids the compiler problem for SPARC OpenBSD 2.3. The hack might work for other OpenBSD SPARC versions, but hasn't been tested there.

If you want to enable the hack for your OpenBSD SPARC version, modify this code in `.../dialects/n+obsd/dlsof.h`:

```
# if defined(OPENBSDV)
# if OPENBSDV==2030 && defined(__sparc__)
# if defined(nbpkg)
#undef nbpkg
# endif /* defined(nbpkg) */
#define nbpkg 4096 /* WARNING!!! ... */
# endif /* OPENBSDV==2030 && defined(__sparc__) */
#include <sys/pipe.h>
#endif /* defined(OPENBSDV) */
```

You will probably want to change the second `#if` test to match your OpenBSD version. You may also want to change what value is assigned to `nbpkg`. See the next section, "What value should I assign to `nbpkg`?"

13.3.2 What value should I assign to `nbpkg`?

If you need to enable the `nbpkg` hack, described in "Why does the compiler claim `nbpkg` isn't defined?", you may also need to assign a value other than 4096 to `nbpkg`. 4096 works for the sun4c processor and should work for sun4m, but 8192 may be needed for sun4.

Check `<machine/param.h>` and other OpenBSD documentation to determine the correct `nbpkg` assignment.

13.4 Why doesn't lsof report on open MS-DOS file system (floppy disk) files?

Lsof is not able to report on open MS-DOS file system files

if `/usr/src/sys/msdosfs` didn't exist when the `lsof` Configure script ran and `lsof` was made. `/usr/src/sys/msdosfs` contains header files `lsof` needs for collecting data on MS-DOS file system files.

You can tell if an `lsof` executable (revisions 4.61 and above) lacks MS-DOS file system support if the following command reports nothing:

```
$ lsof -v 2>&1 | grep HASMSDOSFS
```

The work-around is to install `/usr/src/sys`, rerun the `lsof` Configure script, and remake `lsof`.

13.5 Why isn't `lsof` feature xxx enabled for OpenBSD?

`lsof`'s Configure script enables OpenBSD features by locating and examining header files associated with the features, and based on what it finds, setting compile-time definitions in Makefiles. (See `00PORTING` for a list of the definitions.)

When Configure doesn't find header files or doesn't find appropriate values in header files, that may mean the header file tree `lsof` is searching is incomplete or out of date.

`lsof` normally looks for OpenBSD header files in `/usr/include` and `/sys`. It can also be directed to look in other directories if told to do so with the contents of the `LSOF_INCLUDE` and `NETBSD_SYS` environment variables.

To determine what header file enables a missing feature, check the OpenBSD stanza in the Configure script. Then check the locations it checks for the indicated header files and contents.

See `00XCONFIG` for more information on `LSOF_INCLUDE` and `NETBSD_SYS`.

14.0 Output Problems

14.1 Why do the `lsof` column sizes change?

`lsof` dynamically sizes its output columns each time it runs to make sure that each column takes the minimum space. Column parsing -- e.g., with `awk` -- is possible, because each column is guaranteed to be separated from the preceding one by at least one space, and no column except the last

(NAME) contains embedded spaces.

14.2 Why does the offset have ``0t' and ``0x" prefixes?

The offset value that appears in the SIZE/OFF column has ``0t' and ``0x" prefixes to distinguish it from size values that may appear in the same column.

Normally if the offset value is less than 100,000,000 (8 digits), it appears in decimal with a ``0t' prefix; over 99,999,999, in hexadecimal with a ``0x" prefix.

A decimal offset is handy, for example, when tracking the progress of an outbound ftp transfer. When lsof reports on the ftp process, it will report the size of the file being sent with its open descriptor; it will report the progress of the transfer via the offset of the outbound open ftp data socket descriptor.

The ``-o [n]" option may be used to specify the maximum number of decimal digits to be printed after ``0t" before lsof switches to the hexadecimal digits after ``0x". As already noted, the default decimal digit count is 8.

14.3 What are the values printed in the FILE_FLAG column and why is 0x<value> sometimes included?

The two comma separated lists, separated by a semicolon, printed in the FILE-FLAG column (when the "+fg" option is specified), are short-hand names or hexadecimal values for the bits lsof finds in the f_flag or f_flags member of file structures for files (the first list, the one before the semicolon), and process open files flags found in various kernel structures, often named "pofile" (the second list, the one after the semicolon).

Lsof determines the short-hand names from symbols in the <fcntl.h>, <linux/fs.h>, <sys/fcntl.h>, <sys/fcntlcom.h>, <sys/file.h>, and <sys/user.h> header files.

See the discussion of FILE-FLAG in the OUTPUT section of the lsof man page, and the FF_* and POF_* symbols in lsof.h for a list of the names.

Bits with no names defined for them are represented by an 0x<value> member of the comma-separated list -- a hexadecimal integer. When "+fG" is specified (instead of "+fg"), lsof will list all flag values as two hexadecimal integers,

separated by a semicolon.

When "-FG" is specified to get the flags in an output field, the format defaults to hexadecimal. You can get names instead by following "-FG" with "+fg" -- e.g.,

```
$ lsof -FG +fg ...
```

However, when you precede "-FG" with "+fg" -- e.g.,

```
$ lsof +fg -FG
```

the format will be hexadecimal; order is important.

14.3.1 Why doesn't lsof display FILE_FLAG values for my dialect?

All versions of lsof except the /proc-based Linux lsof report FILE-FLAG values. Lsof can't obtain FILE-FLAG information from the Linux /proc interface.

14.4 Network Addresses

14.4.1 Why does lsof's -n option cause IPv4 addresses, mapped to IPv6, to be displayed in IPv6 notation?

When you use the -n option to tell lsof to display numeric network addresses, and an IPv4 address has been mapped to IPv6, lsof displays the address in IPv6 format and puts "ipv4" in the TYPE column. That combination indicates the IPv4 address has been mapped to IPv6.

For example, the IPv4 address 1.2.3.4, when mapped to an IPv6 address, will be displayed by lsof as:

```
[::ffff:1.2.3.4]
```

The enclosing brackets are lsof's signal that this is an IPv6 address. Inside the brackets is a standard IPv6 address, reported by inet_ntop(). The first two colons, signifying zeroes in the first 64 bits of the IPv6 address, and the hexadecimal ffff in the next 32 bits, indicate that the last 32 bits contains a mapped IPv4 address, which is then displayed in IPv4 dot notation.

14.5 Why does lsof output \x, ^x, or \xnn for characters sometimes?

Lsof displays only printable ASCII characters. Lsof

considers a character printable if `isprint(3)` says it is. If `isprint(3)` says a character isn't printable, the `lsf` man page explains:

"... Non-printable characters are printed in one of three forms: the C `\\[bfrnt]` form; the control character `^'` form (e.g., `^^@`); or hexadecimal leading `\\x` form (e.g., `\\xab`). Space is non-printable in the COMMAND column (`\\x20`) and printable elsewhere."

14.5.1 Why is space considered a non-printable character in command names?

Space is considered an unprintable character in command names because it is sometimes possible to hide the full command name from scripts that parse `ps(1)` output by embedding a space in the name.

14.6 Why doesn't `lsf` print all the characters of a command name?

By default `lsf` prints the first nine characters of the names of commands associated with processes. If more characters are required, the "w" value of the "+c w" option may be used to specify a larger width.

If "w" is zero (0) `lsf` will print all characters of all command names up to the limit of the number of characters supplied by the particular UNIX dialect. When reporting command names, `lsf` replaces non-printable characters as discussed in the answer to "Why does `lsf` output `\\x`, `^x`, or `\\xnn` for characters sometimes?"

See the answer to the "Why is space considered a non-printable character in command names?" question for an explanation of why spaces are replaced by the `\\x20` representation in command names.

The number of command name characters supplied to `lsf` by UNIX dialects in files and structures varies by dialect. For example, Linux 2.4.27 supplies `lsf` the first 15 characters of command names and Solaris 9 supplies 16. Thus, even if "w" is zero (0), `lsf` can't report more characters for command names on those two UNIX dialects than they provide `lsf`.

14.7 Why does `lsf` reject some -c command names, saying their lengths are "> what system provides (nn)"?

The command name length that a specific system provides varies from dialect to dialect. As noted in the answer to the "Why doesn't lsof print all the characters of a command name?" question, Linux and Solaris provide a limited number of command name characters.

When more characters are specified in the parameter to the -c option, lsof considers it an error and issues a fatal error message -- e.g.,

lsof: "-c xxxxyyyy" length (8) > what system provides (7)

The only work-around is to specify no more characters to -c than the system provides to lsof.

14.8 Why does lsof sometimes print TYPE numbers instead of names?

When lsof can't convert a type number to a name for printing in the TYPE column, it will report the number as four octets.

14.9 Marker line format problems

14.9.1 Why won't lsof accept a marker line format?

Lsof's Configure script must find the localtime(3) and strftime(3) functions in the dialect's C library in order to enable support for marker line formats.

Check the output of lsof's -v option for the presence of -DHAS_STRFTIME in the compiler flags. If it isn't there, Configure didn't find the necessary two C library functions.

If you think lsof should have found the functions, make a copy of the C test program in the Configure script that it uses to find the functions. Then use the copy, or a more informative modification of it, to learn why Configure can't find the functions. You can find that program by searching for strftime.

14.9.2 Why does lsof reject the NL (%n) marker line format?

When repeat mode and field output (with -F) have both been specified, lsof won't allow new line (NL) formats to be specified with ``%n''. That's because the marker line is always guaranteed to be a single line.

There is no work-around to this restriction.

14.10 How are protocol state name exclusion and inclusion used?

Protocol state name inclusion and exclusion with the ``-s p:s" option and its arguments have some issues to consider.

First, there is the problem of determining what state names, if any, the dialect produces. Try running this lsof command to find them:

```
$ lsof -i
```

Knowing the state names of interest, the next problem is to decide on the lsof options and their parameters that will produce the desired output. Here some examples are probably the most useful.

To list only TCP socket files in LISTEN and CLOSE_WAIT states, use:

```
$ lsof -itcp -stcp:listen,close_wait  
or  
$ lsof -iTCP -sTCP:LISTEN,CLOSE_WAIT
```

Case isn't important to lsof in protocol and state names.

To exclude TCP socket files in CLOSE_WAIT state, use:

```
$ lsof -itcp -stcp:^close_wait
```

Note the `^' preceding close_wait; it selects exclusion. You can mix included and excluded names in a comma separated list, but you may not include and exclude the same name for the same protocol.

To list TCP files in LISTEN state and UDP files in Idle state, use:

```
$ lsof -i -stcp:listen -sudp:idle
```

Note: if you don't accompany the ``-s p:s" list option and arguments with the -i option, lsof will list all other regular files, while applying the specified inclusion and exclusion specifications to network files. Generally, then, you want to use -i with -s.

14.10.1 Why doesn't my dialect support state name exclusion and inclusion?

When state name inclusion and exclusion was added, I had access

to test systems for AIX, Darwin, FreeBSD, Linux, PSTAT-based HP-UX and Solaris.

Therefore, I was unable to add and test the support to any other UNIX dialects.

If a dialect has the support, then the HASTCPUDPSTATE definition in its machine.h header file will be active; if not, it will be absent or commented out.

If your dialect doesn't have the support and you want it added, you will have to provide me Internet access to a test host, where I can compile lsof and have the credentials to test the changes the support requires. If that's possible for you, please contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

15.0 Pyramid Version Problems

15.0.5 Statement of deprecation

As of lsof revision 4.52 support for all Pyramid versions has been dropped. Contact me via e-mail at <abe@purdue.edu> if you are interested in obtaining the last lsof Pyramid distribution. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

16.0 SCO Problems

16.1 SCO OpenServer Problems

16.1.1 How can I avoid segmentation faults when compiling lsof?

If you have an older SCO OpenServer compiler, it may get a segmentation fault when compiling some lsof modules. That appears to happen because of the -Ox optimization action requested in the lsof Makefile.

Try changing -Ox to -O with this make invocation:

```
$ make DEBUG=-O
```

Bela Lubkin supplied this tip and Steve Williams verified it.

16.1.2 Where is libsocket.a?

If you compile lsof and the loader says it can't find the socket library, libsocket.a, called by the -lsocket option in the lsof compile flags, you probably are running an SCO OpenServer release earlier than 5.0 and don't have the TCP/IP Development System package installed.

You may have the necessary header files, because you have the TCP/IP run-time package installed, but if you don't have the TCP/IP Development System package installed, you won't have libsocket.a.

Your choices are to install the TCP/IP Development System package or upgrade to OpenServer Release 5.0. You will find libsocket.a in 5.0 -- you'll find all the libraries and header files there, in fact -- and you can use gcc to compile lsof if you don't want to install the 5.0 Development System package.

16.1.3 Why do I get "warning C4200" messages when I compile lsof?

When you compile lsof under OSR 3.2v4.2 (and perhaps under earlier versions as well), you may get many compiler warning messages of the form:

```
node.c(183) : warning C4200: previous declarator is not
compatible with default argument promotion
```

In my opinion this is a bug in the OSR compiler. Because the compiler cannot handle full ANSI-C prototypes, it assumes default types for function parameters as it encounters untyped in a function prototype -- e.g., in this function declaration from node.c,

```
readrnode(ra, r)
KA_T ra;
struct rnode *r;
{
...

```

the compiler assigns default int types to the ra and r arguments.

Then, when the compiler encounters the fully typed parameters after the function skeleton and sees parameters with types that don't match the assumptions it previously made, it whines about its own assumptions.

You can ignore these messages.

16.2 SCO|Caldera UnixWare Problems

16.2.1 Why doesn't lsof compile on my UnixWare 7.1.1 or above system?

When you Configure lsof with the "uw" abbreviation and try to compile it for UnixWare 7.1.1, you may get compiler error messages like this:

```
UX:acomp: ERROR: "dproc.c", line 98:  
undefined struct/union member: p_pgidp
```

This suggest that you probably have a non-stop cluster UnixWare 7.1.1 system. Its <sys/proc.h> header file differs from the one on the system where I did the lsof port to UnixWare 7.1.1. I currently don't have access to a non-stop cluster system to be able to develop changes to lsof that would make it compile and work there.

If you have a non-stop cluster UnixWare 7.1.1 system, want lsof for it, and can offer me a test account on the system, please contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

If you have a system with nsc_cfs and can offer me a test account on it, please contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

16.2.2 Why does lsof complain about node_self() on my UnixWare 7.1.1 or above system?

If lsof exits immediately after issuing this message:

```
can't identify process NSC node; node_self(): <message>
```

It means that lsof has been built to run on a NonStop Cluster (NSC) UnixWare 7.1.1 or higher system and can't get the number of the node on which it is running. Lsof uses the node number to determine the path to the kernel boot file.

You can tell if lsof has been built for NSC by looking for "-DHAS_UW_NSC" in lsof's "-v" option output.

If the system on which you're trying to run lsof isn't running an NSC kernel, you will need to build a non-NSC lsof.

16.2.3 Why does UnixWare 7.1.1 or above complain about -lcluster, node_self(), or libcluster.so?

When you build, compile, and load lsof for UnixWare 7.1.1 and above, ld may complain that it can't find the -lcluster library or that the node_self symbol is undefined. When you try to run an existing lsof binary it may complain that libcluster.so can't be found.

These messages mean the tests made by Configure on your system led it to believe your system is running a NonStop Cluster (NSC) kernel, or the lsof binary you're trying to use was built on a NonStop Cluster system. If an lsof binary was built for NSC, this shell command produces output:

```
$ strings <lsof_binary> | grep HAS_UW_NSC
```

If that's not the case, and you can rebuild lsof, set the UW_HAS_NSC environment variable to "N" and do this:

```
$ Configure -n clean
$ UW_HAS_NSC=N
$ export UW_HAS_NSC
$ Configure -n uw
$ make
```

You can also edit Makefile and lib/Makefile. Remove -DHAS_UW_NSC from the CFGF strings. Remove -lcluster from the CFGL strings. Then run make again.

If you have an existing NSC lsof binary and you want one for a non-NSC system, you will have to build lsof yourself on the system where you want to use it. (That's always a good idea anyway.)

16.2.4 Why does UnixWare 7.1.1 or above lsof complain it can't read the kernel name list?

If lsof complains:

```
can't read kernel name list from <path>
```

It means that lsof can't find the booted kernel image file at <path>. On NonStop Cluster (NSC) UnixWare 7.1.1 or higher systems lsof determines the booted file path by examining this file:

```
/stand/node_self/boot
```

If examining that file doesn't lead to an NSC path, lsof uses:

```
/stand/1/unix
```

On non-NSC systems lsof expects the booted kernel image to be in /stand/unix.

If your booted kernel image is in a different place, use lsof's "-k <path>" option to specify its path.

16.2.5 Why doesn't lsof report link count, node number, and size for some UnixWare 7.1.1 or above CFS files?

Lsof reports link count, node number, and size for open CFS files as recorded in their kernel node structure's cached attributes. Sometimes not all attributes are cached on the node where lsof runs, so lsof cannot report them.

16.2.6 Why doesn't lsof report open files on all UnixWare 7.1.1 NonStop Cluster (NSC) nodes?

Lsof can only report on files open on the node on which it runs, because the information lsof reports comes from the private kernel memory of the node. This may mean that asking lsof to find a specific open file, or use of a specific Internet address or port, may not report all open instances on nodes other than the one used to run lsof.

You can use the NSC onnode(1) command to run lsof on specific nodes, or the onall(1) command to run lsof on all nodes -- e.g.,

```
$ onall lsof [options] 2>&1 | less
```

or

```
$ onnode node-number lsof [options] 2>&1 | less
```

Note that, when lsof is run all nodes, the path name component assembly results it reports in its NAME column may vary, because the dynamic name cache from which lsof

gets the components is private to the kernel of each node.

Also note the use of shell redirection in the examples to merge the standard error file information from onnode and onall with lsof's standard output file output. That will put the onnode and onall node announcements in proper sequence with lsof's output.

16.2.7 Why doesn't lsof report the UnixWare 7.1.1 NonStop Cluster (NSC) node a process is using?

To induce lsof to report the node on which a process runs would be a significant, non-standard modification to lsof. It has much wider implications than merely the printing of a number in an output column. I'm not currently (April 2001) prepared to undertake such a modification.

If you want node-specific NSC information about open files, run lsof under the control of onall(1) or onnode(1).

```
$ onall lsof [options] 2>&1 | less
```

or

```
$ onnode node-number lsof [options] 2>&1 | less
```

16.2.8 Why does the compiler complain about missing UnixWare 2.1[.x] header files?

SCO|Caldera didn't ship the following header files with UnixWare 2.1 through 2.1.3:

```
<fs/proc/prdata.h>  
<fs/procfs/prdata.h>  
<sys/fs/fifonode.h>  
<sys/fs/namenode.h>
```

Lsof needs those header files for its compilation. Contact SCO|Caldera to get copies of those header files.

If you can't get the header files from SCO|Caldera, please contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

17.0 Sun Problems

17.0.5 Statement of deprecation

Lsof support for SunOS 4.1.x was last tested at revision 4.51.
Contact me via e-mail at <abe@purdue.edu> if you're interested in
obtaining it. Make sure "lsof" appears in the "Subject:" line so
my e-mail filter won't classify your letter as Spam.

17.1 My Sun gcc-compiled lsof doesn't work -- why?

Gcc can be used to build lsof successfully. However, an
improperly installed Sun gcc compiler will usually not
produce a working lsof.

If your Sun gcc-compiled lsof doesn't report anything, or
reports ``can't read proc table," or gcc refuses to compile
lsof without error, check that the gcc step that "fixes"
Sun header files was run on the system where you're using
gcc to compile lsof. As an alternative, if you have the
SunPro C 5.0 compiler or later available, use it to compile
lsof -- e.g., use the solariscc Configure abbreviations.

17.2 How can I make lsof compile with gcc under Solaris 2.[456], 2.5.1, 7, 8 or 9?

Presuming your gcc-specific header files are wrong for
Solaris, edit the lsof Configure-generated Makefile and
lib/Makefile and make this change:

```
CFGF= -Dsolaris=20400 ...  
to  
CFGF= -Dsolaris=20400 -D__STDC__=0 -I/usr/include ...
```

or change:

```
CFGF= -Dsolaris=20500 ...  
to  
CFGF= -Dsolaris=20500 -D__STDC__=0 -I/usr/include ...
```

or change:

```
CFGF= -Dsolaris=20501 ...  
to  
CFGF= -Dsolaris=20501 -D__STDC__=0 -I/usr/include ...
```

This is only a temporary work-around. You really should
instruct gcc to update your gcc-specific header files
or install a recent gcc (e.g., 3.2), which has no need for
private copies of Solaris include files.

17.3 Why does Solaris Sun C complain about system header files?

You're probably trying to use `/usr/ucb/cc` if you get compiler complaints like:

```
cc -O -Dsun -Dsolaris=20300 ...
"/usr/include/sys/machsig.h", line 81: macro BUS_OBJERR
redefines previous macro at "/usr/ucbinclude/sys/signal.h",
line 444
```

Note the reference to `"/usr/ucbinclude/sys/signal.h"`. It reveals that the BSD Compatibility Package C compiler is in use. `lsf` requires the ANSI C version of the Solaris C compiler, usually found in `/usr/opt/bin/cc` or `/opt/SUNWspro/bin/cc`.

Try adding a `CC` string to the `lsf` Makefile that points to the Sun ANSI C version of the Sun C compiler -- e.g.,

```
CC= /usr/opt/bin/cc
or
CC= /opt/SUNWspro/bin/cc.
```

17.4 Why doesn't `lsf` work under my Solaris 2.4 system?

If `lsf` doesn't work under your Solaris 2.4 system -- e.g., it produces no output, little output, or the output is missing command names or file descriptors -- you may have a pair of conflicting Sun patches installed.

Solaris patch 101945-32 installs a kernel that was built with a `<sys/auxv.h>` header file whose `NUM_*_VECTORS` definitions don't match the ones in the `<sys/auxv.h>` updated by Solaris patch 102303-02.

`NUM_*_VECTORS` in the kernel of patch 101945-32 are smaller than the ones in the `<sys/auxv.h>` of patch 102303-02. The consequence is that when `lsf` is compiled with the `<sys/auxv.h>` whose `NUM_*_VECTORS` definitions are larger than the ones used to compile the patched kernel, `lsf`'s user structure does not align with the one that the kernel employs.

If you have these two patches installed, contact Sun and complain about the mis-match.

You may be able to work around the problem by editing `/usr/include/sys/auxv.h` to have the following `NUM_*_VECTORS` definitions:

```
#define NUM_GEN_VECTORS 4
#define NUM_SUN_VECTORS 8
```

The Configure script issues a prominent WARNING that you should try the work-around.

I thank Leif Hedstrom for identifying the offending patches.

17.5 Where are the Solaris header files?

If you try to compile lsof under Solaris and get a compiler complaint that it can't find system header files, perhaps you forgot to add the header file package, SUNWhea.

17.6 Where is the Solaris /usr/src/uts/<architecture>/sys/machparam.h?

When you try to Configure lsof for Solaris 2.[23456], 2.5.1, and 7 -- e.g., on a `uname -m` == sun4m system -- Configure complains:

```
grep: /usr/src/uts/sun4m/sys/machparam.h:
No such file or directory
grep: /usr/src/uts/sun4m/sys/machparam.h:
No such file or directory
```

And when you try to compile the configured lsof, cc or gcc complains:

```
dproc.c:530: `KERNELBASE' undeclared (first use this function)
```

The explanation is that somehow your Solaris system doesn't have the header files in /usr/src/uts it should have. Perhaps someone removed the directory to save space. Perhaps you're using a gcc installation, copied from another system. In any event, you will have to load the header files from the SUNWhea package of your Solaris distribution.

KERNELBASE is an important symbol to lsof -- it keeps lsof from sending an illegal kernel value to kvm_read() where a segmentation violation might result (a bug in the kvm library). Lsof can get illegal kernel values because it reads kernel values slowly with kvm_read() calls that the kernel is changing rapidly.

Lsof doesn't need KERNELBASE at Solaris 2.5 and above, because it has a KERNELBASE value whose address lsof can find with /dev/ksyms and whose value it can read with kvm_read(). Under Solaris 2.5 /usr/src/uts has moved to

/usr/platform.

17.7 Why does Solaris lsof say "can't read proc table"?

When lsof collects data on processes, using the `kvm_*()` functions to scan the kernel's proc structure table, it checks to make sure it has identified a reasonable number of them -- a minimum of three. When lsof can't identify three processes during a scan, it repeats the scan.

When five scans fail to yield three processes, lsof issues the fatal message:

```
lsof: can't read proc table
```

and exits.

Usually lsof fails to identify three processes during a scan because its idea of the form of the proc structure differs from that being used by the kernel. Since the proc structure is defined in `<sys/proc.h>` and other `/usr/include` header files, the root cause of a proc structure discrepancy usually can be found in the composition of `/usr/include`.

One common way that `/usr/include` header files can be incorrect is that gcc was used to compile lsof, gcc used its special (i.e., "fixed") header files instead of the ones in `/usr/include`, and the special gcc header files weren't updated when Solaris was. Answers to these questions:

My Sun gcc-compiled lsof doesn't work -- why?

How can I make lsof compile with gcc under Solaris 2.[456], 2.5.1, 7, 8 or 9?

Why does Solaris Sun C complain about system header files?

discuss the gcc header file problem and offer suggestions on how to fix it or work around it.

It may also be that you are trying to run a version of lsof that was compiled on an older version of Solaris. For example, an lsof executable, compiled for Solaris 2.4, will produce the "can't read proc table" message if you try to run it under Solaris 2.5. If you have compiled lsof under Solaris 2.5 and it still won't work, see if the header files in `/usr/include` have been updated to 2.5, or still represent a previous version of Solaris.

Another source of header file discrepancies to consider is the Solaris patch level and whether a binary kernel patch was not matched with a corresponding header file update. See the "Why doesn't lsof work under my Solaris 2.4 system?" question for an example of one in Solaris 2.4 -- there may be other such patch conflicts I don't know about.

17.8 Why does Solaris lsof complain about a bad cached clone device?

When lsof revisions below 4.04 have been run on a Solaris system and have been allowed to create a device cache file, the running of revisions 4.04 and above on the same systems may produce this complaint:

```
lsof: bad cached clone device: ...  
lsof: WARNING: created device cache file: ...
```

This is the result of a change in the device cache file that took place at lsof revision 4.04. The change introduced a node number into the clone device lines of the device cache file and was done in such a way that lsof could detect device cache files whose clone lines don't have node numbers (lines created by previous lsof revisions) and recognize the need to regenerate the device cache file.

17.9 Why doesn't Solaris make generate .o files?

Solaris /usr/ccs/bin/make won't generate .o files from .c files if /usr/share/lib/make/make.rules is missing. It may be found in and installed from the SUNWsport package.

17.10 Why does lsof report some Solaris 2.3 and 2.4 lock types as `N'?

For Solaris 2.3 with patch P101318 installed at level 45 or above, and for all versions of Solaris 2.4, NFS locks are represented by a NFS-specific kernel lock structure that sometimes lacks a read or write lock type indicator. When lsof encounters such a lock structure, it reports the lock type as `N'.

17.11 Why does lsof Configure say "WARNING: no cc in ..."?

When lsof's Configure script is executed with the solariscc abbreviation it tries to make sure it's using the Sun C compiler and not the UCB substitute from /usr/ucb/cc. Thus, it looks for cc in the "standard" Sun compiler location, /opt/SUNWspro/bin.

If Configure can't find cc there, it issues the warning:

```
lsof: WARNING: no cc in /opt/SUNWspro/bin;  
using cc without path.
```

and uses cc for the compiler name, letting the shell find cc with its PATH environment variable.

You can tell Configure where to find your cc with the SOLARIS_CCDIR cross-configuration environment variable. (See 00XCONFIG for more information on SOLARIS_CCDIR). For example, use this Configure shell command:

```
SOLARIS_CCDIR=/usr/special/bin Configure -n solariscc
```

(SOLARIS_CCDIR should be the full path to the directory containing your cc.)

17.12 Solaris 7, 8 and 9 Problems

17.12.1 Why does lsof say the compiler isn't adequate for Solaris 7, 8 or 9?

Solaris 7, 8 and 9 kernels come in two flavors, 32 and 64 bit. 64 bit kernels run on machines that support the SPARC v9 instruction set architecture. Separate executables for some programs, -- e.g., ones using libkvm like lsof -- must be built for 32 and 64 bit kernels.

Previous Sun (e.g., SC4.0) and earlier gcc compilers will build lsof for 32 bit kernels, but they won't build it for 64 bit kernels. Compilers that will build lsof for 64 bit Solaris 7, 8 and 9 kernels are the Sun WorkShop Compilers C 5.0 and above, and recent gcc versions, e.g., 3.2.

When given the `--xarch=v9` flag, the C 5.0 compiler and above, and associated loader and 64 bit libraries will build a 64 bit lsof executable; when given the `"-m64"` or `"-mcpu=v9"` (deprecated) flags, an appropriate gcc compiler will build a 64 bit lsof executable.

When the lsof Configure script detects a 64 bit kernel is in use (e.g., by executing ``/bin/isainfo -kv``), and when it finds that the specified compiler is inappropriate, it complains with these messages:

For gcc:

```

"!!!WARNING!!!=====!!!WARNING!!!=====!!!WARNING!!!"
"!                               !"
"! LSOF NEEDS TO BE CONFIGURED FOR A 64 BIT KERNEL, BUT !"
"! THIS GCC DOESN'T SUPPORT THE BUILDING OF 64 BIT    !"
"! SOLARIS EXECUTABLES. LSOF WILL BE CONFIGURED FOR A !"
"! 32 BIT echo KERNEL.                               !"
"!                               !"
"!!!WARNING!!!=====!!!WARNING!!!=====!!!WARNING!!!"

```

For Sun C:

```

!!!WARNING!!!=====!!!WARNING!!!=====!!!WARNING!!!
!                               !
! LSOF NEEDS TO BE CONFIGURED FOR A 64 BIT KERNEL, BUT |
! THE VERSION OF SUN C AVAILABLE DOESN'T SUPPORT THE  !
! -xarch=v9 FLAG. LSOF WILL BE CONFIGURED FOR A 32 BIT !
! KERNEL.                                             !
!                               !
!!!WARNING!!!=====!!!WARNING!!!=====!!!WARNING!!!

```

17.12.2 Why does Solaris 7, 8 or 9 lsof say "FATAL: lsof was compiled for..."?

Solaris 7, 8 or 9 lsof may say:

```

lsof: FATAL: lsof was compiled for a xx bit kernel,
but this machine has booted a yy bit kernel.

```

```

Where: xx = 32 or 64
yy = 64 or 32

```

(xx and yy won't match.)

This message indicates that lsof was compiled for one size kernel and is being asked to execute on a different size one. That's not possible for programs like lsof that use libkvm.

Depending on the instruction sets for which you need Solaris 7, 8 or 9 lsof, you may need two or more versions of lsof, compiled for each kernel size, installed for use with /usr/lib/isaexec. See the "How do I install lsof for Solaris 7, 8 or 9?" section of this document for more information on that.

17.12.3 How do I build lsof for a 64 bit Solaris kernel under a 32 bit Solaris kernel?

If your Solaris system has an appropriate compiler (e.g., WorkShop Compilers C 5.0 and above, or a recent gcc like 3.2) and the 64 bit libraries have been installed, you can force lsof's Configure script to build a 64 bit version of lsof with:

```
$ SOLARIS_KERNBITS=64 Configure -n solarisc
```

The SOLARIS_KERNBITS environment variable is part of the lsof cross-configuration support, described in the 00XCONFIG file of the lsof distribution.

17.12.4 How do I install lsof for Solaris 7, 8 or 9?

If you are installing lsof where it will be used only under the bit size kernel for which it was built, no special installation is required.

If, however, you are installing different versions of lsof for different bit sizes -- e.g., for use on a 64 bit NFS server and from its 32 bit clients -- you should read the man page for isaexec(3C) and install lsof according to its instructions.

The executable at the directory where lsof is to be found should be a hard link to /usr/lib/isaexec or a copy of it. In the directory there must be instruction architecture subdirectories -- e.g., ../sparc/ and ../sparcv9/. The lsof for 64 bit size kernels is installed in the ../sparcv9/ subdirectory; the one for 32 bit size kernels, in ../sparc/.

For example, if you're installing 32 and 64 bit lsof executables in /usr/local/etc, you would:

```
# cd /usr/local/etc
# ln /usr/lib/isaexec lsof
# mkdir sparc sparcv9
# install the 32 bit lsof as sparc/lsof
# install the 64 bit lsof as sparcv9/lsof
# chmod, chown, and chgrp sparc/lsof and
  sparcv9/lsof appropriately
```

Lsof permissions and ownerships are the same whether one or more lsof executables are being installed, with or without the /usr/lib/isaexec hard link.

17.12.5 Why does my Solaris 7, 8 or 9 system say it cannot execute

lsf?

When you attempt to execute lsf, your Solaris 7, 8 or 9 shell may complain:

```
ksh: ./lsf: cannot execute
```

If the lsf executable exists and has the proper execution permissions, this error may be the result of trying to execute an lsf, built for a 64 bit kernel, on a 32 bit kernel.

This will tell you about the lsf executable:

```
$ file lsf
lsf: ELF 64-bit MSB executable SPARCV9 Version 1,
dynamically linked, not stripped
```

The "64-bit" notation indicates the binary was built for a 64 bit kernel. To see the running kernel bit size, use this command:

```
$ isainfo -kv
32-bit sparc kernel modules
```

The "32-bit" notation indicates a 32 bit kernel has been booted.

The only work-around is to obtain, or Configure and make, an lsf for the appropriate kernel bit size. If you Configure and make lsf on the kernel where you wish to run it the proper compiler, the lsf Configure step will generate Makefiles that can be used with make to build an appropriate lsf executable.

To compile a 64 bit lsf, you must have an appropriate compiler -- i.e., Sun WorkShop Compilers C 5.0 or higher or a recent gcc like 3.2.

17.12.6 What gcc will produce 64 bit Solaris 7, 8 and 9 executables?
8 and 9 executables?

Properly built and installed recent gcc versions -- e.g., 3.2 -- will build lsf for 64 bit Solaris kernels.

If you update your gcc version to 3.2 or later, make sure the private gcc header files become current -- i.e., clear out any private header files from a previous gcc or Solaris

installation before installing the new ones, or build to a new --prefix root and replace the old root with it after the build and installation are complete.

17.12.7 Why does lsof on my Solaris 7, 8 or 9 system say, "can't read namelist from /dev/ksyms?"

You're probably trying to use an lsof executable built for an earlier Solaris release on a 64 bit Solaris 7, 8 or 9 kernel. The output from `lsof -v` will tell you the build environment of your lsof executable. You should also have gotten a warning message that lsof is compiled for a different Solaris version than the one under which it is running -- something like this:

```
lsof: WARNING: compiled for Solaris release X; this is Y
```

You need to build lsof on the system where you want to use it. For 64 bit Solaris 7, 8 and 9 you need a compiler that can generate 64 bit Solaris executables -- e.g., the Sun Workshop 5 C compiler or later, or a recent gcc version like 3.2. See the "Why does lsof say the compiler isn't adequate for Solaris 7, 8 or 9?" section and the ones following it for a discussion of building lsof for 64 bit Solaris 7, 8 or 9.

17.13 Solaris and COMMON

17.13.1 What does COMMON mean in the NAME column for a Solaris VCHR file?

When lsof puts COMMON or (COMMON) in the NAME column of a Solaris VCHR file, it means that the file is handled by the special file system functions of the kernel through a common vnode.

17.13.2 Why does a COMMON Solaris VCHR file sometimes seem to have an incorrect minor device number?

When lsof reports on an open file in a Solaris special file system that uses a COMMON vnode, and the file is a VCHR file, lsof tries to locate the associated device node by looking for matches on the major and minor device numbers first.

If no major and minor match results, lsof then looks for a match on pseudo and clone device files. (See /devices/pseudo.) Those device nodes are matched specially by either their

major or minor device numbers, but not both. Hence, when lsof finds a match under those special conditions, it may report a value in its output DEVICE column that differs from one of the major and minor numbers of the device node.

Here's an example from a sun4m Solaris 7 system:

```
$ ls -li /devices/pseudo/pm@0:pm
151261 crw-rw-rw- 1 root  sys  117, 0 ...
$ lsof /devices/pseudo/pm@0:pm
COMMAND ... DEVICE ...  NODE NAME
powerd    117,1 ... 151261 /devices/pseudo/pm@0:pm (COMMON)
Xsun     ... 117,0 ... 151261 /devices/pseudo/pm@0:pm
```

Note that the DEVICE value for the file with (COMMON) in its name field has a different minor device number (1) from what ls reports (0), while the DEVICE value for the file without (COMMON) matches the ls output exactly. Both match on the major device number, 117. The minor device number mis-match is a result of the way the Solaris kernel handles special file system common vnodes, and it's the reason lsof puts (COMMON) after the name to signal that a mis-match is possible.

17.14 Why don't lsof and Solaris pfiles reports always match?

/usr/proc/bin/pfiles for Solaris 2.6, 7, 8, and 9 also reports information on open files for processes. Sometimes the information it reports differs from what lsof reports.

There are several reasons why this might be true. First, because pfiles is a Sun product, based on Sun kernel features, its developers have a better chance of knowing exactly how open file information is organized. I sometimes have to guess at how kernel file structure linkages are constructed by gleaning hints from header files.

Second, lsof is aimed at providing information, specifically device and node numbers, that can be used to identify named file system objects -- i.e., path names. Thus, lsof tries to make sure its device and node numbers match those reported by stat(2). Pfiles doesn't always report numbers that match stat(2) -- e.g., for files using clone and pseudo devices via common vnodes like the nlist() /dev/ksyms usage.

Here's the Solaris 7 COMMON VCHR example again with additional pfiles output:

```

$ ls -li /devices/pseudo/pm@0:pm
151261 crw-rw-rw- 1 root  sys  117, 0 ...
$ lsof /devices/pseudo/pm@0:pm
vic1: 10 = lsof /dev/pm
COMMAND ... DEVICE ...  NODE NAME
powerd ... 117,1 ... 151261 /devices/pseudo/pm@0:pm (COMMON)
Xsun ... 117,0 ... 151261 /devices/pseudo/pm@0:pm
$ pfiles ...
0: S_IFCHR ... dev:32,24 ino:61945 ... rdev:117,1
...
14: S_IFCHR ... dev:32,24 ino:151261 ... rdev:117,0

```

Note that the NODE number, reported by lsof, matches what ls(1) and stat(2) report, while the ino value pfiles reports doesn't. Lsof also indicates with the (COMMON) notation that the DEVICE number is a pseudo one, derived from the character device's value. The lsof DEVICE value matches the pfiles rdev value, correct behavior for a character device, but pfiles gives no sign that it's not possible to find that character device number in /devices with ls(1) or stat(2).

17.15 Why does lsof say, "kvm_open(namelist=default, core=default): Permission denied?"

Lsof needs permission to read from the /dev/kmem and /dev/mem memory devices. Access to them is opened via a call to the kvm_open() library function and it reports the indicated message.

You must give lsof permission to read the memory devices. The super user can almost always do that, but other lsof users can do it if some group -- e.g., sys -- has permission to read the memory devices, and the lsof binary is installed with the group's ownership and with the setgid permission bit enabled.

17.16 Why is lsof slow on my busy Solaris UFS file system?

Lsof may be slow on a busy Solaris UFS file system when UFS logging has been enabled with the "logging" mount option. That option can significantly increase disk operations under certain conditions -- e.g., when a lot of files are accessed quickly.

When only the "logging" option is specified to mount, all file accesses (atime updates) are logged to the UFS logging queue. Each atime update requires two writes to the disk

to complete it.

If you want to do UFS logging -- and there are reliability advantages to it -- consider using the "logging,noatime" mount options instead. That will shift atime updates from the logging queue to fewer and independent asynchronous operations, consequently making the UFS logging queue a smaller bottleneck.

Consult mount_ufs(1M) for more information on the logging and noatime options.

(My thanks to Casper Dik for this tip on improving the performance of UFS logging.)

17.17 Why is lsof so slow on my Solaris 8 or 9 system?

Solaris 8 has a post-release feature upgrade modifying kernel name cache (DNLC) handling that can slow lsof throughput dramatically. The feature, sometimes called negative DNLC caching, is standard in Solaris 9.

As best I can tell, when you install the Solaris 8 MU1 package, you get negative DNLC caching. If this pipe produces any output, your system has negative DNLC caching.

```
$ nm /dev/ksyms | grep negative_cache_vnode
```

The reason negative DNLC caching perturbs lsof is that a single vnode address (found in the negative_cache_vnode kernel variable) is used to mark entries in the DNLC that are not (the negative part) found on disk.

Since a single vnode address (the DNLC key lsof uses) can represent many (I've seen upwards of 30,000.) DNLC entries, their presence overloads lsof's internal DNLC hashing function. An overloaded hash function is a slow hash function, and lsof's slows to a crawl when it encounters thousands of keys that produce the same value when the lsof DNLC hash function is applied to them.

The solution is simple -- ignore negative DNLC cache keys. They don't represent path name components lsof can use. Lsof revisions 4.50 and above have an addition that ignores them and the performance of those lsof revisions improves significantly when presented with negative DNLC cache keys.

If you don't have an lsof revision at 4.51 or later, there's

a work-around. Use lsof's ``-C" option. It disables lsof's DNLC caching. Of course, that also inhibits the reporting of any path name components from the kernel DNLC. When ``-c" is used, lsof will continue to report file system and character device paths.

17.18 Solaris and VxFS

17.18.1 Why doesn't lsof support VxFS 3.4 on Solaris 2.6, and above?

Lsof will not support VxFS version 3.4 on Solaris 2.6 and above unless some files from VxFS Update 2 have been installed. VxFS 3.4 FCS and VxFS 3.4 update 1 lack the header files lsof normally uses to obtain information from the VxFS 3.4 kernel node structure, vx_inode. VxFS 3.4 Update 2 provides a method whereby lsof can obtain the necessary vx_inode information from the vxfsu_get_ioffsets() function in Veritas utility libraries.

The utility libraries (32 bit and 64 bit versions) may be found in /opt/VRTSvxfs/lib. An ancillary header file may be found in /opt/VRTSvxfs/include/sys/fs/vx_libutil.h. Documentation of the vxfsu_get_ioffsets(3) function may be found in /opt/VRTS/man/man3/vxfsu_get_ioffsets.3.

Those files of VxFS 3.4 Update 2 may be downloaded from:

```
ftp://ftp.veritas.com/pub/support/vxfs_34.i64243.tar
```

The vxfs_34.i64243.tar archive will unpack into an i64243 directory containing these files:

```
$ ls i64243
README
libvxfsutil.sol26.sums
libvxfsutil.sol26.tar.Z
libvxfsutil.sol27.sums
libvxfsutil.sol27.tar.Z
libvxfsutil.sol28.sums
libvxfsutil.sol28.tar.Z
```

Read README. Select the *.tar.Z file appropriate for your Solaris version. Its contents will unpack into /opt/VRTS and /opt/VRTSvxfs, so you will need sufficient permission -- e.g., do it as root -- to unpack the uncompressed archive. Once you've done that, it's a good idea to compare the checksums of the archive you unpacked with the ones recorded in the appropriate *.sums file. Use `sum -r` to verify

the checksums.

For example, if you want the Solaris 8 version, uncompress and unpack libvxfstutil.sol28.tar.Z -- e.g.,

```
$ su
...
# cd i6423
# zcat libvxfstutil.sol28.tar.Z | tar xf -
```

That should create these new files and subdirectories with the indicated checksums:

```
File or subdirectory  sum -r

/opt/VRTSvxfs/include/vxfstutil.h 03938
/opt/VRTSvxfs/lib/libvxfstutil.a 51794
/opt/VRTSvxfs/lib/sparcv9/
/opt/VRTSvxfs/lib/sparcv9/libvxfstutil.a 07420
/opt/VRTS/man/man3/
/opt/VRTS/man/man3/vxfstu_get_ioffsets.3 62480
```

Once these files are in place, run lsof's Configure script for the solaris or solariscc abbreviation. Configure will locate the appropriate VxFS 3.4 Update 2 files and set up for the making of an lsof that will properly display open VxFS 3.4 file information.

17.18.2 Why does lsof report "vx_inode: vxfstu_get_ioffsets error" for open Solaris 2.6 and above VxFS 3.4 and above files?

Even when lsof supports VxFS 3.4 and above on Solaris 2.6 and above, it may report "vx_inode: vxfstu_get_ioffsets error" in the NAME column for all VxFS files.

The usual cause is that lsof doesn't have permission to read the file at the end of the /dev/vxportal symbolic link. If, for example, lsof has been installed setgid(sys), then the /dev/vxportal symbolic link destination should be owned by the sys group and readable by it.

Update 2 for VxFS 3.4 sets the modes of the /dev/vxportal symbolic link destination to 0640 and the group ownership to sys. But I have had a report that the modes are wrong in a VxFS 4.0 installation.

Another cause may be that the system has more than one version of VxFS installed (Only one can be active.), and lsof's

Configure script did not choose the header files and libraries for the active VxFS version. Configure opts for VxFS 4.0 and above header files and libraries (in /opt/VRTS) in preference to those for VxFS below 4.0 (in /opt/VRTSvxfs).

Look for the directories /opt/VRTS and /opt/VRTSvxfs. If you have /opt/VRTS, make sure its header and library symbolic links point to those of the active VxFS version.

If you have both directories, look at the CFLAGS that Configure constructed for making Isof and see which directory path follows a -I option. If that doesn't match the directory path of the active VxFS version, try pointing Configure at the correct directory with the SOLARIS_VXFSINCL environment variable -- e.g.,

```
$ SOLARIS_VXFSINCL=/opt/.../include ./Configure -n solaris
```

17.18.3 Why does Solaris Configure claim there is no VxFS library?

The Isof Configure script, when configuring for Solaris, may report:

```
FATAL: no VxFS .../libvxfsutil.a
```

That fatal error message indicates Isof has found the VxFS utility library's header files, but can't find the library itself in the expected location adjacent to the header files.

One possible cause is an incorrect symbolic link from /opt/VRTS/lib/sparcv9/libvxfsutil.a to the library's real location. (Some VxFS distributions declared the link incorrectly.) Use `ls -lL` on that path to see if it exists. If it doesn't exist, the link may be missing an additional leading "../" component.

If the problem is a missing "../" from the library's link, you can correct the link or check with Veritas/Symantec for the patch that corrects it.

If the problem is not a missing "../", and you know the libvxfsutil.a location, you can define its path in the SOLARIS_VXFSLIB environment variable before running the Isof Configure script. (See 00XCONFIG for information about using the SOLARIS_VXFSLIB environment variable.)

If you have no libvxfsutil.a, you must obtain it from Veritas/Symantec or find it in your VxFS installation package.

17.18.4 Why doesn't Solaris lsof report VxFS path name components?

Solaris lsof will report path name components for VxFS versions that use the common Solaris Dynamic Name Lookup Cache (DNLC) or on some file systems of VxFS versions that support the VxFS Reverse Name Lookup (RNL) facility.

VxFS versions 3.3 (approximately) and below use the common Solaris DNLC. (I haven't been able to determine exactly when VxFS stopped using the DNLC.) For versions above that boundary, but below 4.0, lsof can't report path name components.

At VxFS 4.0 and above, lsof can be compiled to use the VxFS RNL facility for reporting path names. If "-DHASVXFSRNL" appears in the compiler flags section of lsof "-v" option output, then the lsof Configure script detected the VxFS RNL facility and lsof has been compiled to use it.

Lsof's use of the RNL facility can fail when the VxFS file system disk layout version is below 6. In that case, lsof can report no path name components. For more information, see the vxfs_inotopath(3) manual page. any of the following commands will show the disk layout version for a VxFS file system, when supplied the block device or mount point on which the file system is mounted.

```
fstyp -v <block_device>  
or  
mkfs -m <block_device>  
or  
vxupgrade <mount_point>
```

You must have permission to read the block device -- e.g., be the root user.

You may also be able to upgrade an older disk layout to one that will work with the RNL. See the vxupgrade(1M) man page for more information on that.

When lsof can't report VxFS path name components, it reports the file system mount point and the path name of device on which it is mounted. The device path name is enclosed in parentheses.

17.18.5 Why does Solaris 10 lsof report scrambled VxFS paths?

Solaris 10 lsof may report a bogus, scrambled path for an open

VxFS file, when lsof obtains the path from a vnode's cached path. Veritas/Symantec reports that their Solaris 10 implementation has bugs in the way it handles the Solaris 10 vnode cached path and those bugs will be fixed in an upcoming patch some time after August 15, 2005.

When Solaris 10 lsof reports a path for an open VxFS file obtained via the VxFS Reverse Name Lookup facility, the path will be correct.

Also see the answers to the questions "Why does Solaris 10 lsof sometimes report the wrong path name?" and "Why doesn't Solaris lsof report VxFS path name components?"

17.19 Large file problems

17.19.1 Why does lsof complain it can't stat(2) a Solaris 2.5.1 large file?

When given an argument that is the path to a Solaris 2.5.1 file, enable for large file operations with the `O_LARGEFILE` `open(2)` option, lsof complains that it can't `stat(2)` the file. That's because lsof isn't using a `stat(2)` call and associated structure enabled for large files.

This error has been fixed, starting at lsof revision 4.58 for Solaris 2.6 and above. That fix won't work on Solaris 2.5.1 and I no longer have access to a Solaris 2.5.1 test system to develop a separate fix.

The work-around is to avoid specifying a `O_LARGEFILE` path as an argument to lsof on Solaris 2.5.1. Instead use a combination of lsof and `grep` to achieve the same results, albeit more clumsily.

17.20 Why does lsof get a segmentation fault on 64 bit Solaris 8 using NIS+?

I have received a report from Gary Craig that lsof produces a segmentation fault on his 64 bit Solaris 8 system using NIS+. Via an independent test program we have exonerated lsof and tracked the fault to the NIS+ `__nis_server_name()` function in the C name server library, `-lnsl`.

Lsof causes the `__nis_server_name()` NIS+ function to be called by calling `getservent()` to read entries of the port number to service name map.

The only Sun bug ID that appears to describe the problem is 4304244, although its text is unclear enough to leave room for doubt.

Until Sun eliminates the `__nis_server_name()` segmentation fault cause, a work-around for `lsof` is to use its "-P" option, causing `lsof` to avoid port to service name lookups.

17.21 Will `lsof` crash the Solaris kernel?

I've received and investigated one report that it has when the Sun hardware (a QME interface) was faulty. Today (May 23, 2002) I've learned that Sun has reports of kernel crashes caused by `adb`, `lsof`, and `mdb`.

The Sun investigation pinpointed a problem in the `/dev/kmem` kernel driver and there is a Sun bug report, 4344513, about the problem. There is a fix in Solaris 9, and patches for Solaris 7 and 8 (SPARC and x86).

To see if your Solaris system is fixed, look for a `/devices/pseudo/*allkmem` node.

Extensive address filtering was added to `lsof` revision 4.50 to forestall what I then (July 2001) believed to be only the possibility that `lsof` might crash Solaris. However, the filtering isn't perfect, since a filtered address might become invalid after `lsof` has filtered it but before `lsof` has delivered it to `/dev/kmem`. That filtering work is described in `.../dialects/sun/solaris_kaddr_filters`, also available at:

ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/solaris_kaddr_filters

The best and safest work-around is to upgrade to Solaris 9 or install an appropriate patch or its equivalent from this list:

Solaris	SPARC	x86
Version	Patch	Patch
=====	=====	=====
7	106541-20	106542-20
8	108528-14	108529-14

17.22 Why does `lsof` on Solaris 7, 8, or 9 report a `kvm_open()` failure?

When `lsof` is started on some Solaris 7, 8, and 9 systems

it may report:

```
lsof: kvm_open(namelist=default, corefile=default): \  
No such file or directory
```

Lsof revisions 4.65 and later will first report:

```
lsof: cannot stat /dev/allkmem
```

The second message, not delivered in lsof revisions below 4.65, explains the cause of the `kvm_open()` failure; it can't find `/dev/allkmem`.

`/dev/allkmem` is a device added to Solaris 7 and 8 in patches and in the Solaris 9 FCS. See the preceding "Will lsof crash the Solaris kernel?" section for more information on `/dev/allkmem` and the patches.

The `kvm_open(3KVM)` function in the KVM library of patched Solaris 7 and 8 systems and in Solaris 9 expects to find `/dev/allkmem` and exits on error when it does not.

If you have installed the patch that updated your KVM library to a version that expects `/dev/allkmem` to be present and it is not, you may need to reconfigure your system's devices with `devfsadm(1M)` or enter "boot -r" to the OpenBoot monitor's prompt (usually "ok").

17.23 Solaris and SAM-FS

17.23.1 Why does Solaris lsof report "(limited SAM-FS info)"?

Lsof 4.68 and above report "(limited SAM-FS info)" on Solaris in the NAME column after the path or file system name for all files it finds on SAM-FS file systems.

That's because no more information is known about the composition of the nodes that follow SAM-FS vnodes. If you can provide that information, please contact me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

17.23.2 Why can't lsof locate named SAM-GS files?

Solaris lsof 4.68 and above can't locate files on SAM-FS file systems when the files are named as lsof arguments because lsof doesn't know how to locate open SAM-FS file

device and node number information. (See also 'Why does Solaris lsof report "(limited SAM-FS info)?')

17.24 Lsof and Solaris 10 zones

17.24.1 How can I make lsof list the Solaris zone?

Use the lsof "-z [z]" option.

17.24.2 Why doesn't lsof work in a Solaris 10 zone?

When run from within a Solaris 10 zone, lsof will usually report:

```
lsof: can't stat(/devices): No such file or directory
```

That's because a Solaris zone usually has no /devices subdirectory, a restriction of the zone implementation intended to limit the ability of zone processes to control global system resources, including physical devices.

While a zone may have a /dev subdirectory, that subdirectory usually lacks the /dev/allkmem, /dev/mem and /dev/kmem devices lsof and the KVM library it uses require.

The work-around is to run lsof in the global zone. When it is run in a global zone lsof will be able to report on processes running in any zone, including the global zone.

17.24.3 Why does lsof complain it can't stat() Solaris 10 zone file systems?

When run from the global zone on Solaris 10 lsof may complain:

```
lsof: WARNING: can't stat() 15 zone file systems;  
using dev= options
```

The warning message means lsof found the reported number of file system entries in the mount table for which it didn't have permission to get stat(2) results, but which had "zone=" and "dev=" mount table options.

That is a normal restriction of Solaris 10 zones. Since the lsof warning message indicates it was able to find "dev=" options for the file systems, lsof will probably work correctly.

One work-around is to relax the restrictions on zone mount

points, so that lsof can stat() them. While that may be possible by changing directory modes or group ownerships, it is probably not a good idea, because it weakens the restrictions zones are intended to provide.

Another work-around is to suppress the warning message with lsof's "-w" option. The down side of that is that it causes the suppression of all warning messages, leading to the possibility that some non-stat() warning messages will be suppressed.

17.25 Solaris 10 problems

17.25.1 Why does Solaris 10 lsof sometimes report the wrong path name?

When a path name component is renamed -- e.g., with mv(1) -- Solaris 10 lsof may report the old component for an open file that used the component in its path before the rename. That's because Solaris 10 lsof reports the path name cached in the open file's vnode and the Solaris 10 kernel doesn't update the open vnode's cached path name when a component of it is changed.

When an open file is deleted -- e.g., with rm(1) -- the path name by which it was opened remains cached in the vnode. Lsof can be instructed to display that path name with the -X option. The path name might be incorrect because of the rename problem described above. See the answer to the 'What does "(deleted)" mean in the NAME column of a Solaris 10 open file?' question for more information.

Lsof is sometimes able to detect that cached path name is incorrect. In that case lsof may report only the mounted-on directory and device of the file system or it may report that the path name is of questionable accuracy by appending a trailing "(?)" to it in the NAME column.

See the answer to the "Why does Solaris 10 lsof sometimes report only the mounted-on directory and device?" and 'What does "(?)" mean in the NAME column of a Solaris 10 open file?' questions for more information.

17.25.2 Why does Solaris 10 lsof sometimes report only the mounted-on directory and device?

For some regular open files lsof may report only the mounted-on directory and device of the file system on which the file resides. That's because lsof was able to determine that the path name cached in the open file's vnode is incorrect.

Lsof detects the cached path name is incorrect by applying stat(2) to it, provided that no error was detected when stat(2) was applied to the file system mounted-on directory during lsof setup. If a mounted-on directory stat(2) error was detected during setup, lsof does no cached path name analysis and simply reports it.

When the application of stat(2) to the cached path name returns a no-entry reply (the ENOENT error number), lsof concludes the path no longer exists (i.e., has been unlinked) and reports the mounted-on directory and device of the file system. That behavior can be modified with the -X option in lsof revisions 4.77 and above. See the answer to the 'What does "(deleted)" mean in the NAME column of a Solaris 10 open file?' for more information.

When the application of stat(2) to the cached path name returns a permission error reply (the EACCES or EPERM error numbers), lsof reports the cached path name and adds a trailing "?" to indicate the reported path name is of questionable accuracy. See the answer to the question 'What does "?" mean in the NAME column of a Solaris 10 open file?' for more information.

If the application of stat(2) to the cached path name yields any other error reply, lsof reports the mounted-on directory and device of the file system.

When the application of stat(2) to the cached path name succeeds, lsof compares the reported device and node numbers to what it has obtained for the open file from kernel structures. If they match, lsof reports the cached path name. If they don't match, lsof instead reports the mounted-on directory and device of the file system.

A work-around that allows lsof to apply stat(2) successfully to cached path names is to give lsof sufficient permission to do it -- i.e., run lsof as the root user.

17.25.3 What does "(deleted)" mean in the NAME column of a Solaris 10 open file?

When the -X option is specified to Solaris 10 lsof, it will report in its NAME column the path name cached for a deleted file in its vnode. The path name will be followed by "(deleted)".

Note that the path name cached in a file's vnode is the path

name by which the file was opened. It is not updated by the Solaris kernel when any path name component is changed. Hence, it may not represent the final path name the open file had.

See the answer to the "Why does Solaris 10 lsof sometimes report the wrong path name?" question for more information on how changing a path name component affects the correctness of a what lsof reports.

17.25.4 What does "(?)" mean in the NAME column of a Solaris 10 open file?

When lsof encounters a path name cached in the open file's vnode that stat(2) reports lsof lacks permission to access, lsof adds "(?)" to the path name reported in the NAME column to indicate the path name is of questionable accuracy.

See the answers to the "Why does Solaris 10 lsof sometimes report the wrong path name?" and "Why does Solaris 10 lsof sometimes report only the mounted-on directory and device?" questions for more information on why lsof may report a path name of questionable accuracy.

A work-around that allows lsof to apply stat(2) successfully to cached path names is to give lsof sufficient permission to do it -- i.e., run lsof as the root user.

17.26 Solaris contract file problems

17.26.1 Why doesn't lsof report size, link count and node number for Solaris 10 contract files?

Lsof doesn't report size, link count or node number for Solaris 10 contract files because I don't know how to obtain them from contract file kernel structures.

17.26.2 Why can't lsof locate a Solaris 10 contract file by path name?

Because lsof can't find the node number of Solaris contract files, it can't match the device and node numbers it gets from applying stat(2) to the contract file path name with what it finds in kernel data.

17.27 Solaris 10 ZFS problems

17.27.1 Why does Configure ask for the location of ZFS header files?

To provide ZFS support when lsof is compiled it needs to have

access to the definitions of ZFS structures used by the kernel. Those definitions are contained in header files that Sun does not distribute with Solaris 10.

When the Configure script detects the system might support ZFS by finding the <sys/fs/zfs.h> header file, it checks for the required ZFS kernel structure definition header files. When they are not found, it asks if ZFS support should be included and if so, with what definitions.

Two sources can be declared for definitions: 1) lsof's internal ones; or 2) the necessary header files at some location other than /usr/include/sys.

The necessary header files are:

```
dmu.h zfs_acl.h zfs_debug.h zfs_rlock.h zil.h  
spa.h zfs_context.h zfs_dir.h zfs_vfsops.h zio.h  
txg.h zfs_ctldir.h zfs_ioctl.h zfs_znode.h zio_impl.h
```

The necessary header files might have been obtained, for example, from the <http://src.opensolaris.org> Open Solaris source site. However, the Open Solaris header files might not be adequate -- see the answer to the "Why don't the Open Solaris ZFS header files provide correct ZFS kernel structure definitions?" question for information on why the Open Solaris ZFS header files might not provide correct ZFS kernel structure definitions.

The supplied header file path must point to a directory that contains a sys/ subdirectory where the matching header files are located -- e.g., if the supplied path is /tmp/zfs, then /tmp/zfs/sys must contain the necessary header files.

See the answer to the "Why do -h and -v output warn about possibly inaccurate ZFS kernel structure definitions?" question for information on the risks associated with using lsof's internal definitions.

17.27.2 Why do -h and -v output warn about possibly inaccurate ZFS kernel structure definitions?

When lsof is configured to use its internal ZFS kernel structure definitions, there is the chance that the definitions may be out of date. Hence, an lsof built with them may report incorrect device numbers, file sizes, node numbers and link counts.

Please contact me via e-mail at <abe@purdue.edu> for work-around suggestions. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

17.27.3 Why don't the Open Solaris ZFS header files provide correct ZFS kernel structure definitions?

The Open Solaris ZFS header files may not provide correct ZFS kernel definitions. An lsof built with them may report incorrect device numbers, file sizes, node numbers and link counts.

The definitions may be incorrect because the Open Solaris header files are not synchronized with any particular Solaris 10 release. Consequently they might contain modifications to the structures not in the structure definitions used to build the running kernel. It may be that only Sun has header files that match the kernel structures of the running Solaris 10 kernel.

Please contact me via e-mail at <abe@purdue.edu> for work-around suggestions. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

17.28 Problems with Solaris 9 and above

17.28.1 Why does the compiler complain about lgrp_root on Solaris 9 and above?

When compiling lsof 4.84 on later Solaris 9 and 10 systems, the compiler may report the following error:

```
/usr/include/sys/lgrp.h", line ...: identifier redeclared: lgrp_root
```

This error results from a conflict between usage of lgrp_root in both <sys/lgrp.h> and <sys/lgrp_user.h> when _KMEMUSER or _KERNEL is #define'd before <sys/lgrp.h> is #include'd. This problem is noted in Sunsolve bug ID 5064229.

The work-around is to use lsof revision 4.85 sources.

18.0 Lsof Features

18.1 Why doesn't lsof report on /proc entries on my system?

/proc file system support is generally available only for BSD, SYSV R4 dialects, and Tru64 UNIX (Digital UNIX, DEC OSF/1). It's also available for Linux, and Pyramid DC/OSx and Reliant UNIX.

Even on some SYSV R4 dialects I encountered many problems while trying to incorporate /proc file system support.

The chief problem is that some vendors don't distribute the header file that describes the /proc file system node -- usually called prdata.h.

18.2 How do I disable the device cache file feature or alter it's behavior?

To disable the device cache file feature for a dialect, remove the HASDCACHE definition from the machine.h file of the dialect's machine.h header file. You can also use HASDCACHE to change the default prefix (`.lsof`) of the device cache file.

Be sure you consider disabling the device cache file feature carefully. Having a device cache file significantly reduces lsof startup overhead by eliminating a full scan of /dev (or /devices) once the device cache file has been created. That full scan also overloads the kernel's name cache with the names of the /dev (or /devices) nodes, reducing the opportunity for lsof to find path name components of open files.

If you're worried about the presence of mode 0600 device cache files in the home directories of the real user IDs that execute lsof, consider these checks that lsof makes on the file before using it:

1. To read the device cache file, lsof must gain permission from access(2).
2. The device cache file's modes must be 0600 (0644 if lsof is reading a system-wide device cache file) and its size non-zero.
3. There must be a correctly formatted section count line at the beginning of the file.
4. Each section must have a header line with a count that properly numbers the lines in the section. Legal sections are device, clone, pseudo-device, and CRC.

5. The lines of a section must have the proper format.
6. All lines are included in a 16 bit CRC, and it is recorded in a non-checksummed section line at the end of the file.
7. The checksum computed when the file is read must match the checksum recorded when the file was written.
8. The checksum section line must be followed by end-of-information.
9. Lsof must be able to get matching results from stat(2) on a randomly chosen entry of the device section.

For more information on the device cache file, read the 00DCACHE file of the lsof distribution.

18.2.1 What's the risk with a perverted device cache file?

Even with the checks that lsof makes on the device cache file, it's conceivable that an intruder could modify it so it would pass lsof's tests.

The only serious consequence I know of this change is the removal of a file whose major device number identifies a socket from some user ID's device cache file. When such a device has been removed from the device cache file, and when lsof doesn't detect the removal, lsof may not be able to identify socket files when executed by the affected user ID. Only certain dialects are at risk to this attack -- e.g., SCO OpenServer and Solaris 2.x, 7, 8, and 9.

If you're tracking a network intruder with lsof, that could be important to you. If you suspect that someone has corrupted the device cache file you're using, I recommend you use lsof's -Di option to tell it to ignore it and use the contents of /dev (or /devices) instead; or remove the device cache file (usually .lsof_hostname, where hostname is the first component of the host's name returned by gethostname(2)) from the user ID's home directory and let lsof create a new one for you.

18.2.2 How do I put the full host name in a personal device cache file path?

Lsof constructs the personal device cache file path name from a format specified in the HASPERSDC #define in the dialect's machine.h header file. As distributed HASPERSDC declares the path to be ``.lsof_ " plus the first component of the host name with the format ``.lsof_%L".

If you want to change the way lsof constructs the personal device cache file path name, you can change the HASPERSDC #define and recompile lsof. If, for example, you #define HASPERSDC to be ``.lsof_%l" (note the lower case `l'), Configure and remake lsof, then the personal device cache file path will be ``.lsof_ " plus the host name returned by gethostname(2).

See the 00DCACHE file of the lsof distribution for more information on the formation of the personal device cache file path and the use of the HASPERSDC #define.

18.2.3 How do I put the personal device cache file in /tmp?

Change the HASPERSDC definition in your dialect's machine.h header file.

When you redefine HASPERSDC, make sure you put at least one user identification conversion in it to keep separate the device cache files for each user of lsof. Also give some thought to including the ``%0" conversion to define an alternate path for setuid-root and root processes.

Here's a definition that puts a personal device cache file in /tmp with the name ``.lsof_login_hostname_pers".

```
#define HASPERSDC "/tmp/.lsof_%u_%l_pers"
```

Thus the /tmp personal device cache file path for login "abe" on host "lsof.itap.purdue.edu" would be:

```
/tmp/.lsof_abe_lsof.itap.purdue.edu_pers
```

You can add the User ID (UID) with the "%U" conversion and the first host name component with the ``%L" conversion.

CAUTION: be careful using absolute paths like /tmp lest lsof processes that are setuid-root or whose real UID is root be used to exploit some security weakness via /tmp. Elect instead to add an alternate path for those processes with the ``%0" conversion. Here's an extension of the

previous HASPERSDC format for /tmp that declares an alternate path:

```
#define HASPERSDC "/tmp/.lsof_%u_%l_pers%0%h/.lsof_%L"
```

When the lsof process is setuid-root or its real UID is root, presuming root's home directory is '/' and the host's name is ``lsof.itap.purdue.edu'', the extended format yields:

```
/.lsof_vic
```

18.3 Why doesn't lsof know about AFS files on my favorite dialect?

Lsof currently supports AFS for these dialects:

```
AIX 4.1.4 (AFS 3.4a)
Linux 1.2.13 (AFS 3.3)
NEXTSTEP 3.2 (AFS 3.3)
Solaris 2.[56] (AFS 3.4a)
```

It may recognize AFS files on other versions of these dialects, but I have no way to test that. Lsof may report correct information for AFS files on other dialects, but I can't test that either.

AFS support must be custom crafted for each UNIX dialect and then tested. If lsof supports your favorite dialect, but doesn't recognize its AFS files, probably I don't have access to a test system. If you want AFS support badly for your dialect, consider helping me do the development and testing.

18.3.1 Why doesn't lsof report node numbers for all AFS volume files, or how do I reveal dynamic module addresses to lsof?

When AFS is implemented via dynamic kernel modules -- e.g., in NEXTSTEP -- lsof can't obtain the addresses of AFS variables in the kernel that it uses to identify AFS vnodes. It can guess that a vnode is assigned to an AFS file and it can obtain other information about AFS files, but it has trouble computing AFS volume node numbers.

To determine node numbers for AFS volumes other than the root volume, /afs, lsof needs access to a hashed volume structure pointer table. When it can't find the address of that table, because AFS support is implemented via dynamic kernel modules, lsof will return blanks in the INODE column for AFS volume files. Lsof can identify the

root volume's node number (0), and can compute the node numbers for all other AFS files.

If you have a name list file that contains the addresses of the AFS dynamic modules -- e.g., you saved module symbols when you created a loadable module kernel with `modload(8)` by specifying `-sym` -- `lsof` may be able to find the kernel addresses it needs in that file.

`lsof` looks up AFS dynamic kernel addresses for these dialects at these default paths:

```
NEXTSTEP 3.2 /usr/vice/etc/afs_loadable
```

A different path to a name list file with AFS dynamic kernel addresses may be specified with the `-A` option, when the `-A` option description appears in `lsof's -h` or `-? (help)` output.

If any addresses appear in the `-A` name list file that also appear in the regular kernel name list file -- e.g., `/vmunix` -- they must match, or `lsof` will silently ignore the `-A` addresses on the presumption that they are out of date.

Found in path(s):

```
* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/00FAQ
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 1995 Purdue Research Foundation, West Lafayette, Indiana  
* 47907. All rights reserved.
```

```
*
```

```
* Written by Victor A. Abell
```

```
*
```

```
* This software is not subject to any license of the American Telephone  
* and Telegraph Company or the Regents of the University of California.
```

```
*
```

```
* Permission is granted to anyone to use this software for any purpose on  
* any computer system, and to alter it and redistribute it freely, subject  
* to the following restrictions:
```

```
*
```

```
* 1. Neither the authors nor Purdue University are responsible for any  
* consequences of the use of this software.
```

```
*
```

```
* 2. The origin of this software must not be misrepresented, either by  
* explicit claim or by omission. Credit to the authors and Purdue  
* University must appear in documentation and sources.
```

```
*
```

```
* 3. Altered versions must be plainly marked as such, and must not be
```

* misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/freebsd/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dproc.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/n+obsd/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dsock.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/darwin/kmem/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/machine.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dlsof.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dproto.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dstore.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dnode.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/hpux/kmem/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dmnt.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isof-4-85-zip/dialects/osr/dfile.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2000 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone

* and Telegraph Company or the Regents of the University of California.

*

* This software has been adapted from sprintf.c in sendmail 8.9.3. It

* is subject to the sendmail copyright statements listed below, and the

* sendmail licensing terms stated in the sendmail LICENSE file comment

* section of this file.

*

* Permission is granted to anyone to use this software for any purpose on

* any computer system, and to alter it and redistribute it freely, subject

* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any

* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by

* explicit claim or by omission. Credit to the authors and Purdue

* University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be

* misrepresented as being the original software.

*
* 4. This notice may not be removed or altered.
*/
/*
* Sendmail copyright statements:
*
* Copyright (c) 1998 Sendmail, Inc. All rights reserved.
* Copyright (c) 1997 Eric P. Allman. All rights reserved.
* Copyright (c) 1988, 1993
* The Regents of the University of California. All rights reserved.
*
* By using this file, you agree to the terms and conditions set
* forth in the LICENSE file which can be found at the top level of
* the sendmail distribution.
*
* The LICENSE file may be found in the following comment section.
*/
/*
* Begin endmail LICENSE file.

SENDMAIL LICENSE

The following license terms and conditions apply, unless a different license is obtained from Sendmail, Inc., 1401 Park Avenue, Emeryville, CA 94608, or by electronic mail at license@sendmail.com.

License Terms:

Use, Modification and Redistribution (including distribution of any modified or derived work) in source and binary forms is permitted only if each of the following conditions is met:

1. Redistributions qualify as "freeware" or "Open Source Software" under one of the following terms:

- (a) Redistributions are made at no charge beyond the reasonable cost of materials and delivery.
- (b) Redistributions are accompanied by a copy of the Source Code or by an irrevocable offer to provide a copy of the Source Code for up to three years at the cost of materials and delivery. Such redistributions must allow further use, modification, and redistribution of the Source Code under substantially the same terms as this license. For the purposes of redistribution "Source Code" means the complete source code of sendmail including all modifications.

Other forms of redistribution are allowed only under a separate royalty-free agreement permitting such redistribution subject to standard

commercial terms and conditions. A copy of such agreement may be obtained from Sendmail, Inc. at the above address.

2. Redistributions of source code must retain the copyright notices as they appear in each source code file, these license terms, and the disclaimer/limitation of liability set forth as paragraph 6 below.
3. Redistributions in binary form must reproduce the Copyright Notice, these license terms, and the disclaimer/limitation of liability set forth as paragraph 6 below, in the documentation and/or other materials provided with the distribution. For the purposes of binary distribution the "Copyright Notice" refers to the following language:
"Copyright (c) 1998 Sendmail, Inc. All rights reserved."
4. Neither the name of Sendmail, Inc. nor the University of California nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission. The name "sendmail" is a trademark of Sendmail, Inc.
5. All redistributions must comply with the conditions imposed by the University of California on certain embedded code, whose copyright notice and conditions for redistribution are as follows:
 - (a) Copyright (c) 1988, 1993 The Regents of the University of California. All rights reserved.
 - (b) Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
 - (i) Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
 - (ii) Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
 - (iii) All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes software developed by the University of California, Berkeley and its contributors."
 - (iv) Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.
6. Disclaimer/Limitation of Liability: THIS SOFTWARE IS PROVIDED BY

SENDMAIL, INC. AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL SENDMAIL, INC., THE REGENTS OF THE UNIVERSITY OF CALIFORNIA OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

(Version 8.6, last updated 6/24/1998)

* End endmail LICENSE file.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/snpf.c

No license file was found, but licenses were detected in source scan.

This program/include file is free software; you can redistribute it and/or
modify it under the terms of the GNU General Public License as published
by the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
useful, but WITHOUT ANY WARRANTY; without even the implied warranty
of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
You should have received a copy of the GNU General Public License
along with this program (in the main directory of the Linux-NTFS

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/sort_res.perl5

No license file was found, but licenses were detected in source scan.

/*

* Copyright 1997 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

- * 1. Neither the authors nor Purdue University are responsible for any
- * consequences of the use of this software.
- *
- * 2. The origin of this software must not be misrepresented, either by
- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dproto.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/ptti.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/dvch.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dnode.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/rnch.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dfile.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dsock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/rmnt.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/pdvn.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/machine.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/rdev.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/isfn.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/prfp.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/finoc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/cvfc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/rnmh.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dnode2.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/rnam.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/lkud.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/linux/dmnt.c

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2000 Purdue Research Foundation, West Lafayette, Indiana
- * 47907. All rights reserved.
- *
- * Written by Victor A. Abell
- *
- * This software is not subject to any license of the American Telephone
- * and Telegraph Company or the Regents of the University of California.
- *

* This software has been adapted from `sprintf.c` in `sendmail 8.9.3`. It
* is subject to the `sendmail` copyright statements listed below, and the
* `sendmail` licensing terms stated in the `sendmail LICENSE` file comment
* section of this file.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

/* Extended regular expression matching and search library,
version 0.12.

(Implements POSIX draft P1003.2/D11.2, except for some of the
internationalization features.)

Copyright (C) 1993-1999, 2000 Free Software Foundation, Inc.

The GNU C Library is free software; you can redistribute it and/or
modify it under the terms of the GNU Library General Public License as
published by the Free Software Foundation; either version 2 of the
License, or (at your option) any later version.

The GNU C Library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Library General Public License for more details.

You should have received a copy of the GNU Library General Public
License along with the GNU C Library; see the file `COPYING.LIB`. If not,
write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330,
Boston, MA 02111-1307, USA. */

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/lib/regex.c

No license file was found, but licenses were detected in source scan.

47907. All rights reserved.

Permission is granted to anyone to use this software for any purpose on

- # 1. Neither the authors nor Purdue University are responsible for any
- # 2. The origin of this software must not be misrepresented, either by
- # 3. Altered versions must be plainly marked as such, and must not be
- # 4. This notice may not be removed or altered.

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/list_NULf.perl5
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/shared.perl5
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/list_fields.perl
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/idrlogin.perl
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/list_fields.awk
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/scripts/idrlogin.perl5

No license file was found, but licenses were detected in source scan.

/*

- * Portions Copyright 2005 Apple Computer, Inc. All rights reserved.
- *
- * Copyright 2005 Purdue Research Foundation, West Lafayette, Indiana
- * 47907. All rights reserved.
- *
- * Written by Allan Nathanson, Apple Computer, Inc., and Victor A.
- * Abell, Purdue University.
- *
- * This software is not subject to any license of the American Telephone
- * and Telegraph Company or the Regents of the University of California.
- *
- * Permission is granted to anyone to use this software for any purpose on
- * any computer system, and to alter it and redistribute it freely, subject
- * to the following restrictions:
- *
- * 1. Neither the authors, nor Apple Computer, Inc. nor Purdue University
- * are responsible for any consequences of the use of this software.
- *
- * 2. The origin of this software must not be misrepresented, either
- * by explicit claim or by omission. Credit to the authors, Apple
- * Computer, Inc. and Purdue University must appear in documentation
- * and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.

*/

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/dproto.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/machine.h

```
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/dsock.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/dmnt.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/ddev.c
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.
*
* Written by V. Abell.
*
* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.
*
* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:
*
* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.
*
* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.
*
* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.
*
* 4. This notice may not be removed or altered.
*/
/*
* If this is a regular file with a non-numeric FD, it may be the
* executable.
*/
```

Found in path(s):

```
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/tests/LTbasic.c
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.
*
* Written by V. Abell.
*
* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.
*

```

- * Permission is granted to anyone to use this software for any purpose on
- * any computer system, and to alter it and redistribute it freely, subject
- * to the following restrictions:
- *
- * 1. Neither the authors nor Purdue University are responsible for any
- * consequences of the use of this software.
- *
- * 2. The origin of this software must not be misrepresented, either by
- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTdnlc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTlock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTnlink.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTbigf.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTsoff.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTsock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTunix.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LTnfs.c

No license file was found, but licenses were detected in source scan.

/*

- * Copyright (c) 1993 Paul Kranenburg
- * All rights reserved.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software
- * must display the following acknowledgement:
- * This product includes software developed by Paul Kranenburg.
- * 4. The name of the author may not be used to endorse or promote products
- * derived from this software without specific prior written permission
- *
- * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR
- * IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES

* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

*

* \$Id: pfsnode.h,v 1.1 1993/12/12 12:26:39 davidg Exp \$

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lof-4-85-zip/dialects/freebsd/include/procfs/pfsnode.h

No license file was found, but licenses were detected in source scan.

/*

* Copyright (c) 1998 The Santa Cruz Operation, Inc.. All Rights Reserved.

*

* THIS IS UNPUBLISHED PROPRIETARY SOURCE CODE OF THE
* SANTA CRUZ OPERATION INC.

*

* The copyright notice above does not evidence any actual or intended
* publication of such source code.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lof-4-85-zip/dialects/uw/uw7/sys/fs/namenode.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/lof-4-85-zip/dialects/uw/uw7/sys/fs/fifonode.h

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by

- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/tests/LsofTest.h

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 1999 Purdue Research Foundation, West Lafayette, Indiana
- * 47907. All rights reserved.
- *
- * Written by Victor A. Abell
- *
- * This software is not subject to any license of the American Telephone
- * and Telegraph Company or the Regents of the University of California.
- *
- * Permission is granted to anyone to use this software for any purpose on
- * any computer system, and to alter it and redistribute it freely, subject
- * to the following restrictions:
- *
- * 1. Neither the authors nor Purdue University are responsible for any
- * consequences of the use of this software.
- *
- * 2. The origin of this software must not be misrepresented, either by
- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/dsock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/dfile.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/dproto.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/machine.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/pstat/dlsof.h

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2000 Purdue Research Foundation, West Lafayette, Indiana
 * 47907. All rights reserved.
 *
 * Written by Victor A. Abell
 *
 * This software is not subject to any license of the American Telephone
 * and Telegraph Company or the Regents of the University of California.
 *
 * This software has been adapted from sncprintf.c in sendmail 8.9.3. It
 * is subject to the sendmail copyright statements listed below, and the
 * sendmail licensing terms stated in the sendmail LICENSE file comment
 * section of this file.
 *
 * Permission is granted to anyone to use this software for any purpose on
 * any computer system, and to alter it and redistribute it freely, subject
 * to the following restrictions:
 *
 * 1. Neither the authors nor Purdue University are responsible for any
 * consequences of the use of this software.
 *
 * 2. The origin of this software must not be misrepresented, either by
 * explicit claim or by omission. Credit to the authors and Purdue
 * University must appear in documentation and sources.
 *
 * 3. Altered versions must be plainly marked as such, and must not be
 * misrepresented as being the original software.
 *
 * 4. This notice may not be removed or altered.
 */
/* Definitions for data structures and routines for the regular
expression library, version 0.12.
Copyright (C) 1985,1989-1993,1995-1998, 2000 Free Software Foundation, Inc.
```

This file is part of the GNU C Library. Its master source is NOT part of the C library, however. The master source lives in `/gd/gnu/lib`.

The GNU C Library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

The GNU C Library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with the GNU C Library; see the file COPYING.LIB. If not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA. */

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/regex.h

No license file was found, but licenses were detected in source scan.

/*

* Copyright 1996 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it freely, subject to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Credit to the authors and Purdue University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/hpux/kmem/dnode2.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/aix/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dlsof.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dnode2.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dproc.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dstore.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dfile.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dproto.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/machine.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/n+os/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dnode1.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/sun/dnode1.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dmmt.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dnode.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/uw/dsock.c
No license file was found, but licenses were detected in source scan.

/*

* Copyright 1994 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

/*

* Copyright (c) 1983, 1988, 1993

* The Regents of the University of California. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.

* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:

* This product includes software developed by the University of
* California, Berkeley and its contributors.

* 4. Neither the name of the University nor the names of its contributors

* may be used to endorse or promote products derived from this software
* without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/print.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2003 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.

/*

* Written by Victor A. Abell

/*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

/*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

/*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

/*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.

/*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.

/*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/aix/dnode2.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright (c) 1991, 1993

* The Regents of the University of California. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. All advertising materials mentioning features or use of this software

* must display the following acknowledgement:

* This product includes software developed by the University of

* California, Berkeley and its contributors.

* 4. Neither the name of the University nor the names of its contributors

* may be used to endorse or promote products derived from this software

* without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE

* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

* SUCH DAMAGE.

*

* @(#)cdefs.h 8.2 (Berkeley) 10/4/93

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lof-4-85-zip/dialects/osr/include/sys/cdefs.h

No license file was found, but licenses were detected in source scan.

/*

* Copyright 1998 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone

* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/uw/dnode3.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/usage.c

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/lib/ckkv.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 1994 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dproto.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dmnt.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dfile.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dmnt.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/store.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dproto.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/ddev.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/dnode.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dfile.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dnode.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dsock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/misc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/proc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/machine.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dsock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/machine.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dmnt.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dfile.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dnode.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/machine.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dmnt.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dsock.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/Isf_fields.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/ddev.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/arg.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dproc.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/dstore.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dlsof.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dproto.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dmnt.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/machine.h

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dproc.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/dsock.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dnode.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/machine.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/dproto.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/machine.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/machine.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dstore.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dmnt.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/node.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dlsof.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dlsof.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/ddev.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dnode.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dmnt.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dstore.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/aix/dproto.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dnode.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dsock.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dsock.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dstore.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/machine.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+os/dproc.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dnode.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dproc.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/du/dfile.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/proto.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/kmem/dproto.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/freebsd/dproto.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dsock.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/sun/dnode.c
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/Isf.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/hpux/kmem/dproto.h
* /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/n+obsd/dsock.c
No license file was found, but licenses were detected in source scan.

/*

* Copyright 1994 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.
*
* Written by Victor A. Abell
*
* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.
*
* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

- *
* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.
*
- * 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.
*
- * 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.
*
- * 4. This notice may not be removed or altered.

*/
/*

* GetOpt() -- Local get option

- *
* Liberally adapted from the public domain AT&T getopt() source,
* distributed at the 1985 UNIFORM conference in Dallas
*
- * The modifications allow '?' to be an option character and allow
* the caller to decide that an option that may be followed by a
* value doesn't have one -- e.g., has a default instead.
*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/main.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2008 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
* consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Credit to the authors and Purdue
* University must appear in documentation and sources.

*

- * 3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/freebsd/dzfs.h
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/util.c
- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/freebsd/dnode2.c

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2005 Purdue Research Foundation, West Lafayette, Indiana
 * 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American Telephone
 * and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
 * any computer system, and to alter it and redistribute it freely, subject
 * to the following restrictions:

*

* 1. Neither the authors nor Purdue University are responsible for any
 * consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either by
 * explicit claim or by omission. Credit to the authors and Purdue
 * University must appear in documentation and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be
 * misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/dialects/darwin/kmem/dfile.c

No license file was found, but licenses were detected in source scan.

Notes for the distribution of lsof version 4

| The latest release of lsof is always available via anonymous ftp |
 | from lsof.itap.purdue.edu. Look in pub/tools/unix/lsof. |

Contents

- Dialects Supported
- How Lsof Works
- Lsof Output
- Getting Started Quickly
- Limiting, Filtering, and Selecting Lsof Output
- Parsing Lsof Output with Another Program
- Repeat Mode
- Distribution Restrictions
- Cautions
- Distribution Contents
- Warranty
- Bug Reports
- The lsof-l Mailing List
- Version 3 Release Notes
- 3.0, May 24, 1994
- ...
- 3.88, February 17, 1997
 - What's New in Version 4
 - Version 4 Release Notes
- 4.0, February 24, 1997
- 4.01, March 3, 1997
- 4.02, March 21, 1997
- 4.03, April 7, 1997
- 4.04, April 17, 1997
- 4.04 supplement, April 18, 1997
- 4.05, April 24, 1997
- 4.06, April 30, 1997
- 4.07, May 12, 1997
- 4.08, May 23, 1997
- 4.09, June 1, 1997
- 4.10, June 8, 1997
- 4.11, June 12, 1997
- 4.12, June 24, 1997
- 4.13, July 9, 1997
- 4.14, July 22, 1997
- 4.15, August 15, 1997
- 4.16, September 25, 1997
- 4.17, October 14, 1997
- 4.18, October 25, 1997
- 4.19, October 30, 1997
- 4.20, November 11, 1997
- 4.21, December 1, 1997
- 4.22, December 15, 1997
- 4.23, January 16, 1998
- 4.24, January 28, 1998

4.25, February 7, 1998
4.26, February 17, 1998
4.27, March 6, 1998
4.28, March 10, 1998
4.29, March 26, 1998
4.30, April 9, 1998
4.31, April 21, 1998
4.32, May 13, 1998
4.33, May 22, 1998
4.34, June 26, 1998
4.35, July 17, 1998
4.36, August 4, 1998
4.37, September 15, 1998
4.38, November 25, 1998
4.39, December 29, 1998
4.40, January 25, 1999
4.41, February 27, 1999
4.42, March 30, 1999
4.43, May 11, 1999
4.44, June 24, 1999
4.45, July 30, 1999
4.46, October 23, 1999
4.47, November 29, 1999
4.48, January 14, 2000
4.49, April 3, 2000
4.50, June 29, 2000
4.51, August 21, 2000
4.52, November 8, 2000
4.53, December 6, 2000
4.54, January 19, 2001
4.55, February 15, 2001
4.56, May 3, 2001
4.57, July 19, 2001
4.58, September 13, 2001
4.59, October 20, 2001
4.60, November 9, 2001
4.61, January 22, 2002
4.62, March 7, 2002
4.63, April 23, 2002
4.64, June 26, 2002
4.65, October 10, 2002
4.66, December 22, 2002
4.67, March 27, 2003
4.68, June 18, 2003
4.69, October 16, 2003
4.70, January 16, 2004
4.71, March 11, 2004
4.72, July 13, 2004

4.73, October 21, 2004
4.74, January 17, 2005
4.75, May 16, 2005
4.76, August 30, 2005
4.77, April 10, 2006
4.78, April 24, 2007
4.79, April 15, 2008
4.80, May 12, 2008
4.81, October 21, 2008
4.82, March 25, 2009
4.83, January 18, 2010
4.84, July 29, 2010
4.85, September 27, 2011

Dialects Supported

=====

Lsof (for LiSt Open Files) lists files opened by processes on selected Unix systems. Version 4 is a source reorganization of version 3, itself a major revision of version 2. Version 4 has been tested on:

AIX 5.3
Apple Darwin 9 and Mac OS X 10.[56]
FreeBSD 4.9 and 6.4 for x86-based systems
FreeBSD 8.[02] and 9.0 for AMD64-based systems
Linux 2.1.72 and above for x86-based systems
Solaris 9, 10 and 11

(The pub/tools/unix/lsof/contrib directory on lsof.itap.purdue.edu contains information on other ports.)

If your favorite Unix dialect is not in the list, or if your version of it is more recent than the ones listed, please contact me at [<abe@purdue.edu>](mailto:abe@purdue.edu).

Version 3 of lsof was tested on:

AIX 3.2.5, 4.1.[1234], and 4.2
BSDI BSD/OS 2.0, 2.0.1, and 2.1 for x86-based systems
DC/OSx 1.1 for Pyramid systems
Digital UNIX (DEC OSF/1) 2.0, 3.0, 3.2, and 4.0
EP/IX 2.1.1 for the CDC 4680
FreeBSD 1.1.5.1, 2.0, 2.0.5, 2.1, 2.1.5 for x86-based systems
HP-UX 8.x, 9.x, 10.01, 10.10, and 10.20
IRIX 5.2, 5.3, 6.0, 6.0.1, and 6.[124]

Linux through 2.0.27 for x86-based systems
NetBSD 1.0, 1.1, and 1.2 for x86 and SPARC-based systems
NEXTSTEP 2.1 and 3.[0123]
OpenBSD 1.2 and 2.0 for x86-based systems
Reliant UNIX 5.43 for Pyramid systems
RISC/os 4.52 for MIPS R2000-based systems
SCO OpenServer Release 1.1, 3.0, and 5.0.x for x86-based systems
SCO UnixWare 2.1 and 2.1.1 for x86-based systems
Sequent PTX 2.1.[1569], 4.0.[23], 4.1.[024], 4.2[.1], and 4.3
Solaris 2.[12345], 2.5.1, and 2.6-Beta
SunOS 4.1.x
Ultrix 4.2, 4.3, 4.4, and 4.5

Version 3 and its predecessor, version 2, may be found at:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/OLD>

How Lsof Works

=====

Using available kernel data access methods -- `getproc()`, `getuser()`, `kvm_*`, `nlist()`, `pstat()`, `read()`, `readx()`, `/proc` -- `lsof` reads process table entries, task table entries, user areas and file pointers to reach the underlying structures that describe files opened by processes.

`lsof` interprets most file node structures -- `advfsnodes`, `autonodes`, `cnodes`, `cdmnodes`, `devnodes`, `fifonodes`, `gnodes`, `hsnodes`, `inodes`, `mfsnodes`, `pcnodes`, `procnodes`, `rnodes`, `snodes`, `specnodes`, `s5inodes`, `tmpnodes`. It understands NFS connections. It recognizes FIFOs, multiplexed files, Unix and Internet sockets. It knows about streams. It understands `/proc` file systems for some dialects. On many dialects it recognizes execution text and library references. It knows about AFS on some Unix dialects.

Lsof Output

=====

The `lsof` output describes:

* the identification number of the process (PID) that has opened the file;

- * the process group identification number (PGID) of the process (optional);
- * the process identification number of the parent process (PPID) (optional);
- * the command the process is executing;
- * the owner of the process;
- * for all files in use by the process, including the executing text file and the shared libraries it is using:
 - * the file descriptor number of the file, if applicable;
 - * the file's access mode;
 - * the file's lock status;
 - * the file's device numbers;
 - * the file's inode number;
 - * the file's size or offset;
 - * the name of the file system containing the file;
 - * any available components of the file's path name;
 - * the names of the file's stream components;
 - * the file's local and remote network addresses;
 - * the TLI network (typically UDP) state of the file;
 - * the TCP state, read queue length, and write queue length of the file;
 - * the file's TCP window read and write lengths (Solaris only);
 - * other file or dialect-specific values.

Getting Started Quickly

=====

If you want to get started using lsof quickly, or see some examples

of how lsof can be used, consult the 00QUICKSTART file of the lsof distribution.

The 00QUICKSTART file won't help you build or install lsof, but it will cut through the density of the lsof man page, giving you more readily an idea of what you can do with lsof.

For information on building and installing lsof, consult the 00README file of the lsof distribution.

Limiting, Filtering, and Selecting Lsof Output

=====

Lsof accepts options to limit, filter, and select its output.

These are the possible criteria:

- * Process ID (PID) number -- to list the open files for a given process;
- * Process Group ID (PGID) -- to list the open files for all the processes of a given process group;
- * User ID number or login name -- to list the open files for all the processes of a given user;
- * Internet address -- to list the open files using a given Internet address (host name), protocol, or port (number or name); or to list all open Internet files;
- * command name;
- * file descriptor name or number;
- * list all open NFS files;
- * list all open Unix domain socket files;
- * list all uses of a specific file;
- * list all open files on a file system.

Selection options are normally ORed -- i.e., an open file meeting any of the criteria is listed. The selection options may be ANDed so that an open file will be listed only if it meets all the criteria.

In the absence of any selection criteria, lsof lists files open to

all processes.

Parsing Lsof Output with Another Program

=====

The lsof -F option directs it to produce "field" output that can easily be parsed by another program. The lsof distribution contains sample awk, perl 4, and perl 5 scripts in its scripts subdirectory that show how to post-process field output.

Repeat Mode

=====

Lsof can be directed to produce output, delay for a specified time, then repeat the output, cycling until stopped by an interrupt or quit signal. This mode is useful for monitoring the status of some file operation -- e.g., an ftp transfer or a tape backup operation.

Repeat mode is more efficient when combined with lsof's selection options, since they limit lsof overhead.

It's possible to use lsof's field output options to supply repeat mode output to another process for its manipulation. The scripts subdirectory of the lsof distribution has sample Perl scripts showing how to consume lsof repeat mode output from a pipe.

Distribution Restrictions

=====

Lsof may be used and distributed freely, subject to these limitations:

1. Neither the author nor Purdue University is responsible for any consequences of the use of this software.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Credit to the author and Purdue University must appear in documentation and sources.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. This notice may not be removed from or altered in the lsof source files.

Cautions

=====

Lsof is a tool that is closely tied to the Unix operating system version. It uses header files that describe kernel structures and reads kernel structures that typically change from OS version to OS version.

DON'T TRY TO USE AN LSOF BINARY, COMPILED FOR ONE UNIX OS VERSION, ON ANOTHER.

On some Unix dialects, notably SunOS and Solaris, lsof versions may be even more restricted by architecture type. An lsof binary, compiled for SunOS 4.1.3 on a sun4c machine, for example, won't work on a sun4m machine.

AN LSOF BINARY, COMPILED FOR ONE SOLARIS 1.X ARCHITECTURE, ISN'T GUARANTEED TO WORK ON A DIFFERENT SOLARIS 1.X ARCHITECTURE.

Distribution Contents

=====

The lsof distribution is checked for completeness when it is constructed and by the Inventory script when you run the Configure script. (See The Inventory Script section of the 00README file of this distribution.)

Lsof is organized in these parts:

- * The main lsof directory, containing common sources, configuration and setup scripts and three subdirectories: dialects/, lib/, and scripts/.

Lsof is compiled in the main lsof directory after configuration. The selected dialect sources are copied or linked from the specified subdirectory. (Symbolic linking is the standard method.)

Common lsof definitions may be found in lsof.h; common function prototypes, proto.h; and common storage, store.c.

- * The dialects/ subdirectory contains subdirectories with sources specific to UNIX dialect implementations -- e.g., the dialects/sun/ subdirectory contains sources for the SunOS (Solaris 1.x) and Solaris (2.x) implementations of lsof. The dialects subdirectories also contain Makefiles and scripts for assisting dialect source configuration.

Dialect configuration definitions may be found in dlsof.h; other dialect definitions, dlsof.h; dialect prototypes, dproto.h; and dialect storage, dstore.c.

- * The lib/ subdirectory contains sources for common lsof functions. Not all dialects use the functions -- some have their own versions of them. The lib/ functions are enabled and customized with #define's in the dialect machine.h header files.
- * The scripts/ subdirectory contains sample scripts for processing lsof field (-F) output. The scripts are written in AWK, Perl 4, and Perl 5.

The 00PORTING file of the lsof distribution has more information on lsof components, configuration, and construction.

Warranty

=====

Lsof is provided as-is without any warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of lsof is with you. Should lsof prove defective, you assume the cost of all necessary servicing, repair, or correction.

Bug Reports

=====

Now that the obligatory disclaimer is out of the way, let me hasten to add that I accept lsof bug reports and try hard to respond to them. I will also consider and discuss requests for new features, ports to new dialects, or ports to new OS versions.

PLEASE DON'T SEND A BUG REPORT ABOUT LSOF TO THE UNIX DIALECT VENDOR.

At worst such a bug report will confuse the vendor; at best, the vendor will forward the bug report to me.

Please send all bug reports, requests, etc. to me via email at <abe@purdue.edu>.

The lsof-l Mailing List

=====

Information about lsof, including notices about the availability of new revisions, may be found in mailings of the lsof-l listserv. For more information about it, including instructions on how to subscribe, read the 00LSOF-L file of the lsof distribution.

Version 3 Release Notes

=====

See 00DIST in the last lsof 3 revision 3.88, for its complete set of release notes. Lsof revision 3.88 may be found at:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/OLD>

3.0 May 24, 1994

This is the first official release of lsof 3.

...

3.88 February 17, 1997

```
+=====+
| This is the last version 3 revision. |
+=====+
```

Added documentation files -- 00.README.FIRST[_<version>] and 00RELEASE.SUMMARY_<version> -- to the distribution.

What's new in Version 4

=====

The main goal of version 4 was to eliminate the confusing common/fragment source file technique. Changing the version number also provided an opportunity to restart the numbering, which at 3.88 had risen to a large value.

The sources that appeared in the dialects/common subdirectory of version 3 in fragment files have been incorporated into the version 4 liblsof.a library as *.c files. This results in significant changes to many source files, scripts, and Makefiles of all dialect versions. It allows elimination of some source files -- ddev.c, dfile.c, dmnt.c -- for dialects now obtaining functions from liblsof.a that formerly came from making dialect source files by combining fragment files.

The version 4 liblsof.a sources are stored in the lib/ subdirectory of the main lsof directory. The liblsof.a functions are activated and conditioned in their source files by values #define'd in the dialect dlsof.h and machine.h header files.

Dialects that provide a private version of a library function refrain from #define'ing the symbol that would activate the library function code.

Version 4 Release Notes

=====

4.0 February 24, 1997

+-----+
| This is the first lsof 4 revision. |
+-----+

Reorganized sources: eliminated code fragment files and created a library in their place. Modified or deleted many dialect source and header files. Changed documentation accordingly.

Added a warning to sgi/Makefile and 00FAQ that advises against using the IRIX C compiler -n32 option when compiling lsof. Thanks go to Peter Ilieve <peter@memex.co.uk> for bringing this to my attention.

Dropped IRIX 5.2 in mid-stream, because my 5.2 test system was upgraded to 5.3.

4.01 March 3, 1997

Added TFS support for Pyramid dialects.

Added test to Configure and to the IRIX dnode.c for the different cnode struct that appears in <cachefs/cachefs_fs.h> on the 6.2 IMPACT distribution. Heddy Boubaker <boubaker@amfou.cenatls.cena.dgac.fr> alerted me to the cnode change and helped test this lsof adjustment.

Shut down the lsof child process before doing a -r sleep(). A comment from Dan Mercer <dam@mmm.com> prompted this.

4.02 March 21, 1997

Based on a report from Pasi Kaara <Pasi.Kaara@atk.tpo.fi>, disabled HP-UX CCIT support in lsof for HP-UX versions 10 and above. Pasi's report also led to changes in the HP-UX machine.h to support use of gcc to compile lsof for HP-UX 10.20 and warnings against using `cc -Aa` or `gcc -ansi` to compile lsof under HP-UX 10.x.

With help from Richard Allen <ra@hp.is> taught HP-UX 10.x lsof to name file systems better by using the virtual file system device number. Elias Halldor Agustsson <elias@rhi.hi.is> provided a test system.

Changed NEXTSTEP and UNIXWARE Makefiles to use safer quoting when generating version.h. The change was suggested by Bob Farmer <ucs_brf@unx1.shsu.edu>.

Added SHELL=/bin/sh string to all Makefiles.

Added support for Linux 2.1.28 on a test system, kindly provided by Jonathan Sergent <sergent@purdue.edu>. Configure tests the Linux 2.1.x's C library lseek() function for proper handling of kernel offsets. If lseek() appears suspect, Configure activates the use of a private lseek() function. Changed the private nlist() function to nlist_private() and taught it to use the query_module() syscall in place of the deprecated get_kernel_syms() one. Added rudimentary AX.25 support for Pierfrancesco Caci <ik5pvx@infogroup.it> who helped test it. Updated the old get_kernel_syms() code to recognize and skip module name entries.

Prompted by Marty Leisner <leisner@sdsp.mc.xerox.com>, eased the requirement that service name lookup for the -i option be accompanied by a protocol name. The name is not needed if both TCP and UDP names yield the same port number.

Added xusers.awk script from Dan Mercer <damercer@mmm.com> to the distribution scripts/ subdirectory.

Changed Configure script to use LSOF_VERS for all UNIX dialect version numbers and to pass LSOF_VERS to the dialect Mksrc functions. Also added the ability for a dialect stanza to declare a different

dialect Makefile source. Modified dialect Mksrc files -- e.g., linux and sun -- accordingly.

Added support for BSD/OS 3.0 with help from Jim Reid <jim@mpn.cp.philips.com>. Terry Kennedy <TERRY@spcvxa.spc.edu> kindly provided a test system. During the port corrected a bug that prevented proper handling of revoked files.

4.03 April 7, 1997

At the suggestion of Dan Mercer <damercer@mmm.com>, made HP-UX building of lsof aware of differences between the HP-UX bundled and unbundled C compilers.

Added the ability for the lsof builder to define the default warning message issuance state. By default the issuance of warning messages is disabled; defining WARNINGSTATE in machine.h disables it. The Customize script was updated to handle WARNINGSTATE. Dan Mercer suggested this.

Eliminated compiler complaint about improperly cast get_NL_value() argument in ncache_load() in lib/rnch.c.

Corrected zeromem() argument error in SCO dproc.c.
Sped up parent directory cache lookup slightly.

Updated for PTX 4.4, including additional VxFS (EFS) file system support.

4.04 April 17, 1997

At the suggestion of Bela Lubkin <belal@sco.COM> changed device cache handling to be more tolerant of a device cache file whose [cm]times are older than the ones on /dev or /devices. The change required adding information to Solaris device cache file clone lines, so the first time lsof 4.04 is run under Solaris it will complain about a bad cached clone device in a previous device cache file, then regenerate it.

Added boot file path detection for SCO OSR 5 and above, based on information supplied by Bela.

Fixed two bugs in DEC OSF/1 lsof -- an error in reporting locks and a missing continue statement in readdev() after a failure to open a directory.

Jan Ole Suhr <josuhr@informatik.tu-clausthal.de>

reported the second bug and supplied a fix.

Fixed XFS problems with IRIX 6.2 by abandoning the idea that SGI will distribute XFS header files and defining an lsof-private xfs_inode structure. John Paul Morrison <John.Paul.Morrison@MultiActive.com> helped develop and test the 5.3 definition. John R. Vanderpool <fish@daacdev1.gsfc.nasa.gov> helped develop and test the 6.2 definition.

Remove obsolete comments about common/*.frag files.

Updated Linux lsof for Linux version 2.1.35.

4.04 April 18, 1997

Supplement Regenerated the 4.04 distribution to correct a non-device-cache #define misplacement in the Solaris and SunOS dlsof.h. Alexandre Oliva <oliva@dcc.unicamp.br> reported the problem.

4.05 April 24, 1997

Corrected an error in 00DCACHE.

Made sure SCO /etc/ps/booted.systems is closed.

Based on an observation by Bela Lubkin <belal@sco.COM> that the lsof child had needless file descriptors open, closed all but the open pipes between the lsof parent and child.

Decommissioned CDC EP/IX support; I no longer have a test system.

Based on a suggestion from Patrick Connor <connor@phreak.csd.sgi.com>, added -xansi to CFLAGS for IRIX 5.3 and 6.[234].

Also at Patrick's suggestion changed Configure to propagate exact SunOS 4.1.x version to the main and library Makefiles. This allowed the sunos413 and sunos413cc Configure abbreviations to be shortened to sunos and sunoscc.

Updated obsolete argument uses (-H changed to -n) in count_pf.perl* and watch_a_file.perl scripts.

Adjusted Solaris 2.6 lsof for Beta_Update with tips from Casper Dik <casper@holland.Sun.COM>.

Fixed a Solaris 2.4 TCP address reporting bug.

4.06 April 30, 1997

Added a step to the Makefile clean rules that does a make clean in the lib subdirectory; suggested by Casper Dik <casper@holland.Sun.COM>. (Configure's -clean argument already did this.)

Fixed an incorrect awk argument in the sunos*)
Configure stanza, reported by Alexandre Oliva
<oliva@dcc.unicamp.br>.

Added CD9660 (aka ISO) file system support to FreeBSD, NetBSD, and OpenBSD with mods and help from Kenneth Stailey <kstailey@disclosure.com>. (BSDI already had CD9660 support.) While at it, added file descriptor system support to BSDI and FreeBSD.

Added /kern file system support to OpenBSD. The support wasn't extended to BSDI, FreeBSD, or NetBSD, because it requires Kenneth Stailey's changes to /sys/miscfs/kernfs/kernfs.h.

Updated IRIX 6.3 support after getting access to a test system, provided by John Paul Morrison <John.Paul.Morrison@MultiActive.com>. Improved the handling of IRIX 5.1 and greater FIFOs.

4.07 May 12, 1997

Based on AIX problem reports from David Capshaw <David.Capshaw@SEMATECH.Org>, changed the aix* Configure script stanza to avoid -bnolibpath for gcc (which the GNU loader doesn't grok) and AIX below 4.1.4 (where -bnolibpath hasn't been tested or is known to be unimplemented), and to refuse to use gcc for compiling lsof in AIX versions below 4.1 (because of possible structure alignment problems). Updated 00FAQ appropriately.

Added OpenBSD support for EXT2FS. This support has yet to be tested.

Tested lsof under OpenBSD 2.1.

Activated /kern file system support for NetBSD when Configure senses that /sys/miscfs/kernfs/kernfs.h

defines the kern_target structure. This support has not been tested under NetBSD, although it has been tested under OpenBSD.

Made some simple changes to the BSDI machine.h, suggested by Jeffrey C. Honig <jch@bsd.com>.

Improved handling of alternate dialect Configure abbreviations -- aix and aixgcc, hpux and hpuxgcc, solaris and solariscc, and sunos and sunoscc.

4.08 May 23, 1997

Cleaned up dialect Makefile's, starting with a suggestion from Christopher Schanzle <chris@cam.nist.gov>.

Improved Configure's -clean processing.

Corrected bugs in Solaris lock reporting.

Changed NetBSD Configure stanza to put -I/usr/include before -I/sys.

4.09 June 1, 1997

Adjusted for latest FreeBSD 3.0 release. This required adding a new kernel name cache module for reading BSD-form hashed kernel name cache entries, rnmh.c, to the lsof library, and adding a #define to each machine.h to select it.

Activated rnmh.c for BSDI 2.1, BSDI 3.0, NetBSD 1.2, and OpenBSD 2.1.

4.10 June 8, 1997

Adjusted for Linux 2.1.x (x > 35) kernels with hashed task structure pointers. Marty Leisner <leisner@sdsp.mc.xerox.com> and Jonathan Sergent <sergent@io.com> tested the adjustment.

Replaced readdev() stat() calls with lstat() to reduce device table and cache entries with the same device number and inode values. Added code to remove all remaining duplicates. This fixes a Linux problem reported by Jonathan Sergent and makes device node name output predictable.

Corrected a bug in UnixWare stream file handling that prevented searching for the stream file by its associated character device name.

Added Pyramid code to determine Reliant UNIX clone major device number differently from that of DC/OSx.

4.11 June 12, 1997

Changed Configure to sense that the PTX `inp_[fl]addr` members of the `inpcb` structure of `<netinet/in_pcb.h>` have a struct type and set `HASINADDRSTR` for use in `PTX dnode.c` and `dsock.c` tests.

Changed PTX version 4.1.4 tests to use 4.1.3 instead. Carson Wilson `<carson@mcs.com>` reported the need to do this and tested the change.

Fixed a block device table indexing bug in `lib/rdev.c`, reported by Carson Wilson. The same bug was squashed in `pyramid/ddev.c`.

Added code to the Pyramid Reliant UNIX `kread()` function to compensate for an address boundary error in the kernel's `/dev/kmem` driver.

Verified that `lsof` compiles and works under AIX 4.2.1. Added an AIX test for the presence of NFS header files, defined `HAS_NFS` and adjusted AIX dialect sources accordingly.

Based on a suggestion from Gaylord Holder `<holder@phy.ucsf.EDU>`, added DEC OSF/1 code to auto-detect the booted file, whence kernel symbol addresses are obtained.

4.12 June 24, 1997

Corrected a device number sign extension problem in the reading and writing of device cache file. The problem was reported by Bela Lubkin `<belal@sco.com>` and he suggested a fix.

Fixed an SCO stream device lookup problem. The report and solution came from Bela Lubkin

Enhanced the `Configure` script to enable cross-configuration of `lsof`, based on suggestions from Marty Leisner `<leisner@sdsp.mc.xerox.com>`. A new documentation file, `00XCONFIG`, describes the process.

Made Pyramid OBJFS support conditional on the presence of supporting header files. Corrected

the Pyramid MkKernOpts script so it generates the necessary -D's for the Nile/Jolt architecture.

Richard Coley <rcoley@pyra.co.uk> helped.

Added another IRIX xfs_inode variant for 6.2, 32 bits, no XFS rollup patch.

Tested under UnixWare 2.1.2.

4.13 July 9, 1997

Taught Pyramid lsof to grok ttyfs vnodes with help from Richard Coley <rcoley@pyra.co.uk>. Fixed some minor bugs in Pyramid FIFO reporting. Eliminated use of the Pyramid UCB compatibility library at Richard's suggestion.

Eliminated reporting of "strange" inode numbers for SCO OSR 3.2v5.0.x HPPS files with help from Bela Lubkin <belal@sco.com>

Modified port to service name lookup to use a small number of getservbyport() calls before reading the entire map with getservent(). Changed port reporting to represent a zero as '*' to be consistent with other prt number reporting tools like netstat. Casper Dik <casper@holland.Sun.COM> suggested these changes -- the getserv*() one to improve performance for large NIS service name maps.

Changed all readdev() functions to make the absence of block devices a warning instead of a fatal error after Brian Redman <ber@ms.com> reported his IRIX 6.4 system had no block devices. (It really did have block devices, but readdev()'s lstat() use caused it to miss them in a directory symbolically linked from /dev/dsk->/hw/disk.) Fixed Brian's real problem by changing the IRIX readdev() to use stat() on /dev nodes if a Configure test shows /hw is readable. Extended the potential to do the same to all readdev() functions.

For consistency and convenience changed some Configure abbreviations and dialect subdirectory names: "decosf" abbreviation and "osf" dialect subdirectory name to "du"; "netbsd" dialect subdirectory name to "n+obsd"; "next3" abbreviation and "next" dialect subdirectory name to "ns"; "sco" abbreviation and dialect subdirectory name to "osr";

"sgi" dialect subdirectory name to "irix"; and "unixware" abbreviation and dialect subdirectory name to "uw".

Added #if/#endif clauses to the AIX rmdupdev() function to avoid clone processing for AIX versions less than 4.1.4. The problem was reported by Toralf Foerster <toralf.foerster@io-warnemuende.de>, who supplied corrective code.

Added support for new style NetBSD inode with i_ffs and i_e2fs union members.

Improved Configure and 00FAQ information on Digital UNIX configuration subdirectory with suggestions from Brad Krebs <brad@EECS.Berkeley.EDU>.

4.14 July 22, 1997

Reorganized the Solaris handling of the inode structure header file, ufs_inode.h, to eliminate VxFS structure definition conflicts for Solaris 2.4, based on information from Greg Earle <earle@netbsd4me.jpl.nasa.gov>.

Cleaned up some typos and confusion in Configure's help output, based on comments from Bela Lubkin <belal@sco.com>

Added a 00DIALECTS file, containing UNIX dialect version numbers, that can be used by Configure and the man page.

4.15 August 15, 1997

Aligned `Configure -help` output better. Removed Configure's 2.6 Beta test adjustments.

Added improved Solaris VxFS configuration and handling, based on information from Greg Earle <earle@netbsd4me.jpl.nasa.gov>.

Added socket state -- TCO or TPI -- for socket files at the suggestion of Ian Fitchet <I.D.Fitchet@ftel.co.uk>.

4.16 September 25, 1997

Added reporting of TCP/TPI queue lengths and window sizes ala netstat to NAME column. Added -T option to select or de-select TCP/TPI info reporting.

(Window sizes are only reported for Solaris.)
Fixed anomalies along the way in SIZE/OFF processing
for some dialects.

Fixed service name argument processor to allow
minus signs as part of the name. Consequently this
disallows names with embedded minus signs from
being specified as the start of a range.

Added 00FAQ entries explaining why lsof won't find
a file being edited with vi, why window sizes aren't
reported for all dialects, and what the "no more
information" message means.

Forced Pyramid CC to be /usr/ccs/bin/cc to avoid
accidental use of the BSD variant in /usr/ucb/cc.

Added support for Linux glibc2, including a Configure
test; cross-Configure support (00XCONFIG); and much
unfortunate and risky sleight-of-hand in lsof Linux
dialect header and source files, forced upon lsof
by incompatibilities between Linux kernel and glibc2
header files.

Included in scripts/identd.perl5 a Perl 5 implementation
of an identd server, using lsof, provided by Kapil
Chowksey <kchowksey@hss.hns.com>.

Updated IRIX 6.4 xfs_inode guess.

4.17 October 14, 1997

Added -V option for verbose search result reporting.
Verbose reports are prepared for failure to locate
file names, command names, Internet addresses or
files, login names, NFS files, PIDs, PGIDs, and UIDs.

Augmented Linux NFS file test to cope with kernels
whose NFS code is in a loadable module. Need for
the test was pointed out by Jonathan Sergent
<sergent@csociety.ecn.purdue.edu>. The change
required that Linux have private dmnt.c source,

Completed a Linux 2.1.57 port on a system provided
by Jonathan Sergent.

4.18 October 25, 1997

Eliminated memory leaks in alloc_ifile(), lkup_port(),
and NEXTSTEP's process_text() function.

Added recognition of OpenBSD 2.2 in Configure,
supplied by Kenneth Stailey <kstailey@disclosure.com>.

Consolidated print_file() functions to use the one
in lib/prtf.c. Made it configurable and changed
it to size print columns dynamically.

!!! WARNING !!!

WITH DYNAMICALLY SIZED PRINT COLUMNS LSOF 4.18
PRODUCES OUTPUT SIGNIFICANTLY DIFFERENT FROM THAT
OF PREVIOUS REVISIONS. LINES ARE GENERALLY SHORTER
AND THERE IS GENERALLY LESS BLANK SPACE BETWEEN
COLUMNS AND THE ITEMS IN THEM. THERE ARE NO LONGER
ANY SPACES BETWEEN DEVICE NUMBER ELEMENTS, ONLY
COMMAS.

!!! WARNING !!!

Added special types and print specification modifiers
for file size and offset to handle UNIX dialects
with 64 bit sizes and offsets. Paul Eggert
<eggert@twinsun.com> reported the need for this
addition.

With Paul Eggert's help picked lint from the lsof
library, the main level lsof sources, and the Sun
dialect sources.

Added documentation, including the file 00LSOF-L,
about the lsof-l LISTSERV.

Added support for Reliant UNIX on the RM600. Bob
Passarella <rmpassar@pyramid.com> supplied the
changes. Kevin Smith <kevin@pyramid.com> helped
arrange test systems. While incorporating Bob's
changes, modified lib/rnch.c to handle kernel ncache
structs whose name is accessed via a char *, rather
than in a char array.

Changed #include order of <sys/socketvar.h> for
Solaris 2.x. W. Richard Stevens <rstevens@kohala.com>
pointed out the need to do this.

4.19 October 30, 1997

Changed Pyramid Reliant RM600 proc scan to skip
SSYS (p_flag) processes, since they don't seem to

have a readable u_cdir vnode.

Enabled Pyramid Reliant UNIX kread() work-around for DC/OSx, too, since its read(/dev/kmem) kernel driver seems to share the page boundary bug this work-around circumvents.

Changed SzOffFtm_d and SzOffFtm_dv (new formats at 4.18 to print size and offset) from signed to unsigned. Setting them signed at 4.18 was an oversight.

Plugged a memory leak that caused the loss of 130 bytes per repeat-mode pass. Fixed it with a simple work-around in main(). Lionel Cons <Lionel.Cons@cern.ch> reported the leak.

4.20 November 11, 1997

Tested under BSDI 3.1.

Added support for Reliant UNIX Mesh IPC files with help from Billy Ho <bho@pyramid.com>.

Added support to Digital UNIX lsof that uses the libmsfs tag_to_path() function (when it exists) to look up AdvFS path names. The idea and sample code came from Dean Brock <brock@cs.unca.edu>. Converted Dean's code into more general purpose support for private name cache lookups via the HASPRIVNMCACHE #define in the dialect machine.h file and code conditional on it in the printname() function.

Taught Digital UNIX lsof to recognize NFS3 file systems. Corrected Digital UNIX lsof DEVICE column alignment.

4.21 December 1, 1997

Squashed bug, introduced at revision 4.18, that resulted in double reporting of each selected PID when terse mode (-t) was specified.

Corrected minor bug, also introduced at 4.18, that might cause an extra print_proc() pass when one PID has been specified.

Added -R to lsof options in scripts/idrlogin.perl*. The option should have been there -- it was supposed to be mandatory for PGID reporting -- but a bug,

corrected in revision 4.18, previously made -R unnecessary.

Enabled configuring for BSDI BSD/OS 4.0 per a suggestion from Jeff Honig <jch@bsd.com>.

Enabled replacement of scoff_t with off64_t (scoff_t is used to type r_size and r_localsize in the rnode struct) for IRIX 5.3 systems that have the NFS kernel rollup patch (1477). This compensates for SGI's failure to distribute an updated <sys/fs/rnode.h> with their patch.

Validated under Linux 2.0.3[12], Linux 2.1.64, and NetBSD 1.3.

Added FreeBSD root directory reporting, courtesy of Dan Nelson <dnelson@emsphone.com>.

4.22 December 15, 1997

Made adjustments for Linux 2.1.7[02].

Improved NAME information for Linux UNIX domain sockets.

Added option +|-M to control the reporting of portmapper registration information in square brackets after the TCP or UDP port or service name. Kenneth Stailey <kstailey@disclosure.com> suggested the feature and provided sample code from OpenBSD. Reporting is disabled by default in the distribution and may be enabled with +M; if lsof is compiled with HASPMAPENABLED (e.g., from machine.h), reporting will be enabled by default and can be disabled with -M.

Changed the -w option to +|-w to match the syntax of the +|-M option and to eliminate any options that flip meaning when a symbol is defined at compile time. For both +|-M and +|-w, specifying '-' when the default state is disabled or specifying '+' when the default state is enabled causes no problems.

!!!WARNING The -w option has changed in lsof 4.22. WARNING!!!

Made the +|- prefix legal for most options, but didn't document it in the man page or help panel.

Most options that disable something -- e.g., -b, -C, -n, -P -- now disable when the prefix is '-' and enable when it is '+'. Since the states these options disable are enabled by default, I chose to avoid documentation complexity and confusion by not mentioning that they can be used with the '+' prefix.

Condensed the help panel.

Made sure Digital UNIX Configure stanza puts normal include path (e.g., /usr/include) before system include paths.

Added IPX socket information reporting to Linux with help from Jonathan Sergent <sergent@purdue.edu>.

4.23 January 16, 1998

Fixed conflict arising from the quondam replacement of the Sun Solaris <netdb.h> with a BIND/BSD version.

With help from Jonathan Sergent <sergent@purdue.edu> developed a /proc file system based Linux lsof. It needs some Linux 2.1.x release to work -- I'm not sure which, but I tested under 2.1.72, 2.1.76, and 2.1.79. The Configure script selects special sources for this lsof, so the full lsof distribution now contains both /dev/kmem and /proc based sources for Linux lsof. An optional kernel mod, written by Jonathan, enhances the /proc-based lsof ability to recognize IPX socket files. Reorganized and augmented the Linux sections in 00FAQ to explain the two types of Linux lsof.

Defined DOSTAT_FUNCTION for dostat() in misc.c to select the function, stat() or lstat(), it will use. DOSTAT_FUNCTION is normally undefined, defaults to lstat(), and is only defined for the /proc-based Linux lsof in its dlsof.h.

Made conditional on the presence of IRIX 6.4 XFS rollup patch #6 an XFS node change introduced in revision 4.16. Identified the patch with help from John R. Vanderpool <fish@daacdev1.gsfc.nasa.gov>.

Added NFS node compensation for NetBSD 1.3. The code and suggestion for it was supplied by Jean-Luc Richier <richier@imag.fr>.

Added diagnostic messages to the /dev/kmem-based Linux Mksrc script to report errors during the construction of the kernel name cache header file, kncache.h. Added 00FAQ information on kncache.h.

Added a new Linux test host, running 2.0.33 and Glibc, provided by Steve Logue <stevel@mail.cdsnet.net>.

Ported to PTX 4.1.3 and 4.4.2. Adjusted lib/rnch.c for 4.4.2 to allow customization of additional ncache struct element names.

4.24 January 28, 1998

Changed /proc-based Linux lsof offset test to use "/" instead of "/etc/passwd".

To assist Jim Mintha <jim@geog.ubc.ca> with the packaging of lsof for Debian Linux, added a DEBIAN_LINUX_LSOF #define to trigger the activation of special system map file location code in the /dev/kmem-based dproc.c.

Applied modification to dialects/bsd/dlsof.h from Ingimar Robertson <iar@skyr.is>, enabling lsof to compile for BSDI BSD/OS 2.0.

Corrected a documentation error in 00DCACHE, pointed out by Thomas Anders <anders@hmi.de>. The error was created when the -V option was added at lsof 4.17.

Made IRIX 5.3 through 6.3 lsof aware of IRIX SCSI tape devices (e.g., /dev/tape). Dave Olson of SGI and Randolph J. Herber of FNAL provided valuable advice, and Igor Schein <ischein@air-boston.com> helped test.

Added a machine.h symbol (NEVER_HASDCACHE) that prevents Customize from offering to change HASDCACHE. The symbol may appear anywhere in machine.h -- e.g., in a comment. Included the symbol in a comment of the HASDCACHE section of the /proc-based Linux lsof machine.h, and accompanied it with warnings against #define'ing HASDCACHE. Did the same thing for WARNDEVACCESS (NEVER_WARNDEVACCESS is the suppressant.)

4.25 February 7, 1998

Corrected an IRIX mis-cast of file offset (position).
Igor Schein <ischein@air-boston.com> reported the problem. This was offered as a patch to 4.24.
Picked some lint Igor pointed out.

At Igor's suggestion added an optional decimal digit size argument to the -o option. This argument specifies how many file offset decimal digits can follow "0t" before lsof switches to a "0x..." form. The argument size specification doesn't count the two characters of the "0t". A size of 0 means unlimited. The default is OFFDECDIG (8), preserving compatibility with existing lsof output; it can be changed by the lsof builder. When size is specified with -o it does not force offset display; -o without a size still must be used to do that.

Added an IRIX 6.2, 32 bit system, XFS node patch, courtesy of Ulrich Bernhard <rzubu@rzu.unizh.ch>.

For my own convenience enabled Configure to use /usr/local/bin/gcc for NEXTSTEP. This allows circumvention of a gcc 2.8.0 ranlib problem on my test 3.1 `040 cube.

Added flags recommended by the RISC/os and Ultrix compilers for the updated (and longer) main.c.

Updated FreeBSD cd9660_node.h Configure test.

4.26 February 17, 1998

Added shared process group processing for IRIX 5.3, and IRIX 6.1 and above, based on investigation of a bug report from Igor Schein <ischein@air-boston.com>. Igor helped test this addition.

Improved handling of file system name arguments. It's now done in a manner similar to fuser. The -f argument forces path names to be considered as simple files, rather than as file system names. The +f flag forces them to be considered as file system names. Normally path arguments are considered file system names when they match a mounted-on directory in the system's mount table, or when they match a mounted file system's block device. Igor Schein helped test this change.

Igor also suggests that the proper compilation of

the IRIX 6.4 proc structure after patch 2536 has been installed may need -DPIOMEMOPS. So lsof's MkKernOpts script was updated to propagate that option from CCOPTS in /var/sysgen/system/irix.sm, even though patch 2536 doesn't add -DPIOMEMOPS to it. Added a 00FAQ item on this patch.

Added a fatal warning message about names forced to be file system names (with +f) that have no match in the mount table.

Improved the -V message for files and file systems for which no open files were found. Added reporting of /proc file and file system search failures.

Did some code reorganization to combine the multiple ck_file_arg() functions into one. Moved the new function from the library to the top level and put it in arg.c; moved the usage function from arg.c to a new top-level source file, usage.c, to balance top-level source file size. The new usage.c depends on version.h; arg.c no longer does.

Added flag recommended by the DU compiler for the updated (and longer) main.c.

4.27 March 6, 1998

At the request of Igor Schein <ischein@air-boston.com> added a conditional repeat mode option, using the '+' prefix to the 'r' option. +r operates as does -r with the exception that it exits the first time no open files have been listed during a cycle. The exit code will be zero when any open files have been listed; one, if none were ever listed.

Ported lsof to HP-UX 11.0 with the help of Richard Allen. This port hasn't been tested on a 64 bit kernel; I'm sure it won't work there without more mods. It may not work on PA 2 architectures; I've only tested it under PA 1 and a separate, busy tester reported PA 2 problems that I've been unable to investigate.

In anticipation of getting access to a 64 bit HP-UX kernel and the pending start of the Solaris 2.7 Beta test (It will have 64 bit kernel addressing.), started adding support for 64 bit kernel pointers. This includes: ubiquitous use of the KA_T cast

for kernel pointers; a format to print them,
KA_T_FMT_X; a function to print them, print_kptr();
and modifications to most kernel-related functions
-- e.g., process_file(), process_node(),
process_socket(), readvfs() -- to process kernel
addresses as KA_T types.

Fixed minor bug in handling path name arguments
that end with a `/'.

Removed support for RISC/os; its test system is no
longer available.

Made modifications to insure that lsof output
doesn't contain non-printable characters. All such
characters are now printed in the printf form
"\x%02x". Several new common functions were
installed in misc.c to support "safe" printing.
This second major modification in 4.27 to common
and dialect code could have introduced bugs not
yet detected.

4.28 March 10, 1998

Refined unprintable format to use \b, \f, \r, \n,
\t, and ^* (for CTRL) forms. Corrected omission
of safestrprt() use for field output command name.
These changes were offered as patches to 4.27.

Made space an unprintable character (\x20) in the
COMMAND column; printable elsewhere, including the
NAME column, field output, and error messages.

Made sure FD column is parseable as a single entity
-- i.e., has no embedded space. Thus, if the access
mode is unknown but there is a known lock mode, (a
very rare case) the access mode will be printed as
`-'.

Picked lint with gcc 2.8.0 under Solaris 2.6.

With the help of Dave Olson of SGI identified a
proc struct element that should have been added to
<sys/proc.h> by IRIX 6.4 patch 2536. Added a
work-around for it to the lsof Configure script.
Igor Schein <ischein@air-boston.com> identified
that the patch caused a proc structure length
complaint from lsof. Removed an obsolete OOFAQ
item on the patch, installed at lsof 4.26, explaining

that no solution was yet available.

Added a 00FAQ item on how BIND installs its own header files, including <netdb.h>, which may cause the rpercent struct definition to vanish. Solaris has an automatic lsof work-around, but that hasn't been (and probably can't be) propagated to all dialects supported by lsof. The 00FAQ item recommends re-installation of the vendor header files that BIND has replaced. (Others include <rpercent.h>, <sys/bitypes.h>, and <sys/ctypes.h>.)

Made AIX AFS fixes.

4.29 March 26, 1998

Corrected bug in Internet address matching. The matching formerly stopped if the foreign address matched, thus failing to check the local address for a match. That led to a possible false "Internet address not located" warning (i.e., in response to -V) about the local address, when both foreign and local addresses were specified with -i. This correction was offered as a patch to 4.28.

Changed readmnt() usage in an attempt to defer mount readlink() and stat() delays until they are necessary.

Corrected two bugs in the Digital UNIX readdev() function. Made the correction available as a patch to 4.28 and regenerated the 4.28 DU binaries.

Added a missing argument to a print-kptr() call in the HP-UX dsock.c. The missing argument causes a fatal gcc error. The problem was reported by Eyal Shaynis <eyal.shaynis@telrad.co.il>. The fix was offered as a 4.28 patch.

Adjusted for Digital UNIX 4.0D; the spec_node structure is now defined in <sys/specdev.h>. Kris Chandrasekhar <Kris.Chandrasekhar@digital.com> identified the need for the adjustment.

Incorporated a bug fix from Brian McAllister <mcallister@mit.edu> to the DU readmnt() function. This fix was offered as a patch to 4.28.

Added "safe" printing to a SunOS clone device error

message.

Corrected bug in tabling of Linux /proc-based lock info.

Corrected bug in handling of SunOS TLI streams.
Dan Farmer <zen@trouble.org> reported the problem.

Added a Solaris 2.6 work-around to keep the BIND <sys/bitypes.h> from colliding with the Solaris <sys/int_types.h>.

Strengthened the Configure test for /proc-based Linux lsof, based on a report from Marty Leisner <leisner@sdsp.mc.xerox.com>.

Tested on OpenBSD 2.3.

Made AIX changes that allow use with 3.2.5. The changes were suggested and tested by Brett Hogden <hogden@rge.com>.

Added Solaris 2.6 AFS support. Disabled reporting of some node numbers for Solaris 2.5 and above open AFS files. The node number computation algorithms used for SunOS 4.1.x and Solaris less than 2.5 no longer always work under Solaris 2.5 and above.

4.30 April 9, 1998

Corrected a pid structure member naming error for UnixWare < 2.1.2. The problem was reported by Richard van Meurs <vanmeurs.anva@atriserv.nl>. He supplied the correction. This was offered as a patch to 4.29.

Had a report from Igor Schein <ischein@air-boston.com> that IRIX 6.4 patch 2839 is another SGI kernel patch, along with 2536, that changes the size of the proc structure in the kernel without changing the proc structure in <sys/proc.h>. Upon further investigation found that the effect of these patches on the proc structure is not consistent. Therefore, dropped the Configure patch test for IRIX 6.4 and made the code in irix/dproc.c slightly more tolerant of proc structure size differences for IRIX 6.4. Igor help test the change.

Corrected Solaris >= 2.5 AFS inode number generation.

Craig Everhart <Craig_Everhart@transarc.com> helped find the cause of the problem. This was offered as a patch to 4.29.

Refined the Linux /dev/kmem-based glibc evasion for the timeval structure to make it work with glibc version 2.0.7. This required defining a new global symbol, TIMEVAL_LSOF, default timeval, that the /dev/kmem-based Linux lsof can set to its private glibc timeval name, distinct from the kernel timeval name.

Added support for Alpha to the /dev/kmem-based Linux lsof. Alexandre Oliva <oliva@dcc.unicamp.br> provided a test system. Added an item to 00FAQ about lsof, the Alpha processor, and Linux.

Added a 00FAQ item about lsof year 2000 compliance. Basically it says lsof is probably compliant, because its only date or time computations are done with time_t values, but I haven't done any specific Y2K validation. I don't have plans to do any.

Added support for UnixWare 7. Chris Daniels <chrisd@dlpco.com> provided a test system and Don Draper <dond@sco.COM> provided technical information. Added BFS and SFS file system support to lsof for UW 2.1.[12] and 7.

Updated Solaris VxFS support for VxFS 3.2.1. Greg Earle <earle@netbsd4me.jpl.nasa.gov> reported the need for the update. Greg and Roger Klorese <rogerk@veritas.com> provided technical information. Scott McClung <mcclung@primenet.com> tested.

Changed IRIX XFS patch detection in anticipation of learning there are multiple XFS patches for IRIX 6.4 that require different versions of the lsof-invented xfs_inode structure.

4.31 April 21, 1998

Added a VxFS #if/#endif wrap to a section of the HP-UX dnode.c that wasn't properly protected. The problem was reported by Peter Klosky <PKlosky@bdm.com>. This was offered as a patch to 4.30.

Added support for Solaris 2.7 (first Beta release). Mike Sullivan <Mike.Sullivan@Eng.Sun.COM> provided

technical advice and helped test. Charles Stephens <cfs@jurassic.eng.Sun.COM> also helped test.

Fixed bug in /proc-based Linux that caused it to access /proc/mounts excessively. Marty Leisner <leisner@sdsp.mc.xerox.com> provided a syscall trace that identified the bug. The fix was offered as a patch to 4.30.

Adjusted the IRIX 6.4 private structure definition for the XFS node to accommodate patch 2970. Igor Schein <ischein@air-boston.com> identified the patch and the required adjustment.

4.32 May 11, 1998

Corrected Solaris 2.7 code for reporting PCFS (floppy disk) node numbers. Casper Dik <casper@holland.sun.com> supplied the fix. The fix was offered as a patch to 4.31.

Corrected a bug in conditional repeat mode handling pointed out by Igor Schein <ischein@air-boston.com>. This was offered as a patch to 4.31.

Improved reporting of AIX open(/dev/memory device) errors.

Corrected a Solaris < 2.5 KA_T declaration error, pointed out by Robert Kiessling <robert@easynet.de>. Changed KA_T from a #define to a typedef for all dialects to prevent future problems of this kind.

Changed the sample Perl 5 script big_brother.perl5 to report a four digit year from localtime().

Added support for AIX 4.3[.1]. Bill Pemberton <wfp5p@tiger.itc.virginia.edu> provided a test system. Andrew Kephart <akephart@austin.ibm.com> and Tom Weaver <tvweaver@austin.ibm.com> provided technical assistance. Niklas Edmundsson <nikke@ing.umu.se> did 4.3.1 testing.

Added -qmaxmem option to CFLAGS for an AIX compilation with an xlc version 4.x compiler.

Adjusted Linux socket handling for changes in the AX25 members of the sock struct. Richard Green <rtg@tir.com> pointed out the problem. Tested

/dev/kmem-based lsof under Linux 2.0.34.

4.33 May 22, 1998

Added generic IPv6 support to common lsof sources and specific IPv6 support to AIX sources. Andrew Kephart <akephart@austin.ibm.com> supplied the additions and helped with testing. Bill Pemberton <wfp5p@tigger.itc.virginia.edu> provided a test system. The modification affected sources for every dialect, whether it supports IPv6 or not, by changing the interfaces to the common Internet address function `ent_inaddr()`.

Added support for the NetBSD UVM virtual memory system. Paul Kranenburg <pk@cs.few.eur.nl> supplied technical details.

Bracketed HP-UX 11 use of <sys/spinlock.h> with `#if/#endif _KERNEL`.

Corrected printing of PCB address in DEVICE column for IRIX.

4.34 June 26, 1998

Updated 00FAQ to discuss TCP and UDP ports private to the AIX kernel and 00README to describe how ACLs can be used to give lsof permission to read the kernel memory devices. Add information to 00FAQ and 00README about other OpenBSD architectures where lsof is reported to compile and run. Added section to 00FAQ discussing how an incorrect loader path environment variable value can prevent lsof from loading correctly.

Improved Solaris namefs and doorfs support so that it is now possible to search for an open VDOOR file by the path name of its fattached file system object. Igor Schein <igor@txc.com> requested the ability to do such a search. Even with the change, lsof can't always identify path names for open VDOOR files.

Also at Igor's request, improved reporting of information on open Solaris VCHR files that share a common vnode, and Solaris UNIX domain socket files.

Corrected `print_kptr()` argument error in PTX `dnode.c`,

reported by Mark Price <mprice@sequent.com>.
Compensated for ncache element naming differences,
introduced at PTX 4.4.2; Kurtis D. Rader
<krader@sequent.com> reported the problem.

Changed output column title from INODE to NODE to
better reflect the column's contents of node IDs
for more than just inodes.

Improved Configuration and processing for Solaris
AFS. Corrected AIX AFS 3.4 afs_rwlock_t simulation.

Corrected a cast problem with two AIX knlist()
calls, thus quieting an AIX 4.2.1 compiler argument
type warning. Jon Champlin <champlin@us.ibm.com>
reported the problem.

Added support to most dialect versions (exception:
/proc-based Linux) to warn when the identity of
the kernel where lsof was compiled doesn't match
the running identity. The warning can be suppressed
with -w. Note: determining AIX state requires
calling oslevel, a potentially slow operation.
Jon Champlin <champlin@us.ibm.com> suggested this
addition.

!!!! WARNING !!!! !!!! WARNING !!!! !!!! WARNING !!!!

Those using the lsof cross-configuration capability
(see 00XCONFIG), should be aware that the kernel
identity test feature introduces two new basic
cross configuration environment variables, LSOF_ARCH
and LSOF_VSTR.

!!!! WARNING !!!! !!!! WARNING !!!! !!!! WARNING !!!!

Identified a situation where a Solaris UNIX domain
socket name is known and can be searched for by
name; added the necessary code.

4.35 July 17, 1998

Made the kernel identity check an option with the
HASKERNIDCK #define in machine.h. Enabled altering
of HASKERNIDCK with the Customize script. Added
a clause to the help output that indicates the
build-time HASKERNIDCK status.

Added more information to the NAME column for

Solaris UNIX domain sockets. Made them searchable by their clone device path name. Igor Schein <igor@txc.com> requested this.

Completed the HP-UX 11 port with support for its optional 64 bit kernel. Rich Rauenzahn <rrouenza@cup.hp.com> provided a test system. Corrected errors with HP-UX 11 lock reporting and private kernel structure and type definitions. Added support for HP-UX NFS3 files.

Limited mount table warnings -- e.g., when -b is used -- to one set per mount point.

Fixed some mount table scanning and usage bugs, including one in Solaris, reported by Kjetil Torgrim Homme <kjetilho@ifi.uio.no>.

4.36 August 4, 1998

Made corrections and additions to IPv6 support and to AF_ROUTE socket handling, supplied by Jean-Luc Richier <Jean-Luc.Richier@imag.fr>. Jean-Luc's additions provide IPv6 support for the Inria IPv6 implementations on FreeBSD and NetBSD.

Fixed two Solaris 2.5, 2.5.1, 2.6 and 2.7 TCP and UDP host name or IP address reporting bugs, reported by James Mathiesen <James-Mathiesen@deshaw.com>. This fix was offered as a patch to 4.35.

Updated the Customize script to cause ENTER to use all defaults. Amir J. Katz <amir@ndsoft.com> suggested this and helped test the changes.

Updated Solaris ICMP and IP stream handling, based on a report from Igor Schein <igor@txc.com>.

Fixed a bug in the Digital UNIX mount table handling, reported by Bob Ward <bward@thehartford.com>. While working on the bug, found and updated some obsolete AdvFS code. This fix was offered as a patch to 4.35.

4.37 September 15, 1998

Deactivated SGI IRIX support and archived revision 4.36 sources and binaries in pub/tools/unix/lsof/OLD.

Improved performance of FD searching. This was

offered as a patch to 4.36.

Amir J. Katz <amir@ndsoft.com> pointed out that ranlib isn't needed for AIX or Solaris. Made appropriate Configure script changes.

Fixed a file offset reporting bug for HP-UX VCHR and VBLK device nodes located on a VxFS root. Doug Siebert <douglas-siebert@iowa.edu> reported the bug. The fix was offered as a patch to 4.36.

Resolved an HP-UX root device name reporting bug, partly caused by an out-dated local copy of the <sys/mount.h> mount structure, by generating a local header file with the structure that can be compiled without needing _KERNEL defined. Doug Siebert also reported this bug.

Changed some dialect source code -- Digital UNIX, Solaris, SunOS, and UnixWare -- to make more consistent with ps the user ID lsof reports in the USER column. Added a 00FAQ entry about it. Igor Schein <igor@txc.com> reported the Solaris and SunOS lsof inconsistencies with what ps(1) reports.

Ported lsof to Pyramid ReliantUNIX 5.44.

Added brackets as comments to case, do, done, else, endif, esac, if, and while statements in Configure to assist in navigating its clauses.

Added more Linux 2.0.x glibc work-arounds.

Added support for UnixWare 7.0.1.

Ralph Forsythe <ralph@contact-paging.com> provided a new FreeBSD test system.

4.38 November 25, 1998

Added support for recent FreeBSD 3.0 distributions. A 3.0 test system was provided by David O'Brien <obrien@NUXI.com>. This was offered as a patch to 4.37.

Updated the scripts/idrlogin.perl* files to look for sshd processes in addition to rlogind and telnetd ones.

Added support for DU 5.0 Beta. Berkley Shands <berkley@cs.wustl.edu> provided a test system.

Added support for OpenBSD 2.4 with changes supplied by Kenneth Stailey <kstailey@disclosure.com>.

Changed the Solaris 2.7 tests and documentation to Solaris 7.

Made some changes to the header files for NEXTSTEP 3.3 and added support for OPENSTEP 4.x with help from Michael A. Hovan III <mhovan@BLaCKSMITH.com> and Carl Lindberg <Carl_Lindberg@BLaCKSMITH.com>. The combined dialect subdirectory is named n+os. One of Carl's changes propagates RC_CFLAGS to the library Makefile. Timothy J. Luoma <luomat@peak.org> helped test under NEXTSTEP 3.3 and OPENSTEP 4.2.

Made UW 7.x version sensitive to the presence of ptf7038. Added peer PCB address to Unix domain socket Name column, even when a path name has been located. Information for these changes was supplied by Francis Le Bourse <flebourse@intelcom.fr>. Lee Penn <lee@dlpco.com> provided a test system.

Tested lsof under OSR 5.0.5 on a test system also provided by Lee Penn.

Made path name argument processing more tolerant of errors per a suggestion from Julian Gordon <julian@cadence.com>.

Acquired a new UnixWare 2.x test system, generously provided by Computer Classroom, Inc. -- Matthew Thurmaier <matt@compclass.com>, Ken Laing <ken@compclass.com>, and Andrew Merrill <andrew@compclass.com>. Updated Configure to accept a UnixWare version of 2.1.3.

Updated kmem-based lsof for Linux 2.0.36.

Updated NetBSD sources for a change in a UVM virtual mapping header file.

Corrected a cache allocation bug in Sun format kernel name cache handling. The bug only shows up when the kernel name cache is inaccessible.

4.39 December 29, 1998

Corrected problems with large device number handling for 64 bit Solaris 7. The problems were reported by Steve Bellenot <bellenot@math.fsu.edu>. Steve helped test the fixes. The fixes were offered as two patches to lsof 4.38.

Improved FreeBSD Configure operations for header files that must be obtained from the kernel source tree, based on a suggestion from David O'Brien <obrien@NUXI.com>.

For Bela Lubkin <filbo@deephought.armory.com> made optional with +f[cfn] the display of file structure address, shared use count, and node structure address. /proc-based Linux doesn't implement this feature, because it doesn't read kernel structures from kernel memory. Modified the PTX -X option to take advantage of the new file structure display option. Added shared.perl5 to the scripts/ subdirectory to provide an example of how +f[fn] might be used to track shared file descriptors and files.

Added more /dev/kmem-based Linux glibc evasions, provided by Jeff Johnson <jbj@redhat.com> and Maciej Lesniewski <nimir@kis.p.lodz.pl>. Jeff helped test them on various Linux architectures.

Tested on AIX 4.3.2; no changes were required. Doug Crabill <dgc@purdue.edu> provided a test system.

Fixed -c option to detect missing command name when following option begins with `+'.

4.40 January 25, 1999

Added support for using the CDS compiler for Reliant Unix 5.44 and above. Made Reliant Unix MIPC support optional, dependent on the presence of <sys/mipc.h>.

Based on a report from Michael Schmitz <MSchmitz@lbl.gov> that /dev/kmem-based lsof misbehaves on a Linux 2.0.x m68k kernel without module support, made the absence of query_module() or get_kernel_syms() Linux kernel support a fatal error. Updated relevant sections of 00FAQ to reflect the change.

Added the ability to force the Linux Configure stanza to use the /proc or /dev/kmem source base via a LINUX_BASE environment variable specification. This is a cross-configuration assist.

Added "+D <dir>" and "+d <dir>" options for directory searching. +D searches the entire tree, starting at <dir>, including <dir>, its contents, and its subdirectory branches; +d searches only <dir> and its contents, but not its subdirectory branches. Improved lsof's searching of the specified name list to compensate for anticipated long lists from +d and +D.

Made an egrep in the Solaris Configure stanza usable by the standard and XPG4 egrep's. Kenneth Stailey <kstailey@disclosure.com> pointed out the improvement.

Fixed bugs in /dev/kmem-based Linux and UnixWare Unix domain socket name searching.

Changed a Linux Alpha #include to be conditional on the presence of its named header file, so that lsof will compile on Red Hat 5.1 and 5.2 (Linux kernel 2.0.35) where the header file is absent. The problem was reported by Alexandre Oliva <oliva@dcc.unicamp.br>.

Fixed an AIX 4.3+ bug in procinfo struct space allocation, reported by Jeff Stewart <jws@purdue.edu>. This was offered as a patch to 4.39.

Added an lstatsafely() function to offer the same isolation for lstat() calls that statsafely() offers for stat() calls. This made DOSTAT_FUNCTION no longer necessary, so deleted it.

With help from Laurent P. Montaron <lpm@sequent.com> ported lsof to PTX 4.4.4. Laurent did a monumental job of identifying TCP/IP changes by their TCP version, rather than by their PTX (With mix 'n match PTX and TCP/IP versions, the PTX version often has no bearing on the TCP/IP version.), and changed the Configure script and pre-processor #if/#else/#endif blocks to match. He also updated Unix domain socket handling for PTX TCP/IP versions 4.5 and above.

Updated CLIENT handle acquisition of fill_portmap() in print.c to use the more modern RPC function clnt_create() in place of clnttcp_create() where possible. PTX 4.4.4 requires clnt_create().

4.41 February 27, 1999

Added FreeBSD 3.1 and 4.0 support with help from Sheldon Hearn <axl@iafrica.com>, David O'Brien <obrien@NUXI.com>, and John Polstra <jdp@polstra.com>.

Corrected bungled AIX 4.3+ patch that went into lsof 4.40.

Reorganized the Configure script to improve Makefile construction. A specific impetus for this was to allow FreeBSD system-wide make flags to be propagated to the lsof Makefiles, but other goals were to make sure that the DEBUG= make entry can over-ride standard CFLAGS values, and to better manage the identification of compilers and their versions. Two compiler-related values may now be supplied in environment variables: 1) the compiler path in LSOF_CC; and 2) the compiler version in LSOF_CCV. 00XCONFIG documents them.

Added support for Pyramid Reliant Unix bsdfs, mssockfs, and sockfs file systems.

Added an optional LSOF_CINFO string to Configure, producing a CINFO string in selected Makefiles, producing a #define LSOF_CINFO in selected version.h header files. The purpose of this is to allow Configure the option to propagate information to the lsof -v output. It is now used for Linux to identify the code base, and for HP-UX 10.30 and 11.0 and Solaris 7 to identify the kernel bit size.

Added system information to NEXTSTEP and OPENSTEP -v output, from the second line of hostinfo's output.

Fixed a login name buffer overflow problem in the processing of -u option values. This was offered as a patch to 4.40. **!!!THIS IS A SERIOUS STACK OVERFLOW BUG; A LINUX EXPLOIT EXISTS FOR IT THAT OPENS A BASH SHELL WITH LSOF'S AUTHORITY -- E.G, SETGID(KMEM) POWER!!!**

Improved the Solaris mount table filter so the volume manager's fake mount point, "/vol", is ignored and doesn't supplant "/" in NAME column path assemblies. Igor Schein <igor@txc.com> reported this bug and provided important help in finding it. This was offered as a patch to 4.40.

Changed the Linux /dev/kmem-based lock ownership test to answer a problem reported by Tom Christiansen <tchrist@jherreg.perl.com>. This was offered as a patch to 4.40.

Installed an HP-UX 11 patch, suggested by Kevin Vajk <kvajk@cup.hp.com>, that adjusts a private lsof kernel header file, derived via Q4, to correspond to an HP-UX patch bundle.

Made NetBSD 1.3I sockproto structure adjustment.

4.42 March 30, 1999

Fixed a typo in the HP-UX dfile.c that caused +fF and +fN output controls to swap effect.

Enabled for OpenBSD 2.5 per notice from Kenneth Stailey <kstailey@kstailey.tzo.com>

Made more VM accommodations for FreeBSD 4.0.

Improved file system search reporting to include path name components when they're available, instead of mindlessly reporting the file system name in the NAME column. Guy Dallaire <gdallair@geocities.com> brought the need for this change to my attention.

Updated Solaris 2.6 VxFS for Veritas Oracle Database Edition 2.0, VxFS version 3.3, and VxVm version 2.5.4, based on a report from Chris Kordish <chris.kordish@East.Sun.COM>. Chris kindly provided a test system.

Improved HP-UX ipc_s patch detection in Configure, response in ../dialects/hpux/hpux11/ipc_s.h, and documentation in 00FAQ, Kevin Vajk <kvajk@cup.hp.com> helped test.

Added to Customize the option to suppress HASKERNIDCK selection for specified dialects. Suppressed it for /proc-based Linux lsof, and removed its test

and code from there. Tin Le <tin@netimages.com> alerted me to the need for this update.

Ported to official Digital UNIX 5.0 release.

Changed DU lsof to use the knlist(3) function when no kernel file has been specified with -k. This change was suggested by Erich Wimmer <Erich.Wimmer@digital.com>.

Updated Configure for latest NetBSD (1.3I?) with UVM support the default.

4.43 May 11, 1999

Corrected a typo in the Solaris gcc discussion in 00FAQ. Made changes to the Solaris 2.5[.1] private tcp_s structure. Both changes were done in response to reports from Igor Schein <igor@txc.com>, who tested the Solaris 2.5 change.

Made more IPv6 adjustments to lsof for Tru64 UNIX (Digital UNIX) 5.0, based on information obtained from Compaq by Berkley Shands <berkley@cs.wustl.edu>.

Corrected HP-UX error message about HP-UX 11 q4 usage. Amir Katz <amir@ndsoft.com> reported the correction.

Fixed a Glibc 2.1 conflict in /proc-based Linux lsof.

Fixed a man page typo reported by Vlad Harchev <hvv@hippo.ru>.

Changed some Solaris 2.7 references to Solaris 7 in Configure and 00EXPORTING.

Added a Solaris example to the echo statements that are the install rule in the SunOS/Solaris Makefile.

Added a field to the file structure output -- FILE-FLAG (file structure open flags, f_flag[s], and process file flags, typically u_pofile) -- enabled with +f[gG]. Its field output character is 'G'.

Figured out another piece of the HP-UX 11 patched ipc_s structure puzzle with the help of Keith Kalet <KEITH_KALET@HP-USA-om41.om.hp.com>.

Fixed a PTX real vnode to real inode interpretation bug.

Added link count to lsof output. Eric Dumazet <dumazet@risgw.ris.fr> requested and helped test it. The new +L option enables and filters it. Its field output character is `k'.

Updated Configure script to recognize NetBSD 1.4.

Updated AFSCONFIG to handle default answers to questions.

Incorporated patch from Jonathan Sargent <sergent@io.com> that enables /proc-based Linux lsof to run on both 32 and 64 bit kernels.

Updated Configure script with a patch from David O'Brien <obrien@NUXI.com> that recognizes FreeBSD 3.2.

4.44 June 24, 1999

Corrected use of nlink member of hsnode for SunOS 4.1.x High Sierra File System files. John Dzuber <zube@tlaloc.stat.colostate.edu> reported the problem and helped test the fix. Also fixed a SunOS segmentation fault bug. These fixes were offered as a patch to 4.43.

Improved handling of /proc-based Linux UNIX PCB address.

Fixed a NEXTSTEP and OPENSTEP bug that made repeat option (-r) processing malfunction. This fix was offered as a patch to 4.43.

Fixed Configure so it doesn't use -O in the Cflags for the bundled HP-UX C compiler. Jim Ankenbrandt <jankenbrandt@penton.com> reported the problem.

Corrected output ordering of parent PID and process group ID when both -R and -g are specified.

Enhanced the pdev.c and pdvn.c library modules for wider use. These dialect versions use the new library modules: DEC OSF/1, Digital UNIX, and Tru64 UNIX; Pyramid DC/OSx and Reliant UNIX; SCO OSR and UnixWare; and Sequent PTX.

Added basic clone device support to /dev/kmem-based HP-UX lsof for HP-UX 10.30 and higher.

Added raw socket support to /proc-based Linux lsof.

Changed NODE-ADDR column title to NODE-ID in anticipation of using more general identification information in the column.

Ported to UnixWare 7.1, using a test system kindly provided by Matt Thurmaier <matt@compclass.com> and Don Draper <dond@sco.com>.

Updated for NetBSD 1.4C VM changes, and a new current and root working directory structure.

Made minor adjustment for latest Tru64 UNIX 5.0 Beta release.

4.45 July 30, 1999

Fixed quoting problem in DEC OSF/1, Digital Unix, and Tru64 UNIX Makefile's install rule. The problem was reported by Berkley Shands <berkley@cs.wustl.edu>.

Fixed bug in Tru64 UNIX 4 lsof that caused FDs to be skipped. These fixes were offered in a patch to 4.44.

Fixed a repeat-mode /proc-based Linux lsof bug, reported by Sami Farin <sfarin@ratol.fi>. This was offered as a patch to 4.44.

Picked lint, some reported by Sami Farin.

Corrected a 00DCACHE documentation error in a sample shell script. The problem was reported by Chad R. Larson <chad@larsons.org>. Changed commented-out entries in machine.h files so they require more thought and work when the comments are removed, based on a remark by Chad.

Compensated for the practice of Solaris 7 and above to record the dev= value in /etc/mnttab in 32 bit mode, even on 64 bit systems. This was offered as a patch to 4.44.

Added a C library test for /proc-based Linux lsof, so that the #include files can be adjusted for a non-Glibc environment. The need for this was

reported by Andrew Hill <andrewh@tirin.openworld.co.uk>.
This was offered as a patch to 4.44.

Added support for Auspex LFS 1.8.1 and 1.9.2 to SunOS 4.1.4 lsof. The support was requested by Quentin Fennessy <quentin@dvorak.amd.com>, who provided information and did testing.

Enabled IPv6 support code for NetBSD and OpenBSD, conditional on Configure script tests. Wolfgang Rupprecht <wolfgang@wsrcc.com> supplied the NetBSD code and tested it. The OpenBSD code I constructed has been compiled but not tested.

Updated the identd Perl 5 script, based on a report from Wendy Lin <af5@taiyang.cc.purdue.edu> that the space in its response line in front of the user name violates RFC 1413.

Added IPv6 support to /proc-based Linux lsof. Jonathan Sergent <sergent@ETLA.NET> and Andrew Thomas Sydelko <sydelko@ecn.purdue.edu> kindly provided a test system.

Updated man page description of AIX multiplexed files to indicate that they might be /dev/ptc or /dev/pts, depending on the AIX version. The correction was suggested by Onno van der Linden <onno@simplex.nl>.

Sylvain Robitaille <syl@alcor.concordia.ca> reports lsof passes his Y2K tests.

4.46 October 23, 1999

Corrected /proc-based Linux lsof to detect that an IPv6 address is a mapped IPv4 address. The problem was reported and analyzed by Arkadiusz Miskiewicz <misiek@misiek.eu.org>, who also tested the fix.

Added a libc5 library /dev/kmem-based Linux lsof circumvention, supplied by Jason Lingohr <lingman@lucid.net.au>.

Corrected a bug in -t (terse) AIX output, reported by Wendy Lin <af5@taiyang.cc.purdue.edu>. I introduced the bug at revision 4.43 when adding FILE_FLAG reporting. This was offered as a patch to 4.45.

Added a work-around for a problem in the OpenBSD 2.3 <sys/pipe.h> header file. Volker Borchert <bt@tekon.de> provided and tested it.

Improved description of cross-building lsof for a 64 bit Solaris 7 system on a 32 bit system with suggestions from Phillip Edwards <Philip.Edwards@sn.wpafb.af.mil>.

Fixed a gawk POSIX-mode pattern error in the Linux /dev/kmem-based Mksrc script, based on a tip from Ambrose C. Li <acli@mingpaoxpress.com>.

Fixed a bug in the Tru64 UNIX IPv6 handling, courtesy of a report from Casper Dik <casper@holland.sun.com>.

Enabled support for OpenBSD 2.6.

Enabled support for BSDI BSD/OS 4.1, based on a report from Jeffrey C Honig <jch@bsd.com> that only a Configure script change is necessary.

Enabled Configure script to use gcc for building lsof for a 64 bit Solaris 7 and 8 kernels, if the gcc version is 2.95 or above.

Improved -i option handling for systems with IPv6 support so that it will search for a host name in both IPv4 and IPv6 families, when that is possible. As a companion modification, changed -V processing to report a single error when a multiple host name match is requested. Casper Dik <casper@holland.Sun.COM> helped test.

Fixed a DEC OSF/1, Digital UNIX, Tru64 UNIX repeat mode bug, reported by Mayer Ilovitz <mayer@cooper.edu>. Mayer helped test the fix. The fix was offered as a patch to 4.45.

Changed Solaris socket file recognition scheme, so it is (nearly) the same through Solaris 8, where the previous clone device scheme no longer works.

With significant assistance from Casper Dik, added support for Solaris 8 Beta and Beta refresh. The IPv6 support in Solaris 8 is still in some flux, so there are temporary compensations for the

differences between Beta IPv6 support and Beta refresh IPv6 support. Casper and I hope those differences disappear by FCS.

Improved the delivery of information on Solaris 2.5.1, 2.6, 7, and 8 door files.

Fixed a repeat mode bug that surfaces when /etc/passwd changes between cycles. The bug report and diagnostic help were supplied by Igor Schein <igor@txc.com>. The fix was offered as a patch to 4.45.

Added support for INRIA IPv6 to NetBSD. Jean-Luc Richier <Jean-Luc.Richier@imag.fr> provided patches and a test system on which to verify them.

Added support for AIX 4.3.3. Jeff W. Stewart <jws@anaconda.cc.purdue.edu> provided a test system.

Made adjustments for FreeBSD 4.0-current.

Improved reporting of information for AIX sockets that lack protocol control blocks.

4.47 November 29, 1999

Based on a query from Jean-Pierre Radley <jpr@jpr.com>, changed the lsof top-level Makefile to propagate CFGF to the library Makefile. (DEBUG was already being propagated.) Added osrgcc and scogcc Configure abbreviations (to use gcc) for Jean-Pierre.

In response to a query from Igor Schein <igor@txc.com>, improved the Configure script test for Solaris 7 and 8 that decides if the compiler can produce 64 bit executables.

Made an ugly hack, based on making a private rnode structure definition from q4 output, to compensate for HP-UX 10.20 and lower recent NFS3 patches. HP didn't supply an updated <nfs/rnode.h> with the patches. The problem was reported by Will Partain <partain@mekb2.sps.mot.com>. Elias Halldor Agustsson <elias@hi.is> helped identify the patches as PHNE_18173, PHNE_19426, PHNE_19937, and PHNE_20091, and provided a test system.

Switched BSDI test system from 2.1 and 3.1 to 4.0.1, courtesy of Terry Kennedy <terry@tmk.com>.

Added some more dev_t hacks for Alpha FreeBSD 4.0.

Added support for IPv6 on BSD 4.x. The support hasn't yet been tested, just compiled.

Added support for the mnt file system (mntfs or /etc/mnttab) on Solaris 8. Tested on Solaris 8 BETA-Refresh.

Made selection of optional fields (e.g., PPID with -FR) in a field output specification select the optional field, too, so that the option selector for the field (e.g., -R) isn't also required. This change was made in response to an inquiry from John DuBois <spcedt@armory.com>. This may require some revision to scripts that parse all field output; two scripts in the lsof distribution's scripts/ subdirectory had to be updated.

Corrected handling of Linux IPv4 addresses mapped in IPv6 addresses.

Tested under OpenBSD 2.6.

4.48 January 14, 2000

Modified -i argument processing of colon-separated IPv6 addresses to recognize an IPv4 address mapped in an IPv6 address and handle it as an IPv4 address. This was offered as a patch to 4.47.

Added a defined symbol (NOWARNBLKDEV) to control (inhibit) the issuance of a warning when no block devices are found. This was done anticipating its need in FreeBSD 4.x, but that dialect version no longer has any block devices, so HASBLKDEV was disabled for it instead. NOWARNBLKDEV was left in place for possible use in the future.

Enabled KAME IPv6 Configure support for FreeBSD when <netinet6/in6.h> is found.

Disabled use of gcc to compile lsof for 64 bit HP-UX 11.

Updated Configure to recognize FreeBSD 3.4.

Based on suggestions from Bernt Christandl

<beb@MPA-Garching.MPG.DE> improved AFS configuration for AIX and Solaris, and updated AIX AFS 3.5 support. Johannes Tax <tax@bluedog.oit.unc.edu>, Hung T. Pham <hung_pham@unc.edu>, and Curt Freeland <curt@grumpy.cse.nd.edu> provided test systems.

Updated lsof's private rnode definition for AIX 4.3.3, since IBM still doesn't ship the <oncpus/nfs/rnode.h> header file and the rnode structure definition in <nfs/rnode.h> doesn't match what the kernel uses. This was offered as a patch to 4.47.

Weakened the test in the Linux /proc-based lsof of the field count of data lines in /proc/net/{tcp,udp}. It appears that recent 2.3.x Linux kernels have added untitled fields to these files. The bug report came from Gabor Liptak <gaborliptak@usa.net>.

Adjusted for a FreeBSD 4.0 change in the definition of [_]KERNEL. David O'Brien <obrien@NUXI.com> reported the problem and provided a test system.

Removed the HASPPID bracket from Fppid (the -R option state variable) so that the field select table will compile even when HASPPID is not defined. This problem was introduced at revision 4.47 with code that causes some field output characters to set option states. The problem was reported by David Bacon <bacon@birch.eecs.lehigh.edu>.

4.49 April 3, 2000

Made clearer in man page that "Lxx" FDs are AIX loader table references. Also updated the 00FAQ discussion of the Stale Segment ID bug to include AIX 4.3.x.

Modified support for NetBSD 1.4Q to include the <sys/buf.h> header file to cope with an MFS change.

Added support for OpenBSD UVM virtual memory.

Added support for AIX systems with > 2GB of memory. Chris Sylvain <csylvain@itg.ummc.umaryland.edu> reported the problem and provided the solution. Chris also supplied some minor code cleanup. This was offered as a patch to 4.48.

Based on new information from Igor Schein <igor@txc.com> made additional compensation in Configure script for 64 bit Solaris 7 and 8 gcc.

Added some 00FAQ info on the effect ordering of the +fg and -FG options has on output format.

Improved NetBSD IPv6 configuration, based on a suggestion from Thomas Klausner <wiz@danbala.ifoer.tuwien.ac.at>. Added code to convert IPv4-mapped-in-IPv6 addresses to IPv4 addresses.

Updated the information in 00FAQ and the HP-UX 11 binary directory README files on the HP-UX 11 ipis_s patch with new information supplied by Eric McWhorter <emcwhorter@xisis.xerox.com>.

Added documentation on changes to HASFSTYPE and HASNCACHE, and the new HASPRIVPRIPP.

Adjusted Configure for FreeBSD 5.0. Made additional, necessary changes to Configure and the BSDI sources to eliminate load errors.

Added KAME IPv6 support to FreeBSD at the request of Ollivier Robert <roberto@eurocontrol.fr>, who provided a test system.

Corrected the script that generates the CHECKSUMS files for binaries to correctly name the detached PGP certificate. The documentation bug was reported by Michael Hennecke <hennecke@rz.uni-karlsruhe.de>.

4.50 June 29, 2000

Added a NetBSD alpha test host, courtesy of Ray Phillips <r.phillips@mailbox.uq.edu.au>. An lsof 4.49 binary, built on Ray's 1.4.1 system was made available prior to the 3.50 release.

Upgraded the system map file tests in /dev/kmem-based Linux lsof, making the use of DEBIAN_LINUX_LSOF unnecessary. Tested the changes on a system made available by Vincent Kujala <kujala@geog.ubc.ca> and Jim Mintha <jim@ic.uva.nl>.

Forced AIX to use the large-file-enabled versions of lstat (lstat64) and stat (stat64) if <sys/stat.h>

contains stat64. This should allow lsof to stat() AIX files > 2GB even when the builder has not defined the "large file enabled programming environment." Configure tests <sys/stat.h> and puts -DHASSTAT64 in the Makefile's CFLAGS to make this happen. Fernando A.B. Whitaker <whitaker@cenapad.unicamp.br> reported the problem. This was offered as a patch to 4.48.

Enabled Configure script to handle OpenBSD 2.7. Angelos D. Keromytis <angelos@dsl.cis.upenn.edu> reported the availability of OpenBSD 2.7 and supplied the Configure script patch.

Improved handling of DOOR and fattach()'d files in Solaris.

Changed message about missing kernel symbol file from "not yet determined" to "none found".

Updated FreeBSD, NetBSD, NEXTSTEP, OpenBSD, and OPENSTEP support to report "no PCB" and the values of the SO_CANTSENDMORE and SO_CANTRCVMORE state flags when a socket structure has no inpcb pointer. This modification was made to AIX lsof at revision 4.46. Added an entry to 00FAQ about sockets that have no inpcb pointer.

Upgraded support for FreeBSD 5.0-CURRENT. Ben Smithurst <ben@scientia.demon.co.uk> supplied patches and did testing. David O'Brien <obrien@NUXI.com> supplied a test system. The update included dropping the FcTTY part of file descriptor file system support, conditional on a Configure script test. I propagated those changes to BSDI, NetBSD, and OpenBSD in anticipation of their having the modification in the future. David also arranged with Michael Haro <mharo@area51.fremont.ca.us> for a FreeBSD 3.4 test system.

In response to an lsof 3.72 bug report from Jim Mewes <jim@corp.phone.com>, added more kernel address filtering to the lsof function, kread(), that reads Solaris kernel data.

In response to a report from Marc Duponcheel <marc@offline.be>, added tests to the /proc-based Linux lsof to ignore file systems of types "autofs"

and "pipfs".

Based on a report and information supplied by Casper Dik <casper@holland.Sun.COM>, updated the ncache_load() function in lib/rnch.c with new code that deals with a post Solaris 8 change in kernel name cache (DNLC) handling. Casper tested the update, which should be invisible to Solaris versions without the new DNLC code.

Added support for Solaris VxFS QIO files, based on a report from Kieran Broadfoot <kieran.broadfoot@gs.com>. Kieran help test the support.

Added support for PTX 4.4.6 and 4.5[.1] with help from the usual cast of good people at Sequent.

Added support for 64 bit file sizes and offsets on BSDI, FreeBSD, NetBSD, and OpenBSD, based on a report from Dan Nelson <dnelson@emsphone.com>. Dan supplied a patch and did FreeBSD testing.

Added Configure script recognition of NetBSD 1.5, based on a report from Andrew Brown <atatat@atadot.net>. Thomas Klausner <wiz@danbala.ifoer.tuwien.ac.at> updated the NetBSD port package to use a pre-release of this addition.

At the last minute saw a notice via deja.com's UseNet search service that FreeBSD 3.5 had been released and lsof didn't grok it. Added recognition of 3.5 to lsof's Configure script, but didn't have the opportunity to test lsof on 3.5.

4.51 August 21, 2000

Added Configure script support for the upcoming Solaris 9 release based on suggestions from Casper Dik <Casper.Dik@holland.sun.com>.

Changed sample Perl scripts to assume that /usr/local/bin/perl is Perl 5 and Perl 4 may be found in /usr/local/bin/perl4.

Updated Configure to recognize FreeBSD 4.1 and made a FreeBSD pre-release distribution available.

Bela Lubkin <belal@sco.COM> tested lsof on the upcoming SCO OSR 5.0.6 release and reports that

lsof appears to work properly.

Updated the AIX compiler test in Configure to recognize its version 5.

Updated AIX 4.3.3 support with automatic recognition of the proper rnode structure, based on machine bit width. Also added code to detect when processing the -X option that lsof has been compiled with the "other" AIX 4.3.3 user structure and to apply compensations. When a compensation method works, it's applied during subsequent -X processing; when none works, further -X processing is disabled.

Added Tru64 UNIX 5.1 support. Updated Tru64 UNIX library text file support to recognize new kernel support for AdvFS library files. Berkley Shands <berkley@cs.wustl.edu> and Klaus Saggerer USG [saggerer@zk3.dec.com] helped put me in contact with Chang Song <song@zk3.dec.com>, the developer of 5.1's new kernel name cache and he helped me develop new code in lsof to access it.

Corrected reporting of PTX fattach()'d address.

Changed Configure and dlsof.h for NetBSD and OpenBSD to use /usr/include/uvm header files when available. Andrew Brown <atatat@atatdot.net>, Thomas Klausner <wiz@danbala.ifoer.tuwien.ac.at>, and Wolfgang Rupprecht <wolfgang@wsrcc.com> pointed out the need to do this for NetBSD. Andrew provided access to a NetBSD 1.5 system for verifying the changes.

Installed snprintf() support, including a private version in the lsof library for those UNIX dialects without the function. Changed all sources to use it instead of sprintf() and strcpy().

Fixed a memory leak in the readvfs() functions of BSDI, DEC/OSF1, Digital UNIX, FreeBSD, NetBSD, OpenBSD, and Tru64 UNIX.

Tested on Linux 2.4.

Modified the Pyramid MkKernOpts script to compensate for `uname -s` configuration alternatives. Robert Dahlem <Robert.Dahlem@ffm2.siemens.de> supplied the modification.

Obtained access to an FCS Solaris 8 64 bit system and built lsof on it, using Sun Workshop C 5.0 and gcc 2.96 20000814 (experimental). Both compilers produce a working lsof.

4.52 November 8, 2000

Completed work on an HP-UX 11.11 port that uses a pstat(2) interface provided by HP. To distinguish it from its predecessors for HP-UX, this lsof version is called PSTAT-based and the predecessor versions are now called /dev/kmem-based. I am indebted to the far-sightedness and support of these good people at HP for making PSTAT-based lsof possible: Carl Davidson, Louis Huemiller, Rich Rauenzahn, and Sailu Yallapragada. The PSTAT-based sources are in lsof_4.52/dialects/hpux/pstat, the /dev/kmem-based ones in lsof_4.52/dialects/hpux/kmem.

Ported to IBM Monterey for Merced[Itanium, aka AIX 5L. It configures via the Configure script's "aix" abbreviation and has been tested on AIX 5L Beta 3. Jay Beck, Steve Dibbell, Loc Le, Nasser Momtaheni, and Malcom Zung of IBM provided generous support. Since AIX 5L is still in Beta testing, this port can't be considered complete.

Added Configure support for OpenBSD 2.8. David Mazieres <dm@cs.nyu.edu> provided a test system.

Based on a report from Marc Christensen <marc@mecworks.com> added sockfs to the mount scan exemption list for /proc-based Linux lsof.

Added large file, CDFS, and DOSFS for UnixWare 7.x. Added UnixWare device memory mapping support. All UnixWare changes were supplied by Eric Dumazet <edumazet@cosmosbay.com> Eric also supplied some miscellaneous bug fixes.

Deferred name cache loading until printname() needs to use the name cache.

Terminated Pyramid, SunOS 4.1.x, and Ultrix support, because test systems are no longer available. Final Pyramid and Ultrix source code distributions for lsof revision 4.51 may be found on lsof.itap.purdue.edu

in pub/tools/unix/Isos/OLD/src. The no longer supported SunOS 4.1.x source code is still distributed with the Solaris source code.

Added code to set Solaris node address to real vnode address, when applicable.

John Speno <speno@lopan.isc-net.upenn.edu> provided information that enabled me to update the Tru64 AdvFS (MSFS) node definition for AdvFS version 5.

Added Tru64 5.x CFS support with help from Kris Chandrasekhar <Kris.Chandrasekhar@compaq.com>, Diane Lebel <lebel@zk3.dec.com>, and John Speno. The support only provides information about cached file attributes.

Installed a Configure patch for HP-UX 11 supplied by Kenneth Stailey <kstailey@disclosure.com> that adds another command to q4 input.

Tested on FreeBSD 4.2.

Will Day <willday@rom.oit.gatech.edu> and Frank Winkler <frank.winkler@germany.sun.com> graciously supplied Solaris 8 binaries.

Added Solaris 9 text file support, supplied by Casper Dik <Casper.Dik@holland.sun.com>.

4.53 December 6, 2000

Added the AIX 5L j2_lock.h to the distribution with a Configure script step to use it when it's missing from /usr/include/j2.

Removed SunOS 4.1.x support.

Removed Linux 2.0.x /dev/kmem support.

Fixed VBLK and VCHR special device file reporting to handle /dev information more accurately.

Added a Apple Darwin / Mac OS X 1.2 port, provided by Allan Nathanson <ajn@apple.com>. Allan also arranged for a test system so I can maintain this port. An additional test system was provided by Dale Talcott.

Dropped claims of support for all UnixWare versions except 7.1.0, since that is the only version on which I can test lsof. Even though lsof 4.53 is deprecated for UnixWare 2.1.3, installed a patch for it with testing done by A. Channing Clark <clark.channing@heb.com>.

Dropped claims of support for all SCO OpenServer versions except 5.0.5, since that is the only version on which I can test lsof.

4.54 January 19, 2001

Added compensation for a change that made the FreeBSD mount structure invisible. I can only test back to 3.2 and the compensation works there, so it's been #ifdef'd for 3.2 and above. David O'Brien <obrien@FreeBSD.org> provided the necessary clue.

Based on a report from Valdis Kletnieks <Valdis.Kletnieks@vt.edu>, changed all IPv6 support to report a TYPE of IPv6 for sockets with IPv4 addresses mapped in IPv6 addresses. The previous lsof behavior was to report their TYPE as IPv4.

Restored the Linux Glibc test to Configure, removed at revision 4.53, based on a report from John Dzubera <zube@cs.colostate.edu>, that RedHat Linux 6.0 still needs the test.

Made setting of link count for Solaris more selective.

Limited Readlink() recursion to MAXSYMLINKS. The bug was reported by Jan Dvorak <johnydog@go.cz>.

Dropped the *claim* that lsof runs on Solaris 2.5.1. It may well do so, but I no longer have access to a test system.

Fixed an #endif comment typo, reported by Igor Schein.

Fixed a typo in a cast for a Tru64 UNIX 5.1 function and updated Configure for Tru64 UNIX 5.0 and 5.1 with information from Jesse Perry <jesse.perry@compaq.com>.

Corrected non-fatal typos in the AdvFS support in dnode.c for Tru64 UNIX.

Added msdos file system support for NetBSD and OpenBSD.

Andrew Brown <atatat@atadot.net> requested and helped test it.

4.55 February 15, 2001

Based on a report from Bernd Eckenfels <eck@lina.inka.de> added support in lsof for files in /proc/<PID>/maps that have been deleted.

Changed PGRP output title to PGID, conforming to the most common current abbreviation for Process Group ID (PGID). While some systems continue to use *pgrp for internal kernel variable names, most systems that support the display of PGID via ps(1) now title it PGID. The lsof -g and -fg options operations are unchanged in function; only titles and descriptions have changed. Also changed internal variable names from *PGRP and *pgrp to *PGID and *pgid where possible.

Dropped the *claim* that lsof runs on HP-UX 9.x. It may well do so, but I no longer have access to a test system.

In response to a suggestion from Jeff Howie <jeff.howie@federated.ca> added support for command name selection by regular expression. A new form of the -c option value is used to identify and specify a regular expression.

Restore the *claim* that lsof works on UnixWare 7.0, since I re-acquired a test system.

4.56 May 3, 2001

Corrected some problems Amir Katz <Amir_Katz@bmc.com> found with Insure++, one in lib/dvch.c, the rest in Solaris sources. Amir's report also helped me find an error in an snpf() call that caused (the unsupported) Solaris 2.5.1 lsof to crash. Wally Winzer, Jr. <wally.winzer@ChampUSA.COM> helped test.

Added support for UnixWare 7.1.1 and above in-kernel UNIX sockets. John Hughes <john@Calva.COM> kindly provided code and access to a test system. John also provided a test system and advice for adding UnixWare 7.1.1 NonStop Cluster and CFS support. More help with that effort came from Kurt Gollhardt (SCO), Barbara Howe (SCO), Bela Lubkin (SCO), and Dewan Rashid <Dewan.Rashid@ir.com>.

Archived a set of compilation hints (patches) from Bill Melvin <Bill.Melvin@esc.edu> that make it possible to compile the old, unsupported lsof 3.08 sources on UnixWare 1.x without NFS or CDFS support.

Installed support supplied by Allan Nathanson <ajn@apple.com> for the Darwin "Gold Master" release, Mac OS X 10.0 (aka Darwin 1.3 in its public source version). Added Allan's CVS repository suggestions to the script that gets additional header files from an open source repository.

Tested an HP-UX 11.11 kernel patch from Sailu Yallapragada that enables reporting of TCP/IP information for telnetd processes that use the telnet multiplexor. I don't yet know the kernel patch ID.

Made the Solaris inclusion of <inet/mi.h> conditional on the Solaris version. (It's apparently not needed at 2.6 and above.) Bill Watson <bill.watson@uk.sun.com> brought this to my attention.

Added alternate Linux 2.4.x lock extent test, supplied by Jim Mintha <jim@ic.uva.nl>.

Rearranged the lines and pre-processor tests in regex.h, lib/regex.c, and lib/snprintf.c so that undef can be used to eliminate copyright and GPL statements when the files aren't being used for a particular dialect. (USE_LIB_* definitions in a dialect's machine.h header file determine if one or more of those three files are to be used.)

Added preliminary support for Solaris 8 with VxFS 3.4. This support will be refined as I get information from Veritas about how they will distribute the kernel header files lsof needs. Those header files were omitted from the standard VxFS 3.4 distribution. Technical assistance and testing were provided by Calle Dybedahl <cdy@algonet.se>, Gary Millen <gary.millen@veritas.com>, Rainer Orth <ro@TechFak.Uni-Bielefeld.DE>, Peter C. Vernam <pvernam@draper.com>, and Donna Yobs <Donna.Yobs@veritas.com>

Tested on FreeBSD 4.3-STABLE.

Dropped the *claim* that lsof works on UNIX dialects where I no longer have test systems: BSDI 2.1, 3.[01] and 4.0; DEC OSF/1, Digital UNIX and True 64 UNIX 2.0 and 3.2; FreeBSD 2.1.[67], 2.2[.x], 3.[012345] and 4.[01]; HP-UX 10.20; NetBSD 1.[234]; SCO OpenServer 5.0.5; and SCO UnixWare 7.0

Tested on Solaris 9 BETA, s81_36.

4.57 July 19, 2001

Help (-h) and version (-v) output now have URLs for the newly created and timeliest lsof FAQ (00FAQ in the lsof distribution) at:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ>

and the man page for the current lsof distribution at:

ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof_man

Based on a report from Steve Laubscher <slaubs@woodward.com>, modified dlsof.h for PTX 4.6[.1] to avoid a temporary dnlc_t definition needed at PTX 4.5.1.

Corrected test for old Linux kernels in Configure. Henri Karrenbeld <ishtar@cal044202.student.utwente.nl> brought the error to my attention. Limited Linux claims to 2.1.72 and above in the documentation.

Improved HP-UX 11 Configure stanza and stream socket handling.

Constructed a work-around for the HP-UX 11 optional OnlineJFS package. The work-around sadly requires lsof to have a private version of the vx_inode structure, since the OnlineJFS package doesn't update <sys/fs/vx_inode.h>. Troyan Krastev <Troyan.Krastev@ricoh-usa.com> brought the bug to my attention and Michael Bracewell <michael@ra.TSS.PeachNet.EDU> provided a test system where I developed the work-around.

Added locale support to lsof's isprint() test, based on a suggestion from Dan Mercer <damercer@mmm.com>. Lsof will use setlocale(), when that function and

its supporting <locale.h> header file are available.

Added OpenBSD 2.9 support.

Based on a report from Aaron Rhodes <arhodes@psionic.com> and with testing help from Aaron, made the lsof 4.56 revision compile and work on OpenBSD 2.6. While that OpenBSD version is no longer supported, Aaron's report exposed a Configure script bug affecting OpenBSD versions lsof does support.

Updated for FreeBSD 5.0-CURRENT. Szilveszter Adam <sziszi@petra.hos.u-szeged.hu> help test. The lsof FreeBSD ports packager, David O'Brien <obrien@FreeBSD.org>, assisted.

Tested on AIX 5.1. Loc Le and Nasser Momtaheni of IBM provided test systems.

4.58 September 13, 2001

Added options to safestrprt() and safestrprtn() to surround the string with "" and to suppress the printing of an ending '\n'. Use of these functions in device cache file error message reporting answers a suggestion for better error reporting from John Jackson <jrj@purdue.edu>.

Fixed a Solaris 2.6 and above problem related to searching for "large" (O_LARGEFILE) files by name; lsof was using the wrong version of lstat(2). The bug was reported by Daniel Trinkle <trinkle@cs.purdue.edu>.

Added AIX 4.1.4 and above XTI socket support.

Added OSR Xenix Shared Data and Semaphore file type support with modifications supplied by Bela Lubkin.

Updated OPENSTEP support with modifications from Carl E. Lindberg <lindberg@clindberg.org>. The changes enable the correct reporting of executable and library open files ("txt" type).

Limited claims of OpenServer support to the versions where I currently test, 5.0.4 and 5.0.6. (Lsof probably works on 5.0.5.)

Enabled processing of -C option for PSTAT-based HP-UX

Isof.

Enabled and tested on FreeBSD 4.4.

Corrected a file system test example in 00QUICKSTART, based on a report from Jun Biao WANG <wangjunb@cn.ibm.com>.

Made available for re-distribution a user-contributed port of Isof 4.51 to Reliant UNIX 5.45. Thomas Mauterer <Thomas.Mauterer@philosys.de> contributed the port.

4.59 October 20, 2001

With the closing of the Sequent Synergy Links Lab by IBM, terminated Isof support for PTX. The last tested PTX Isof revision, 4.58, is available on Isof.itap.purdue.edu in .../Isof/OLD/src.

Adjusted for FreeBSD 5.0-CURRENT NFS header file changes, based on a report from Jos Backus <josb@cncdsl.com>.

Corrected a bug in the way Linux Isof identifies the owner of a process. Lionel Cons <lionel.cons@cern.ch> reported the problem and tested the fix. Added code to avoid stat(2) calls on regular Linux files whenever possible. Lionel reported the need to do this (AFS files) and tested the new code.

Added new output field for raw device number in hex. The field is identified with 'r'. This field is NOT selected when -F or -F0 is specified so that its appearance won't disturb existing scripts that process field output.

Added support for OpenUNIX 8. A test system was provided by Larry Rosenman <ler@lerctr.org>. Matthew Thurmaier <matt@compclass.com> and many people from Caldera provided technical assistance.

Added an additional UVM test to the NetBSD Configure stanza. Andrew Brown <atatat@atatdot.net> supplied the test; it recognizes NetBSD 1.5Y UVM changes to the vnode structure recently committed by Chuck Silvers.

Applied Configure and get-xnu-headers.sh script changes supplied by Allan Nathanson <ajn@apple.com>

for Darwin 1.4.

Added for Bela Lubkin <belal@mammoth.ca.caldera.com>
OSR-specific environment variables to supply values
to the Configure script. The variables are described
in 00XCONFIG.

Added an IP version selector to the -i option
parameters.

4.60 November 9, 2001

Added special handling to and corrected bugs in
the matching of IPv4 in IPv6 addresses to -i6:<...>
selectors.

Made 00FAQ corrections and updates, based on
discussions with Igor Schein <igor@txc.com>.

Modified Configure script to detect a 64 bit capable
gcc compiler and permit it to be used to build 64
bit (PA-RISC 2) lsof for HP-UX 11.00. Tested with
HP's gcc package, which Rich Rauenzahn of HP kindly
installed on a test system at HP. Stefan Marquardt
<stefan.marquardt@hagebau.de> helped test.

Made lsof's method of killing its child process
more robust, based on a suggestion from Bela Lubkin
<belal@caldera.com>.

Modified all dialect Makefile segments to accept
select -v #define's from the environment -- a
builder's comment, host, logname, system information
and user name. This was done for Bela Lubkin, so
he can "tune" the -v output when he packages lsof
in the upcoming Caldera OSR 5.0.7 release.

Changed Perl scripts in scripts/ to put the lsof
path consistently in \$LSOF. Also added a fix from
Bela Lubkin to scripts/big_brother.perl5 that allows
it to tolerate SCO OSR "ago" clauses in open UDP
file information. Strengthened emphasis in
scripts/00README that the scripts are examples that
shouldn't be expected to run on all UNIX dialects
without modification.

At Bela Lubkin's suggestion changed the device
cache file format examples in 00DCACHE and 00FAQ
to avoid "%U%". That's an SCCS escape sequence.

Added support for OpenBSD 3.0.

Added +DAportable to CFLAGS for 32 bit HP-UX 11.
Amir Katz <Amir_Katz@bmc.com> suggested the addition.

4.61 January 22, 2002

Updated field output example Perl scripts in the scripts/ subdirectory to discover the lsof path, starting at .. and proceeding through the PATH environment variable's directories.

Added minor OSR Configure script fixes, provided by Bela Lubkin <belal@caldera.com>.

In response to a report from Joshua Wright <Joshua.Wright@jwu.edu> modified NetBSD and OpenBSD Configure stanzas and sources so that lsof can be built when there is no system source tree (e.g., /usr/src/sys).

In response to a report from Peter Valchev <pvalchev@openbsd.org> improved the UVM test in the OpenBSD Configure stanza.

Updated Configure script to recognize FreeBSD 4.5.
Updated for FreeBSD 5.0 procs and pseudofs changes.

Updated HP-UX stanza to see if the compiler named in the LSOF_CC environment variable is the bundled compiler. If it is, "-O" is omitted from the compiler flags.

Updated Digital UNIX 4.x and Tru64 UNIX error message related to kernel name list failures. Added an FAQ section about how a kloadsvr daemon failure can cause knlist(3) to fail. The condition was reported by Douglas B. Jones <douglas@gpc.peachnet.edu>

Based on a report from Mark W. Eichin <eichin@thok.org> made Linux lsof capable of handling and reporting file sizes greater than 32 bits.

Tested on Solaris 9 BETA-Refresh.

Corrected a bug in the matching of IPv4 addresses, mapped in IPv6 addresses, to an IPv4 parameter to an -i option.

Ported to 64 bit Power AIX 5.1 kernel with advice from David Clissold <cliss@austin.ibm.com> and Marc Stephenson <marc@austin.ibm.com>, and on a test system provided by Loc Le <lple@us.ibm.com>.

4.62 March 7, 2002

Updated 00README to reflect the usefulness of gcc for building AIX lsof. Documented a report from Brian L. Gentry <BGentry@nationsrent.com> of success on AIX 4.3.3. I documented my success on 32 bit Power AIX 5.1 and my lack of success on ia64 AIX 5.1 and 64 bit Power AIX 5.1.

Improved UnixWare >=7.1.1 reporting of UNIX socket NAME field information for NonStop Cluster systems with a patch provided by John Hughes <john@Calva.COM>. Offered John's improvement as a patch to lsof 4.61.

Corrected bugs in handling of open files on block devices by OSR lsof. The bugs were reported by Bela Lubkin <filbo@deephought.armory.com>.

Fixed bug in writing >32 bit device numbers for block devices to the device cache file.

Added support for reporting block special nodes not in /dev (or /devices). That required "like device special" be changed to "like block special" and "like character special". (00FAQ was updated.)

Based on a report from Peter Valchev <pvalchev@openbsd.org> improved the definition of the source for NetBSD and OpenBSD kernel symbols (the nlist() source file). NetBSD now defaults to getbootfile(3) if it is available, /netbsd otherwise. OpenBSD now defaults to /dev/ksyms if it is available, /bsd otherwise.

Made possible compilation under BSD/OS (BSDI) 5.0 with changes to Configure, dialects/bsdi/dlsof, dialects/bsdi/dproc.c and lib/rnmh.c. The changes were suggested by Steven Hinkle <hinkle@bsdi.com>. Note that these changes do not substantiate a claim that lsof works on BSDI 5.0, because I haven't tested it there.

Updated OpenUNIX private <sys/fs/memfs_mnode.h>.

based on a report from Larry Rosenman <ler@lerctr.org> that it had been updated by Caldera patch OU800PK3. Unfortunately the patch only corrects some of the problems with the header file, so it is still necessary to distribute a private patched version of it with the lsof sources.

Applied a man page correction reported by Frederic Delanoy <max_ok@yahoo.com>.

Corrected cast bugs related to using the HP-UX bundled C compiler on HP-UX 11.11.

4.63 April 23, 2002

Added HPUX_BOOTFILE environment variable for use by the Configure script in determining HP-UX kernel configuration information -- e.g., the state of the ipis_s structure in the HP-UX 11 kernel. The change was suggested by Marc Bejarano <beej@alum.mit.edu>. Marc also suggested some changes to the HP-UX section in 00FAQ that discusses Configure's use of q4 for HP-UX 11.

Fixed a bug in the Solaris lsof file system matching code. It was not reporting that VCHR files in /devices were in / when /devices was in /, too.

Corrected bugs in device number, file size, file offset, and raw device number field output generation.

Added recognition of OpenBSD 3.1 to the Configure script with a suggestion from Peter Valchev <pvalchev@sightly.net>. Note that this change does not constitute a claim that lsof works on OpenBSD 3.1, because I haven't tested it there.

Built an automated test suite. (See 00TEST and the tests/ sub-directory of the lsof main directory). Bela Lubkin requested it. Dale Talcott, John Hughes, and Larry Rosenman helped me validate it on their systems.

During the development of the test suite I discovered the following lsof bugs or missing features, and corrected or supplied them.

* Corrected the reporting of locks for:
o Digital UNIX 4.0d and Tru64 Unix 5.[01];

- o HP-UX 10.30 and 11.00;
- o OpenUNIX 8;
- o UnixWare 7.1.1.

* Enabled HP-UX 10.30 and 11.00 to report open NFS file link counts.

* Corrected the reporting of UNIX domain socket names for Apple Darwin, FreeBSD 4.5 and above, NetBSD 1.4.1 and above, and for OpenBSD 3.0 and above.

* Enabled HP-UX 11.11 to stat(2) large files.

* Fixed handling of combination 32 and 64 bit device numbers in AIX 64 bit architectures.

Updated the AIX 4.3.3 NFS rnode recognition code, first installed at revision 4.51. It looks like some IBM update has restored a single rnode structure independent of the machine bit width.

Updated the NetBSD and OpenBSD sources so NetBSD can process DTYPE_PIPE files, as OpenBSD was already able to do.

Updated Darwin get-xnu-headers.sh script to reflect information about a recent reorganization of the Darwin CVS hierarchy, supplied by Allan Nathanson <aj@apple.com>.

Added defense against the standard I/O descriptor attack.

4.64 June 26, 2002

Corrected some FreeBSD pre-processor directives.

David O'Brien <obrien@NIXI.com> pointed them out.

Updated lsof's main() function to: 1) close all open file descriptors above 2 before starting; and 2) to set a non-interfering umask. Moved GET_MAX_FD test from misc.c to proto.h, so that main() could use it. Added multiple-include protection to proto.h.

Moved FAQ's test suite Q's & A's to a more appropriate section. Added a Q&A on HASSECURITY option and its affect on searching for open files. (That was

already in the man page.)

Updated hpux/kmem/dnode.c for HP-UX < 11 compilation with information from John Dzuberka <Zube@CS.ColoState.EDU>. While lsof doesn't support HP-UX < 11 any more, I try to avoid disabling it there when possible, and a locking fix for HP-UX >= 11 in lsof 4.63 inadvertently disabled compilation of lsof for HP-UX < 11. Fixed long-standing bug in HP-UX 10.20 lock reporting.

Removed language from the test suite programs that requires an ANSI-C compiler. This allowed the test suite to be validated with cc and gcc on the unsupported HP-UX 10.20.

At the suggestion of Manuel Bouyer <bouyer@antioche.eu.org> switched NetBSD and OpenBSD lsof from using nlist() to using kvm_nlist(). Made the same change for BSDI, Darwin, and FreeBSD.

Validated test suite on OPENSTEP 4.2.

In response to a suggestion from Jeff Stoner <jstoner@blackboard.com> enhanced support for the FD list of the -d option to allow it to be either an exclusion or inclusion list, using the '^' prefix to denote exclusions.

Made adjustments for FreeBSD 4.6 and 5.0-CURRENT. Fixed a FreeBSD /etc/make.conf CFLAGS extraction bug, reported by Kris Kennaway <kris@obsecuity.org>, and new a bug in the fix, reported by Eric Cronin <ecronin@eecs.umich.edu>

Added nullfs support for FreeBSD, NetBSD, and OpenBSD at the request of Andrew Brown <atatat@atatdot.net>.

Modified all readmnt() functions to ignore mounted-on directory names that don't begin with '/'.

Tested on NetBSD 1.6A and OpenBSD 3.1.

Upgraded to Solaris 9 FCS with two changes to the BETA-Refresh support: 1) an adjustment to dnode.c for a change in the so_so (sonode) structure; and 2) addition of Solaris 9 FCS specific DNLC code. David Comay <David.Comay@Eng.Sun.COM> sent me the

dnodc.c change and Casper Dik <Casper.Dik@sun.com>
helped with the new DNLC support code.

Applied OpenUNIX changes that permit lsof to compile
and run on the upcoming 8.0.1 release. The changes
were supplied by Robert Lipe <robertl@caldera.com>.
Larry Rosenman <ler@lerctr.org> provided a test
system.

Added Solaris fd file system support.

4.65 October 10, 2002

Adjusted for change in FreeBSD 5.0-CURRENT inode
structure, reported by David O'Brien <obrien@NUXI.com>.
Adjusted for changes in FreeBSD 5.0-CURRENT <sys/vnode.h>.
One change was reported by Anders Nordby
<anders@FreeBSD.org>. Adjusted for FreeBSD 5.0-CURRENT
on sparc64 architecture.

Enhanced the error reporting of Solaris lsof when
it detects a kvm_open() failure, and added a 00FAQ
entry on the cause, based on a report from Peter
J. Bertocini <pjb@anl.gov>.

Enabled compiling of lsof for NetBSD 1.5 with the
NULL file system, using a patch from Andrew Brown
<atatat@atatdot.net>.

Removed a hack in the LTbigf test program that was
once needed when it was compiled on Solaris 9 BETA-
Refresh with gcc. The hack isn't needed on Solaris
9 FCS. Janet Hempstead <jan@library.carleton.ca>
brought the need for this change to my attention.

Applied a patch, supplied by Andrew Brown
<atatat@atatdot.net>, that updates lsof for NetBSD
version 1.6F. Corrected handling of the NetBSD
nullfs.

Updated to BSDI BSD/OS 4.3 on a test system kindly
provided by Terry Kennedy <terry@tmk.com>.

Updated to FreeBSD 4.7.

Updated to Apple Darwin 1.5, 5.x and 6.x with
patches supplied by Allan Nathanson <ajn@apple.com>.
The patches include IPv6 support.

Updated Configure to use the -bnolibpath loader option when building lsof on a PowerPC, running AIX 5 or greater. Valdis Kletnieks <Valdis.Kletnieks@vt.edu> informed me this was needed. Lsof for AIX 5.x was initially developed on the IA64, where -bnolibpath can't be used and I didn't think to restore it to PowerPC loads when AIX 5.x became available for that architecture.

Updated to UnixWare 7.1.3 on a test system provided by Larry Rosenman <ler@lerctr.org>. Removed claims that lsof works on OpenUNIX 8.0.1, because UnixWare 7.1.3 is the release name of OpenUNIX 8.0.1.

Based on a comment that his e-mail address was wrong in the lsof distribution from Kenneth Stailey <kstailey@disclosure.com>, removed all e-mail addresses from lsof documentation files except this one, 00DIST. The addresses in 00DIST are used to send revision release notices to those who contributed to a revision, but the addresses in this file for previous revisions and in other documentation files sometimes grow stale and are never validated.

4.66 December 22, 2002

Acquired Solaris 7 and 8 test systems, courtesy of John Dzuberka <Zube@CS.ColoState.EDU>. Updated 00TEST and tests/TestDB accordingly.

Clarified FreeBSD 5.0 architecture claims at the suggestion of David O'Brien <obrien@NUXI.com>. Also implemented David's suggestion to change Intel to x86.

Installed changes to DNLC handling in OSR lsof in preparation for handling changes in the OSR 5.0.7 DNLC cache. Information about the changes and patches to handle them were supplied by Bela Lubkin <filbo@deephought.armory.com>.

Upgraded True 64 UNIX support to the 5.1B release on a test system provided by Berkley Shands <berkley@cse.wustl.edu> Had to use relaxed ANSI compilation because of an error in a system header file and other lsof source usages.

Implemented the HASNOSOCKSECURITY compile-time option. When it and HASSECURITY are defined, lsof

will be built to list only the user's open files, but will also list anyone else's open socket files, provided the "-i" option selects their listing. Updated the Customize script to ask about setting HASNOSOCKSECURITY. Left it undefined in all dialect machine.h header files. This change was requested by Kenneth Stailey <kstailey@speakeasy.net> for use with ntop.

Added support for OpenBSD 3.2 and its kernel trace file.

Improved lsof help (-h) and version (-v) information reporting.

Fixed a FreeBSD 4.7 and above off-by-two UNIX domain socket path termination bug, reported by Ken Stailey <kstailey@speakeasy.net>

4.67 March 27, 2003

Began the transition of the lsof ftp server host name from vic.cc.purdue.edu to lsof.itap.purdue.edu. That reflects Purdue organizational changes. This first step makes the new name an alias to the old one. The old name, vic.cc.purdue.edu, will remain usable for an extended period.

Corrected a revision number reference in section 17.17 of 00FAQ on the appearance of Solaris negative DNLC caching handling.

Updated 00FAQ discussion of compilers for 64 bit Solaris.

Validated test suite for 64 bit Solaris 8 and gcc.

At the request of Alek O. Komarnitsky <alek@komar.org> added the "+c <width>" option to enable optional changing of the COMMAND column output maximum width from the default to <width>. The default maximum width remains CMDL, as defined in lsof.h.

Fixed three AIX kernel bit size detection bugs, one in the AIX Configure script stanza, the second and third in the AIX dproc.c get_kernel_access() function. The bugs were reported by Pierre-Yves Fontaniere <pyf@cc.in2p3.fr>, who tested the fixes.

Added kernel event queue file support for FreeBSD, NetBSD and OpenBSD. Andrew Brown <atatat@atadot.net> supplied the code.

Updated to AIX 5.2 on a test system provided by Dale Talcott <dtalcott@purdue.edu>. Had to build work-arounds for two missing AIX 5.2 header files, <j2/j2_snapshot> and <proc/proc_public.h>. Corrected an off-by-one UNIX socket addressing bug. Taught AIX lsof to handle both jfs and jfs2 files at the same time. Adjusted for an IBM mistake in the sizing of the fdsinfo structure in <procinfo.h> Toshiya Nakamura <TOSHIYAN@jp.ibm.com> helped test,

Updated to FreeBSD 4.8. Corrected another bug in FreeBSD UNIX domain socket name handling.

Corrected gcc build problems on HP-UX 11i, reported by Yuliy Minchev <yuliy@mobitel.bg>.

Updated BSDI BSD/OS support to 4.3.1.

Augmented a lock ID test on NetBSD to check if the ID is an LWP pointer.

4.68 June 18, 2003

Enhanced Configure script's cleanup operations.

Added support for OpenBSD 3.3, based on a report from Peter Valchev <pvalchev@sightly.net>.

Improved the description of the detached PGP signature certificate file in the main lsof README file, based on a suggestion from Diana Stockdale <diana@mpl.ucsd.edu>.

Installed a work-around for FreeBSD 5.0-CURRENT on Alpha to avoid a compiler register use complaint.

Corrected a 'c' option error message. Gnele <blaadeleng@yahoo.com> reported the problem.

Upgraded EXT2FS and UFS support for NetBSD and OpenBSD to handle new inode information, and the fast UFS1 and UFS2 file systems.

With the help of Andrew Brown <atatat@atadot.net> determined the NetBSD snapshot (1.6F) at which

<sys/mount.h> could be included under `_KERNEL`, thus eliminating the `lsof netexport.h` hack. The same change applies to OpenBSD versions 3.3 and above.

Applied a patch from Armin Gruner <ag@muc.de> that corrects the use of the `HASPROCFS` definition in the FreeBSD dialect sources.

Corrected spelling errors in `00FAQ` and in the generated `00.README.FIRST_<version>` file of the distribution archive. John Jackson <jrj@purdue.edu> and Ray Phillips <r.phillips@jkmrc.uq.edu.au> spotted and reported the errors.

Corrected a spelling error in a comment and incorrect use of an alarm function in the `LTsock` test program.

At the suggestion of Stuart Anderson <sba@srl.caltech.edu> added preliminary (and incomplete) SAM-FS file system support to Solaris `lsof`. Completion awaits availability of SAM-FS internals.

Fixed a Solaris device name printing bug, reported by Ric Anderson <ric@tick.Telcom.Arizona.EDU>, only visible when `HASDCACHE` is not defined. Ric helped test the fix.

Fixed an AIX kernel bit size handling bug related to the NFS node (`rnode`) structure.

Corrected a `print_kptr()` function call error in the AIX AFS code, reported by David Steiner <david.r.steiner@Dartmouth.EDU>. Upon further reflection and because I no longer have appropriate AIX AFS test systems, disabled AIX AFS support in the `Configure` script for AIX versions above 4.3.3.0 or AIX AFS versions above 3.5.

Added support for FreeBSD 5.1.

With advice from Allan Nathanson <ajn@apple.com> adjusted the Darwin `get-xnu-headers.sh` script to access the kernel header files needed by `lsof` from a new form of the Apple open source repository.

Installed Linux and `lsof` library bug fixes and improvements, supplied by Marian Jancar <mjancar@suse.cz>. One Linux improvement handles mount strings that have octal escapes in them, eg., `\040` for embedded

blanks. Marian tested the changes.

4.69 October 16, 2003

Received and applied an OpenBSD patch from Peter Valchev <pvalchev@sightly.net> that replaces a ctob() call with a sysconf() call. Peter claims sysconf() is needed for OpenBSD on SPARC. (It is not needed for NetBSD on SPARC.)

With the upgrade of my only Solaris 7 test system to, Solaris 8, dropped the *claim* that lsof works on Solaris 7. That doesn't mean it won't work there, so those who want lsof for Solaris 7 probably should be able to build it there and it probably will work there.

Revised lsof's DNLC handling for BSD derivatives, including: BSDI; Darwin, DEC OSF/1, Digital UNIX and Tru64 UNIX; FreeBSD; NetBSD; and OpenBSD. The latest NetBSD distribution's dropping of the vnode capability ID (v_id) required the revision.

Adjusted to the latest FreeBSD 5.1-CURRENT.

Added NetBSD support for using kvm_getproc2().

Added a patch from Andrew Brown <atatat@atadot.net> to handle NetBSD enum conflicts and changes in the <miscfs/kernfs/kernfs.h> and <miscfs/procfs/procfs.h> header files.

Added a "#define _KERNEL" to the AIX dnode2.c source file for compatibility with a new <j2/j2_inode.h> AIX 5.2 header file version. The addition was supplied by Dick Dunbar <Dick.Dunbar@Siebel.com> and was offered as a patch to lsof 4.68/

Added support for a second type of Solaris SAMFS. Stuart Anderson <sba@srl.caltech.edu> provided the support. SAMFS support in lsof SOLARIS remains scanty, because Sun won't release any details on its kernel structures.

Dropped the *claim* that lsof works on AIX 4.3.3, because I was unable to test it there. That doesn't mean it won't work there, so those who want lsof for AIX 4.3.3 probably should be able to build it there and it probably will work there.

Updated for Solaris 10 on test systems provided by Mike Miscevic <miscevic@hotpop.com>. Casper Dik <casper@holland.sun.com> provided significant help. During the Solaris 10 port found and fixed an lofs handling bug that prevented reporting of open lofs file lock status.

Updated the DNLC test, LTdnlc, to provide a possible explanation about file systems on which the test might fail.

Modified the procedure for obtaining missing Darwin XNU kernel header files. The new one requires more manual intervention, but is the best that can be done with the way Apple open sources are now organized. 00FAQ explains the new procedures for those not used to downloading Apple open source files.

Added support for Apple Darwin 7.0 (Mac OS X 10.3) with patches supplied by Allan Nathanson <ajn@apple.com>. Dropped the *claim* that lsof builds and works on Apple Darwin below 6.0.

Validated lsof on FreeBSD 4.9, using a test system provided by Ben Lewis <bl@purdue.edu>.

Validated lsof on FreeBSD 5.1-CURRENT for Amd64. David O'Brien <obrien@FreeBSD.org> provided a test system.

Changed the NetBSD Configure stanza to do header file searches in /usr/include by default. The LSOF_INCLUDE and NETBSD_SYS environment variables may still be used to specify other search paths. Discussions with Andrew Brown and Wolfgang S. Rupprecht <wolfgang@wsrcc.com> led to the change.

4.70 January 16, 2004

Improved shell-portability of the linux stanza of the Configure script with a patch from Paul Jarc <prj@po.cwru.edu>.

Added a "silent" rule to tests/Makefile for Paul. Updated, extended and clarified the test suite documentation in 00FAQ and 00TEST.

Fixed Solaris 10 dlsof.h typo, reported by Mike

Miscevic <miscovic@hotpop.com>. The typo prevents lsof from loading cleanly in Solaris 10 builds past 40.

Fixed a Solaris HSFS node number reporting bug and added a structure definition work-around for Solaris 10.

Converted PGP signing to GPG. My previous PGP key can be used, but the gpg "--allow-non-selfsigned-uid" option may have to be used when it is imported into a GPG key ring.

Added bz2 compression.

Updated for OpenBSD 3.4.

Added a work-around for a missing header file in the s10_44 Solaris 10 build.

Added support for FreeBSD 5.2-BETA and 5.2-CURRENT.

Updated Linux AX25 support with modifications supplied by Lutz Poetschulat <dl9cu@db0zwi.de>.

Added raw IPv6 support to Linux lsof.

Improved handling of parameters after "-i@".

Improved file name test in LTdnlc.c.

Added loop count controls to the reading of Solaris lock chains. The change was implemented as a result of a report from Steve Gonczi <steve@relicore.com>.

Based on a report from John Jackson <jrj@purdue.edu>, enabled a Solaris 10 <sys/lgrp.h> work-around for Solaris 9, too. (Patch 112233 installs an lgrp.h on Solaris 9 that needs the work-around.)

With help from Andrew Brown <atatat@atadot.net> and John Heasley <heas@netbsd.org> added log-structured file system (LFS) support for NetBSD and OpenBSD.

Added AMD64 to the list of FreeBSD 5.x-CURRENT supported architectures. FreeBSD.org provides a test system, courtesy of (I believe) David O'Brien <obrien@FreeBSD.org>.

Added a cast to lseek() in the HP-UX /dev/kmem-based kread() function to make it work properly with the bundled HP C compiler.

4.71 March 11, 2004

Added text file support to Apple Darwin lsof and enabled the lsof executable portion of the LTbasic test. Added support for Darwin kernel queue, POSIX semaphore and POSIX shared memory files. Tested on Darwin 7.2 (aka Mac OS 10.3.2).

Added process_kqueue() function prototypes for FreeBSD, NetBSD and OpenBSD.

Picked some lint in AIX sources, lib/rnmh.c and tests/LTsock.c.

Added "-x [fl]" cross-over option, which enables +d and +D processing to cross over symbolic links and/or file system mount points. Discussion with Johan Lindquist <johan@smilfinken.net> and Eric Williams (aka The Ghost In The Machine) <ewill3@earthlink.net> on Linux news groups revealed the need for the option.

Updated support for UnixWare 7.1.4.

Added support for the optional reporting of socket options, socket states and TCP flags for most currently supported dialects. John Smith <lbalbalba@hotmail.com> and Tristan Nefzger <tn@bhtrader.com> requested the information. The dialects and their versions for which this feature has become available include:

- AIX 4.3.2 and 5.[12]
- Apple Darwin 7.2
- BSDI BSD/OS 4.3.1
- Digital UNIX and Tru64 UNIX 4.0
- FreeBSD 4.9 and 5.2
- HP-UX 11 and 11.11 (aka 11i)
- NetBSD 1.6ZH
- OpenBSD 3.4
- OPENSTEP 4.2
- OpenUNIX 8
- SCO OpenServer Release 5.0.6
- Solaris 2.6, 8, 9 and 10
- UnixWare 7.1.[134]

Modified the Configure stanza for HP-UX 11 with better

q4 detection. Steve Bonds <3vhmxxm02@sneakemail.com> supplied the modification.

Applied a patch from Mike Miscevic <miscovic@hotpop.com> to enable lsof to compile with the zone support in the Solaris 10 s10_b51 release. Added information on lsof zone behavior to 00FAQ.

Added a "-z [z]" option to Solaris 10 lsof. It enables the listing of zone name and can also be used to select the listing of processes and their files from specified zones.

4.72 July 13, 2004

Corrected Solaris 10 ZONE column title display bug with a patch from Joep Vesseur <Joep.Vesseur@Sun.COM>. Joep's fix was offered as a patch to 4.71.

Based on a report from Jean-Pierre Radley <jpr@jpr.com> about an unexpected GNU uname Configure interaction on OSR, and working from information received from Bela Lubkin, changed the OSR Configure stanza to use /bin/uname instead of uname. Added an FAQ entry about Configure version detection problems.

Added the +m and "+m m" options in response to a dialog with Robert T. Brown <rbrown@netmentor.com>. The options allow the creation of a mount table supplement file which can be used on selected dialects to get device numbers when stat(2) and lstat(2) can't deliver them. (That's generally the result of an inaccessible NFS server.) Currently the new options are supported only on Linux.

Made cpumask_t typedef _KERNEL compensation for FreeBSD 5.2-CURRENT. Refined it for 5.2.1-RELEASE with testing help from Scott Ellentuch <tuc@tsg.com>.

Added support for FreeBSD 4.10. Larry Rosenmann <ler@lerctr.org> kindly provided a test system.

Added support for NetBSD 2.0 with patches supplied by Andrew Brown <atatat@atadot.net>. Andrew also provided two test systems.

Made handling of Linux maps file more robust, based on a report from Jan Blunck <J.Blunck@tu-harburg.de>. As a side benefit, made handling of generated stat(2)

information more flexible.

As a result of a discussion with Jason Fortezzo <fortezza@mechanicalism.net>, adjusted lsof for Solaris to obtain the maximum user name length from ut_name of the utmpx structure, if <utmpx.h> exists.

Tested under OpenBSD 3.5.

Updated README information about using gcc (via the Configure aixgcc abbreviation) to compile lsof on AIX. Ann Janssen <ajanssen@nebook.com> made me aware the information was out of date.

Added an AIX SIGDANGER handler and some FAQ sections on lsof memory usage after a discussion with Tom Qin <tom.qin@citigroup.com> about lsof memory usage.

Added scripts/sort_res.perl5, contributed by Fabian Frederick <fabian.frederick@gmx.fr>. The script displays lsof output sorted by size and path name.

Improved handling of files on Linux NFS mount points that use the root_squash option, based on discussions with Paul Szabo <psz@maths.usyd.edu.au>.

Updated FreeBSD 5.2-CURRENT support, based on a problem report from Filippo Natali <filippo@widestore.net>.

Corrected improper FreeBSD 5.x-CURRENT #if condition, reported by Kim Culhan <kimc@kim.net>.

Added a Configure script work-around for AIX 5.2 lsof with JFS2, compiled by gcc >= 3.3. The work-around was supplied by Florian M. Weps <fmw@hactrn.ch>.

4.73 October 21, 2004

Added an `__XPG4_CHAR_CLASS__` #define before #include'ing <ctype.h> on Solaris to restore lsof's ability to display special characters such as acute-e.

Added wide-character (e.g., UTF-8) support where possible, prompted by a request from Kyungjoon Lee <kjoonlee@gmail.com>. Some older dialects -- e.g., NetBSD 1.4.1 -- don't support wide characters, so the wide character support is enabled by definitions in each dialect's machine.h. Dialects with wide-character support are listed in FAQ.

Make a FreeBSD 5.2-CURRENT adjustment for <sys/pipe.h>, supplied by Sergey A. Osokin <osa@FreeBSD.ORG>.

Implemented a Linux feature request made by Jakub Jelinek <jakub@redhat.com> that enhances lsof's ability to locate UNIX domain sockets whose paths are named as arguments. Jakub supplied suggested code.

Dropped *claims* that lsof works on AIX below 5.1, SCO Dropped *claims* that lsof works on AIX below 5.1, SCO Openserver 5.0.4, Tru64 UNIX 5.0, and UnixWare below 7.1.4. Lsof will probably build and work on those UNIX dialect versions, but I no longer have any way to test lsof on them.

Added support for FreeBSD 5.3 and 6.0. The FreeBSD 5.3 support hasn't been tested.

Added FD test code that will allow dialect versions to test FD option selections. Used the new code in the PSTAT-based HP-UX lsof to enable it to avoid scanning the mount table when its information is not needed. The addition was made in response to a query from Harvey Garner <Harvey.Garner@championusa.com> about lsof performance in a busy NFS environment.

Upgraded lsof's AIX support level to AIX 5.3, based on a report from Dick Dunbar <Dick.Dunbar@Siebel.com>. (I have not tested lsof under AIX 5.3.) Based on Dick's recommendation and local testing changed the C for AIX version 6 and higher -qmaxmem option value to -1.

Made LSOFF_AR environment variable more useful and documented it in 00XCONFIG.

Corrected the use of sum(1) to generate signatures for the lsof distribution and binaries to match the documentation that claims it is sum -r output. Jin Guojun <jin@george.lbl.gov> noticed and reported the problem.

Tested under OpenBSD 3.6.

Added checksum and GPG certificate files for the bz2, gz and Z lsof distribution archives. The new files reside with the distribution archives and supplement the signature information already inside the archives.

Validated on Solaris 10, i8xpc, build s10_63.

4.74 January 17, 2005

Fixed a Solaris segment fault bug on systems that lack a /dev/allkmem device. Offered the fix as a patch to lsof 4.73. The bug was reported by Donald Zoch <donald.zoch@amd.com>.

Updated lsof for FreeBSD 6.0 and higher for a change in <sys/vnode.h>, based on a report from Sergey A. Osokin <osa@FreeBSD.ORG>. Made the update available in a 4.74 'A' edition pre-release.

Filed an HP bug report about missing pstat(2) CWD info for LOFS on HP-UX 11.11 and higher. The missing CWD info was noticed by Ermin Borovac <e.borovac@bom.gov.au>. Added info to 00FAQ about the problem, which can cause the lsof test suite's LTbasic test to fail.

Updated the q4-generated tcp_s.h in the lsof distribution and added socket option support for HP-UX 11.00. Erwin Reyns <ereyns@europarl.eu.int> helped test.

Updated for Solaris 10, build s10_69, with a patch supplied by Mike Miscevic <miscevic@hotpop.com>.

Added v_path support to Solaris 10 lsof. That relieves it of having to read and decode the kernel DNLC, and delivers full paths more reliably.

Added specialized NFS4 support to Solaris 10 lsof.

Applied Solaris 10 patches to lsof supplied by Casper Dik <casper@holland.sun.com>.

Updated lsof for NetBSD 2.99.10 and tested it on a system provided by Andrew Brown <atatat@atatdot.net>.

Added support for the FreeBSD 6.0-CURRENT f_vnode pointer in the file structure.

Added BSDI, FreeBSD, NetBSD and OpenBSD support for the *effnlink member of the inode structure. This makes the lsof LTnlink test run faster on all modified dialects and correctly on OpenBSD.

Added ptyfs support for NetBSD, using modifications provided by Andrew Brown.

Changed the netbsd Configure stanza to look by default for system header files in both /usr/include and /usr/src. (The NETBSD_SYS environment variable can still be used to select an alternate for /usr/src.)

Corrects two FreeBSD 4.10 RPC/XDR type definitions.

Added an FAQ Q&A about setuid and setgid restrictions in HP-UX 11.11. The information in the answer was supplied by Frank Sanders <frank.sanders@siemens.com>.

Added abbreviations for AXI FCIO and FSNAPSHOT file flags. Holger VanKoll <Holger.VanKoll@swisscom.com> reported the missing FCIO.

Adjusted lsof's private AIX 64 bit rnode structure for 64 bit AIX 5.2 systems. (IBM doesn't distribute a correct <nfs/rnode.h> for it.)

Corrected a Linux socket inode printing bug reported by Igor Schein <igor@txc.com>.

Updated for FreeBSD 4.11. The support compiles but hasn't been tested.

Back-ported a FreeBSD 6.0-CURRENT fix to FreeBSD 5.3-RELEASE-p1. That was done to solve a compilation problem reported by Radko Keves <rado@daemon.sk>.

4.75 May 16, 2005

Dropped the *claim* that lsof works on DEC OSF/1 and Digital UNIX, since my last 4.0 test system has been removed. The last tested distribution of lsof on DEC OSF/1 and Digital UNIX was revision 4.74. It has been archived on lsof.itap.purdue.edu in pub/tools/unix/lsof/OLD/src.

Added negation forms to the values in the -g (PGID) and -p (PID) lists. Negated PGID and PID values, like negated UID or login name values, are applied without ORing or ANDing and take effect before any other selection criteria are applied.

At the request of Marcin Gozdalik <gozdal@gmail.com> added a -X option for Linux. The option inhibits the reading of the /proc/net/tcp* and /proc/net/udp*

files.

Based on a report from David Gutierrez <davegu1@hotmail.com> changed DEC OSF/1 process table allocation to request memory in smaller increments.

Based on a report from jayjwa <jayjwa@atr2.ath.cx> updated the Customize script to use "tail -n 1" where possible.

Enabled support for FreeBSD 5.4.

Improved the BSDI, FreeBSD, NetBSD, OpenBSD and Solaris kvm_open() and kvm_openfiles() error messages.

Enabled support for NetBSD 2.99.12.

Improved HP-UX Configure stanza with help from Piet Starreveld <pstarrev@csc.com>. Picked some lint Piet found.

Enabled IPv6 support for HP-UX > 11. Piet Starreveld helped test it on 11.23, among others.

Updated for HP-UX 11.23 on the ia64 architecture.

Updated to latest FreeBSD 6.0-CURRENT, using a test system provided by Andrzej Tobola <ato@iem.pw.edu.pl>.

Added support for SCO OSR 6.0.0 and UnixWare 7.1.4 with help from Richard at SCO.

Corrected a Linux bug in NFS handling, reported by Karel Zak <kzak@redhat.com>. Karel supplied a patch.

Improved the code for accessing an AIX 3.2 and higher sockaddr_un structure, thus eliminating a segmentation fault possibility.

Updated for AIX 5.3.

Added preliminary (DEBUG) support for the AIX SANFS file system.

Fixed a bug in the Solaris 10 processing of the vnode's v_path pointer with code supplied by Edward Jajko <ejajko@portal.com>. The fix was offered as a patch to 4.74.

Dropped support for OpenUNIX 8, since a test system is no longer available. Archived an OpenUNIX-only distribution of the last revision (4.74) tested on OpenUNIX in pub/tools/unix/lsof/OLD/src.

Tested under Openbsd 3.7.

Tested under Darwin 7.7.0.

Enabled building on amd64 Solaris 10 with hints from Marc Aurele La France <tsi@ualberta.ca>. Marc provided a test system.

Supplied a missing quote in the FreeBSD Configure stanza. Carl Cook <Info@quantum-sci.com> reported the problem.

Removed "-O" option from tests/Makefile so that the HP-UX bundled compiler won't complain.

4.76 August 30, 2005

Corrected an example and spelling errors in man page.

Updated for Apple Darwin 8.x with changes supplied by Allan Nathanson <ajn@apple.com>. Allan also provided a test system.

Completed documentation of CLRLFILEADD in all machine.h files.

At the request of Chris Markle <cmarkle@sendmail.com> added partial listen queue length to socket options displayed when -Tf is specified. Partial queue length is not reported for all dialects. (OOFAQ lists the ones where it is reported.)

Updated for FreeBSD 7.0 with information supplied by Andrzej Tobola <ato@iem.pw.edu.pl>.

Updated Solaris VxFS support for VxFS versions 4 and above with technical advice from Craig Harmer <craig_harmer@symantec.com>, Gary Millen <gary_millen@symantec.com> and Chuck Silvers <charles_silvers@symantec.com>. Testing help was provided by Michael Antlitz <mantlitz@prophasys.com>, Steve Ginsberg <steve@dhapdigital.com> and Kenneth Stailey <kstailey@yahoo.com>.

Fixed a Solaris address space map processing bug. Janardhan Molumuri <mjanardhan@gmail.com> reported the bug and help me identify it. Made the fix available as a patch to 4.75.

Added support for Solaris 10 port and CTFS files. The CTFS support is incomplete, because I don't know how to get inode number, size and link count. (There's a new 00FAQ entry about that.)

Investigated a report from Christopher J Warweg <warwegc@GAO.GOV> that the CHECKSUMS for the lsof 4.75 binary for 64 bit Solaris 8 was incorrect. It was my packaging error. I rebuilt and repackaged the binary.

Enabled support for Linux map file names with embedded spaces.

4.77 April 10, 2006

Added -X option support for Solaris 10 and above. When -X is specified lsof will report cached v_node path names for unlinked files, followed by "(deleted)".

Improved cached vnode path name handling by adding "(?)" to the end of path names of questionable accuracy.

Updated 00FAQ to reflect these changes.

Updated for FreeBSD 7.0-CURRENT.

Fixed name addition spacing bug, reported by Stuart Anderson <anderson@ligo.caltech.edu>. Also updated Solaris 10 SAMFS support at Stuart's request.

Added missing "break;" and another HASSTATVFS test to the NetBSD and OpenBSD dnode.c. Bill Behr <bbeh@networkstoragecorp.com> reported those needs.

Fixed an HP-UX 11 file descriptor "chunk" size problem, reported by Per Allansson <per@appgate.com>. Per helped devise the fix and tested it. This fix was offered as a patch to lsof 4.76.

Updated for FreeBSD 6.0-STABLE and FreeBSD 6.1-PRERELEASE.

Updated scripts/sort_res.perl5 with changes supplied by Frederick Fabian <fabian.frederick@skynet.be>, the author of the script.

Corrected +|-M man page documentation error, reported by Roger Cornelius <rac@tenzing.org>.

Improved FreeBSD user device random seed generation in response to a problem report from Danny Braniss <danny@cs.huji.ac.il>.

Eliminated three syntax error bugs and other compiler complaints from the PSTAT-based lsof. H. Merijn Brand <h.m.brand@xs4all.nl> reported the problems and tested the fixes.

Eliminated compiler complaints in the test suite.

Investigated problems with the building of lsof on PA-RISC HP-UX 11.23, based on a report from John Orndorff <John.Orndorff@sungard.com>. Found that neither the HP bundled C compiler nor gcc would build lsof, but the the HP unbundled ANSI C compiler would. Concluded that HP bundled C compiler can't handle <gssapi/gssapi.h>. Devised a work-around to gcc's omission of the rpercent structure definition of <netdb.h> that allows it to compile lsof's print.c, but the resulting binary doesn't run reliably. Documented the situation in 00FAQ.

Changed reporting of unknown file types. The number of an unknown type is now reported as four octets. The change was made in response to a Linux lsof bug report from Karel Zak <kzak@redhat.com>.

Dropped the *claim* that lsof works on BSDI BSD/OS since my last test system has been removed. The last tested distribution of lsof for BSDI BSD/OS was revision 4.76. It has been archived on lsof.itap.purdue.edu in pub/tools/unix/lsof/OLD/src.

As a result of discussing the lsof source tar's MD5 checksum with Andrew Bell <andrew.bell.ia@gmail.com>, changed the description of a suitable MD5 tool in the lsof distribution's documentation to name the openssl "dgst" command.

Enabled compilation on Solaris 10 1/06 with a fix sent by Jason Fortezzo <fortezza@mechanicalism.net>. Made the fix available as a patch to 4.76.

Adjusted to FreeBSD 5.5-PRERELEASE.

Corrected a bug in the lsof library's process_file() function to enable the locating of AIX XTI sockets by their TCP/IP address values. The bug was reported by Michel Dubois <Dubois@sears.ca>.

Based on a bug report from Karel Zak <kzak@redhat.com> added command name length checking to as many dialects as possible (Linux for Karel) for the "-c c" option.

Updated for OpenBSD 3.[89]. Tested the 3.9 update on a system provided by David Mazieres. I have not tested on OpenBSD 3.8, but David reports lsof 4.76 worked there.

Ended regression testing of lsof on 32 bit Solaris 8 with the ending of access to a test system. Lsof continues to be tested on 64 bit Solaris 8.

4.78 April 24, 2007

Added more information to the lsof FAQ about missing link counts and sizes on Linux files.

Simplified Linux stat() and lstat() usage.

Relocated #define's that prevent OpenBSD compilation on systems without a /proc file system. Pieter Bowman <bowman@math.utah.edu> reported the problem.

Added code to avoid processing Linux /proc/<PID>/maps file entries with zero device and node numbers. Some such entries now have names associated with them that are not path names -- e.g., "[heap]", "[stack]" or "[vdso]". Scott Worley <sworley@chkno.net> reported lsof's mishandling of such entries.

Added SELinux security context support, provided by James Antill <james.antill@redhat.com>. I have not tested this, but James and Karel Zak <kzak@redhat.com> have.

Added the #include of <sys/types.h> to Solaris lsof to enable compilation on Solaris 10 6/06. Peter Harvey Peter.Harvey@Sun.COM diagnosed the problem and supplied a patch.

Added better support for JFS2 on AIX 5.2 and 5.3, based

on bug reports and help from Thomas Braunbeck
<BRAUNBEC@de.ibm.com> and Tom Whitty <TWHITTY@cerner.com>.

Documented that lsof supports AIX 5.3 only up through
maintenance level 1 (ML1).

Enabled Solaris lsof to locate the AFS vnode operation
address for OpenAFS 1.4.1. The fix was supplied by
Robert Jelinek <Robert.Jelinek@MorganStanley.com>.

Enabled support for Solaris 10 ZFS. If the necessary
ZFS header files aren't found, lsof offers the option
to drop ZFS support, to use internal, possibly
inaccurate structure definitions, or to supply a path
to the missing header files. Horst Scheuermann
<Horst.Scheuermann@uni-trier.de> provided a development
system and helped test the support.

Corrected a typo in the man page, reported by Eric S.
Raymond <esr@thyrsus.com>.

Changed the spelling of macroes to macros in lsof
source and documentations files, based on a suggestion
from Josh Soref <timeless@gmail.com> and verification
with the OED.

The following dialects are no longer supported: 32 bit
AIX 5.2, HP-UX 11, OpenStep 4.2, Solaris 2.6, Solaris
8, True Unix 64 and UnixWare 7.1.4. Lsof may work on
them, but I no longer have test systems for them.
Support for OpenBSD ends at its version 3.9 for lack of
interest in the port.

4.79 April 15, 2008

***** IMPORTANT NOTE *****

* *
* Lsof support has been reduced to the following *
* dialects: AIX, FreeBSD, Linux and Solaris, and *
* only in selected versions of those dialects. *
* The selected versions are listed in this file *
* and in other lsof documentation. *
* *
* I have made this move because of retirement *
* and because I no longer have many test systems *
* available to me. *
* *
* Vic Abell *

*

*

Fixed a Solaris VXFS permission problem when accessing the VXFS inode offsets. The bug was reported by Gregory A. Ivanov <ivga@mts.ru>. Gregory tested the fix.

Moved an #include <string.h> later in FreeBSD dlsof.h to enable compilation on recent FreeBSD releases. The change was supplied by Roy Marples <uberlord@gentoo.org>.

Improved Linux /proc file stream reading speed by applying an expanded version of a patch from Eric Dumazet <dada1@cosmosbay.com> that allocates a page size buffer to each stream. Improved TCP, TCP6, UDP and UDP6 hashing by determining the hash bucket count from the /proc/net sockstat and sockstat6 files. The improvement was suggested by Eric and he provided sample code. Eric also tested both improvements.

Modified Configure script to build lsof on FreeBSD 6.2. Tested it on a system provided by Larry Rosenman <ler@lerctr.org>.

Fixed a Linux maps file processing bug that prevented path names from having an embedded colon. James Lingard <jchl@arastra.com> reported the bug and helped with its fix.

Based on reports from Eric Dumazet and Samuel Thibault <samuel.thibault@ens-lyon.org> added support for the Linux 2.6.22 kernel's /proc/<PID>/fdinfo files -- i.e., file offset and flags. Samuel Thibault provided a test system.

Fixed a Linux UNIX socket memory leak, reported by Phillip Shin <pshin@xceedium.com>. Phillip supplied the fix.

With generous assistance from HP added support for an HP-UX 11.23 patch that makes TLI/XTI socket address information available.

Fixed a header file problem for FreeBSD 6.2 on the Alpha architecture. The problem was reported by Pekka Honkanen <phonkane@cc.hut.fi>. Pekka tested the fix.

Based on a report and using suggested fixes from Karel Zak <kzak@redhat.com>, made these changes to Linux lsof: corrected a getpidcon() error message; insured that inode numbers are handled correctly for their unsigned long long type; and improved SELinux handling. At the request of Alon Bar-Lev <alonbl@gentoo.org> added the LINUX_HASSELINUX environment variable to enable or inhibit SELinux support unconditionally.

Updated Configure for FreeBSD 8.0-CURRENT and tested lsof on AMD64 there.

Added a patch provided by Oles Hnatkevych <don_oles@able.com.ua> for FreeBSD systems where the root file system is on a CD9660 device.

Added compensation for the disappearance of FMARK and FDEFER from the FreeBSD 8.0-CURRENT <sys/file.h>.

Updated FreeBSD lsof with ZFS support. Larry Rosenman <ler@lerctr.org>, Erwin Lansing <erwin@FreeBSD.org>, Wesley Shields <wx@atarininja.org> and Dmitry Morozovsky <marck@rinet.ru> provided test systems.

Fixed a socket file identification problem reported by Pavol Rusnak <stick@gk2.sk>. Pavol also reported the cause of the problem.

Added the ability to format the repeat mode marker line with strftime(3), where the dialect supports the localtime(3) and strftime(3) C library functions. The addition was suggested by Mike Depot <mdepot@comcast.net>, who also tested it. The addition required creating a new main lsof source module, util.c, that contains functions whose compilation conflicts with the general header file tree defined by lsof.h and dlsof.h.

Based on reports from Andrei V. Lavreniyuk <andy.lavr@reactor-xg.kiev.ua> and Pav Lucistnik <pav@FreeBSD.org> updated the FreeBSD 7.0 and above file lock handling to use new locking structures. The update requires a terrible hack to get a definition for the lock owner structure from a kernel source module into a local lsof header file.

4.80 May 12, 2008

Updated for a FreeBSD 7.0 and above byte level locking change. The problem was reported by Conrad J. Sabatier <conrads@cox.net>, who helped test the update. Wesley

Shields <wxs@FreeBSD.org> provided an 8.0-CURRENT test system.

Propagated the FreeBSD 7.0 and above locking changes to FreeBSD 6.x, based on a report from Edwin Groothuis <edwin@FreeBSD.org>.

Added warnings for unsupported dialects or versions.

Added Linux support for the UDPLITE protocol. Eric Dumazet <dada1@cosmosbay.com> supplied a patch.

Added a missing quote to the Configure script's FreeBSD stanza.

Added a usage.o rule to the HP-UX PSTAT-based Makefile. I mistakenly deleted the rule at revision 4.79. The missing rule was reported by Kawaljeet Kaur <kawaljeet.malviya@gmail.com> who tested the corrected Makefile.

4.81 October 21, 2008

Updated the Darwin libproc sources with changes from Allan Nathanson <ajn@apple.com>. Tested them on a iMac mini, provided by Apple Inc.

Changed dummy declarations in library source files to eliminate complaints about unused variables and empty object files. This change may not work on dialects I can no longer test; it has been tested on some versions of AIX, Darwin, FreeBSD, Linux and Solaris.

At the request of Hal Brooks <hal@uga.edu> added support for Linux /proc/net/packet files. Hal tested it.

Added socket file only performance enhancements to Linux and PSTAT-based HPUX lsof.

Added htonl call around improper usage of INADDR_LOOPBACK; report from an Apple engineer forwarded by Allan Nathanson <ajn@apple.com>.

Adjusted for FreeBSD-8.0 change in device number handling. The adjustment should work for FreeBSD 5 and above, should the 8.0 change be propagated downward. The problem was reported by Pav Lucistnik <pav@FreeBSD.org>. An updated test system was provided by Erwin Lansing <erwin@FreeBSD.org>.

Reduced AIX support to version 5.3, since test systems with older versions are no longer available to me.

At the request of Marjo F. Mercado <mmercado@xceedium.com> and Phil Shin <pschin@xceedium.com> applied some speed improvements to lsof, particularly when the files of interest are /Internet files -- i.e., selected with lsof's -i" option. Added a two new options to assist the improvements: 1) "-c^<command>" to tell lsof to exclude the named command(s); and 2) "-stcp|ud>:[^]state'" to tell lsof to include in its reporting or exclude (^) from its reporting Internet files in the named states (e.g., LISTEN, ^CLOSE_WAIT, IDLE, etc.) For the most part these changes apply only to AIX, Darwin, FreeBSD, PSTAT-based HP-UX, Linux and Solaris, since those are the only places I could test them. They are controlled by the HASTCPUDPSTATE definition in each dialect's machine.h header file. Marjo and Phil provided HP-UX 11.23 and 11.31 test systems.

Fixed a stat(2) problem on HP-UX 11.31 while testing the speed improvements.

Adjusted for kernel header file changes in FreeBSD 8.0-CURRENT. Larry Rosenman <ler@lerctr.org> provided a test system.

Added a warning for Solaris systems where VxFS node info can't be obtained from the VxFS utility library. The warning was requested by Tom Matthews <Tom.MATTHEWS@rbs.com>.

Corrected mishandling of file system path name arguments that have trailing slashes, except, of course, the root file system, "/". Allan Nathanson <ajn@apple.com> reported the bug.

4.82 March 25, 2009

Corrected an over-zealous exclusion test that caused lsof to report nothing when it was given no arguments and built with HASSECURITY and HASNOSOCKSECURITY enabled. Joshua Kinard <kumba@gentoo.org> reported the bug and supplied information for reproducing it.

Based on a report from Dan Trinkle <trinkle@cs.purdue.edu> corrected use of <sys/utsname.h> for 32 bit Solaris 10 and above compilations. Simultaneously eliminated a casting complaint in arg.c and updated Configure to use the appropriate 64 bit compilation option (-xarch=v9 or -m64) with the Solaris Sun C compiler.

Updated for FreeBSD 7.1-PRERELEASE with information supplied by Larry Rosenman <ler@lerctr.org>.

Updated the Darwin libproc sources with changes from Allan Nathanson <ajn@apple.com>. Tested them on a iMac mini, provided by Apple Inc. Allan also provided man page corrections.

Updated the FreeBSD Makefile to use the `{MAKE}` variable for ZFS dnod2.c module compilation, based on a suggestion from Alexis Ballier <aballier@gentoo.org>.

Improved the Solaris VxFS library location test, based on a suggestion from Jason Fortezzo <fortezza@mechanicalism.net>. Jason tested the change.

Updated Solaris 10 ZFS support for ZFS version 4 and ZFS pool version 10, using a test system kindly provided by Vladislav Nespov <vladislav.nespov@id.ethz.ch>. Renata Maria Dart <renata@slac.stanford.edu> tested on ZFS version 4, verifying that the update works there, too. (ZFS pool version 10 is apparently the ZFS version shipped with the 10/08 update to Solaris. The original ZFS support targeted ZFS version 3.)

I still consider ZFS support in Solaris lsof a hack, because it depends on a znode structure definition that I developed using dbx. Sun is remiss in not distributing the ZFS header files used to build the distributed kernel.

Because of the znode structure definition hack, I can't guarantee that lsof ZFS support will work for any other versions of ZFS.

Solaris 10: adjusted to a change in the way devices are stored in the kernel; fixed a problem in zone handling; and added rudimentary sharedfs support. Carson Gaspar <carson@taltos.org> reported the device number problem, provided a test system, and tested the changes. Peter Vines <psv2b@eservices.virginia.edu> reported the zone handling problem and tested the fix.

Adapted to FreeBSD 8.0-CURRENT changes in device number computation. Problem was reported by Erwin Lansing <erwin@FreeBSD.org>. Larry Rosenman <ler@lerctr.org> provided a test system.

Corrected Solaris Configure test for appropriate VxFS library when using gcc to compile lsof.

Updated for loss of KAME IPv6 FreeBSD accommodations.

Adapted to FreeBSD 7.2. Made Configure script recognized FreeBSD 6.3.

4.83 January 18, 2010

Converted Solaris 10 and above ZFS support to use the CTF debugger library, libctf. Code was supplied by Robert Byrnes <Robert.Byrnes@deshaw.com>.

Corrected a typo in the testing of the LINUX_HASSELINUX environment variable in the Configure script. The error was reported by Mike Frysinger <vapier@gentoo.org>. At Mike's request made Configure script accept LSOF_RANLIB (ranlib command), LSOF_CFGF (additional configuration flags) and LSOF_CFGL (additional library specifications) from the environment.

Enabled compilation of Solaris 10 lsof after a recent Sun patch which changed the PC file system's structure. Peter Vernam <pvernam@draper.com> reported the problem and helped with the fix.

Made the sort of configuration CFLAGS in the CkTestDB script impervious to locale settings.

Ported to Solaris 11, using a test system kindly provided by David Day <dday76@gmail.com>.

Adjusted to the disappearance of <nfs/rpcv2.h> in FreeBSD 8.0-BETA1.

Changed Solaris node type lookup to a hashed method and added some ability for it to handle duplicate vnodeop names in /dev/ksyms.

Updated for FreeBSD 9.0-CURRENT. Andrzej Tobola <ato@iem.pw.edu.pl> provided a test system. Extends the fix to FreeBSD 6.0 and above via a Configure test and a compile-time definition. The need for the extension was reported by Erik Trulsson <ertr1013@student.uu.se>>

Made corrections to FAQ typographical errors, suggested by Josh Soref <timeless@gmail.com>.

Added `__UCLIBC__` test to Linux `dlsof.h` so `lsof` would compile on an Intel ARM XScale processor. The addition was provided by Doug Kehn <rdkehn@yahoo.com>.

Added test for `<utmpx.h>` to FreeBSD configuration. Improved its use in `lsof.h`. The changes were supplied by Martin Wilke <miwi@FreeBSD.org>.

4.84 July 29, 2010

Fixed a man page `nroff` command error with a correction supplied by Josh Soref <timeless@gmail.com>.

Made `Configure` script recognize FreeBSD 7.3. Larry Rosenman <ler@lerctr.org> provided a test system.

Improved task support, initially for Linux only, with help provided by Jerome Marchand <jmarchan@redhat.com> and Miklos Szeredi <mszeredi@suse.cz>. The support includes a new compile-time definition, `HASTASKS`, and a new run time option, `"-K"` to select task reporting.

While adding help output support for `"-K"`, reorganized the printing of help columns to make it much easier to add a new option description.

Updated the Solaris PC file system structure patch in revision 4.83 so it will compile with `gcc`.

Disabled the Solaris `lgrp_root` work-around in the Solaris `machine.h` so it won't cause compilation problems on Solaris 11. It no longer causes compilation problems on my Solaris 9 and 10 test systems, but some older Solaris 9 and 10 versions may still need it, so the work-around was left in the Sun `machine.h` and a FAQ entry was created about it.

Updated for Solaris 11 b134, using a test system kindly provided by Carson Gaspar <carson@taltos.org>. Made provisions for the next ZFS version. Added info about the failure of the `LTnlink` test on ZFS file systems.

Corrected typo in `Configure` script, reported by Dmitry Berezin <dmitryb@oit.rutgers.edu>.

4.85 September 27, 2011

John Dzuberka <Zube@CS.ColoState.EDU> kindly provided a patched Solaris 9 test system with the `lgrp_root` conflict and I was able to devise an automatic work-around for the conflict. The special note in `.../dialects/sun/machine.h` was removed and

the 17.28.1 FAQ entry was modified to reflect the update.

Added a Solaris 11 work-around for a typedef problem with <sys/mutex.h>. Carson Gaspar <carson@taltos.org> reported the problem and supplied the work-around.

Added support for FreeBSD 7.4 and 8.2; tested on systems provided by Larry Rosenman <ler@lerctr.org>.

Added support for 32 bit Solaris 11 lsof with mods supplied by Jan Wortelboer <J.H.P.Wortelboer@uva.nl>.

Added Solaris 11 support for using an alternate genunix location. Bill Goodridge <bill@its.brooklyn.cuny.edu> reported the alternate location.

Added further Linux cross configuration support to lsof's Configure script. The additional support was supplied by Grant Erickson <erick205@umn.edu>. See the descriptions of the LINUX_* environment variables in 00XCONFIG for more information. Tested lsof on Linux kernel 2.6.32 and picked some lint that surfaced during the test.

Added fixes and changes for Apple Mac OS X 10.6, provided by Allan Nathanson <aj@apple.com>. Allan also provided a test system.

Tested on FreeBSD 6.4 i386, using a test system provided by Terry Kennedy <TERRY@tmk.com>. Updated for recent FreeBSD ZFS changes on an 8.2 amd64 test system also provided by Terry.

Changed documentation to indicate FreeBSD 7.x is no longer supported, since I no longer have a test system.

Made some changes to the lsof man page, suggested by Navid <evil1m4chine@googlemail.com>.

Added compensation for Solaris 10 systems that have patch 144488-10. The patch requires that the new header file <sys/socket_proto.h> be included while _KERNEL is defined. Brett Bartick <Brett.bartick@nomura.com> reported the problem first, followed by Stuart Anderson <anderson@ligo.caltech.edu>. Michael Hocke <michael.hocke@nyu.edu> suggested a work-around which I refined to limit it to the specific Solaris 10 instance and then tested on a system provided by Charles Stephens <cfs@cowlabs.com>

Added the +|-e option for Linux. It exempts file systems

named by path from function calls that might block in the kernel -- i.e., stat(2) and lstat(2), and when the +e form is used, readlink (2). The new packager of lsof for the Linux Fedora and RHEL distributions, Peter Schiffer <pschiffe@redhat.com>, asked for the feature so it could be used with Clearcase file systems, whose implementation can block stat(2) calls. I consider this feature very risky and easy to misuse -- e.g., specifying the file system as '/' would exempt all file systems. I don't intend to propagate this option to any other UNIX dialect that lsof currently supports.

Made FreeBSD 9 adjustment.

Fixed a Linux bug that prevented the display of paths for abstract UNIX sockets. Masatake Yamato <yamato@redhat.com> reported the bug and supplied a patch.

Added compensation for the removal of RPC header files from Glibc 2.14 for Linux. Marek Behun <kabel@blackhole.sk> reported the problem and supplied a patch.

Added support for Linux Netlink protocol. Masatake Yamato requested the support and supplied a patch. Peter Schiffer <pschiffe@redhat.com> provided a test system.

Corrected Linux UDP6-lite path. The error was reported by Masatake Yamato and he also supplied a patch.

Vic Abell <abe@purdue.edu>
September 27, 2011

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/00DIST
No license file was found, but licenses were detected in source scan.

Making and Installing lsof 4

```
*****  
| The latest release of lsof is always available via anonymous ftp |  
| from lsof.itap.purdue.edu. Look in pub/tools/unix/lsof.      |  
*****
```

Contents

Pre-built lsof Binaries

Making lsof

Other Configure Script Options

- Environment Variables
- Security
- Run-time Warnings
- Device Access Warnings
- NFS Blocks
- Caches -- Name and Device
- Raw Sockets
- Other Compile-time Definitions
- The AFSConfig Script
- The Inventory Script
- The Customize Script
- Cautions
- Warranty
- License
- Bug Reports
- The 00FAQ File
- The lsof-l Mailing List
- Field Output Example Scripts
- Field Output C Library
- Testing Lsof
- Dialect Notes
 - AFS
 - AIX
 - Apple Darwin
 - Auspex LFS (no longer maintained)
 - BSDI BSD/OS
 - DEC OSF/1, Digital UNIX, Tru64 UNIX
 - FreeBSD
 - HP-UX
 - IPv6
 - Linux
 - NetBSD
 - NEXTSTEP and OPENSTEP
 - OpenBSD
 - Pyramid DC/OSx and Reliant UNIX (no longer available)
 - Caldera OpenUNIX
 - SCO OpenServer
 - SCO|Caldera UnixWare
 - Solaris 2.x, 7, 8, 9 and 10
 - Ulrix (no longer available)
 - Veritas VxFS and VxVM
- User-contributed Dialect Support
- Dialects No Longer Supported
- Installing Lsof
 - Setuid-root Lsof Dialects
 - Setgid Lsof Dialects
- Porting lsof 4 to a New UNIX Dialect
- Quick Start to Using lsof

Cross-configuring Lsof Environment Variables Affecting the Configure Script

Pre-built Lsof Binaries

Avoid using pre-built lsof binaries if you can; build your own instead.

I do not support lsof binaries built and packaged by third parties nor lsof binaries built from anything but the latest lsof revision. (See the Bug Reports section for more information on the details of lsof support.)

One important reason for those support restrictions is that when lsof is built its Configure script tunes lsof to the features available on the building system, often embodied in supporting header files and libraries. If the building system doesn't have support for a particular feature, lsof won't be built to support the feature on any system.

The Veritas VxFS file system is a good example of a feature that requires build-time support.

UNIX dialect version differences -- Solaris 8 versus 9, AIX 4.3.3 versus 5.2, etc. -- can also render a pre-built lsof binary useless on a different version. So can kernel bit size.

There are so many potential pitfalls to using an lsof binary improperly that I strongly recommend lsof be used only where it is built.

Making Lsof

```
$ cd <lsof source directory>
$ ./Configure <your dialect's abbreviation>
$ make
```

(Consult the 00FAQ and 00XCONFIG files of the lsof distribution for information about using make command invocations and environment variables to override lsof default Makefile strings.)

This lsof distribution can be used with many UNIX dialects. However,

it must be configured specifically for each dialect. Configuration is done in three ways: 1) by changing definitions in the machine.h header file of the UNIX dialect of interest; 2) by defining environment variable values prior to calling Configure (see the 00XCONFIG file, the Environment Variables and Environment Variables Affecting the Configure Script sections of this file); and 3) by running the Configure shell script found in the top level of the distribution directory.

You may not need to change any machine.h definitions, but you might want to look at them anyway. Pay particular attention to the definitions that are discussed in the Security section of this file. Please read that section.

The Configure script calls three other scripts in the lsof distribution: AFSConfig; Inventory; and Customize. The AFSConfig script is called for selected dialects (AIX, HP-UX, NEXTSTEP, and Solaris) to locate AFS header files and determine the AFS version. See The AFSConfig Script section of this file for more information.

The Inventory script checks the completeness of the lsof distribution. Configure calls Inventory after it has accepted the dialect abbreviation, but before it configures the top-level directory for the dialect. See The Inventory Script section of this file for more information.

Configure calls the Customize script after it has configured the top-level lsof directory for the declared dialect. Customize helps you modify some of the important compile-time definitions of machine.h. See the The Customize Script section.

You should also think about where you will install lsof and its man page, and whom you will let execute lsof. Please read the Installing lsof section of this file for information on installation considerations.

Once you have inspected the machine.h file for the dialect for which you want to build lsof, and made any changes you need, run the Configure script, supplying it with the abbreviation for the dialect. (See the following table.) Configure selects the appropriate options for the dialect and runs the Mksrc shell script in the dialect sub-directory to construct the appropriate source files in the top-level distribution directory.

Configure may also run the MkKernOpts script in the dialect sub-directory to propagate kernel build options to the dialect Makefile. This is done for only a few dialects -- e.g., DC/OSx, and Reliant UNIX.

Configure creates a dialect-specific Makefile. You may want to inspect or edit this Makefile to make it conform to local conventions. If you want the Makefile to install lsof and its man page, you will have to create an appropriate install rule.

Lsof may be configured using UNIX dialect abbreviations from the following table. Alternative abbreviations are indicated by a separating `|'. For example, for SCO OpenServer you can use either the ``osr" or the ``sco" abbreviation:

```
$ Configure osr
or
$ Configure sco
```

Abbreviations UNIX Dialect

aix	IBM AIX 5.[23] and 5.3-ML1 using IBM's C Compiler
aixgcc	IBM AIX 5.[12] and 5.3-ML1 using gcc
darwin	Apple Darwin 7.x and 8.x for Power Macintosh systems
decosf	DEC OSF/1, Digital UNIX, Tru64 UNIX 4.0 and 5.1
digital_unix	Digital UNIX, DEC OSF/1, Tru64 UNIX 4.0 and 5.1
du	Digital UNIX, DEC OSF/1, Tru64 UNIX 4.0 and 5.1
freebsd	FreeBSD 4.x, 4.1x, 5.x and [67].x
hpux	HP-UX 11.00, 11.11 and 11.23, using HP's C Compiler, both /dev/kmem-based and PSTAT-based
hpuxgcc	HP-UX 11.00, 11.11 and 11.23, using gcc, both /dev/kmem-based and PSTAT-based
linux	Linux 2.1.72 and above for x86-based systems
netbsd	NetBSD 1.[456], 2.x and 3.x
next	NEXTSTEP 3.[13]
nextstep	NEXTSTEP 3.[13]
ns	NEXTSTEP 3.[13]
nxt	NEXTSTEP 3.[13]
openbsd	OpenBSD 2.[89] and 3.[0-9]
openstep	OPENSTEP 4.x
os	OPENSTEP 4.x
osr	SCO OpenServer Release 5.0.6, using the C compiler from the SCO developer's kit
osrgcc	SCO OpenServer Release 5.0.6, using gcc
osr6	SCO OpenServer 6.0.0, using the SCO C compiler
sco	SCO OpenServer Release 5.0.6, using the C compiler from the SCO developer's kit
scogcc	SCO OpenServer Release 5.0.6, using gcc
solaris	Solaris 2.x, 7, 8, 9 and 10 using gcc
solarisc	Solaris 2.x, 7, 8, 9 and 10 using Sun's cc
tru64	Tru64 UNIX, DEC OSF/1, Digital UNIX 4.0 and 5.1

unixware SCO|Caldera UnixWare 7.1.4

uw SCO|Caldera UnixWare 7.1.4

If you have an earlier version of a dialect not named in the above list, lsof may still work on your system. I have no way of testing that myself. Try configuring for the named dialect -- e.g., if you're using Solaris 2.1, try configuring for Solaris 2.5.1.

After you have configured lsof for your UNIX dialect and have selected options via the Customize script (See the The Customize Script section.) , use the make command to build lsof -- e.g.,

```
$ make
```

Other Configure Script Options

=====

There are three other useful options to the Configure script besides the dialect abbreviation:

-clean may be specified to remove all traces of a dialect configuration, including the Makefile, symbolic links, and library files.

-h may be specified to obtain a list of
-help Configure options, including dialect abbreviations.

-n may be specified to stop the Configure script from calling the Customize and Inventory scripts.

Caution: -n also suppresses the AFSConfig step.

Environment Variables

=====

Lsof configuration, building, and execution may be affected by environment variable settings. See the Definitions That Affect Compilation section in the 00PORTING file, the General Environment Variables section in the 00XCONFIG file, the Dialect-Specific Environment Variables section in the 00XCONFIG file, and the Environment Variables Affecting the Configure Script section of this file for more information.

Note in the General Environment Variables section of the 00XCONFIG file that there are five environment variables that can be used to pre-define values in lsof's -v output: LSOF_BLDCMT, LSOF_HOST, LSOF_LOGNAME, LSOF_SYSINFO, and LSOF_USER.

Security

=====

If the symbol HASSECURITY is defined, a security mode is enabled, and lsof will allow only the root user to list all open files.

Non-root users may list only open files whose processes have the same user ID as the real user ID of the lsof process (the one that its user logged on with).

However, if HASNOSOCKSECURITY is also defined, anyone may list anyone else's open socket files, provided their listing is enabled with the "-i" option.

Lsof is distributed with the security mode disabled -- HASSECURITY is not defined. (When HASSECURITY is not defined, the definition of HASNOSOCKSECURITY has no meaning.) You can enable the security mode by defining HASSECURITY in the Makefile or in the machine.h header file for the specific dialect you're using -- e.g. dialects/aix/machine.h.

The Customize script, run by Configure when it has finished its work, gives you the opportunity to define HASSECURITY and HASNOSOCKSECURITY. (See the The Customize Script section.)

The lsof -h output indicates the state HASSECURITY and HASNOSOCKSECURITY had when lsof was built, reporting:

```
"Only root can list all files;"
if HASSECURITY was defined and HASNOSOCKSECURITY wasn't
defined;
```

```
"Only root can list all files, but anyone can list socket files."
if HASSECURITY and HASNOSOCKSECURITY were both defined;
```

```
"Anyone can list all files;"
if HASSECURITY wasn't defined. (The definition of
HASNOSOCKSECURITY doesn't matter when HASSECURITY isn't
defined.)
```

You should carefully consider the implications of using the default security mode. When lsof is compiled in the absence of the

HASSESECURITY definition, anyone who can execute lsof may be able to see the presence of all open files. This may allow the lsof user to observe open files -- e.g., log files used to track intrusions -- whose presence you would rather not disclose.

All pre-compiled binaries on lsof.itap.purdue.edu and mirrored from it were constructed without the HASSECURITY definition.

As distributed, lsof writes a user-readable and user-writable device cache file in the home directory of the real user ID executing lsof. There are other options for constructing the device cache file path, and they each have security implications.

The 00DCACHE file in the lsof distribution discusses device cache file path construction in great detail. It tells how to disable the various device cache file path options, or how to disable the entire device cache file feature by removing the HASDCACHE definition from the dialect's machine.h file. There is also information on the device cache file feature in the 00FAQ file. (The 00DCACHE and 00FAQ files are part of the lsof distribution package.)

The Customize script, run by Configure after it has finished its work, gives you the opportunity to change the compile-time options related to the device cache file. (See The Customize Script section.)

Since lsof may need setgid or setuid-root permission (See the Setgid Lsof Dialects and Setuid-root Lsof Dialects sections.), its security should always be viewed with skepticism. Lest the setgid and setuid-root permissions allow lsof to read kernel name list or memory files, declared with the -k and -m options, that the lsof user can't normally access, lsof uses access(2) to establish its real user's authority to read such files when it can't surrender its power before opening them. This change was added at the suggestion of Tim Ramsey.

Lsof surrenders setgid permission on most dialects when it has gained access to the kernel's memory devices. There are exceptions to this rule, and some lsof implementations need to run setuid-root. (The Setgid Lsof Dialects and Setuid-root Lsof Dialects sections contains a list of lsof implementations and the permissions recommended in the distribution's Makefiles.)

The surrendering of setgid permission is controlled by the WILLDROPGID definition in the dialect machine.h header files.

In the end you must judge for yourself and your installation the risks that lsof presents and restrict access to it according to

your circumstances and judgement.

Run-time Warnings

=====

Lsof can issue warning messages when it runs -- e.g., about the state of the device cache file, about an inability to access an NFS file system, etc. Issuance of warnings are enabled by default in the lsof distribution.

Issuance of warnings may be disabled by default by defining WARNINGSTATE in the dialect's machine.h. The Customize script may also be used to change the default warning message issuance state. (See The Customize Script section.)

The ``-w" option description of the ``-h" option (help) output will indicate the default warning issuance state. Whatever the state may be, it can be reversed with ``-w".

Device Access Warnings

=====

When lsof encounters a /dev (or /devices) directory, one of its sub-directories, or one of their files that it cannot access with opendir(3) or stat(2), it issues a warning message and continues. Lsof will be more likely to issue such a warning when it has been installed with setgid(<some group name>) permission; it won't have trouble if it has been installed with setuid(root) permission or is being run under the root login.

The lsof caller can inhibit or enable the warning with the -w option, depending on the issuance state of run-time warnings. (See the Run-time Warnings section.)

The warning messages do not appear when lsof obtains device information from a device cache file that it has built and believes to be current or when warning message issuance is disabled by default. (See the "Caches -- Name and Device" section for more information on the device cache file.)

The lsof builder can inhibit the warning by disabling the definition of WARNDEVACCESS in the dialect's machine.h or disable all warnings by defining WARNINGSTATE. WARNDEVACCESS is defined by default for most dialects. However, some dialects have some device directory elements that are private -- e.g., HP-UX -- and it is more convenient for the lsof user if warning messages about them are inhibited.

Output from lsof's -h option indicates the status of WARNDEVACCESS.

If it was defined when lsof was compiled, this message will appear:

```
/dev warnings = enabled
```

If WARNDEVACCESS was not defined when lsof was compiled, this message will appear instead:

```
/dev warnings = disabled
```

The Customize script, run by Configure after it has finished its work, gives you the opportunity to change the WARNDEVACCESS definition. (See The Customize Script section.)

NFS Blocks

```
=====
```

Lsof is susceptible to NFS blocks when it tries to lstat() mounted file systems and when it does further processing -- lstat() and readlink() -- on its optional file and file system arguments.

Lsof tries to avoid being stopped completely by NFS blocks by doing the lstat() and readlink() functions in a child process, which returns the function response via a pipe. The lsof parent limits the wait for data to arrive in the pipe with a SIGALRM, and, if the alarm trips, terminates the child process with a SIGINT and a SIGKILL.

This is as reliable and portable a method for breaking NFS deadlocks as I have found, although it still fails under some combinations of NFS version, UNIX dialect, and NFS file system mount options. It generally succeeds when the "intr" or "soft" mount options are used; it generally fails when the "hard" mount option is used.

When lsof cannot kill the child process, a second timeout causes it to stop waiting for the killed child to complete. While the second timeout allows lsof to complete, it may leave behind a hung child process. Unless warnings are inhibited by default or with the -w option, lsof reports the possible hung child.

NFS block handling was updated with suggestions made by Andreas Stolcke. Andreas suggested using the alternate device numbers that appear in the mount tables of some dialects when it is not possible to stat(2) the mount points.

The -b option was added to direct lsof to avoid the stat(2) and

readlink(2) calls that might block on NFS mount points and always use the alternate device numbers. If warning message issuance is enabled and you don't want warning messages about what lsof is doing, use the -w option, too.

The -O option directs lsof to avoid doing the potentially blocking operations in child processes. Instead, when -O is specified, lsof does them directly. While this consumes far less system overhead, it can cause lsof to hang, so I advise you to use -O sparingly.

Caches -- Name and Device

=====

Robert Ehrlich suggested that lsof obtain path name components for open files from the kernel's name cache. Where possible, lsof dialect implementations do that. The -C option inhibits kernel name cache examination.

Since AFS apparently does not use the kernel's name cache, where lsof supports AFS it is unable to identify AFS files with path name components.

Robert also suggested that lsof cache the information it obtains via stat(2) for nodes in /dev (or /devices) to reduce subsequent running time. Lsof does that, too.

In the default distribution the device cache file is stored in .lsof_hostname, mode 0600, in the home directory of the login of the user ID that executes lsof. The suffix, hostname, is the first component of the host's name returned by gethostname(2). If lsof is executed by a user ID whose home directory is NFS-mounted from several hosts, the user ID's home directory may collect several device cache files, one for each host from which it was executed.

Lsof senses accidental or malicious damage to the device cache file with extensive integrity checks, including the use of a 16 bit CRC. It also tries to sense changes in /dev (or /devices) that indicate the device cache file is out of date.

There are other options for forming the device cache file path. Methods the lsof builder can use to control and employ them are documented in the separate 00DCACHE file of the lsof distribution.

Raw Sockets

=====

On many UNIX systems raw sockets use a separate network control block structure. Display of files for applications using raw sockets -- ping, using ICMP, for example -- need special support for displaying their information. This support is so dialect-specific and information to provide it so difficult to find that not all dialect revisions of lsof handle raw sockets completely.

Other Compile-time Definitions

=====

The machine.h and dlsof.h header files for each dialect contains definitions that affect the compilation of lsof. Check the Definitions That Affect Compilation section of the 00PORTING file of the lsof distribution for their descriptions. (Also see The Customize Script section.)

The AFSConfig Script

=====

Lsof supports AFS on some combinations of UNIX dialect and AFS version. See the AFS section of this document for a list of supported combinations.

When configuring for dialects where AFS is supported, the Configure script calls the AFSConfig script to determine the location of AFS header files and the AFS version. Configure will not call AFSConfig, even for the selected dialects, unless the file /usr/vice/etc/ThisCell exists.

The AFS header file location is recorded in the AFSHeaders file; version, AFSVersion. Once these values have been recorded, Configure can be told to skip the calling of AFSConfig by specifying its (Configure's) -n option.

The Inventory Script

=====

The lsof distribution contains a script, called Inventory, that checks the distribution for completeness. It uses the file 00MANIFEST in the distribution as a reference point.

After the Configure script has accepted the dialect abbreviation, it normally calls the Inventory script to make sure the distribution is complete.

After Inventory has run, it creates the file ".ck00MAN" in the top-level directory to record for itself the fact that the inventory has been check. Should Inventory be called again, it senses this file and asks the caller if another check is in order, or if the check should be skipped.

The -n option may be supplied to Configure to make it bypass the calling of the Inventory script. (The option also causes Configure to avoid calling the Customize script.)

The lsof power user may want to define (touch) the file ".neverInv". Configure avoids calling the Inventory script when ".neverInv" exists.

The Customize Script

=====

Normally when the Configure script has finished its work, it calls another shell script in the lsof distribution called Customize. (You can tell Configure to bypass Customize with its -n option.)

Customize leads you through the specification of these important compile-time definitions for the dialect's machine.h header file:

HASDCACHE device cache file control
HASENVDC device cache file environment
variable name
HASPERSDC personal device cache file path
format
HASPERSDCPATH name of environment variable that
provides an additional component
of the personal device cache file
path
HASSYSDC system-wide device cache file path
HASKERNIDCK the build-time to run-time kernel
identity check
HASSECURITY the security option
HASNOSOCKSECURITY the open socket listing option whe
HASSECURITY is defined
WARNDEVACCESS /dev (or /devices) warning message
control
WARNINGSTATE warning message issuance state

The Customize script accompanies its prompting for entry of new values for these definitions with brief descriptions of each of them. More information on these definitions may be found in this file or in the 00DCACHE and 00FAQ files of the lsof distribution.

You don't need to run Customize after Configure. You can run it later or you can edit machine.h directly.

The -n option may be supplied to Configure to make it bypass the calling of the Customize script. (The option also causes Configure to avoid calling the Inventory script.)

The lsof power user may want to define (touch) the file ".neverCust". Configure avoids calling the Customize script when ".neverCust" exists.

Customize CAUTION: the Customize script works best when it is applied to a newly configured lsof source base -- i.e., the machine.h header file has not been previously modified by the Customize script. If you have previously configured lsof, and want to rerun the Customize script, I recommend you clean out the previous configuration and create a new one:

```
$ Configure -clean
$ Configure <dialect_abbreviation>
...
Customize in response to the Customize script prompts.
```

Cautions

=====

Lsof is a tool that is closely tied to the UNIX operating system version. It uses header files that describe kernel structures and reads kernel structures that typically change from OS version to OS version, and even within a version as vendor patches are applied.

DON'T TRY TO USE AN LSOB BINARY, COMPILED FOR ONE UNIX OS VERSION, ON ANOTHER. VENDOR PATCHES INFLUENCE THE VERSION IDENTITY.

On some UNIX dialects lsof versions may be even more restricted by architecture type.

The bottom line is use lsof where you built it. If you intend to use a common lsof binary on multiple systems, make sure all systems run exactly the same OS version and have exactly the same patches.

Warranty

=====

Lsof is provided as-is without any warranty of any kind, either

expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of Isof is with you. Should Isof prove defective, you assume the cost of all necessary servicing, repair, or correction.

License

=====

Isof has no license. Its use and distribution are subject to these terms and conditions, found in each Isof source file. (The copyright year in or format of the notice may vary slightly.)

/*

* Copyright 2002 Purdue Research Foundation, West Lafayette,
* Indiana 47907. All rights reserved.

*

* Written by Victor A. Abell

*

* This software is not subject to any license of the American
* Telephone and Telegraph Company or the Regents of the
* University of California.

*

* Permission is granted to anyone to use this software for
* any purpose on any computer system, and to alter it and
* redistribute it freely, subject to the following
* restrictions:

*

* 1. Neither the authors nor Purdue University are responsible
* for any consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented,
* either by explicit claim or by omission. Credit to the
* authors and Purdue University must appear in documentation
* and sources.

*

* 3. Altered versions must be plainly marked as such, and must
* not be misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Bug Reports

=====

Now that the obligatory disclaimer is out of the way, let me hasten to

add that I accept lsof bug reports and try hard to respond to them. I will also consider and discuss requests for new features, ports to new dialects, or ports to new OS versions.

PLEASE DON'T SEND BUG REPORTS ABOUT LSOF TO THE UNIX DIALECT OR DIALECT OPTION VENDOR.

At worst such bug reports will confuse the vendor; at best, the vendor will forward the bug report to me.

PLEASE DON'T SEND BUG REPORTS ABOUT LSOF BINARIES BUILT OR DISTRIBUTED BY SOMEONE ELSE, BECAUSE I CAN'T SUPPORT THEM.

I do support binaries I built, obtained ONLY from lsof.itap.purdue.edu. Before reporting a problem with a lsof.itap.purdue.edu binary, please verify the correctness of the signatures found in its associated CHECKSUMS file.

Before you send me a bug report, please do these things:

- * Make sure you try the latest lsof revision.

- + Download the latest revision from:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof>

- + Verify the signatures of what you have downloaded;

- + While connected to lsof.itap.purdue.edu, check for patches:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/patches>

- + If patches exist, install them in the latest revision you just downloaded. Then build the latest revision and see if it fixes your bug.

- * If you're having trouble compiling lsof with gcc, try the UNIX dialect vendor's compiler. I don't have access to gcc on all test systems, so my support for it is hit-and-miss, and so is my ability to respond to gcc compilation problem reports.

- * Check the lsof frequently asked questions file, 00FAQ, to see if there's a question and answer relevant to your problem.

- * Make sure you're running the lsof you think you are by checking the path to it with which(1). When in doubt, use an absolute path to lsof. Make sure that lsof binary has

sufficient permissions to do what you ask, including internal permissions given it (e.g., restrictions on what files lsof may report for whom) during its build.

When you send a bug report, make sure you include output from your running of lsof's Configure script. If you were able to compile a running lsof, please also include:

- * Output from which(1) that shows the absolute path to the lsof binary in question;
- * Output from running lsof with its -h and -v options at lsof's absolute path;
- * Output from "ls -l" directed to lsof's absolute path.

If you weren't able to compile a running lsof, please send me: the compiler error output; identification of the lsof revision you're using (contents of the lsof version.c file); identification of your system (full uname output or output from whatever other tool identifies the system); and compiler identification (e.g., gcc -v output).

Either set of output will help me understand how lsof was configured and what UNIX dialect and lsof revision is involved.

Please send all bug reports, requests, etc. to me via e-mail at <abe@purdue.edu>. Make sure "lsof" appears in the "Subject:" line so my e-mail filter won't classify your letter as Spam.

The 00FAQ File

=====

The lsof distribution contains an extensive frequently asked questions file on lsof features and problems. I recommend you consult it before sending me e-mail. Use your favorite editor or pager to search 00FAQ -- e.g., supplying as a search argument some fixed text from an lsof error message.

The lsof-l Mailing List

=====

Information about lsof, including notices about the availability of new revisions, may be found in mailings of the lsof-l listserv. For more information about it, including instructions on how to subscribe, read the 00LSOF-L file of the lsof distribution.

Field Output Example Scripts

=====

Example AWK and Perl 4 or 5 scripts for post-processing lsof field output are located in the scripts sub-directory of the lsof distribution. The scripts sub-directory contains a 00README file with information about the scripts.

Field Output C Library

=====

The lsof test suite (See "Testing Lsof."), checks basic lsof operations using field output. The test suite has its own library of C functions for common test program operations, including processing of field output. The library or selections of its functions could be adapted for use by C programs that want to process lsof field output. See the library in the file LTlib.c in the tests/ sub-directory

Testing Lsof

=====

Lsof has an automated test suite in the tests/ sub-directory that can be used to test some basic lsof features -- once lsof has been configured and made. Tests are arranged in three groups: basic tests that should run on all dialects; standard tests that should run on all dialects; and optional tests that may not run on all dialects or may need special resources to run. See 00TEST for more information.)

CAUTION!!! Before you attempt to use the test suite make sure that the lsof you want to test can access the necessary kernel resources -- e.g., /dev/mem, /dev/kmem, /proc, etc. Usually you want to test the lsof you just built, so this is an important check. (See 00TEST.)

To run the basic and standard tests, using the lsof in the parent directory of tests/, do this:

```
$ cd tests
$ make test
  or $ make std
  or $ make standard
```

The basic and standard tests may be run as silently as possible,

using the lsof in the parent directory of tests/, with:

```
$ cd tests
$ make auto
```

This is the "automatic" test mode, designed for use by scripts that build lsof. The caller is expected to test the make exit code to determine if the tests succeeded. The caller should divert standard output and standard error to /dev/null to suppress make's error exit message.

The optional tests may be run, using the lsof in the parent directory of tests/, with:

```
$ cd tests
$ make opt
  or $ make optional
```

It's possible to execute individual tests, too. See the 00TEST file of this distribution for more information on the tests, what they do, and how to run and possibly customize each test.

It's possible to run the tests, using an lsof other than the one in the parent directory of /tests, too. See 00TEST for information about using the LT_LSOF_PATH environment variable to do that.

```
=====
Dialect Notes
=====
```

AFS
===

Lsof recognizes AFS files on the following combinations of UNIX dialect and AFS versions:

- AIX 4.1.4 (AFS 3.4a)
- Linux 1.2.13 (AFS 3.3)
- NEXTSTEP 3.2 (AFS 3.3) (untested on recent lsof revisions)
- Solaris 2.6 (AFS 3.4a)
- Ultrix 4.2 RISC (AFS 3.2b) (no longer available)

Lsof has not been tested under other combinations -- e.g. HP-UX 10.10 and AFS 3.4a -- and probably won't even compile there. Often when a UNIX dialect version or AFS version changes, the new header files come into conflict, causing compiler objections.

AIX

===

Specify the aix Configure abbreviation for AIX 4.1.[45], 4.2.[1], 4.3.[123], 5L, and 5.[123].

Specify aixgcc on AIX above 4.1 to use the gcc compiler. (Gcc can't be used to compile lsof on AIX 4.1 and below because of kernel structure alignment differences between it and xlc.) Gcc results sometimes depend on the version of the gcc compiler that is used.

Compilation of lsof with gcc on AIX 4.3.[123], 5L, and 5.[123] has been sparsely tested with varying degrees of success: it has been reported to succeed on AIX 4.3.3 and 32 bit Power AIX 5.1; to fail on ia64 AIX 5.1 and 64 bit Power AIX 5.1; and to succeed on 32 and 64 bit Power AIX 5.2. Lsof compilation with gcc hasn't been tested on AIX 5.3.

At revision 4.61 and above lsof is configured and built to match the bit size of the kernel of Power architecture AIX 5.1 systems. Lsof binaries built for 32 and 64 bit kernels are not interchangeable. See 00FAQ for more information.

The Configure script uses /usr/bin/oslevel to determine the AIX version for AIX less than 5 and ``uname -rv" for AIX 5 and higher. If /usr/bin/oslevel isn't executable on AIX less than 5, the Configure script issues a warning message and uses ``uname -rv" to determine the AIX version.

When Configure must use ``uname -rv" on AIX less than 5 to determine the AIX version, the result will lack a correct third component -- e.g., the `4' of ``4.1.4". If your AIX less than 5 system lacks an executable oslevel, I suggest you edit the Configure-produced Makefile and complete the _AIXV definition in the CFGF string.

By default lsof avoids using the kernel's readx() function, causing it to be unable to report information on some text and library file references. The ``-X" option allows the lsof user to ask for the information readx() supplies.

Lsof avoids readx() to avoid the possibility of triggering a kernel problem, known as the Stale Segment ID kernel bug. Kevin Ruderman reported this bug to me. The bug shows up when the kernel's dir_search() function hangs, hanging the application process that called it so completely that the application process can neither be killed nor stopped. The hang is the consequence of another process (perhaps lsof) making legitimate use of the kernel's readx()

function to access the kernel memory that `dir_search()` is examining. IBM has indicated they have no plans to fix the bug.

A fuller discussion of this bug may be found in the 00FAQ file of the `lsf` distribution. There you will find a description of the Stale Segment ID bug, the APAR on it, and a discussion of the sequence of events that exposes it.

I added the ```-X` function so you can tell `lsf` to use `readx()`, but if you use ```-X`, you should be alert to its possibly serious side effects. Although `readx()` is normally disabled, its state is controlled with the `HASXOPT`, `HASXOPT_ROOT`, and `HASXOPT_VALUE` definitions in `dialects/aix/machine.h`, and you can change its default state by changing those definitions. You can also change `HASXOPT_ROOT` via the `Customize` script.

You can also compile `lsf` with `readx()` use permanently enabled or disabled -- see the comments about the definitions in the `dialects/aix/machine.h` header file. You may want to permanently disable `lsf`'s use of `readx()` if you plan to make `lsf` publicly executable. You can also restrict `-X` to processes whose real UID is root by defining `HASXOPT_ROOT`.

I have never seen `lsf` cause the Stale Segment ID bug to occur and haven't had a report that it has, but I believe there is a possibility it could.

AFS support for AIX was added with help help from Bob Cook and Jan Tax who provided test systems.

Henry Grebler and David J. Wilson helped with `lsf` for AIX 4.2.

Bill Pemberton provided an AIX 4.3 test system. Andrew Kephart and Tom Weaver provided AIX 4.3 technical assistance. Niklas Edmundsson did 4.3.1 testing. Doug Crabill provided an AIX 4.3.2 test system. Jeff W. Stewart provided an AIX 4.3.3 test system.

The SMT file type for AIX 4.1.[45], 4.2[.1], and 4.3[.12] is my fabrication. See the 00FAQ file more information on it.

Loc Le and Nasser Momtaheni of IBM provided test systems for AIX 5L and 5.1. `lsf` for AIX 5L and 5.1 needs `setuid-root` permission to process the `-X` option on systems whose architecture type is `ia64`.

Dale Talcott of Purdue provided AIX 5.1 and 5.2 test systems. Dale and John Jackson of Purdue provided an AIX 5.3 test system.

Apple Darwin

=====

The Apple Darwin port was provided by Allan Nathanson for version 1.2. Allan also arranged for access to a test system for maintenance and regression testing. Dale Talcott provided a test system, too.

Allan supplied patches for updates to 1.4, 5.x, 6.x, 7.x and 8.x.

BSDI BSD/OS

=====

As of lsof revision 4.77 support for BSDI BSD/OS has been discontinued. Lsof revision 4.76 with BSDI BSD/OS support may be found on lsof.itap.purdue.edu in `pub/tools/unix/lsof/src`.

DEC OSF/1, Digital UNIX, Tru64 UNIX

=====

Robert Benites, Dean Brock, Angel Li, Dwight McKay, Berkley Shands, Ron Young and Steve Wilson have kindly provided test systems. Jeffrey Mogul has provided technical assistance. Dave Morrison and Lawrence MacIntyre did Digital UNIX V3.2 testing.

Lsof supports the ADVFS/MSFS layered file system product. Lsof can locate all the open files of an ADVFS/MSFS file system when its path is specified, provided the file system is listed in `/etc/fstab` with an ```advfs``` type. (This `/etc/fstab` caveat applies only to Digital UNIX 2.0.) At Digital UNIX 4.0 and Tru64 UNIX, using code provided by David Brock, lsof 4.20 and above can locate ADVFS file paths.

Testing of lsof on DEC OSF/1 and Digital UNIX 4.0 ended with lsof revision 4.74. Hence, the lsof documentation has dropped the claim that it works there. For a distribution of lsof 4.74 that was tested on DEC OSF/1 and Digital UNIX 4.0, check `pub/tools/unix/lsof/OLD/src` on the lsof ftp home, lsof.itap.purdue.edu.

Lsof revisions past 4.74 have only been tested on Tru64 UNIX 5.1.

FreeBSD

=====

Bill Bormann of Purdue University provided access to several FreeBSD test systems. Ade Barkah, John Clear, Ralph Forsythe, Michael

Haro, Kurt Jaeger, and William McVey have also provided FreeBSD test systems.

The FreeBSD distribution header files are augmented by header files in the dialects/freebsd/include directory.

David O'Brien maintains the lsof FreeBSD port package.

HP-UX

=====

Lsof has two HP-UX bases: /dev/kmem for HP-UX 11.0 and earlier; and PSTAT for HP-UX 11.11 and later. The lsof Configure script will pick the appropriate base.

To use the CCITT x.25 socket support for HP-UX, you must have the x.25 header files in /etc/conf/x25

Pasi Kaara helped with the HP-UX port, especially with its CCITT x.25 socket support.

Richard Allen provided HP-UX 10.x and 11.x test systems, as did Mark Bixby, and Elias Halldor Agustsson. Marc Winkler helped test the 10.20 port. Richard J. Rauenzahn provided a 64 bit HP-UX 11 test system and an HP-UX 11.11 development system.

AFS support for HP-UX was added thanks to help from Chaskiel Moses Grundman, who provided a test system.

The /dev/kmem-based HP-UX 11.00 support is extremely fragile. It depends on privately developed kernel structure definitions. (See ../dialects/hpux/hpux11 for the header files making the definitions.) Those header files and their definitions will not be updated by HP-UX 11.00 patches, making it likely that any patch changing a kernel structure critical to lsof will break lsof in some way.

It's possible to build a 64 bit lsof for 64 bit HP-UX 11.00 with gcc, but you must have a gcc compiler capable of producing 64 bit executables. See the 00FAQ file for more information.

The PSTAT-based lsof for HP-UX 11.11 and later is much more solid. I am indebted to the vision of HP for providing an lsof kernel API through the PSTAT implementation. Specifically I appreciate the help of HP staff members Carl Davidson, Louis Huemiller, Rich Rauenzahn, and Sailu Yallapragada that made PSTAT-based HP-UX lsof possible.

IPv6

=====

Lsof has IPv6 support that has been tested for these UNIX dialects: AIX 4.3.x; Apple Darwin 5.[12] and 6.0; the INRIA and KAME FreeBSD IPv6 implementations; PSTAT-based HP-UX; /proc-based Linux; the INRIA and KAME NetBSD implementations; and Solaris 8 and 9. Lsof has IPv6 support that hasn't been tested for: OpenBSD (KAME); OpenUNIX 8; Tru64 Unix 5.[01]; and UnixWare 7.1.[34].

Please let me know if your UNIX dialect has IPv6 support and I'll see if it can be supported by lsof.

Linux

=====

Tim Korb, Steve Logue, Joseph J. Nuspl Jr., and Jonathan Sergent have provided Linux test systems.

Michael Shields helped add and test automatic handling of ELF/COFF form names in /System.map, Marty Leisner and Keith Parks have helped test many lsof revisions. Marty has provided valuable suggestions, Linux hints, and code, too.

The 00FAQ file gives some Linux tips, including information on coping with system map file problems.

To determine the state of the Linux 2.1.x C library lseek() function, the lsof Configure script runs a test program that must have permission to read /dev/kmem. The test determines if the lseek() function properly handles kernel offsets, which appear to be negative because their high order bit is set. If the lseek() test reveals a faulty lseek(), Configure activates the use of a private lseek() function for kernel offset positioning. See the Linux problems section of the 00FAQ file of the lsof distribution for more information.

NetBSD

=====

Greg Earle and Paul Kranenburg have assisted with the NetBSD ports. Paul has provided test systems. Ray Phillips provided a NetBSD Alpha test system. Andrew Brown also provided a test system.

The NetBSD dialect version of lsof is compiled using the dialect

sources it shares with OpenBSD in the n+obsd dialect sub-directory.

NEXTSTEP and OPENSTEP

=====

Virtual memory header files that allow lsof to display text references were derived from the contents of /usr/include/vm of NEXTSTEP 2.0. NeXT did not ship the virtual memory header files with other NEXTSTEP or OPENSTEP versions.

You may use the RC_FLAGS environment variable to declare compiler options outside the Makefile. A common use of this variable is to define the architecture types to be included in a "fat" executable. See the comments in dialects/next/Makefile for an example.

OpenBSD

=====

David Mazieres has provided OpenBSD test systems. The OpenBSD dialect version of lsof is compiled using the dialect sources it shares with NetBSD in the n+obsd dialect sub-directory.

Kenneth Stailey has provided OpenBSD testing and advice.

John Dzuber (Zube) reports, "lsof 4.33 compiles and runs on OpenBSD 2.3 for the pmax architecture (decstation 3100)."

I have not tested lsof on OpenBSD 3.8, but David Mazieres reports revision 4.76 worked on OpenBSD 3.8.

Pyramid DC/OSx and Reliant UNIX

=====

As of lsof revision 4.52 support for all Pyramid dialects has been discontinued. Lsof revision 4.51 with Pyramid support may be obtained upon request. Send the request to abe@purdue.edu.

These two UNIX dialects are very similar and share dialect-specific source files from the pyramid sub-directory.

The Reliant Unix Pyramid C compiler issues warning messages that I haven't found a convenient way to suppress. You can ignore warning messages about casts and conversions that lose bits. The message "warning: undefining __STDC__" is intentionally caused by the lsof MkKernOpts configuration script to suppress warning messages

about cast and conversion problems in standard system header files, such as <stdio.h> and <string.h>.

Bruce Beare and Kevin Smith provided test systems.

Caldera OpenUNIX

=====

Larry Rosenman provided an OpenUNIX 8 test system. Matthew Thurmaier provided technical assistance, along with these people from Caldera: Jack Craig, Robert Lipe, and Bela Lubkin.

Robert Lipe supplied changes to lsof for OpenUNIX 8.0.1. Those changes were also incorporated in UnixWare 7.1.3 when it became the release name for OpenUNIX 8.0.1.

Support for lsof on OpenUNIX ended at lsof revision 4.74. The last lsof revision, 4.74, tested on OpenUNIX, may be found at the lsof "home" ftp site, lsof.itap.purdue.edu, in pub/tools/unix/lsof/OLD/src.

SCO OpenServer

=====

Dion Johnson, Bela Lubkin, and Nathan Peterson of SCO gave me copies of SCO OpenServer and the SCO OpenServer Development System 3.0 and provided technical advice for the lsof port.

Hugh Dickins, Bela Lubkin, Craig B. Olofson, and Nathan Peterson provided version 5.0 and gave technical advice for porting lsof to it. Bela provided the 5.0.4 changes. D. Chris Daniels provided a 5.0.4 test system, Lee Penn provided one for 5.0.5, and John Dubois for 5.0.6.

The <netdb.h> header file was accidentally omitted from some SCO OpenServer Development System releases. The Configure script will sense its absence and substitute an equivalent from the BSD distribution. The BSD <netdb.h> and the <sys/cdefs.h> header file it includes are located in the dialects/os/include sub-directory tree.

To compile lsof from its distribution sources you must have the TCP/IP and NSF headers in /usr/include. While those are optional OpenServer packages, I have access to no system that doesn't have them, so I'm unable to build lsof for such a configuration. However, it should be possible to modify the lsof Configure script and sources so lsof would compile and work without those optional

packages.

If you have an OpenServer system configured without the TCP/IP and NFS packages, and want to tackle the job of building lsof for it, contact me via e-mail at <abe@purdue.edu>. I'll identify the Configure script, header file, and source file changes you will need to make. (Caution: this is not a simple task, or I would have already done it.)

The optional osrgcc and scogcc Configure abbreviations construct Makefiles for compiling lsof with gcc.

The UnixWare 7.1.4 sources are used for OpenServer Release 6.0.0. Hence there is a separate Configure abbreviation for it, "osr6". Richard of SCO provided a test system and technical assistance.

SCO|Caldera UnixWare

=====

D. Chris Daniels, John Hughes, Ken Laing, Andrew Merrill, Lee Penn, and Matthew Thurmaier provided test systems. Bela Lubkin provided technical assistance. Larry Rosenman provided 7.1.[34] test systems.

Solaris 2.x, 7, 8, 9 and 10

=====

SEE THE CAUTIONS SECTION OF THIS DOCUMENT.

The latest Solaris revision of lsof 4 might work under Solaris 2.[1-4] and 2.5[.1] and 7 but hasn't been tested there. I have no test systems for those Solaris versions.

Lsof will compile with gcc and the Sun C compiler under Solaris. If you want to use the Sun compiler, use the solariscc Configure abbreviation. If you use a gcc version less than 2.8 on Solaris, make sure the gcc-specific includes have been updated for your version of Solaris -- i.e., run the gcc fixincludes script.

Solaris 7, 8, 9 and 10 support for 64 bit kernels depends on a Sun WorkShop or Forte C compiler version that supports the "-xarch=v9" flag -- usually 5.0 or greater. Gcc versions 2.95 and above *may* be configured and built for 64 bit support, but it takes some extra work, the resulting compiler may be fragile, and the gcc developers discourage it. I've built 64 bit capable gcc compilers for Solaris 7, 8 and 9 from gcc versions 2.95 through 3.0.1 and produced working lsof executables with them. More information on 64 bit gcc for

Solaris may be found in the 00FAQ file.

Solaris 10 ZFS support is questionable, because Sun does not distribute the ZFS kernel structure definition header files. The lsof Configure script and source code use some risky work-arounds. ZFS file system support was made possible with help from Horst Scheuermann.

Dave Curry and Steve Kirsch provided resources for Solaris 2.x ports. Casper Dik and Gerry Singleton consulted and provided valuable assistance.

Henry Katz, Joseph Kowalski, Charles Stephens, Mike Sullivan, and Mike Tracy provided technical assistance.

AFS support was added to Solaris lsof with help from Curt Freeland, Heidi Hornstein, Michael L. Lewis, Terry McCoy, Phillip Moore, and Sushila R. Subramanian.

Casper Dik provided valuable assistance for the Solaris 8 support.

Sun has graciously provided me access to BETA versions of Solaris 2.5, 2.6, 7, 8, and 9.

John Dzuberá provided Solaris 7 and 8 test systems.

Mike Miscevic provided Solaris 10 test systems.

Ultrix

=====

As of lsof revision 4.52 support for Ultrix is no longer available, because I no longer have an Ultrix test system.

Terry Friedrichsen, Dwight McKay, and Jeffrey Mogul helped me with this port.

DECnet support was added to Ultrix lsof with the help of John Beacom, who kindly provided a test system. The Configure script decides that DECnet support is available if /usr/lib/libdnet.a and /usr/include/netdnet/dn.h exist and are readable.

Veritas VxFS and VxVM

=====

Lsof supports some versions of Veritas VxFS and VxVM on some UNIX dialects. Consult the lsof Configure script for the specific

dialect, and consult the lsof dialect-specific source files for the UNIX dialect of interest. Veritas support will usually be found in a source file named dnode[1-9].c.

Since Veritas rarely has a version number that can be extracted with shell commands, lsof doesn't use it. Instead, when lsof supports Veritas, the Configure script will form compile-time definitions starting with HASVXFS. Check the lsof 00PORTING documentation file for more information.

Lsof Veritas support requires that the supporting Veritas header files be installed -- e.g., in /usr/include/sys/fs. (The location will depend in the dialect's header file conventions.)

Some information on lsof support for Veritas extensions may be found in the lsof 00DIST file.

Chris Kordish and Andy Thomas have provided Solaris VxFS test systems.

=====
User-contributed Dialect Support
=====

There are some user-contributed dialect versions of lsof; more information on them can be found at:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/contrib>

Check the 00INDEX file there for details.

=====
Dialects No Longer Supported
=====

Because I don't have access to test systems, these UNIX dialects are no longer supported by lsof:

CDC EP/IX
/dev/kmem-based Linux
MIPS RISC/os
Motorola V/88
Pyramid DC/OSx
Pyramid Reliant UNIX
Sequent DYNIX
SGI IRIX

SunOS 4.x
Ultrix
UnixWare below 7.0

Remnants of the support lsof once provided for these dialects may be found in:

<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/OLD/binaries>
and
<ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/OLD/dialects>

=====
Installing Lsof
=====

The distributed Makefiles do not have actions that will install lsof. I've come to the conclusion there is no standard for installing lsof or its man page, so I no longer distribute make rules for installing them. You should adjust the Makefile for your local preferences.

The Makefile does have an install rule that will cause lsof to compile by virtue of its dependency clause. Some Makefiles also have a dependency that causes the production of a man page that is ready to install. However, the actions of the install rule will not cause the lsof executable or its man page to be installed in any UNIX system-wide directory.

Instead, after the compilation and optional man page production are completed, the install rule will produce a brief description of what actions you might add to the install rule. The description will suggest the possible modes, ownerships, permissions, and destinations your install rule might employ to install the lsof executable and man page.

As you form your install rule, keep in mind that lsof usually needs some type of special permission to do its job. That may be permission to read memory devices such as /dev/kmem, /dev/mem, or /dev/swap, or it may be authorization to read entries in the /proc file system.

Memory device access can usually be provided by setting the modes of the lsof executable so that its effective group identifier when it runs is the same as the group that has permission to read the memory devices -- i.e., it is setgid-group. The privileged group is usually kmem, sys, or system.

Don't overlook using ACLs -- e.g., on AIX or Solaris 8 -- to give

lsof permission to access memory devices. ACLs, coupled to a separate group like kmem, can be safer than giving lsof setgid authorization to a commonly used system group.

When lsof needs to read /proc file system entries, it must be installed with modes that make its effective user identifier root when it runs -- i.e., it must be setuid-root. If lsof must be installed setuid-root (only the AIX 5L, PSTAT-based HP-UX, and /proc-based Linux, ports need such power.), then access to memory devices is automatic (or not needed in the case of /proc-based Linux).

Your choice of permissions for lsof may also be affected by your desire to allow anyone to use it or your need to restrict its usage to specific individuals. You will have to be guided by local policy and convention in this case.

The next two sections, Setgid Lsof Dialect Versions and Setuid-root Lsof Dialect Versions, list recommended install permissions.

The system directory where you install the lsof executable is also open to choice. A traditional place for a tool like lsof is /usr/local/etc, but recent changes in directory structure organization suggest that somewhere in /opt may be more suitable.

Bear one other factor in mind when choosing a location for the lsof executable -- it usually is a shared executable, requiring access to shared libraries. Thus, locations like /sbin or /usr/sbin are probably unsuitable.

Once you've chosen a location for the executable you may find that the location for the man page follows -- e.g., if the executable goes in /usr/local/etc, then the man page goes in /usr/local/man. If the executable location doesn't imply a location for the man page, you'll have to let local custom guide you.

Setuid-root Lsof Dialect Versions

=====

These dialect versions should be installed with setuid-root permission -- i.e., the lsof binary should be owned by root and its setuid execution bit (04000) should be set.

AIX 5L and above for full use of the -X option
Apple Darwin 8.x for Power Macintosh systems
PSTAT-based HP-UX 11.11 and 11.23
/proc-based Linux (generally 2.1.72 and above)

Setgid Lsof Dialect Versions

=====

These dialect versions should be installed with setgid permission, owned by the group that can read kernel memory devices such as /dev/drum, /dev/kmem, /dev/ksyms, /dev/mem, /dev/swap. ACLs may be another mechanism (e.g., under AIX or Solaris 8) you can use to grant read permission to the kernel memory devices.

AIX 4.1.[45], 4.2[.1], and 4.3[.123]

Apple Darwin 7.x for Power Macintosh systems

DEC OSF/1, Digital UNIX, Tru64 UNIX 2.0, 3.2, 4.0, and 5.[01]

FreeBSD 2.1.6, 2.2[.x], 3.x, 4.x, 5.x and [67].x

/dev/kmem-based 11.00

NetBSD 1.[456], 2.x and 3.x

NEXTSTEP 3.[13]

OpenBSD 2.[89] and 3.[0-9]

OPENSTEP 4.x

Caldera OpenUNIX 8

SCO OpenServer 5.0.[46]

SCO UnixWare 7.0 and 7.1.[0134]

Solaris 2.6, 8, 9 and 10

Ultrix 4.2 (no longer available)

=====

Porting Lsof 4 to a New UNIX Dialect

=====

If you're brave enough to consider this, look at the 00PORTING file. Please contact me before you start. I might be able to help you or even do the port myself.

Don't overlook the contrib/ directory in pub/tools/unix/lsof on my ftp server, lsof.itap.purdue.edu. It contains user-contributed ports of lsof to dialects I don't distribute, because I can't test new revisions of lsof on them.

=====

Quick Start to Using Lsof

=====

For information on how to get started quickly using lsof, consult the 00QUICKSTART file of the lsof distribution. It cuts past the formal density of the lsof man page to provide quick examples of using lsof to solve common open file display problems.

=====
Cross-configuring Lsof
=====

Using environment variables it is possible to Configure (and possibly build) Lsof for one UNIX dialect on a different one -- e.g., you are running Configure on a Linux 2.3 system and you want to Configure and build Lsof for Linux 2.4.

See the 00XCONFIG file of the Lsof distribution for a discussion of how to do this.

=====
Environment Variables Affecting the Configure Script
=====

Configure script actions can be modified by introducing values to the script via environment variables. In many cases the environment variable values take the place of test operations the Configure script makes.

For more information on environment variables that can affect Configure, consult the 00XCONFIG file of the Lsof distribution. See the General Environment Variables sections for descriptions of ones that affect all dialects. Consult the Dialect-Specific Environment Variables section for ones that might affect the dialect you are trying to configure.

Vic Abell <abe@purdue.edu>
April 24, 2007

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/lsof-4-85-zip/00README

No license file was found, but licenses were detected in source scan.

/*

* Portions Copyright 2005-2007 Apple Inc. All rights reserved.

*

* Copyright 2005 Purdue Research Foundation, West Lafayette, Indiana

* 47907. All rights reserved.

*

* Written by Allan Nathanson, Apple Inc., and Victor A. Abell, Purdue

* University.

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors, nor Apple Inc. nor Purdue University are
* responsible for any consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either
* by explicit claim or by omission. Credit to the authors, Apple
* Inc. and Purdue University must appear in documentation and sources.
* and sources.

*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software.

*

* 4. This notice may not be removed or altered.

*/

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isosf-4-85-zip/dialects/darwin/libproc/dproc.c

No license file was found, but licenses were detected in source scan.

/*

* Portions Copyright 2005-2007 Apple Inc. All rights reserved.

*

* Copyright 2005 Purdue Research Foundation, West Lafayette, Indiana
* 47907. All rights reserved.

*

* Written by Allan Nathanson, Apple Inc., and Victor A. Abell, Purdue
* University.

*

* This software is not subject to any license of the American Telephone
* and Telegraph Company or the Regents of the University of California.

*

* Permission is granted to anyone to use this software for any purpose on
* any computer system, and to alter it and redistribute it freely, subject
* to the following restrictions:

*

* 1. Neither the authors, nor Apple Inc. nor Purdue University are
* responsible for any consequences of the use of this software.

*

* 2. The origin of this software must not be misrepresented, either
* by explicit claim or by omission. Credit to the authors, Apple
* Inc. and Purdue University must appear in documentation and sources.

*

- * 3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

Found in path(s):

- * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/dfile.c
 - * /opt/cola/permits/1550988360_1675319900.3624527/0/Isf-4-85-zip/dialects/darwin/libproc/dlsof.h
- No license file was found, but licenses were detected in source scan.

/*

- * Copyright 1994 Purdue Research Foundation, West Lafayette, Indiana
- * 47907. All rights reserved.
- *
- * Written by Victor A. Abell
- *
- * This software is not subject to any license of the American Telephone
- * and Telegraph Company or the Regents of the University of California.
- *
- * Permission is granted to anyone to use this software for any purpose on
- * any computer system, and to alter it and redistribute it freely, subject
- * to the following restrictions:
- *
- * 1. Neither the authors nor Purdue University are responsible for any
- * consequences of the use of this software.
- *
- * 2. The origin of this software must not be misrepresented, either by
- * explicit claim or by omission. Credit to the authors and Purdue
- * University must appear in documentation and sources.
- *
- * 3. Altered versions must be plainly marked as such, and must not be
- * misrepresented as being the original software.
- *
- * 4. This notice may not be removed or altered.
- */

/*

- * Copyright (c) 1983, 1993
- * The Regents of the University of California. All rights reserved.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.

- * 3. All advertising materials mentioning features or use of this software
- * must display the following acknowledgement:
- * This product includes software developed by the University of
- * California, Berkeley and its contributors.
- * 4. Neither the name of the University nor the names of its contributors
- * may be used to endorse or promote products derived from this software
- * without specific prior written permission.
- *
- * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
- * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- * ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
- * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- * SUCH DAMAGE.
- */

Found in path(s):

* /opt/cola/permits/1550988360_1675319900.3624527/0/Isot-4-85-zip/dialects/du/ddev.c

1.177 lua 5.1.5

1.177.1 Available under license :

Lua License

Lua is licensed under the terms of the MIT license reproduced below.
 This means that Lua is free software and can be used for both academic
 and commercial purposes at absolutely no cost.

For details and rationale, see <http://www.lua.org/license.html> .

=====

Copyright (C) 1994-2012 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy
 of this software and associated documentation files (the "Software"), to deal
 in the Software without restriction, including without limitation the rights
 to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
 copies of the Software, and to permit persons to whom the Software is
 furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

(end of COPYRIGHT)

1.178 @tensorflow-models/body-pix 2.2

1.178.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2021 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

Found in path(s):

```
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body-pix.min.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body-pix.esm.js
```

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2019 Google Inc. All Rights Reserved.
```

```

* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
* =====
*/

```

Found in path(s):

- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/util_test.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/util_test.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body_pix_test.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/argmax2d_test.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body_pix_test.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/argmax2d_test.d.ts

No license file was found, but licenses were detected in source scan.

```

/**
* @license
* Copyright 2019 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
* =====
*/

```

Found in path(s):

* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/keypoints.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_pose.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/version_test.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/blur.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/decode_part_map.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/util.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/setup_test.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/version_test.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/util.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/decode_single_pose.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/build_part_with_score_queue.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/setup_test.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/argmax2d.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/util.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/output_rendering_util.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/util.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/single_person/argmax2d.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/output_rendering_util.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/build_part_with_score_queue.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_pose.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/blur.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/keypoints.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/decode_part_map.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/run_tests.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-

pix/dist/single_person/decode_single_pose.js

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2019 Google Inc. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

Found in path(s):

```
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-
pix/dist/saved_models.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-
pix/dist/saved_models.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-
pix/dist/index.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-
pix/dist/resnet.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-
pix/dist/index.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-
pix/dist/resnet.js
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"body-
pix.min.js","sources":["../src/decode_part_map.ts","../src/base_model.ts","../src/mobilenet.ts","../src/keypoints.ts","..
../src/multi_person/util.ts","../src/multi_person/decode_multiple_masks_cpu.ts","../src/multi_person/decode_multiple
_masks_webgl.ts","../src/multi_person/decode_instance_masks.ts","../src/multi_person/max_heap.ts","../src/multi_p
erson/build_part_with_score_queue.ts","../src/multi_person/decode_pose.ts","../src/multi_person/decode_multiple_p
oses.ts","../src/resnet.ts","../src/saved_models.ts","../src/util.ts","../src/body_pix_model.ts","../src/output_rendering_
util.ts","../src/blur.ts","../src/part_channels.ts","../src/version.ts"],"sourcesContent":["/**\n * @license\n * Copyright
2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```

=====
*/\nimport * as tf from '@tensorflow/tfjs-core';\n\n/**\n * Takes the sigmoid of the part heatmap output and\n * generates a 2d one-hot\n * tensor with ones where the part's score has the maximum value.\n * @param\n * partHeatmapScores\n * \nfunction toFlattenedOneHotPartMap(partHeatmapScores: tf.Tensor3D): tf.Tensor2D {\n * const numParts = partHeatmapScores.shape[2];\n * const partMapLocations = tf.argmax(partHeatmapScores, 2);\n * const partMapFlattened = tf.reshape(partMapLocations, [-1]);\n * \n * return tf.oneHot(partMapFlattened, numParts) as\n * tf.Tensor2D;\n * }\n * \n * \nfunction clipByMask2d(image: tf.Tensor2D, mask: tf.Tensor2D): tf.Tensor2D {\n * return\n * tf.mul(image, mask);\n * }\n * \n * \n * Takes the sigmoid of the segmentation output, and generates a segmentation\n * mask with a 1 or 0 at each pixel where there is a person or not a person. The\n * segmentation threshold determines\n * the threshold of a score for a pixel for it\n * to be considered part of a person.\n * @param segmentScores A 3d-\n * tensor of the sigmoid of the segmentation output.\n * @param segmentationThreshold The minimum that\n * segmentation values must have\n * to be considered part of the person. Affects the generation of the\n * segmentation mask and the clipping of the colored part image.\n * @returns A segmentation mask with a 1 or 0\n * at each pixel where there is a\n * person or not a person.\n * \n * \n * \nfunction toMaskTensor(\n * segmentScores:\n * tf.Tensor2D, threshold: number): tf.Tensor2D {\n * return tf.tidy(\n * () =>\n * (tf.cast(tf.greater(\n * segmentScores, tf.scalar(threshold)), 'int32') as tf.Tensor2D));\n * }\n * \n * \n * \n * Takes the sigmoid of the person and\n * part map output, and returns a 2d tensor\n * of an image with the corresponding value at each pixel corresponding to\n * the\n * part with the highest value. These part ids are clipped by the segmentation\n * mask. Wherever the a pixel is\n * clipped by the segmentation mask, its value\n * will set to -1, indicating that there is no part in that pixel.\n * @param segmentScores A 3d-tensor of the sigmoid of the segmentation output.\n * @param partHeatmapScores A\n * 3d-tensor of the sigmoid of the part heatmap\n * output. The third dimension corresponds to the part.\n * @returns A 2d tensor of an image with the corresponding value at each pixel\n * corresponding to the part with the\n * highest value. These part ids are clipped\n * by the segmentation mask. It will have values of -1 for pixels that are\n * outside of the body and do not have a corresponding part.\n * \n * \n * \n * \nfunction decodePartSegmentation(\n * segmentationMask: tf.Tensor2D,\n * partHeatmapScores: tf.Tensor3D): tf.Tensor2D {\n * const [partMapHeight,\n * partMapWidth, numParts] = partHeatmapScores.shape;\n * return tf.tidy(() => {\n * const flattenedMap =\n * toFlattenedOneHotPartMap(partHeatmapScores);\n * const partNumbers = tf.expandDims(tf.range(0, numParts, 1,\n * 'int32'), 1);\n * const partMapFlattened =\n * tf.cast(tf.matmul(flattenedMap, partNumbers as tf.Tensor2D),\n * 'int32');\n * const partMap = tf.reshape(partMapFlattened, [partMapHeight, partMapWidth]);\n * const\n * partMapShiftedUpForClipping = tf.add(partMap, tf.scalar(1, 'int32'));\n * return tf.sub(clipByMask2d(\n * partMapShiftedUpForClipping as tf.Tensor2D, segmentationMask)\n * , tf.scalar(1, 'int32'));\n * });\n * }\n * \n * \n * \n * \nfunction decodeOnlyPartSegmentation(partHeatmapScores: tf.Tensor3D):\n * tf.Tensor2D {\n * const\n * [partMapHeight, partMapWidth, numParts] = partHeatmapScores.shape;\n * return tf.tidy(() => {\n * const\n * flattenedMap = toFlattenedOneHotPartMap(partHeatmapScores);\n * const partNumbers =\n * tf.expandDims(tf.range(0, numParts, 1, 'int32'), 1);\n * const partMapFlattened =\n * tf.cast(tf.matmul(flattenedMap, partNumbers as tf.Tensor2D), 'int32');\n * return tf.reshape(partMapFlattened,\n * [partMapHeight, partMapWidth]);\n * });\n * });\n * }\n * \n * \n * \n * \n * @license\n * Copyright 2019 Google Inc. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * \n * \n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *

```

```

=====
*/\nimport * as tfconv from '@tensorflow/tfjs-converter';\nimport * as tf from '@tensorflow/tfjs-core';\nimport\n * {BodyPixOutputStride} from './types';\n * \n * \n * \n * BodyPix supports using various convolution neural network\n * models\n * (e.g. ResNet and MobileNetV1) as its underlying base model.\n * The following BaseModel interface\n * defines a unified interface for\n * creating such BodyPix base models. Currently both MobileNet (in\n *

```



```

./mobilenet.ts) and ResNet (in ./resnet.ts) implements the BaseModel interface. New base models that conform
to the BaseModel interface can be added to BodyPix.

export abstract class BaseModel {
  constructor(
    protected readonly model: tfconv.GraphModel,
    public readonly outputStride: BodyPixOutputStride) {
    const inputShape =
      this.model.inputs[0].shape as [number, number, number, number];
    tf.util.assert(
      (inputShape[1] === -1) && (inputShape[2] === -1),
      () => `Input shape [${inputShape[1]}, ${inputShape[2]}]
      must both be equal to or -1`);
  }

  abstract preprocessInput(input: tf.Tensor3D): tf.Tensor3D;

  /**
   * Predicts intermediate Tensor representations.
   * @param input The input RGB image of the base
   model.
   * A Tensor of shape: [inputResolution, inputResolution, 3].
   * @return A dictionary of base
   model's intermediate predictions.
   * The returned dictionary should contains the following elements:
   * - heatmapScores: A Tensor3D that represents the keypoint heatmap scores.
   * - offsets: A Tensor3D that represents
   the offsets.
   * - displacementFwd: A Tensor3D that represents the forward displacement.
   * - displacementBwd: A Tensor3D that represents the backward displacement.
   * - segmentation: A Tensor3D that
   represents the segmentation of all
   * people.
   * - longOffsets: A Tensor3D that represents the long offsets used
   for
   * instance grouping.
   * - partHeatmaps: A Tensor3D that represents the body part segmentation.

  predict(input: tf.Tensor3D): {
    heatmapScores: tf.Tensor3D,
    offsets: tf.Tensor3D,
    displacementFwd:
    tf.Tensor3D,
    displacementBwd: tf.Tensor3D,
    segmentation: tf.Tensor3D,
    partHeatmaps: tf.Tensor3D,
    longOffsets: tf.Tensor3D,
    partOffsets: tf.Tensor3D
  }

  return tf.tidy(() => {
    const asFloat =
    this.preprocessInput(tf.cast(input, 'float32'));
    const asBatch = tf.expandDims(asFloat, 0);
    const results =
    this.model.predict(asBatch) as tf.Tensor4D[];
    const results3d: tf.Tensor3D[] = results.map(y => tf.squeeze(y,
    [0]));
    const namedResults = this.nameOutputResults(results3d);

    return {
      heatmapScores:
      tf.sigmoid(namedResults.heatmap),
      offsets: namedResults.offsets,
      displacementFwd:
      namedResults.displacementFwd,
      displacementBwd: namedResults.displacementBwd,
      segmentation:
      namedResults.segmentation,
      partHeatmaps: namedResults.partHeatmaps,
      longOffsets:
      namedResults.longOffsets,
      partOffsets: namedResults.partOffsets
    };
  });
}

// Because
MobileNet and ResNet predict() methods output a different order for
// these values, we have a method that needs
to be implemented to order them.
abstract nameOutputResults(results: tf.Tensor3D[]): {
  heatmap:
  tf.Tensor3D,
  offsets: tf.Tensor3D,
  displacementFwd: tf.Tensor3D,
  displacementBwd: tf.Tensor3D,
  segmentation: tf.Tensor3D,
  partHeatmaps: tf.Tensor3D,
  longOffsets: tf.Tensor3D,
  partOffsets:
  tf.Tensor3D
};

/**
 * Releases the CPU and GPU memory allocated by the model.
 */
dispose() {
  this.model.dispose();
}

}

/**
 * @license
 * Copyright 2019 Google Inc. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in
 * compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
 * OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
 * governing permissions and
 * limitations under the License.
 */
}

=====

import * as tf from '@tensorflow/tfjs-core';
import { BaseModel } from './base_model';
export class
MobileNet extends BaseModel {
  preprocessInput(input: tf.Tensor3D): tf.Tensor3D {
    // Normalize the pixels
    [0, 255] to be between [-1, 1].
    return tf.tidy(() => tf.sub(tf.div(input, 127.5), 1.0));
  }

  nameOutputResults(results: tf.Tensor3D[]) {
    const [
      offsets,
      segmentation,
      partHeatmaps,
      longOffsets,
      heatmap,
      displacementFwd,
      displacementBwd,
      partOffsets,
    ] = results;
    return {
      offsets,
      segmentation,
      partHeatmaps,
      longOffsets,
      heatmap,
      displacementFwd,
      displacementBwd,
      partOffsets
    };
  }
}

/**
 * @license
 * Copyright 2019
 * Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you
 * may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES

```

OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/
export type Tuple<T> = [T, T];
export type StringTuple = Tuple<string>;
export type NumberTuple =
  Tuple<number>;
export const PART_NAMES = [
  'nose', 'leftEye', 'rightEye', 'leftEar', 'rightEar',
  'leftShoulder', 'rightShoulder', 'leftElbow', 'rightElbow', 'leftWrist', 'rightWrist',
  'leftHip', 'rightHip', 'leftKnee', 'rightKnee', 'leftAnkle', 'rightAnkle'];
export const NUM_KEYPOINTS = PART_NAMES.length;
export interface NumberDict {
  [jointName: string]: number;
}
export const PART_IDS =
  PART_NAMES.reduce(
    (result: NumberDict, jointName, i): NumberDict => {
      result[jointName] = i;
      return result;
    }, {});
const CONNECTED_PART_NAMES: StringTuple[] = [
  ['leftHip', 'leftShoulder'],
  ['leftElbow', 'leftShoulder'],
  ['leftElbow', 'leftWrist'],
  ['leftHip', 'leftKnee'],
  ['leftKnee', 'leftAnkle'],
  ['rightHip', 'rightShoulder'],
  ['rightElbow', 'rightShoulder'],
  ['rightElbow', 'rightWrist'],
  ['rightHip', 'rightKnee'],
  ['rightKnee', 'rightAnkle'],
  ['leftShoulder', 'rightShoulder'],
  ['leftHip', 'rightHip']];
/* Define the skeleton.
This defines the parent->child relationships of our tree. Arbitrarily this defines the nose as the root of the tree,
however since we will infer the displacement for both parent->child and child->parent, we can define the
tree root as any node.
*/
export const POSE_CHAIN: StringTuple[] = [
  ['nose', 'leftEye'],
  ['leftEye', 'leftEar'],
  ['nose', 'rightEye'],
  ['rightEye', 'rightEar'],
  ['nose', 'leftShoulder'],
  ['leftShoulder', 'leftElbow'],
  ['leftElbow', 'leftWrist'],
  ['leftShoulder', 'leftHip'],
  ['leftHip', 'leftKnee'],
  ['leftKnee', 'leftAnkle'],
  ['nose', 'rightShoulder'],
  ['rightShoulder', 'rightElbow'],
  ['rightElbow', 'rightWrist'],
  ['rightShoulder', 'rightHip'],
  ['rightHip', 'rightKnee'],
  ['rightKnee', 'rightAnkle']];
export const CONNECTED_PART_INDICES =
  CONNECTED_PART_NAMES.map(
    ([jointNameA, jointNameB]) => ([PART_IDS[jointNameA], PART_IDS[jointNameB]]);
  );
"/**
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in
 * compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
 * OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
 * governing permissions and
 * limitations under the License.
 */
=====
*/
import { NUM_KEYPOINTS } from './keypoints';
import { Padding, Part, TensorBuffer3D, Vector2D } from './types';
export function getScale(
  [height, width]: [number, number],
  [inputResolutionY, inputResolutionX]: [number, number],
  padding: Padding): [number, number] {
  const { top: padT, bottom: padB, left: padL, right: padR } = padding;
  const scaleY = inputResolutionY / (padT + padB + height);
  const scaleX = inputResolutionX / (padL + padR + width);
  return [scaleX, scaleY];
}
export function getOffsetPoint(
  y: number, x: number, keypoint: number, offsets: TensorBuffer3D): Vector2D {
  return {
    y: offsets.get(y, x, keypoint),
    x: offsets.get(y, x, keypoint + NUM_KEYPOINTS)
  };
}
export function getImageCoords(
  part: Part, outputStride: number, offsets: TensorBuffer3D): Vector2D {
  const { heatmapY, heatmapX, id: keypoint } = part;
  const { y, x } = getOffsetPoint(heatmapY, heatmapX, keypoint, offsets);
  return {
    x: part.heatmapX * outputStride + x,
    y: part.heatmapY * outputStride + y
  };
}
export function fillArray<T>(element: T, size: number): T[] {
  const result: T[] = new Array(size);
  for (let i = 0; i < size; i++) {
    result[i] = element;
  }
  return result;
}
export function clamp(a: number, min: number, max: number): number {
  if (a < min) {
    return min;
  }
  if (a > max) {
    return max;
  }
  return a;
}
export function squaredDistance(
  y1: number, x1: number, y2: number, x2: number): number {
  const dy = y2 - y1;
  const dx = x2 - x1;
  return dy * dy + dx * dx;
}
export function addVectors(a: Vector2D, b: Vector2D): Vector2D {
  return { x: a.x + b.x, y: a.y + b.y };
}
export function clampVector(a: Vector2D, min: number, max: number): Vector2D {
  return { y: clamp(a.y, min, max), x: clamp(a.x, min, max) };
}
"/**
 * @license
 * Copyright 2019 Google Inc. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0
 * (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of

```

the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/
import {NUM_KEYPOINTS} from './keypoints';
import {Padding, Pose} from './types';
import {getScale} from './util';
interface Pair {
  x: number;
  y: number;
}
function computeDistance(embedding: Pair[], pose: Pose, minPartScore = 0.3) {
  let distance = 0.0;
  let numKpt = 0;
  for (let p = 0; p < embedding.length; p++) {
    if (pose.keypoints[p].score > minPartScore) {
      numKpt += 1;
      distance += (embedding[p].x - pose.keypoints[p].position.x) ** 2 + (embedding[p].y - pose.keypoints[p].position.y) ** 2;
    }
  }
  if (numKpt === 0) {
    distance = Infinity;
  } else {
    distance = distance / numKpt;
  }
  return distance;
}
function convertToPositionInOutput(position: Pair, [padT, padL]: [number, number], [scaleX, scaleY]: [number, number], stride: number): Pair {
  const y = Math.round(((padT + position.y + 1.0) * scaleY - 1.0) / stride);
  const x = Math.round(((padL + position.x + 1.0) * scaleX - 1.0) / stride);
  return {x, y};
}
function getEmbedding(location: Pair, keypointIndex: number, convertToPosition: (pair: Pair) => Pair, outputResolutionX: number, longOffsets: Float32Array, refineSteps: number, [height, width]: [number, number]): Pair {
  const newLocation = convertToPosition(location);
  const nn = newLocation.y * outputResolutionX + newLocation.x;
  let dy = longOffsets[NUM_KEYPOINTS * (2 * nn) + keypointIndex];
  let dx = longOffsets[NUM_KEYPOINTS * (2 * nn + 1) + keypointIndex];
  let y = location.y + dy;
  let x = location.x + dx;
  for (let t = 0; t < refineSteps; t++) {
    y = Math.min(y, height - 1);
    x = Math.min(x, width - 1);
    const newPos = convertToPosition({x, y});
    const nn = newPos.y * outputResolutionX + newPos.x;
    dy = longOffsets[NUM_KEYPOINTS * (2 * nn) + keypointIndex];
    dx = longOffsets[NUM_KEYPOINTS * (2 * nn + 1) + keypointIndex];
    y = y + dy;
    x = x + dx;
  }
  return {x, y};
}
function matchEmbeddingToInstance(location: Pair, longOffsets: Float32Array, poses: Pose[], numKptForMatching: number, [padT, padL]: [number, number], [scaleX, scaleY]: [number, number], outputResolutionX: number, [height, width]: [number, number], stride: number, refineSteps: number): number {
  const embed: Pair[] = [];
  const convertToPosition = (pair: Pair) => convertToPositionInOutput(pair, [padT, padL], [scaleX, scaleY], stride);
  for (let keypointsIndex = 0; keypointsIndex < numKptForMatching; keypointsIndex++) {
    const embedding = getEmbedding(location, keypointsIndex, convertToPosition, outputResolutionX, longOffsets, refineSteps, [height, width]);
    embed.push(embedding);
  }
  let kMin = -1;
  let kMinDist = Infinity;
  for (let k = 0; k < poses.length; k++) {
    const dist = computeDistance(embed, poses[k]);
    if (dist < kMinDist) {
      kMin = k;
      kMinDist = dist;
    }
  }
  return kMin;
}
function getOutputResolution([inputResolutionY, inputResolutionX]: [number, number], stride: number): [number, number] {
  const outputResolutionX = Math.round((inputResolutionX - 1.0) / stride + 1.0);
  const outputResolutionY = Math.round((inputResolutionY - 1.0) / stride + 1.0);
  return [outputResolutionX, outputResolutionY];
}
export function decodeMultipleMasksCPU(segmentation: Uint8Array, longOffsets: Float32Array, posesAboveScore: Pose[], height: number, width: number, stride: number, [inHeight, inWidth]: [number, number], padding: Padding, refineSteps: number, numKptForMatching = 5): Uint8Array[] {
  const dataArrays = posesAboveScore.map(x => new Uint8Array(height * width).fill(0));
  const {top: padT, left: padL} = padding;
  const [scaleX, scaleY] = getScale([height, width], [inHeight, inWidth], padding);
  const [outputResolutionX, ] = getOutputResolution([inHeight, inWidth], stride);
  for (let i = 0; i < height; i += 1) {
    for (let j = 0; j < width; j += 1) {
      const n = i * width + j;
      const prob = segmentation[n];
      if (prob === 1) {
        const kMin = matchEmbeddingToInstance({x: j, y: i}, longOffsets, posesAboveScore, numKptForMatching, [padT, padL], [scaleX, scaleY], outputResolutionX, [height, width], stride, refineSteps);
        if (kMin >= 0) {
          dataArrays[kMin][n] = 1;
        }
      }
    }
  }
  return dataArrays;
}
export function decodeMultiplePartMasksCPU(segmentation: Uint8Array, longOffsets: Float32Array, partSegmentaion: Uint8Array, posesAboveScore: Pose[], height: number, width: number, stride: number, [inHeight, inWidth]: [number, number], padding: Padding, refineSteps: number,
```

```

numKptForMatching = 5): Int32Array[] {\n  const dataArrays =\n    posesAboveScore.map(x => new
Int32Array(height * width).fill(-1));\n  const {top: padT, left: padL} = padding;\n  const [scaleX, scaleY] =\n    getScale([height, width], [inHeight, inWidth], padding);\n  const [outputResolutionX, ] =\n    getOutputResolution([inHeight, inWidth], stride);\n  for (let i = 0; i < height; i += 1) {\n    for (let j = 0; j < width; j
+= 1) {\n      const n = i * width + j;\n      const prob = segmentation[n];\n      if (prob === 1) {\n        const kMin =
matchEmbeddingToInstance(\n          {x: j, y: i}, longOffsets, posesAboveScore, numKptForMatching,\n        [padT, padL], [scaleX, scaleY], outputResolutionX, [height, width],\n          stride, refineSteps);\n        if (kMin >=
0) {\n          dataArrays[kMin][n] = partSegmentaion[n];\n        }\n      }\n    }\n  }\n  return
dataArrays;\n}\n",/**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====

```

```

*\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport * as tf_webgl from '@tensorflow/tfjs-backend-
webgl';\n\nimport {NUM_KEYPOINTS} from '../keypoints';\nimport {Padding, Pose} from '../types';\nimport
{getScale} from './util';\n\nexport function decodeMultipleMasksWebGl(\n  segmentation: tf.Tensor2D,\n  longOffsets: tf.Tensor3D,\n  posesAboveScore: Pose[], height: number, width: number, stride: number,\n  [inHeight, inWidth]: [number, number], padding: Padding,\n  refineSteps: number, minKptScore: number,\n  maxNumPeople: number): tf.TensorInfo {\n  // The height/width of the image/canvas itself.\n  const [origHeight,
origWidth] = segmentation.shape;\n  // The height/width of the output of the model.\n  const [outHeight, outWidth]
= longOffsets.shape.slice(0, 2);\n  const shapedLongOffsets: tf.Tensor4D =\n    tf.reshape(longOffsets,\n  [outHeight, outWidth, 2, NUM_KEYPOINTS]);\n  // Make pose tensor of shape [MAX_NUM_PEOPLE,\n  NUM_KEYPOINTS, 3] where\n  // the last 3 coordinates correspond to the score, h and w coordinate of that\n  //
keypoint.\n  const poseVals = new Float32Array(maxNumPeople * NUM_KEYPOINTS * 3).fill(0.0);\n  for (let i =
0; i < posesAboveScore.length; i++) {\n    const poseOffset = i * NUM_KEYPOINTS * 3;\n    const pose =
posesAboveScore[i];\n    for (let kp = 0; kp < NUM_KEYPOINTS; kp++) {\n      const keypoint =
pose.keypoints[kp];\n      const offset = poseOffset + kp * 3;\n      poseVals[offset] = keypoint.score;\n
      poseVals[offset + 1] = keypoint.position.y;\n      poseVals[offset + 2] = keypoint.position.x;\n    }\n  }\n  const
[scaleX, scaleY] =\n    getScale([height, width], [inHeight, inWidth], padding);\n  const posesTensor =
tf.tensor(poseVals, [maxNumPeople, NUM_KEYPOINTS, 3]);\n  const {top: padT, left: padL} = padding;\n  const
program: tf_webgl.GPGPUProgram = {\n    variableNames: ['segmentation', 'longOffsets', 'poses'],\n    outputShape: [origHeight, origWidth],\n    userCode: `\n    int convertToPositionInOut(int pos, int pad, float
scale, int stride) {\n      return round(((float(pos + pad) + 1.0) * scale - 1.0) / float(stride));\n    }\n\n    float
convertToPositionInOutFloat(\n      int pos, int pad, float scale, int stride) {\n      return ((float(pos + pad) + 1.0)
* scale - 1.0) / float(stride);\n    }\n\n    float dist(float x1, float y1, float x2, float y2) {\n      return pow(x1 - x2, 2.0)
+ pow(y1 - y2, 2.0);\n    }\n\n    float sampleLongOffsets(float h, float w, int d, int k) {\n      float fh = fract(h);\n
float fw = fract(w);\n      int clH = int(ceil(h));\n      int clW = int(ceil(w));\n      int flH = int(floor(h));\n      int flW =
int(floor(w));\n      float o11 = getLongOffsets(flH, flW, d, k);\n      float o12 = getLongOffsets(flH, clW, d, k);\n
float o21 = getLongOffsets(clH, flW, d, k);\n      float o22 = getLongOffsets(clH, clW, d, k);\n      float o1 =
mix(o11, o12, fw);\n      float o2 = mix(o21, o22, fw);\n      return mix(o1, o2, fh);\n    }\n\n    int
findNearestPose(int h, int w) {\n      float prob = getSegmentation(h, w);\n      if (prob < 1.0) {\n        return -1;\n
      }\n\n      // Done(Tyler): convert from output space h/w to strided space.\n      float stridedH =
convertToPositionInOutFloat(\n        h, ${padT}, ${scaleY}, ${stride});\n      float stridedW =
convertToPositionInOutFloat(\n        w, ${padL}, ${scaleX}, ${stride});\n\n      float minDist = 1000000.0;\n      int iMin = -1;\n      for (int i = 0; i < ${maxNumPeople}; i++) {\n        float curDistSum = 0.0;\n        int numKpt =

```

```

0;\n    for (int k = 0; k < ${NUM_KEYPOINTS}; k++) {\n        float dy = sampleLongOffsets(stridedH,
stridedW, 0, k);\n        float dx = sampleLongOffsets(stridedH, stridedW, 1, k);\n        float y = float(h) + dy;\n        float x = float(w) + dx;\n        for (int s = 0; s < ${refineSteps}; s++) {\n            int yRounded = round(min(y,
float(${height} - 1.0));\n            int xRounded = round(min(x, float(${width} - 1.0)));\n            float yStrided =
convertToPositionInOutFloat(\n                yRounded, ${padT}, ${scaleY}, ${stride});\n            float xStrided =
convertToPositionInOutFloat(\n                xRounded, ${padL}, ${scaleX}, ${stride});\n            float dy =
sampleLongOffsets(yStrided, xStrided, 0, k);\n            float dx = sampleLongOffsets(yStrided, xStrided, 1, k);\n            y = y + dy;\n            x = x + dx;\n        }\n        float poseScore = getPoses(i, k, 0);\n        float poseY =
getPoses(i, k, 1);\n        float poseX = getPoses(i, k, 2);\n        if (poseScore > ${minKptScore}) {\n
numKpt = numKpt + 1;\n        curDistSum = curDistSum + dist(x, y, poseX, poseY);\n        }\n        if
(numKpt > 0 && curDistSum / float(numKpt) < minDist) {\n            minDist = curDistSum / float(numKpt);\n
iMin = i;\n        }\n    }\n    return iMin;\n}\n\nvoid main() {\n    ivec2 coords = getOutputCoords();\n
int nearestPose = findNearestPose(coords[0], coords[1]);\n    setOutput(float(nearestPose));\n}\n\nconst
webglBackend = tf.backend() as tf_webgl.MathBackendWebGL;\nreturn webglBackend.compileAndRun(\n
program, [segmentation, shapedLongOffsets, posesTensor]);\n\n"/**\n * @license\n * Copyright 2019 Google
Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport * as tf from 'tensorflow/tfjs-core';\nimport {getBackend} from 'tensorflow/tfjs-core';\nimport
{Padding, PartSegmentation, PersonSegmentation, Pose} from './types';\nimport {decodeMultipleMasksCPU,
decodeMultiplePartMasksCPU} from './decode_multiple_masks_cpu';\nimport {decodeMultipleMasksWebGL} from
'./decode_multiple_masks_webgl';\n\nexport function toPersonKSegmentation(\n    segmentation: tf.Tensor2D, k:
number): tf.Tensor2D {\n    return tf.tidy(\n        () => (tf.cast(tf.equal(\n            segmentation, tf.scalar(k), 'int32') as
tf.Tensor2D));\n    )\n}\n\nexport function toPersonKPartSegmentation(\n    segmentation: tf.Tensor2D, bodyParts:
tf.Tensor2D, k: number): tf.Tensor2D {\n    return tf.tidy(\n        () => tf.sub(tf.mul(tf.cast(tf.equal(\n
segmentation, tf.scalar(k), 'int32'), tf.add(bodyParts, 1)), 1));\n    )\n}\n\nfunction isWebGLBackend() {\n    return
getBackend() === 'webgl';\n}\n\nexport async function decodePersonInstanceMasks(\n    segmentation:
tf.Tensor2D, longOffsets: tf.Tensor3D, poses: Pose[],\n    height: number, width: number, stride: number,\n    [inHeight, inWidth]: [number, number], padding: Padding, minPoseScore = 0.2,\n    refineSteps = 8,
minKeypointScore = 0.3,\n    maxNumPeople = 10): Promise<PersonSegmentation[]> {\n    // Filter out poses with
smaller score.\n    const posesAboveScore = poses.filter(pose => pose.score >= minPoseScore);\n    let
personSegmentationsData: Uint8Array[];\n    if (isWebGLBackend()) {\n        const personSegmentations = tf.tidy(()
=> {\n            const masksTensorInfo = decodeMultipleMasksWebGL(\n                segmentation, longOffsets,
posesAboveScore, height, width, stride,\n                [inHeight, inWidth], padding, refineSteps, minKeypointScore,\n                maxNumPeople);\n            const masksTensor = tf.engine().makeTensorFromDataId(\n                masksTensorInfo.dataId,
masksTensorInfo.shape,\n                masksTensorInfo.dtype) as tf.Tensor2D;\n            return posesAboveScore.map(\n
                (_, k) => toPersonKSegmentation(masksTensor, k);\n            );\n        });\n        personSegmentationsData =\n            (await
Promise.all(personSegmentations.map(mask => mask.data()))) as\n            Uint8Array[];\n    } else {\n        const segmentationsData = await
segmentation.data() as Uint8Array;\n        const longOffsetsData = await longOffsets.data() as Float32Array;\n        personSegmentationsData =
decodeMultipleMasksCPU(\n            segmentationsData, longOffsetsData,\n            posesAboveScore, height, width,\n            stride, [inHeight, inWidth], padding, refineSteps);\n    }\n    return
personSegmentationsData.map(\n        (data, i) => ({data, pose: posesAboveScore[i], width, height});\n    )\n}\n\nexport
async function decodePersonInstancePartMasks(\n    segmentation: tf.Tensor2D, longOffsets: tf.Tensor3D,\n

```

```

partSegmentation: tf.Tensor2D, poses: Pose[], height: number, width: number,\n  stride: number, [inHeight,
inWidth]: [number, number], padding: Padding,\n  minPoseScore = 0.2, refineSteps = 8, minKeypointScore =
0.3,\n  maxNumPeople = 10): Promise<PartSegmentation[]> {\n  const posesAboveScore = poses.filter(pose =>
pose.score >= minPoseScore);\n  let partSegmentationsByPersonData: Int32Array[];\n  if (isWebGLBackend())
{\n  const partSegmentations = tf.tidy(() => {\n    const masksTensorInfo = decodeMultipleMasksWebGL(\n
segmentation, longOffsets, posesAboveScore, height, width, stride,\n    [inHeight, inWidth], padding,
refineSteps, minKeypointScore,\n    maxNumPeople);\n    const masksTensor =
tf.engine().makeTensorFromDataId(\n    masksTensorInfo.dataId, masksTensorInfo.shape,\n
masksTensorInfo.dtype) as tf.Tensor2D;\n\n    return posesAboveScore.map(\n    (_, k) =>\n
toPersonKPartSegmentation(masksTensor, partSegmentation, k));\n  });\n  partSegmentationsByPersonData =\n    (await Promise.all(partSegmentations.map(x => x.data()))) as\n    Int32Array[];\n\n  partSegmentations.forEach(x => x.dispose());\n  } else {\n  const segmentationsData = await segmentation.data()
as Uint8Array;\n  const longOffsetsData = await longOffsets.data() as Float32Array;\n  const
partSegmentaionData = await partSegmentation.data() as Uint8Array;\n\n  partSegmentationsByPersonData =
decodeMultiplePartMasksCPU(\n    segmentationsData, longOffsetsData, partSegmentaionData,\n
posesAboveScore, height, width, stride, [inHeight, inWidth], padding,\n    refineSteps);\n  }\n  return
partSegmentationsByPersonData.map(\n    (data, k) => ({pose: posesAboveScore[k], data, height,
width}));\n  }\n  }"/**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\n// algorithm based on Coursera Lecture from Algorithms, Part 1:\n\n//
https://www.coursera.org/learn/algorithms-part1/lecture/ZjoSM/heapsort\n\nfunction half(k: number) {\n  return
Math.floor(k / 2);\n}\n\nexport class MaxHeap<T> {\n  private priorityQueue: T[];\n  private numberOfElements:
number;\n  private getElementValue: (element: T) => number;\n\n  constructor(maxSize: number, getElementValue:
(element: T) => number) {\n    this.priorityQueue = new Array(maxSize);\n    this.numberOfElements = -1;\n\n
this.getElementValue = getElementValue;\n  }\n\n  public enqueue(x: T): void {\n
this.priorityQueue[++this.numberOfElements] = x;\n    this.swim(this.numberOfElements);\n  }\n\n  public
dequeue(): T {\n    const max = this.priorityQueue[0];\n    this.exchange(0, this.numberOfElements--);\n
this.sink(0);\n    this.priorityQueue[this.numberOfElements + 1] = null;\n    return max;\n  }\n\n  public empty():
boolean {\n    return this.numberOfElements === -1;\n  }\n\n  public size(): number {\n    return
this.numberOfElements + 1;\n  }\n\n  public all(): T[] {\n    return this.priorityQueue.slice(0, this.numberOfElements
+ 1);\n  }\n\n  public max(): T {\n    return this.priorityQueue[0];\n  }\n\n  private swim(k: number): void {\n
while (k > 0 && this.less(half(k), k)) {\n    this.exchange(k, half(k));\n    k = half(k);\n  }\n  }\n\n  private sink(k:
number): void {\n    while (2 * k <= this.numberOfElements) {\n      let j = 2 * k;\n      if (j < this.numberOfElements
&& this.less(j, j + 1)) {\n        j++;\n      }\n      if (!this.less(k, j)) {\n        break;\n      }\n      this.exchange(k, j);\n
k = j;\n    }\n  }\n\n  private getValueAt(i: number): number {\n    return
this.getElementValue(this.priorityQueue[i]);\n  }\n\n  private less(i: number, j: number): boolean {\n    return
this.getValueAt(i) < this.getValueAt(j);\n  }\n\n  private exchange(i: number, j: number): void {\n    const t =
this.priorityQueue[i];\n    this.priorityQueue[i] = this.priorityQueue[j];\n    this.priorityQueue[j] = t;\n  }\n  }"/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/\n\nimport {PartWithScore, TensorBuffer3D} from '../types';\nimport {MaxHeap} from
'/max_heap';\n\nfunction scoreIsMaximumInLocalWindow(\n  keypointId: number, score: number, heatmapY:
number, heatmapX: number,\n  localMaximumRadius: number, scores: TensorBuffer3D): boolean {\n  const
[height, width] = scores.shape;\n\n  let localMaximum = true;\n  const yStart = Math.max(heatmapY -
localMaximumRadius, 0);\n  const yEnd = Math.min(heatmapY + localMaximumRadius + 1, height);\n  for (let
yCurrent = yStart; yCurrent < yEnd; ++yCurrent) {\n    const xStart = Math.max(heatmapX - localMaximumRadius,
0);\n    const xEnd = Math.min(heatmapX + localMaximumRadius + 1, width);\n    for (let xCurrent = xStart;
xCurrent < xEnd; ++xCurrent) {\n      if (scores.get(yCurrent, xCurrent, keypointId) > score) {\n        localMaximum
= false;\n        break;\n      }\n    }\n    if (!localMaximum) {\n      break;\n    }\n  }\n\n  return
localMaximum;\n}\n\n/**\n * Builds a priority queue with part candidate positions for a specific image in\n * the
batch. For this we find all local maxima in the score maps with score\n * values above a threshold. We create a
single priority queue across all parts.\n */\n\nexport function buildPartWithScoreQueue(\n  scoreThreshold: number,
localMaximumRadius: number,\n  scores: TensorBuffer3D): MaxHeap<PartWithScore> {\n  const [height, width,
numKeypoints] = scores.shape;\n\n  const queue = new MaxHeap<PartWithScore>(\n    height * width *
numKeypoints, ({score}) => score);\n\n  for (let heatmapY = 0; heatmapY < height; ++heatmapY) {\n    for (let
heatmapX = 0; heatmapX < width; ++heatmapX) {\n      for (let keypointId = 0; keypointId < numKeypoints;
++keypointId) {\n        const score = scores.get(heatmapY, heatmapX, keypointId);\n\n        // Only consider parts
with score greater or equal to threshold as\n        // root candidates.\n        if (score < scoreThreshold) {\n
continue;\n        }\n\n        // Only consider keypoints whose score is maximum in a local window.\n        if
(scoreIsMaximumInLocalWindow(\n          keypointId, score, heatmapY, heatmapX, localMaximumRadius,\n          scores)) {\n          queue.enqueue({score, part: {heatmapY, heatmapX, id: keypointId}});\n        }\n      }\n    }\n  }\n\n  return queue;\n}\n\n", "*/\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====
*/\n\nimport {NumberTuple, PART_IDS, PART_NAMES, POSE_CHAIN} from '../keypoints';\nimport {Keypoint,
PartWithScore, TensorBuffer3D, Vector2D} from '../types';\nimport {clamp, getOffsetPoint} from './util';\nimport
{addVectors, getImageCoords} from './util';\n\nconst parentChildrenTuples: NumberTuple[] =
POSE_CHAIN.map(\n  ([parentJoinName, childJoinName]): NumberTuple =>\n  ([PART_IDS[parentJoinName], PART_IDS[childJoinName]]);\n\nconst parentToChildEdges: number[] =\n  parentChildrenTuples.map(([, childJointId]) => childJointId);\n\nconst childToParentEdges: number[] =\n  parentChildrenTuples.map(([\n    parentJointId,\n    parentJointId,\n  ]) =>\n  parentJointId);\n\nfunction getDisplacement(\n  edgeId: number, point: Vector2D, displacements:
TensorBuffer3D): Vector2D {\n  const numEdges = displacements.shape[2] / 2;\n  return {\n    y:
displacements.get(point.y, point.x, edgeId),\n    x: displacements.get(point.y, point.x, numEdges + edgeId)\n  };\n}\n\nfunction getStridedIndexNearPoint(\n  point: Vector2D, outputStride: number, height: number,\n  width:
number): Vector2D {\n  return {\n    y: clamp(Math.round(point.y / outputStride), 0, height - 1),\n    x:
clamp(Math.round(point.x / outputStride), 0, width - 1)\n  };\n}\n\n/**\n * We get a new keypoint along the
`edgeId` for the pose instance, assuming\n * that the position of the `idSource` part is already known. For this, we\n
* follow the displacement vector from the source to target part (stored in\n * the `i`-t channel of the displacement
tensor). The displaced keypoint\n * vector is refined using the offset vector by `offsetRefineStep` times.\n */
```

```

*\nfunction traverseToTargetKeypoint(\n  edgeId: number, sourceKeypoint: Keypoint, targetKeypointId:
number,\n  scoresBuffer: TensorBuffer3D, offsets: TensorBuffer3D, outputStride: number,\n  displacements:
TensorBuffer3D, offsetRefineStep = 2): Keypoint {\n  const [height, width] = scoresBuffer.shape;\n  \n  // Nearest
neighbor interpolation for the source->target displacements.\n  const sourceKeypointIndices =
getStridedIndexNearPoint(\n    sourceKeypoint.position, outputStride, height, width);\n  \n  const displacement =\n  getDisplacement(edgeId, sourceKeypointIndices, displacements);\n  \n  const displacedPoint =
addVectors(sourceKeypoint.position, displacement);\n  let targetKeypoint = displacedPoint;\n  for (let i = 0; i <
offsetRefineStep; i++) {\n    const targetKeypointIndices =\n    getStridedIndexNearPoint(targetKeypoint,
outputStride, height, width);\n    \n    const offsetPoint = getOffsetPoint(\n      targetKeypointIndices.y,
targetKeypointIndices.x, targetKeypointId,\n      offsets);\n    \n    targetKeypoint = addVectors(\n      {\n        x:
targetKeypointIndices.x * outputStride,\n        y: targetKeypointIndices.y * outputStride\n      },\n      {\n        x:
offsetPoint.x, y: offsetPoint.y});\n    }\n    \n    const targetKeypointIndices =\n    getStridedIndexNearPoint(targetKeypoint, outputStride, height, width);\n    \n    const score = scoresBuffer.get(\n    targetKeypointIndices.y, targetKeypointIndices.x, targetKeypointId);\n    \n    return {position: targetKeypoint, part:
PART_NAMES[targetKeypointId], score};\n  }\n}\n\n/**\n * Follows the displacement fields to decode the full pose of
the object\n * instance given the position of a part that acts as root.\n * @return An array of decoded keypoints
and their scores for a single pose\n */\nexport function decodePose(\n  root: PartWithScore, scores:
TensorBuffer3D, offsets: TensorBuffer3D,\n  outputStride: number, displacementsFwd: TensorBuffer3D,\n  displacementsBwd: TensorBuffer3D): Keypoint[] {\n  const numParts = scores.shape[2];\n  const numEdges =
parentToChildEdges.length;\n  \n  const instanceKeypoints: Keypoint[] = new Array(numParts);\n  \n  // Start a new
detection instance at the position of the root.\n  const {part: rootPart, score: rootScore} = root;\n  const rootPoint =
getImageCoords(rootPart, outputStride, offsets);\n  \n  instanceKeypoints[rootPart.id] = {\n    score: rootScore,\n
part: PART_NAMES[rootPart.id],\n    position: rootPoint\n  };\n  \n  // Decode the part positions upwards in the tree,
following the backward\n  // displacements.\n  for (let edge = numEdges - 1; edge >= 0; --edge) {\n    const
sourceKeypointId = parentToChildEdges[edge];\n    const targetKeypointId = childToParentEdges[edge];\n    if
(instanceKeypoints[sourceKeypointId] &&\n      !instanceKeypoints[targetKeypointId]) {\n      \n      instanceKeypoints[targetKeypointId] = traverseToTargetKeypoint(\n        edge,
instanceKeypoints[sourceKeypointId], targetKeypointId, scores,\n        offsets, outputStride, displacementsBwd);\n      \n      }\n    }\n  \n  // Decode the part positions downwards in the tree, following the forward\n  // displacements.\n  for (let
edge = 0; edge < numEdges; ++edge) {\n    const sourceKeypointId = childToParentEdges[edge];\n    const
targetKeypointId = parentToChildEdges[edge];\n    if (instanceKeypoints[sourceKeypointId] &&\n      !instanceKeypoints[targetKeypointId]) {\n      \n      instanceKeypoints[targetKeypointId] = traverseToTargetKeypoint(\n        edge, instanceKeypoints[sourceKeypointId], targetKeypointId, scores,\n        offsets, outputStride,
displacementsFwd);\n      \n      }\n    }\n  \n  return instanceKeypoints;\n}\n\n"/**\n * @license\n * Copyright 2019 Google
Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */
\n\n
=====
*\n\nimport {Keypoint, Pose, TensorBuffer3D} from './types';\n\nimport {buildPartWithScoreQueue} from
'./build_part_with_score_queue';\n\nimport {decodePose} from './decode_pose';\n\nimport {getImageCoords,
squaredDistance} from './util';\n\nfunction withinNmsRadiusOfCorrespondingPoint(\n  poses: Pose[],
squaredNmsRadius: number, {x, y}: {x: number, y: number},\n  keypointId: number): boolean {\n  return
poses.some(({keypoints}) => {\n    const correspondingKeypoint = keypoints[keypointId].position;\n    return
squaredDistance(\n      y, x, correspondingKeypoint.y, correspondingKeypoint.x) <= \n      squaredNmsRadius;\n  });\n}\n\n/* Score the newly proposed object instance without taking into account\n * the

```



```

scores of the parts that overlap with any previously detected
 * instance.\n */\nfunction getInstanceScore(\n
existingPoses: Pose[], squaredNmsRadius: number,\n
instanceKeypoints: Keypoint[]): number {\n
let\n
notOverlappedKeypointScores = instanceKeypoints.reduce(\n
(result, { position, score }, keypointId): number =>\n
{\n
if (!withinNmsRadiusOfCorrespondingPoint(\n
existingPoses, squaredNmsRadius, position,\n
keypointId)) {\n
result += score;\n
}\n
return result;\n
}, 0.0);\n\n
return\n
notOverlappedKeypointScores /= instanceKeypoints.length;\n
}\n\n
// A point (y, x) is considered as root part\n
candidate if its score is a\n\n
// maximum in a window |y - y'| <= kLocalMaximumRadius, |x - x'| <=\n\n
//\n
kLocalMaximumRadius.\n\n
const kLocalMaximumRadius = 1;\n\n
/**\n\n
 * Detects multiple poses and finds their parts\n
from part scores and\n\n
 * displacement vectors. It returns up to `maxDetections` object instance\n\n
 * detections in\n
decreasing root score order. It works as follows: We first\n\n
 * create a priority queue with local part score maxima\n
above\n\n
 * `scoreThreshold`, considering all parts at the same time. Then we\n\n
 * iteratively pull the top element of\n
the queue (in decreasing score order)\n\n
 * and treat it as a root candidate for a new object instance. To avoid\n\n
 * duplicate detections, we reject the root candidate if it is within a disk\n\n
 * of `nmsRadius` pixels from the\n
corresponding part of a previously detected\n\n
 * instance, which is a form of part-based non-maximum suppression\n
(NMS). If\n\n
 * the root candidate passes the NMS check, we start a new object instance\n\n
 * detection, treating the\n
corresponding part as root and finding the\n\n
 * positions of the remaining parts by following the displacement\n
vectors\n\n
 * along the tree-structured part graph. We assign to the newly detected\n\n
 * instance a score equal to the\n
sum of scores of its parts which have not\n\n
 * been claimed by a previous instance (i.e., those at least `nmsRadius`\n\n
 * pixels away from the corresponding part of all previously detected\n\n
 * instances), divided by the total number of\n
parts `numParts`.\n\n
 * @param heatmapScores 3-D tensor with shape `[height, width, numParts]`.\n\n
 * The value\n
of heatmapScores[y, x, k] is the score of placing the `k`-th\n\n
 * object part at position `(y, x)`.\n\n
 * @param\n
offsets 3-D tensor with shape `[height, width, numParts * 2]`.\n\n
 * The value of [offsets[y, x, k], offsets[y, x, k +\n
numParts]] is the\n\n
 * short range offset vector of the `k`-th object part at heatmap\n\n
 * position `(y, x)`.\n\n
 * @param\n
displacementsFwd 3-D tensor of shape\n\n
 * `[height, width, 2 * num_edges]`, where `num_edges =\n
num_parts - 1` is the\n\n
 * number of edges (parent-child pairs) in the tree. It contains the forward\n\n
 * displacements\n
between consecutive part from the root towards the leaves.\n\n
 * @param\n
displacementsBwd 3-D tensor of\n
shape\n\n
 * `[height, width, 2 * num_edges]`, where `num_edges = num_parts - 1` is the\n\n
 * number of edges (parent-child pairs) in the tree. It contains the backward\n\n
 * displacements\n
between consecutive part from the root towards\n
the leaves.\n\n
 * @param\n
outputStride The output stride that was used when feed-forwarding\n\n
 * through the\n
PoseNet model. Must be 32, 16, or 8.\n\n
 * @param\n
maxPoseDetections Maximum number of returned instance\n
detections per\n\n
 * image.\n\n
 * @param\n
scoreThreshold Only return instance detections that have root part\n\n
 * score greater or equal to this value. Defaults to 0.5.\n\n
 * @param\n
nmsRadius Non-maximum suppression part\n
distance. It needs to be\n\n
 * strictly positive. Two parts suppress each other if they are less than\n\n
 * `nmsRadius`\n
pixels away. Defaults to 20.\n\n
 * @return\n
An array of poses and their scores, each containing keypoints and\n\n
 * the\n
corresponding keypoint scores.\n\n
 */\n\n
export function decodeMultiplePoses(\n
scoresBuffer: TensorBuffer3D,\n
offsetsBuffer: TensorBuffer3D,\n
displacementsFwdBuffer: TensorBuffer3D,\n
displacementsBwdBuffer:\n
TensorBuffer3D, outputStride: number,\n
maxPoseDetections: number, scoreThreshold = 0.5, nmsRadius = 20):\n
Pose[] {\n
const poses: Pose[] = [];\n\n
const queue = buildPartWithScoreQueue(\n
scoreThreshold,\n
kLocalMaximumRadius, scoresBuffer);\n\n
const squaredNmsRadius = nmsRadius * nmsRadius;\n\n
// Generate\n
at most maxDetections object instances per image in\n\n
// decreasing root part score order.\n\n
while (poses.length <\n
maxPoseDetections && !queue.empty()) {\n
// The top element in the queue is the next root candidate.\n
const\n
root = queue.dequeue();\n\n
// Part-based non-maximum suppression: We reject a root candidate if it\n\n
// is\n
within a disk of `nmsRadius` pixels from the corresponding part of\n\n
// a\n
previously detected instance.\n\n
const\n
rootImageCoords =\n
getImageCoords(root.part, outputStride, offsetsBuffer);\n
if\n
(withinNmsRadiusOfCorrespondingPoint(\n
poses, squaredNmsRadius, rootImageCoords, root.part.id)) {\n
continue;\n
}\n\n
// Start a new detection instance at the position of the root.\n
const keypoints =\n
decodePose(\n
root, scoresBuffer, offsetsBuffer, outputStride, displacementsFwdBuffer,\n
displacementsBwdBuffer);\n\n
const score = getInstanceScore(poses, squaredNmsRadius, keypoints);\n\n
}

```

poses.push({keypoints, score});\n }\n\n return poses;\n}\n", "/*\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * https://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport {BaseModel} from './base_model';\nconst imageNetMean = [-123.15, -115.90, -103.06];\nexport class ResNet extends BaseModel {\n  preprocessInput(input: tf.Tensor3D): tf.Tensor3D {\n    return tf.add(input, imageNetMean);\n  }\n  nameOutputResults(results: tf.Tensor3D[]) {\n    const [\n      displacementBwd,\n      displacementFwd,\n      heatmap,\n      longOffsets,\n      offsets,\n      partHeatmaps,\n      segmentation,\n      partOffsets,\n    ] = results;\n    return {\n      offsets,\n      segmentation,\n      partHeatmaps,\n      longOffsets,\n      heatmap,\n      displacementFwd,\n      displacementBwd,\n      partOffsets\n    }; \n  }\n}\n", "/*\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * https://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nconst RESNET50_BASE_URL =\n  'https://storage.googleapis.com/tfjs-models/savedmodel/bodypix/resnet50';\nconst MOBILENET_BASE_URL =\n  'https://storage.googleapis.com/tfjs-models/savedmodel/bodypix/mobilenet';\n\n// The BodyPix 2.0 ResNet50 models use the latest TensorFlow.js 1.0 model\n// format.\nexport function resNet50SavedModel(stride: number, quantBytes: number): string {\n  const graphJson = `model-stride${stride}.json`;\n  // quantBytes=4 corresponding to the non-quantized full-precision SavedModel.\n  if (quantBytes === 4) {\n    return RESNET50_BASE_URL + `float^` + graphJson;\n  } else {\n    return RESNET50_BASE_URL + `quant${quantBytes}^` + graphJson;\n  }\n}\n\n// The BodyPix 2.0 MobileNetV1 models use the latest TensorFlow.js 1.0 model\n// format.\nexport function mobileNetSavedModel(\n  stride: number, multiplier: number, quantBytes: number): string {\n  const toStr: {[key: number]: string} = {1.0: '100', 0.75: '075', 0.50: '050'};\n  const graphJson = `model-stride${stride}.json`;\n  // quantBytes=4 corresponding to the non-quantized full-precision SavedModel.\n  if (quantBytes === 4) {\n    return MOBILENET_BASE_URL + `float/${toStr[multiplier]}^` + graphJson;\n  } else {\n    return MOBILENET_BASE_URL + `quant${quantBytes}/${toStr[multiplier]}^` +\n      graphJson;\n  }\n}\n", "/*\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport {BodyPixInput, BodyPixOutputStride, Padding} from './types';\nimport {Pose, TensorBuffer3D} from './types';\nimport {BodyPixInternalResolution} from './types';\n\nfunction getSizeFromImageLikeElement(input: HTMLImageElement|\n  HTMLCanvasElement|\n  OffscreenCanvas): [number, number] {\n  if ('offsetHeight' in input && input.offsetHeight !== 0 && 'offsetWidth' in input && input.offsetWidth !== 0) {\n    return [input.offsetHeight, input.offsetWidth];\n  } else if (input.height !== null && input.width !== null) {\n    return
```

```

[input.height, input.width];\n } else {\n   throw new Error(\n     `HTMLImageElement must have height and
width attributes set.`);\n   }\n}\n\nfunction getSizeFromVideoElement(input: HTMLVideoElement): [number,
number] {\n  if (input.hasAttribute('height') && input.hasAttribute('width')) {\n    // Prioritizes user specified height
and width.\n    // We can't test the .height and .width properties directly,\n    // because they evaluate to 0 if unset.\n    return [input.height, input.width];\n  } else {\n    return [input.videoHeight, input.videoWidth];\n  }\n}\n\nexport
function getInputSize(input: BodyPixInput): [number, number] {\n  if ((typeof (HTMLCanvasElement) !==
'undefined' &&\n    input instanceof HTMLCanvasElement) ||\n    (typeof (OffscreenCanvas) !== 'undefined'
&&\n    input instanceof OffscreenCanvas) ||\n    (typeof (HTMLImageElement) !== 'undefined' &&\n
input instanceof HTMLImageElement)) {\n    return getSizeFromImageLikeElement(input);\n  } else if (typeof
(ImageData) !== 'undefined' && input instanceof ImageData) {\n    return [input.height, input.width];\n  } else if (\n
    typeof (HTMLVideoElement) !== 'undefined' &&\n    input instanceof HTMLVideoElement) {\n    return
getSizeFromVideoElement(input);\n  } else if (input instanceof tf.Tensor) {\n    return [input.shape[0],
input.shape[1]];\n  } else {\n    throw new Error(`error: Unknown input type: ${input}`);\n  }\n}\n\nfunction
isValidInputResolution(\n  resolution: number, outputStride: number): boolean {\n  return (resolution - 1) %
outputStride === 0;\n}\n\nexport function toValidInputResolution(\n  inputResolution: number, outputStride:
BodyPixOutputStride): number {\n  if (isValidInputResolution(inputResolution, outputStride)) {\n    return
inputResolution;\n  }\n\n  return Math.floor(inputResolution / outputStride) * outputStride + 1;\n}\n\nconst
INTERNAL_RESOLUTION_STRING_OPTIONS = {\n  low: 'low',\n  medium: 'medium',\n  high: 'high',\n  full:
'full'\n};\n\nconst INTERNAL_RESOLUTION_PERCENTAGES = {\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.low]: 0.25,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.medium]: 0.5,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.high]: 0.75,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.full]: 1.0\n};\n\nconst MIN_INTERNAL_RESOLUTION =
0.1;\n\nconst MAX_INTERNAL_RESOLUTION = 2.0;\n\nfunction toInternalResolutionPercentage(\n
internalResolution: BodyPixInternalResolution): number {\n  if (typeof internalResolution === 'string') {\n
const result = INTERNAL_RESOLUTION_PERCENTAGES[internalResolution];\n\n    tf.util.assert(\n      typeof result
=== 'number',\n      () => `string value of inputResolution must be one of ${\n
Object.values(INTERNAL_RESOLUTION_STRING_OPTIONS)\n        .join(',')\n      } but was
${internalResolution}`);\n    return result;\n  } else {\n    tf.util.assert(\n      typeof internalResolution
=== 'number'
&&\n      internalResolution <= MAX_INTERNAL_RESOLUTION &&\n      internalResolution >=
MIN_INTERNAL_RESOLUTION,\n      () =>\n        `inputResolution must be a string or number between ${\n
MIN_INTERNAL_RESOLUTION} and ${MAX_INTERNAL_RESOLUTION}, but ` +\n        `was
${internalResolution}`);\n    return internalResolution;\n  }\n}\n\nexport function
toInputResolutionHeightAndWidth(\n  internalResolution: BodyPixInternalResolution,\n  outputStride:
BodyPixOutputStride,\n  [inputHeight, inputWidth]: [number, number]): [number, number] {\n  const
internalResolutionPercentage =\n    toInternalResolutionPercentage(internalResolution);\n\n  return [\n
toValidInputResolution(\n    inputHeight * internalResolutionPercentage, outputStride),\n
toValidInputResolution(\n    inputWidth * internalResolutionPercentage, outputStride)\n  ];\n}\n\nexport function
toInputTensor(input: BodyPixInput) {\n  // TODO: tf.browser.fromPixels types to support OffscreenCanvas\n //
@ts-ignore\n  return input instanceof tf.Tensor ? input : tf.browser.fromPixels(input);\n}\n\nexport function
resizeAndPadTo(\n  imageTensor: tf.Tensor3D, [targetH, targetW]: [number, number],\n  flipHorizontal = false):
{\n  resizedAndPadded: tf.Tensor3D,\n  paddedBy: [[number, number], [number, number]]\n} {\n  const [height,
width] = imageTensor.shape;\n\n  const targetAspect = targetW / targetH;\n  const aspect = width / height;\n\n  let
resizeW: number;\n  let resizeH: number;\n  let padL: number;\n  let padR: number;\n  let padT: number;\n  let
padB: number;\n\n  if (aspect > targetAspect) {\n    // resize to have the larger dimension match the shape.\n
resizeW = targetW;\n    resizeH = Math.ceil(resizeW / aspect);\n\n    const padHeight = targetH - resizeH;\n    padL
= 0;\n    padR = 0;\n    padT = Math.floor(padHeight / 2);\n    padB = targetH - (resizeH + padT);\n  } else {\n
resizeH = targetH;\n    resizeW = Math.ceil(targetH * aspect);\n\n    const padWidth = targetW - resizeW;\n    padL

```

```

= Math.floor(padWidth / 2);\n  padR = targetW - (resizeW + padL);\n  padT = 0;\n  padB = 0;\n }\n\n const
resizedAndPadded = tf.tidy(() => {\n  // resize to have largest dimension match image\n  let resized:
tf.Tensor3D;\n  if (flipHorizontal) {\n    resized = tf.image.resizeBilinear(\n      tf.reverse(imageTensor, 1),
[resizeH, resizeW]);\n  } else {\n    resized = tf.image.resizeBilinear(imageTensor, [resizeH, resizeW]);\n  }\n\n
const padded = tf.pad3d(resized, [[padT, padB], [padL, padR], [0, 0]]);\n\n  return padded;\n });\n\n return
{resizedAndPadded, paddedBy: [[padT, padB], [padL, padR]]};\n }\n\n\nexport function
scaleAndCropToInputTensorShape(\n  tensor: tf.Tensor3D,\n  [inputTensorHeight, inputTensorWidth]: [number,
number],\n  [resizedAndPaddedHeight, resizedAndPaddedWidth]: [number, number],\n  [[padT, padB], [padL,
padR]]: [[number, number], [number, number]],\n  applySigmoidActivation = false): tf.Tensor3D {\n  return
tf.tidy(() => {\n    let inResizedAndPadded: tf.Tensor3D = tf.image.resizeBilinear(tensor,\n  [resizedAndPaddedHeight, resizedAndPaddedWidth], true);\n\n    if (applySigmoidActivation) {\n      inResizedAndPadded = tf.sigmoid(inResizedAndPadded);\n    }\n\n    return removePaddingAndResizeBack(\n  inResizedAndPadded, [inputTensorHeight, inputTensorWidth],\n      [[padT, padB], [padL, padR]]);\n  });\n }\n\n\nexport function removePaddingAndResizeBack(\n  resizedAndPadded: tf.Tensor3D,\n  [originalHeight, originalWidth]: [number, number],\n  [[padT, padB], [padL, padR]]: [[number, number], [number, number]]):\n  tf.Tensor3D {\n  return tf.tidy(() => {\n    const batchedImage: tf.Tensor4D = tf.expandDims(resizedAndPadded);\n\n    return tf.squeeze(tf.image\n      .cropAndResize(\n        batchedImage, [[\n          padT / (originalHeight +
padT + padB - 1.0),\n          padL / (originalWidth + padL + padR - 1.0),\n          (padT + originalHeight - 1.0)
/\n          (originalHeight + padT + padB - 1.0),\n          (padL + originalWidth - 1.0) / (originalWidth + padL
+ padR - 1.0)\n        ]),\n        [0], [originalHeight, originalWidth], [0]);\n      });\n }\n\n\nexport function resize2d(\n  tensor: tf.Tensor2D, resolution: [number, number],\n  nearestNeighbor?: boolean): tf.Tensor2D {\n  return
tf.tidy(() => {\n    const batchedImage: tf.Tensor4D = tf.expandDims(tensor, 2);\n    return tf.squeeze(\n  tf.image.resizeBilinear(batchedImage, resolution, nearestNeighbor));\n  });\n }\n\n\nexport function
padAndResizeTo(\n  input: BodyPixInput, [targetH, targetW]: [number, number]):\n  {resized: tf.Tensor3D, padding: Padding} {\n  const [height, width] = getInputSize(input);\n  const targetAspect = targetW / targetH;\n  const aspect = width / height;\n  let [padT, padB, padL, padR] = [0, 0, 0, 0];\n  if (aspect < targetAspect) {\n    //
pads the width\n    padT = 0;\n    padB = 0;\n    padL = Math.round(0.5 * (targetAspect * height - width));\n    padR
= Math.round(0.5 * (targetAspect * height - width));\n  } else {\n    // pads the height\n    padT = Math.round(0.5 *
((1.0 / targetAspect) * width - height));\n    padB = Math.round(0.5 * ((1.0 / targetAspect) * width - height));\n
    padL = 0;\n    padR = 0;\n  }\n\n  const resized: tf.Tensor3D = tf.tidy(() => {\n    let imageTensor =
toInputTensor(input);\n    imageTensor = tf.pad3d(imageTensor, [[padT, padB], [padL, padR], [0, 0]]);\n\n    return
tf.image.resizeBilinear(imageTensor, [targetH, targetW]);\n  });\n\n  return {resized, padding: {top: padT, left: padL,
right: padR, bottom: padB}};\n }\n\n\nexport async function toTensorBuffers3D(tensors: tf.Tensor3D[]):\n  Promise<TensorBuffer3D[]> {\n  return Promise.all(tensors.map(tensor => tensor.buffer()));\n }\n\n\nexport function
scalePose(\n  pose: Pose, scaleY: number, scaleX: number, offsetY = 0,\n  offsetX = 0): Pose {\n  return {\n    score: pose.score,\n    keypoints: pose.keypoints.map(({score, part, position}) => ({\n      score,\n      part,\n      position: {\n        x: position.x * scaleX +
offsetX,\n        y: position.y * scaleY + offsetY\n      }\n    })))\n  };\n }\n\n\nexport function scalePoses(\n  poses: Pose[], scaleY: number, scaleX: number, offsetY = 0, offsetX
= 0) {\n  if (scaleX === 1 && scaleY === 1 && offsetY === 0 && offsetX === 0) {\n    return poses;\n  }\n  return
poses.map(pose => scalePose(pose, scaleY, scaleX, offsetY, offsetX));\n }\n\n\nexport function
flipPoseHorizontal(pose: Pose, imageWidth: number): Pose {\n  return {\n    score: pose.score,\n    keypoints:
pose.keypoints.map(\n      ({score, part, position}) => ({\n        score,\n        part,\n        position: {x:
imageWidth - 1 - position.x, y: position.y}\n      })\n    );\n  }\n }\n\n\nexport function flipPosesHorizontal(poses: Pose[],
imageWidth: number) {\n  if (imageWidth <= 0) {\n    return poses;\n  }\n  return poses.map(pose =>
flipPoseHorizontal(pose, imageWidth));\n }\n\n\nexport function scaleAndFlipPoses(\n  poses: Pose[], [height, width]: [number, number],\n  [inputResolutionHeight, inputResolutionWidth]: [number, number],\n  padding:
Padding, flipHorizontal: boolean): Pose[] {\n  const scaleY =\n    (height + padding.top + padding.bottom) /

```

```
(inputResolutionHeight);\n const scaleX =\n (width + padding.left + padding.right) /
(inputResolutionWidth);\n\n const scaledPoses =\n scalePoses(poses, scaleY, scaleX, -padding.top, -
padding.left);\n\n if (flipHorizontal) {\n return flipPosesHorizontal(scaledPoses, width);\n } else {\n return
scaledPoses;\n }\n}\n", "\n**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport * as tfconv from '@tensorflow/tfjs-converter';\nimport * as tf from '@tensorflow/tfjs-core';\nimport
{BaseModel} from './base_model';\nimport {decodeOnlyPartSegmentation, decodePartSegmentation,
toMaskTensor} from './decode_part_map';\nimport {MobileNet} from './mobilenet';\nimport
{decodePersonInstanceMasks, decodePersonInstancePartMasks} from
'/multi_person/decode_instance_masks';\nimport {decodeMultiplePoses} from
'/multi_person/decode_multiple_poses';\nimport {ResNet} from './resnet';\nimport {mobileNetSavedModel,
resNet50SavedModel} from './saved_models';\nimport {BodyPixArchitecture, BodyPixInput,
BodyPixInternalResolution, BodyPixMultiplier, BodyPixOutputStride, BodyPixQuantBytes, Padding} from
'/types';\nimport {PartSegmentation, PersonSegmentation, SemanticPartSegmentation,
SemanticPersonSegmentation} from './types';\nimport {getInputSize, padAndResizeTo,
scaleAndCropToInputTensorShape, scaleAndFlipPoses, toInputResolutionHeightAndWidth, toTensorBuffers3D}
from './util';\n\nconst APPLY_SIGMOID_ACTIVATION = true;\nconst FLIP_POSES_AFTER_SCALING =
false;\n\n**\n * BodyPix model loading is configurable using the following config dictionary.\n *\n *
`architecture`: BodyPixArchitecture. It determines which BodyPix architecture\n * to load. The supported
architectures are: MobileNetV1 and ResNet50.\n *\n * `outputStride`: Specifies the output stride of the BodyPix
model.\n * The smaller the value, the larger the output resolution, and more accurate\n * the model at the cost of
speed. Set this to a larger value to increase speed\n * at the cost of accuracy. Stride 32 is supported for ResNet and\n
* stride 8,16,32 are supported for various MobileNetV1 models.\n *\n * `multiplier`: An optional number with
values: 1.01, 1.0, 0.75, or\n * 0.50. The value is used only by MobileNet architecture. It is the float\n * multiplier
for the depth (number of channels) for all convolution ops.\n * The larger the value, the larger the size of the layers, and
more accurate\n * the model at the cost of speed. Set this to a smaller value to increase speed\n * at the cost of
accuracy.\n *\n * `modelUrl`: An optional string that specifies custom url of the model. This\n * is useful for
area/countries that don't have access to the model hosted on\n * GCP.\n *\n * `quantBytes`: An optional number
with values: 1, 2, or 4. This parameter\n * affects weight quantization in the models. The available options are\n * 1
byte, 2 bytes, and 4 bytes. The higher the value, the larger the model size\n * and thus the longer the loading time,
the lower the value, the shorter the\n * loading time but lower the accuracy.\n */\n\nexport interface ModelConfig {\n
architecture: BodyPixArchitecture;\n outputStride: BodyPixOutputStride;\n multiplier?: BodyPixMultiplier;\n
modelUrl?: string;\n quantBytes?: BodyPixQuantBytes;\n}\n\n// The default configuration for loading
MobileNetV1 based BodyPix.\n// (And for references, the default configuration for loading ResNet\n// based
PoseNet is also included).\n// ``\n// const RESNET_CONFIG = {\n// architecture: 'ResNet50',\n//
outputStride: 32,\n// quantBytes: 4,\n// } as ModelConfig;\n// ``\n\nconst MOBILENET_V1_CONFIG = {\n
architecture: 'MobileNetV1',\n outputStride: 16,\n quantBytes: 4,\n multiplier: 0.75,\n} as ModelConfig;\n\nconst
VALID_ARCHITECTURE: BodyPixArchitecture[] = ['MobileNetV1', 'ResNet50'];\nconst VALID_STRIDE: {[id:
string]: BodyPixOutputStride[]} = {\n 'MobileNetV1': [8, 16, 32],\n 'ResNet50': [32, 16]\n};\nconst
VALID_MULTIPLIER: {[id: string]: BodyPixMultiplier[]} = {\n 'MobileNetV1': [0.50, 0.75, 1.0],\n 'ResNet50':
[1.0]\n};\nconst VALID_QUANT_BYTES: BodyPixQuantBytes[] = [1, 2, 4];\n\nfunction
validateModelConfig(config: ModelConfig): ModelConfig {\n config = config || MOBILENET_V1_CONFIG;\n
```

```

if (config.architecture == null) {\n  config.architecture = 'MobileNetV1';\n }\n if
(VALID_ARCHITECTURE.indexOf(config.architecture) < 0) {\n  throw new Error(\n    `Invalid architecture
${config.architecture}. ` +\n    `Should be one of ${VALID_ARCHITECTURE}`);\n }\n if (config.outputStride
== null) {\n  config.outputStride = 16;\n }\n if
(VALID_STRIDE[config.architecture].indexOf(config.outputStride) < 0) {\n  throw new Error(\n    `Invalid
outputStride ${config.outputStride}. ` +\n    `Should be one of ${VALID_STRIDE[config.architecture]} ` +\n
`for architecture ${config.architecture}.`);\n }\n\n if (config.multiplier == null) {\n  config.multiplier = 1.0;\n }\n
if (VALID_MULTIPLIER[config.architecture].indexOf(config.multiplier) < 0) {\n  throw new Error(\n
`Invalid multiplier ${config.multiplier}. ` +\n    `Should be one of
${VALID_MULTIPLIER[config.architecture]} ` +\n    `for architecture ${config.architecture}.`);\n }\n\n if
(config.quantBytes == null) {\n  config.quantBytes = 4;\n }\n if
(VALID_QUANT_BYTES.indexOf(config.quantBytes) < 0) {\n  throw new Error(\n    `Invalid quantBytes
${config.quantBytes}. ` +\n    `Should be one of ${VALID_QUANT_BYTES} ` +\n    `for architecture
${config.architecture}.`);\n }\n\n return config;\n}\n\n/**\n * BodyPix inference is configurable using the
following config dictionary.\n *\n * `flipHorizontal`: If the left-right keypoint of poses/part segmentation\n *
should be flipped/mirrored horizontally. This should be set to true for\n * videos where the video is by default
flipped horizontally (i.e. a webcam),\n * and you want the person & body part segmentation to be returned in the proper\n
* orientation.\n *\n * `internalResolution`: Defaults to 'medium'. The internal resolution\n * percentage that the
input is resized to before inference. The larger the\n * internalResolution the more accurate the model at the cost of
slower\n * prediction times. Available values are 'low', 'medium', 'high', 'full', or a\n * percentage value between 0
and 1. The values 'low', 'medium', 'high', and\n * 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.\n *\n *
`segmentationThreshold`: The minimum that segmentation values must\n * have to be considered part of the person.
Affects the generation of the\n * segmentation mask. More specifically, it is the threshold used to binarize\n * the
intermediate person segmentation probability. The probability of each\n * pixel belongs to a person is in range [0,
1]. If the probability is greater\n * than the `segmentationThreshold`, it will be set to 1 otherwise 0.\n *\n */\n\nexport
interface InferenceConfig {\n  flipHorizontal?: boolean;\n  internalResolution?: BodyPixInternalResolution;\n
segmentationThreshold?: number;\n}\n\n/**\n * Person Inference Config\n *\n * `maxDetections`: Defaults to 10.
Maximum number of person pose detections per\n * image.\n *\n * `scoreThreshold`: Defaults to 0.4. Only return
person pose that have root\n * part score greater or equal to this value.\n *\n * `nmsRadius`: Defaults to 20. Non-
maximum suppression part distance in pixels.\n * It needs to be strictly positive. Two pose keypoints suppress each
other if\n * they are less than `nmsRadius` pixels away.\n */\n\nexport interface PersonInferenceConfig extends
InferenceConfig {\n  maxDetections?: number;\n  scoreThreshold?: number;\n  nmsRadius?: number;\n}\n\n/**\n *
Multiple Person Instance Inference Config\n *\n * `maxDetections`: Defaults to 10. Maximum number of returned
instance\n * segmentation and pose detections per image.\n *\n * `scoreThreshold`: Defaults to 0.4. Only returns
and uses person\n * poses for instance segmentation assignment when the pose has root part score\n * greater or
equal to this value.\n *\n * `nmsRadius`: Defaults to 20. Non-maximum suppression part distance in pixels.\n *
It needs to be strictly positive. Two parts suppress each other if they are\n * less than `nmsRadius` pixels away.\n
*\n * `minKeypointScore`: Default to 0.3. Keypoints above the score are used\n * for matching and assigning
segmentation mask to each person.\n *\n * `refineSteps`: Default to 10. The number of refinement steps used when\n
* assigning the instance segmentation. It needs to be strictly positive. The\n * larger the higher the accuracy and
slower the inference.\n *\n */\n\nexport interface MultiPersonInstanceInferenceConfig extends InferenceConfig {\n
maxDetections?: number;\n  scoreThreshold?: number;\n  nmsRadius?: number;\n  minKeypointScore?: number;\n
refineSteps?: number;\n}\n\nexport const PERSON_INFERENCE_CONFIG: PersonInferenceConfig = {\n
flipHorizontal: false,\n  internalResolution: 'medium',\n  segmentationThreshold: 0.7,\n  maxDetections: 10,\n
scoreThreshold: 0.4,\n  nmsRadius: 20,\n};\n\nexport const
MULTI_PERSON_INSTANCE_INFERENCE_CONFIG: MultiPersonInstanceInferenceConfig = {\n
flipHorizontal: false,\n  internalResolution: 'medium',\n  segmentationThreshold: 0.7,\n  maxDetections:
10,\n  scoreThreshold: 0.4,\n  nmsRadius: 20,\n  minKeypointScore: 0.3,\n  refineSteps: 10\n}

```

```

};\n\nfunction validatePersonInferenceConfig(config: PersonInferenceConfig) {\n  const {segmentationThreshold,\n    maxDetections, scoreThreshold, nmsRadius} =\n    config;\n  if (segmentationThreshold < 0.0 ||\n    segmentationThreshold > 1.0) {\n    throw new Error(\n      `segmentationThreshold ${segmentationThreshold}.`\n      +`\n      `Should be in range [0.0, 1.0]`);\n  }\n  if (maxDetections <= 0) {\n    throw new Error(\n      `Invalid\n    maxDetections ${maxDetections}.`\n      +`\n      `Should be > 0`);\n  }\n  if (scoreThreshold < 0.0 || scoreThreshold >\n    1.0) {\n    throw new Error(\n      `Invalid scoreThreshold ${scoreThreshold}.`\n      +`\n      `Should be in range [0.0,\n    1.0]`);\n  }\n  if (nmsRadius <= 0) {\n    throw new Error(`Invalid nmsRadius ${nmsRadius}.`);\n  }\n}\n\nfunction validateMultiPersonInstanceInferenceConfig(\n  config: MultiPersonInstanceInferenceConfig) {\n  const {\n    segmentationThreshold,\n    maxDetections,\n    scoreThreshold,\n    nmsRadius,\n    minKeypointScore,\n    refineSteps\n  } = config;\n  if (segmentationThreshold < 0.0 || segmentationThreshold >\n    1.0) {\n    throw new Error(\n      `segmentationThreshold ${segmentationThreshold}.`\n      +`\n      `Should be in\n    range [0.0, 1.0]`);\n  }\n  if (maxDetections <= 0) {\n    throw new Error(\n      `Invalid maxDetections\n    ${maxDetections}.`\n      +`\n      `Should be > 0`);\n  }\n  if (scoreThreshold < 0.0 || scoreThreshold > 1.0) {\n    throw\n    new Error(\n      `Invalid scoreThreshold ${scoreThreshold}.`\n      +`\n      `Should be in range [0.0, 1.0]`);\n  }\n  if\n    (nmsRadius <= 0) {\n    throw new Error(`Invalid nmsRadius ${nmsRadius}.`);\n  }\n  if (minKeypointScore < 0 ||\n    minKeypointScore > 1) {\n    throw new Error(\n      `Invalid minKeypointScore ${minKeypointScore}.`\n      +`\n      `Should be in range [0.0, 1.0]`);\n  }\n  if (refineSteps <= 0 || refineSteps > 20) {\n    throw new Error(\n      `Invalid refineSteps ${refineSteps}.`\n      +`\n      `Should be in range [1, 20]`);\n  }\n}\n\nexport class BodyPix {\n  baseModel: BaseModel;\n\n  constructor(net: BaseModel) {\n    this.baseModel = net;\n  }\n\n  private\n  predictForPersonSegmentation(input: tf.Tensor3D): {\n    segmentLogits: tf.Tensor3D,\n    heatmapScores:\n    tf.Tensor3D,\n    offsets: tf.Tensor3D,\n    displacementFwd: tf.Tensor3D,\n    displacementBwd: tf.Tensor3D,\n  }\n  {\n    const {\n      segmentation,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n    }\n    = this.baseModel.predict(input);\n    return {\n      segmentLogits: segmentation,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n    };\n  }\n\n  private\n  predictForPersonSegmentationAndPart(input: tf.Tensor3D): {\n    segmentLogits: tf.Tensor3D,\n    partHeatmapLogits: tf.Tensor3D,\n    heatmapScores: tf.Tensor3D,\n    offsets: tf.Tensor3D,\n    displacementFwd:\n    tf.Tensor3D,\n    displacementBwd: tf.Tensor3D,\n  }\n  {\n    const {\n      segmentation,\n      partHeatmaps,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd\n    }\n    = this.baseModel.predict(input);\n    return {\n      segmentLogits: segmentation,\n      partHeatmapLogits: partHeatmaps,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n    };\n  }\n\n  private\n  predictForMultiPersonInstanceSegmentationAndPart(input: tf.Tensor3D):\n  {\n    segmentLogits:\n    tf.Tensor3D,\n    longOffsets: tf.Tensor3D,\n    heatmapScores: tf.Tensor3D,\n    offsets: tf.Tensor3D,\n    displacementFwd: tf.Tensor3D,\n    displacementBwd: tf.Tensor3D,\n    partHeatmaps: tf.Tensor3D\n  }\n  {\n    const {\n      segmentation,\n      longOffsets,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n      partHeatmaps,\n    }\n    = this.baseModel.predict(input);\n    return {\n      segmentLogits:\n      segmentation,\n      longOffsets,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n      partHeatmaps\n    };\n  }\n\n  /**\n   * Given an image with people, returns a dictionary of all intermediate\n   * tensors including: 1) a binary array with 1 for the pixels that are part of\n   * the person, and 0 otherwise, 2)\n   * heatmapScores, 3) offsets, and 4) paddings.\n   *\n   * @param input\n   * ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n   * The input image to feed\n   * through the network.\n   *\n   * @param internalResolution Defaults to 'medium'. The internal resolution\n   * that\n   * the input is resized to before inference. The larger the\n   * internalResolution the more accurate the model at the\n   * cost of slower\n   * prediction times. Available values are 'low', 'medium', 'high', 'full', or\n   * a percentage value\n   * between 0 and 1. The values 'low', 'medium', 'high', and\n   * 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.\n   *\n   * @param segmentationThreshold The minimum that segmentation values must have\n   * to be considered\n   * part of the person. Affects the generation of the\n   * segmentation mask.\n   *\n   * @return A dictionary containing\n   * `segmentation`, `heatmapScores`, `offsets`,\n   * and `padding`:\n   * - `segmentation`: A 2d Tensor with 1 for the\n   * pixels that are part of the\n   * person, and 0 otherwise. The width and height correspond to the same\n   *

```

dimensions of the input image.

- * - `heatmapScores`: A 3d Tensor of the keypoint heatmaps used by pose estimation decoding.
- * - `offsets`: A 3d Tensor of the keypoint offsets used by pose estimation decoding.
- * - `displacementFwd`: A 3d Tensor of the keypoint forward displacement used by pose estimation decoding.
- * - `displacementBwd`: A 3d Tensor of the keypoint backward displacement used by pose estimation decoding.
- * - `padding`: The padding (unit pixels) being applied to the input image before it is fed into the model.

```

*
* @param input: BodyPixInput, internalResolution:
* BodyPixInternalResolution, segmentationThreshold = 0.5): {
*   segmentation: tf.Tensor2D,
*   heatmapScores: tf.Tensor3D,
*   offsets: tf.Tensor3D,
*   displacementFwd: tf.Tensor3D,
*   displacementBwd: tf.Tensor3D,
*   padding: Padding,
*   internalResolutionHeightAndWidth: [number, number]
* } {
*   const [height, width] = getInputSize(input);
*   const internalResolutionHeightAndWidth =
*   toInputResolutionHeightAndWidth(
*     internalResolution, this.baseModel.outputStride, [height, width]);
*   const {resized, padding} = padAndResizeTo(input, internalResolutionHeightAndWidth);
*   const {
*     segmentation,
*     heatmapScores,
*     offsets,
*     displacementFwd,
*     displacementBwd
*   } = tf.tidy(() => {
*     const {
*       segmentLogits,
*       heatmapScores,
*       offsets,
*       displacementFwd,
*       displacementBwd
*     } = this.predictForPersonSegmentation(resized);
*     const [resizedHeight, resizedWidth] = resized.shape;
*     const scaledSegmentScores = scaleAndCropToInputTensorShape(
*       segmentLogits, [height, width], [resizedHeight, resizedWidth],
*       [[padding.top, padding.bottom], [padding.left, padding.right]],
*       APPLY_SIGMOID_ACTIVATION);
*     return {
*       segmentation: toMaskTensor(
*         tf.squeeze(scaledSegmentScores), segmentationThreshold),
*       heatmapScores,
*       offsets,
*       displacementFwd,
*       displacementBwd,
*     };
*   });
*   resized.dispose();
*   return {
*     segmentation,
*     heatmapScores,
*     offsets,
*     displacementFwd,
*     displacementBwd,
*     padding,
*     internalResolutionHeightAndWidth
*   };
* }
*
* Given an image with many people, returns a PersonSegmentation dictionary that contains the segmentation mask for all people and a single pose.
* Note: The segmentation mask returned by this method covers all people but the pose works well for one person. If you want to estimate instance-level multiple person segmentation & pose for each person, use `segmentMultiPerson` instead.
* @param input
* ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)
* The input image to feed through the network.
* @param config PersonInferenceConfig object that contains parameters for the BodyPix inference using person decoding.
* @return A SemanticPersonSegmentation dictionary that contains height, width, the flattened binary segmentation mask and the poses for all people.
* The width and height correspond to the same dimensions of the input image.
* - `height`: The height of the segmentation data in pixel unit.
* - `width`: The width of the segmentation data in pixel unit.
* - `data`: The flattened Uint8Array of segmentation data. 1 means the pixel belongs to a person and 0 means the pixel doesn't belong to a person. The size of the array is equal to `height` x `width` in row-major order.
* - `allPoses`: The 2d poses of all people.
*
* async segmentPerson(
*   input: BodyPixInput,
*   config: PersonInferenceConfig = PERSON_INFERENCE_CONFIG):
*   Promise<SemanticPersonSegmentation> {
*     config = {...PERSON_INFERENCE_CONFIG, ...config};
*     validatePersonInferenceConfig(config);
*     const {
*       segmentation,
*       heatmapScores,
*       offsets,
*       displacementFwd,
*       displacementBwd,
*       padding,
*       internalResolutionHeightAndWidth
*     } = this.segmentPersonActivation(
*       input, config.internalResolution, config.segmentationThreshold);
*     const [height, width] = segmentation.shape;
*     const result = await segmentation.data() as Uint8Array;
*     segmentation.dispose();
*     const tensorBuffers = await toTensorBuffers3D(
*       [heatmapScores, offsets, displacementFwd, displacementBwd]);
*     const [scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf] = tensorBuffers;
*     let poses = decodeMultiplePoses(
*       scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,
*       this.baseModel.outputStride, config.maxDetections, config.scoreThreshold, config.nmsRadius);
*     poses = scaleAndFlipPoses(
*       poses, [height, width], internalResolutionHeightAndWidth, padding,
*       FLIP_POSES_AFTER_SCALING);
*     heatmapScores.dispose();
*     offsets.dispose();
*     displacementFwd.dispose();
*     displacementBwd.dispose();
*     return {height, width, data: result, allPoses:

```


poses};\n }\n\n /**\n * Given an image with multiple people, returns an *array* of\n * PersonSegmentation object. Each element in the array corresponding to one\n * of the people in the input image. In other words, it predicts\n * instance-level multiple person segmentation & pose for each person.\n *\n * The model does standard ImageNet pre-processing before inferring through\n * the model. The image pixels should have values [0-255].\n *\n * @param input\n * ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n * The input\n * image to feed through the network.\n *\n * @param config MultiPersonInferenceConfig object that contains\n * parameters for the BodyPix inference using multi-person decoding.\n *\n * @return An array of PersonSegmentation object, each containing a width,\n * height, a binary array (1 for the pixels that are part of the\n * person, and 0 otherwise) and 2D pose. The array size corresponds to the\n * number of pixels in the image. The width and height correspond to the\n * dimensions of the image the binary array is shaped to, which are the same\n * dimensions of the input image.\n */\n async segmentMultiPerson(\n input: BodyPixInput,\n config: MultiPersonInstanceInferenceConfig =\n MULTI_PERSON_INSTANCE_INFERENCE_CONFIG):\n Promise<PersonSegmentation[]> {\n config = {...MULTI_PERSON_INSTANCE_INFERENCE_CONFIG,\n ...config};\n validateMultiPersonInstanceInferenceConfig(config);\n const [height, width] =\n getInputSize(input);\n const internalResolutionHeightAndWidth = toInputResolutionHeightAndWidth(\n config.internalResolution, this.baseModel.outputStride,\n [height, width]);\n\n const {resized, padding} =\n padAndResizeTo(input, internalResolutionHeightAndWidth);\n const {\n segmentation,\n longOffsets,\n heatmapScoresRaw,\n offsetsRaw,\n displacementFwdRaw,\n displacementBwdRaw,\n } = tf.tidy(() => {\n const {\n segmentLogits,\n longOffsets,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd,\n } =\n this.predictForMultiPersonInstanceSegmentationAndPart(resized);\n const scaledSegmentScores =\n scaleAndCropToInputTensorShape(\n segmentLogits, [height, width], internalResolutionHeightAndWidth,\n [[padding.top, padding.bottom], [padding.left, padding.right]],\n APPLY_SIGMOID_ACTIVATION);\n const longOffsetsResized = false;\n let scaledLongOffsets;\n if (longOffsetsResized) {\n scaledLongOffsets = scaleAndCropToInputTensorShape(\n longOffsets, [height, width],\n internalResolutionHeightAndWidth,\n [[padding.top, padding.bottom], [padding.left, padding.right]],\n APPLY_SIGMOID_ACTIVATION);\n } else {\n scaledLongOffsets = longOffsets;\n }\n\n const\n segmentation = toMaskTensor(\n tf.squeeze(scaledSegmentScores), config.segmentationThreshold);\n\n return {\n segmentation,\n longOffsets: scaledLongOffsets,\n heatmapScoresRaw: heatmapScores,\n offsetsRaw: offsets,\n displacementFwdRaw: displacementFwd,\n displacementBwdRaw:\n displacementBwd,\n };\n });\n\n const tensorBuffers = await toTensorBuffers3D(\n [heatmapScoresRaw,\n offsetsRaw, displacementFwdRaw, displacementBwdRaw]);\n const [scoresBuf, offsetsBuf,\n displacementsFwdBuf, displacementsBwdBuf] =\n tensorBuffers;\n\n let poses = decodeMultiplePoses(\n scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,\n this.baseModel.outputStride,\n config.maxDetections,\n config.scoreThreshold, config.nmsRadius);\n\n poses = scaleAndFlipPoses(\n poses, [height, width], internalResolutionHeightAndWidth, padding,\n FLIP_POSES_AFTER_SCALING);\n\n const instanceMasks = await decodePersonInstanceMasks(\n segmentation, longOffsets, poses, height, width,\n this.baseModel.outputStride, internalResolutionHeightAndWidth, padding,\n config.scoreThreshold,\n config.refineSteps, config.minKeypointScore,\n config.maxDetections);\n\n resized.dispose();\n segmentation.dispose();\n longOffsets.dispose();\n heatmapScoresRaw.dispose();\n offsetsRaw.dispose();\n displacementFwdRaw.dispose();\n displacementBwdRaw.dispose();\n\n return instanceMasks;\n }\n\n /**\n * Given an image with many people, returns a dictionary containing: height,\n * width, a tensor with a part id from 0-24 for the pixels that are\n * part of a corresponding body part, and -1 otherwise. This does standard\n * ImageNet pre-processing before inferring through the model. The image\n * should pixels should have values [0-255].\n *\n * @param input ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n * The input image to feed through the network.\n *\n * @param internalResolution Defaults to 'medium'. The internal resolution\n * percentage that the input is resized to before inference. The larger the\n * internalResolution the more accurate the model at the cost of slower\n * prediction times. Available values are 'low', 'medium', 'high',

'full', or a percentage value between 0 and 1. The values 'low', 'medium', 'high', and 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.

@param segmentationThreshold The minimum that segmentation values must have to be considered part of the person. Affects the clipping of the colored part image.

@return A dictionary containing 'partSegmentation', 'heatmapScores', 'offsets', and 'padding':

- 'partSegmentation': A 2d Tensor with a part id from 0-24 for the pixels that are part of a corresponding body part, and -1 otherwise.
- 'heatmapScores': A 3d Tensor of the keypoint heatmaps used by single-person pose estimation decoding.
- 'offsets': A 3d Tensor of the keypoint offsets used by single-person pose estimation decoding.
- 'displacementFwd': A 3d Tensor of the keypoint forward displacement used by pose estimation decoding.
- 'displacementBwd': A 3d Tensor of the keypoint backward displacement used by pose estimation decoding.
- 'padding': The padding (unit pixels) being applied to the input image before it is fed into the model.

```

^/n segmentPersonPartsActivation(^/n input: BodyPixInput,
internalResolution: BodyPixInternalResolution,
segmentationThreshold = 0.5): {^/n partSegmentation:
tf.Tensor2D,^/n heatmapScores: tf.Tensor3D,^/n offsets: tf.Tensor3D,^/n displacementFwd: tf.Tensor3D,^/n
displacementBwd: tf.Tensor3D,^/n padding: Padding,^/n internalResolutionHeightAndWidth: [number, number]^/n
} {^/n const [height, width] = getInputSize(input);^/n const internalResolutionHeightAndWidth =
toInputResolutionHeightAndWidth(^/n internalResolution, this.baseModel.outputStride, [height, width]);^/n
const {^/n resized,^/n padding,^/n } = padAndResizeTo(input, internalResolutionHeightAndWidth);^/n const
{^/n partSegmentation,^/n heatmapScores,^/n offsets,^/n displacementFwd,^/n displacementBwd^/n } =
tf.tidy() => {^/n const {^/n segmentLogits,^/n partHeatmapLogits,^/n heatmapScores,^/n offsets,^/n
displacementFwd,^/n displacementBwd^/n } = this.predictForPersonSegmentationAndPart(resized);^/n
const [resizedHeight, resizedWidth] = resized.shape;^/n const scaledSegmentScores =
scaleAndCropToInputTensorShape(^/n segmentLogits, [height, width], [resizedHeight, resizedWidth],
[[padding.top, padding.bottom], [padding.left, padding.right]], APPLY_SIGMOID_ACTIVATION);^/n
const scaledPartHeatmapScore = scaleAndCropToInputTensorShape(^/n partHeatmapLogits, [height, width],
[resizedHeight, resizedWidth], [[padding.top, padding.bottom], [padding.left, padding.right]],
APPLY_SIGMOID_ACTIVATION);^/n const segmentation =^/n
toMaskTensor(tf.squeeze(scaledSegmentScores), segmentationThreshold);^/n return {^/n partSegmentation:^/n
decodePartSegmentation(segmentation, scaledPartHeatmapScore),^/n heatmapScores,^/n offsets,^/n
displacementFwd,^/n displacementBwd,^/n };^/n };^/n resized.dispose();^/n return {^/n
partSegmentation,^/n heatmapScores,^/n offsets,^/n displacementFwd,^/n displacementBwd,^/n
padding,^/n internalResolutionHeightAndWidth^/n };^/n }^/n /**^/n * Given an image with many people,
returns a PartSegmentation dictionary that^/n * contains the body part segmentation mask for all people and a single
pose.^/n *^/n * Note: The body part segmentation mask returned by this method covers all^/n * people but the pose
works well when there is one person. If you want to^/n * estimate instance-level multiple person body part
segmentation & pose for^/n * each person, use `segmentMultiPersonParts` instead.^/n *^/n * @param input
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)^/n * The input image to feed
through the network.^/n *^/n * @param config PersonInferenceConfig object that contains^/n * parameters for the
BodyPix inference using single person decoding.^/n *^/n * @return A SemanticPartSegmentation dictionary that
contains height, width,^/n * the flattened binary segmentation mask and the pose for the person. The^/n * width and
height correspond to the same dimensions of the input image.^/n * - `height`: The height of the person part
segmentation data in pixel unit.^/n * - `width`: The width of the person part segmentation data in pixel unit.^/n * -
`data`: The flattened Int32Array of person part segmentation data with a^/n * part id from 0-24 for the pixels that are
part of a corresponding body^/n * part, and -1 otherwise. The size of the array is equal to `height` x^/n * `width` in
row-major order.^/n * - `allPoses`: The 2d poses of all people.^/n */^/n async segmentPersonParts(^/n input:
BodyPixInput,^/n config: PersonInferenceConfig = PERSON_INFERENCE_CONFIG):^/n
Promise<SemanticPartSegmentation> {^/n config = {...PERSON_INFERENCE_CONFIG, ...config};^/n
validatePersonInferenceConfig(config);^/n const {^/n partSegmentation,^/n heatmapScores,^/n offsets,^/n
displacementFwd,^/n displacementBwd,^/n padding,^/n internalResolutionHeightAndWidth^/n } =^/n

```

```

this.segmentPersonPartsActivation(\n      input, config.internalResolution, config.segmentationThreshold);\nconst [height, width] = partSegmentation.shape;\n  const data = await partSegmentation.data() as Int32Array;\n  partSegmentation.dispose();\n  const tensorBuffers = await toTensorBuffers3D(\n    [heatmapScores, offsets,\n    displacementFwd, displacementBwd]);\n  const [scoresBuf, offsetsBuf, displacementsFwdBuf,\n    displacementsBwdBuf] =\n    tensorBuffers;\n  let poses = decodeMultiplePoses(\n    scoresBuf, offsetsBuf,\n    displacementsFwdBuf, displacementsBwdBuf,\n    this.baseModel.outputStride, config.maxDetections,\n    config.scoreThreshold, config.nmsRadius);\n  poses = scaleAndFlipPoses(\n    poses, [height, width],\n    internalResolutionHeightAndWidth, padding,\n    FLIP_POSES_AFTER_SCALING);\n  heatmapScores.dispose();\n  offsets.dispose();\n  displacementFwd.dispose();\n  displacementBwd.dispose();\n  return {height, width, data, allPoses: poses};\n} \n\n /**\n * Given an image with multiple people, returns an\n *array* of PartSegmentation\n * object. Each element in the array corresponding to one\n * of the people in the\n * input image. In other words, it predicts\n * instance-level multiple person body part segmentation & pose for\n * each\n * person.\n * This does standard ImageNet pre-processing before inferring through\n * the model.\n * The image pixels should have values [0-255].\n * @param input\n * ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement) The input\n * image to feed\n * through the network.\n * @param config MultiPersonInferenceConfig object that contains\n * parameters for\n * the BodyPix inference using multi-person decoding.\n * @return An array of PartSegmentation object, each\n * containing a width,\n * height, a flattened array (with part id from 0-24 for the pixels that are\n * part of a\n * corresponding body part, and -1 otherwise) and 2D pose. The width\n * and height correspond to the dimensions of\n * the image. Each flattened part\n * segmentation array size is equal to `height` x `width`.\n */\nasync\nsegmentMultiPersonParts(\n  input: BodyPixInput,\n  config: MultiPersonInstanceInferenceConfig =\n    MULTI_PERSON_INSTANCE_INFERENCE_CONFIG): Promise<PartSegmentation[]> {\n  config =\n    {...MULTI_PERSON_INSTANCE_INFERENCE_CONFIG, ...config};\n  validateMultiPersonInstanceInferenceConfig(config);\n  const [height, width] = getInputSize(input);\n  const\n    internalResolutionHeightAndWidth = toInputResolutionHeightAndWidth(\n      config.internalResolution,\n      this.baseModel.outputStride,\n      [height, width]);\n  const {resized, padding} =\n    padAndResizeTo(input,\n    internalResolutionHeightAndWidth);\n  const {\n    segmentation,\n    longOffsets,\n    heatmapScoresRaw,\n    offsetsRaw,\n    displacementFwdRaw,\n    displacementBwdRaw,\n    partSegmentation,\n  } = tf.tidy(() =>\n    {\n      const {\n        segmentLogits,\n        longOffsets,\n        heatmapScores,\n        offsets,\n        displacementFwd,\n        displacementBwd,\n        partHeatmaps\n      } =\n        this.predictForMultiPersonInstanceSegmentationAndPart(resized);\n      // decoding with scaling.\n      const\n        scaledSegmentScores = scaleAndCropToInputTensorShape(\n          segmentLogits, [height, width],\n          internalResolutionHeightAndWidth,\n          [[padding.top, padding.bottom], [padding.left, padding.right]],\n          APPLY_SIGMOID_ACTIVATION);\n      // decoding with scaling.\n      const scaledPartSegmentationScores =\n        scaleAndCropToInputTensorShape(\n          partHeatmaps, [height, width], internalResolutionHeightAndWidth,\n          [[padding.top, padding.bottom], [padding.left, padding.right]],\n          APPLY_SIGMOID_ACTIVATION);\n      const scaledLongOffsets = longOffsets;\n      const segmentation = toMaskTensor(\n        tf.squeeze(scaledSegmentScores), config.segmentationThreshold);\n      const partSegmentation =\n        decodeOnlyPartSegmentation(scaledPartSegmentationScores);\n      return {\n        segmentation,\n        longOffsets:\n          scaledLongOffsets,\n        heatmapScoresRaw: heatmapScores,\n        offsetsRaw: offsets,\n        displacementFwdRaw: displacementFwd,\n        displacementBwdRaw: displacementBwd,\n        partSegmentation\n      };\n    });\n  const tensorBuffers = await toTensorBuffers3D(\n    [heatmapScoresRaw,\n    offsetsRaw, displacementFwdRaw, displacementBwdRaw]);\n  const [scoresBuf, offsetsBuf,\n    displacementsFwdBuf, displacementsBwdBuf] =\n    tensorBuffers;\n  let poses = decodeMultiplePoses(\n    scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,\n    this.baseModel.outputStride,\n    config.maxDetections,\n    config.scoreThreshold, config.nmsRadius);\n  poses = scaleAndFlipPoses(\n    poses, [height, width], internalResolutionHeightAndWidth, padding,\n    FLIP_POSES_AFTER_SCALING);\n  const instanceMasks = await decodePersonInstancePartMasks(\n    segmentation, longOffsets, partSegmentation,\n
```

```

poses, height, width,\n      this.baseModel.outputStride, internalResolutionHeightAndWidth, padding,\n      config.scoreThreshold, config.refineSteps, config.minKeypointScore,\n      config.maxDetections);\n      resized.dispose();\n      segmentation.dispose();\n      longOffsets.dispose();\n      heatmapScoresRaw.dispose();\n      offsetsRaw.dispose();\n      displacementFwdRaw.dispose();\n      displacementBwdRaw.dispose();\n      partSegmentation.dispose();\n      return instanceMasks;\n    }\n\n    public dispose() {\n      this.baseModel.dispose();\n    }\n  }\n\n  /**\n   * Loads the MobileNet BodyPix model.\n   */\n  @nasync function loadMobileNet(config: ModelConfig):\n  Promise<BodyPix> {\n    const outputStride = config.outputStride;\n    const quantBytes = config.quantBytes;\n    const multiplier = config.multiplier;\n    if (tf == null) {\n      throw new Error(`Cannot find TensorFlow.js. If you are\n        using a <script> tag, please ` +\n        `also include @tensorflow/tfjs on the page before using this\n        model.`);\n    }\n    const url = mobileNetSavedModel(outputStride, multiplier, quantBytes);\n    const graphModel = await\n      tfconv.loadGraphModel(config.modelUrl || url);\n    const mobilenet = new MobileNet(graphModel, outputStride);\n    return new BodyPix(mobilenet);\n  }\n\n  /**\n   * Loads the ResNet BodyPix model.\n   */\n  @nasync function\n  loadResNet(config: ModelConfig): Promise<BodyPix> {\n    const outputStride = config.outputStride;\n    const\n      quantBytes = config.quantBytes;\n    if (tf == null) {\n      throw new Error(`Cannot find TensorFlow.js. If you\n        are using a <script> tag, please ` +\n        `also include @tensorflow/tfjs on the page before using this\n        model.`);\n    }\n    const url = resNet50SavedModel(outputStride, quantBytes);\n    const graphModel = await\n      tfconv.loadGraphModel(config.modelUrl || url);\n    const resnet = new ResNet(graphModel, outputStride);\n    return\n      new BodyPix(resnet);\n  }\n\n  /**\n   * Loads the BodyPix model instance from a checkpoint, with the ResNet\n   * or\n   * MobileNet architecture. The model to be loaded is configurable using the\n   * config dictionary ModelConfig. Please find more details in the\n   * documentation of the ModelConfig.\n   */\n  @param config ModelConfig dictionary that contains parameters for\n   * the BodyPix loading process. Please find more details of each parameters\n   * in the documentation of the ModelConfig interface. The predefined\n   * `MOBILENET_V1_CONFIG` and `RESNET_CONFIG` can also be used as references\n   * for defining your customized config.\n   */\n  @nexport async\n  function load(config: ModelConfig = MOBILENET_V1_CONFIG): Promise<BodyPix> {\n    config =\n      validateModelConfig(config);\n    if (config.architecture === 'ResNet50') {\n      return loadResNet(config);\n    } else if\n      (config.architecture === 'MobileNetV1') {\n      return loadMobileNet(config);\n    } else {\n      return null;\n    }\n  }\n\n  /**\n   * @license\n   * Copyright 2019 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing, software\n   * distributed under the License is distributed on an "AS IS"\n   * BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   */\n  =====\n\n  */\n  @import {cpuBlur} from './blur';\n  @import {Color, PartSegmentation, PersonSegmentation} from\n  './types';\n  @import {SemanticPartSegmentation, SemanticPersonSegmentation} from './types';\n  @import {getInputSize} from './util';\n  @nexport type Canvas = HTMLCanvasElement | OffscreenCanvas;\n  @nconst offScreenCanvases:\n  {[name: string]: Canvas} = {};\n  @ntype ImageType = HTMLImageElement|HTMLVideoElement|Canvas;\n  @ntype\n  HasDimensions = {\n    width: number,\n    height: number\n  };\n  @nfunction isSafari() {\n    return\n      (/^(?!chrome|android).*safari/i.test(navigator.userAgent));\n  }\n  @nfunction assertSameDimensions(\n    {width:\n      widthA, height: heightA}: HasDimensions,\n    {width: widthB, height: heightB}: HasDimensions, nameA: string,\n    nameB: string) {\n    if (widthA !== widthB || heightA !== heightB) {\n      throw new Error(`error: dimensions must\n        match. ${nameA} has dimensions ${\n          widthA}x${heightA}, ${nameB} has dimensions\n          ${widthB}x${heightB}`);\n    }\n  }\n  @nfunction flipCanvasHorizontal(canvas: Canvas) {\n    const ctx =\n      canvas.getContext('2d');\n    ctx.scale(-1, 1);\n    ctx.translate(-canvas.width, 0);\n  }\n  @nfunction\n  drawWithCompositing(\n    ctx: CanvasRenderingContext2D|OffscreenCanvasRenderingContext2D,\n    image:\n    Canvas|ImageType,\n    compositeOperation: string) {\n    ctx.globalCompositeOperation = compositeOperation;\n    ctx.drawImage(image, 0, 0);\n  }\n  @nfunction createOffScreenCanvas(): Canvas {\n    if (typeof document !==\n      'undefined') {\n      return document.createElement('canvas');\n    } else if (typeof OffscreenCanvas !== 'undefined')\n
```

```

{\n  return new OffscreenCanvas(0, 0);\n } else {\n  throw new Error('Cannot create a canvas in this context');\n
}\n}\n\nfunction ensureOffscreenCanvasCreated(id: string): Canvas {\n if (!offScreenCanvases[id]) {\n
offScreenCanvases[id] = createOffScreenCanvas();\n }\n return offScreenCanvases[id];\n}\n\nfunction
drawAndBlurImageOnCanvas(\n  image: ImageType, blurAmount: number, canvas: Canvas) {\n const {height,
width} = image;\n const ctx = canvas.getContext('2d');\n canvas.width = width;\n canvas.height = height;\n
ctx.clearRect(0, 0, width, height);\n ctx.save();\n if (isSafari()) {\n  cpuBlur(canvas, image, blurAmount);\n } else
{\n  // tslint:disable:no-any\n  (ctx as any).filter = `blur(${blurAmount}px)`;\n  ctx.drawImage(image, 0, 0,
width, height);\n }\n ctx.restore();\n}\n\nfunction drawAndBlurImageOnOffScreenCanvas(\n  image: ImageType,
blurAmount: number,\n  offscreenCanvasName: string): Canvas {\n const canvas =
ensureOffscreenCanvasCreated(offscreenCanvasName);\n if (blurAmount === 0) {\n
renderImageToCanvas(image, canvas);\n } else {\n  drawAndBlurImageOnCanvas(image, blurAmount, canvas);\n
}\n return canvas;\n}\n\nfunction renderImageToCanvas(image: ImageType, canvas: Canvas) {\n const {width,
height} = image;\n canvas.width = width;\n canvas.height = height;\n const ctx = canvas.getContext('2d');\n\n
ctx.drawImage(image, 0, 0, width, height);\n}\n\n/**\n * Draw an image on a canvas\n */\nfunction
renderImageDataToCanvas(image: ImageData, canvas: Canvas) {\n canvas.width = image.width;\n canvas.height
= image.height;\n const ctx = canvas.getContext('2d');\n\n ctx.putImageData(image, 0, 0);\n}\n\nfunction
renderImageDataToOffScreenCanvas(\n  image: ImageData, canvasName: string): Canvas {\n const canvas =
ensureOffscreenCanvasCreated(canvasName);\n renderImageDataToCanvas(image, canvas);\n\n return
canvas;\n}\n\n/**\n * Given the output from estimating multi-person segmentation, generates an\n * image with
foreground and background color at each pixel determined by the\n * corresponding binary segmentation value at
the pixel from the output. In\n * other words, pixels where there is a person will be colored with foreground\n *
color and where there is not a person will be colored with background color.\n *\n * @param
personOrPartSegmentation The output from\n * `segmentPerson`, `segmentMultiPerson`,\n * `segmentPersonParts`
or `segmentMultiPersonParts`. They can\n * be SemanticPersonSegmentation object, an array of
PersonSegmentation object,\n * SemanticPartSegmentation object, or an array of PartSegmentation object.\n *\n *
@param foreground Default to {r:0, g:0, b:0, a: 0}. The foreground color\n * (r,g,b,a) for visualizing pixels that
belong to people.\n *\n * @param background Default to {r:0, g:0, b:0, a: 255}. The background color\n * (r,g,b,a)
for visualizing pixels that don't belong to people.\n *\n * @param drawContour Default to false. Whether to draw
the contour around each\n * person's segmentation mask or body part mask.\n *\n * @param foregroundIds Default
to [1]. The integer values that represent\n * foreground. For person segmentation, 1 is the foreground. For body
part\n * segmentation, it can be a subset of all body parts ids.\n *\n * @returns An ImageData with the same width
and height of\n * all the PersonSegmentation in multiPersonSegmentation, with opacity and\n * transparency at each
pixel determined by the corresponding binary\n * segmentation value at the pixel from the output.\n */\nexport
function toMask(\n  personOrPartSegmentation: SemanticPersonSegmentation|\n
SemanticPartSegmentation|PersonSegmentation[]|PartSegmentation[],\n  foreground: Color = {\n  r: 0,\n  g:
0,\n  b: 0,\n  a: 0\n },\n  background: Color = {\n  r: 0,\n  g: 0,\n  b: 0,\n  a: 255\n },\n
drawContour = false, foregroundIds: number[] = [1]): ImageData {\n if (Array.isArray(personOrPartSegmentation)
&&\n  personOrPartSegmentation.length === 0) {\n  return null;\n }\n\n let multiPersonOrPartSegmentation:\n
Array<SemanticPersonSegmentation|SemanticPartSegmentation|\n
PersonSegmentation|PartSegmentation>;\n\n if (!Array.isArray(personOrPartSegmentation)) {\n
multiPersonOrPartSegmentation = [personOrPartSegmentation];\n } else {\n  multiPersonOrPartSegmentation =
personOrPartSegmentation;\n }\n\n const {width, height} = multiPersonOrPartSegmentation[0];\n const bytes =
new Uint8ClampedArray(width * height * 4);\n\n function drawStroke(\n  bytes: Uint8ClampedArray, row:
number, column: number, width: number,\n  radius: number, color: Color = {r: 0, g: 255, b: 255, a: 255}) {\n
for (let i = -radius; i <= radius; i++) {\n  for (let j = -radius; j <= radius; j++) {\n  if (i !== 0 && j !== 0) {\n
const n = (row + i) * width + (column + j);\n  bytes[4 * n + 0] = color.r;\n  bytes[4 * n + 1] = color.g;\n
bytes[4 * n + 2] = color.b;\n  bytes[4 * n + 3] = color.a;\n  }\n }\n }\n }\n\n function
isSegmentationBoundary(\n  segmentationData: Uint8Array|Int32Array,\n  row: number,\n  column:

```

```

number,\n width: number,\n foregroundIds: number[] = [1],\n radius = 1,\n ): boolean {\n let
numberBackgroundPixels = 0;\n for (let i = -radius; i <= radius; i++) {\n for (let j = -radius; j <= radius; j++)
{\n if (i !== 0 && j !== 0) {\n const n = (row + i) * width + (column + j);\n if
(!foregroundIds.some(id => id === segmentationData[n])) {\n numberBackgroundPixels += 1;\n }\n
}\n }\n return numberBackgroundPixels > 0;\n }\n\n for (let i = 0; i < height; i += 1) {\n for (let j = 0; j
< width; j += 1) {\n const n = i * width + j;\n bytes[4 * n + 0] = background.r;\n bytes[4 * n + 1] =
background.g;\n bytes[4 * n + 2] = background.b;\n bytes[4 * n + 3] = background.a;\n for (let k = 0; k <
multiPersonOrPartSegmentation.length; k++) {\n if (foregroundIds.some(\n id => id ===
multiPersonOrPartSegmentation[k].data[n])) {\n bytes[4 * n] = foreground.r;\n bytes[4 * n + 1] =
foreground.g;\n bytes[4 * n + 2] = foreground.b;\n bytes[4 * n + 3] = foreground.a;\n const
isBoundary = isSegmentationBoundary(\n multiPersonOrPartSegmentation[k].data, i, j, width,\n
foregroundIds);\n if (drawContour && i - 1 >= 0 && i + 1 < height && j - 1 >= 0 &&\n j + 1 < width
&& isBoundary) {\n drawStroke(bytes, i, j, width, 1);\n }\n }\n }\n }\n }\n\n return new
ImageData(bytes, width, height);\n}\n\nconst RAINBOW_PART_COLORS: Array<[number, number, number]> =
[\n [110, 64, 170], [143, 61, 178], [178, 60, 178], [210, 62, 167],\n [238, 67, 149], [255, 78, 125], [255, 94, 99],
[255, 115, 75],\n [255, 140, 56], [239, 167, 47], [217, 194, 49], [194, 219, 64],\n [175, 240, 91], [135, 245, 87],
[96, 247, 96], [64, 243, 115],\n [40, 234, 141], [28, 219, 169], [26, 199, 194], [33, 176, 213],\n [47, 150, 224], [65,
125, 224], [84, 101, 214], [99, 81, 195]];\n\n/**\n * Given the output from person body part segmentation (or
multi-person\n * instance body part segmentation) and an array of colors indexed by part id,\n * generates an image
with the corresponding color for each part at each pixel,\n * and white pixels where there is no part.\n *\n * @param
partSegmentation The output from segmentPersonParts\n * or segmentMultiPersonParts. The former is a
SemanticPartSegmentation\n * object and later is an array of PartSegmentation object.\n *\n * @param partColors A
multi-dimensional array of rgb colors indexed by\n * part id. Must have 24 colors, one for every part.\n *\n *
@return An ImageData with the same width and height of all the element in\n * multiPersonPartSegmentation,
with the corresponding color for each part at\n * each pixel, and black pixels where there is no part.\n */\n\nexport
function toColoredPartMask(\n partSegmentation: SemanticPartSegmentation|PartSegmentation[],\n partColors:
Array<[number, number, number]> =\n RAINBOW_PART_COLORS): ImageData {\n if
(Array.isArray(partSegmentation) && partSegmentation.length === 0) {\n return null;\n }\n\n let
multiPersonPartSegmentation;\n if (!Array.isArray(partSegmentation)) {\n multiPersonPartSegmentation =
[partSegmentation];\n } else {\n multiPersonPartSegmentation = partSegmentation;\n }\n\n const {width, height}
= multiPersonPartSegmentation[0];\n const bytes = new Uint8ClampedArray(width * height * 4);\n\n for (let i = 0;
i < height * width; ++i) {\n // invert mask. Invert the segmentation mask.\n const j = i * 4;\n bytes[j + 0] =
255;\n bytes[j + 1] = 255;\n bytes[j + 2] = 255;\n bytes[j + 3] = 255;\n for (let k = 0; k <
multiPersonPartSegmentation.length; k++) {\n const partId = multiPersonPartSegmentation[k].data[i];\n if
(partId !== -1) {\n const color = partColors[partId];\n if (!color) {\n throw new Error(`No color could
be found for part id ${partId}`);\n }\n bytes[j + 0] = color[0];\n bytes[j + 1] = color[1];\n bytes[j +
2] = color[2];\n bytes[j + 3] = 255;\n }\n }\n }\n\n return new ImageData(bytes, width, height);\n}\n\nconst
CANVAS_NAMES = {\n blurred: 'blurred',\n blurredMask: 'blurred-mask',\n mask: 'mask',\n lowresPartMask:
'lowres-part-mask',\n};\n\n/**\n * Given an image and a maskImage of type ImageData, draws the image with the\n
* mask on top of it onto a canvas.\n *\n * @param canvas The canvas to be drawn onto.\n *\n * @param image The
original image to apply the mask to.\n *\n * @param maskImage An ImageData containing the mask. Ideally this
should be\n * generated by toMask or toColoredPartMask.\n *\n * @param maskOpacity The opacity of the mask
when drawing it on top of the\n * image. Defaults to 0.7. Should be a float between 0 and 1.\n *\n * @param
maskBlurAmount How many pixels to blur the mask by. Defaults to 0.\n * Should be an integer between 0 and 20.\n
*\n * @param flipHorizontal If the result should be flipped horizontally. Defaults\n * to false.\n */\n\nexport function
drawMask(\n canvas: Canvas, image: ImageType, maskImage: ImageData|null,\n maskOpacity = 0.7,\n maskBlurAmount = 0, flipHorizontal = false) {\n const [height, width] = getInputSize(image);\n canvas.width =
width;\n canvas.height = height;\n\n const ctx = canvas.getContext('2d');\n ctx.save();\n if (flipHorizontal) {\n

```

```

flipCanvasHorizontal(canvas);\n }\n\n ctx.drawImage(image, 0, 0);\n\n ctx.globalAlpha = maskOpacity;\n if
(maskImage) {\n  assertSameDimensions({ width, height }, maskImage, 'image', 'mask');\n\n  const mask =
renderImageDataToOffScreenCanvas(maskImage, CANVAS_NAMES.mask);\n\n  const blurredMask =
drawAndBlurImageOnOffScreenCanvas(\n    mask, maskBlurAmount, CANVAS_NAMES.blurredMask);\n\n  ctx.drawImage(blurredMask, 0, 0, width, height);\n }\n ctx.restore();\n}\n\n/**\n * Given an image and a
maskImage of type ImageData, draws the image with the\n * pixelated mask on top of it onto a canvas.\n *\n *
@param canvas The canvas to be drawn onto.\n *\n * @param image The original image to apply the mask to.\n *\n
* @param maskImage An ImageData containing the mask. Ideally this should be\n * generated by
toColoredPartMask.\n *\n * @param maskOpacity The opacity of the mask when drawing it on top of the\n *
image. Defaults to 0.7. Should be a float between 0 and 1.\n *\n * @param maskBlurAmount How many pixels to
blur the mask by. Defaults to 0.\n * Should be an integer between 0 and 20.\n *\n * @param flipHorizontal If the
result should be flipped horizontally. Defaults\n * to false.\n *\n * @param pixelCellWidth The width of each pixel
cell. Default to 10 px.\n */\nexport function drawPixelatedMask(\n  canvas: Canvas, image: ImageType,
maskImage: ImageData,\n  maskOpacity = 0.7, maskBlurAmount = 0, flipHorizontal = false,\n  pixelCellWidth =
10.0) {\n  const [height, width] = getInputSize(image);\n  assertSameDimensions({ width, height }, maskImage,
'image', 'mask');\n\n  const mask = renderImageDataToOffScreenCanvas(maskImage, CANVAS_NAMES.mask);\n\n  const blurredMask = drawAndBlurImageOnOffScreenCanvas(\n    mask, maskBlurAmount,
CANVAS_NAMES.blurredMask);\n\n  canvas.width = blurredMask.width;\n  canvas.height =
blurredMask.height;\n\n  const ctx = canvas.getContext('2d');\n  ctx.save();\n  if (flipHorizontal) {\n
flipCanvasHorizontal(canvas);\n }\n\n  const offscreenCanvas =\n  ensureOffscreenCanvasCreated(CANVAS_NAMES.lowresPartMask);\n  const offscreenCanvasCtx =
offscreenCanvas.getContext('2d');\n  offscreenCanvas.width = blurredMask.width * (1.0 / pixelCellWidth);\n
offscreenCanvas.height = blurredMask.height * (1.0 / pixelCellWidth);\n  offscreenCanvasCtx.drawImage(\n
blurredMask, 0, 0, blurredMask.width, blurredMask.height, 0, 0,\n    offscreenCanvas.width,
offscreenCanvas.height);\n  ctx.imageSmoothingEnabled = false;\n  ctx.drawImage(\n    offscreenCanvas, 0, 0,
offscreenCanvas.width, offscreenCanvas.height, 0,\n    0, canvas.width, canvas.height);\n\n  // Draws vertical grid
lines that are `pixelCellWidth` apart from each other.\n  for (let i = 0; i < offscreenCanvas.width; i++) {\n
ctx.beginPath();\n  ctx.strokeStyle = '#ffffff';\n  ctx.moveTo(pixelCellWidth * i, 0);\n  ctx.lineTo(pixelCellWidth
* i, canvas.height);\n  ctx.stroke();\n }\n\n  // Draws horizontal grid lines that are `pixelCellWidth` apart from
each\n // other.\n  for (let i = 0; i < offscreenCanvas.height; i++) {\n  ctx.beginPath();\n  ctx.strokeStyle =
'#ffffff';\n  ctx.moveTo(0, pixelCellWidth * i);\n  ctx.lineTo(canvas.width, pixelCellWidth * i);\n  ctx.stroke();\n
}\n\n  ctx.globalAlpha = 1.0 - maskOpacity;\n  ctx.drawImage(image, 0, 0, blurredMask.width,
blurredMask.height);\n  ctx.restore();\n}\n\nfunction createPersonMask(\n  multiPersonSegmentation:
PersonSegmentation[]|SemanticPersonSegmentation,\n  edgeBlurAmount: number): Canvas {\n  const
backgroundMaskImage = toMask(\n    multiPersonSegmentation, {r: 0, g: 0, b: 0, a: 255},\n    {r: 0, g: 0, b: 0, a:
0});\n\n  const backgroundMask =\n    renderImageDataToOffScreenCanvas(backgroundMaskImage,
CANVAS_NAMES.mask);\n  if (edgeBlurAmount === 0) {\n    return backgroundMask;\n  } else {\n    return
drawAndBlurImageOnOffScreenCanvas(\n    backgroundMask, edgeBlurAmount,
CANVAS_NAMES.blurredMask);\n  }\n}\n\n/**\n * Given a personSegmentation and an image, draws the image
with its background\n * blurred onto the canvas.\n *\n * @param canvas The canvas to draw the background-blurred
image onto.\n *\n * @param image The image to blur the background of and draw.\n *\n * @param
personSegmentation A SemanticPersonSegmentation or an array of\n * PersonSegmentation object.\n *\n * @param
backgroundBlurAmount How many pixels in the background blend into each\n * other. Defaults to 3. Should be an
integer between 1 and 20.\n *\n * @param edgeBlurAmount How many pixels to blur on the edge between the
person\n * and the background by. Defaults to 3. Should be an integer between 0 and 20.\n *\n * @param
flipHorizontal If the output should be flipped horizontally. Defaults\n * to false.\n */\nexport function
drawBokehEffect(\n  canvas: Canvas, image: ImageType,\n  multiPersonSegmentation:
SemanticPersonSegmentation|PersonSegmentation[],\n  backgroundBlurAmount = 3, edgeBlurAmount = 3,

```

```

flipHorizontal = false) {\n  const blurredImage = drawAndBlurImageOnOffScreenCanvas(\n    image,
backgroundBlurAmount, CANVAS_NAMES.blurred);\n  canvas.width = blurredImage.width;\n  canvas.height =
blurredImage.height;\n\n  const ctx = canvas.getContext('2d');\n\n  if (Array.isArray(multiPersonSegmentation)
&&\n    multiPersonSegmentation.length === 0) {\n    ctx.drawImage(blurredImage, 0, 0);\n    return;\n  }\n\n  const personMask = createPersonMask(multiPersonSegmentation, edgeBlurAmount);\n\n  ctx.save();\n  if
(flipHorizontal) {\n    flipCanvasHorizontal(canvas);\n  }\n  // draw the original image on the final canvas\n  const
[height, width] = getInputSize(image);\n  ctx.drawImage(image, 0, 0, width, height);\n\n  // \"destination-in\" - \"The
existing canvas content is kept where both the\n  // new shape and existing canvas content overlap. Everything else
is made\n  // transparent.\"\n  // crop what's not the person using the mask from the original image\n  drawWithCompositing(ctx, personMask, 'destination-in');\n  // \"destination-over\" - \"The existing canvas content is
kept where both the\n  // new shape and existing canvas content overlap. Everything else is made\n  //
transparent.\"\n  // draw the blurred background on top of the original image where it doesn't\n  // overlap.\n  drawWithCompositing(ctx, blurredImage, 'destination-over');\n  ctx.restore();\n}\n\nfunction
createBodyPartMask(\n  multiPersonPartSegmentation: SemanticPartSegmentation|PartSegmentation[],\n  bodyPartIdsToMask: number[], edgeBlurAmount: number): Canvas {\n  const backgroundMaskImage = toMask(\n    multiPersonPartSegmentation, {r: 0, g: 0, b: 0, a: 0},\n    {r: 0, g: 0, b: 0, a: 255}, true, bodyPartIdsToMask);\n\n  const backgroundMask =\n    renderImageDataToOffScreenCanvas(backgroundMaskImage,
CANVAS_NAMES.mask);\n  if (edgeBlurAmount === 0) {\n    return backgroundMask;\n  } else {\n    return
drawAndBlurImageOnOffScreenCanvas(\n    backgroundMask, edgeBlurAmount,
CANVAS_NAMES.blurredMask);\n  }\n}\n\n/**\n * Given a personSegmentation and an image, draws the image
with its background\n * blurred onto the canvas.\n * @param canvas The canvas to draw the background-blurred
image onto.\n * @param image The image to blur the background of and draw.\n * @param
partSegmentation A SemanticPartSegmentation or an array of\n * PartSegmentation object.\n * @param
bodyPartIdsToBlur Default to [0, 1] (left-face and right-face). An\n * array of body part ids to blur. Each must be
one of the 24 body part ids.\n * @param backgroundBlurAmount How many pixels in the background blend into
each\n * other. Defaults to 3. Should be an integer between 1 and 20.\n * @param edgeBlurAmount How many
pixels to blur on the edge between the person\n * and the background by. Defaults to 3. Should be an integer
between 0 and 20.\n * @param flipHorizontal If the output should be flipped horizontally. Defaults\n * to
false.\n */\nexport function blurBodyPart(\n  canvas: Canvas, image: ImageType,\n  partSegmentation:
SemanticPartSegmentation|PartSegmentation[],\n  bodyPartIdsToBlur = [0, 1], backgroundBlurAmount = 3,
edgeBlurAmount = 3,\n  flipHorizontal = false) {\n  const blurredImage =
drawAndBlurImageOnOffScreenCanvas(\n    image, backgroundBlurAmount, CANVAS_NAMES.blurred);\n\n  canvas.width = blurredImage.width;\n  canvas.height = blurredImage.height;\n\n  const ctx =
canvas.getContext('2d');\n\n  if (Array.isArray(partSegmentation) && partSegmentation.length === 0) {\n    ctx.drawImage(blurredImage, 0, 0);\n    return;\n  }\n\n  const bodyPartMask =\n    createBodyPartMask(partSegmentation, bodyPartIdsToBlur, edgeBlurAmount);\n\n  ctx.save();\n  if (flipHorizontal)
{\n    flipCanvasHorizontal(canvas);\n  }\n  // draw the original image on the final canvas\n  const [height, width] =
getInputSize(image);\n  ctx.drawImage(image, 0, 0, width, height);\n\n  // \"destination-in\" - \"The existing canvas
content is kept where both the\n  // new shape and existing canvas content overlap. Everything else is made\n  //
transparent.\"\n  // crop what's not the person using the mask from the original image\n  drawWithCompositing(ctx,
bodyPartMask, 'destination-in');\n  // \"destination-over\" - \"The existing canvas content is kept where both the\n  //
new shape and existing canvas content overlap. Everything else is made\n  // transparent.\"\n  // draw the blurred
background on top of the original image where it doesn't\n  // overlap.\n  drawWithCompositing(ctx, blurredImage,
'destination-over');\n  ctx.restore();\n}\n\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES

```


OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n *\/\n\n// method copied from bGluR in https://codepen.io/zhaojun/pen/zZmRQe\n\nexport function cpuBlur(\n  canvas: HTMLCanvasElement|OffscreenCanvas,\n  image:\n    HTMLImageElement|HTMLVideoElement|HTMLCanvasElement|OffscreenCanvas,\n  blur: number) {\n  const\n    ctx = canvas.getContext('2d');\n    let sum = 0;\n    const delta = 5;\n    const alphaLeft = 1 / (2 * Math.PI * delta * delta);\n    const step = blur < 3 ? 1 : 2;\n    for (let y = -blur; y <= blur; y += step) {\n      for (let x = -blur; x <= blur; x += step) {\n        const weight =\n          alphaLeft * Math.exp(-(x * x + y * y) / (2 * delta * delta));\n        sum +=\n          weight;\n      }\n    }\n    for (let y = -blur; y <= blur; y += step) {\n      for (let x = -blur; x <= blur; x += step) {\n        ctx.globalAlpha = alphaLeft * Math.exp(-(x * x + y * y) / (2 * delta * delta)) / sum * blur;\n        ctx.drawImage(image, x, y);\n      }\n    }\n    ctx.globalAlpha = 1;\n  }\n\n}, /**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n\n\n=====\n\n *\/\n\n\nexport const PART_CHANNELS: string[] = [\n  'left_face',\n  'right_face',\n  'left_upper_arm_front',\n  'left_upper_arm_back',\n  'right_upper_arm_front',\n  'right_upper_arm_back',\n  'left_lower_arm_front',\n  'left_lower_arm_back',\n  'right_lower_arm_front',\n  'right_lower_arm_back',\n  'left_hand',\n  'right_hand',\n  'torso_front',\n  'torso_back',\n  'left_upper_leg_front',\n  'left_upper_leg_back',\n  'right_upper_leg_front',\n  'right_upper_leg_back',\n  'left_lower_leg_front',\n  'left_lower_leg_back',\n  'right_lower_leg_front',\n  'right_lower_leg_back',\n  'left_feet',\n  'right_feet'\n];\n\n}, /**\n * @license See the LICENSE file.\n */\n\n\n// This code is auto-generated, do not modify this file!\n\nconst version = '2.2.0';\n\nexport\n  { version },\n  "names": [\n    "toFlattenedOneHotPartMap",\n    "partHeatmapScores",\n    "numParts",\n    "shape",\n    "partMapLocation",\n    "s",\n    "tf.argmax",\n    "partMapFlattened",\n    "tf.reshape",\n    "tf.oneHot",\n    "toMaskTensor",\n    "segmentScores",\n    "threshold",\n    "tf.tidy",\n    "tf.cast",\n    "tf.greater",\n    "tf.scalar",\n    "decodePartSegmentation",\n    "segmentationMask",\n    "_a",\n    "partMapHeight",\n    "partMapWidth",\n    "image",\n    "mask",\n    "flattenedMap",\n    "partNumbers",\n    "tf.expandDims",\n    "tf.range",\n    "tf.matmul",\n    "partMap",\n    "partMapShif",\n    "tedUpForClipping",\n    "tf.add",\n    "tf.sub",\n    "tf.mul",\n    "model",\n    "outputStride",\n    "this",\n    "inputShape",\n    "inputs",\n    "tf.util",\n    "assert",\n    "BaseModel",\n    "input",\n    "asFloat",\n    "_this",\n    "preprocessInput",\n    "asBatch",\n    "results3d",\n    "predict",\n    "map",\n    "y",\n    "tf.squeeze",\n    "namedResults",\n    "nameOutputResults",\n    "heatmapScores",\n    "tf.sigmoid",\n    "heatmap",\n    "offsets",\n    "displacementFwd",\n    "displacementBwd",\n    "segmentation",\n    "partHeatmaps",\n    "longOffsets",\n    "partOffsets",\n    "dispose",\n    "__extends",\n    "MobileNet",\n    "tf.div",\n    "results",\n    "PART_NAMES",\n    "NUM_KEYPOINTS",\n    "length",\n    "PART_IDS",\n    "reduce",\n    "result",\n    "jointName",\n    "i",\n    "jointNameA",\n    "jointNameB",\n    "getScale",\n    "_b",\n    "padding",\n    "height",\n    "width",\n    "inputResolutionY",\n    "inputResolutionX",\n    "padT",\n    "padB",\n    "getOffsetPoint",\n    "x",\n    "keypoint",\n    "get",\n    "getImageCoords",\n    "part",\n    "heatmapX",\n    "heatmapY",\n    "clamp",\n    "a",\n    "min",\n    "max",\n    "addVectors",\n    "b",\n    "computeDistance",\n    "embedding",\n    "pose",\n    "minPartScore",\n    "distance",\n    "numKpt",\n    "p",\n    "keypoint",\n    "s",\n    "score",\n    "Math",\n    "position",\n    "Infinity",\n    "getEmbedding",\n    "location",\n    "keypointIndex",\n    "convertToPosition",\n    "outputResolutionX",\n    "refineSteps",\n    "newLocation",\n    "nn",\n    "dy",\n    "dx",\n    "t",\n    "newPos",\n    "nn_1",\n    "matchEmbeddingToInstance",\n    "poses",\n    "numKptForMatching",\n    "_c",\n    "stride",\n    "padL",\n    "scaleX",\n    "scaleY",\n    "embed",\n    "pair",\n    "round",\n    "convertToPositionInOutput",\n    "keypointsIndex",\n    "push",\n    "kMin",\n    "kMinDist",\n    "k",\n    "dist",\n    "getOutputResolution",\n    "decodeMultipleMasksWebGL",\n    "posesAboveScore",\n    "minKptScore",\n    "maxNumPeople",\n    "inHeight",\n    "inWidth",\n    "origHeight",\n    "origWidth",\n    "slice",\n    "outHeight",\n    "outWidth",\n    "shapedLongOffsets",\n    "poseVals",\n    "Float32Array",\n    "fill",\n    "poseOffset",\n    "kp",\n    "offset",\n    "_d",\n    "posesTensor",\n    "tf.tensor",\n    "program",\n    "variableNames",\n    "outputShape",\n    "userCode",\n    "tf.backend",\n    "compileAndRun",\n    "isWebGLBackend",\n    "getBackend",\n    "decodePersonInstanceMasks",\n    "minPoseScore",\n    "minKeypointScore",\n    "filter",\n    "personSegmentations",\n    "masksTensorInfo",\n    "masksTensor",\n    "tf.engine",\n    "makeTensorFromDataId",\n    "dataId",\n    "dtype",\n    "_",\n    "tf.equal",\n    "toPersonKSegmentation",\n    "Promise",\n    "all",\n    "data",\n    "personSegmentationsData",\n    "forEach",\n    "segmentationsData",\n    "longOffse"
```

tsData", "dataArrays", "Uint8Array", "j", "n", "decodeMultipleMasksCPU", "decodePersonInstancePartMasks", "partSegmentation", "partSegmentations", "bodyParts", "toPersonKPartSegmentation", "partSegmentationsByPersonData", "partSegmentaionData", "partSegmentaion", "Int32Array", "decodeMultiplePartMasksCPU", "half", "floor", "maxSize", "getElementValue", "priorityQueue", "Array", "numberOfElements", "MaxHeap", "swim", "exchange", "sink", "less", "getValueAt", "scoreIsMaximumInLocalWindow", "keypointId", "localMaximumRadius", "scores", "localMaximum", "yStart", "yEnd", "yCurrent", "xStart", "xEnd", "xCurrent", "parentChildrenTuples", "parentJoinName", "childJoinName", "parentToChildEdges", "childToParentEdges", "getStridedIndexNearPoint", "point", "traverseToTargetKeypoint", "edgeId", "sourceKeypoint", "targetKeypointId", "scoresBuffer", "displacements", "offsetRefineStep", "displacement", "numEdges", "getDisplacement", "targetKeypoint", "targetKeypointIndices", "offsetPoint", "targetKeypointIndices", "decodePose", "root", "displacementsFwd", "displacementsBwd", "instanceKeypoints", "rootPart", "rootScore", "rootPoint", "id", "edge", "sourceKeypointId", "withinNmsRadiusOfCorrespondingPoint", "squaredNmsRadius", "some", "y1", "x1", "y2", "x2", "correspondingKeypoint", "getInstanceScore", "existingPoses", "kLocalMaximumRadius", "decodeMultiplePoses", "offsetsBuffer", "displacementsFwdBuffer", "displacementsBwdBuffer", "maxPoseDetections", "scoreThreshold", "nmsRadius", "queue", "numKeypoints", "enqueue", "buildPartWithScoreQueue", "empty", "dequeue", "imageNetMean", "ResNet", "RESNET50_BASE_URL", "MOBILENET_BASE_URL", "getInputSize", "HTMLCanvasElement", "OffscreenCanvas", "HTMLImageElement", "offsetHeight", "offsetWidth", "Error", "getSizeFromImageLikeElement", "ImageData", "HTMLVideoElement", "hasAttribute", "videoHeight", "videoWidth", "getSizeFromVideoElement", "tf.Tensor", "toValidInputResolution", "inputResolution", "resolution", "isValidInputResolution", "INTERNAL_RESOLUTION_STRING_OPTIONS", "low", "medium", "high", "full", "INTERNAL_RESOLUTION_PERCENTAGES", "MIN_INTERNAL_RESOLUTION", "MAX_INTERNAL_RESOLUTION", "toInputResolutionHeightAndWidth", "internalResolution", "inputHeight", "inputWidth", "internalResolutionPercentage", "Object", "values", "join", "toInternalResolutionPercentage", "scaleAndCropToInputTensorShape", "tensor", "applySigmoidActivation", "inputTensorHeight", "inputTensorWidth", "resizedAndPaddedHeight", "resizedAndPaddedWidth", "_e", "padR", "inResizedAndPadded", "tf.image", "resizeBilinear", "resizedAndPadded", "originalHeight", "originalWidth", "batchedImage", "cropAndResize", "removePaddingAndResizeBack", "padAndResizeTo", "targetH", "targetW", "targetAspect", "resized", "imageTensor", "tf.browser", "fromPixels", "toInputTensor", "tf.pad3d", "top", "left", "right", "bottom", "toTensorBuffers3D", "tensors", "buffer", "flipPoseHorizontal", "imageWidth", "scaleAndFlipPoses", "flipHorizontal", "inputResolutionHeight", "inputResolutionWidth", "scaledPoses", "offsetY", "offsetX", "scalePose", "scalePoses", "flipPosesHorizontal", "MOBILENET_V1_CONFIG", "architecture", "quantBytes", "multiplier", "VALID_ARCHITECTURE", "VALID_STRIDE", "MobileNetV1", "ResNet50", "VALID_MULTIPLIER", "VALID_QUANT_BYTES", "PERSON_INFERENCE_CONFIG", "segmentationThreshold", "maxDetections", "MULTI_PERSON_INSTANCE_INFERENCE_CONFIG", "validatePersonInferenceConfig", "config", "validateMultiPersonInstanceInferenceConfig", "net", "baseModel", "BodyPix", "segmentLogits", "partHeatmapLogits", "internalResolutionHeightAndWidth", "predictForPersonSegmentation", "resizedHeight", "resizedWidth", "scaledSegmentScores", "segmentPersonActivation", "tensorBuffers", "scoresBuf", "offsetsBuf", "displacementsFwdBuf", "displacementsBwdBuf", "allPoses", "scaledLongOffsets", "predictForMultiPersonInstanceSegmentationAndPart", "heatmapScoresRaw", "offsetsRaw", "displacementFwdRaw", "displacementBwdRaw", "instanceMasks", "predictForPersonSegmentationAndPart", "scaledPartHeatmapScore", "segmentPersonPartsActivation", "scaledPartSegmentationScores", "decodeOnlyPartSegmentation", "loadMobileNet", "tf", "url", "toStr", "1", "0.75", "0.5", "graphJson", "mobileNetSavedModel", "tfconv.loadGraphModel", "modelUrl", "graphModel", "mobilenet", "loadResNet", "resNet50SavedModel", "resnet", "offScreenCanvases", "assertSameDimensions", "nameA", "nameB", "widthA", "heightA", "widthB", "heightB", "flipCanvasHorizontal", "canvas", "ctx", "getContext", "scale", "translate", "drawWithCompositing", "compositeOperation", "globalCompositeOperation", "drawImage", "ensureOffscreenCanvasCreated", "document", "createElement", "createOffscreenCanvas", "drawAndBlurImageOnCanvas", "blurAmount", "clearRect", "save", "test", "navigator", "userAgent", "blur", "sum", "alphaLeft", "PI", "step", "exp", "globalAlpha", "cpuBlur", "restore", "drawAndBlurImageOnOffscreenCanvas", "offscreenCanvasName", "renderImageToCanvas", "renderImageDataToOffscreenCanvas", "canvasName", "putImageData", "renderImageDataToCanvas", "toMask", "personOrPartSegmentation", "foreground", "background", "drawContour", "foregroundIds", "r", "g", "isArray", "multiPersonOrPartSegmentation", "bytes", "Uint8ClampedArray", "drawStroke", "row", "column", "radius", "color", "isSegmentationBoundary", "segmentationData", "numberBa

ckgroundPixels","n_1","isBoundary","RAINBOW_PART_COLORS","CANVAS_NAMES","blurred","blurredMask","lowresPartMask","indexOf","validateModelConfig","bodyPartIdsToBlur","backgroundBlurAmount","edgeBlurAmount","blurredImage","bodyPartMask","multiPersonPartSegmentation","bodyPartIdsToMask","backgroundMask","createBodyPartMask","multiPersonSegmentation","personMask","createPersonMask","maskImage","maskOpacity","maskBlurAmount","pixelCellWidth","offscreenCanvas","offscreenCanvasCtx","imageSmoothingEnabled","beginPath","strokeStyle","moveTo","lineTo","stroke","partColors","partId","resizeW","resizeH","aspect","padHeight","ceil","padWidth","tf.reverse","paddedBy"],"mappings":";;;;;;;;;;;mpEAyBA,SAASA,EAAyBC,GAChC,IAAMC,EAAWD,EAakBE,MAAM,GACnCC,EAAmBC,SAAUJ,EAAmB,GAehDK,EAAmBC,UAAWH,IAAoB,IAExD,OAAOI,SAAUF,EAakBJ,YAoBrBO,EACZC,EAA4BC,GAC9B,OAAOC,OACH,WACI,OAACC,OAAQC,UACLJ,EAAeK,SAAUJ,IAAa,oBAkBPcK,EACZC,EACAhB,GACI,IAAAiB,EAA0CjB,EAakBE,MAA3DgB,OAAC,OAAClB,OACpC,OAAOU,OAAQ,WACb,IA7CkBS,EAAoBC,EA6ChCC,EAAevB,EAAyBC,GACxCuB,EAAC,aAAcC,QAAS,EAAGxB,EAU,EAAG,SAAU,GAe/DI,EACFO,OAAQc,SAAUJ,EAAC,GAA6B,SAE3DI,EAUrB,UAAWD,GAAMBa,EAAeC,IAEvDS,EAA8BC,MAAOF,EAASb,SAAU,EAAG,UAEjE,OAAOgB,OAVDWV,EAwDPQ,EAxD2BP,EAwDiBL,EAvDiDe,MAAOX,EAAOC,IAwDbP,SAAU,EAAG,YC5DvB,iBACE,WACuBkB,EACHC,GADGC,WAAAF,EACHE,kBAAAD,EACiB,IAAME,EACFD,KAakF,MAAMI,OAAO,GAAGiC,MACzBmC,OAAQC,QACgB,IAAnBH,EAAW,KAakC,IAAnBA,EAAW,GACtC,WAAM,MAAA,gBAAGBA,EA AW,QAAOA,EAAW,qCAyE3D,OAjDEI,oBAAA,SAAQC,GAAR,WAUE,OAAO7B,OAAQ,WACb,IAAM8B,EA AUC,EAakC,gBAAGB/B,OAAQ4B,EAAO,YAC9CI,EAAUpB,aAAciB,EAAS,GAejCI,EADUH,EAakV,MAA Mc,QAAQF,GACMG,IAAI,SAAAC,GAak,OAAAC,UAAWD,GAAI,MAC3DE,EAAeR,EAakS,kBAakBN,GA E5C,OACEO,cAAeC,UAAWH,EAAaI,SACvCC,QAASL,EAAaK,QACtBC,gBAAiBN,EAAaM,gBAC9BC,gBAA iBP,EAAaO,gBAC9BC,aAAcR,EAAaQ,aAC3BC,aAAcT,EAAaS,aAC3BC,YAAaV,EAAaU,YAC1BC,YAAaX,E AAaW,gBAqBhCtB,oBAAA,WACEL,KAakF,MAAM8B,8BCzFf,4DA4BA,OA5B+BC,OAC7BC,4BAAA,SAAG BxB,GAEd,OAAO7B,OAAQ,WAAM,OAAmB,MAAOmC,MAAOzB,EAAO,OAAQ,MAGpDwB,8BAAA,SAA kBE,GAWhB,OACEX,QAFaw,KAGAR,aAHAQ,KAIAP,aAJAO,KAKAN,YALAM,KAMAZ,QANAY,KAOAV, gBAPAU,KAQAT,gBARAS,KASAL,YATAK,UAhByB3B,GCAiB4B,GACX,OAAQ,UAAW,WAAY,UAAW,W AAY,eACtD,gBAAiB,YAAa,aAAc,YAAa,aACzD,UAAW,WAAY,WAAY,YAAa,YAAa,cAGIDC,EAAGBD,EA AWE,OAM3BC,EACTH,EAawi,OAAO,SAACC,EAAoBC,EAawC,GAehD,OADAF,EAAOC,GAAaC,EACbF,S AIV,UAAW,iBAakB,YAAa,iBAC1C,YAAa,cAAe,UAAW,aACvC,WAAY,cAAe,WAAY,kBACvC,aAAc,kBAA mB,aAAc,eAC/C,WAAY,cAAe,YAAa,eACxC,eAAgB,kBAAMb,UAAW,aAoBUzB,IACvD,SAAC9B,OAAC0D, OAAyC,OACV,OAAEN,EAASK,GAAaL,EAASM,eC/CzBC,EACZ5D,EACA6D,EACAC,OAFCC,OAAQC,OA CRC,OAAkBC,OAETC,EAA+CL,MAAjCM,EAaiCN,SAG3D,OADeI,GAf4CJ,OAAAA,QAEVE,GADICC,GAA oBE,EAAOC,EAAOL,aAKnCM,EACZtC,EAawuC,EAawC,EAakBjC,GAC1C,OACEP,EAAGO,EAaqkC,IA AIZC,EAAGuC,EAAGC,GACrBD,EAAGhC,EAaqkC,IAAIzC,EAAGuC,EAAGC,EAawpB,aAIpBsB,EACZC,E AAY1D,EAASbS,B,GAC7B,IACDtC,EAASqE,EAD4BK,WAAAA,WAAAA,KACiBpC,GAARDP,MAAGuC,MA CV,OACEA,EAAGI,EAakC,SAAW3D,EAAesD,EAC1cVc,EAAG2C,EAake,SAAW5D,EAAee,YActB8C,EA AMC,EAawC,EAAaC,GAC5C,OAAIF,EAaic,EACCA,EAELD,EAaIE,EACCA,EAeff,WAUOG,EAawH,EA AaI,GACtC,OAAQZ,EAAGQ,EAaER,EAaiY,EAaeZ,EAAGvC,EAAG+C,EAae/C,EAaiM,D,EAaEnD,GCjDnC, SAASoD,EAAGBC,EAAMBC,EAAYC,gBAAAA,MAGtD,IAFA,IAAIC,EAaw,EACXC,EAAS,EACJC,EAai,E AAGA,EAAIL,EAauhC,OAAQqC,IAChCJ,EAakK,UAAUD,GAAGE,MAAQL,IAC5BE,GAU,EAACVD,GAA YK,SAACR,EAauK,GAAGnB,EAaiE,EAakK,UAAUD,GAAGI,SAASvB,EAAM,GAC3DsB,SAACR,EAauK, GAAG1D,EAaiS,D,EAakK,UAAUD,GAAGI,SAAS9D,EAAM,IAQ3D,OALe,IAAXyD,EACFD,EAawO,EA AaA,EAEXP,GAASBC,EAEjBD,EAWT,SAASQ,EACLc,EAAGBC,EACbC,EAayCC,EACzCxD,EAa2ByD,EAC3 BpG,GAQF,QARG+D,OAAQC,OACLqC,EAACh,EAakBF,GAehCM,EAakD,EAAYtE,EAaiOE,EAaoBE,EA AY/B,EACvDiC,EAak5D,EAAYQ,GAaiB,EAaiM,D,GAAML,GAC5CO,EAak7D,EAAYQ,GAaiB,EAaiM,D, EAak,GAakL,GAChDIE,EAaiE,EAASjE,EAaiwE,EACjBjC,EAai0B,EAAS1B,EAaiK,C,EACZC,EAai,EA AGA,EAAIL,EAaAK,IAAK,CACpC1E,EAai6D,KAakB,IAAIhD,EAAGgC,EAAS,GAezB,IAAM2C,EAASR,GA AmB5B,EADICA,EAaisB,KAakB,IAAIT,EAAGN,EAaq,GACajC,MAC/B4E,EAakD,EAao3E,EAaiOE,EA Aobo,EAaoPc,EAGjDvC,GAFAwE,EAak5D,EAAYQ,GAaiB,EAaiwD,GAAMV,GAG5C3B,GAFAkC,EAak7

D,EAAYQ,GAAiB,EAAIwD,EAAK,GAACKV,GAKID,OAAQ3B,IAAGvC,KAGb,SAAS6E,EACLZ,EAAgBrD,E
AA2BkE,EAC3CC,EAA2B9G,EAC3B6D,EAAoCsC,EACpCY,EAAMCC,EACnCZ,GAKF,QAR8BjC,OAAM8C,
OACjCC,OAAQC,OACRpD,OAAQC,OAELoD,KACAIB,EAAoB,SAACmB,GACvB,OA1CN,SACIxB,EAAgB7
F,EACHB6D,EAAoCmD,OADnB7C,OAAM8C,OACtBC,OAAQC,OACLpF,EAAI6D,KAAK0B,QAAQnD,EAAO
0B,EAAS9D,EAAI,GAAOoF,EAAS,GAAOH,GAEIE,OAAQ1C,EADeSb,KAAK0B,QAAQL,EAAOpB,EAASvB
,EAAI,GAAO4C,EAAS,GAAOF,GACvDjF,KAqCPwF,CAAyBF,GAAOID,EAAM8C,IAAQC,EAAQC,GAASH,I
AE1DQ,EAAiB,EAAGA,EAAiBV,EACzCU,IAAkB,CACrB,IAAMpC,EAAYW,EACdC,EAAUwB,EAAgBtB,EA
AmBC,EAC7CxD,EAAayD,GAAcrC,EAAQC,IAEvCoD,EAAMK,KAAKrc,GAKb,IAFA,IAAIsC,GAAQ,EACR
C,EAAW7B,EAAAA,EACN8B,EAAI,EAAGA,EAAIf,EAAMzD,OAAQwE,IAAK,CACrC,IAAMC,EAAO1C,EA
AgBiC,EAAOP,EAAMe,IACtCC,EAAOF,IACtD,EAAOE,EACPD,EAWE,GAGf,OAAOH,EAGT,SAASI,EAC
L9H,EACAgh,OADC/C,OAakBC,OAIrB,OAF0B0B,KAAK0B,OAAOpD,EAAMb,GAAO8C,EAAS,GAC/CpB,
KAAK0B,OAAOrD,EAAMb,GAAO+C,EAAS,aC1F3De,EACztF,EAA2BE,EAC3BqF,EAAyBjE,EAAgBC,EAA
egD,EACxDhH,EAAuC8D,EACvCsC,EAAqB6B,EACrBC,GAAf,QAfGC,OAAUC,OAIPvE,EAA0BpB,EAAxD,
MAAtCoJ,OAAYC,OAEBvB,EAAwBpE,EAAY1D,MAAMsJ,MAAM,EAAG,GAAIDC,OAAWC,OAEEZC,EACFr
J,UAAWsD,GAAc6F,EAAWC,EAAU,EAAGtF,IAK/CwF,EAAW,IAAIC,aAAaV,EAAe/E,EAAgB,GAAG0F,KA
AK,GACHepF,EAAI,EAAGA,EAAIuE,EAAGB5E,OAAQK,IAG1C,IAFA,IAAMqF,EAAarF,EAAIN,EAAgB,EA
CjCkC,EAAO2C,EAAgBvE,GACpBsF,EAAK,EAAGA,EAAK5F,EAAe4F,IAAM,CACzC,IAAMxE,EAAWc,EA
AKK,UAAUqD,GAC1BC,EAASF,EAakB,EAALC,EAC5BJ,EAASK,GAAUzE,EAASoB,MAC5BgD,EAASK,E
AAS,GAAKzE,EAASsB,SAAS9D,EACzC4G,EAASK,EAAS,GAAKzE,EAASsB,SAASvB,EAIvC,IAAA2E,EAC
FrF,GAAUG,EAAQC,IAASmE,EAAUC,GAAUte,GAD5CoD,OAAQC,OAGT+B,EAAC,SAAUR,GAAWT,EA
Ac/E,EAAe,IAE1DgB,EAAoBL,MAARmD,EAAQnD,OAElBsF,GACJC,eAAGb,eAAGb,cAAe,SAC/CC,aAAcJB
,EAAYC,GAC1BiB,SAAU.gyCAsCDpF,OAASgD,OAAWH,4EAepBC,OAASC,OAAWF,6FAILkB,qGAGE/E,+
PAOEiD,8DACgBrC,EAAS,2DACTC,EAAQ,oGAG9BG,OAASgD,OAAWH,+FAepBC,OAASC,OAAWF,0XAY
lBiB,mfAqB1B,OADqBuB,YACDC,cAchBL,GAAU3G,EAACiG,EAAMbQ,ICxHjD,SAASQ,IACP,MAAwB,UA
AjBC,wBAGaC,EACIBnH,EAA2BE,EAA0BkE,EACrD9C,EAAgBC,EAAegD,EAC/BhH,EAAuC8D,EAAkB+F,E
ACzDzD,EAAiB0D,EACjB5B,OAFCC,OAAUC,2BAA8CyB,mBACzDzD,kBAAiB0D,mBACjB5B,4GAEIF,EAA
kBnB,EAAMkD,OAAO,SAAA1E,GAAQ,OAAAA,EAAMK,OAASke,IAIvDH,KACIM,EAASbtk,OAAQ,WACI
C,IAAMuK,EAakBIC,EACpBtF,EAACe,EAAaqF,EAAiBjE,EAAQC,EAAOgD,GAC1DmB,EAAUC,GAAUte,E
AASsC,EAAa0D,EAC3C5B,GACEgC,EAAC,WAAyC,qBAC5BH,EAAgBI,OAAQJ,EAAgBhL,MACxCgL,EA
AgBK,OAEPB,OAAOtC,EAAgBIG,IACnB,SAACyI,EAAG3C,GAAM,gBAvChBnF,EAA2BmF,GAC7B,OAAOII
,OACH,WAAM,OAACC,OAAQ6K,QACX/H,EAAC5C,SAAU+H,IAAK,WAoCnB6C,CAASBP,EAAatC,UAIx8C
C,QAAQC,IAAIX,EAAoBII,IAAI,SAAA1B,GAAQ,OAAAA,EAAMkK,gCAD5DC,EACKhH,SAGLmG,EAAoB
c,QAAQ,SAAAxG,GAAK,OAAAA,EAEEzB,yBAET,SAAMJ,EAAamI,eACrB,OADIBG,EAAoBIH,YACIIB,EA
AYiI,eAaPcI,EAakBnH,SAExBgH,WF0CapI,EAA0BE,EAC1BqF,EAAyBjE,EAAgBC,EAAegD,EACxDhH,EA
AuC8D,EACvCsC,EAAqBU,OADpBqB,OAAUC,oBACUtB,KAUvB,IATA,IAAMmE,EACfjD,EAAgBIG,IAAI,S
AAAwC,GAAK,OAAA,IAAI4G,WAAWnH,EAASC,GAAO6E,KAAK,KAERd1E,EAAoBL,MAARmD,EAAQnD
,OAE1BD,EACFD,GAAUG,EAAQC,IAASmE,EAAUC,GAAUte,GAD5CoD,OAAQC,OAERhB,EACL2B,GAAq
BK,EAAUC,GAAUpB,MACICvD,EAAI,EAAGA,EAAM,EAAQN,GAAK,EAC/B,IAAK,IAAI0H,EAAI,EAAGA
,EAAInH,EAAOmH,GAAK,EAAG,CACjC,IAAMC,EAAI3H,EAAIO,EAAQmH,EAETb,GAAa,IADA1I,EAAa2I,
GACV,CACd,IAAM1D,EAAOd,GACrC,EAAG6G,EAAGpJ,EAAG0B,GAAId,EAAaqF,EAAiBIB,GAC3C3C,E
AAM8C,IAAQC,EAAQC,GAAShB,GAAoBpC,EAAQC,GAC5DgD,EAAQZ,GACRsB,GAAQ,IACVuD,EAAWv
D,GAAM0D,GAAK,IAM9B,OAAOH,EEvEqBI,CACtBN,EAAMBC,EAAiBhD,EAAiBjE,EAAQC,EAC7DgD,GA
ASmB,EAAUC,GAAUte,EAASsC,oBAG5C,SAAOyE,EAAwB/I,IAC3B,SAAC8I,EAAMnH,GAAM,OAAEmH,
OAAMvF,KAAM2C,EAAgBvE,GAAIO,QAAOD,2BAGtCuH,EACIB7I,EAA2BE,EAC3B4I,EAA+B1E,EAAe9C,
EAAgBC,EAC9DgD,EAAgBhH,EAAuC8D,EACvD+F,EAAoBzD,EAAiB0D,EACrC5B,OAFiBC,OAAUC,2BAC
3ByB,mBAAoBzD,kBAAiB0D,mBACrC5B,8GACIF,EAakBnB,EAAMkD,OAAO,SAAA1E,GAAQ,OAAAA,EA
AMK,OAASke,IAIvDH,KACI8B,EAAoB9L,OAAQ,WACH,IAAMuK,EAakBIC,EACpBtF,EAACe,EAAaqF,E
AAiBjE,EAAQC,EAAOgD,GAC1DmB,EAAUC,GAAUte,EAASsC,EAAa0D,EAC3C5B,GACEgC,EAAC,WAA

YC,qBAC9BH,EAAgBI,OAAQJ,EAAgBhL,MACxCgL,EAAgBK,OAEIB,OAAOtC,EAAgBIG,IACnB,SAACyI,E
AAG3C,GACA,gBA3EVnF,EAA2BgJ,EAAB7D,GACrD,OAAOII,OACH,WAAM,OAAAmB,MAAOC,MAAO
nB,OAAQ6K,QACxB/H,EAAC5C,SAAU+H,IAAK,SAAUhH,MAAO6K,EAAB,IAAK,KAWE1DC,CAA0BxB,E
AAaqB,EAAB3D,UAIxD8C,QAAQC,IAAIa,EAAB1J,IAAI,SAAAwC,GAAC,OAAAA,EAASg,GCADpDe,E
ACK9H,SAGL2H,EAABV,QAAQ,SAAAxG,GAAC,OAAAA,EAASzB,yBAEP,SAAMJ,EAAAmI,eACrB,OADI
BG,EAAoBIH,YACIIB,EAAyiI,eACd,OADtBI,EAABnH,YACU0H,EAAiBX,eAA7CgB,EAASB/H,SAE5B8H,
WF+BAIJ,EAA0BE,EAC1BkJ,EAA6B7D,EAAyBjE,EACtDC,EAAegD,EAAgBhH,EAC/B8D,EAABsC,EACIB
U,OAFgCqB,OAAUC,oBAE1CtB,KAWF,IAVA,IAAMmE,EACFjD,EAAgBIG,IAAI,SAAAwC,GAAC,OAAA,I
AAIwH,WAAB/H,EAASC,GAAO6E,MAAM,KAETD1E,EAAoBL,MAARmD,EAAQnD,OAE1BD,EACFD,GAA
UG,EAAQC,IAASmE,EAAUC,GAAUtE,GAD5CoD,OAAQC,OAERhB,EACL2B,GAAqBK,EAAUC,GAAUpB,
MAEICvD,EAAI,EAAGA,EAAIM,EAAQN,GAAC,EAC/B,IAAK,IAAI0H,EAAI,EAAGA,EAAInH,EAAOmH,G
AAK,EAAG,CACjC,IAAMC,EAAI3H,EAAIO,EAAQmH,EAETB,GAAa,IADA1I,EAAa2I,GACV,CACd,IAAM1
D,EAAOd,GACRtC,EAAG6G,EAAGpJ,EAAG0B,GAAId,EAAaqF,EAAiBIB,GAC3C3C,EAAM8C,IAAQC,EA
QC,GAAShB,GAAoBpC,EAAQC,GAC5DgD,EAAQZ,GACRsB,GAAQ,IACVuD,EAABwD,GAAM0D,GAACKS,
EAAGBT,KAM9C,OAAOH,EE9D2Bc,CAC5BhB,EAAMBC,EAAiBY,EACpC5D,EAAiBjE,EAAQC,EAAOgD,G
AASmB,EAAUC,GAAUtE,EAC7DsC,oBAGN,SAAOuF,EAA8B7J,IACjC,SAAC8I,EAAMhD,GAAM,OAAEvC,
KAAM2C,EAAgBJ,GAAIgD,OAAM7G,SAAQC,iBC5G7D,SAASgI,EAAPe,GACZ,OAAOhC,KAAPqG,MAA
MrE,EAAI,GAGxB,iBAKE,WAAYsE,EAAiBC,GAC3BIL,KAAPmL,cAAB,IAAIC,MAAMH,GAC/BjL,KAAP
qL,kBAABoB,EACzBrL,KAAPkL,gBAABBA,EAKE3B,OA/DSI,oBAAP,SAAEjI,GACbrD,KAAPmL,gBAABnL,
KAAPqL,kBAABoBhI,EAC9CrD,KAAPuL,KAAPvL,KAAPqL,mBAGVC,oBAAP,WACE,IAAMvH,EAAM/D,K
AAPmL,cAAc,GAI/B,OAHAAnL,KAAPwL,SAAS,EAAGxL,KAAPqL,oBACtBrL,KAAPyL,KAAP,GACVzL,K
AAPmL,cAAcnL,KAAPqL,iBAABmB,GAAC,KACzCtH,GAGFuH,kBAAP,WACE,OAAc,IAA3BtL,KAAPqL,k
BAGPC,iBAAP,WACE,OAAOtL,KAAPqL,iBAABmB,GAG1BC,gBAAP,WACE,OAAOtL,KAAPmL,cAAc7D,M
AAM,EAAGtH,KAAPqL,iBAABmB,IAGtDC,gBAAP,WACE,OAAOtL,KAAPmL,cAAc,IAGPBG,iBAAR,SAaA3
E,GACX,KAAOA,EAAI,GAAC3G,KAAP0L,KAAPX,EAAPe,GAAIA,IACjC3G,KAAPwL,SAAS7E,EAAGo
E,EAAPe,IACtBA,EAAIoE,EAAPe,IAIL2E,iBAAR,SAaA3E,GACX,KAAO,EAAIA,GAAC3G,KAAPqL,kB
AAPB,CACrC,IAAIInB,EAAI,EAAIvD,EAIZ,GAHIuD,EAAIK,KAAPqL,kBAABoBrL,KAAP0L,KAAPxB,EA
GA,EAAI,IACHDA,KAEGIK,KAAP0L,KAAP/E,EAAGuD,GACHB,MAEFIK,KAAPwL,SAAS7E,EAAGuD,GA
CjBvD,EAAIuD,IAIAoB,uBAAR,SAAM9I,GACjB,OAAOxC,KAAPkL,gBAABgBIL,KAAPmL,cAAc3I,KAGzC
8I,iBAAR,SAaA9I,EAAB0H,GACtB,OAAOIK,KAAP2L,WAABnJ,GAACxC,KAAP2L,WAABzB,IAGtCoB,q
BAAR,SAAi9I,EAAB0H,GAC1B,IAAM1E,EAAIxH,KAAPmL,cAAc3I,GAC7BxC,KAAPmL,cAAc3I,GAACx
C,KAAPmL,cAAcB,GAC3CIK,KAAPmL,cAAcB,GAAC1E,QC3E5B,SAASoG,EACLc,EAAoBnH,EAAsf,EA
APBD,EACrDoI,EAA4BC,GAM9B,IALM,IAAAhN,EAABgN,EAAO/N,MAAB8E,OAAQC,OAEXiJ,GAAsE,
ACbC,EAAShH,KAAPZ,IAAIJ,EAABmI,EAAoB,GACjDI,EAAOVH,KAAPb,IAAIH,EAABmI,EAAPB,EAAGH
J,GACHdQJ,EAABWF,EAAPQE,EAABWD,IAAQC,EAABU,CAGvD,IAFA,IAAMC,EAASzH,KAAPZ,IAAIL,EAAB
oI,EAAoB,GACjDO,EAAO1H,KAAPb,IAAIJ,EAABoI,EAAPB,EAAG/I,GACHDuJ,EAABWF,EAAPQE,EAABWD,I
AAQC,EAC7C,GAAIP,EAAOxI,IAAI4I,EAABUG,EAABUT,GAAcnH,EAAO,CACtDsH,GAAsE,EACf,MAGJ,IAAP
A,EACH,MAIJ,OAAOA,ECpBT,IAAMO,IPgCH,OAAQ,YAAa,UAAW,YAAa,OAAQ,aACrD,WAAY,aAAc,OA
AQ,iBACIC,eAAB,cAAe,YAAa,cAC5C,eAAB,YAAa,UAAW,aACxC,WAAY,cAAe,OAAQ,kBACnC,gBAABiB
,eAAB,aAAc,eAC/C,gBAABiB,aAAc,WAAY,cAC3C,YAAa,eOvCuC1L,IACnD,SAAC9B,OAACyN,OAAgBC,O
ACd,OAAErK,EAASoK,GAAiBpK,EAASqK,MAEvCC,EACFH,EAABqBIL,IAAI,SAAC9B,GAAqB,cAE7C4N,E
ACFJ,EAABqBIL,IAAI,SAAC9B,GAEK,cAWnC,SAAS6N,EACLc,EAAiB9M,EAASB+C,EACvCC,GACF,OACE
jC,EAAG8C,EAAMe,KAAP0B,MAAMwG,EAAM/L,EAAIf,GAAsE,EAAG+C,EAAS,GACzDO,EAAGO,EAAMe
,KAAP0B,MAAMwG,EAAMxJ,EAAItD,GAAsE,EAAGgD,EAAGQ,IAW5D,SAAS+J,EACLc,EAABgBC,EAAB0C,
EAC1CC,EAAB7L,EAABtB,EACvDoN,EAAB+BC,gBAAAA,KAYjC,IAXM,IAAArO,EAABmO,EAAlP,MA
A9B8E,OAAQC,OAMTsK,EAnCR,SACIN,EAABF,EAABiBM,GACnC,IAAMG,EAABWH,EAABnP,MAAM,GA
K,EAC1C,OACE8C,EAAGqM,EAAC5J,IAAIj,EAAM/L,EAAG+L,EAAMxJ,EAAG0J,GACvC1J,EAAG8J,EA
c5J,IAAIj,EAAM/L,EAAG+L,EAAMxJ,EAAGiK,EAABWP,IA+BhDQ,CAABR,EAJUJ,EAC1BI,EAAPeI,SA

U7E,EAAC+C,EEAQC,GAGAoK,GAG/CK,EADmBxJ,EAAGwJ,EAepI,SAAUyI,GAElD7K,EAAl,EAAGA,EA
AI4K,EAakB5K,IAAK,CACzC,IAAMiL,EACFb,EAAYBY,EAAGBzN,EAAC+C,EEAQC,GAEl7D2K,EAActK,E
AChBqK,EAAsB3M,EAAG2M,EAAsBpK,EAAG4J,EACID5L,GAElmM,EAaiBxJ,GAEXX,EAAGoK,EAAsBp
K,EAAlD,EAC7Be,EAAG2M,EAAsB3M,EAAlf,IAE9BsD,EAAGqK,EAAYrK,EAAGvC,EAAG4M,EAAY5M,I
AExC,IAAM6M,EACFf,EAAYBY,EAAGBzN,EAAC+C,EEAQC,GAC7D2B,EAQwI,EAa3J,IACvBoK,EAAsB
7M,EAAG6M,EAAsBtK,EAAG4J,GAElD,OAAQrI,SAAU4I,EAAGB/J,KAAMxB,EAAGwL,GAAMbvI,kBASxD
kJ,EACZC,EAaqB9B,EAawB1K,EAC7CtB,EAAsB+N,EACtBC,GACF,IAAMhQ,EAAGwO,EAaO/N,MAAM,
GACxBsP,EAAGWZ,EAAMbvK,OAE9B6L,EAAGC,IAAI5C,MAAMrN,GAEnCkQ,EAa8BJ,OAAbK,EAaL,QA
CrCM,EAAY3K,EAAYeK,EAAlUO,EAACsB,GAEd2D2M,EAakBC,EAASG,KACzB1J,MAAOwJ,EACPzK,KAA
MxB,EAAGwM,EAASG,IAC1BxJ,SAAUuJ,GAKZ,IAAK,IAAIE,EAaOf,EAAGW,EAAGe,GAAQ,IAAKA,EAAM
,CAC/C,IAAMC,EAAMB5B,EAAMB2B,GACtCpB,EAAMBN,EAAMB0B,GACxCL,EAakBM,KACjBN,EAakB
f,KACrBe,EAakBf,GAAoBH,EACICuB,EAAML,EAakBM,GAAMBrB,EAakBIB,EAC7D1K,EAAStB,EAacgO,
IAM/B,IAASM,EAaO,EAAGA,EAaOf,IAAYe,EAAM,CACpCC,EAAMB3B,EAAMB0B,GACtCpB,EAAMBP,E
AAMB2B,GACxCL,EAakBM,KACjBN,EAakBf,KACrBe,EAakBf,GAAoBH,EACICuB,EAAML,EAakBM,GA
AMBrB,EAakBIB,EAC7D1K,EAAStB,EAAC+N,IAI/B,OAAOE,EC7HT,SAASO,EACL3I,EAae4I,EAa0BzP,EA
CzC8M,OAD0CxI,MAAGvC,MAE/C,OAAO8E,EAAM6I,KAak,SAAC1P,OP2CjB2P,EAAYC,EAAYC,EAAYC
,EACChvJ,EACAC,EO5CEuJ,cAAkCjD,GAAYjH,SACpD,OPyCA8J,EOxCW5N,EPwCC6N,EOxCEtL,EPwCUu
L,EOxCPE,EAAsBhO,EPwCH+N,EOxCMC,EAAsBzL,GPyC5DiC,EAakSj,EAakf,GAElpJ,GADNC,EAakSj,
EAakf,GACMpJ,GO1ChBiJ,IAQR,SAASO,EACL,EAauBR,EACvBR,GAUF,OATkCA,EAakB3L,OACHD,S
AACC,EAQvD,EAAMB8M,OAAIBjH,AAUF,UAKIB,OAJK6J,EACGS,EAaeR,EAakB5J,EAAluH,KACjDvJ
,GAAUoC,GAELpC,GACN,GAE+BOL,EAakB7L,OAM1D,IAAM8M,EAAsB,WAYDZC,EACZHC,EAa8BiC,EA
C9BC,EACAC,EAawCtP,EACxCuP,EAa2BC,EAAsBC,gBAAtBD,mBAAsBC,MAUnD,IATA,IAAM5J,KAEA6
J,WFPeJF,EAawBzD,EACxBC,GAMF,IALM,IAAAhN,EAAGCgN,EAaO/N,MAAtC8E,OAAQC,OAAO2M,OA
EhBD,EAAG,IAAlnE,EACdxI,EAASC,EAAG2M,EAAC,SAAC3Q,GAAY,iBAEvC4E,EAAGW,EAAGA,EAAWb,I
AAUa,EAC1C,IAAK,IAAlD,EAAGW,EAAGA,EAAGW,IAASW,EACzC,IAAK,IAAlmI,EAaA,EAAGA,EAa6D,
IAAGB7D,EAAY,CACH,E,IAAMnH,EAAGqH,EAaOxI,IAAlI,EAAlUD,EAAlUmI,GAIZCnH,EAAG6K,GAKR3D,
EACIC,EAAYnH,EAaOf,EAAlUD,EAAlUoI,EACvCC,IACN0D,EAAME,SAASjL,QAAOjB,MAAOE,WAAUD,
WAAU0K,GAAlvC,KAM7D,OAAO4D,EEwCOG,CACVL,EAAGBN,EAaqB/B,GAEnCsB,EAAMBgB,EAAYA,
EAl9B5J,EAAMzD,OAASmN,IAAsBG,EAAMI,SAAS,CAEzD,IAAMhC,EAaO4B,EAAMK,UAlOnB,IAAlvB,E
ACI3I,EAaO4I,EAfXhL,EAaeqK,EAakpK,KAAM1D,EAacoP,GAEMtB,EAakpK,KAak2K,IAD5D,CAMA,I
AAM3J,EAAYmJ,EACdC,EAAMX,EAACiC,EAepP,EAacqP,EACjDC,GAEE3K,EAAGqK,EAAlBnJ,EAaO4I,
EAakB/J,GAExDmB,EAAMY,MAAM/B,YAAWC,WAGzB,OAAOkB,ECIIT,MAAMmK,IAAlB,QAAS,OAAS,s
BAEzC,4DA2BA,OA3B4BIO,OAC1BmO,4BAAA,SAAGB1P,GACd,OAAOX,MAAOW,EAaOyP,IAGvBC,8BA
AA,SAakBhO,GAEd,IAAAT,EAQAS,KAPAV,EAoAU,KANAZ,EAMAY,KALAN,EAKAM,KAJAX,EAIAW,K
AHAP,EAGAO,KACF,OACEX,UACAG,aAHAQ,KAIAP,eACAC,cACAN,UACAE,kBACAC,kBACAI,YATAK,
UafsB3B,GCNtB4P,EACF,OEACEC,EACF,oFC6BYC,EAaA7P,GAC3B,GAAoC,uCAC/BA,aAAiB8P,mBACY,q
CAC1B9P,aAAiB+P,iBACU,sCAC9B/P,aAAiBgQ,iBACpB,OAhCJ,SAAGChQ,GAGnC,GAAl,iBAakBA,GAAG
C,IAAvBA,EAAMiQ,cAC9B,gBAAlBjQ,GAA+B,IAAtBA,EAAMkQ,YACrC,OAAQIQ,EAAMiQ,aAAcjQ,EA
MkQ,aAC7B,GAAoB,MAAhBIQ,EAAMwC,QAAiC,MAAfxC,EAAMyC,MACvC,OAAQzC,EAAMwC,OAAQx
C,EAAMyC,OAESB,MAAM,IAAl0N,MACN,+DAsBGC,CAA4BpQ,GAC9B,GAA2B,+BAAeA,aAAiBqQ,UACH
E,OAAQRQ,EAAMwC,OAAQxC,EAAMyC,OACvB,GAC2B,sCAC9BzC,aAAiBsQ,iBACnB,OAxBJ,SAAlCtQ,G
AC/B,OAAIA,EAAMuQ,aAAa,WAAAVQ,EAAMuQ,aAAa,UAl7CvQ,EAAMwC,OAAQxC,EAAMyC,QAEPzC,
EAAMwQ,YAAaxQ,EAAMyQ,YAlB1BC,CAAwB1Q,GAC1B,GAAlA,aAAiB2Q,SAC1B,OAAQ3Q,EAAMtC,M
AAM,GAAlS,EAAMtC,MAAM,IAEpC,MAAM,IAAlYs,MAAM,8BAA8BnQ,gBASIC4Q,EACZC,EAAYBpR,G
AC3B,OAPF,SACIqR,EAaOBrR,GACtB,OAAQqR,EAaA,GAakrR,GAAlB,EAkvCsR,CAAuBF,EAAlBpR,GAC
nCoR,EAGFxM,KAakqG,MAAMmG,EAakBpR,GAAGBA,EAae,EAGrE,IAAMuR,GACJC,IAAK,MACLC,OA
AQ,SACRC,KAAM,OACNC,KAAM,QAGFC,UACHL,EAAMCC,KAAM,IAC1CxS,EAACuS,EAAMCE,QAAS,
GAC7CzS,EAACuS,EAAMCG,MAAO,IAC3C1S,EAACuS,EAAMCI,MAAO,KAGvCE,EAa0B,GAC1BC,EAa0

B,WA2BhBC,EACZC,EACAhS,EACAhB,OAACiT,OAAaC,OACVC,EA7BR,SACIH,GACF,GAaKc,iBAAvBA,EAaiC,CAC1C,IAAMzP,EAASqP,EAAGCI,GAO/C,OALA5R,OAAQC,OACc,iBAAXkC,EACP,WAAM,MAAA,kDACF6P,OAAOC,OAAOd,GACTe,KAAK,iBAAGBN,QAC3BzP,EAWP,OATAnC,OAAQC,OAC0B,iBAAvB2R,GACHA,GAAsBF,GACtBE,GAAsBH,EAC1B,WACI,MAAA,sDACIA,UAA+BC,eAC5BE,IAERA,EASLO,CAA+BP,GAEnC,OACEb,EACIc,EAACe,EAA8BnS,GACHDmR,EACIe,EAAaC,EAA8BnS,aAmEnCwS,GACZC,EACAZT,EACA6D,EACAkD,EACA2M,OAHCc,OAAMBC,OACnBC,OAaWBC,OACxB7K,OAAC9E,OAAMC,OAAO2P,OAAC9M,OAAM+M,OAExB,oBADEN,MACKhU,OAAQ,WACb,IAAIuU,EAakCC,QAASC,eAAeV,GACzDI,EAaWBC,IAAwB,GAMrD,OAIIJ,IACFO,EAaqB7R,UAAW6R,aAUICG,EACApU,EACA6D,OADCwQ,OAAGBC,OACHBvN,OAAC5C,OAAMC,OAAO6E,OAACHc,OAAM+M,OAExB,OAaOtU,OAAQ,WACb,IAAM6U,EAA4BhU,aAAc6T,GACHD,OAAOpS,UAAWkS,QACbM,cACGD,IACEpQ,GAAQkQ,EAaiBIQ,EAaOC,EAaO,GACvC6C,GAAQqN,EAAGBrN,EAaO+M,EAaO,IACrC7P,EAaOkQ,EAaiB,IACpBA,EAaiBIQ,EAaOC,EAaO,IACnC6C,EAaOqN,EAAGb,IAAQa,EAAGBrN,EAaO+M,EAaO,MAE/D,IAAKK,EAAGBC,KAAKB,MAtBzCG,CACHR,GAAqBN,EAAMBC,KACtCzP,EAAMC,IAAQ6C,EAAM+M,gBAkCdU,GACZnT,EAaqBvB,OAAC2U,OAASC,OAe3B/Q,EAakBuN,EAaA7P,GAA9BwC,OAAQC,OACT6Q,EAaEd,EAaUD,EAe3B5N,GAaA4B,EAAG,EAAG,EAAG,GAAPc5C,OAAMC,OAAM6C,OAAM+M,OASBvB,OAaBehQ,EAaQD,EAeV8Q,GAEX1Q,EAaO,EACPC,EAaO,EACp6C,EAaOrB,KAAK0B,MAAM,IAAOuN,EAaE9Q,EAASC,IACjdGQ,EAaOpO,KAAK0B,MAAM,IAAOuN,EAaE9Q,EAASC,MAGjdG,EAaOyB,KAAK0B,MAAM,IAAQ,EAAMuN,EAAGb7Q,EAaQD,IACxDK,EAaOwB,KAAK0B,MAAM,IAAQ,EAAMuN,EAAGb7Q,EAaQD,IACxDkD,EAaO,EACP+M,EAaO,IAUDc,QAPqBpV,OAAQ,WACnC,IAAIqV,WAvIsBxT,GAG5B,OAaOA,aAAiB2Q,SAAY3Q,EAaQyT,UAAWC,WAAW1T,GAoI9C2T,CAAc3T,GAGhC,OAFAwT,EAaCI,QAASJ,IAaE5Q,EAAMC,IAAQ6C,EAAM+M,IAAQ,EAAG,KAE9DE,QAASC,eAAeY,GAACJ,EAASC,MAGvC9Q,SAAUsR,IAAKjR,EAAMkR,KAAMpO,EAAMqO,MAaOtB,EAAMuB,OAaQnR,aAGnDoR,GAakBC,oEAeTc,SAaO/K,QAaQC,IAAI8K,EAaQ3T,IAAI,SAaA2R,GAAU,OAAAA,EAaOiC,0BA2BICC,GAAMbtQ,EAAYuQ,GAC7C,OACEjQ,MAaON,EAaKM,MACZD,UAAWL,EAaKK,UAAU5D,IACtB,SAAC9B,OAAC2F,UAAOjB,SAAMmB,aAAc,OAC3BF,QACAjB,OACAmB,UAAWvB,EAAGsR,EAaA,EAaI/P,EAASvB,EAAGvC,EAAG8D,EAAS9D,gBAYjd8T,GACZhp,EAaE7G,EACf6D,EACAC,EAakBgS,OAFf/R,OAAQC,OACvB+R,OAaUbc,OAOpBC,WAnCjP,EAaEM,EAAGBD,EAAGBgP,EAaAc,GAC9D,oBADiDD,kBAaAc,KAC/C,IAAXjP,GAA2B,IAAXC,GAA4B,IAAZ+O,GAA6B,IAAZC,EAC5CtP,EAeFA,EAAM/E,IAAI,SAaAuD,GAAQ,gBAPbVBA,EAAY8B,EAAGBD,EAAGBgP,EAC5CC,GACF,oBAF8CD,kBAC5CC,MAEaxQ,MAaON,EAaKM,MACZD,UAAWL,EAaKK,UAAU5D,IAAI,SAAC9B,OAAC2F,UAAOjB,SAAMmB,aAAc,OAC3BF,QACAjB,OACAmB,UACEvB,EAAGuB,EAASvB,EAaI4C,EAASiP,EACzBpU,EAAG8D,EAAS9D,EAaIoF,EAAS+O,OAaWpCE,CAAU/Q,EAAM8B,EAaQD,EAaQgP,EAASC,KAGc9DE,CAAWxP,GALV9C,EAASD,EAaQsR,IAAMtR,EAaQyR,WAE/BvR,EAaQF,EAaQuR,KAAOvR,EAaQwR,UAGGxR,EAaQsR,KAAMtR,EAaQuR,MAE7D,OAaIS,WAnB8BjP,EAaE+O,GACjD,OAaIA,GAAC,EACT/O,EAeFA,EAAM/E,IAAI,SAaAuD,GAAQ,OAaAsQ,GAAMbtQ,EAAMuQ,KAGBzCU,CAaOB,L,EAaajS,GAejCiS,EC5TX,IAqDMM,IACJC,aAAc,cACdxV,aAAc,GACdyV,WAAy,EACZC,WAAy,KAGRC,IAA6C,cAAe,YAC5DC,IACJC,aAAgB,EAAG,GAaI,IACvBC,UAAa,GAaI,KAEBc,IACJF,aAAgB,GAAM,IAAM,GAC5BC,UAAa,IAETE,IAA0C,EAAG,EAAG,GA6H/C,IAAMC,IACXnB,gBAAGB,EACHB9C,mBAaOB,SACpBkE,sBAaUB,GACvBC,cAAe,GACf3G,eAAGB,GACHBC,UAAW,IAGA2G,IAEPtB,gBAAGB,EACHB9C,mBAaOB,SACpBkE,sBAaUB,GACvBC,cAAe,GACf3G,eAAGB,GACHBC,UAAW,GACX3G,iBAaKB,GACIB1D,YAAa,IAGnB,SAASiR,GAA8BC,GAC9B,IAAAJ,EACHI,wBAD0BH,EAC1BG,gBADyC9G,EACzC8G,iBADyD7G,EACzD6G,YAEJ,GAaIJ,EAaWb,GAAOA,EAaWb,EACzD,MAAM,IAAIxF,MACN,yBAAYBwF,qCAI/B,GAaIC,GAaIB,EACnB,MAAM,IAAIzF,MACN,yBAAYByF,qBAI/B,GAaI3G,EAaIB,GAAOA,EAaIB,EAC3C,MAAM,IAAIkB,MACN,0BAA0BIB,qCAIhC,GAaIC,GAaA,EACf,MAAM,IAAIiB,MAAM,qBAaQbJB,OAIzC,SAAS8G,GACLD,GAEA,IAAAJ,EAMEI,wBALFH,EAKEG,gBAJF9G,EAIE8G,iBAHF7G,EAGE6G,YAFFxN,EAEEwN,mBADFIR,EACEkR,cAEJ,GAaIJ,EAaWb,GAAOA,EAaWb,EACzD,MAAM,IAAIxF,MACN,yBAAYBwF,qCAI/B,GAaIC,GAaIB,EACnB,MAAM,IAAIzF,MACN,yBAAYByF,qBAI/B,GAaI3G,EAaIB,GAAOA,EAaIB,EAAC3C,MAAM,IAAIkB,MACN,0BAA0BIB,qCAIhC,GAaIC,GAaA,EACf,MAAM,IAAIiB,MAAM,qBAaQbJB,OAaGvC,GAaI3G,EAAMb,GAaKA,EAAMb,EAC7C,MAAM,IAAI4H,MACN,4BAA4B5H,oCAIIC,GAaIID,GAaE,

GAAKA,EAAC,GACpC,MAAM,IAAIsL,MACN,uBAAuBtL,mDAQ7B,WAAYoR,GACVvW,KAAKwW,UAAyD,EA+oBrB,OA5oBUE,yCAAR,SAAqCnW,GAO7B,IAAAvB,EAMFiB,KAAKwW,UAAU5V,QAAQN,GAC3B,OACEoW,6BACAxV,8BACAG,kBACAC,kCACAC,oCAIikV,gDAAR,SAA4CnW,GAQpC,IAAAvB,EAOFiB,KAAKwW,UAAU5V,QAAQN,GAC3B,OACEoW,6BACAC,iCACAzV,8BACAG,kBACAC,kCACAC,oCAIikV,6DAAR,SAAyDnW,GAUjD,IAAAvB,EAQFiB,KAAKwW,UAAU5V,QAAQN,GAC3B,OACEoW,6BACAhV,OBACAR,8BACAG,kBACAC,kCACAC,kCACAE,8BAuCjgV,oCAA,SACInW,EAAqByR,EACrBkE,GAFJ,wBAEIA,MASI,IAAAIX,EAakBoR,EAAa7P,GAA9BwC,OAAQC,OACT6T,EAAmC9E,EACrCC,EAAoB/R,KAAKwW,UAAUzW,cAAe+C,EAAQC,IACxDH,EACF6Q,GAAenT,EAAOsW,GADnB/C,YAAShR,YAGViD,EAMFrH,OA AQ,WACJ,IAAAM,EAMFyB,EAakqW,6BAA6BhD,GALpC6C,kBACAxV,kBACAG,YACAC,oBACAC,oBAGIqB,EAAgCiR,EAAQ7V,MAAvC8Y,OAAeC,OAehBC,EAAsBzE,GACxBmE,GAAgB5T,EAAQC,IAAS+T,EAAeC,KAC9CIU,EAAQsR,IAAKtR,EAAQyR,SAAUzR,EAAQuR,KAAMvR,EAAQwR,SA7bhC,GAGc3B,OACE7S,aAAcID,EACVyC,UAAWiW,GAAsBf,GACrC/U,gBACAG,UACAC,kBACAC,qBA3BFC,iBACAN,kBACAG,YACAC,oBACAC,oBA2BF,OADAsS,EAAQjS,WAENJ,eACAN,gBACAG,UACAC,kBACAC,kBACAsB,UACA+T,qCA6BEH,0BAAN,SACInW,EACA+V,uBAAAA,+HAoBa,OAhbFD,GAFAC,SAAaL,IAA4BK,IAInCtX,EASFiB,KAAKiX,wBACD3W,EAAO+V,EAAOtE,mBAAoBsE,EAAOJ,uBAT/CzU,iBACAN,kBACAG,YACAC,oBACAC,oBACAsB,YACA+T,qCAKIhU,EAakBpB,EAaxD,MAA9B8E,OAAQC,UAEMvB,EAAamI,eAGZ,OAHHBrH,EAASwD,SACfIE,EAAaI,aAEe2S,IACvBrT,EAAeG,EAASC,EAAiBC,YAkB9C,OAnBM2V,EAAgBpR,SAEfqR,EACHD,KADcE,EACdF,KAD0BG,EAC1BH,KAD+CI,EAC/CJ,KAOJtR,EAAQgP,GALJhP,EAAQsJ,EACRiI,EAAWC,EAAYC,EAAqBC,EAC5CtX,KAAKwW,UAAUzW,aAAcsW,EAAOH,cACpCG,EAAO9G,eAAgB8G,EAAO7G,YAGtB1M,EAAQC,GAAQ6T,EAakC/T,GAjhBjC,GAohB7B3B,EAACu,UACdP,EAAQO,UACRN,EAAGBM,UACHBL,EAAgBK,cAERkB,SAAQC,QAAO4G,KAAMrH,EAAQiV,SAAU3R,UA0B3C6Q,+BAAN,SACInW,EACA+V,uBAAAA,4IAwDoB,OApdTBC,GADAD,SAAaF,IAA2CE,IAEIDtX,EAakBoR,EAAa7P,GAA9BwC,OAAQC,OACT6T,EAAmC9E,EACrCuE,EAAOtE,mBAAoB/R,KAAKwW,UAAUzW,cACzC+C,EAAQC,IAEPH,EACF6Q,GAAenT,EAAOsW,GADnB/C,YAAShR,YAEViD,EAOFrH,OAAQ,WACJ,IAaF+Y,EAbeZy,EAOFyB,EAakIX,iDAAiD5D,GANxD6C,kBACAhV,gBACAR,kBACAG,YACAC,oBACAC,oBAElyV,EAAsBzE,GACxBmE,GAAgB5T,EAAQC,GAAQ6T,IAC9B/T,EAAQsR,IAAKtR,EAAQyR,SAAUzR,EAAQuR,KAAMvR,EAAQwR,SAPlBhC,GAomB3B,OANEmD,EAAoB9V,GAOpBF,aAJmBID,EACjByC,UAAWiW,GAAsBX,EAAOJ,uBAIICvU,YAAa8V,EACbE,iBAakBxW,EAClByW,WAAytW,EACZuW,mBAAoBtW,EACpBuW,mBAAoBtW,KAvCtBC,iBACAE,gBACAgW,qBACAC,eACAC,uBACAC,0BAsC0BtD,IACvBmD,EAakBC,EAAYC,EAAoBC,YAajC,OADhBX,EAAgBIP,SAEfmP,EACHD,KADcE,EACdF,KAD0BG,EAC1BH,KAD+CI,EAC/CJ,KAOJtR,EAAQgP,GALJhP,EAAQsJ,EACRiI,EAAWC,EAAYC,EAAqBC,EAC5CtX,KAAKwW,UAAUzW,aAAcsW,EAAOH,cACpCG,EAAO9G,eAAgB8G,EAAO7G,YAGtB1M,EAAQC,GAAQ6T,EAakC/T,GAXnBjC,MA2nBD8F,EACxBnH,EAACe,EAAakE,EAAO9C,EAAQC,EAC1C/C,KAAKwW,UAAUzW,aAAc6W,EAakC/T,EAC/DwT,EAAO9G,eAAgB8G,EAAOIR,YAAakR,EAAOxN,iBACIDwN,EAAOH,uBAUX,OADM4B,EAAgB9P,SAMtB6L,EAAQjS,UACRJ,EAAaI,UACbF,EAAYE,UACZ8V,EAAiB9V,UACjB+V,EAAW/V,UACXgW,EAAmBhW,UACnBiW,EAAmBjW,aAEZkW,SAuCTrB,yCAAA,SACInW,EAAqByR,EACrBkE,GAFJ,wBAEIA,MASI,IAAAIX,EAakBoR,EAAa7P,GAA9BwC,OAAQC,OACT6T,EAAmC9E,EACrCC,EAAoB/R,KAAKwW,UAAUzW,cAAe+C,EAAQC,IACxDH,EAGF6Q,GAAenT,EAAOsW,GAFxB/C,YACAhR,YAGIiD,EAMFrH,OAAQ,WACJ,IAAAM,EAOFyB,EAakux,oCAAOcIE,GAN3C6C,kBACAC,sBACAZV,kBACAG,YACAC,oBACAC,oBAGIqB,EAAgCiR,EAAQ7V,MAAvC8Y,OAAeC,OAehBC,EAAsBzE,GACxBmE,GAAgB5T,EAAQC,IAAS+T,EAAeC,KAC9CIU,EAAQsR,IAAKtR,EAAQyR,SAAUzR,EAAQuR,KAAMvR,EAAQwR,SAXtBhC,GA2tBrB2D,EAAYBzF,GAC3BoE,GAAoB7T,EAAQC,IAAS+T,EAAeC,KACIDIU,EAAQsR,IAAKtR,EAAQyR,SAAUzR,EAAQuR,KAAMvR,EAAQwR,SA7tBhC,GAiuB3B,OACE/J,iBACIzL,EAHFP,EAAyC,UAAWiW,GAAsBf,GAGP+B,GACzC9W,gBACAG,UACAC,kBACAC,qBAICF+I,qBACApJ,kBACAG,YACAC,oBACAC,oBAkCF,OADAsS,EAAQjS,WAENoI,mBACApJ,gBACAG,UACAC,kBACAC,kBACAsB,UACA+T,qCA8BEH,+BAAN,SACInW,EACA+V,uBAAAA,+HAKBW,OADbD,GAFAC,SAAaL,IAA4BK,IAGnCtX,EASFiB,KAAKiY,6BACD3X,EAAO+V,EAAOtE,mBAAoBsE,EAAOJ,uBAT/C3L,qBACApJ,kBACAG,YACAC,oBACAC,oBACAsB,YACA+T,qCAKIhU,EAakB0H,EAAiBtM,MAAIC8E,OAAQC,UACIuH,EAAiBX,eAGd,OAHHBA,EAAO7D,SACbwE,EAAiB1I,aAEW2S,IACv

BrT,EAAeG,EAASC,EAAiBC,YAkB9C,OAnBM2V,EAAgBpR,SAEfqr,EACHD,KADcE,EACdF,KAD0BG,EA
C1BH,KAD+CI,EAC/CJ,KAOJrR,EAAQgP,GALJhP,EAAQsJ,EACRiI,EAAWC,EAAYC,EAAqBC,EAC5CtX,K
AAKwW,UAAUzW,AAAcS,W,EAaOH,cACpCG,EAAO9G,eAAgB8G,EAAO7G,YAGtB1M,EAAQC,GAAQ6T,E
AAkC/T,GAjzBjC,GAozB7B3B,EAACU,UACdP,EAAQO,UACRN,EAAgBM,UACHBL,EAAgBK,cAERkB,SAA
QC,QAAO4G,OAAM4N,SAAU3R,UA0BnC6Q,oCAAN,SACInW,EACA+V,uBAAAA,8IA0DoB,OAtDtBC,GAF
AD,SAAaF,IAA2CE,IAGIDtX,EAakBoR,EAAa7P,GAA9BwC,OAAQC,OACT6T,EAAMc9E,EACrCuE,EAAOt
E,mBAAoB/R,KAAKwW,UAAUzW,cACzC+C,EAAQC,IACPH,EACF6Q,GAAenT,EAAOsW,GADnB/C,YAAS
hR,YAEViD,EAQFrH,OAAQ,WACJ,IAAAM,EAQFyB,EAAKiX,iDAAiD5D,GAPxD6C,kBACAhV,gBACAR,k
BACAG,YACAC,oBACAC,oBACAE,iBAIluV,EAAsBzE,GACxBmE,GAAgB5T,EAAQC,GAAQ6T,IAC9B/T,E
AAQsR,IAAKtR,EAAQyR,SAAUzR,EAAQuR,KAAMvR,EAAQwR,SAv3BhC,GA23BrB6D,EAA+B3F,GACjC9
Q,GAAeqB,EAAQC,GAAQ6T,IAC7B/T,EAAQsR,IAAKtR,EAAQyR,SAAUzR,EAAQuR,KAAMvR,EAAQwR,S
A73BhC,GAG4BrBmD,EAAoB9V,EAK1B,OACEF,aALmBID,EACnByC,UAAWiW,GAAsBX,EAAOJ,uBAKxC
vU,YAAa8V,EACbE,iBAAkBxW,EACiByW,WAAYtW,EACZuW,mBAAoBtW,EACpBuW,mBAAoBtW,EACpB
+I,0Bf70BmCxM,GAEnC,IAAAiB,EAA0CjB,EAakBE,MAA3DgB,OAaEC,OAaCIB,OACpC,OAAOU,OAAQ,
WACb,IAAMW,EAAevB,EAAYBC,GACxCuB,EAACc,aAAcC,QAAS,EAAGxB,EAAU,EAAG,SAAU,GAE/DI,E
ACFO,OAAQc,SAAUJ,EAACc,GAA6B,SAEjE,OAaOjB,UAAWD,GAAMBa,EAACc,Me2zB9CkZ,CAA2BD,M
AIC/B1W,iBACAE,gBACAgW,qBACAC,eACAC,uBACAC,uBACAvN,wBAwC0BiK,IACvBmD,EAakBC,EA
YC,EAAoBC,YAajC,OAdhBX,EAAGBIP,SAEfM,EACHD,KADcE,EACdF,KAD0BG,EAC1BH,KAD+CI,EAC/
CJ,KAOJrR,EAAQgP,GALJhP,EAAQsJ,EACRiI,EAAWC,EAAYC,EAAqBC,EAC5CtX,KAAKwW,UAAUzW,a
AAAcS,W,EAaOH,cACpCG,EAAO9G,eAAgB8G,EAAO7G,YAGtB1M,EAAQC,GAAQ6T,EAakC/T,GA15BjC,M
A65BDwH,EACxB7I,EAACe,EAAa4I,EAakB1E,EAAO9C,EAAQC,EAC5D/C,KAAKwW,UAAUzW,AAAc6W,
EAakC/T,EAC/DwT,EAAO9G,eAAgB8G,EAAOIR,YAAakR,EAAOXn,iBACIDwN,EAAOH,uBAWX,OAFM4B,
EAAGB9P,SAMtB6L,EAAQjS,UACRJ,EAAaI,UACbF,EAAYE,UACZ8V,EAAiB9V,UACjB+v,EAaw/V,UACX
gW,EAAMbHw,UACnBiW,EAAMbjW,UACnB0I,EAaiB1I,AAEVkW,SAGFrB,oBAAP,WACEzW,KAAKwW,U
AAU5U,gBAOnB,SAAwW,GAAC/B,2GAI3B,GAHMTW,EAAsW,EAAOtW,aActByV,EAaaa,EAAOb,WACp
BC,EAaaY,EAAOZ,WACHb,MAAN4C,EACF,MAAM,IAAI5H,MACN,kJAMa,OADb6H,WF97BJvS,EAAGB0P,
EAAoBD,GACtC,IAAM+C,GAakCC,EAak,MAAOC,IAAM,MAAOC,GAAM,OACjEC,EAAY,eAAe5S,UAEjC
,OAAmB,IAAfyP,EACKtF,EAAqB,SAASqI,EAAM9C,OAAiBkD,EAErDzI,EAAqB,QAAQsF,MAAc+C,EAAM9
C,OACpDkD,EEs7BMC,CAAoB7Y,EAAC0V,EAAYD,MACjCqD,iBAAsBxC,EAAOyC,UAAyR,WAEIE,OAFM
S,EAaaha,SACbia,EAAY,IAAIIX,EAAUiX,EAAYhZ,MACrC,IAAI0W,GAAQuC,SAMrB,SAaEC,GAAW5C,yG
AGxB,GAFMtW,EAAsW,EAAOtW,aActByV,EAaaa,EAAOb,WACHb,MAAN6C,EACF,MAAM,IAAI5H,MA
CN,kJAMa,OADb6H,WF99B2BvS,EAAGByP,GACjD,IAAMmD,EAAY,eAAe5S,UAEjC,OAAmB,IAAfyP,EAC
KvF,EAAoB,SAAW0I,EAE/B1I,EAAoB,QAAQuF,MAAGbMD,EEw9BzCO,CAAMbnZ,EAacyV,MACpBqD,iB
AAsBxC,EAAOyC,UAAyR,WAEIE,OAFMS,EAaaha,SACboa,EAAS,IAAIInJ,EAAO+I,EAAYhZ,MAC/B,IAAI0
W,GAAQ0C,SCj+BrB,IAAMC,MAYN,SAASC,GACLta,EACA6D,EAAiD0W,EACjDC,OAFQC,UAGBC,WAC
hBC,UAGBC,WAE1B,GAaiH,IAAWE,GAAUD,IAAYE,EACnC,MAAM,IAAIJ,MAAM,iCAAiC6I,qBAC7CE,
MAAUC,OAAYF,qBAawBG,MAAUC,GAIhE,SAASC,GAAqBC,GAC5B,IAAMC,EAAMD,EAAOE,WAAW,M
AC9BD,EAaIE,OAaO,EAAG,GACdF,EAaIG,WAAWJ,EAAO9W,MAAO,GAG/B,SAASmX,GACLJ,EACA5a,
EACAib,GACFL,EAAIM,yBAA2BD,EAC/BL,EAAIO,UAAUnb,EAAO,EAAG,GAa1B,SAASob,GAA6BIM,GAI
pC,OAHKgL,GAakBhL,KACrBgL,GAakBhL,GAZtB,WACE,GAAwB,oBAAbmM,SACT,OAaOA,SAASC,cA
Ac,UACzB,GAA+B,oBAApBnK,gBACHB,OAaO,IAAIA,gBAAGB,EAAG,GAE9B,MAAM,IAAI,MAAM,0CA
MQgK,IAEnBrB,GAakBhL,GAG3B,SAASsM,GACLxb,EAakByb,EAAoBd,GACjC,IAAA/W,EAAiB5D,SAAT
6D,EAAS7D,QACIB4a,EAAMD,EAAOE,WAAW,MAC9BF,EAAO9W,MAAQA,EACf8W,EAAO/W,OAASA,E
AChBgX,EAaIc,UAAU,EAAG,EAAG7X,EAAOD,GAC3BgX,EAaIe,OAnDI,iCAAiCC,KAAKC,UAAUC,oBCd
tDnB,EACA3a,EACA+b,GAOF,IANA,IAAMnB,EAAMD,EAAOE,WAAW,MAE1BmB,EAAM,EAejC,EAAY,G
AAK,EAaIxW,KAAKyW,GADIB,EAaa,GAERC,EAAOJ,EAAO,EAaI,EAaI,EACnBna,GAakma,EAAMna,G
AAKma,EAAMna,GAakua,EACIC,IAAK,IAAIhY,GAak4X,EAAM5X,GAak4X,EAAM5X,GAakgY,EAGIC
H,GADIC,EAAYxW,KAAK2W,MAAMjY,EAaIA,EAaIvC,EAaIA,OAI3C,IAASA,GAakma,EAAMna,GAak

ma,EAAMna,GAAKua,EACIC,IAAShY,GAAK4X,EAAM5X,GAAK4X,EAAM5X,GAAKgY,EACICvB,EAAIyB, YAAcJ,EACdxW,KAAK2W,MAAMjY,EAAIA,EAAIvC,EAAIA,OAA4Boa,EAAMD,EAC7DnB,EAAIO,UAAU nb,EAAOmE,EAAGvC,GAG5BgZ,EAAIyB,YAAc,ED4ChBC,CAAQ3B,EAAQ3a,EAAOyb,IAGtBb,EAAyhR,O AAS,QAAQ6R,QAC9Bb,EAAIO,UAAUnb,EAAO,EAAG,EAAG6D,EAAOD,IAEpCgX,EAAI2B,UAGN,SAASC ,GACLxc,EAakByb,EACIBgB,GACF,IAAM9B,EAASS,GAA6BqB,GAM5C,OALmB,IAAfhB,EAQN,SAA6Bzb, EAakB2a,GACtC,IAAA9W,EAAiB7D,QAAV4D,EAAU5D,SACx2a,EAAO9W,MAAQA,EACf8W,EAAO/W,O AASA,EACJ+W,EAAOE,WAAW,MAE1BM,UAAUnb,EAAO,EAAG,EAAG6D,EAAOD,GAbhC8Y,CAAoB1c,E AAO2a,GAE3Ba,GAAYBxb,EAAOyb,EAAyD,GAEvCA,EAsBT,SAASgC,GACL3c,EAakB4c,GACpB,IAAMjC, EAASS,GAA6BwB,GAG5C,OAbF,SAAiC5c,EAakB2a,GACjDA,EAAO9W,MAAQ7D,EAAM6D,MACrB8W,E AAO/W,OAA5D,EAAM4D,OACV+W,EAAOE,WAAW,MAE1BgC,aAAa7c,EAAO,EAAG,GAM3B8c,CAAwb 9c,EAAO2a,GAExBA,WakCOoC,GACZC,EAEAC,EAMAC,EAMAC,EAAqBC,GACvB,gBAAbEH,GACEI,EAA G,EACHC,EAAG,EACHvY,EAAG,EACHJ,EAAG,iBAELuY,GACEG,EAAG,EACHC,EAAG,EACHvY,EAAG, EACHJ,EAAG,mBAELwY,mBAAqBC,GAA2B,IAC9CIR,MAAMqR,QAAQP,IACsB,IAApCA,EAAyB/Z,OAC3 B,OAAO,KAGT,IAAIua,EAUE3d,GAHJ2d,EAHGtR,MAAMqR,QAAQP,GAGeA,GAFCa,IAKmb,GAA/CnZ,U AAOD,WACR6Z,EAAQ,IAAIC,kBAakB7Z,EAAQD,EAAS,GAERD,SAAS+Z,EACLF,EAA0BG,EAAaC,EAAG Bha,EACvDia,EAAgBC,gBAAAA,GAAGBV,EAAG,EAAGC,EAAG,IAAKvY,EAAG,IAAKJ,EAAG,MAC3D,IA AK,IAAIrB,GAAKwa,EAAQxa,GAAKwa,EAAQxa,IACjC,IAAK,IAAI0H,GAAK8S,EAAQ9S,GAAK8S,EAAQ9 S,IACjC,GAAU,IAAN1H,GAAiB,IAAN0H,EAAS,CACtB,IAAMC,GAAK2S,EAAMta,GAAKO,GAASga,EAAS 7S,GACxCyS,EAAM,EAAIxS,EAAI,GAAK8S,EAAMV,EACzBI,EAAM,EAAIxS,EAAI,GAAK8S,EAAMT,EAC zBG,EAAM,EAAIxS,EAAI,GAAK8S,EAAMhZ,EACzB0Y,EAAM,EAAIxS,EAAI,GAAK8S,EAAMpZ,GAMjC,S AASqZ,EACLC,EACAL,EACAC,EACaha,EACAuZ,EACAU,gBADAV,GAA2B,iBAC3BU,KAGF,IADA,IAAIL, EAAyB,EACpB5a,GAAKwa,EAAQxa,GAAKwa,EAAQxa,IACjC,mBAAS0H,GACP,GAAU,IAAN1H,GAAiB,IA AN0H,EAAS,CACtB,IAAMmT,GAAKP,EAAMta,GAAKO,GAASga,EAAS7S,GACnCoS,EAAc7N,KAAK,SAA AL,GAAM,OAAAA,IAAO+O,EAAiBE,OACpDD,GAA0B,KAJvBIT,GAAK8S,EAAQ9S,GAAK8S,EAAQ9S,M AA1BA,GASX,OAAOkT,EAAyB,EAGIC,IAAK,IAAI5a,EAAI,EAAGA,EAAIM,EAAQN,GAAK,EAC/B,mBAA S0H,GACP,IAAMC,EAAI3H,EAAIO,EAAQmH,EACtByS,EAAM,EAAIxS,EAAI,GAAKiS,EAAWG,EAC9BI,E AAM,EAAIxS,EAAI,GAAKiS,EAAWI,EAC9BG,EAAM,EAAIxS,EAAI,GAAKiS,EAAWnY,EAC9B0Y,EAAM, EAAIxS,EAAI,GAAKiS,EAAWvY,EAC9B,mBAAS8C,GACP,GAAI2V,EAAc7N,KACV,SAAAL,GAAM,OAAA A,IAAOsO,EAA8B/V,GAAGgD,KAAKQ,KAAK,CAC9DwS,EAAM,EAAIxS,GAAKgS,EAAWI,EAC1BI,EAAM,EAAIxS,EAAI,GAAKgS,EAAWK,EAC9BG,EAAM,EAAIxS,EAAI,GAAKgS,EAAWIY,EAC9B0Y,EAAM,E AAIxS,EAAI,GAAKgS,EAAWtY,EAC9B,IAAMyZ,EAAaJ,EACfR,EAA8B/V,GAAGgD,KAAMnH,EAAG0H,E AAGnH,EAC7CuZ,GACAD,GA Ae7Z,EAAI,GAAK,GAAKA,EAAI,EAAIM,GAAUoH,EAAI,GAAK,GACxDA,E AAI,EAAInH,GAASua,GACnBT,EAAWF,EAAOna,EAAG0H,EAAGnH,EAAO,KAZ5B4D,EAAI,EAAGA,EAAI +V,EAA8Bva,OAAQwE,MAAjDA,IANFuD,EAAI,EAAGA,EAAInH,EAAOmH,GAAK,IAAvBA,GAYBX,OAA O,IAAIyG,UAAUgM,EAAO5Z,EAAOD,GAGrC,IAAMya,KACH,IAAK,GAAL,MAAO,IAAK,GAAL,MAAO,IAA K,GAAL,MAAO,IAAK,GAAL,MACzD,IAAK,GAAL,MAAO,IAAK,GAAL,MAAO,IAAK,GAAL,MAAO,IAAK,IA AK,KAC1D,IAAK,IAAK,KAAM,IAAK,IAAK,KAAM,IAAK,IAAK,KAAM,IAAK,IAAK,KAC1D,IAAK,IAAK, KAAM,IAAK,IAAK,KAAM,GAAL,IAAK,KAAO,GAAL,IAAK,MACzD,GAAL,IAAK,MAAO,GAAL,IAAK,MAA O,GAAL,IAAK,MAAO,GAAL,IAAK,MACzD,GAAL,IAAK,MAAO,GAAL,IAAK,MAAO,GAAL,IAAK,MAAO,G AAL,GAAL,MA6D3D,IAAMC,IACJC,QAAS,UAUTC,YAAa,eACbve,KAAM,OACNwe,eAAgB,iDDurBStH,uBA AAA,gEAGzB,MAA4B,cAD5BA,EAn6BF,SAA6BA,GAM3B,GAH2B,OAF3BA,EAASA,GAAUf,IAERC,eACTc ,EAAOd,aAAe,eAEpBG,GAAMbKI,QAAQvH,EAAOd,cAAgB,EACpD,MAAM,IAAI9E,MACN,wBAAwB4F,EA AOd,mCACXG,IAK1B,GAH2B,MAAvBW,EAAOtW,eACTsW,EAAOtW,aAAe,IAEpB4V,GAAaU,EAAOd,cAA cqI,QAAQvH,EAAOtW,cAAgB,EACnE,MAAM,IAAI0Q,MACN,wBAAwB4F,EAAOtW,mCACX4V,GAAaU,E AAOd,mCACpBc,EAAOd,kBAMjC,GAHyB,MAArBc,EAAOZ,aACTY,EAAOZ,WAAa,GAElBK,GAAiBO,EA AOd,cAAcqI,QAAQvH,EAAOZ,YAAc,EACrE,MAAM,IAAIhF,MACN,sBAAsB4F,EAAOZ,iCACTK,GAAiBO,E AAOd,mCACxBc,EAAOd,kBAMjC,GAHyB,MAArBc,EAAOb,aACTa,EAAOb,WAAa,GAElBO,GAakB6H,QA AQvH,EAAOb,YAAc,EACjD,MAAM,IAAI/E,MACN,sBAAsB4F,EAAOb,iCACTO,wBACAM,EAAOd,kBAGjC

,OAAOc,EA03BEwH,CAAoBxH,IACIBd,gBACF0D,GAAW5C,IACe,gBAAxBA,EAAOd,gBACT6C,GAAC/B,O
AEd,mCCtcPwD,EAAGB3a,EACHBoL,EACAwT,EAA4BC,EAA0BC,EACtDnJ,gBADaiJ,GAAqB,EAAG,iBAAI
C,kBAA0BC,kBACtDnJ,MACF,IAAMoJ,EAevC,GACjBxc,EAA06e,EAAsBP,GAAaC,SAC9C5D,EAA09W,M
AAQkb,EAAlb,MAC5B8W,EAAO/W,OAASmb,EAAnb,OAE7B,IAAMgX,EAAMD,EAAOE,WAAW,MAE9B,
GAAI30,MAAMqR,QAAQnS,IAAiD,IAA5BA,EAaiBnI,OACtD2X,EAAIO,UAAU4D,EAAC,EAAG,OADjC,CA
IA,IAAMC,EAxDR,SACIC,EACAC,EAA6BJ,GAC/B,IAIMK,EACFxC,GALwBI,GACxBkC,GAA8B5B,EAAG,E
AAGC,EAAG,EAAGvY,EAAG,EAAGJ,EAAG,IACID0Y,EAAG,EAAGC,EAAG,EAAGvY,EAAG,EAAGJ,EA
G,MAAM,EAAMua,GAGoBZ,GAAare,MACvE,OAAuB,IAAnB6e,EACKK,EAEA3C,GACH2C,EAAGBL,EAAG
BR,GAAaE,aA4C/CY,CAAmBhU,EAakBwT,EAAMBE,GAE5DIE,EAaIe,OACAhG,GACF+E,GAAqBC,GAGjB
,IAAA9a,EAakBoR,EAajR,GAA9B4D,OAAQC,OACf+W,EAAIO,UAAUnb,EAAO,EAAG,EAAG6D,EAAOD,
GAMICoX,GAAoBJ,EAakoE,EAac,kBAMvChE,GAAoBJ,EAakmE,EAac,oBACvCnE,EAAI2B,uCAthF5B,E
AAgB3a,EACHBqf,EACAR,EAA0BC,EAAoBnJ,gBAA9CkJ,kBAA0BC,kBAoBnJ,MACHD,IAAMoJ,EAevC,
GACjBxc,EAA06e,EAAsBP,GAAaC,SAC9C5D,EAA09W,MAAQkb,EAAlb,MAC5B8W,EAAO/W,OAASmb,
EAAnb,OAE7B,IAAMgX,EAAMD,EAAOE,WAAW,MAE9B,GAAI30,MAAMqR,QAAQ8B,IACqB,IAAnCA,E
AAwBpc,OAC1B2X,EAAIO,UAAU4D,EAAC,EAAG,OAFjC,CAMA,IAAMO,EAtdR,SACID,EACAP,GACF,IAI
MK,EACFxC,GALwBI,GACxBsC,GAA0BhC,EAAG,EAAGC,EAAG,EAAGvY,EAAG,EAAGJ,EAAG,MAC9C0
Y,EAAG,EAAGC,EAAG,EAAGvY,EAAG,EAAGJ,EAAG,IAGgC2Z,GAAare,MACvE,OAAuB,IAAnB6e,EACK
K,EAEA3C,GACH2C,EAAGBL,EAAGBR,GAAaE,aAyChCe,CAaiBF,EAayBP,GAE7DIE,EAaIe,OACAhG,GA
CF+E,GAAqBC,GAGjB,IAAA9a,EAakBoR,EAajR,GAA9B4D,OAAQC,OACf+W,EAAIO,UAAUnb,EAAO,E
AAG,EAAG6D,EAAOD,GAMICoX,GAAoBJ,EAak0E,EAAY,kBAMrCtE,GAAoBJ,EAakmE,EAac,oBACvCn
E,EAAI2B,gCArLF5B,EAAGB3a,EAakBwf,EACICC,EAAMBC,EAAoB/J,gBAAvC8J,mBAAMBC,kBAoB/J,M
ACnC,IAAA9V,EAakBoR,EAajR,GAA9B4D,OAAQC,OACf8W,EAA09W,MAAQA,EACf8W,EAAO/W,OA
SA,EAehB,IAAMgX,EAAMD,EAAOE,WAAW,MAS9B,GARAD,EAaIe,OACAhG,GACF+E,GAAqBC,GAGvB
C,EAAIO,UAAUnb,EAAO,EAAG,GAExB4a,EAaiYb,YAAcoD,EACdD,EAAW,CACbrF,IAAsBtW,QAAOD,UA
AS4b,EAAW,QAAS,QAe1D,IAEMhB,EAachC,GAFFG,GAAiC6C,EAAWIB,GAAare,MAG5Dyf,EAAGBpB,GA
AaE,aACvC5D,EAAIO,UAAUqD,EAaa,EAAG,EAAG3a,EAAOD,GAE1CgX,EAAI2B,wCA0BF5B,EAAGB3a,E
AAkBwf,EACICC,EAAMBC,EAAoB/J,EACvCgK,gBADAF,mBAAMBC,kBAoB/J,mBACvCgK,MACI,IAAA9f
,EAakBoR,EAajR,GAA9B4D,OACPuW,IAAsBtW,WAAOD,UAAS4b,EAAW,QAAS,QAe1D,IACMhB,EAAC
hC,GADPG,GAAiC6C,EAAWIB,GAAare,MAE5Dyf,EAAGBpB,GAAaE,aAEvC7D,EAA09W,MAAQ2a,EAAY3
a,MAC3B8W,EAAO/W,OAAS4a,EAAY5a,OAE5B,IAAMgX,EAAMD,EAAOE,WAAW,MAC9BD,EAaIe,OAC
AhG,GACF+E,GAAqBC,GAGvB,IAAMiF,EACFxE,GAA6BkD,GAAaG,gBACxCoB,EAAGBD,EAAGB/E,WAA
W,MACtD+E,EAAGB/b,MAAQ2a,EAAY3a,OAAS,EAAM8b,GACnDC,EAAGBhc,OAAS4a,EAAY5a,QAAU,EA
AM+b,GACrDE,EAAMb1E,UACfqD,EAaa,EAAG,EAAGA,EAAY3a,MAAO2a,EAAY5a,OAAQ,EAAG,EAC7
Dgc,EAAGB/b,MAAO+b,EAAGBhc,QAC3CgX,EAaIkF,uBAawB,EAC5BIF,EAAIO,UACaY,EAAiB,EAAG,E
AAGA,EAAGB/b,MAAO+b,EAAGBhc,OAAQ,EACtE,EAAG+W,EAA09W,MAAO8W,EAAO/W,QAG5B,IAAK,
IAAIN,EAAL,EAAGA,EAALsc,EAAGB/b,MAAOP,IACzCsX,EAALmF,YACJnF,EAALoF,YAAc,UACIBpF,EAAL
qF,OAAON,EAALiBrc,EAAG,GAC/BsX,EAALsF,OAAOP,EAALiBrc,EAAGqX,EAAO/W,QACtCgX,EAALuF,SAK
N,IAAS7c,EAAL,EAAGA,EAALsc,EAAGBhc,OAAQN,IAC1CsX,EAALmF,YACJnF,EAALoF,YAAc,UACIBpF,E
AALqF,OAAO,EAAGN,EAALiBrc,GAC/BsX,EAALsF,OAAOVF,EAAO9W,MAAO8b,EAALiBrc,GAC1CsX,EAALu
F,SAGNVF,EAALiYb,YAAc,EAAMoD,EACxB7E,EAAIO,UAAUnb,EAAO,EAAG,EAAGwe,EAAY3a,MAAO2a,
EAAY5a,QAC1DgX,EAAI2B,wCA3KFnR,EACAgV,GAEF,gBAFEA,MAEEIU,MAAMqR,QAAQnS,IAAiD,IAA
5BA,EAaiBnI,OACtD,OAAO,KAYT,IATA,IAAIgc,EAMEpf,GAfJof,EAHG/S,MAAMqR,QAAQnS,GAGaA,GA
FCA,IAImB,GAA7CvH,UAAOD,WACR6Z,EAAQ,IAAIC,kBAakB7Z,EAAQD,EAAS,GAE5CN,EAAL,EAAGA,
EAALM,EAASC,IAASP,EAAG,CAEvC,IAAM0H,EAAQ,EAALJH,EACVma,EAAMzS,EAAL,GAAK,IACfY,EA
AMzS,EAAL,GAAK,IACfY,EAAMzS,EAAL,GAAK,IACfY,EAAMzS,EAAL,GAAK,IACf,IAAK,IAALvD,EAAL,
EAAGA,EAALwX,EAAL4Bhc,OAAQwE,IAAK,CAC3D,IAAM4Y,EAASpB,EAAL4BxX,GAAgGD,KAAKnH,GAC
nD,IAAGB,IAAZ+c,EAaE,CACjB,IAAMtC,EAAQqC,EAAWC,GACzB,IAAKtC,EACH,MAAM,IAALxM,MAA
M,uCAAuC8O,GAEzD5C,EAAMzS,EAAL,GAAK+S,EAAM,GACrBN,EAAMzS,EAAL,GAAK+S,EAAM,GACrB

N,EAAMzS,EAAI,GAAK+S,EAAM,GACrBN,EAAMzS,EAAI,GAAK,MAIrB,OAAO,IAAIyG,UAAUgM,EAAO5Z,EAAOD,iCEvTnC,YACA,aACA,uBACA,sBACA,wBACA,uBACA,uBACA,sBACA,wBACA,uBACA,YACA,aACA,cACA,aACA,uBACA,sBACA,wBACA,uBACA,uBACA,sBACA,wBACA,uBACA,YACA,gEJ0GEgR,EAA0B/U,EAC1B8V,OAD2BnB,OAASC,oBACpCkB,MAII,IAKF2K,EACAC,EACAzZ,EACA+M,EACA7P,EACAC,EAVEP,EAAkBkR,EAAy9V,MAA7B8E,OAGD4c,OAAiB5c,EASvB,GAAI4c,EAViB/L,EAAUD,EAUJ,CAEzB8L,EAAU7L,EAGV,IAAMgM,EAAyJm,GAFIB+L,EAAU9a,KAAKib,KAAKJ,EAAUE,IAG9B1Z,EAAO,EACP+M,EAAO,EACP7P,EAAOyB,KAAKqG,MAAM2U,EAAy,GAC9Bxc,EAAOuQ,GAAW+L,EAAUvc,OACvB,CACLuc,EAAU/L,EAGV,IAAMmM,EAAWIM,GAFjB6L,EAAU7a,KAAKib,KAAKIM,EAAUgM,IAG9B1Z,EAAOrB,KAAKqG,MAAM6U,EAAW,GAC7B9M,EAAOY,GAAW6L,EAAUxZ,GAC5B9C,EAAO,EACPC,EAAO,EakBT,OAAQgQ,iBAfiB1U,OAAQ,WAE/B,IAAIoV,EAUJ,OAREA,EADegB,EACQ5B,QAASC,eAcf4M,UAAWhM,EAAa,IAAK2L,EAASD,IAEhCvM,QAASC,eAAeY,GAAC2L,EAASD,IAG5CtL,QAASL,IAAW3Q,EAAMC,IAAQ6C,EAAM+M,IAAQ,EAAG,OAK1CgN,WAAy7c,EAAMC,IAAQ6C,EAAM+M,oDKtM5C"}

Found in path(s):

* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body-pix.min.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version":3, "file": "body-pix.esm.js", "sources": [ "../src/decode_part_map.ts", "../src/base_model.ts", "../src/mobilenet.ts", "../src/keypoints.ts", "../src/multi_person/util.ts", "../src/multi_person/decode_multiple_masks_cpu.ts", "../src/multi_person/decode_multiple_masks_webgl.ts", "../src/multi_person/decode_instance_masks.ts", "../src/multi_person/max_heap.ts", "../src/multi_person/build_part_with_score_queue.ts", "../src/multi_person/decode_pose.ts", "../src/multi_person/decode_multiple_poses.ts", "../src/resnet.ts", "../src/saved_models.ts", "../src/util.ts", "../src/body_pix_model.ts", "../src/blur.ts", "../src/output_rendering_util.ts", "../src/part_channels.ts", "../src/version.ts"], "sourcesContent": ["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n * =====\n *\n * import * as tf from '@tensorflow/tfjs-core';\n *\n * Takes the sigmoid of the part heatmap output and generates a 2d one-hot tensor with ones where the part's score has the maximum value.\n * @param partHeatmapScores\n * @function toFlattenedOneHotPartMap(partHeatmapScores: tf.Tensor3D): tf.Tensor2D {\n *   const numParts = partHeatmapScores.shape[2];\n *   const partMapLocations = tf.argmax(partHeatmapScores, 2);\n *   const partMapFlattened = tf.reshape(partMapLocations, [-1]);\n *   return tf.oneHot(partMapFlattened, numParts) as tf.Tensor2D;\n * }\n *\n * clipByMask2d(image: tf.Tensor2D, mask: tf.Tensor2D): tf.Tensor2D {\n *   return tf.mul(image, mask);\n * }\n *\n * Takes the sigmoid of the segmentation output, and generates a segmentation mask with a 1 or 0 at each pixel where there is a person or not a person. The segmentation threshold determines the threshold of a score for a pixel for it to be considered part of a person.\n * @param segmentScores A 3d-tensor of the sigmoid of the segmentation output.\n * @param segmentationThreshold The minimum that segmentation values must have to be considered part of the person. Affects the generation of the segmentation mask and the clipping of the colored part image.\n * @returns A segmentation mask with a 1 or 0 at each pixel where there is a person or not a person.\n *\n * export function toMaskTensor(segmentScores: tf.Tensor2D, threshold: number): tf.Tensor2D {\n *   return tf.tidy(() => (tf.cast(tf.greater(segmentScores, tf.scalar(threshold)), 'int32') as tf.Tensor2D));\n * }\n *\n * Takes the sigmoid of the person and part map output, and returns a 2d tensor of an image with the corresponding value at each pixel corresponding to
```

the part with the highest value. These part ids are clipped by the segmentation mask. Wherever the a pixel is clipped by the segmentation mask, its value will set to -1, indicating that there is no part in that pixel.

@param segmentScores A 3d-tensor of the sigmoid of the segmentation output.

@param partHeatmapScores A 3d-tensor of the sigmoid of the part heatmap output. The third dimension corresponds to the part.

@returns A 2d tensor of an image with the corresponding value at each pixel corresponding to the part with the highest value. These part ids are clipped by the segmentation mask. It will have values of -1 for pixels that are outside of the body and do not have a corresponding part.

```

function decodePartSegmentation(
  segmentationMask: tf.Tensor2D,
  partHeatmapScores: tf.Tensor3D): tf.Tensor2D {
  const [partMapHeight,
  partMapWidth, numParts] = partHeatmapScores.shape;
  return tf.tidy(() => {
    const flattenedMap =
    toFlattenedOneHotPartMap(partHeatmapScores);
    const partNumbers = tf.expandDims(tf.range(0, numParts, 1,
    'int32'), 1);
    const partMapFlattened =
    tf.cast(tf.matmul(flattenedMap, partNumbers as tf.Tensor2D),
    'int32');
    const partMap = tf.reshape(partMapFlattened, [partMapHeight, partMapWidth]);
    const
    partMapShiftedUpForClipping = tf.add(partMap, tf.scalar(1, 'int32'));
    return tf.sub(clipByMask2d(
    partMapShiftedUpForClipping as tf.Tensor2D, segmentationMask)
    , tf.scalar(1, 'int32'));
  });
}

function decodeOnlyPartSegmentation(partHeatmapScores: tf.Tensor3D):
  tf.Tensor2D {
  const
  [partMapHeight, partMapWidth, numParts] = partHeatmapScores.shape;
  return tf.tidy(() => {
    const
    flattenedMap = toFlattenedOneHotPartMap(partHeatmapScores);
    const partNumbers =
    tf.expandDims(tf.range(0, numParts, 1, 'int32'), 1);
    const partMapFlattened =
    tf.cast(tf.matmul(flattenedMap, partNumbers as tf.Tensor2D),
    'int32');
    return tf.reshape(partMapFlattened,
    [partMapHeight, partMapWidth]);
  });
}

```

=====
 @license Copyright 2019 Google Inc. All Rights Reserved.
 Licensed under the Apache License, Version 2.0 (the "License");
 you may not use this file except in compliance with the License.
 You may obtain a copy of the License at
<http://www.apache.org/licenses/LICENSE-2.0>
 Unless required by applicable law or agreed to in writing,
 software distributed under the License is distributed on an "AS IS"
 BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
 express or implied. See the License for the specific language
 governing permissions and limitations under the License.

```

import * as tfconv from '@tensorflow/tfjs-converter';
import * as tf from '@tensorflow/tfjs-core';
import {BodyPixOutputStride} from './types';

BodyPix supports using various convolution neural network models
(e.g. ResNet and MobileNetV1) as its underlying base model. The
following BaseModel interface defines a unified interface for
creating such BodyPix base models. Currently both MobileNet
(/mobilenet.ts) and ResNet (in /resnet.ts) implements the
BaseModel interface. New base models that conform to the
BaseModel interface can be added to BodyPix.

export abstract class BaseModel {
  constructor(
    protected readonly model: tfconv.GraphModel,
    public readonly outputStride: BodyPixOutputStride) {
    const inputShape =
      this.model.inputs[0].shape as [number, number, number, number];
    tf.util.assert(
      (inputShape[1] === -1) && (inputShape[2] === -1),
      () => `Input shape [${inputShape[1]}, ${inputShape[2]}]
      must both be equal to or -1`);
  }

  abstract preprocessInput(input: tf.Tensor3D): tf.Tensor3D;

  /**
   * Predicts intermediate Tensor representations.
   * @param input The input RGB image of the base model.
   * A Tensor of shape: [inputResolution, inputResolution, 3].
   * @return A dictionary of base model's intermediate predictions.
   * The returned dictionary should contains the following elements:
   * - heatmapScores: A Tensor3D that represents the keypoint heatmap scores.
   * - offsets: A Tensor3D that represents the offsets.
   * - displacementFwd: A Tensor3D that represents the forward displacement.
   * - displacementBwd: A Tensor3D that represents the backward displacement.
   * - segmentation: A Tensor3D that represents the segmentation of all
   * people.
   * - longOffsets: A Tensor3D that represents the long offsets used
   for instance grouping.
   * - partHeatmaps: A Tensor3D that represents the body part segmentation.
   */
  predict(input: tf.Tensor3D): {
    heatmapScores: tf.Tensor3D,
    offsets: tf.Tensor3D,
    displacementFwd: tf.Tensor3D,
    displacementBwd: tf.Tensor3D,
    segmentation: tf.Tensor3D,
    partHeatmaps: tf.Tensor3D,
    longOffsets: tf.Tensor3D,
    partOffsets: tf.Tensor3D
  }
  return tf.tidy(() => {
    const asFloat =

```

```

this.preprocessInput(tf.cast(input, 'float32'));\n    const asBatch = tf.expandDims(asFloat, 0);\n    const results =
this.model.predict(asBatch) as tf.Tensor4D[];\n    const results3d: tf.Tensor3D[] = results.map(y => tf.squeeze(y,
[0]));\n    const namedResults = this.nameOutputResults(results3d);\n\n    return {\n        heatmapScores:
tf.sigmoid(namedResults.heatmap),\n        offsets: namedResults.offsets,\n        displacementFwd:
namedResults.displacementFwd,\n        displacementBwd: namedResults.displacementBwd,\n        segmentation:
namedResults.segmentation,\n        partHeatmaps: namedResults.partHeatmaps,\n        longOffsets:
namedResults.longOffsets,\n        partOffsets: namedResults.partOffsets\n    };;\n    };\n\n\n    // Because
MobileNet and ResNet predict() methods output a different order for\n    // these values, we have a method that needs
to be implemented to order them.\n    abstract nameOutputResults(results: tf.Tensor3D[]): {\n        heatmap:
tf.Tensor3D,\n        offsets: tf.Tensor3D,\n        displacementFwd: tf.Tensor3D,\n        displacementBwd: tf.Tensor3D,\n        segmentation: tf.Tensor3D,\n        partHeatmaps: tf.Tensor3D,\n        longOffsets: tf.Tensor3D,\n        partOffsets:
tf.Tensor3D\n    };;\n\n\n    /**\n     * Releases the CPU and GPU memory allocated by the model.\n     */\n    dispose() {\n        this.model.dispose();\n    }\n\n\n    /**\n     * @license\n     * Copyright 2019 Google Inc. All Rights Reserved.\n     * Licensed under the Apache License, Version 2.0 (the "License");\n     * you may not use this file except in
compliance with the License.\n     * You may obtain a copy of the License at\n     */\n    http://www.apache.org/licenses/LICENSE-2.0\n\n\n    * Unless required by applicable law or agreed to in writing,
software\n    * distributed under the License is distributed on an "AS IS" BASIS,\n    * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n    * See the License for the specific language
governing permissions and\n    * limitations under the License.\n    */
\n\n\n    =====\n\n    /**\n     * import * as tf from '@tensorflow/tfjs-core';\n     * import { BaseModel } from './base_model';\n     * export class
MobileNet extends BaseModel {\n        preprocessInput(input: tf.Tensor3D): tf.Tensor3D {\n            // Normalize the pixels
[0, 255] to be between [-1, 1].\n            return tf.tidy(() => tf.sub(tf.div(input, 127.5), 1.0));\n        }\n\n        nameOutputResults(results: tf.Tensor3D[]) {\n            const [\n                offsets,\n                segmentation,\n                partHeatmaps,\n                longOffsets,\n                heatmap,\n                displacementFwd,\n                displacementBwd,\n                partOffsets,\n            ] = results;\n            return [\n                offsets,\n                segmentation,\n                partHeatmaps,\n                longOffsets,\n                heatmap,\n                displacementFwd,\n                displacementBwd,\n                partOffsets\n            ];;\n        }\n\n\n        /**\n         * @license\n         * Copyright 2019
Google LLC. All Rights Reserved.\n         * Licensed under the Apache License, Version 2.0 (the "License");\n         * you
may not use this file except in compliance with the License.\n         * You may obtain a copy of the License at\n         */\n        http://www.apache.org/licenses/LICENSE-2.0\n\n\n        * Unless required by applicable law or agreed to in writing,
software\n        * distributed under the License is distributed on an "AS IS" BASIS,\n        * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n        * See the License for the specific language
governing permissions and\n        * limitations under the License.\n        */
\n\n\n        =====\n\n        /**\n         * export type Tuple<T> = [T, T];\n         * export type StringTuple = Tuple<string>;\n         * export type NumberTuple =
Tuple<number>;\n         * export const PART_NAMES = [\n            'nose', 'leftEye', 'rightEye', 'leftEar', 'rightEar',
'leftShoulder',\n            'rightShoulder', 'leftElbow', 'rightElbow', 'leftWrist', 'rightWrist',\n            'leftHip', 'rightHip', 'leftKnee', 'rightKnee', 'leftAnkle', 'rightAnkle'\n        ];\n         * export const NUM_KEYPOINTS = PART_NAMES.length;\n         * export
interface NumberDict {\n            [jointName: string]: number;\n        }\n         * export const PART_IDS =\n        PART_NAMES.reduce((result: NumberDict, jointName, i): NumberDict => {\n            result[jointName] = i;\n            return result;\n        }, {});\n         * export const CONNECTED_PART_NAMES: StringTuple[] = [\n            ['leftHip', 'leftShoulder'],
['leftElbow', 'leftShoulder'],\n            ['leftElbow', 'leftWrist'], ['leftHip', 'leftKnee'],\n            ['leftKnee', 'leftAnkle'], ['rightHip', 'rightShoulder'],\n            ['rightElbow', 'rightShoulder'], ['rightElbow', 'rightWrist'],\n            ['rightHip', 'rightKnee'],
['rightKnee', 'rightAnkle'],\n            ['leftShoulder', 'rightShoulder'], ['leftHip', 'rightHip']\n        ];\n\n\n        /**\n         * Define the skeleton. This defines the parent->child relationships of our\n         * tree. Arbitrarily this defines the nose as the root of the tree,
however\n         * since we will infer the displacement for both parent->child and\n         * child->parent, we can define the tree root as any node.\n         */\n         * export const POSE_CHAIN: StringTuple[] = [\n            'nose', 'leftEye', ['leftEye', 'leftEar'],
['nose', 'rightEye'],\n            ['rightEye', 'rightEar'], ['nose', 'leftShoulder'],\n            ['leftShoulder', 'leftElbow'], ['leftElbow',

```

```

'leftWrist'],\n ['leftShoulder', 'leftHip'], ['leftHip', 'leftKnee'],\n ['leftKnee', 'leftAnkle'], ['nose', 'rightShoulder'],\n
['rightShoulder', 'rightElbow'], ['rightElbow', 'rightWrist'],\n ['rightShoulder', 'rightHip'], ['rightHip', 'rightKnee'],\n
['rightKnee', 'rightAnkle']\n];\n\nexport const CONNECTED_PART_INDICES =
CONNECTED_PART_NAMES.map(\n ([jointNameA, jointNameB]) =>\n ([PART_IDS[jointNameA],
PART_IDS[jointNameB]]);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {NUM_KEYPOINTS} from '../keypoints';\nimport {Padding, Part, TensorBuffer3D, Vector2D} from
'../types';\n\nexport function getScale(\n [height, width]: [number, number],\n [inputResolutionY,
inputResolutionX]: [number, number],\n padding: Padding): [number, number] {\n const {top: padT, bottom:
padB, left: padL, right: padR} = padding;\n const scaleY = inputResolutionY / (padT + padB + height);\n const
scaleX = inputResolutionX / (padL + padR + width);\n return [scaleX, scaleY];\n}\n\nexport function
getOffsetPoint(\n y: number, x: number, keypoint: number, offsets: TensorBuffer3D): Vector2D {\n return {\n
y: offsets.get(y, x, keypoint),\n x: offsets.get(y, x, keypoint + NUM_KEYPOINTS)\n };\n}\n\nexport function
getImageCoords(\n part: Part, outputStride: number, offsets: TensorBuffer3D): Vector2D {\n const {heatmapY,
heatmapX, id: keypoint} = part;\n const {y, x} = getOffsetPoint(heatmapY, heatmapX, keypoint, offsets);\n return
{\n x: part.heatmapX * outputStride + x,\n y: part.heatmapY * outputStride + y\n };\n}\n\nexport function
fillArray<T>(element: T, size: number): T[] {\n const result: T[] = new Array(size);\n\n for (let i = 0; i < size; i++)
{\n result[i] = element;\n }\n\n return result;\n}\n\nexport function clamp(a: number, min: number, max:
number): number {\n if (a < min) {\n return min;\n }\n if (a > max) {\n return max;\n }\n return
a;\n}\n\nexport function squaredDistance(\n y1: number, x1: number, y2: number, x2: number): number {\n const
dy = y2 - y1;\n const dx = x2 - x1;\n return dy * dy + dx * dx;\n}\n\nexport function addVectors(a: Vector2D, b:
Vector2D): Vector2D {\n return {x: a.x + b.x, y: a.y + b.y};\n}\n\nexport function clampVector(a: Vector2D, min:
number, max: number): Vector2D {\n return {y: clamp(a.y, min, max), x: clamp(a.x, min, max)};\n}\n", "/*\n *
@license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0
(the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of
the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {NUM_KEYPOINTS} from '../keypoints';\nimport {Padding, Pose} from '../types';\nimport
{getScale} from '../util';\n\ninterface Pair {\n x: number;\n y: number;\n}\n\nfunction computeDistance(embedding:
Pair[], pose: Pose, minPartScore = 0.3) {\n let distance = 0.0;\n let numKpt = 0;\n for (let p = 0; p <
embedding.length; p++) {\n if (pose.keypoints[p].score > minPartScore) {\n numKpt += 1;\n distance +=
(embedding[p].x - pose.keypoints[p].position.x) ** 2 +\n (embedding[p].y - pose.keypoints[p].position.y) **
2;\n }\n }\n if (numKpt === 0) {\n distance = Infinity;\n } else {\n distance = distance / numKpt;\n }\n
return distance;\n}\n\nfunction convertToPositionInOutput(\n position: Pair, [padT, padL]: [number, number],\n [scaleX, scaleY]: [number, number], stride: number): Pair {\n const y = Math.round((((padT + position.y + 1.0) *
scaleY - 1.0) / stride);\n const x = Math.round((((padL + position.x + 1.0) * scaleX - 1.0) / stride);\n return {x,
y};\n}\n\nfunction getEmbedding(\n location: Pair, keypointIndex: number,\n convertToPosition: (pair: Pair) =>
Pair, outputResolutionX: number,\n longOffsets: Float32Array, refineSteps: number,\n [height, width]: [number,
number]): Pair {\n const newLocation = convertToPosition(location);\n\n const nn = newLocation.y *

```

```

outputResolutionX + newLocation.x;\n let dy = longOffsets[NUM_KEYPOINTS * (2 * nn) + keypointIndex];\n let
dx = longOffsets[NUM_KEYPOINTS * (2 * nn + 1) + keypointIndex];\n let y = location.y + dy;\n let x =
location.x + dx;\n for (let t = 0; t < refineSteps; t++) {\n y = Math.min(y, height - 1);\n x = Math.min(x, width -
1);\n const newPos = convertToPosition({x, y});\n const nn = newPos.y * outputResolutionX + newPos.x;\n
dy = longOffsets[NUM_KEYPOINTS * (2 * nn) + keypointIndex];\n dx = longOffsets[NUM_KEYPOINTS * (2
* nn + 1) + keypointIndex];\n y = y + dy;\n x = x + dx;\n }\n\n return {x, y};\n}\n\nfunction
matchEmbeddingToInstance(\n location: Pair, longOffsets: Float32Array, poses: Pose[],\n numKptForMatching:
number, [padT, padL]: [number, number],\n [scaleX, scaleY]: [number, number], outputResolutionX: number,\n
[height, width]: [number, number], stride: number,\n refineSteps: number): number {\n const embed: Pair[] = [];\n
const convertToPosition = (pair: Pair) =>\n convertToPositionInOuput(pair, [padT, padL], [scaleX, scaleY],
stride);\n\n for (let keypointsIndex = 0; keypointsIndex < numKptForMatching;\n keypointsIndex++) {\n
const embedding = getEmbedding(\n location, keypointsIndex, convertToPosition, outputResolutionX,\n
longOffsets, refineSteps, [height, width]);\n embed.push(embedding);\n }\n\n let kMin = -1;\n let kMinDist =
Infinity;\n for (let k = 0; k < poses.length; k++) {\n const dist = computeDistance(embed, poses[k]);\n if (dist <
kMinDist) {\n kMin = k;\n kMinDist = dist;\n }\n }\n return kMin;\n}\n\nfunction getOutputResolution(\n
[inputResolutionY, inputResolutionX]: [number, number],\n stride: number): [number, number] {\n const
outputResolutionX = Math.round((inputResolutionX - 1.0) / stride + 1.0);\n const outputResolutionY =
Math.round((inputResolutionY - 1.0) / stride + 1.0);\n return [outputResolutionX, outputResolutionY];\n}\n\nexport
function decodeMultipleMasksCPU(\n segmentation: Uint8Array, longOffsets: Float32Array,\n
posesAboveScore: Pose[], height: number, width: number, stride: number,\n [inHeight, inWidth]: [number,
number], padding: Padding,\n refineSteps: number, numKptForMatching = 5): Uint8Array[] {\n const dataArrays
=\n posesAboveScore.map(x => new Uint8Array(height * width).fill(0));\n\n const {top: padT, left: padL} =
padding;\n\n const [scaleX, scaleY] =\n getScale([height, width], [inHeight, inWidth], padding);\n const
[outputResolutionX, ] =\n getOutputResolution([inHeight, inWidth], stride);\n for (let i = 0; i < height; i += 1) {\n
for (let j = 0; j < width; j += 1) {\n const n = i * width + j;\n const prob = segmentation[n];\n if (prob ===
1) {\n const kMin = matchEmbeddingToInstance(\n {x: j, y: i}, longOffsets, posesAboveScore,
numKptForMatching,\n [padT, padL], [scaleX, scaleY], outputResolutionX, [height, width],\n stride,
refineSteps);\n if (kMin >= 0) {\n dataArrays[kMin][n] = 1;\n }\n }\n }\n }\n\n return
dataArrays;\n}\n\nexport function decodeMultiplePartMasksCPU(\n segmentation: Uint8Array, longOffsets:
Float32Array,\n partSegmentaion: Uint8Array, posesAboveScore: Pose[], height: number,\n width: number,
stride: number, [inHeight, inWidth]: [number, number],\n padding: Padding, refineSteps: number,\n
numKptForMatching = 5): Int32Array[] {\n const dataArrays =\n posesAboveScore.map(x => new
Int32Array(height * width).fill(-1));\n\n const {top: padT, left: padL} = padding;\n\n const [scaleX, scaleY] =\n
getScale([height, width], [inHeight, inWidth], padding);\n const [outputResolutionX, ] =\n
getOutputResolution([inHeight, inWidth], stride);\n\n for (let i = 0; i < height; i += 1) {\n for (let j = 0; j < width; j
+= 1) {\n const n = i * width + j;\n const prob = segmentation[n];\n if (prob === 1) {\n const kMin =
matchEmbeddingToInstance(\n {x: j, y: i}, longOffsets, posesAboveScore, numKptForMatching,\n
[padT, padL], [scaleX, scaleY], outputResolutionX, [height, width],\n stride, refineSteps);\n if (kMin >=
0) {\n dataArrays[kMin][n] = partSegmentaion[n];\n }\n }\n }\n }\n\n return
dataArrays;\n}\n\n", "/*\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport * as tf_webgl from '@tensorflow/tfjs-backend-

```



```

webgl';\n\nimport {NUM_KEYPOINTS} from './keypoints';\nimport {Padding, Pose} from './types';\nimport
{getScale} from './util';\n\nexport function decodeMultipleMasksWebGl(\n  segmentation: tf.Tensor2D,
  longOffsets: tf.Tensor3D,\n  posesAboveScore: Pose[], height: number, width: number, stride: number,\n  [inHeight, inWidth]: [number, number], padding: Padding,\n  refineSteps: number, minKptScore: number,\n  maxNumPeople: number): tf.TensorInfo {\n  // The height/width of the image/canvas itself.\n  const [origHeight,
  origWidth] = segmentation.shape;\n  // The height/width of the output of the model.\n  const [outHeight, outWidth]
  = longOffsets.shape.slice(0, 2);\n\n  const shapedLongOffsets: tf.Tensor4D =\n    tf.reshape(longOffsets,
  [outHeight, outWidth, 2, NUM_KEYPOINTS]);\n\n  // Make pose tensor of shape [MAX_NUM_PEOPLE,
  NUM_KEYPOINTS, 3] where\n  // the last 3 coordinates correspond to the score, h and w coordinate of that\n  //
  keypoint.\n  const poseVals = new Float32Array(maxNumPeople * NUM_KEYPOINTS * 3).fill(0.0);\n  for (let i =
  0; i < posesAboveScore.length; i++) {\n    const poseOffset = i * NUM_KEYPOINTS * 3;\n    const pose =
  posesAboveScore[i];\n    for (let kp = 0; kp < NUM_KEYPOINTS; kp++) {\n      const keypoint =
  pose.keypoints[kp];\n      const offset = poseOffset + kp * 3;\n      poseVals[offset] = keypoint.score;\n
  poseVals[offset + 1] = keypoint.position.y;\n      poseVals[offset + 2] = keypoint.position.x;\n    }\n  }\n\n  const
  [scaleX, scaleY] =\n    getScale([height, width], [inHeight, inWidth], padding);\n\n  const posesTensor =
  tf.tensor(poseVals, [maxNumPeople, NUM_KEYPOINTS, 3]);\n\n  const {top: padT, left: padL} = padding;\n\n  const
  program: tf_webgl.GPGPUProgram = {\n    variableNames: ['segmentation', 'longOffsets', 'poses'],\n    outputShape:
  [origHeight, origWidth],\n    userCode: `\n    int convertToPositionInOutput(int pos, int pad, float
  scale, int stride) {\n      return round(((float(pos + pad) + 1.0) * scale - 1.0) / float(stride));\n    }\n\n    float
  convertToPositionInOutputFloat(\n      int pos, int pad, float scale, int stride) {\n      return ((float(pos + pad) + 1.0)
  * scale - 1.0) / float(stride);\n    }\n\n    float dist(float x1, float y1, float x2, float y2) {\n      return pow(x1 - x2, 2.0)
  + pow(y1 - y2, 2.0);\n    }\n\n    float sampleLongOffsets(float h, float w, int d, int k) {\n      float fh = fract(h);\n
  float fw = fract(w);\n      int cIH = int(ceil(h));\n      int cIW = int(ceil(w));\n      int fIH = int(floor(h));\n      int fIW =
  int(floor(w));\n      float o11 = getLongOffsets(fIH, fIW, d, k);\n      float o12 = getLongOffsets(fIH, cIW, d, k);\n
  float o21 = getLongOffsets(cIH, fIW, d, k);\n      float o22 = getLongOffsets(cIH, cIW, d, k);\n      float o1 =
  mix(o11, o12, fw);\n      float o2 = mix(o21, o22, fw);\n      return mix(o1, o2, fh);\n    }\n\n    int
  findNearestPose(int h, int w) {\n      float prob = getSegmentation(h, w);\n      if (prob < 1.0) {\n        return -1;\n
      }\n\n      // Done(Tyler): convert from output space h/w to strided space.\n      float stridedH =
  convertToPositionInOutputFloat(\n        h, ${padT}, ${scaleY}, ${stride});\n      float stridedW =
  convertToPositionInOutputFloat(\n        w, ${padL}, ${scaleX}, ${stride});\n\n      float minDist = 1000000.0;\n
  int iMin = -1;\n      for (int i = 0; i < ${maxNumPeople}; i++) {\n        float curDistSum = 0.0;\n        int numKpt =
  0;\n        for (int k = 0; k < ${NUM_KEYPOINTS}; k++) {\n          float dy = sampleLongOffsets(stridedH,
  stridedW, 0, k);\n          float dx = sampleLongOffsets(stridedH, stridedW, 1, k);\n\n          float y = float(h) + dy;\n
          float x = float(w) + dx;\n\n          for (int s = 0; s < ${refineSteps}; s++) {\n            int yRounded = round(min(y,
  float(${height} - 1.0));\n            int xRounded = round(min(x, float(${width} - 1.0));\n\n            float yStrided =
  convertToPositionInOutputFloat(\n              yRounded, ${padT}, ${scaleY}, ${stride});\n            float xStrided =
  convertToPositionInOutputFloat(\n              xRounded, ${padL}, ${scaleX}, ${stride});\n\n            float dy =
  sampleLongOffsets(yStrided, xStrided, 0, k);\n            float dx = sampleLongOffsets(yStrided, xStrided, 1, k);\n\n
            y = y + dy;\n            x = x + dx;\n          }\n\n          float poseScore = getPoses(i, k, 0);\n          float poseY =
  getPoses(i, k, 1);\n          float poseX = getPoses(i, k, 2);\n          if (poseScore > ${minKptScore}) {\n            numKpt =
  numKpt + 1;\n            curDistSum = curDistSum + dist(x, y, poseX, poseY);\n          }\n        }\n        if
  (numKpt > 0 && curDistSum / float(numKpt) < minDist) {\n          minDist = curDistSum / float(numKpt);\n
        }\n      }\n      return iMin;\n    }\n\n    void main() {\n      ivec2 coords = getOutputCoords();\n      int nearestPose =
  findNearestPose(coords[0], coords[1]);\n      setOutput(float(nearestPose));\n    }\n  `;\n\n  const webglBackend =
  tf.backend() as tf_webgl.MathBackendWebGL;\n  return webglBackend.compileAndRun(\n    program, [segmentation,
  shapedLongOffsets, posesTensor]);\n}\n\n"/**\n * @license\n * Copyright 2019 Google
  Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
  use this file except in compliance with the License.\n * You may obtain a copy of the License at\n */

```

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport {getBackend} from '@tensorflow/tfjs-core';\nimport {Padding, PartSegmentation, PersonSegmentation, Pose} from './types';\nimport {decodeMultipleMasksCPU, decodeMultiplePartMasksCPU} from './decode_multiple_masks_cpu';\nimport {decodeMultipleMasksWebGl} from './decode_multiple_masks_webgl';\n\nexport function toPersonKSegmentation(\n  segmentation: tf.Tensor2D, k:\n  number): tf.Tensor2D {\n  return tf.tidy(() => (tf.cast(tf.equal(\n    segmentation, tf.scalar(k)), 'int32') as\n    tf.Tensor2D));\n}\n\nexport function toPersonKPartSegmentation(\n  segmentation: tf.Tensor2D, bodyParts:\n  tf.Tensor2D, k: number): tf.Tensor2D {\n  return tf.tidy(() => tf.sub(tf.mul(tf.cast(tf.equal(\n    segmentation, tf.scalar(k)), 'int32'), tf.add(bodyParts, 1)), 1));\n}\n\nfunction isWebGIBackend() {\n  return\n  getBackend() === 'webgl';\n}\n\nexport async function decodePersonInstanceMasks(\n  segmentation:\n  tf.Tensor2D, longOffsets: tf.Tensor3D, poses: Pose[],\n  height: number, width: number, stride: number,\n  [inHeight, inWidth]: [number, number], padding: Padding, minPoseScore = 0.2,\n  refineSteps = 8, minKeypointScore = 0.3,\n  maxNumPeople = 10): Promise<PersonSegmentation[]> {\n  // Filter out poses with\n  // smaller score.\n  const posesAboveScore = poses.filter(pose => pose.score >= minPoseScore);\n  let\n  personSegmentationsData: Uint8Array[];\n  if (isWebGIBackend()) {\n    const personSegmentations = tf.tidy(()\n    => {\n      const masksTensorInfo = decodeMultipleMasksWebGl(\n        segmentation, longOffsets,\n        posesAboveScore, height, width, stride,\n        [inHeight, inWidth], padding, refineSteps, minKeypointScore,\n        maxNumPeople);\n      const masksTensor = tf.engine().makeTensorFromDataId(\n        masksTensorInfo.dataId,\n        masksTensorInfo.shape,\n        masksTensorInfo.dtype) as tf.Tensor2D;\n      return posesAboveScore.map(\n        (_, k) => toPersonKSegmentation(masksTensor, k));\n    });\n    personSegmentationsData =\n    (await\n    Promise.all(personSegmentations.map(mask => mask.data())) as\n    Uint8Array[]);\n  } else {\n    const segmentationsData = await\n    segmentation.data() as Uint8Array;\n    const longOffsetsData = await\n    longOffsets.data() as Float32Array;\n    personSegmentationsData =\n    decodeMultipleMasksCPU(\n      segmentationsData, longOffsetsData,\n      posesAboveScore, height, width,\n      stride, [inHeight, inWidth], padding, refineSteps);\n  }\n  return\n  personSegmentationsData.map(\n    (data, i) => ({data, pose: posesAboveScore[i], width, height});\n  );\n}\n\nexport\n  async function decodePersonInstancePartMasks(\n  segmentation: tf.Tensor2D, longOffsets: tf.Tensor3D,\n  partSegmentation: tf.Tensor2D, poses: Pose[], height: number, width: number,\n  stride: number, [inHeight, inWidth]: [number, number], padding: Padding,\n  minPoseScore = 0.2, refineSteps = 8, minKeypointScore =\n  0.3,\n  maxNumPeople = 10): Promise<PartSegmentation[]> {\n  const posesAboveScore = poses.filter(pose =>\n  pose.score >= minPoseScore);\n  let partSegmentationsByPersonData: Int32Array[];\n  if (isWebGIBackend())\n  {\n    const partSegmentations = tf.tidy(() => {\n      const masksTensorInfo = decodeMultipleMasksWebGl(\n        segmentation, longOffsets, posesAboveScore, height, width, stride,\n        [inHeight, inWidth], padding,\n        refineSteps, minKeypointScore,\n        maxNumPeople);\n      const masksTensor =\n      tf.engine().makeTensorFromDataId(\n        masksTensorInfo.dataId, masksTensorInfo.shape,\n        masksTensorInfo.dtype) as tf.Tensor2D;\n      return posesAboveScore.map(\n        (_, k) =>\n        toPersonKPartSegmentation(masksTensor, partSegmentation, k);\n      );\n    });\n    partSegmentationsByPersonData =\n    (await\n    Promise.all(partSegmentations.map(x => x.data())) as\n    Int32Array[]);\n  } else {\n    const segmentationsData = await\n    segmentation.data()\n    as Uint8Array;\n    const longOffsetsData = await\n    longOffsets.data() as Float32Array;\n    const\n    partSegmentaionData = await\n    partSegmentation.data() as Uint8Array;\n    partSegmentationsByPersonData =\n    decodeMultiplePartMasksCPU(\n      segmentationsData, longOffsetsData, partSegmentaionData,\n      posesAboveScore, height, width, stride, [inHeight, inWidth], padding,\n      refineSteps);\n  }\n  return\n  partSegmentationsByPersonData.map(\n    (data, k) => ({pose: posesAboveScore[k], data, height,
```

width}));\n}\n", "/*\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```
=====\n*\n// algorithm based on Coursera Lecture from Algorithms, Part 1:\n// https://www.coursera.org/learn/algorithms-part1/lecture/ZjoSM/heapsort\nfunction half(k: number) {\n  return Math.floor(k / 2);\n}\n\nexport class MaxHeap<T> {\n  private priorityQueue: T[];\n  private numberOfElements: number;\n  private getElementValue: (element: T) => number;\n\n  constructor(maxSize: number, getElementValue: (element: T) => number) {\n    this.priorityQueue = new Array(maxSize);\n    this.numberOfElements = -1;\n    this.getElementValue = getElementValue;\n  }\n\n  public enqueue(x: T): void {\n    this.priorityQueue[++this.numberOfElements] = x;\n    this.swim(this.numberOfElements);\n  }\n\n  public dequeue(): T {\n    const max = this.priorityQueue[0];\n    this.exchange(0, this.numberOfElements--);\n    this.sink(0);\n    this.priorityQueue[this.numberOfElements + 1] = null;\n    return max;\n  }\n\n  public empty(): boolean {\n    return this.numberOfElements === -1;\n  }\n\n  public size(): number {\n    return this.numberOfElements + 1;\n  }\n\n  public all(): T[] {\n    return this.priorityQueue.slice(0, this.numberOfElements + 1);\n  }\n\n  public max(): T {\n    return this.priorityQueue[0];\n  }\n\n  private swim(k: number): void {\n    while (k > 0 && this.less(half(k), k)) {\n      this.exchange(k, half(k));\n      k = half(k);\n    }\n  }\n\n  private sink(k: number): void {\n    while (2 * k <= this.numberOfElements) {\n      let j = 2 * k;\n      if (j < this.numberOfElements && this.less(j, j + 1)) {\n        j++;\n      }\n      if (!this.less(k, j)) {\n        break;\n      }\n      this.exchange(k, j);\n      k = j;\n    }\n  }\n\n  private getValueAt(i: number): number {\n    return this.getElementValue(this.priorityQueue[i]);\n  }\n\n  private less(i: number, j: number): boolean {\n    return this.getValueAt(i) < this.getValueAt(j);\n  }\n\n  private exchange(i: number, j: number): void {\n    const t = this.priorityQueue[i];\n    this.priorityQueue[i] = this.priorityQueue[j];\n    this.priorityQueue[j] = t;\n  }\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport { PartWithScore, TensorBuffer3D } from './types';\nimport { MaxHeap } from './max_heap';\n\nfunction scoreIsMaximumInLocalWindow(\n  keypointId: number, score: number, heatmapY: number, heatmapX: number,\n  localMaximumRadius: number, scores: TensorBuffer3D): boolean {\n  const [height, width] = scores.shape;\n  let localMaximum = true;\n  const yStart = Math.max(heatmapY - localMaximumRadius, 0);\n  const yEnd = Math.min(heatmapY + localMaximumRadius + 1, height);\n  for (let yCurrent = yStart; yCurrent < yEnd; ++yCurrent) {\n    const xStart = Math.max(heatmapX - localMaximumRadius, 0);\n    const xEnd = Math.min(heatmapX + localMaximumRadius + 1, width);\n    for (let xCurrent = xStart; xCurrent < xEnd; ++xCurrent) {\n      if (scores.get(yCurrent, xCurrent, keypointId) > score) {\n        localMaximum = false;\n        break;\n      }\n    }\n    if (!localMaximum) {\n      break;\n    }\n  }\n  return localMaximum;\n}\n\n/*\n * Builds a priority queue with part candidate positions for a specific image in\n * the batch. For this we find all local maxima in the score maps with score\n * values above a threshold. We create a single priority queue across all parts.\n */\n\nexport function buildPartWithScoreQueue(\n  scoreThreshold: number, localMaximumRadius: number,\n  scores: TensorBuffer3D): MaxHeap<PartWithScore> {\n  const [height, width, numKeypoints] = scores.shape;\n  const queue = new MaxHeap<PartWithScore>(\n    height * width *
```

```

numKeypoints, ({score}) => score);\n\n for (let heatmapY = 0; heatmapY < height; ++heatmapY) {\n  for (let
heatmapX = 0; heatmapX < width; ++heatmapX) {\n    for (let keypointId = 0; keypointId < numKeypoints;
++keypointId) {\n      const score = scores.get(heatmapY, heatmapX, keypointId);\n      // Only consider parts
with score greater or equal to threshold as\n      // root candidates.\n      if (score < scoreThreshold) {\n
continue;\n    }\n    // Only consider keypoints whose score is maximum in a local window.\n    if
(scoreIsMaximumInLocalWindow(\n      keypointId, score, heatmapY, heatmapX, localMaximumRadius,\n      scores)) {\n      queue.enqueue({score, part: {heatmapY, heatmapX, id: keypointId}});\n    }\n  }\n}\n}\n}\n\n return queue;\n}\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {NumberTuple, PART_IDS, PART_NAMES, POSE_CHAIN} from './keypoints';\nimport {Keypoint,
PartWithScore, TensorBuffer3D, Vector2D} from './types';\nimport {clamp, getOffsetPoint} from './util';\nimport
{addVectors, getImageCoords} from './util';\n\nconst parentChildrenTuples: NumberTuple[] =
POSE_CHAIN.map(\n  ([parentJoinName, childJoinName]): NumberTuple =>\n  ([PART_IDS[parentJoinName], PART_IDS[childJoinName]]);\n\nconst parentToChildEdges: number[] =\n  parentChildrenTuples.map(([, childJointId]) => childJointId);\n\nconst childToParentEdges: number[] =\n  parentChildrenTuples.map(([\n    parentJointId,\n    ] =>\n  parentJointId);\n\nfunction getDisplacement(\n  edgeId: number, point: Vector2D, displacements:
TensorBuffer3D): Vector2D {\n  const numEdges = displacements.shape[2] / 2;\n  return {\n    y:
displacements.get(point.y, point.x, edgeId),\n    x: displacements.get(point.y, point.x, numEdges + edgeId)\n  };\n}\n\nfunction getStridedIndexNearPoint(\n  point: Vector2D, outputStride: number, height: number,\n  width:
number): Vector2D {\n  return {\n    y: clamp(Math.round(point.y / outputStride), 0, height - 1),\n    x:
clamp(Math.round(point.x / outputStride), 0, width - 1)\n  };\n}\n\n/**\n * We get a new keypoint along the
`edgeId` for the pose instance, assuming\n * that the position of the `idSource` part is already known. For this, we\n
* follow the displacement vector from the source to target part (stored in\n * the `i`-t channel of the displacement
tensor). The displaced keypoint\n * vector is refined using the offset vector by `offsetRefineStep` times.\n
*\nfunction traverseToTargetKeypoint(\n  edgeId: number, sourceKeypoint: Keypoint, targetKeypointId:
number,\n  scoresBuffer: TensorBuffer3D, offsets: TensorBuffer3D, outputStride: number,\n  displacements:
TensorBuffer3D, offsetRefineStep = 2): Keypoint {\n  const [height, width] = scoresBuffer.shape;\n  // Nearest
neighbor interpolation for the source->target displacements.\n  const sourceKeypointIndices =
getStridedIndexNearPoint(\n    sourceKeypoint.position, outputStride, height, width);\n  const displacement =\n  getDisplacement(edgeId, sourceKeypointIndices, displacements);\n  const displacedPoint =
addVectors(sourceKeypoint.position, displacement);\n  let targetKeypoint = displacedPoint;\n  for (let i = 0; i <
offsetRefineStep; i++) {\n    const targetKeypointIndices =\n      getStridedIndexNearPoint(targetKeypoint,
outputStride, height, width);\n    const offsetPoint = getOffsetPoint(\n      targetKeypointIndices.y,
targetKeypointIndices.x, targetKeypointId,\n      offsets);\n    targetKeypoint = addVectors(\n      {\n        x:
targetKeypointIndices.x * outputStride,\n        y: targetKeypointIndices.y * outputStride\n      },\n      {\n
x: offsetPoint.x, y: offsetPoint.y});\n  }\n  const targetKeypointIndices =\n  getStridedIndexNearPoint(targetKeypoint, outputStride, height, width);\n  const score = scoresBuffer.get(\n
targetKeypointIndices.y, targetKeypointIndices.x, targetKeypointId);\n  return {position: targetKeypoint, part:
PART_NAMES[targetKeypointId], score};\n}\n\n/**\n * Follows the displacement fields to decode the full pose of
the object\n * instance given the position of a part that acts as root.\n *\n * @return An array of decoded keypoints
and their scores for a single pose\n *\nexport function decodePose(\n  root: PartWithScore, scores:

```

```

TensorBuffer3D, offsets: TensorBuffer3D,\n  outputStride: number, displacementsFwd: TensorBuffer3D,\n  displacementsBwd: TensorBuffer3D): Keypoint[] {\n  const numParts = scores.shape[2];\n  const numEdges =\n  parentToChildEdges.length;\n  const instanceKeypoints: Keypoint[] = new Array(numParts);\n  // Start a new\n  detection instance at the position of the root.\n  const {part: rootPart, score: rootScore} = root;\n  const rootPoint =\n  getImageCoords(rootPart, outputStride, offsets);\n  instanceKeypoints[rootPart.id] = {\n  score: rootScore,\n  part: PART_NAMES[rootPart.id],\n  position: rootPoint\n  };\n  // Decode the part positions upwards in the tree,\n  following the backward\n  // displacements.\n  for (let edge = numEdges - 1; edge >= 0; --edge) {\n  const\n  sourceKeypointId = parentToChildEdges[edge];\n  const targetKeypointId = childToParentEdges[edge];\n  if\n  (instanceKeypoints[sourceKeypointId] &&\n  !instanceKeypoints[targetKeypointId]) {\n  instanceKeypoints[targetKeypointId] = traverseToTargetKeypoint(\n  edge,\n  instanceKeypoints[sourceKeypointId], targetKeypointId, scores,\n  offsets, outputStride, displacementsBwd);\n  }\n  }\n  // Decode the part positions downwards in the tree, following the forward\n  // displacements.\n  for (let\n  edge = 0; edge < numEdges; ++edge) {\n  const sourceKeypointId = childToParentEdges[edge];\n  const\n  targetKeypointId = parentToChildEdges[edge];\n  if (instanceKeypoints[sourceKeypointId] &&\n  !instanceKeypoints[targetKeypointId]) {\n  instanceKeypoints[targetKeypointId] = traverseToTargetKeypoint(\n  edge, instanceKeypoints[sourceKeypointId], targetKeypointId, scores,\n  offsets, outputStride,\n  displacementsFwd);\n  }\n  }\n  return instanceKeypoints;\n  }\n  }"/**\n  * @license\n  * Copyright 2019 Google\n  Inc. All Rights Reserved.\n  * Licensed under the Apache License, Version 2.0 (the "License");\n  * you may not\n  use this file except in compliance with the License.\n  * You may obtain a copy of the License at\n  *\n  * http://www.apache.org/licenses/LICENSE-2.0\n  *\n  * Unless required by applicable law or agreed to in writing,\n  software\n  * distributed under the License is distributed on an "AS IS"\n  BASIS,\n  * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n  * See the License for the specific language\n  governing permissions and\n  * limitations under the License.\n  *\n  =====\n  *\n  import {Keypoint, Pose, TensorBuffer3D} from './types';\n  import {buildPartWithScoreQueue} from\n  './build_part_with_score_queue';\n  import {decodePose} from './decode_pose';\n  import {getImageCoords,\n  squaredDistance} from './util';\n  function withinNmsRadiusOfCorrespondingPoint(\n  poses: Pose[],\n  squaredNmsRadius: number, {x, y}: {x: number, y: number},\n  keypointId: number): boolean {\n  return\n  poses.some(({keypoints}) => {\n  const correspondingKeypoint = keypoints[keypointId].position;\n  return\n  squaredDistance(\n  y, x, correspondingKeypoint.y, correspondingKeypoint.x) <= \n  squaredNmsRadius;\n  });\n  }\n  /* Score the newly proposed object instance without taking into account\n  * the\n  scores of the parts that overlap with any previously detected\n  * instance.\n  */\n  function getInstanceScore(\n  existingPoses: Pose[], squaredNmsRadius: number,\n  instanceKeypoints: Keypoint[]): number {\n  let\n  notOverlappedKeypointScores = instanceKeypoints.reduce(\n  (result, {position, score}, keypointId): number =>\n  {\n  if (!withinNmsRadiusOfCorrespondingPoint(\n  existingPoses, squaredNmsRadius, position,\n  keypointId)) {\n  result += score;\n  }\n  return result;\n  }, 0.0);\n  return\n  notOverlappedKeypointScores / instanceKeypoints.length;\n  }\n  // A point (y, x) is considered as root part\n  candidate if its score is a\n  // maximum in a window |y - y'| <= kLocalMaximumRadius, |x - x'| <= \n  //\n  kLocalMaximumRadius.\n  const kLocalMaximumRadius = 1;\n  /**\n  * Detects multiple poses and finds their parts\n  from part scores and\n  * displacement vectors. It returns up to `maxDetections` object instance\n  * detections in\n  decreasing root score order. It works as follows: We first\n  * create a priority queue with local part score maxima\n  above\n  * `scoreThreshold`, considering all parts at the same time. Then we\n  * iteratively pull the top element of\n  the queue (in decreasing score order)\n  * and treat it as a root candidate for a new object instance. To avoid\n  * duplicate detections, we reject the root candidate if it is within a disk\n  * of `nmsRadius` pixels from the\n  corresponding part of a previously detected\n  * instance, which is a form of part-based non-maximum suppression\n  (NMS). If\n  * the root candidate passes the NMS check, we start a new object instance\n  * detection, treating the\n  corresponding part as root and finding the\n  * positions of the remaining parts by following the displacement\n  vectors\n  * along the tree-structured part graph. We assign to the newly detected\n  * instance a score equal to the

```

sum of scores of its parts which have not been claimed by a previous instance (i.e., those at least `nmsRadius` pixels away from the corresponding part of all previously detected instances), divided by the total number of parts `numParts`. The value of `heatmapScores[y, x, k]` is the score of placing the `k`-th object part at position `(y, x)`. The value of `[offsets[y, x, k], offsets[y, x, k + numParts]]` is the short range offset vector of the `k`-th object part at heatmap position `(y, x)`. The value of `displacementsFwd` 3-D tensor of shape `[height, width, 2 * num_edges]`, where `num_edges = num_parts - 1` is the number of edges (parent-child pairs) in the tree. It contains the forward displacements between consecutive part from the root towards the leaves. The value of `displacementsBwd` 3-D tensor of shape `[height, width, 2 * num_edges]`, where `num_edges = num_parts - 1` is the number of edges (parent-child pairs) in the tree. It contains the backward displacements between consecutive part from the root towards the leaves. The value of `outputStride` The output stride that was used when feed-forwarding through the PoseNet model. Must be 32, 16, or 8. The value of `maxPoseDetections` Maximum number of returned instance detections per image. The value of `scoreThreshold` Only return instance detections that have root part score greater or equal to this value. Defaults to 0.5. The value of `nmsRadius` Non-maximum suppression part distance. It needs to be strictly positive. Two parts suppress each other if they are less than `nmsRadius` pixels away. Defaults to 20. The return value is an array of poses and their scores, each containing keypoints and the corresponding keypoint scores.

```

function decodeMultiplePoses(scoresBuffer: TensorBuffer3D,
offsetsBuffer: TensorBuffer3D,
displacementsFwdBuffer: TensorBuffer3D,
displacementsBwdBuffer:
TensorBuffer3D, outputStride: number,
maxPoseDetections: number, scoreThreshold = 0.5, nmsRadius = 20):
Pose[] {
  const poses: Pose[] = [];
  const queue = buildPartWithScoreQueue(scoreThreshold,
kLocalMaximumRadius, scoresBuffer);
  const squaredNmsRadius = nmsRadius * nmsRadius;
  // Generate at most maxDetections object instances per image in
  // decreasing root part score order.
  while (poses.length < maxPoseDetections && !queue.empty()) {
    // The top element in the queue is the next root candidate.
    const root = queue.dequeue();
    // Part-based non-maximum suppression: We reject a root candidate if it
    // is within a disk of nmsRadius pixels from the corresponding part of
    // a previously detected instance.
    const rootImageCoords =
      getImageCoords(root.part, outputStride, offsetsBuffer);
    if (withinNmsRadiusOfCorrespondingPoint(poses, squaredNmsRadius,
rootImageCoords, root.part.id)) {
      continue;
    }
    // Start a new detection instance at the position of the root.
    const keypoints =
      decodePose(root, scoresBuffer, offsetsBuffer, outputStride,
displacementsFwdBuffer,
displacementsBwdBuffer);
    const score = getInstanceScore(poses, squaredNmsRadius, keypoints);
    poses.push({keypoints, score});
  }
  return poses;
}

```

Copyright 2019 Google Inc. All Rights Reserved. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <https://www.apache.org/licenses/LICENSE-2.0>. Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```

import * as tf from 'tensorflow/tfjs-core';
import { BaseModel } from './base_model';
const imageNetMean = [-123.15, -115.90, -103.06];
export class ResNet extends BaseModel {
  preprocessInput(input: tf.Tensor3D): tf.Tensor3D {
    return tf.add(input, imageNetMean);
  }
  nameOutputResults(results: tf.Tensor3D[]) {
    const [displacementBwd, displacementFwd, heatmap,
longOffsets, offsets, partHeatmaps, segmentation,
partOffsets] = results;
    return [offsets, segmentation, partHeatmaps, longOffsets, heatmap,
displacementFwd, displacementBwd, partOffsets];
  }
}

```

Copyright 2019 Google Inc. All Rights Reserved. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nconst RESNET50_BASE_URL =\n  'https://storage.googleapis.com/tfjs-
models/savedmodel/bodypix/resnet50/';\nconst MOBILENET_BASE_URL =\n  'https://storage.googleapis.com/tfjs-models/savedmodel/bodypix/mobilenet/';\n\n// The BodyPix 2.0 ResNet50
models use the latest TensorFlow.js 1.0 model\n// format.\nexport function resNet50SavedModel(stride: number,
quantBytes: number): string {\n  const graphJson = `model-stride${stride}.json`;\n  // quantBytes=4 corresponding
to the non-quantized full-precision SavedModel.\n  if (quantBytes === 4) {\n    return RESNET50_BASE_URL +
`float` + graphJson;\n  } else {\n    return RESNET50_BASE_URL + `quant${quantBytes}` + graphJson;\n  }\n}\n\n// The BodyPix 2.0 MobileNetV1 models use the latest TensorFlow.js 1.0 model\n// format.\nexport
function mobileNetSavedModel(\n  stride: number, multiplier: number, quantBytes: number): string {\n  const
toStr: {[key: number]: string} = {1.0: '100', 0.75: '075', 0.50: '050'};\n  const graphJson = `model-
stride${stride}.json`;\n  // quantBytes=4 corresponding to the non-quantized full-precision SavedModel.\n  if
(quantBytes === 4) {\n    return MOBILENET_BASE_URL + `float${toStr[multiplier]}` + graphJson;\n  } else
{\n    return MOBILENET_BASE_URL + `quant${quantBytes}/${toStr[multiplier]}` +\n      graphJson;\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n * \n *
=====
```

```
*\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport {BodyPixInput, BodyPixOutputStride, Padding} from
 './types';\nimport {Pose, TensorBuffer3D} from './types';\nimport {BodyPixInternalResolution} from
 './types';\n\nfunction getSizeFromImageLikeElement(input: HTMLImageElement|\nHTMLCanvasElement|\n  OffscreenCanvas): [number, number] {\n  if ('offsetHeight' in input
&& input.offsetHeight !== 0\n    && 'offsetWidth' in input && input.offsetWidth !== 0) {\n    return
[input.offsetHeight, input.offsetWidth];\n  } else if (input.height !== null && input.width !== null) {\n    return
[input.height, input.width];\n  } else {\n    throw new Error(\n      `HTMLImageElement must have height and
width attributes set.`);\n  }\n}\n\nfunction getSizeFromVideoElement(input: HTMLVideoElement): [number,
number] {\n  if (input.hasAttribute('height') && input.hasAttribute('width')) {\n    // Prioritizes user
specified height
and width.\n    // We can't test the .height and .width properties directly,\n    // because they evaluate to 0 if unset.\n    return [input.height, input.width];\n  } else {\n    return [input.videoHeight, input.videoWidth];\n  }\n}\n\nexport
function getInputSize(input: BodyPixInput): [number, number] {\n  if ((typeof (HTMLCanvasElement) !==
'undefined' &&\n    input instanceof HTMLCanvasElement) ||\n    (typeof (OffscreenCanvas) !== 'undefined'
&&\n    input instanceof OffscreenCanvas) ||\n    (typeof (HTMLImageElement) !== 'undefined' &&\n    input instanceof HTMLImageElement)) {\n    return
getSizeFromImageLikeElement(input);\n  } else if (typeof
(ImageData) !== 'undefined' && input instanceof ImageData) {\n    return [input.height, input.width];\n  }
else if (\n    typeof (HTMLVideoElement) !== 'undefined' && input instanceof HTMLVideoElement) {\n    return
getSizeFromVideoElement(input);\n  } else if (input instanceof tf.Tensor) {\n    return [input.shape[0],
input.shape[1]];\n  } else {\n    throw new Error(`error: Unknown input type: ${input}`);\n  }\n}\n\nfunction
isValidInputResolution(\n  resolution: number, outputStride: number): boolean {\n  return (resolution - 1) %
outputStride === 0;\n}\n\nexport function toValidInputResolution(\n  inputResolution: number, outputStride:
BodyPixOutputStride): number {\n  if (isValidInputResolution(inputResolution, outputStride)) {\n    return
inputResolution;\n  }\n  return Math.floor(inputResolution / outputStride) * outputStride + 1;\n}\n\nconst
```

```

INTERNAL_RESOLUTION_STRING_OPTIONS = {\n low: 'low',\n medium: 'medium',\n high: 'high',\n full:
'full'\n};\n\nconst INTERNAL_RESOLUTION_PERCENTAGES = {\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.low]: 0.25,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.medium]: 0.5,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.high]: 0.75,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.full]: 1.0\n};\n\nconst MIN_INTERNAL_RESOLUTION =
0.1;\nconst MAX_INTERNAL_RESOLUTION = 2.0;\n\nfunction toInternalResolutionPercentage(\n
internalResolution: BodyPixInternalResolution): number {\n  if (typeof internalResolution === 'string') {\n    const
result = INTERNAL_RESOLUTION_PERCENTAGES[internalResolution];\n\n    tf.util.assert(\n      typeof result
=== 'number',\n      () => `string value of inputResolution must be one of ${\n
Object.values(INTERNAL_RESOLUTION_STRING_OPTIONS)\n        .join(',')\n      } but was
${internalResolution}.`);\n    return result;\n  } else {\n    tf.util.assert(\n      typeof internalResolution === 'number'
&&\n      internalResolution <= MAX_INTERNAL_RESOLUTION &&\n      internalResolution >=
MIN_INTERNAL_RESOLUTION,\n      () =>\n        `inputResolution must be a string or number between ${\n
MIN_INTERNAL_RESOLUTION} and ${MAX_INTERNAL_RESOLUTION}, but ` +\n        `was
${internalResolution}`);\n\n    return internalResolution;\n  }\n}\n\nexport function
toInputResolutionHeightAndWidth(\n  internalResolution: BodyPixInternalResolution,\n  outputStride:
BodyPixOutputStride,\n  [inputHeight, inputWidth]: [number, number]): [number, number] {\n  const
internalResolutionPercentage =\n    toInternalResolutionPercentage(internalResolution);\n\n  return [\n
toValidInputResolution(\n    inputHeight * internalResolutionPercentage, outputStride),\n
toValidInputResolution(\n    inputWidth * internalResolutionPercentage, outputStride)\n  ];\n}\n\nexport function
toInputTensor(input: BodyPixInput) {\n  // TODO: tf.browser.fromPixels types to support OffscreenCanvas\n //
@ts-ignore\n  return input instanceof tf.Tensor ? input : tf.browser.fromPixels(input);\n}\n\nexport function
resizeAndPadTo(\n  imageTensor: tf.Tensor3D, [targetH, targetW]: [number, number],\n  flipHorizontal = false):
{\n  resizedAndPadded: tf.Tensor3D,\n  paddedBy: [[number, number], [number, number]]\n} {\n  const [height,
width] = imageTensor.shape;\n\n  const targetAspect = targetW / targetH;\n  const aspect = width / height;\n\n  let
resizeW: number;\n  let resizeH: number;\n  let padL: number;\n  let padR: number;\n  let padT: number;\n  let
padB: number;\n\n  if (aspect > targetAspect) {\n    // resize to have the larger dimension match the shape.\n
resizeW = targetW;\n    resizeH = Math.ceil(resizeW / aspect);\n\n    const padHeight = targetH - resizeH;\n    padL
= 0;\n    padR = 0;\n    padT = Math.floor(padHeight / 2);\n    padB = targetH - (resizeH + padT);\n  } else {\n
resizeH = targetH;\n    resizeW = Math.ceil(targetH * aspect);\n\n    const padWidth = targetW - resizeW;\n    padL
= Math.floor(padWidth / 2);\n    padR = targetW - (resizeW + padL);\n    padT = 0;\n    padB = 0;\n  }\n\n  const
resizedAndPadded = tf.tidy(() => {\n    // resize to have largest dimension match image\n    let resized:
tf.Tensor3D;\n    if (flipHorizontal) {\n      resized = tf.image.resizeBilinear(\n        tf.reverse(imageTensor, 1),
[resizeH, resizeW]);\n    } else {\n      resized = tf.image.resizeBilinear(imageTensor, [resizeH, resizeW]);\n    }\n\n
const padded = tf.pad3d(resized, [[padT, padB], [padL, padR], [0, 0]]);\n\n    return padded;\n  });\n\n  return
{resizedAndPadded, paddedBy: [[padT, padB], [padL, padR]]};\n}\n\nexport function
scaleAndCropToInputTensorShape(\n  tensor: tf.Tensor3D,\n  [inputTensorHeight, inputTensorWidth]: [number,
number],\n  [resizedAndPaddedHeight, resizedAndPaddedWidth]: [number, number],\n  [[padT, padB], [padL,
padR]]: [[number, number], [number, number]],\n  applySigmoidActivation = false): tf.Tensor3D {\n  return
tf.tidy(() => {\n    let inResizedAndPadded: tf.Tensor3D = tf.image.resizeBilinear(tensor,\n
[resizedAndPaddedHeight, resizedAndPaddedWidth], true);\n\n    if (applySigmoidActivation) {\n
inResizedAndPadded = tf.sigmoid(inResizedAndPadded);\n    }\n\n    return removePaddingAndResizeBack(\n
inResizedAndPadded, [inputTensorHeight, inputTensorWidth],\n      [[padT, padB], [padL, padR]]);\n
});\n}\n\nexport function removePaddingAndResizeBack(\n  resizedAndPadded: tf.Tensor3D,\n  [originalHeight,
originalWidth]: [number, number],\n  [[padT, padB], [padL, padR]]: [[number, number], [number, number]]):\n
tf.Tensor3D {\n  return tf.tidy(() => {\n    const batchedImage: tf.Tensor4D = tf.expandDims(resizedAndPadded);\n
return tf.squeeze(tf.image\n      .cropAndResize(\n        batchedImage, [[\n          padT / (originalHeight +

```



```

padT + padB - 1.0),\n      padL / (originalWidth + padL + padR - 1.0),\n      (padT + originalHeight - 1.0)
/\n      (originalHeight + padT + padB - 1.0),\n      (padL + originalWidth - 1.0) / (originalWidth + padL
+ padR - 1.0)\n    ]],\n    [0], [originalHeight, originalWidth], [0]);\n  });\n}\n\nexport function resize2d(\n  tensor: tf.Tensor2D, resolution: [number, number],\n  nearestNeighbor?: boolean): tf.Tensor2D {\n  return
tf.tidy(() => {\n    const batchedImage: tf.Tensor4D = tf.expandDims(tensor, 2);\n    return tf.squeeze(\n      tf.image.resizeBilinear(batchedImage, resolution, nearestNeighbor));\n    });\n}\n\nexport function
padAndResizeTo(\n  input: BodyPixInput, [targetH, targetW]: [number, number]):\n  {resized: tf.Tensor3D,
padding: Padding} {\n  const [height, width] = getInputSize(input);\n  const targetAspect = targetW / targetH;\n  const aspect = width / height;\n  let [padT, padB, padL, padR] = [0, 0, 0, 0];\n  if (aspect < targetAspect) {\n    //
pads the width\n    padT = 0;\n    padB = 0;\n    padL = Math.round(0.5 * (targetAspect * height - width));\n    padR
= Math.round(0.5 * (targetAspect * height - width));\n  } else {\n    // pads the height\n    padT = Math.round(0.5 *
((1.0 / targetAspect) * width - height));\n    padB = Math.round(0.5 * ((1.0 / targetAspect) * width - height));\n
padL = 0;\n    padR = 0;\n  }\n\n  const resized: tf.Tensor3D = tf.tidy(() => {\n    let imageTensor =
toInputTensor(input);\n    imageTensor = tf.pad3d(imageTensor, [[padT, padB], [padL, padR], [0, 0]]);\n\n    return
tf.image.resizeBilinear(imageTensor, [targetH, targetW]);\n  });\n\n  return {resized, padding: {top: padT, left: padL,
right: padR, bottom: padB}};\n}\n\nexport async function toTensorBuffers3D(tensors: tf.Tensor3D[]):\n  Promise<TensorBuffer3D[]> {\n  return Promise.all(tensors.map(tensor => tensor.buffer()));\n}\n\nexport function
scalePose(\n  pose: Pose, scaleY: number, scaleX: number, offsetY = 0,\n  offsetX = 0): Pose {\n  return {\n    score: pose.score,\n    keypoints: pose.keypoints.map(({score, part, position}) => ({\n
      score,\n      part,\n      position: {\n        x: position.x * scaleX +
offsetX,\n        y: position.y * scaleY + offsetY\n      }\n    })))\n  };\n}\n\nexport function scalePoses(\n  poses: Pose[],
scaleY: number, scaleX: number, offsetY = 0, offsetX
= 0) {\n  if (scaleX === 1 && scaleY === 1 && offsetY === 0 && offsetX === 0) {\n    return poses;\n  }\n  return
poses.map(pose => scalePose(pose, scaleY, scaleX, offsetY, offsetX));\n}\n\nexport function
flipPoseHorizontal(pose: Pose, imageWidth: number): Pose {\n  return {\n    score: pose.score,\n    keypoints:
pose.keypoints.map(\n      ({score, part, position}) => ({\n        score,\n        part,\n        position: {x:
imageWidth - 1 - position.x, y: position.y}\n      })))\n  };\n}\n\nexport function flipPosesHorizontal(poses: Pose[],
imageWidth: number) {\n  if (imageWidth <= 0) {\n    return poses;\n  }\n  return poses.map(pose =>
flipPoseHorizontal(pose, imageWidth));\n}\n\nexport function scaleAndFlipPoses(\n  poses: Pose[], [height,
width]: [number, number],\n  [inputResolutionHeight, inputResolutionWidth]: [number, number],\n  padding:
Padding, flipHorizontal: boolean): Pose[] {\n  const scaleY =\n    (height + padding.top + padding.bottom) /
(inputResolutionHeight);\n  const scaleX =\n    (width + padding.left + padding.right) /
(inputResolutionWidth);\n\n  const scaledPoses =\n    scalePoses(poses, scaleY, scaleX, -padding.top, -
padding.left);\n\n  if (flipHorizontal) {\n    return flipPosesHorizontal(scaledPoses, width);\n  } else {\n    return
scaledPoses;\n  }\n}\n\n",
"/**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport * as tfconv from '@tensorflow/tfjs-converter';\nimport * as tf from '@tensorflow/tfjs-core';\n\nimport
{BaseModel} from './base_model';\nimport {decodeOnlyPartSegmentation, decodePartSegmentation,
toMaskTensor} from './decode_part_map';\nimport {MobileNet} from './mobilenet';\nimport
{decodePersonInstanceMasks, decodePersonInstancePartMasks} from
'/multi_person/decode_instance_masks';\nimport {decodeMultiplePoses} from
'/multi_person/decode_multiple_poses';\nimport {ResNet} from './resnet';\nimport {mobileNetSavedModel,

```

```

resNet50SavedModel} from './saved_models';\nimport {BodyPixArchitecture, BodyPixInput,
BodyPixInternalResolution, BodyPixMultiplier, BodyPixOutputStride, BodyPixQuantBytes, Padding} from
 './types';\nimport {PartSegmentation, PersonSegmentation, SemanticPartSegmentation,
SemanticPersonSegmentation} from './types';\nimport {getInputSize, padAndResizeTo,
scaleAndCropToInputTensorShape, scaleAndFlipPoses, toInputResolutionHeightAndWidth, toTensorBuffers3D}
from './util';\n\nconst APPLY_SIGMOID_ACTIVATION = true;\nconst FLIP_POSES_AFTER_SCALING =
false;\n\n**\n * BodyPix model loading is configurable using the following config dictionary.\n *\n * `architecture`: BodyPixArchitecture. It determines which BodyPix architecture\n * to load. The supported
architectures are: MobileNetV1 and ResNet50.\n *\n * `outputStride`: Specifies the output stride of the BodyPix
model.\n * The smaller the value, the larger the output resolution, and more accurate\n * the model at the cost of
speed. Set this to a larger value to increase speed\n * at the cost of accuracy. Stride 32 is supported for ResNet and\n
* stride 8,16,32 are supported for various MobileNetV1 models.\n *\n * `multiplier`: An optional number with
values: 1.01, 1.0, 0.75, or\n * 0.50. The value is used only by MobileNet architecture. It is the float\n * multiplier for
the depth (number of channels) for all convolution ops.\n * The larger the value, the larger the size of the layers, and
more accurate\n * the model at the cost of speed. Set this to a smaller value to increase speed\n * at the cost of
accuracy.\n *\n * `modelUrl`: An optional string that specifies custom url of the model. This\n * is useful for
area/countries that don't have access to the model hosted on\n * GCP.\n *\n * `quantBytes`: An optional number
with values: 1, 2, or 4. This parameter\n * affects weight quantization in the models. The available options are\n * 1
byte, 2 bytes, and 4 bytes. The higher the value, the larger the model size\n * and thus the longer the loading time,
the lower the value, the shorter the\n * loading time but lower the accuracy.\n */\n\nexport interface ModelConfig {\n
architecture: BodyPixArchitecture;\n outputStride: BodyPixOutputStride;\n multiplier?: BodyPixMultiplier;\n
modelUrl?: string;\n quantBytes?: BodyPixQuantBytes;}\n\n// The default configuration for loading
MobileNetV1 based BodyPix.\n\n// (And for references, the default configuration for loading ResNet\n// based
PoseNet is also included).\n\n// ``\n// const RESNET_CONFIG = {\n//   architecture: 'ResNet50',\n//
outputStride: 32,\n//   quantBytes: 4,\n// } as ModelConfig;\n// ``\n\nconst MOBILENET_V1_CONFIG = {\n
architecture: 'MobileNetV1',\n outputStride: 16,\n quantBytes: 4,\n multiplier: 0.75,\n} as ModelConfig;\n\nconst
VALID_ARCHITECTURE: BodyPixArchitecture[] = ['MobileNetV1', 'ResNet50'];\nconst VALID_STRIDE: {[id:
string]: BodyPixOutputStride[]} = {\n 'MobileNetV1': [8, 16, 32],\n 'ResNet50': [32, 16]};\n\nconst
VALID_MULTIPLIER: {[id: string]: BodyPixMultiplier[]} = {\n 'MobileNetV1': [0.50, 0.75, 1.0],\n 'ResNet50':
[1.0]};\n\nconst VALID_QUANT_BYTES: BodyPixQuantBytes[] = [1, 2, 4];\n\nfunction
validateModelConfig(config: ModelConfig): ModelConfig {\n  config = config || MOBILENET_V1_CONFIG;\n  if
(config.architecture == null) {\n    config.architecture = 'MobileNetV1';\n  }\n  if
(VALID_ARCHITECTURE.indexOf(config.architecture) < 0) {\n    throw new Error(\n      `Invalid architecture
${config.architecture}.` +\n      `Should be one of ${VALID_ARCHITECTURE}`);\n  }\n  if (config.outputStride
== null) {\n    config.outputStride = 16;\n  }\n  if
(VALID_STRIDE[config.architecture].indexOf(config.outputStride) < 0) {\n    throw new Error(\n      `Invalid
outputStride ${config.outputStride}.` +\n      `Should be one of ${VALID_STRIDE[config.architecture]}` +\n
`for architecture ${config.architecture}.`);\n  }\n  if (config.multiplier == null) {\n    config.multiplier = 1.0;\n
}\n  if (VALID_MULTIPLIER[config.architecture].indexOf(config.multiplier) < 0) {\n    throw new Error(\n
`Invalid multiplier ${config.multiplier}.` +\n      `Should be one of
${VALID_MULTIPLIER[config.architecture]}` +\n      `for architecture ${config.architecture}.`);\n  }\n  if
(config.quantBytes == null) {\n    config.quantBytes = 4;\n  }\n  if
(VALID_QUANT_BYTES.indexOf(config.quantBytes) < 0) {\n    throw new Error(\n      `Invalid quantBytes
${config.quantBytes}.` +\n      `Should be one of ${VALID_QUANT_BYTES}` +\n      `for architecture
${config.architecture}.`);\n  }\n  return config;\n}\n\n**\n * BodyPix inference is configurable using the
following config dictionary.\n *\n * `flipHorizontal`: If the left-right keypoint of poses/part segmentation\n * should
be flipped/mirrored horizontally. This should be set to true for\n * videos where the video is by default flipped
horizontally (i.e. a webcam),\n * and you want the person & body part segmentation to be returned in the proper\n
*
```

orientation.
`internalResolution`: Defaults to 'medium'. The internal resolution percentage that the input is resized to before inference. The larger the `internalResolution` the more accurate the model at the cost of slower prediction times. Available values are 'low', 'medium', 'high', 'full', or a percentage value between 0 and 1. The values 'low', 'medium', 'high', and 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.
`segmentationThreshold`: The minimum that segmentation values must have to be considered part of the person. Affects the generation of the segmentation mask. More specifically, it is the threshold used to binarize the intermediate person segmentation probability. The probability of each pixel belongs to a person is in range [0, 1]. If the probability is greater than the `segmentationThreshold`, it will be set to 1 otherwise 0.

```

export interface InferenceConfig {
  flipHorizontal?: boolean;
  internalResolution?: BodyPixInternalResolution;
  segmentationThreshold?: number;
}
export interface PersonInferenceConfig {
  maxDetections?: number;
  scoreThreshold?: number;
  nmsRadius?: number;
}
export interface MultiPersonInstanceInferenceConfig extends InferenceConfig {
  maxDetections?: number;
  scoreThreshold?: number;
  nmsRadius?: number;
  minKeypointScore?: number;
  refineSteps?: number;
}
export const PERSON_INFERENCE_CONFIG: PersonInferenceConfig = {
  flipHorizontal: false,
  internalResolution: 'medium',
  segmentationThreshold: 0.7,
  maxDetections: 10,
  scoreThreshold: 0.4,
  nmsRadius: 20,
};
export const MULTI_PERSON_INSTANCE_INFERENCE_CONFIG: MultiPersonInstanceInferenceConfig = {
  flipHorizontal: false,
  internalResolution: 'medium',
  segmentationThreshold: 0.7,
  maxDetections: 10,
  scoreThreshold: 0.4,
  nmsRadius: 20,
  minKeypointScore: 0.3,
  refineSteps: 10,
};
function validatePersonInferenceConfig(config: PersonInferenceConfig) {
  const { segmentationThreshold, maxDetections, scoreThreshold, nmsRadius } = config;
  if (segmentationThreshold < 0.0 || segmentationThreshold > 1.0) {
    throw new Error(`segmentationThreshold ${segmentationThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (maxDetections <= 0) {
    throw new Error(`Invalid maxDetections ${maxDetections}. Should be > 0`);
  }
  if (scoreThreshold < 0.0 || scoreThreshold > 1.0) {
    throw new Error(`Invalid scoreThreshold ${scoreThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (nmsRadius <= 0) {
    throw new Error(`Invalid nmsRadius ${nmsRadius}`);
  }
}
function validateMultiPersonInstanceInferenceConfig(config: MultiPersonInstanceInferenceConfig) {
  const { segmentationThreshold, maxDetections, scoreThreshold, nmsRadius, minKeypointScore, refineSteps } = config;
  if (segmentationThreshold < 0.0 || segmentationThreshold > 1.0) {
    throw new Error(`segmentationThreshold ${segmentationThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (maxDetections <= 0) {
    throw new Error(`Invalid maxDetections ${maxDetections}. Should be > 0`);
  }
  if (scoreThreshold < 0.0 || scoreThreshold > 1.0) {
    throw new Error(`Invalid scoreThreshold ${scoreThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (nmsRadius <= 0) {
    throw new Error(`Invalid nmsRadius ${nmsRadius}`);
  }
  if (minKeypointScore < 0 || minKeypointScore > 1) {
    throw new Error(`Invalid minKeypointScore ${minKeypointScore}. Should be in range [0.0, 1.0]`);
  }
  if (refineSteps <= 0 || refineSteps > 20) {
    throw new Error(`

```

```

`Invalid refineSteps ${refineSteps}.` +\n      `Should be in range [1, 20]`);\n }\n}\n\nexport class BodyPix {\n
baseModel: BaseModel;\n\n constructor(net: BaseModel) {\n  this.baseModel = net;\n }\n\n private
predictForPersonSegmentation(input: tf.Tensor3D): {\n  segmentLogits: tf.Tensor3D,\n  heatmapScores:
tf.Tensor3D,\n  offsets: tf.Tensor3D,\n  displacementFwd: tf.Tensor3D,\n  displacementBwd: tf.Tensor3D,\n }
{\n  const {\n    segmentation,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd,\n  }
= this.baseModel.predict(input);\n  return {\n    segmentLogits: segmentation,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd,\n  };\n }\n\n private
predictForPersonSegmentationAndPart(input: tf.Tensor3D): {\n  segmentLogits: tf.Tensor3D,\n
partHeatmapLogits: tf.Tensor3D,\n  heatmapScores: tf.Tensor3D,\n  offsets: tf.Tensor3D,\n  displacementFwd:
tf.Tensor3D,\n  displacementBwd: tf.Tensor3D,\n } {\n  const {\n    segmentation,\n    partHeatmaps,\n
heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd,\n  } = this.baseModel.predict(input);\n
return {\n  segmentLogits: segmentation,\n  partHeatmapLogits: partHeatmaps,\n  heatmapScores,\n
offsets,\n  displacementFwd,\n  displacementBwd,\n };\n }\n\n private
predictForMultiPersonInstanceSegmentationAndPart(input: tf.Tensor3D):\n  {\n    segmentLogits:
tf.Tensor3D,\n    longOffsets: tf.Tensor3D,\n    heatmapScores: tf.Tensor3D,\n    offsets: tf.Tensor3D,\n
displacementFwd: tf.Tensor3D,\n    displacementBwd: tf.Tensor3D,\n    partHeatmaps: tf.Tensor3D,\n  } {\n
const {\n    segmentation,\n    longOffsets,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n
displacementBwd,\n    partHeatmaps,\n  } = this.baseModel.predict(input);\n  return {\n    segmentLogits:
segmentation,\n    longOffsets,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd,\n
partHeatmaps,\n  };\n }\n\n /**\n * Given an image with people, returns a dictionary of all intermediate\n *
tensors including: 1) a binary array with 1 for the pixels that are part of\n * the person, and 0 otherwise, 2)
heatmapScores, 3) offsets, and 4) paddings.\n *\n * @param input
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n * The input image to feed
through the network.\n *\n * @param internalResolution Defaults to 'medium'. The internal resolution\n * that
the input is resized to before inference. The larger the\n * internalResolution the more accurate the model at the
cost of slower\n * prediction times. Available values are 'low', 'medium', 'high', 'full', or\n * a percentage value
between 0 and 1. The values 'low', 'medium', 'high', and\n * 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.\n
*\n * @param segmentationThreshold The minimum that segmentation values must have\n * to be considered
part of the person. Affects the generation of the\n * segmentation mask.\n *\n * @return A dictionary containing
`segmentation`, `heatmapScores`, `offsets`,\n * and `padding`:\n * - `segmentation`: A 2d Tensor with 1 for the
pixels that are part of the\n * person, and 0 otherwise. The width and height correspond to the same\n *
dimensions of the input image.\n * - `heatmapScores`: A 3d Tensor of the keypoint heatmaps used by\n * pose
estimation decoding.\n * - `offsets`: A 3d Tensor of the keypoint offsets used by pose\n * estimation decoding.\n
* - `displacementFwd`: A 3d Tensor of the keypoint forward displacement used\n * by pose estimation decoding.\n
* - `displacementBwd`: A 3d Tensor of the keypoint backward displacement used\n * by pose estimation
decoding.\n * - `padding`: The padding (unit pixels) being applied to the input image\n * before it is fed into the
model.\n *\n /n segmentPersonActivation(\n  input: BodyPixInput, internalResolution:
BodyPixInternalResolution,\n  segmentationThreshold = 0.5): {\n  segmentation: tf.Tensor2D,\n
heatmapScores: tf.Tensor3D,\n  offsets: tf.Tensor3D,\n  displacementFwd: tf.Tensor3D,\n  displacementBwd:
tf.Tensor3D,\n  padding: Padding,\n  internalResolutionHeightAndWidth: [number, number]\n } {\n  const
[height, width] = getInputSize(input);\n  const internalResolutionHeightAndWidth =
toInputResolutionHeightAndWidth(\n    internalResolution, this.baseModel.outputStride, [height, width]);\n
const {resized, padding} =\n    padAndResizeTo(input, internalResolutionHeightAndWidth);\n\n  const {\n
segmentation,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd,\n  } = tf.tidy(() =>
{\n    const {\n      segmentLogits,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n
displacementBwd,\n    } = this.predictForPersonSegmentation(resized);\n    const [resizedHeight, resizedWidth]
= resized.shape;\n\n    const scaledSegmentScores = scaleAndCropToInputTensorShape(\n      segmentLogits,
[height, width], [resizedHeight, resizedWidth],\n      [[padding.top, padding.bottom], [padding.left,

```

```

padding.right]],\n      APPLY_SIGMOID_ACTIVATION);\n\n      return {\n        segmentation: toMaskTensor(\n          tf.squeeze(scaledSegmentScores), segmentationThreshold),\n        heatmapScores,\n        offsets,\n        displacementFwd,\n        displacementBwd,\n      });\n    }\n    resized.dispose();\n    return {\n      segmentation,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n      padding,\n      internalResolutionHeightAndWidth\n    });\n  }\n  /**\n   * Given an image with many people, returns a\n   * PersonSegmentation dictionary\n   * that contains the segmentation mask for all people and a single pose.\n   * Note: The segmentation mask returned by this method covers all people but\n   * the pose works well for one person. If you want to estimate instance-level\n   * multiple person segmentation & pose for each person, use\n   * `segmentMultiPerson` instead.\n   * @param input\n   * ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n   * The input image to feed through the network.\n   * @param config PersonInferenceConfig object that contains\n   * parameters for the BodyPix inference using person decoding.\n   * @return A SemanticPersonSegmentation dictionary that contains height,\n   * width, the flattened binary segmentation mask and the poses for all people.\n   * The width and height correspond to the same dimensions of the input image.\n   * - `height`: The height of the segmentation data in pixel unit.\n   * - `width`: The width of the segmentation data in pixel unit.\n   * - `data`: The flattened Uint8Array of segmentation data. 1 means the pixel\n   * belongs to a person and 0 means the pixel doesn't belong to a person.\n   * The size of the array is equal to `height` x `width` in row-major order.\n   * - `allPoses`: The 2d poses of all people.\n   */\n  async segmentPerson(\n    input: BodyPixInput,\n    config: PersonInferenceConfig =\n      PERSON_INFERENCE_CONFIG):\n    Promise<SemanticPersonSegmentation> {\n      config =\n        {...PERSON_INFERENCE_CONFIG, ...config};\n      validatePersonInferenceConfig(config);\n      const {\n        segmentation,\n        heatmapScores,\n        offsets,\n        displacementFwd,\n        displacementBwd,\n        padding,\n        internalResolutionHeightAndWidth\n      } =\n        this.segmentPersonActivation(\n          input,\n          config.internalResolution, config.segmentationThreshold);\n      const [height, width] = segmentation.shape;\n      const result = await segmentation.data() as Uint8Array;\n      segmentation.dispose();\n      const tensorBuffers =\n        await toTensorBuffers3D(\n          [heatmapScores, offsets, displacementFwd, displacementBwd]);\n      const\n        [scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf] =\n          tensorBuffers;\n      let poses =\n        decodeMultiplePoses(\n          scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,\n          this.baseModel.outputStride, config.maxDetections,\n          config.scoreThreshold, config.nmsRadius);\n      poses =\n        scaleAndFlipPoses(\n          poses, [height, width], internalResolutionHeightAndWidth, padding,\n          FLIP_POSES_AFTER_SCALING);\n      heatmapScores.dispose();\n      offsets.dispose();\n      displacementFwd.dispose();\n      displacementBwd.dispose();\n      return {height, width, data: result, allPoses:\n        poses};\n    }\n  }\n  /**\n   * Given an image with multiple people, returns an *array* of\n   * PersonSegmentation object. Each element in the array corresponding to one\n   * of the people in the input image. In other words, it predicts\n   * instance-level multiple person segmentation & pose for each person.\n   * The model does standard ImageNet pre-processing before inferring through\n   * the model. The image pixels should have values [0-255].\n   * @param input\n   * ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n   * The input\n   * image to feed through the network.\n   * @param config MultiPersonInferenceConfig object that contains\n   * parameters for the BodyPix inference using multi-person decoding.\n   * @return An array of PersonSegmentation object, each containing a width,\n   * height, a binary array (1 for the pixels that are part of the\n   * person, and 0 otherwise) and 2D pose. The array size corresponds to the\n   * number of pixels in the image. The width and height correspond to the\n   * dimensions of the image the binary array is shaped to, which are the same\n   * dimensions of the input image.\n   */\n  async segmentMultiPerson(\n    input: BodyPixInput,\n    config: MultiPersonInstanceInferenceConfig =\n      MULTI_PERSON_INSTANCE_INFERENCE_CONFIG):\n    Promise<PersonSegmentation[]> {\n      config = { ...MULTI_PERSON_INSTANCE_INFERENCE_CONFIG,\n        ...config};\n      validateMultiPersonInstanceInferenceConfig(config);\n      const [height, width] =\n        getInputSize(input);\n      const internalResolutionHeightAndWidth =\n        toInputResolutionHeightAndWidth(\n          config.internalResolution, this.baseModel.outputStride,\n          [height, width]);\n      const {resized, padding} =\n        padAndResizeTo(input, internalResolutionHeightAndWidth);\n      const {\n        segmentation,\n        longOffsets,\n

```

```

heatmapScoresRaw,\n  offsetsRaw,\n  displacementFwdRaw,\n  displacementBwdRaw,\n  } = tf.tidy(() =>
{\n  const {\n  segmentLogits,\n  longOffsets,\n  heatmapScores,\n  offsets,\n  displacementFwd,\n  displacementBwd,\n  } =
this.predictForMultiPersonInstanceSegmentationAndPart(resized);\n  const scaledSegmentScores =
scaleAndCropToInputTensorShape(\n  segmentLogits, [height, width], internalResolutionHeightAndWidth,\n  [[padding.top, padding.bottom], [padding.left, padding.right]],\n  APPLY_SIGMOID_ACTIVATION);\n  const longOffsetsResized = false;\n  let scaledLongOffsets;\n  if (longOffsetsResized) {\n  scaledLongOffsets = scaleAndCropToInputTensorShape(\n  longOffsets, [height, width],
internalResolutionHeightAndWidth,\n  [[padding.top, padding.bottom], [padding.left, padding.right]],\n  APPLY_SIGMOID_ACTIVATION);\n  } else {\n  scaledLongOffsets = longOffsets;\n  }\n  const
segmentation = toMaskTensor(\n  tf.squeeze(scaledSegmentScores), config.segmentationThreshold);\n  return {\n  segmentation,\n  longOffsets: scaledLongOffsets,\n  heatmapScoresRaw: heatmapScores,\n  offsetsRaw: offsets,\n  displacementFwdRaw: displacementFwd,\n  displacementBwdRaw:
displacementBwd,\n  };\n  });\n  const tensorBuffers = await toTensorBuffers3D(\n  [heatmapScoresRaw,
offsetsRaw, displacementFwdRaw, displacementBwdRaw]);\n  const [scoresBuf, offsetsBuf,
displacementsFwdBuf, displacementsBwdBuf] =\n  tensorBuffers;\n  let poses = decodeMultiplePoses(\n
scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,\n  this.baseModel.outputStride,
config.maxDetections,\n  config.scoreThreshold, config.nmsRadius);\n  poses = scaleAndFlipPoses(\n
poses, [height, width], internalResolutionHeightAndWidth, padding,\n  FLIP_POSES_AFTER_SCALING);\n  const instanceMasks = await decodePersonInstanceMasks(\n
segmentation, longOffsets, poses, height, width,\n  this.baseModel.outputStride, internalResolutionHeightAndWidth, padding,\n  config.scoreThreshold,
config.refineSteps, config.minKeypointScore,\n  config.maxDetections);\n  resized.dispose();\n
segmentation.dispose();\n  longOffsets.dispose();\n  heatmapScoresRaw.dispose();\n  offsetsRaw.dispose();\n
displacementFwdRaw.dispose();\n  displacementBwdRaw.dispose();\n  return instanceMasks;\n  };\n  /**\n  *
Given an image with many people, returns a dictionary containing: height,\n  * width, a tensor with a part id from 0-
24 for the pixels that are\n  * part of a corresponding body part, and -1 otherwise. This does standard\n  * ImageNet
pre-processing before inferring through the model. The image\n  * should pixels should have values [0-255].\n  * \n
* @param input ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n  * The input
image to feed through the network.\n  * \n  * @param internalResolution Defaults to 'medium'. The internal
resolution\n  * percentage that the input is resized to before inference. The larger the\n  * internalResolution
the more accurate the model at the cost of slower\n  * prediction times. Available values are 'low', 'medium', 'high',
'full', or\n  * a percentage value between 0 and 1. The values 'low', 'medium', 'high', and\n  * 'full' map to 0.25, 0.5,
0.75, and 1.0 correspondingly.\n  * \n  * @param segmentationThreshold The minimum that segmentation values
must have\n  * to be considered part of the person. Affects the clipping of the colored\n  * part image.\n  * \n
* @return A dictionary containing `partSegmentation`, `heatmapScores`,\n  * `offsets`, and `padding`:\n  * -
`partSegmentation`: A 2d Tensor with a part id from 0-24 for\n  * the pixels that are part of a corresponding body
part, and -1 otherwise.\n  * - `heatmapScores`: A 3d Tensor of the keypoint heatmaps used by\n  * single-person
pose estimation decoding.\n  * - `offsets`: A 3d Tensor of the keypoint offsets used by single-person pose\n  *
estimation decoding.\n  * - `displacementFwd`: A 3d Tensor of the keypoint forward displacement\n  * used by
pose estimation decoding.\n  * - `displacementBwd`: A 3d Tensor of the keypoint backward displacement used\n  *
by pose estimation decoding.\n  * - `padding`: The padding (unit pixels) being applied to the input image\n  *
before it is fed into the model.\n  * \n  */\n  segmentPersonPartsActivation(\n  input: BodyPixInput,\n
internalResolution: BodyPixInternalResolution,\n  segmentationThreshold = 0.5): {\n  partSegmentation:
tf.Tensor2D,\n  heatmapScores: tf.Tensor3D,\n  offsets: tf.Tensor3D,\n  displacementFwd: tf.Tensor3D,\n
displacementBwd: tf.Tensor3D,\n  padding: Padding,\n  internalResolutionHeightAndWidth: [number, number]\n
} {\n  const [height, width] = getInputSize(input);\n  const internalResolutionHeightAndWidth =
toInputResolutionHeightAndWidth(\n  internalResolution, this.baseModel.outputStride, [height, width]);\n
const {\n  resized,\n  padding,\n  } = padAndResizeTo(input, internalResolutionHeightAndWidth);\n  const

```

```

{\n partSegmentation,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd\n } =
tf.tidy(() => {\n const {\n segmentLogits,\n partHeatmapLogits,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd\n } = this.predictForPersonSegmentationAndPart(resized);\n\n const [resizedHeight, resizedWidth] = resized.shape;\n\n const scaledSegmentScores =
scaleAndCropToInputTensorShape(\n segmentLogits, [height, width], [resizedHeight, resizedWidth],\n [[padding.top, padding.bottom], [padding.left, padding.right]],\n APPLY_SIGMOID_ACTIVATION);\n\n const scaledPartHeatmapScore = scaleAndCropToInputTensorShape(\n partHeatmapLogits, [height, width],\n [resizedHeight, resizedWidth],\n [[padding.top, padding.bottom], [padding.left, padding.right]],\n APPLY_SIGMOID_ACTIVATION);\n\n const segmentation =\n toMaskTensor(tf.squeeze(scaledSegmentScores), segmentationThreshold);\n\n return {\n partSegmentation:\n decodePartSegmentation(segmentation, scaledPartHeatmapScore),\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd,\n }; \n });\n resized.dispose();\n return {\n partSegmentation,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd,\n padding,\n internalResolutionHeightAndWidth\n }; \n }\n\n /**\n * Given an image with many people,
returns a PartSegmentation dictionary that\n * contains the body part segmentation mask for all people and a single
pose.\n *\n * Note: The body part segmentation mask returned by this method covers all\n * people but the pose
works well when there is one person. If you want to\n * estimate instance-level multiple person body part
segmentation & pose for\n * each person, use `segmentMultiPersonParts` instead.\n *\n * @param input
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n * The input image to feed
through the network.\n *\n * @param config PersonInferenceConfig object that contains\n * parameters for the
BodyPix inference using single person decoding.\n *\n * @return A SemanticPartSegmentation dictionary that
contains height, width,\n * the flattened binary segmentation mask and the pose for the person. The\n * width and
height correspond to the same dimensions of the input image.\n * - `height`: The height of the person part
segmentation data in pixel unit.\n * - `width`: The width of the person part segmentation data in pixel unit.\n * -
`data`: The flattened Int32Array of person part segmentation data with a\n * part id from 0-24 for the pixels that are
part of a corresponding body\n * part, and -1 otherwise. The size of the array is equal to `height` x\n * `width` in
row-major order.\n * - `allPoses`: The 2d poses of all people.\n */\n\n async segmentPersonParts(\n input:
BodyPixInput,\n config: PersonInferenceConfig = PERSON_INFERENCE_CONFIG):\n Promise<SemanticPartSegmentation> {\n config = {...PERSON_INFERENCE_CONFIG, ...config};\n\n validatePersonInferenceConfig(config);\n\n const {\n partSegmentation,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd,\n padding,\n internalResolutionHeightAndWidth\n } =\n this.segmentPersonPartsActivation(\n input, config.internalResolution, config.segmentationThreshold);\n\n const [height, width] = partSegmentation.shape;\n\n const data = await partSegmentation.data() as Int32Array;\n\n partSegmentation.dispose();\n\n const tensorBuffers = await toTensorBuffers3D(\n [heatmapScores, offsets,\n displacementFwd, displacementBwd]);\n\n const [scoresBuf, offsetsBuf, displacementsFwdBuf,\n displacementsBwdBuf] =\n tensorBuffers;\n\n let poses = decodeMultiplePoses(\n scoresBuf, offsetsBuf,\n displacementsFwdBuf, displacementsBwdBuf,\n this.baseModel.outputStride, config.maxDetections,\n config.scoreThreshold, config.nmsRadius);\n\n poses = scaleAndFlipPoses(\n poses, [height, width],\n internalResolutionHeightAndWidth, padding,\n FLIP_POSES_AFTER_SCALING);\n\n heatmapScores.dispose();\n offsets.dispose();\n displacementFwd.dispose();\n displacementBwd.dispose();\n\n return {height, width, data, allPoses: poses}; \n }\n\n /**\n * Given an image with multiple people, returns an
*array* of PartSegmentation\n * object. Each element in the array corresponding to one\n * of the people in the
input image. In other words, it predicts\n * instance-level multiple person body part segmentation & pose for
each\n * person.\n *\n * This does standard ImageNet pre-processing before inferring through\n * the model.
The image pixels should have values [0-255].\n *\n * @param input\n *
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement) The input\n * image to feed
through the network.\n *\n * @param config MultiPersonInferenceConfig object that contains\n * parameters for the
BodyPix inference using multi-person decoding.\n *\n * @return An array of PartSegmentation object, each

```

containing a width, height, a flattened array (with part id from 0-24 for the pixels that are part of a corresponding body part, and -1 otherwise) and 2D pose. The width and height correspond to the dimensions of the image. Each flattened part segmentation array size is equal to height x width.

```
async
segmentMultiPersonParts(input: BodyPixInput, config: MultiPersonInstanceInferenceConfig = MULTI_PERSON_INSTANCE_INFERENCE_CONFIG): Promise<PartSegmentation[]> {
  config = {...MULTI_PERSON_INSTANCE_INFERENCE_CONFIG, ...config};
  validateMultiPersonInstanceInferenceConfig(config);
  const [height, width] = getInputSize(input);
  const internalResolutionHeightAndWidth = toInputResolutionHeightAndWidth(config.internalResolution, this.baseModel.outputStride, [height, width]);
  const {resized, padding} = padAndResizeTo(input, internalResolutionHeightAndWidth);
  const {segmentation, longOffsets, heatmapScoresRaw, offsetsRaw, displacementFwdRaw, displacementBwdRaw, partSegmentation, } = tf.tidy(() => {
    const {segmentLogits, longOffsets, heatmapScores, offsets, displacementFwd, displacementBwd, partHeatmaps} =
  this.predictForMultiPersonInstanceSegmentationAndPart(resized);
  // decoding with scaling
  const scaledSegmentScores = scaleAndCropToInputTensorShape(segmentLogits, [height, width], internalResolutionHeightAndWidth, [[padding.top, padding.bottom], [padding.left, padding.right]], APPLY_SIGMOID_ACTIVATION);
  // decoding with scaling
  const scaledPartSegmentationScores = scaleAndCropToInputTensorShape(partHeatmaps, [height, width], internalResolutionHeightAndWidth, [[padding.top, padding.bottom], [padding.left, padding.right]], APPLY_SIGMOID_ACTIVATION);
  const scaledLongOffsets = longOffsets;
  const segmentation = toMaskTensor(tf.squeeze(scaledSegmentScores), config.segmentationThreshold);
  const partSegmentation = decodeOnlyPartSegmentation(scaledPartSegmentationScores);
  return {segmentation, longOffsets: scaledLongOffsets, heatmapScoresRaw: heatmapScores, offsetsRaw: offsets, displacementFwdRaw: displacementFwd, displacementBwdRaw: displacementBwd, partSegmentation};
});
const tensorBuffers = await toTensorBuffers3D([heatmapScoresRaw, offsetsRaw, displacementFwdRaw, displacementBwdRaw]);
const [scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf] = tensorBuffers;
let poses = decodeMultiplePoses(scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf, this.baseModel.outputStride, config.maxDetections, config.scoreThreshold, config.nmsRadius);
poses = scaleAndFlipPoses(poses, [height, width], internalResolutionHeightAndWidth, padding, FLIP_POSES_AFTER_SCALING);
const instanceMasks = await decodePersonInstancePartMasks(segmentation, longOffsets, partSegmentation, poses, height, width, this.baseModel.outputStride, internalResolutionHeightAndWidth, padding, config.scoreThreshold, config.refineSteps, config.minKeypointScore, config.maxDetections);
resized.dispose();
segmentation.dispose();
longOffsets.dispose();
heatmapScoresRaw.dispose();
offsetsRaw.dispose();
displacementFwdRaw.dispose();
displacementBwdRaw.dispose();
partSegmentation.dispose();
return instanceMasks;
}

public dispose() {
  this.baseModel.dispose();
}
}

/** Loads the MobileNet BodyPix model. */
async function loadMobileNet(config: ModelConfig): Promise<BodyPix> {
  const outputStride = config.outputStride;
  const quantBytes = config.quantBytes;
  const multiplier = config.multiplier;
  if (tf === null) {
    throw new Error(`Cannot find TensorFlow.js. If you are using a <script> tag, please ` +
      `also include @tensorflow/tfjs on the page before using this model.`);
  }
  const url = mobileNetSavedModel(outputStride, multiplier, quantBytes);
  const graphModel = await tfconv.loadGraphModel(config.modelUrl || url);
  const mobilenet = new MobileNet(graphModel, outputStride);
  return new BodyPix(mobilenet);
}

/** Loads the ResNet BodyPix model. */
async function loadResNet(config: ModelConfig): Promise<BodyPix> {
  const outputStride = config.outputStride;
  const quantBytes = config.quantBytes;
  if (tf === null) {
    throw new Error(`Cannot find TensorFlow.js. If you are using a <script> tag, please ` +
      `also include @tensorflow/tfjs on the page before using this model.`);
  }
  const url = resNet50SavedModel(outputStride, quantBytes);
  const graphModel = await tfconv.loadGraphModel(config.modelUrl || url);
  const resnet = new ResNet(graphModel, outputStride);
  return
```


new BodyPix(resnet);

`loadModel` Loads the BodyPix model instance from a checkpoint, with the ResNet or MobileNet architecture. The model to be loaded is configurable using the config dictionary ModelConfig. Please find more details in the documentation of the ModelConfig. @param config ModelConfig dictionary that contains parameters for the BodyPix loading process. Please find more details of each parameters in the documentation of the ModelConfig interface. The predefined MOBILENET_V1_CONFIG and RESNET_CONFIG can also be used as references for defining your customized config.

```

export async function load(config: ModelConfig = MOBILENET_V1_CONFIG): Promise<BodyPix> {
  config = validateModelConfig(config);
  if (config.architecture === 'ResNet50') {
    return loadResNet(config);
  } else if (config.architecture === 'MobileNetV1') {
    return loadMobileNet(config);
  } else {
    return null;
  }
}

```

License: Copyright 2019 Google LLC. All Rights Reserved. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```

=====
// method copied from bGlur in https://codepen.io/zhaojun/pen/zZmRQe
export function cpuBlur(canvas: HTMLCanvasElement|OffscreenCanvas, image: HTMLImageElement|HTMLVideoElement|HTMLCanvasElement|OffscreenCanvas, blur: number) {
  const ctx = canvas.getContext('2d');
  let sum = 0;
  const delta = 5;
  const alphaLeft = 1 / (2 * Math.PI * delta * delta);
  const step = blur < 3 ? 1 : 2;
  for (let y = -blur; y <= blur; y += step) {
    for (let x = -blur; x <= blur; x += step) {
      const weight = alphaLeft * Math.exp(-(x * x + y * y) / (2 * delta * delta));
      sum += weight;
    }
  }
  for (let y = -blur; y <= blur; y += step) {
    for (let x = -blur; x <= blur; x += step) {
      ctx.globalAlpha = alphaLeft * Math.exp(-(x * x + y * y) / (2 * delta * delta)) / sum * blur;
      ctx.drawImage(image, x, y);
    }
  }
  ctx.globalAlpha = 1;
}

```

License: Copyright 2019 Google LLC. All Rights Reserved. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```

=====
import {cpuBlur} from './blur';
import {Color, PartSegmentation, PersonSegmentation} from './types';
import {SemanticPartSegmentation, SemanticPersonSegmentation} from './types';
import {getInputSize} from './util';
export type Canvas = HTMLCanvasElement | OffscreenCanvas;
const offScreenCanvases: {[name: string]: Canvas} = {};
type ImageType = HTMLImageElement|HTMLVideoElement|Canvas;
type HasDimensions = {width: number, height: number};
function isSafari() {
  return /^(?!chrome|android).*safari/i.test(navigator.userAgent);
}
function assertSameDimensions({width: widthA, height: heightA}: HasDimensions, {width: widthB, height: heightB}: HasDimensions, nameA: string, nameB: string) {
  if (widthA !== widthB || heightA !== heightB) {
    throw new Error(`error: dimensions must match. ${nameA} has dimensions ${widthA}x${heightA}, ${nameB} has dimensions ${widthB}x${heightB}`);
  }
}
function flipCanvasHorizontal(canvas: Canvas) {
  const ctx = canvas.getContext('2d');
  ctx.scale(-1, 1);
  ctx.translate(-canvas.width, 0);
}
function drawWithCompositing(ctx: CanvasRenderingContext2D|OffscreenCanvasRenderingContext2D, image: Canvas|ImageType, compositeOperation: string) {
  ctx.globalCompositeOperation = compositeOperation;
  ctx.drawImage(image, 0, 0);
}
function createOffScreenCanvas(): Canvas {
  if (typeof document !== 'undefined') {
    return document.createElement('canvas');
  } else if (typeof OffscreenCanvas !== 'undefined') {
    return new OffscreenCanvas(0, 0);
  } else {
    throw new Error('Cannot create a canvas in this context');
  }
}

```

```

}\n\nfunction ensureOffscreenCanvasCreated(id: string): Canvas {\n if (!offScreenCanvases[id]) {\n
offScreenCanvases[id] = createOffScreenCanvas();\n }\n return offScreenCanvases[id];\n}\n\nfunction
drawAndBlurImageOnCanvas(\n image: ImageType, blurAmount: number, canvas: Canvas) {\n const {height,
width} = image;\n const ctx = canvas.getContext('2d');\n canvas.width = width;\n canvas.height = height;\n
ctx.clearRect(0, 0, width, height);\n ctx.save();\n if (isSafari()) {\n cpuBlur(canvas, image, blurAmount);\n } else
{\n // tslint:disable:no-any\n (ctx as any).filter = `blur(${blurAmount}px)`;\n ctx.drawImage(image, 0, 0,
width, height);\n }\n ctx.restore();\n}\n\nfunction drawAndBlurImageOnOffScreenCanvas(\n image: ImageType,
blurAmount: number,\n offscreenCanvasName: string): Canvas {\n const canvas =
ensureOffscreenCanvasCreated(offscreenCanvasName);\n if (blurAmount === 0) {\n
renderImageToCanvas(image, canvas);\n } else {\n drawAndBlurImageOnCanvas(image, blurAmount, canvas);\n
}\n return canvas;\n}\n\nfunction renderImageToCanvas(image: ImageType, canvas: Canvas) {\n const {width,
height} = image;\n canvas.width = width;\n canvas.height = height;\n const ctx = canvas.getContext('2d');\n\n
ctx.drawImage(image, 0, 0, width, height);\n}\n\n/**\n * Draw an image on a canvas\n */\nfunction
renderImageDataToCanvas(image: ImageData, canvas: Canvas) {\n canvas.width = image.width;\n canvas.height
= image.height;\n const ctx = canvas.getContext('2d');\n\n ctx.putImageData(image, 0, 0);\n}\n\nfunction
renderImageDataToOffScreenCanvas(\n image: ImageData, canvasName: string): Canvas {\n const canvas =
ensureOffscreenCanvasCreated(canvasName);\n renderImageDataToCanvas(image, canvas);\n\n return
canvas;\n}\n\n/**\n * Given the output from estimating multi-person segmentation, generates an\n * image with
foreground and background color at each pixel determined by the\n * corresponding binary segmentation value at
the pixel from the output. In\n * other words, pixels where there is a person will be colored with foreground\n *
color and where there is not a person will be colored with background color.\n */\n * @param
personOrPartSegmentation The output from\n * `segmentPerson`, `segmentMultiPerson`,\n * `segmentPersonParts`
or `segmentMultiPersonParts`. They can\n * be SemanticPersonSegmentation object, an array of
PersonSegmentation object,\n * SemanticPartSegmentation object, or an array of PartSegmentation object.\n */\n *
@param foreground Default to {r:0, g:0, b:0, a: 0}. The foreground color\n * (r,g,b,a) for visualizing pixels that
belong to people.\n */\n * @param background Default to {r:0, g:0, b:0, a: 255}. The background color\n * (r,g,b,a)
for visualizing pixels that don't belong to people.\n */\n * @param drawContour Default to false. Whether to draw
the contour around each\n * person's segmentation mask or body part mask.\n */\n * @param foregroundIds Default
to [1]. The integer values that represent\n * foreground. For person segmentation, 1 is the foreground. For body
part\n * segmentation, it can be a subset of all body parts ids.\n */\n * @returns An ImageData with the same width
and height of\n * all the PersonSegmentation in multiPersonSegmentation, with opacity and\n * transparency at each
pixel determined by the corresponding binary\n * segmentation value at the pixel from the output.\n */\n\nexport
function toMask(\n personOrPartSegmentation: SemanticPersonSegmentation|\n
SemanticPartSegmentation|PersonSegmentation[]|PartSegmentation[],\n foreground: Color = {\n r: 0,\n g:
0,\n b: 0,\n a: 0\n },\n background: Color = {\n r: 0,\n g: 0,\n b: 0,\n a: 255\n },\n
drawContour = false, foregroundIds: number[] = [1]): ImageData {\n if (Array.isArray(personOrPartSegmentation)
&&\n personOrPartSegmentation.length === 0) {\n return null;\n }\n\n let multiPersonOrPartSegmentation:\n
Array<SemanticPersonSegmentation|SemanticPartSegmentation|\n
PersonSegmentation|PartSegmentation>;\n\n if (!Array.isArray(personOrPartSegmentation)) {\n
multiPersonOrPartSegmentation = [personOrPartSegmentation];\n } else {\n multiPersonOrPartSegmentation =
personOrPartSegmentation;\n }\n\n const {width, height} = multiPersonOrPartSegmentation[0];\n const bytes =
new Uint8ClampedArray(width * height * 4);\n\n function drawStroke(\n bytes: Uint8ClampedArray, row:
number, column: number, width: number,\n radius: number, color: Color = {r: 0, g: 255, b: 255, a: 255}) {\n
for (let i = -radius; i <= radius; i++) {\n for (let j = -radius; j <= radius; j++) {\n if (i !== 0 && j !== 0) {\n
const n = (row + i) * width + (column + j);\n bytes[4 * n + 0] = color.r;\n bytes[4 * n + 1] = color.g;\n
bytes[4 * n + 2] = color.b;\n bytes[4 * n + 3] = color.a;\n }\n }\n }\n }\n\n function
isSegmentationBoundary(\n segmentationData: Uint8Array|Int32Array,\n row: number,\n column:
number,\n width: number,\n foregroundIds: number[] = [1],\n radius = 1,\n ): boolean {\n let

```

```

numberBackgroundPixels = 0;\n  for (let i = -radius; i <= radius; i++) {\n    for (let j = -radius; j <= radius; j++)\n    {\n      if (i !== 0 && j !== 0) {\n        const n = (row + i) * width + (column + j);\n        if\n        (!foregroundIds.some(id => id === segmentationData[n])) {\n          numberBackgroundPixels += 1;\n        }\n      }\n    }\n  }\n  return numberBackgroundPixels > 0;\n }\n\n for (let i = 0; i < height; i += 1) {\n  for (let j = 0; j\n  < width; j += 1) {\n    const n = i * width + j;\n    bytes[4 * n + 0] = background.r;\n    bytes[4 * n + 1] =\n    background.g;\n    bytes[4 * n + 2] = background.b;\n    bytes[4 * n + 3] = background.a;\n    for (let k = 0; k <\n    multiPersonOrPartSegmentation.length; k++) {\n      if (foregroundIds.some(\n        id => id ===\n        multiPersonOrPartSegmentation[k].data[n])) {\n        bytes[4 * n] = foreground.r;\n        bytes[4 * n + 1] =\n        foreground.g;\n        bytes[4 * n + 2] = foreground.b;\n        bytes[4 * n + 3] = foreground.a;\n        const\n        isBoundary = isSegmentationBoundary(\n          multiPersonOrPartSegmentation[k].data, i, j, width,\n          foregroundIds);\n        if (drawContour && i - 1 >= 0 && i + 1 < height && j - 1 >= 0 &&\n          j + 1 < width\n          && isBoundary) {\n          drawStroke(bytes, i, j, width, 1);\n        }\n      }\n    }\n  }\n}\n\n return new\n ImageData(bytes, width, height);\n}\n\nconst RAINBOW_PART_COLORS: Array<[number, number, number]> =\n[\n [110, 64, 170], [143, 61, 178], [178, 60, 178], [210, 62, 167],\n [238, 67, 149], [255, 78, 125], [255, 94, 99],\n [255, 115, 75],\n [255, 140, 56], [239, 167, 47], [217, 194, 49], [194, 219, 64],\n [175, 240, 91], [135, 245, 87],\n [96, 247, 96], [64, 243, 115],\n [40, 234, 141], [28, 219, 169], [26, 199, 194], [33, 176, 213],\n [47, 150, 224], [65,\n 125, 224], [84, 101, 214], [99, 81, 195]\n];\n\n/**\n * Given the output from person body part segmentation (or\n multi-person\n * instance body part segmentation) and an array of colors indexed by part id,\n * generates an image\n with the corresponding color for each part at each pixel,\n * and white pixels where there is no part.\n */\n * @param\n partSegmentation The output from segmentPersonParts\n * or segmentMultiPersonParts. The former is a\n SemanticPartSegmentation\n * object and later is an array of PartSegmentation object.\n */\n * @param partColors A\n multi-dimensional array of rgb colors indexed by\n * part id. Must have 24 colors, one for every part.\n */\n * @returns An ImageData with the same width and height of all the element in\n * multiPersonPartSegmentation,\n with the corresponding color for each part at\n * each pixel, and black pixels where there is no part.\n */\n\nexport\n function toColoredPartMask(\n  partSegmentation: SemanticPartSegmentation|PartSegmentation[],\n  partColors:\n  Array<[number, number, number]> =\n  RAINBOW_PART_COLORS): ImageData {\n  if\n  (Array.isArray(partSegmentation) && partSegmentation.length === 0) {\n    return null;\n  }\n  let\n  multiPersonPartSegmentation;\n  if (!Array.isArray(partSegmentation)) {\n    multiPersonPartSegmentation =\n    [partSegmentation];\n  } else {\n    multiPersonPartSegmentation = partSegmentation;\n  }\n  const {width, height}\n  = multiPersonPartSegmentation[0];\n  const bytes = new Uint8ClampedArray(width * height * 4);\n  for (let i = 0;\n  i < height * width; ++i) {\n    // invert mask. Invert the segmentation mask.\n    const j = i * 4;\n    bytes[j + 0] =\n    255;\n    bytes[j + 1] = 255;\n    bytes[j + 2] = 255;\n    bytes[j + 3] = 255;\n    for (let k = 0; k <\n    multiPersonPartSegmentation.length; k++) {\n      const partId = multiPersonPartSegmentation[k].data[i];\n      if\n      (partId !== -1) {\n        const color = partColors[partId];\n        if (!color) {\n          throw new Error(`No color could\n          be found for part id ${partId}`);\n        }\n        bytes[j + 0] = color[0];\n        bytes[j + 1] = color[1];\n        bytes[j +\n        2] = color[2];\n        bytes[j + 3] = 255;\n      }\n    }\n  }\n  return new ImageData(bytes, width, height);\n}\n\nconst\n CANVAS_NAMES = {\n  blurred: 'blurred',\n  blurredMask: 'blurred-mask',\n  mask: 'mask',\n  lowresPartMask:\n  'lowres-part-mask',\n};\n\n/**\n * Given an image and a maskImage of type ImageData, draws the image with the\n\n * mask on top of it onto a canvas.\n */\n * @param canvas The canvas to be drawn onto.\n */\n * @param image The\n original image to apply the mask to.\n */\n * @param maskImage An ImageData containing the mask. Ideally this\n should be\n * generated by toMask or toColoredPartMask.\n */\n * @param maskOpacity The opacity of the mask\n when drawing it on top of the\n * image. Defaults to 0.7. Should be a float between 0 and 1.\n */\n * @param\n maskBlurAmount How many pixels to blur the mask by. Defaults to 0.\n * Should be an integer between 0 and 20.\n */\n * @param\n flipHorizontal If the result should be flipped horizontally. Defaults\n * to false.\n */\n\nexport\n function\n drawMask(\n  canvas: Canvas, image: ImageType, maskImage: ImageData|null,\n  maskOpacity = 0.7,\n  maskBlurAmount = 0, flipHorizontal = false) {\n  const [height, width] = getInputSize(image);\n  canvas.width =\n  width;\n  canvas.height = height;\n  const ctx = canvas.getContext('2d');\n  ctx.save();\n  if (flipHorizontal) {\n    flipCanvasHorizontal(canvas);\n  }\n  ctx.drawImage(image, 0, 0);\n  ctx.globalAlpha = maskOpacity;\n  if

```

```

(maskImage) {\n  assertSameDimensions({ width, height}, maskImage, 'image', 'mask');\n\n  const mask =
renderImageDataToOffScreenCanvas(maskImage, CANVAS_NAMES.mask);\n\n  const blurredMask =
drawAndBlurImageOnOffScreenCanvas(\n    mask, maskBlurAmount, CANVAS_NAMES.blurredMask);\n  ctx.drawImage(blurredMask, 0, 0, width, height);\n  }\n  ctx.restore();\n}\n\n/**\n * Given an image and a
maskImage of type ImageData, draws the image with the\n * pixelated mask on top of it onto a canvas.\n *\n * @param canvas The canvas to be drawn onto.\n *\n * @param image The original image to apply the mask to.\n *\n * @param maskImage An ImageData containing the mask. Ideally this should be\n * generated by
toColoredPartMask.\n *\n * @param maskOpacity The opacity of the mask when drawing it on top of the\n *
image. Defaults to 0.7. Should be a float between 0 and 1.\n *\n * @param maskBlurAmount How many pixels to
blur the mask by. Defaults to 0.\n *\n * Should be an integer between 0 and 20.\n *\n * @param flipHorizontal If the
result should be flipped horizontally. Defaults\n * to false.\n *\n * @param pixelCellWidth The width of each pixel
cell. Default to 10 px.\n */\nexport function drawPixelatedMask(\n  canvas: Canvas, image: ImageType,
maskImage: ImageData,\n  maskOpacity = 0.7, maskBlurAmount = 0, flipHorizontal = false,\n  pixelCellWidth =
10.0) {\n  const [height, width] = getInputSize(image);\n  assertSameDimensions({ width, height}, maskImage,
'image', 'mask');\n\n  const mask = renderImageDataToOffScreenCanvas(maskImage, CANVAS_NAMES.mask);\n\n  const blurredMask = drawAndBlurImageOnOffScreenCanvas(\n    mask, maskBlurAmount,
CANVAS_NAMES.blurredMask);\n\n  canvas.width = blurredMask.width;\n  canvas.height =
blurredMask.height;\n\n  const ctx = canvas.getContext('2d');\n  ctx.save();\n  if (flipHorizontal) {\n    flipCanvasHorizontal(canvas);\n  }\n\n  const offscreenCanvas =\n  ensureOffscreenCanvasCreated(CANVAS_NAMES.lowresPartMask);\n  const offscreenCanvasCtx =
offscreenCanvas.getContext('2d');\n  offscreenCanvas.width = blurredMask.width * (1.0 / pixelCellWidth);\n  offscreenCanvas.height = blurredMask.height * (1.0 / pixelCellWidth);\n  offscreenCanvasCtx.drawImage(\n    blurredMask, 0, 0, blurredMask.width, blurredMask.height, 0, 0,\n    offscreenCanvas.width,
offscreenCanvas.height);\n  ctx.imageSmoothingEnabled = false;\n  ctx.drawImage(\n    offscreenCanvas, 0, 0,
offscreenCanvas.width, offscreenCanvas.height, 0, 0, canvas.width, canvas.height);\n\n  // Draws vertical grid
lines that are `pixelCellWidth` apart from each other.\n  for (let i = 0; i < offscreenCanvas.width; i++) {\n    ctx.beginPath();\n    ctx.strokeStyle = '#ffffff';\n    ctx.moveTo(pixelCellWidth * i, 0);\n    ctx.lineTo(pixelCellWidth
* i, canvas.height);\n    ctx.stroke();\n  }\n\n  // Draws horizontal grid lines that are `pixelCellWidth` apart from
each\n  // other.\n  for (let i = 0; i < offscreenCanvas.height; i++) {\n    ctx.beginPath();\n    ctx.strokeStyle =
'#ffffff';\n    ctx.moveTo(0, pixelCellWidth * i);\n    ctx.lineTo(canvas.width, pixelCellWidth * i);\n    ctx.stroke();\n  }\n\n  ctx.globalAlpha = 1.0 - maskOpacity;\n  ctx.drawImage(image, 0, 0, blurredMask.width,
blurredMask.height);\n  ctx.restore();\n}\n\nfunction createPersonMask(\n  multiPersonSegmentation:
PersonSegmentation[]|SemanticPersonSegmentation,\n  edgeBlurAmount: number): Canvas {\n  const
backgroundMaskImage = toMask(\n    multiPersonSegmentation, {r: 0, g: 0, b: 0, a: 255},\n    {r: 0, g: 0, b: 0, a:
0});\n\n  const backgroundMask =\n    renderImageDataToOffScreenCanvas(backgroundMaskImage,
CANVAS_NAMES.mask);\n  if (edgeBlurAmount === 0) {\n    return backgroundMask;\n  } else {\n    return
drawAndBlurImageOnOffScreenCanvas(\n    backgroundMask, edgeBlurAmount,
CANVAS_NAMES.blurredMask);\n  }\n}\n\n/**\n * Given a personSegmentation and an image, draws the image
with its background\n * blurred onto the canvas.\n *\n * @param canvas The canvas to draw the background-blurred
image onto.\n *\n * @param image The image to blur the background of and draw.\n *\n * @param
personSegmentation A SemanticPersonSegmentation or an array of\n * PersonSegmentation object.\n *\n * @param
backgroundBlurAmount How many pixels in the background blend into each\n * other. Defaults to 3. Should be an
integer between 1 and 20.\n *\n * @param edgeBlurAmount How many pixels to blur on the edge between the
person\n * and the background by. Defaults to 3. Should be an integer between 0 and 20.\n *\n * @param
flipHorizontal If the output should be flipped horizontally. Defaults\n * to false.\n */\nexport function
drawBokehEffect(\n  canvas: Canvas, image: ImageType,\n  multiPersonSegmentation:
SemanticPersonSegmentation|PersonSegmentation[],\n  backgroundBlurAmount = 3, edgeBlurAmount = 3,
flipHorizontal = false) {\n  const blurredImage = drawAndBlurImageOnOffScreenCanvas(\n    image,

```

```

backgroundBlurAmount, CANVAS_NAMES.blurred);\n canvas.width = blurredImage.width;\n canvas.height =
blurredImage.height;\n\n const ctx = canvas.getContext('2d');\n\n if (Array.isArray(multiPersonSegmentation)
&&\n  multiPersonSegmentation.length === 0) {\n  ctx.drawImage(blurredImage, 0, 0);\n  return;\n }\n\n const personMask = createPersonMask(multiPersonSegmentation, edgeBlurAmount);\n\n ctx.save();\n if
(flipHorizontal) {\n  flipCanvasHorizontal(canvas);\n } \n // draw the original image on the final canvas\n\n const
[height, width] = getInputSize(image);\n ctx.drawImage(image, 0, 0, width, height);\n\n // \"destination-in\" - \"The
existing canvas content is kept where both the\n // new shape and existing canvas content overlap. Everything else
is made\n // transparent.\"\n // crop what's not the person using the mask from the original image\n\n
drawWithCompositing(ctx, personMask, 'destination-in');\n // \"destination-over\" - \"The existing canvas content is
kept where both the\n // new shape and existing canvas content overlap. Everything else is made\n //
transparent.\"\n // draw the blurred background on top of the original image where it doesn't\n // overlap.\n\n
drawWithCompositing(ctx, blurredImage, 'destination-over');\n ctx.restore();\n }\n\n\nfunction
createBodyPartMask(\n  multiPersonPartSegmentation: SemanticPartSegmentation|PartSegmentation[],\n
bodyPartIdsToMask: number[], edgeBlurAmount: number): Canvas {\n  const backgroundMaskImage = toMask(\n
  multiPersonPartSegmentation, {r: 0, g: 0, b: 0, a: 0},\n    {r: 0, g: 0, b: 0, a: 255}, true, bodyPartIdsToMask);\n\n
const backgroundMask =\n  renderImageDataToOffScreenCanvas(backgroundMaskImage,
CANVAS_NAMES.mask);\n  if (edgeBlurAmount === 0) {\n    return backgroundMask;\n  } else {\n    return
drawAndBlurImageOnOffScreenCanvas(\n    backgroundMask, edgeBlurAmount,
CANVAS_NAMES.blurredMask);\n  }\n}\n\n/**\n * Given a personSegmentation and an image, draws the image
with its background\n * blurred onto the canvas.\n *\n * @param canvas The canvas to draw the background-blurred
image onto.\n *\n * @param image The image to blur the background of and draw.\n *\n * @param
partSegmentation A SemanticPartSegmentation or an array of\n * PartSegmentation object.\n *\n * @param
bodyPartIdsToBlur Default to [0, 1] (left-face and right-face). An\n * array of body part ids to blur. Each must be
one of the 24 body part ids.\n *\n * @param backgroundBlurAmount How many pixels in the background blend into
each\n * other. Defaults to 3. Should be an integer between 1 and 20.\n *\n * @param edgeBlurAmount How many
pixels to blur on the edge between the person\n * and the background by. Defaults to 3. Should be an integer
between 0 and 20.\n *\n * @param flipHorizontal If the output should be flipped horizontally. Defaults\n * to
false.\n */\n\nexport function blurBodyPart(\n  canvas: Canvas, image: ImageType,\n  partSegmentation:
SemanticPartSegmentation|PartSegmentation[],\n  bodyPartIdsToBlur = [0, 1], backgroundBlurAmount = 3,
edgeBlurAmount = 3,\n  flipHorizontal = false) {\n  const blurredImage =
drawAndBlurImageOnOffScreenCanvas(\n    image, backgroundBlurAmount, CANVAS_NAMES.blurred);\n\n  canvas.width =
blurredImage.width;\n  canvas.height = blurredImage.height;\n\n  const ctx =
canvas.getContext('2d');\n\n  if (Array.isArray(partSegmentation) && partSegmentation.length === 0) {\n
  ctx.drawImage(blurredImage, 0, 0);\n  return;\n }\n\n  const bodyPartMask =\n  createBodyPartMask(partSegmentation, bodyPartIdsToBlur, edgeBlurAmount);\n\n  ctx.save();\n  if (flipHorizontal)
{\n    flipCanvasHorizontal(canvas);\n  } \n // draw the original image on the final canvas\n\n  const [height, width] =
getInputSize(image);\n  ctx.drawImage(image, 0, 0, width, height);\n\n  // \"destination-in\" - \"The existing canvas
content is kept where both the\n // new shape and existing canvas content overlap. Everything else is made\n //
transparent.\"\n  // crop what's not the person using the mask from the original image\n\n  drawWithCompositing(ctx,
bodyPartMask, 'destination-in');\n  // \"destination-over\" - \"The existing canvas content is kept where both the\n //
new shape and existing canvas content overlap. Everything else is made\n // transparent.\"\n  // draw the blurred
background on top of the original image where it doesn't\n // overlap.\n\n  drawWithCompositing(ctx, blurredImage,
'destination-over');\n  ctx.restore();\n }\n\n\n\"**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

```

governing permissions and\n * limitations under the License.\n *\n *

```
=====\n\n*\n\nexport const PART_CHANNELS: string[] = [\n 'left_face',\n 'right_face',\n 'left_upper_arm_front',\n 'left_upper_arm_back',\n 'right_upper_arm_front',\n 'right_upper_arm_back',\n 'left_lower_arm_front',\n 'left_lower_arm_back',\n 'right_lower_arm_front',\n 'right_lower_arm_back',\n 'left_hand',\n 'right_hand',\n 'torso_front',\n 'torso_back',\n 'left_upper_leg_front',\n 'left_upper_leg_back',\n 'right_upper_leg_front',\n 'right_upper_leg_back',\n 'left_lower_leg_front',\n 'left_lower_leg_back',\n 'right_lower_leg_front',\n 'right_lower_leg_back',\n 'left_feet',\n 'right_feet'\n];\n\n/** @license See the LICENSE file. *\n\n// This code is auto-generated, do not modify this file!\n\nconst version = '2.2.0';\n\nexport {\n version;\n names: [\n 'toFlattenedOneHotPartMap',\n 'partHeatmapScores',\n 'numParts',\n 'shape',\n 'partMapLocations',\n 'tf.argmax',\n 'partMapFlattened',\n 'tf.reshape',\n 'tf.oneHot',\n 'clipByMask2d',\n 'image',\n 'mask',\n 'tf.mul',\n 'toMaskTensor',\n 'segmentScores',\n 'threshold',\n 'tf.tidy',\n 'tf.cast',\n 'tf.greater',\n 'tf.scalar',\n 'decodePartSegmentation',\n 'segmentationMask',\n '_a',\n 'partMapHeight',\n 'partMapWidth',\n 'flattenedMap',\n 'partNumbers',\n 'tf.expandDims',\n 'tf.range',\n 'tf.matmul',\n 'partMap',\n 'partMapShiftedUpForClipping',\n 'tf.add',\n 'tf.sub',\n 'decodeOnlyPartSegmentation',\n 'model',\n 'outputStride',\n 'this',\n 'inputShape',\n 'inputs',\n 'tf.util',\n 'assert',\n 'BaseModel',\n 'input',\n 'asFloat',\n '_this',\n 'preprocessInput',\n 'asBatch',\n 'results3d',\n 'predict',\n 'map',\n 'y',\n 'tf.squeeze',\n 'namedResults',\n 'nameOutputResults',\n 'heatmapScores',\n 'tf.sigmoid',\n 'heatmap',\n 'offsets',\n 'displacementFwd',\n 'displacementBwd',\n 'segmentation',\n 'partHeatmaps',\n 'longOffsets',\n 'partOffsets',\n 'dispose',\n '__extends',\n 'MobileNet',\n 'tf.div',\n 'results',\n 'PART_NAMES',\n 'NUM_KEYPOINTS',\n 'length',\n 'PART_IDS',\n 'reduce',\n 'result',\n 'jointName',\n 'i',\n 'CONNECTED_PART_NAMES',\n 'POSE_CHAIN',\n 'CONNECTED_PART_INDICES',\n 'jointNameA',\n 'jointNameB',\n 'getScale',\n '_b',\n 'padding',\n 'height',\n 'width',\n 'inputResolutionY',\n 'inputResolutionX',\n 'padT',\n 'padB',\n 'getOffsetPoint',\n 'x',\n 'keypoint',\n 'get',\n 'getImageCoords',\n 'part',\n 'heatmapX',\n 'heatmapY',\n 'clamp',\n 'a',\n 'min',\n 'max',\n 'squaredDistance',\n 'y1',\n 'x1',\n 'y2',\n 'x2',\n 'dy',\n 'dx',\n 'addVectors',\n 'b',\n 'computeDistance',\n 'embedding',\n 'pose',\n 'minPartScore',\n 'distance',\n 'numKpt',\n 'p',\n 'keypoints',\n 'score',\n 'Math',\n 'position',\n 'Infinity',\n 'convertToPositionInOutput',\n 'stride',\n 'padL',\n 'scaleX',\n 'scaleY',\n 'round',\n 'getEmbedding',\n 'location',\n 'keypointIndex',\n 'convertToPosition',\n 'outputResolutionX',\n 'refineSteps',\n 'newLocation',\n 'nn',\n 't',\n 'newPos',\n 'nn_1',\n 'matchEmbeddingToInstance',\n 'poses',\n 'numKptForMatching',\n '_c',\n 'embed',\n 'pair',\n 'keypointsIndex',\n 'push',\n 'kMin',\n 'kMinDist',\n 'k',\n 'dist',\n 'getOutputResolution',\n 'decodeMultipleMasksCPU',\n 'posesAboveScore',\n 'inHeight',\n 'inWidth',\n 'dataArray',\n 'Uint8Array',\n 'fill',\n 'j',\n 'n',\n 'decodeMultiplePartMasksCPU',\n 'partSegmentation',\n 'Int32Array',\n 'decodeMultipleMasksWebGL',\n 'minKptScore',\n 'maxNumPeople',\n 'origHeight',\n 'origWidth',\n 'slice',\n 'outHeight',\n 'outWidth',\n 'shapedLongOffsets',\n 'poseVals',\n 'Float32Array',\n 'poseOffset',\n 'kp',\n 'offset',\n '_d',\n 'posesTensor',\n 'tf.tensor',\n 'program',\n 'variableNames',\n 'outputShape',\n 'userCode',\n 'tf.backend',\n 'compileAndRun',\n 'toPersonKSegmentation',\n 'tf.equal',\n 'toPersonKPartSegmentation',\n 'bodyParts',\n 'isWebGLBackend',\n 'getBackend',\n 'decodePersonInstanceMasks',\n 'minPoseScore',\n 'minKeypointScore',\n 'filter',\n 'personSegmentations',\n 'masksTensorInfo',\n 'masksTensor',\n 'tf.engine',\n 'makeTensorFromDataId',\n 'dataId',\n 'dtype',\n '_',\n 'Promise',\n 'all',\n 'data',\n 'personSegmentationsData',\n 'forEach',\n 'segmentationsData',\n 'longOffsetsData',\n 'decodePersonInstancePartMasks',\n 'partSegmentation',\n 'partSegmentations',\n 'partSegmentationsByPersonData',\n 'partSegmentationData',\n 'half',\n 'floor',\n 'maxSize',\n 'getElementValue',\n 'priorityQueue',\n 'Array',\n 'numberOfElements',\n 'MaxHeap',\n 'swim',\n 'exchange',\n 'sink',\n 'less',\n 'getValueAt',\n 'scoreIsMaximumInLocalWindow',\n 'keypointId',\n 'localMaximumRadius',\n 'scores',\n 'localMaximum',\n 'yStart',\n 'yEnd',\n 'yCurrent',\n 'xStart',\n 'xEnd',\n 'xCurrent',\n 'buildPartWithScoreQueue',\n 'scoreThreshold',\n 'numKeypoints',\n 'queue',\n 'enqueue',\n 'id',\n 'parentChildrenTuples',\n 'parentJoinName',\n 'childJoinName',\n 'parentToChildEdges',\n 'childToParentEdges',\n 'getDisplacement',\n 'edgeId',\n 'point',\n 'displacements',\n 'numEdges',\n 'getStridedIndexNearPoint',\n 'traverseToTargetKeypoint',\n 'sourceKeypoint',\n 'targetKeypointId',\n 'scoresBuffer',\n 'offsetRefineStep',\n 'displacement',\n 'targetKeypoint',\n 'targetKeypointIndices',\n 'offsetPoint',\n 'targetKeypointIndices',\n 'decodePose',\n 'root',\n 'displacementsFwd',\n 'displacementsBwd',\n 'instanceKeypoints',\n 'rootPart',\n 'rootScore',\n 'rootPoint',\n 'edge',\n 'sourceKeypointId',\n 'withinNmsRadiusOfCorrespondingPoint',\n 'squaredNmsRadius',\n 'some',\n 'correspondingKeypoint',\n 'getInstanceScore',\n 'existingPoses',\n 'kLocalMaximumRadius',\n 'decodeMultiplePoses',\n 'offsetsBuffer',\n 'displacementsFwdBuffer',\n 'displacementsBwdBuffer',\n 'maxPoseDetections',\n 'nmsRadius',\n 'empty',\n 'dequeue',\n 'imageNetMean',\n 'ResNet',\n 'RESNET50_BASE_URL',\n 'MOBILENET_BASE_URL',\n 'resNet50SavedModel',\n 'quantBytes',\n 'graphJson',\n 'mobileNetSavedModel',\n 'multiplier',\n 'toString',\n '1',\n '0.75',\n '0.5',\n 'getSi
```

zeFromImageLikeElement", "offsetHeight", "offsetWidth", "Error", "getSizeFromVideoElement", "hasAttribute", "videoHeight", "videoWidth", "getInputSize", "HTMLCanvasElement", "OffscreenCanvas", "HTMLImageElement", "ImageData", "HTMLVideoElement", "tf.Tensor", "isValidInputResolution", "resolution", "toValidInputResolution", "inputResolution", "INTERNAL_RESOLUTION_STRING_OPTIONS", "low", "medium", "high", "full", "INTERNAL_RESOLUTION_PERCENTAGES", "MIN_INTERNAL_RESOLUTION", "MAX_INTERNAL_RESOLUTION", "toInternalResolutionPercentage", "internalResolution", "Object", "values", "join", "toInputResolutionHeightAndWidth", "inputHeight", "inputWidth", "internalResolutionPercentage", "toInputTensor", "tf.browser", "fromPixels", "resizeAndPadTo", "imageTensor", "flipHorizontal", "targetH", "targetW", "resizeW", "resizeH", "padR", "aspect", "padHeight", "ceil", "padWidth", "resizedAndPadded", "resized", "tf.image", "resizeBilinear", "tf.reverse", "tf.pad3d", "paddedBy", "scaleAndCropToInputTensorShape", "tensor", "applySigmoidActivation", "inputTensorHeight", "inputTensorWidth", "resizedAndPaddedHeight", "resizedAndPaddedWidth", "_e", "inResizedAndPadded", "removePaddingAndResizeBack", "originalHeight", "originalWidth", "batchedImage", "cropAndResize", "padAndResizeTo", "targetAspect", "top", "left", "right", "bottom", "toTensorBuffers3D", "tensors", "buffer", "scalePose", "offsetY", "offsetX", "scalePoses", "flipPoseHorizontal", "imageWidth", "flipPosesHorizontal", "scaleAndFlipPoses", "inputResolutionHeight", "inputResolutionWidth", "scaledPoses", "APPLY_SIGMOID_ACTIVATION", "FLIP_POSES_AFTER_SCALING", "MOBILENET_V1_CONFIG", "architecture", "VALID_ARCHITECTURE", "VALID_STRIDE", "MobileNetV1", "ResNet50", "VALID_MULTIPLIER", "VALID_QUANT_BYTES", "validateModelConfig", "config", "indexOf", "PERSON_INFERENCE_CONFIG", "segmentationThreshold", "maxDetections", "MULTI_PERSON_INSTANCE_INFERENCE_CONFIG", "validatePersonInferenceConfig", "validateMultiPersonInstanceInferenceConfig", "net", "baseModel", "BodyPix", "segmentLogits", "partHeatmapLogits", "internalResolutionHeightAndWidth", "predictForPersonSegmentation", "resizedHeight", "resizedWidth", "scaledSegmentScores", "segmentPersonActivation", "tensorBuffers", "scoresBuf", "offsetsBuf", "displacementsFwdBuf", "displacementsBwdBuf", "allPoses", "scaledLongOffsets", "predictForMultiPersonInstanceSegmentationAndPart", "heatmapScoresRaw", "offsetsRaw", "displacementFwdRaw", "displacementBwdRaw", "instanceMasks", "predictForPersonSegmentationAndPart", "scaledPartHeatmapScore", "segmentPersonPartsActivation", "scaledPartSegmentationScores", "loadMobileNet", "tf", "url", "tfconv.loadGraphModel", "modelUrl", "graphModel", "mobilenet", "loadResNet", "resnet", "load", "cpuBlur", "canvas", "blur", "ctx", "getContext", "sum", "alphaLeft", "PI", "step", "exp", "globalAlpha", "drawImage", "offScreenCanvases", "isSafari", "test", "navigator", "userAgent", "assertSameDimensions", "nameA", "nameB", "widthA", "heightA", "widthB", "heightB", "flipCanvasHorizontal", "scale", "translate", "drawWithCompositing", "compositeOperation", "globalCompositeOperation", "createOffScreenCanvas", "document", "createElement", "ensureOffscreenCanvasCreated", "drawAndBlurImageOnCanvas", "blurAmount", "clearRect", "save", "restore", "drawAndBlurImageOnOffScreenCanvas", "offscreenCanvasName", "renderImageToCanvas", "renderImageDataToCanvas", "putImageData", "renderImageDataToOffScreenCanvas", "canvasName", "toMask", "personOrPartSegmentation", "foreground", "background", "drawContour", "foregroundIds", "r", "g", "isArray", "multiPersonOrPartSegmentation", "bytes", "Uint8ClampedArray", "drawStroke", "row", "column", "radius", "color", "isSegmentationBoundary", "segmentationData", "numberBackgroundPixels", "n_1", "isBoundary", "RAINBOW_PART_COLORS", "toColoredPartMask", "partColors", "multiPersonPartSegmentation", "partId", "CANVAS_NAMES", "blurred", "blurredMask", "lowresPartMask", "drawMask", "maskImage", "maskOpacity", "maskBlurAmount", "drawPixelatedMask", "pixelCellWidth", "offscreenCanvas", "offscreenCanvasCtx", "imageSmoothingEnabled", "beginPath", "strokeStyle", "moveTo", "lineTo", "stroke", "createPersonMask", "multiPersonSegmentation", "edgeBlurAmount", "backgroundMask", "drawBokehEffect", "backgroundBlurAmount", "blurredImage", "personMask", "createBodyPartMask", "bodyPartIdsToMask", "blurBodyPart", "bodyPartIdsToBlur", "bodyPartMask", "PART_CHANNELS", "version"], "mappings":":;;;;;;;;;;;;;otEAYBA,SAASA,yBAAyBC,GACHC,IAAMC,EAAWD,EAakBE,MAAM,GACnCC,EAAmBC,OAAUJ,EAAmB,GAehDK,EAAMBC,QAAWH,IAAoB,IAExD,OAaOI,OAaUF,EAakBJ,GAGrC,SAASO,aAAaC,EAAoBC,GACxC,OAAOC,IAAOF,EAAOC,GAGvB,SAAgBE,aACZC,EAA4BC,GAC9B,OAAOC,KACH,WACI,OAACC,KAAQC,QACLJ,EAaEK,OAAUJ,IAAa,WakBpD,SAAgBK,uBACZC,EACApB,GACI,IAAaqB,EAA0CrB,EAakBE,MAA3DoB,OAAeC,OAAcB,OACpC,OAAOc,KAAQ,WACb,IAAMS,EAAezB,yBAAYBC,GACxCyB,EAAcC,WAAcC,MAAS,EAAg1B,EAAU,EAAG,SAAU,GAe/DI,EACFW,KAAQY,OAAUJ,EAACc,GAA6B,SAE3DI,EAAUvB,QAAWD,GAAmBiB,EAAeC,IAEvDO,EAA8BC,IAAOF,EAASX,OAAU,EAAG,UAEjE,OAAOc,IAAOxB,aACHsB,EAA4CV,

GACjDF,OAAU,EAAG,YAIvB,SAAGBe,2BAA2BjC,GAEnC,IAAAqB,EAA0CrB,EAakBE,MAA3DoB,OAAeC,
OAAcB,OACpC,OAAOc,KAAQ,WACb,IAAMS,EAaeZB,yBAAYBC,GACxCyB,EAAC,WAAC,MAAS,EAA
G1B,EAAU,EAAG,SAAU,GAE/DI,EACFW,KAAQY,OAAUJ,EAAC,GAA6B,SAEjE,OAAOnB,QAAWD,GAA
mBiB,EAAeC,MC1ExD,yBACE,WACuBW,EACHC,GADGC,WAAAF,EACHE,kBAAAD,EACIB,IAAME,EAC
FD,KAAKF,MAAMI,OAAO,GAAGpC,MACzBqC,KAAQC,QACgB,IAAnBH,EAAW,KAAkC,IAAnBA,EAAW,
GACtC,WAAM,MAAA,gBAAgBA,EAAW,QAAOA,EAAW,qCAyE3D,OAJDEI,oBAAA,SAAQC,GAAR,WAUE
,OAAO3B,KAAQ,WACb,IAAM4B,EAAUC,EAAC,gBAAgB7B,KAAQ0B,EAAO,YAC9CI,EAAUpB,WAACiB
,EAAS,GAejCl,EADUH,EAAKV,MAAMc,QAAQF,GACMG,IAAI,SAAAC,GAAC,OAAAC,QAAWD,GAAL,M
AC3DE,EAAeR,EAAS,kBAakBN,GAe5C,OACEO,cAAeC,QAAWH,EAAaI,SACvCC,QAASL,EAAaK,QACt
BC,gBAAiBN,EAAaM,gBAC9BC,gBAAiBP,EAAaO,gBAC9BC,aAAcR,EAAaQ,aAC3BC,aAAcT,EAAaS,aAC3
BC,YAAaV,EAAaU,YAC1BC,YAAaX,EAAaW,gBAqBhCtB,oBAAA,WACEL,KAAKF,MAAM8B,sCCzFf,4DA
4BA,OA5B+BC,eAC7BC,4BAAA,SAAGxB,GAEd,OAAO3B,KAAQ,WAAM,OAAAiB,IAAOmC,IAAOzB,EA
AO,OAAQ,MAGpDwB,8BAAA,SAakBE,GAWhB,OACEX,QAFaw,KAGAR,aAHAQ,KAIAP,aAJAO,KAKAN
,YALAM,KAMAZ,QANAY,KAOAV,gBAPAU,KAQAT,gBARAS,KASAL,YATAK,UhByB3B,WCAIB4B,YA
CX,OAAQ,UAAW,WAAY,UAAW,WAAY,eACtD,gBAAiB,YAAa,aAAc,YAAa,aACzD,UAAW,WAAY,WAAY,
YAAa,YAAa,cAGIDC,cAAgBD,WAAWE,OAM3BC,SACTH,WAAWI,OAAO,SAACC,EAAoBC,EAAWC,GAe
hD,OADAF,EAAOC,GAAaC,EACbF,OAGPG,uBACH,UAAW,iBAakB,YAAa,iBAC1C,YAAa,cAAe,UAAW,aA
CvC,WAAY,cAAe,WAAY,kBACvC,aAAc,kBAAMb,aAAc,eAC/C,WAAY,cAAe,YAAa,eACxC,eAAgB,kBAAM
B,UAAW,aASpCC,aACV,OAAQ,YAAa,UAAW,YAAa,OAAQ,aACrD,WAAY,aAAc,OAAQ,iBAC1C,eAAgB,cA
Ae,YAAa,cAC5C,eAAgB,YAAa,UAAW,aACxC,WAAY,cAAe,OAAQ,kBACnC,gBAAiB,eAAgB,aAAc,eAC/C,g
BAAiB,aAAc,WAAY,cAC3C,YAAa,eAGHC,uBAAYBF,qBAAqB5B,IACvD,SAAC5B,OAAC2D,OAAyC,OAC
V,OAAET,SAASQ,GAAaR,SAASS,MCIDzC,SAGgBC,SACZ7D,EACA8D,EACAC,OAFCC,OAAQC,OACRC,O
AAkBC,OAETC,EAA+CL,MAAjCM,EAAiCN,SAG3D,OADeI,GAF4CJ,OAAAA,QAEVE,GADICC,GAAoBE,E
AAOC,EAAOL,IAKnD,SAAGBM,eACZzC,EAAW0C,EAAWC,EAakBpC,GAC1C,OACEP,EAAGO,EAAQqC,I
AAI5C,EAAG0C,EAAGC,GACrBD,EAAGnC,EAAQqC,IAAI5C,EAAG0C,EAAGC,EAAWvB,gBAIpC,SAAGBy
B,eACZC,EAAY7D,EAAsBsB,GAC7B,IACDpC,EAASsE,eAD4BK,WAAAA,WAAAA,KACiBvC,GAARDP,MA
AG0C,MACV,OACEA,EAAGI,EAAC,SAAW9D,EAeyD,EAC1C,EAAG8C,EAAKE,SAAW/D,EAae,GAI
tC,SAUgBiD,MAAMC,EAAWC,EAAaC,GAC5C,OAAIF,EAAIC,EACCA,EAELD,EAAIE,EACCA,EAFF,EAG
T,SAAGBG,gBACZC,EAAYC,EAAYC,EAAYC,GACtC,IAAMC,EAAKF,EAAKF,EACVK,EAAKF,EAAKF,EA
ChB,OAAOG,EAACA,EAAC,EAAGxB,SAAGBC,WAAWV,EAAaW,GACtC,OAAQnB,EAAGQ,EAER,
EAAImB,EAAEnB,EAAG1C,EAAGkD,EAAEID,EAAI6D,EAAE7D,GC3DnC,SAUS8D,gBAAGBC,EAAMBC,
EAAYC,gBAAAA,MAGtD,IAFA,IAAIC,EAAW,EACXC,EAAS,EACJC,EAAL,EAAGA,EAAIL,EAU1C,OAA
Q+C,IACChJ,EAACK,UAAUD,GAAGE,MAAQL,IAC5BE,GAAU,EACVD,GAAYK,SAACR,EAAUK,GAAG1
B,EAALsB,EAACK,UAAUD,GAAGI,SAAS9B,EAAM,GAC3D6B,SAACR,EAAUK,GAAGpE,EAALgE,EAACK,
UAAUD,GAAGI,SAASxE,EAAM,IAQ3D,OALe,IAAXmE,EACFD,EAAWO,EAAAA,EAEXP,GAAsBC,EAejB
D,EAGT,SAASQ,yBACLF,EAAGBrG,EACb8D,EAAoC0C,OADnBpC,OAAMqC,OACtBC,OAAQC,OACL9E,
EAAIuE,KAAKQ,QAAQxC,EAAOiC,EAASxE,EAAL,GAO8E,EAAS,GAOH,GAIE,OAAQjC,EADE6B,KA
AKQ,QAAQH,EAAOJ,EAAS9B,EAAL,GAOmc,EAAS,GAOOF,GACvD3E,KAGb,SAASgF,aACLC,EAAGBC,
EACbBC,EAAYCC,EACzCxE,EAA2ByE,EAC3BIH,GAQF,QARGgE,OAAQC,OACLkD,EAACH,EAakBF,GAe
hCM,EAAKD,EAAYtF,EAALoF,EAAoBE,EAAY5C,EACvDgB,EAAG9C,EAAYQ,eAAiB,EAALmE,GAAML,G
AC5CvB,EAAC/C,EAAYQ,eAAiB,EAALmE,EAAC,GAACL,GACHDIF,EAALiF,EAASjF,EAAL0D,EACjBhB,EA
ALuC,EAASvC,EAALiB,EACZ6B,EAAL,EAAGA,EAALH,EAAaG,IAAK,CACpCxF,EAALuE,KAAKpB,IAALnD,
EAAGmC,EAAS,GAezB,IAAMsD,EAASN,GAAMbZC,EAADICA,EAAL6B,KAAKpB,IAAIT,EAAGN,EAAQ,GA
CapC,MAC/B0F,EAAKD,EAAOzF,EAALoF,EAAoBK,EAAO/C,EAGjD1C,GAFA0D,EAAG9C,EAAYQ,eAAiB,
EAALsE,GAAMR,GAG5CxC,GAFAiB,EAAC/C,EAAYQ,eAAiB,EAALsE,EAAC,GAAGR,GAKID,OAAQxC,IA
AG1C,KAGb,SAAS2F,yBACLv,EAAGBrE,EAA2BgF,EAC3CC,EAA2B1H,EAC3B8D,EAAoCmD,EACpCU,EA
AMCnB,EACnCU,GAKF,QAR8B9C,OAAMqC,OACjCC,OAAQC,OACR3C,OAAQC,OAEL2D,KACAZ,EAAoB
,SAACa,GACvB,OAAAtB,yBAAYBsB,GAOzD,EAAMqC,IAAQC,EAAQC,GAASH,IAE1DsB,EAALiB,EAAGA

,EAAiBJ,EACzCI,IAAkB,CACrB,IAAMIC,EAAYiB,aACdC,EAAUgB,EAAGbD,EAAMBC,EAC7CxE,EAAayE,GAACdID,EAAQC,IAEvC2D,EAAMG,KAAKnC,GAKb,IAFA,IAAIoC,GAAQ,EACRC,EAAW3B,EAAAA,EACN4B,EAAI,EAAGA,EAAIT,EAAMvE,OAAQgF,IAAK,CACrC,IAAMC,EAAOxC.gBAAgBiC,EAAOH,EAAMS,IACtCC,EAAOF,IACTD,EAAOE,EACPD,EAWE,GAGf,OAAOH,EAGT,SAASI,oBACLpI,EACAwG,OADCtC,OAAkBC,OAIrB,OAF0BiC,KAAKQ,OAAOzC,EAAMb,GAAOqC,EAAS,GAC/CJ,KAAKQ,OAAO1C,EAAMb,GAAOsC,EAAS,IAI3E,SAAgB6B,uBACZ9F,EAA0BE,EAC1B6F,EAAYbEtE,EAAGBC,EAAeuC,EACxDxG,EAAuC+D,EACvCmD,EAAqBQ,OADpBa,OAAUC,oBACUd,KAUvB,IATA,IAAMe,EACFH,EAAGB1G,IAAI,SAAA2C,GAAC,AAAA,IAAIImE,WAAWIE,EAASC,GAAO0E,KAAK,KAERdVe,EAAoBL,MAAR0C,EAAQ1C,OAE1BD,EACFD,UAAUG,EAAQC,IAASsE,EAAUC,GAAUzE,GAD5C2C,OAAQC,OAERM,EACLmB,qBAAqBG,EAAUC,GAAUhC,MACICjD,EAAI,EAAGA,EAAS,EAAQT,GAAC,EAC/B,IAAK,IAAIqF,EAAI,EAAGA,EAAI3E,EAAO2E,GAAC,EAAG,CACjC,IAAMC,EAAItF,EAAIU,EAAQ2E,EAETb,GAAa,IADArG,EAAasG,GACV,CACd,IAAMb,EAAOR,0BACRjD,EAAGqE,EAAG/G,EAAG0B,GAAId,EAAa6F,EAAiBZ,GAC3CtD,EAAMqC,IAAQC,EAAQC,GAASM,GAAoBjD,EAAQC,GAC5DuC,EAAQU,GACRc,GAAQ,IACVS,EAAWT,GAAMa,GAAC,IAAM9B,OAAOJ,EAGT,SAAgBK,2BACZvG,EAA0BE,EAC1BsG,EAA6BT,EAAYbEtE,EACtDC,EAAeuC,EAAGBxG,EAC/B+D,EAakBmD,EACIBQ,OAFgCa,OAAUC,oBAE1Cd,KAWF,IAVA,IAAMe,EACFH,EAAGB1G,IAAI,SAAA2C,GAAC,AAAA,IAAIyE,WAAWhF,EAASC,GAAO0E,MAAM,KAERdVe,EAAoBL,MAAR0C,EAAQ1C,OAE1BD,EACFD,UAAUG,EAAQC,IAASsE,EAAUC,GAAUzE,GAD5C2C,OAAQC,OAERM,EACLmB,qBAAqBG,EAAUC,GAAUhC,MAEICjD,EAAI,EAAGA,EAAS,EAAQT,GAAC,EAC/B,IAAK,IAAIqF,EAAI,EAAGA,EAAI3E,EAAO2E,GAAC,EAAG,CACjC,IAAMC,EAAItF,EAAIU,EAAQ2E,EAETb,GAAa,IADArG,EAAasG,GACV,CACd,IAAMb,EAAOR,0BACRjD,EAAGqE,EAAG/G,EAAG0B,GAAId,EAAa6F,EAAiBZ,GAC3CtD,EAAMqC,IAAQC,EAAQC,GAASM,GAAoBjD,EAAQC,GAC5DuC,EAAQU,GACRc,GAAQ,IACVS,EAAWT,GAAMa,GAAC,EAAGBF,KAM9C,OAAOJ,ECtKT,SAOgBQ,yBACZ1G,EAA2BE,EAC3B6F,EAAYbEtE,EAAGBC,EAAeuC,EACxDxG,EAAuC+D,EACvCmD,EAAqBgC,EACrBC,GAaF,QAfGZ,OAAUC,OAIP1E,EAA0BvB,EAAa1D,MAAtCuK,OAAyC,OAEB1B,EAAwBIF,EAAY5D,MAAMyK,MAAM,EAAG,GAALDC,OAAWC,OAEZC,EACFxK,QAAWwD,GAAC8G,EAAWC,EAAU,EAAGvG,gBAK/CyG,EAAW,IAAIC,aAAaR,EAAeIG,cAAgB,GAAG0F,KAAK,GACHEpF,EAAI,EAAGA,EAAI+E,EAAGBpF,OAAQK,IAG1C,IAFA,IAAMqG,EAAarG,EAAIN,cAAgB,EACjC4C,EAAOyC,EAAGB/E,GACpBsG,EAAC,EAAGA,EAAC5G,cAAe4G,IAAM,CACzC,IAAMrF,EAAWqB,EAAKK,UAAU2D,GAC1BC,EAASF,EAakB,EAALC,EAC5BH,EAASI,GAAUf,EAAS2B,MAC5BuD,EAASI,EAAS,GAACtF,EAAS6B,SAASxE,EACzC6H,EAASI,EAAS,GAACtF,EAAS6B,SAAS9B,EAIvC,IAAAwF,EACFIG,UAAUG,EAAQC,IAASsE,EAAUC,GAAUzE,GAD5C2C,OAAQC,OAGTqD,EAAcC,OAAUP,GAAWP,EAAcIG,cAAe,IAE1DmB,EAAoBL,MAAR0C,EAAQ1C,OAE1BmG,GACJC,eAAgB,eAAgB,cAAe,SAC/Cc,aAAchB,EAAyC,GAC1BgB,SAAU.gyCAsCDjG,OAASuC,OAAWH,4EAEPBC,OAASC,OAAWF,6FAIL2C,qGAGEIG,2QAOEiE,8DACgBID,EAAS,2DACTC,EAAQ,oGAG9BG,OAASuC,OAAWH,+FAEPBC,OAASC,OAAWF,0XAYIB0C,mfAqB1B,OADqBoB,UACDC,cAChBL,GAAU3H,EAACKH,EAAMBO,aCtJcQ,sBACZjI,EAA2B2F,GAC7B,OAAOxI,KACH,WAAM,OAACC,KAAQ8K,MACXII,EAAC1C,OAAUqI,IAAK,WAGvC,SAAgBwC,0BACZnI,EAA2BoI,EAAwBzC,GACrD,OAAOxI,KACH,WAAM,OAAAiB,IAAOrB,IAAOK,KAAQ8K,MACxBI,EAAC1C,OAAUqI,IAAK,SAAUxH,IAAOiK,EAAW,IAAK,KAGxE,SAASC,iBACP,MAAwB,UAAjBC,aAGT,SAASBC,0BACIBvI,EAA2BE,EAA0BgF,EACrDzD,EAAGBC,EAAeuC,EAC/BxG,EAAuC+D,EAAkBgH,EACzD7D,EAAiB8D,EACjB7B,OAFcZ,OAAUC,2BAA8CuC,mBACzD7D,kBAAiB8D,mBACjB7B,8HAEIb,EAakBb,EAAMwD,OAAO,SAApF,GAAQ,OAAAA,EAACKM,OAAS4E,IAIvDH,kBACIM,EAASbL,KAAQ,WACIC,IAAMyL,EAakBiC,yBACpB1G,EAACe,EAAa6F,EAAiBtE,EAAQC,EAAOuC,GAC1D+B,EAAUC,GAAUzE,EAASmD,EAAa8D,EAC3C7B,GACEiC,EAACc,SAAyC,qBAC5BH,EAAGBI,OAAQJ,EAAGbTm,MACxCsM,EAAGBK,OAEPb,OAAOID,EAAGB1G,IACnB,SAAC6J,EAAGvD,GAAM,OAAAsC,sBAAsBY,EAAaID,UAIxCwD,QAAQC,IAAIT,EAAoBtJ,IAAI,SAAAvC,GAAQ,OAAAA,EAACKuM,gCAD5DC,EACK/H,SAGLoH,EAAoBY,QAAQ,SAAAvH,GAAC,OAAAA,EAAE5B,yBAET,SAAMJ,EAAaqJ,eACrB,OADIBG,EAAoBjI,YACIrB,EAAYmJ,eAApCI,EAakBiI,SAExB+H,EAA0BxD,uBACtB0D,EAAMBC,EAAiB1D,EAAiBtE,EAAQC,EAC7DuC,GAAS+B,EAAUC,GAAUzE,EAASmD,oBAG5C,SAAO2E,EAAwBjK,IAC3B,SAACgK,EAAMrI,GAAM,OAEEqI,OAAM/F,KAAMyC,EAAGB/E,GAAIU,QAAOD,kBAG5D,SAASBiI,8BACIB1J,EAA2BE,EAC3ByJ,EAA+BzE,EAA

ezD,EAAGBC,EAC9DuC,EAAGBxG,EA AUc+D,EACvDgH,EA AoB7D,EA AiB8D,EACrC7B,OAFiBZ,OAAUC,2
BAC3BuC,mBA AoB7D,kBA AiB8D,mBACrC7B,gIACIb,EA AkBb,EAAMwD,OAAO,SAAApF,GAAQ,OAAAA,
EA AKM,OAAS4E,IAIvDH,kBACIuB,EA AoBzM,KAAQ,WAC hC,IAAMyL,EA AkBIC,yBACpB1G,EA AcE,EA A
a6F,EA AiBtE,EA AQc,EA AOuC,GAC1D+B,EA AUC,GAAUzE,EA ASmD,EA Aa8D,EAC3C7B,GACEiC,EA AcC,
SAA YC,qBAC9BH,EA AgBI,OAAQJ,EA AgBtM,MACxCSm,EA AgBK,OAEIb,OAAOID,EA AgB1G,IACnB,SAA
C6J,EAAGvD,GACA,OAAAwC,0BAA0BU,EA Aac,EA AkBhE,UAIxDwD,QAAQC,IAAIQ,EA AkBvK,IAAI,SA
AA2C,GA AK,OAAAA,EA AEqH,gCADpDQ,EACKtI,SAGLqI,EA AkBL,QAAQ,SAAAvH,GA AK,OAAAA,EA A
E5B,yBAEP,SAAMJ,EA AaqJ,eACrB,OADIBG,EA AoBjI,YACIrB,EA AYmJ,eACd,OADtBI,EA AkBII,YACUoI,E
AAiBN,eAA7CS,EA ASvI,SAE5BsI,EA AgCtD,2BAC5BiD,EA AmBC,EA AiBK,EACpC/D,EA AiBtE,EA AQc,E
AAOuC,GAAS+B,EA AUC,GAAUzE,EAC7DmD,oBAGN,SAAOKf,EA A8BxK,IACjC,SAACgK,EAAM1D,GA A
M,OAAErC,KAA MyC,EA AgBJ,GAAI0D,OAAM5H,SAAQC,iBC5G7D,SAASqI,KAAKpE,GACZ,OAAO9B,KA
AKmG,MAAMrE,EA AI,GAGxB,uBAKE,WAA YsE,EA AiBC,GAC3B1L,KAAK2L,cAAgB,IAAIC,MAAMH,GA
C/BzL,KAAK6L,kBA AoB,EACzB7L,KAAK0L,gBA AkBA,EA Ke3B,OA/DSI,oBAAP,SAAetI,GACbxD,KAAK2
L,gBA AgB3L,KAAK6L,kBA AoBrI,EAC9CxD,KAAK+L,KAAK/L,KAAK6L,mBAGVC,oBAAP,WACE,IAAM5
H,EAAMIE,KAAK2L,cAAc,GAI/B,OAHA3L,KAAKgM,SAAS,EA AGhM,KAAK6L,oBACtB7L,KAAKiM,KAA
K,GACVjM,KAAK2L,cAAc3L,KAAK6L,iBA AmB,GA AK,KACzC3H,GAGF4H,kBAAP,WACE,OAAc,KIAA3B
9L,KAAK6L,kBAGPC,iBAAP,WACE,OAAO9L,KAAK6L,iBA AmB,GAG1BC,gBAAP,WACE,OAAO9L,KAAK
2L,cAAcP,D,MAAM,EAAGvI,KAAK6L,iBA AmB,IAGtDC,gBAAP,WACE,OAAO9L,KAAK2L,cAAc,IAGpBG,i
BAAR,SAAa3E,GACX,KAAOA,EA AI,GA AKnH,KAAKkM,KAAKX,KAAKpE,GAAIA,IACjCnH,KAAKgM,S
AAS7E,EAAGoE,KAAKpE,IACtBA,EA AiOe,KAAKpE,IAIL2E,iBAAR,SAAa3E,GACX,KAAO,EA AIA,GA AK
nH,KAAK6L,kBA AkB,CACrC,IAAIhE,EA AI,EA AIV,EAIZ,GA HIU,EA AI7H,KAAK6L,kBA AoB7L,KAAKkM,
KAAKrE,EAAGA,EA AI,IACHDA,KAEG7H,KAAKkM,KAAK/E,EAAGU,GACHB,MAEF7H,KAAKgM,SAAS7
E,EAAGU,GACjBV,EA AIU,IAIAiE,uBAAR,SA AmBtJ,GACjB,OAAOxK,KAAK0L,gBA AgB1L,KAAK2L,cAAc
nJ,KAGzCsJ,iBAAR,SAAAtJ,EA AWqF,GACtB,OAAO7H,KAAKmM,WAAW3J,GA AKxK,KAAKmM,WAAWtE
,IAGtCiE,qBAAR,SAAiBtJ,EA AWqF,GAC1B,IAAMvB,EA AItG,KAAK2L,cAAcnJ,GAC7BxC,KAAK2L,cAAcn
J,GA AKxK,KAAK2L,cAAc9D,GAC3C7H,KAAK2L,cAAc9D,GA AKvB,QC7E5B,SAES8F,4BACLC,EA AoBjH,
EA AetB,EA AkBD,EACrDyI,EA A4BC,GAM9B,IALM,IAAA tN,EA AkBsN,EA AOzO,MAAxBmF,OAAQC,OAE
XsJ,GA Ae,EACbC,EA ASpH,KAAKnB,IAAIJ,EA AWwI,EA AoB,GACjDI,EA AO rH,KAAKpB,IAAIH,EA AWwI,
EA AqB,EAAGrJ,GACHD0J,EA AWF,EA AQE,EA AWD,IAAQC,EA AU,CAGvD,IAFA,IAAMC,EA ASvH,KAAKn
B,IAAIL,EA AWyI,EA AoB,GACjDO,EA AOxH,KAAKpB,IAAIJ,EA AWyI,EA AqB,EAAGpJ,GACHD4J,EA AWF,
EA AQE,EA AWD,IAAQC,EAC7C,GAAIP,EA AO7I,IAAIjJ,EA AUG,EA AUT,GA AcjH,EA AO,CACtDoH,GA Ae,
EACf,MAGJ,IAAKA,EACH,MAIJ,OAAOA,EAQT,SA AgBO,wBACZC,EA AwBV,EACxBC,GAMF,IALM,IAAA
tN,EA AgCsN,EA AOzO,MAAtCmF,OAAQC,OAAO+J,OA EhBC,EA AQ,IAAIpB,QACd7I,EAASC,EA AQ+J,EA A
c,SAACHO,GAAY,iBAEvC6E,EA AW,EAAGA,EA AWb,IAAUa,EAC1C,IAAK,IAAID,EA AW,EAAGA,EA AWX
,IAASW,EACzC,IAAK,IAAIwI,EA Aa,EAAGA,EA Ay,IAAgBZ,EAAY,CACH E,IAAMjH,EA AQmH,EA AO7I,IA
AAIL,EA AUD,EA AUwI,GA IzCjH,EA AQ4H,GAKRZ,4BACIC,EA AYjH,EA AOtB,EA AUD,EA AUyI,EACvCC,IA
ACNW,EAAMC,SAAS/H,QAAOxB,MAAOE,WAAUD,WAAUuJ,GA AIf,KAM7D,OAAOa,EC/DT,IAMMG,qB
AAsC3K,WAAW7B,IACnD,SAAC5B,OAACqO,OA AgBC,OACd,OAAEnL,SAASKL,GA AiBIL,SAASmL,MAEv
CC,mBACFH,qBA AqBxM,IAAI,SAAC5B,GA AqB,cAE7CwO,mBACFJ,qBA AqBxM,IAAI,SAAC5B,GA EK,cAE
nC,SAASyO,gBACLC,EA AgBC,EA AiBC,GACnC,IAAMC,EA AWD,EA Ac/P,MAAM,GA AK,EAC1C,OACEgD,
EAAG+M,EA AcnK,IAAIkK,EAAM9M,EAAG8M,EAAMpK,EAAGmK,GACvCnK,EAAGqK,EA AcnK,IAAIkK,
EAAM9M,EAAG8M,EAAMpK,EAAGsK,EA AWH,IAItD,SAASI,yBACLH,EA AiB7N,EA ASbkD,EACvCC,GAC
F,OACEpC,EAAGiD,MAAMsB,KAAKQ,MAAM+H,EAAM9M,EA AIf,GA Ae,EAAGkD,EAAS,GACzDO,EAAG
O,MAAMsB,KAAKQ,MAAM+H,EAAMpK,EA AIzD,GA Ae,EAAGmD,EA AQ,IAW5D,SAAS8K,yBACLL,EA A
gBM,EA A0BC,EAC1CC,EA A8B9M,EA AyBtB,EACvD8N,EA A+BO,gBAAAA,KAYjC,IAXM,IAAAnP,EA AkB
kP,EA AarQ,MAA9BmF,OAAQC,OAMTmL,EACFX,gBA AgBC,EAJUI,yBAC1BE,EA Ae3I,SAAUvF,EA AckD,E
AAQC,GAGA2K,GAG/CS,EADmB5J,WAAWuJ,EA Ae3I,SAAU+I,GA EID7L,EA AI,EAAGA,EA AI4L,EA AkB5
L,IAAK,CACzC,IAAM+L,EACFR,yBA AyBO,EA AgBvO,EA AckD,EA AQc,GA E7DsL,EA AcjL,eAChBgL,EAAS

BzN,EAAGyN,EAAsB/K,EAAG0K,EACID7M,GAeJiN,EAaiB5J,YAEXIB,EAAG+K,EAAsB/K,EAaiZD,EAC7
Be,EAAGyN,EAAsBzN,EAaiF,IAE9ByD,EAAGgL,EAAYhL,EAAG1C,EAAG0N,EAAY1N,IAEXc,IAAM2N,E
ACFV,yBAAyBO,EAAGbVo,EAACKD,EAAGQC,GAC7DkC,EAAGQ+I,EAAGzK,IACvB+K,EAAsB3N,EAAG2N,E
AAsBjL,EAAG0K,GAETD,OAAQ5I,SAAUgJ,EAAGb1K,KAAM3B,WAAWiM,GAAMb9I,SASxS,SAAGBsJ,WA
CZC,EAAGbPc,EAAGwBIL,EAC7CtB,EAAsB6O,EACtBC,GACF,IAAMhR,EAAGW0O,EAAGoZ,MAAM,GACxB
gQ,EAAGWN,mBAAMBrL,OAE9B2M,EAAGc,IAAIID,MAAM/N,GAEnCkR,EAAG8BJ,OAAbK,EAAGaL,QACrCM
,EAAYtL,eAAeOL,EAAGuHP,EAAGcS,GAAGzDyN,EAAGkBC,EAAGS3B,KACzBhI,MAAG0J,EACpPL,KAAM3B,W
AAW8M,EAAGS3B,IAC1B9H,SAAGU2J,GAKZ,IAAK,IAAIC,EAAGOpB,EAAGW,EAAGoB,GAAQ,IAAKA,EAAM,
CAC/C,IAAMC,EAAGmB3B,mBAAMb0B,GACtChB,EAAGmBT,mBAAMByB,GACxCJ,EAAGkBK,KACjBL,EAAG
BZ,KACrBY,EAAGkZ,GAAoBF,yBACICKB,EAAGMJ,EAAGkBK,GAAmBjB,EAAGk3B,EAC7DIL,EAAGStB,EAAG
8O,IAM/B,IAASK,EAAGO,EAAGA,EAAGOpB,IAAGYoB,EAAGM,CACpCC,EAAGmB1B,mBAAMByB,GACtChB,EA
AGmBV,mBAAMb0B,GACxCJ,EAAGkBK,KACjBL,EAAGkZ,KACrBY,EAAGkZ,GAAoBF,yBACICKB,EAAGMJ,E
AGkBK,GAAmBjB,EAAGk3B,EAC7DIL,EAAGStB,EAAGc6O,IAI/B,EAAGOE,ECjIT,SAISM,oCACLI,EAAGe2I,EA
AG0BpQ,EAGzCoN,OAG0C7I,MAAG1C,MAE/C,EAAG04F,EAAGM4I,KAAK,SAAGCrQ,OAGXsQ,cAAAGCID,GAA
Y/G,SAGpD,OAGOnB,gBAGIrD,EAAG0C,EAAG+L,EAAGsBzO,EAAGyO,EAAGsB/L,IAC5D6L,IAQR,SAAGS,iB
AGLC,EAAGuBJ,EAGvBP,GAUF,OATkCA,EAAGkZM,OAGChD,SAAGC,EAAGrD,EAAGmBoN,OAGAlB/G,aAGUUF,
UAKIB,OAGKkK,oCAGCK,EAAGeJ,EAAGk/J,EAAGU+G,KAGjd/J,GAAU8C,GAEL9C,GACN,GAAG+BwM,EAAG
B3M,OAGM1D,IAAGmUN,oBAAGsB,EAAGD5B,SAAGBC,oBAGZxB,EAAG8ByB,EAG9BC,EAGCAC,EAAGwC/P,EAGx
CgQ,EAAG2B/C,EAAGsBgD,gBAAGtBhD,mBAAGsBgD,MAAGnD,IATA,IAAGMtJ,KAGAwG,EAAGQH,wBAGVC,EAAG
gB0C,oBAAGbVb,GAAGnCb,EAAGmBW,EAAGYA,EAAG9BtJ,EAAGmVe,EAAGS4N,IAAGsB7C,EAAGM+C,SAAGS,CAE
zD,IAAGMtB,EAAGoZB,EAAGmGD,UAAGnB,IAAGId,oCACI1I,EAAG02I,EAAGX1L,eAAegL,EAAGK/K,KAAG7D,EAAG
c6P,GAAGmJB,EAAGK/K,KAAKwJ,IAGD5D,CAMA,IAAGmJi,EAAGYUj,WAGCd,EAAGMR,EAAGyB,EAAGe7P,EAAGc8
P,EAGjDC,GAAG1K,EAAGQoK,iBAAGiB9I,EAAG02I,EAAGkBIK,GAAGxDuB,EAAGMM,MAAG7B,YAAGWC,WAGz
B,EAAGOsB,SCIIHyJ,eAAiB,QAAS,EAAGS,2BAAGzC,4DA2BA,EAAG3B4BtO,eAC1BuO,4BAAA,SAAGb9P,GAGcd,
EAAGOX,IAAGOW,EAAG06P,eAGvBC,8BAAA,SAAGkBP,O,GAAGEd,IAAGAT,EAAGAS,KAGAV,EAAGOU,KANAZ,EA
AGMAY,KALAN,EAAGAM,KAGAJX,EAAGIAW,KAGHAP,EAAGAO,KAGCF,OAGCEX,UAGCAG,aAGAHQ,KAGIAP,eAGCAC,cA
AGCAN,UAGCAE,kBAGCAC,kBAGCAI,YAGTAK,UAGfsB3B,WAGntBgQ,kBAGCF,0EAGCEC,mBAGCF,2EAGIJ,SAAGBC,mB
AGAmB9K,EAAGB+K,GAGjd,IAAGMC,EAAGY,eAAehL,UAGejC,EAAGmB,IAAGf+K,EAGCKH,kBAGAoB,SAAGWI,EAAG
/BJ,kBAGAoB,QAGAQG,MAAGBC,EAGmVd,SAAGBC,oBAGZjL,EAAGbKl,EAAGoBH,GAGtC,IAAGMI,GAAGkCC,E
AGAK,MAAGOC,IAAGM,MAAGOC,GAAGM,OAGjEN,EAAGY,eAAehL,UAGejC,EAAGmB,IAAGf+K,EAGCKF,mBAGAQb,S
AGASM,EAAGMD,EAAGiBF,EAAGrDH,mBAGAQb,QAGAQE,MAAGcI,EAAGMD,OAGpDF,WAGrBCO,4BAG4B1Q,GAGn
C,GAAGI,iBAGkBA,GAAGc,IAAGvBA,EAAGM2Q,cAG9B,gBAAGiB3Q,GAA+B,IAAGtBA,EAAGM4Q,YAGrC,OAGQ
5Q,EAAGM2Q,aAGAc3Q,EAAGM4Q,aAG7B,GAAoB,MAAGhB5Q,EAAGM2C,QAGAiC,MAAGf3C,EAAGM4C,MAAGvC,O
AGAQ5C,EAAGM2C,OAGAQ3C,EAAGM4C,OAG5B,MAAGM,IAAGliO,MACN,+DAIR,SAAGS,wBAGwB9Q,GAG/B,O
AGAIA,EAAGM+Q,aAGAA,WAGa/Q,EAAGM+Q,aAGAA,UAGI7C/Q,EAAGM2C,OAGAQ3C,EAAGM4C,QAGEpB5C,EAAGm
R,YAGAAhR,EAAGMiR,YAGIrC,SAAGBC,aAGAAr,GAG3B,GAAoC,uCAG/BA,aAGAiBmR,mBAGCY,qCAC1BnR,aAG
iBoR,iBAGCU,sCAG9BpR,aAGAiBqR,iBAGCpB,EAAGOX,4BAG4B1Q,GAG9B,GAA2B,+BAGAE,aAGAiBsR,UAGChE,
OAGQtR,EAAGM2C,OAGAQ3C,EAAGM4C,OAGvB,GAG2B,sCAG9B5C,aAGAiBuR,iBAGCnB,EAAGOT,wBAGwB9Q,
GAG1B,GAGAIA,aAGAiBwR,OAG1B,OAGAQxR,EAAGMxC,MAAGM,GAAGIwC,EAAGMxC,MAAGM,IAAGEpC,MAAGM,IA
AGIqT,MAAGM,8BAG4B7Q,OAGIID,SAAGSyR,uBAGCLC,EAAGoBjS,GAGtB,OAGQiS,EAAGa,GAAGkJS,GAAGiB,EAG7
C,SAAGBkS,uBAGZC,EAAGyBnS,GAG3B,OAGIgS,uBAGAuBG,EAAGiBnS,GAGnCmS,EAGF7M,KAGKMG,MAAG
M0G,EAAGkBS,GAGgBA,EAAGe,EAGrE,IAAGMoS,oCAGJC,IAAGK,MAAGCLC,OAGAQ,SAGRC,KAAGM,OAGCNC,KA
AGM,QAGFC,yCAGHL,mCAGAmCC,KAAGM,IAG1CnT,GAAGkT,mCAGAmCE,QAAGS,GAG7CpT,GAAGkT,mCAG
mCG,MAAGO,IAG3CtT,GAAGkT,mCAGAmCI,MAAGO,MAGvCE,wBAG0B,GAG1BC,wBAG0B,EAAGhC,SAAGS,+
BAGCLC,GAGF,GAAGk,iBAGvBA,EAAGiC,CAG1C,IAAGMtQ,EAAGSkQ,gCAGAGCI,GAO/C,OAGLzS,KAGAQ,OA
GC,iBAGXkC,EAGCP,WAGAM,MAAGAA,kDAGFuQ,EAAGOC,EAAGOX,oCAGTY,KAGK,iBAGAgBH,QAG3BtQ,EAG
P,OAGAnC,KAGAQ,OAG0B,iBAGvBwS,GAGHA,GAAGsBF,yBAGtBE,GAAGsBH,wBAG1B,WAGI,MAAGAA,sDAG
IA,gCAG+BC,qCAG5BE,IAERA,EAIX,SAAGBI,gCAGZJ,EAG4S,EAGAd,EAAGcU,EAAGaC,OAGVC,EAGFR,

+BAA+BC,GAEnC,OACEX,uBACIgb,EAACe,EAA8BpT,GACHDkS,uBACliB,EAAaC,EAA8BpT,IAInD,SAAg
BqT,cAAc9S,GAG5B,OAAOA,aAAiBwR,OAAyXR,EAAQ+S,QAAWC,WAAWhT,GAGpE,SAAGBiT,eACZC,E
AA0BvU,EAC1BwU,OAD2BC,OAASC,oBACpCF,MAIL,IAKFG,EACAC,EACAnO,EACAoO,EACAZQ,EACAC
,EAVEP,EAakByQ,EAAY1V,MAA7BmF,OAGD8Q,OAAiB9Q,EASvB,GAAl8Q,EAViBJ,EAAUD,EAUJ,CAEz
BE,EAAUD,EAGV,IAAMK,EAAYN,GAFiBG,EAAUxO,KAAK4O,KAAKL,EAAUG,IAG9BrO,EAAO,EACPoO
,EAAO,EACPzQ,EAAOgC,KAAKmG,MAAMwI,EAAY,GAC9B1Q,EAAOoQ,GAAWG,EAAUxQ,OACvB,CAC
LwQ,EAAUH,EAGV,IAAMQ,EAAWP,GAFjBC,EAAUvO,KAAK4O,KAAKP,EAAUK,IAG9BrO,EAAOL,KAA
KmG,MAAM0I,EAAW,GAC7BJ,EAAOH,GAAWC,EAAUIO,GAC5BrC,EAAO,EACPC,EAAO,EAKBT,OAAQ6
Q,iBAfiBxV,KAAQ,WAE/B,IAAIyV,EAUJ,OAREA,EADEX,EACQY,MAASC,eACfC,QAAWf,EAAa,IAAKK,E
AASD,IAEhCS,MAASC,eAAed,GAACk,EAASD,IAG5CY,MAASJ,IAAW/Q,EAAMC,IAAQoC,EAAMoO,IAAQ
,EAAG,OAK1CW,WAAyPr,EAAMC,IAAQoC,EAAMoO,KAG5D,SAAGBY,+BACZC,EACA1V,EACA8D,EA
CA6D,EACAgO,OAHCc,OAAMBC,OACnBC,OAawBC,OACxBhM,OAAC3F,OAAMC,OAAO2R,OAACvP,O
AAMoO,OAExB,oBADEc,MACKjW,KAAQ,WACb,IAAIuW,EAakCb,MAASC,eAAeK,GACzDI,EAawBC,IAA
wB,GAMrD,OAIJ,IACFM,EAaqB/T,QAAW+T,IAG3BC,2BACHD,GAAqBL,EAAMBC,KACtCzR,EAAMC,IA
AQoC,EAAMoO,OAI9B,SAAGBqB,2BACzhB,EACA1V,EACA8D,OADCqS,OAGBC,OACHzO,OAACvD,OA
AMC,OAAO0F,OAACtD,OAAMoO,OAExB,OAAnV,KAAQ,WACb,IAAM2W,EAA4BhW,WAAc6U,GACHD,
OAAOpT,QAAWsT,MACbkB,cACGD,IACEjS,GAAQ+R,EAAiB/R,EAAOC,EAAO,GACvCoC,GAAQ2P,EAAG
B3P,EAAOoO,EAAO,IACrCzQ,EAAO+R,EAAiB,IACpBA,EAAiB/R,EAAOC,EAAO,IACnCoC,EAAO2P,EAAG
B,IAAQ,EAAGB3P,EAAOoO,EAAO,MAE/D,IAAKsB,EAAGBC,KAAkB,MAIpD,SAUGBG,eACZIV,EAaqBrB
,OAACyU,OAASC,OAEB35Q,EAakByO,aAAalR,GAA9B2C,OAAQC,OACTuS,EAAe9B,EAAUD,EAE3B9M,
GAA4B,EAAG,EAAG,EAAG,GAAPcVd,OAAMC,OAAMoC,OAAMoO,OASvB,OAvBe5Q,EAAQD,EAEVwS
,GAEXpS,EAAO,EACPC,EAAO,EACPoC,EAAOL,KAAKQ,MAAM,IAAO4P,EAAexS,EAASC,IACjD4Q,EAA
OzO,KAAKQ,MAAM,IAAO4P,EAAexS,EAASC,MAGjDG,EAAOgC,KAAKQ,MAAM,IAAQ,EAAM4P,EAAGB
vS,EAAQD,IACxdk,EAAO+B,KAAKQ,MAAM,IAAQ,EAAM4P,EAAGBvS,EAAQD,IACxDyC,EAAO,EACPo
O,EAAO,IAUDM,QAPqBzV,KAAQ,WACnC,IAAI6U,EAACJ,cAAc9S,GAGhC,OAFAkT,EAACgB,MAAShB,IA
AenQ,EAAMC,IAAQoC,EAAMoO,IAAQ,EAAG,KAE9DO,MAASC,eAAed,GAACe,EAASC,MAGvC3Q,SAAU
0S,IAAKrS,EAAMsS,KAAMjQ,EAAMkQ,MAAO9B,EAAM+B,OAAQvS,IAGzE,SAASBwS,kBAakBC,sFAEtC,
SAAOpL,QAAQC,IAAIml,EAAQIV,IAAI,SAAA8T,GAAU,OAAAA,EAAOqB,iBAGID,SAAGBC,UACZnR,EA
AYc,EAAGBD,EAAGBuQ,EAC5CC,GACF,oBAF8CD,kBAC5CC,MAEA/Q,MAAON,EAAMC,MACZD,UAAW
L,EAARK,UAAUte,IAAI,SAAC5B,OAACmG,UAAOxB,SAAM0B,aAAc,OAC3BF,QACaxB,OACA0B,UACE9
B,EAAG8B,EAAS9B,EAImC,EAASwQ,EACzBrV,EAAGwE,EAASxE,EAAl8E,EAASsQ,OAM/D,SAAGBE,W
ACZ1P,EAAd,EAAGBD,EAAGBuQ,EAAaC,GAC9D,oBADiDD,kBAAaC,KAC/C,IAAXxQ,GAA2B,IAAXC,GA
A4B,IAAZsQ,GAA6B,IAAZC,EAC5CzP,EAFA,EAAM7F,IAAI,SAAAIe,GAAQ,OAAAmR,UAAUnR,EAAMC
,EAAQD,EAAQuQ,EAASC,KAGpE,SAAGBE,mBAAMbvR,EAAYwR,GAC7C,OACEIR,MAAON,EAAMC,MA
CZD,UAAWL,EAARK,UAAUte,IACtB,SAAC5B,OAACmG,UAAOxB,SAAM0B,aAAc,OAC3BF,QACaxB,OA
CA0B,UAAW9B,EAAG8S,EAAa,EAAlhR,EAAS9B,EAAG1C,EAAGwE,EAASxE,OAKjE,SAAGByV,oBAAoB7
P,EAAe4P,GACjD,OAAIA,GAAC,EAFT5P,EAFA,EAAM7F,IAAI,SAAAIe,GAAQ,OAAAuR,mBAAMbvR,EA
AMwR,KAGpD,SAAGBE,kBACZ9P,EAAezH,EACf8D,EACAC,EAakByQ,OAFFxQ,OAAQC,OACvBuT,OAAU
BC,OAOpBC,EACFP,WAAW1P,GALVzD,EAASD,EAAQ0S,IAAM1S,EAAQ6S,WAE/B3S,EAAQF,EAAQ2S,K
AAO3S,EAAQ4S,UAGG5S,EAAQ0S,KAAM1S,EAAQ2S,MAE7D,OAAIIC,EACK8C,oBAAoBI,EAAzT,GAEj
CyT,MC5TLC,0BAA2B,EAC3BC,0BAA2B,EAoD3BC,qBACJC,aAAc,cACdhX,aAAc,GACdyQ,WAAy,EACZG
,WAAy,KAGRqG,oBAA6C,cAAe,YAC5DC,cACJC,aAAgB,EAAG,GAAL,IACvBC,UAAa,GAAL,KAEBc,kBAC
JF,aAAgB,GAAM,IAAM,GAC5BC,UAAa,IAETE,mBAA0C,EAAG,EAAG,GAETD,SAASC,oBAAoBC,GAM3B,
GAH2B,OAF3BA,EAASA,GAAUT,qBAERC,eACTQ,EAAOR,aAAe,eAEpBC,mBAAMbQ,QAAQD,EAAOR,cA
AgB,EACpD,MAAM,IAAI5F,MACN,wBAAwBoG,EAAOR,mCACXC,oBAK1B,GAH2B,MAAvBO,EAAOxX,e
ACTwX,EAAOxX,aAAe,IAEpBkX,aAAaM,EAAOR,cAAcS,QAAQD,EAAOxX,cAAgB,EACnE,MAAM,IAAIoR
,MACN,wBAAwBoG,EAAOxX,mCACXkX,aAAaM,EAAOR,mCACpBQ,EAAOR,kBAMjC,GAHyB,MAArBQ,E
AAO5G,aACT4G,EAAO5G,WAAa,GAElByG,iBAAIbG,EAAOR,cAAcS,QAAQD,EAAO5G,YAAc,EACrE,MA

AM,IAAIQ,MACN,sBAAsBoG,EAAO5G,iCACTyG,iBAAiBG,EAAOR,mCACxBQ,EAAOR,kBAMjC,GAHyB,MAArBQ,EAAO/G,aACT+G,EAAO/G,WAAa,GAElB6G,kBAakBG,QAAQD,EAAO/G,YAAc,EACjD,MAAM,IAAIW,MACN,sBAAsBoG,EAAO/G,iCACT6G,uCACAE,EAAOR,kBAGjC,OAAOQ,EakFT,IAAaE,yBACXhE,gBAAgB,EACbBb,mBAAoB,SACpB8E,sBAAuB,GACvBC,cAAe,GACf3K,eAAgB,GACbBgD,UAAW,IAGA4H,wCAEPnE,gBAAgB,EACbBb,mBAAoB,SACpB8E,sBAAuB,GACvBC,cAAe,GACf3K,eAAgB,GACbBgD,UAAW,GACX/F,iBAakB,GACIB9D,YAAa,IAGnB,SAAS0R,8BAA8BN,GAC9B,IAAAG,EACHH,wBAD0BI,EAC1BJ,gBADyCvK,EACzCuK,iBADyDvH,EACzDuH,YAEJ,GAAIG,EAAwB,GAAOA,EAAwB,EACzD,MAAM,IAAIvG,MACN,yBAAyBuG,qCAI/B,GAAIC,GAAiB,EACnB,MAAM,IAAIxG,MACN,yBAAyBwG,qBAI/B,GAAI3K,EAAiB,GAAOA,EAAiB,EAC3C,MAAM,IAAIImE,MACN,0BAA0BnE,qCAIhC,GAAIgD,GAAa,EACf,MAAM,IAAIImB,MAAM,qBAAqBnB,OAIzC,SAAS8H,2CACLP,GAEA,IAAAG,EAMEH,wBALFI,EAKEJ,gBAJFvK,EAIEuK,iBAHFvH,EAGEuH,YAFFtN,EAEESn,mBADFP,R,EACEoR,cAEJ,GAAIG,EAAwB,GAAOA,EAAwB,EACzD,MAAM,IAAIvG,MACN,yBAAyBuG,qCAI/B,GAAIC,GAAiB,EACnB,MAAM,IAAIxG,MACN,yBAAyBwG,qBAI/B,GAAI3K,EAAiB,GAAOA,EAAiB,EAC3C,MAAM,IAAIImE,MACN,0BAA0BnE,qCAIhC,GAAIgD,GAAa,EACf,MAAM,IAAIImB,MAAM,qBAAqBnB,OAGvC,GAAI/F,EAAMB,GAACA,EAAMB,EAC7C,MAAM,IAAIkH,MACN,4BAA4BIH,oCAIIC,GAAI9D,GAAe,GAACA,EAAC,GACpC,MAAM,IAAIgI,MACN,uBAAuBhL,iCAAK/B,uBAGE,WAAy4R,GACV/X,KAAKgY,UAAyD,EA+oBrB,OA5oBUE,yCAAR,SAAqC3X,GA07B,IAAArB,EAMFe,KAAKgY,UAAUpX,QAAQN,GAC3B,OACE4X,6BACAhX,8BACAG,kBACAC,kCACAC,oCAII0W,gDAAR,SAA4C3X,GAQpC,IAAArB,EAOfE,KAAKgY,UAAUpX,QAAQN,GAC3B,OACE4X,6BACAC,iCACajX,8BACAG,kBACAC,kCACAC,oCAII0W,6DAAR,SAAyD3X,GAUjD,IAAArB,EAQFe,KAAKgY,UAAUpX,QA AQN,GAC3B,OACE4X,6BACAxW,0BACAR,8BACAG,kBACAC,kCACAC,kCACAE,8BAuCJwW,oCAAA,SA CI3X,EAAqBsS,EACrB8E,GAfJ,wBAEIA,MASI,IAAAzY,EAakBuS,aAAaR,GAA9B2C,OAAQC,OACTkV,EA AmCpF,gCACrCJ,EAAoB5S,KAAKgY,UAAUjY,cAAeKd,EAAQC,IACxDH,EACfYs,eAAeIV,EAAO8X,GADn BhE,YAASpR,YAGV4D,EAMFjI,KAAQ,WACJ,IAAAM,EAMFuB,EAak6X,6BAA6BjE,GALpC8D,kBACAhX, kBACAG,YACAC,oBACAC,oBAGIwB,EAAGcQr,EAAQtW,MAAvCwa,OAaE,OAehBC,EAA8B9D,+BACxB wD,GAAGbjV,EAAQC,IAASoV,EAaE,CAC9CvV,EAAQ0S,IAAK1S,EAAQ6S,SAAU7S,EAAQ2S,KAAM3S, EAAQ4S,QACvDgB,0BAEJ,OACEpV,aAAchD,aACvUc,QAAWyX,GAAsBd,GACrCxW,gBACAG,UACAC,kB ACAC,qBA3BFC,iBACAN,kBACAG,YACAC,oBACAC,oBA2BF,OADA6S,EAAQxS,WAENJ,eACAN,gBACA G,UACAC,kBACAC,kBACAyB,UACAoV,qCA6BEH,0BAAN,SACI3X,EACaiX,uBAAAA,sKAoBa,OahBfM,8 BAFAN,uBAAaE,yBAA4BF,IAInCtY,EASFe,KAAKyY,wBACDnY,EAAoiX,EAAO3E,mBAAoB2E,EAAOG,u BAT/CIW,iBACAN,kBACAG,YACAC,oBACAC,oBACAyB,YACAoV,qCAKIrV,EAakBvB,EAAa1D,MAA9Bm F,OAAQC,UAEM1B,EAAaqJ,eAGZ,OAHHbVl,EAASsE,SACfpF,EAAaI,aAEekU,mBACvB5U,EAaEg,EAASC, EAAiBC,YakB9C,OAnBMmX,EAAGb9R,SAEf+R,EACHD,KADcE,EACdF,KAD0BG,EAC1BH,KAD+CI,EAC/ CJ,KAOJhS,EAAQ8P,kBALJ9P,EAAQiJ,oBACRgJ,EAawC,EAAYC,EAAqBC,EAC5C9Y,KAAKgY,UAAUjY, aAAcwX,EAAOI,cACpCJ,EAAOvK,eAAgBuK,EAAOvH,YAGtB/M,EAAQC,GAAQkV,EAakCpV,EAC1D6T,0 BAEJ3V,EAACU,UACdP,EAAQO,UACRN,EAAGBM,UACHBL,EAAGBK,cAERqB,SAAQC,QAAO2H,KAAMvI ,EAAQyW,SAAUrS,UA0B3CuR,+BAAN,SACI3X,EACaiX,uBAAAA,kMAwDoB,OApdTBO,2CADAP,uBAAa K,wCAA2CL,IAEIdY,EAakBuS,aAAaR,GAA9B2C,OAAQC,OACTkV,EAAMCpF,gCACrCuE,EAAO3E,mBA AoB5S,KAAKgY,UAAUjY,cACzCkD,EAAQC,IAEPH,EACfYs,eAAeIV,EAAO8X,GADnBhE,YAASpR,YAEV 4D,EAOFjI,KAAQ,WACJ,IAaFqa,EAbE/Z,EAOFuB,EAakYy,iDAAiD7E,GANxD8D,kBACAxW,gBACAR,kB ACAG,YACAC,oBACAC,oBAEliX,EAA8B9D,+BACxBwD,GAAGbjV,EAAQC,GAAQkV,IAC9BpV,EAAQ0S,I AAK1S,EAAQ6S,SAAU7S,EAAQ2S,KAAM3S,EAAQ4S,QACvDgB,0BAeJ,OAneOC,EAAoBtX,GAOpBF,aAJ mBhD,aACjBuC,QAAWyX,GAAsBjB,EAAOG,uBAI1ChW,YAAasX,EACbE,iBAakBhY,EACiBiY,WAAy9X,E ACZ+X,mBAAoB9X,EACpB+X,mBAAoB9X,KAvCtBC,iBACAE,gBACAwX,qBACAC,eACAC,uBACAC,0BAS C0BvD,mBACvBoD,EAakBC,EAAYC,EAAoBC,YAAjC,OAadhBX,EAAGb1P,SAEf2P,EACHD,KADcE,EACdF, KAD0BG,EAC1BH,KAD+CI,EAC/CJ,KAOJhS,EAAQ8P,kBALJ9P,EAAQiJ,oBACRgJ,EAawC,EAAYC,EAAq BC,EAC5C9Y,KAAKgY,UAAUjY,aAAcwX,EAAOI,cACpCJ,EAAOvK,eAAgBuK,EAAOvH,YAGtB/M,EAAQC ,GAAQkV,EAakCpV,EAC1D6T,6BAEWb9M,0BACxBvI,EAACe,EAAAGf,EAAOzD,EAAQC,EAC1CID,KAAK gY,UAAUjY,aAAcQY,EAakCpV,EAC/DuU,EAAOvK,eAAgBuK,EAAOpR,YAAaoR,EAAOtN,iBACIDsn,EAA

OI,uBAUX,OAdM2B,EAAGtQ,SAMtBoL,EAAQxS,UACRJ,EAAaI,UACbF,EAAYE,UACZsX,EAAiBtX,UACjBuX,EAAWvX,UACXwX,EAAMbX,UACnByX,EAAMbZx,AAEZ0X,SAuCTrB,yCAAA,SACI3X,EAAqBsS,EACrB8E,GAFJ,wBAEIA,MASI,IAAAzY,EAakBuS,AAaAlR,GAA9B2C,OAAQC,OACTkV,EAAMCpF,gCACrCJ,EAAoB5S,KAAKgy,UAAUjY,cAAekD,EAAQC,IACxDH,EAGFyS,eAAelV,EAAO8X,GAFxBhE,YACApR,YAGI4D,EAMFjI,KAAQ,WACJ,IAAAM,EAOfuB,EAak+Y,oCAAoCnF,GAN3C8D,kBACAC,sBACAjX,kBACAG,YACAC,oBACAC,oBAGlwB,EAAGcQr,EAAQtW,MAAvCwa,OAAeC,OAEhBC,EAAsB9D,+BACxBwD,GAAgBjV,EAAQC,IAASoV,EAAeC,KAC9CvV,EAAQ0S,IAAK1S,EAAQ6S,SAAU7S,EAAQ2S,KAAM3S,EAAQ4S,QACvDgB,0BAEE4C,EAAYB9E,+BAC3ByD,GAAoBIV,EAAQC,IAASoV,EAAeC,KACIDvV,EAAQ0S,IAAK1S,EAAQ6S,SAAU7S,EAAQ2S,KAAM3S,EAAQ4S,QACvDgB,0BAGJ,OACEzL,iBACIpM,uBAHFp,AAauC,QAAWYX,GAAsBd,GAGP8B,GACzCtY,gBACAG,UACAC,kBACAC,qBAlCF4J,qBACAjK,kBACAG,YACAC,oBACAC,oBAkCF,OADA6S,EAAQxS,WAENuJ,mBACAjK,gBACAG,UACAC,kBACAC,kBACAYB,UACAOV,qCA8BEH,+BAAN,SACI3X,EACAIx,uBAAAA,sKakBW,OadbM,8BAFAN,uBAAAE,yBAA4BF,IAGnCY,EASFe,KAAKyZ,6BACDnZ,EAAOIx,EAAO3E,mBAAoB2E,EAAOG,uBAT/CvM,qBACAjK,kBACAG,YACAC,oBACAC,oBACAYB,YACAOV,qCAKIrv,EAakBoI,EAaiBrN,MAAIcMf,OAAQC,UACIIl,EAaiBN,eAGd,OAHHBA,EAAOjE,SACbuE,EAaiBvJ,AAEWkU,mBACvB5U,EAAeG,EAASC,EAaiBC,YAkB9C,OAnBMmX,EAAGB9R,SAEf+R,EACHD,KADcE,EACdF,KAD0BG,EAC1BH,KAD+CI,EAC/CJ,KAoJhS,EAAQ8P,kBALJ9P,EAAQIJ,oBACRgJ,EAAWC,EAAYC,EAAqBC,EAC5C9Y,KAAKgy,UAAUjY,AAAcwX,EAAOI,cACpCJ,EAAOVk,eAAgBuK,EAAOVH,YAGtB/M,EAAQC,GAAQkV,EAakCpV,EAC1D6T,0BAEJ3V,EAAeU,UACdP,EAAQO,UACRN,EAAGBM,UACHBL,EAAGBK,cAERqB,SAAQC,QAAO2H,OAAMkO,SAAUrS,UA0BnCuR,oCAAN,SACI3X,EACAIx,uBAAAA,oMA0DoB,OAtDtBO,2CAFAP,uBAAAK,wCAA2CL,IAGIDtY,EAakBuS,AAaAlR,GAA9B2C,OAAQC,OACTkV,EAAMCpF,gCACrCuE,EAAO3E,mBAAoB5S,KAAKgy,UAAUjY,cACzCkD,EAAQC,IACPH,EACFyS,eAAelV,EAAO8X,GADnBhE,YAASpR,YAEV4D,EAQFjI,KAAQ,WACJ,IAAAM,EAQFuB,EAAYyY,iDAAiD7E,GAPxD8D,kBACAxW,gBACAR,kBACAG,YACAC,oBACAC,oBACAE,iBAII+W,EAAsB9D,+BACxBwD,GAAgBjV,EAAQC,GAAQkV,IAC9BpV,EAAQ0S,IAAK1S,EAAQ6S,SAAU7S,EAAQ2S,KAAM3S,EAAQ4S,QACvDgB,0BAGE8C,EAA+BhF,+BACjCjT,GAAewB,EAAQC,GAAQkV,IAC7BpV,EAAQ0S,IAAK1S,EAAQ6S,SAAU7S,EAAQ2S,KAAM3S,EAAQ4S,QACvDgB,0BAEEoC,EAAoBtX,EAK1B,OACEF,aALmBhD,aACnBuC,QAAWYX,GAAsBjB,EAAOG,uBAKxChW,YAAAsX,EACbE,iBAakBhY,EACIBiY,WAAy9X,EACZ+X,mBAAoB9X,EACpB+X,mBAAoB9X,EACpB4J,iBAREtL,2BAA2B6Z,MAIC/BIY,iBACAE,gBACAwX,qBACAC,eACAC,uBACAC,uBACAIO,wBAwC0B2K,mBACvBoD,EAakBC,EAAYC,EAAoBC,YAajC,OAdhBX,EAAGBIP,SAEf2P,EACHD,KADcE,EACdF,KAD0BG,EAC1BH,KAD+CI,EAC/CJ,KAoJhS,EAAQ8P,kBALJ9P,EAQIj,oBACRgJ,EAAWC,EAAYC,EAAqBC,EAC5C9Y,KAAKgy,UAAUjY,AAAcwX,EAAOI,cACpCJ,EAAOVk,eAAgBuK,EAAOVH,YAGtB/M,EAAQC,GAAQkV,EAakCpV,EAC1D6T,6BAEW3L,8BACxB1J,EAAeE,EAAYJ,EAakBzE,EAAOzD,EAAQC,EAC5DID,KAAKgy,UAAUjY,AAAcqY,EAakCpV,EAC/DuU,EAAOVk,eAAgBuK,EAAOPR,YAAaoR,EAAOtN,iBACIDSN,EAAOI,uBAWX,OAFM2B,EAAGtQ,SAMtBoL,EAAQxS,UACRJ,EAAaI,UACbF,EAAYE,UACZsX,EAaiBtX,UACjBuX,EAAWvX,UACXwX,EAAMbX,UACnByX,EAAMbZx,UACnBuJ,EAaiBvJ,AAEV0X,SAGFrB,oBAAP,WACEjY,KAAKgy,UAAUpW,gBAOnB,SAAe+X,cAAcPc,6HA13B,GAHMxX,EAewX,EAAOxX,aACtByQ,EAAa+G,EAAO/G,WACpBG,EAAa4G,EAAO5G,WACHB,MAANiJ,GACF,MAAM,IAAIzI,MACN,kJAMa,OAdb0I,EAAMnJ,oBAAoB3Q,EAAC4Q,EAAYH,MACjCsJ,eAAsBvC,EAAOWC,UAYF,WAEIE,OAFMG,EAAa/a,SACbgb,EAAY,IAAIInY,UAAUkY,EAAYja,MACrC,IAAIkY,QAAQgC,SAMrB,SAAeC,WAAW3C,2HAGxB,GAFMxX,EAewX,EAAOxX,aACtByQ,EAAa+G,EAAO/G,WACHB,MAANoJ,GACF,MAAM,IAAIzI,MACN,kJAMa,OAdb0I,EAAMtJ,mBAAMbXQ,EAACyQ,MACpBsJ,eAAsBvC,EAAOWC,UAYF,WAEIE,OAFMG,EAAa/a,SACbkb,EAAS,IAAI/J,OAAO4J,EAAYja,MAC/B,IAAIkY,QAAQkC,SAerB,SAAAsBC,KAAK7C,uBAAAA,mGAGzB,MAA4B,cAD5BA,EAASD,oBAAoBC,IACIBR,gBACFmD,WAAW3C,IACe,gBAAXBA,EAOR,gBACT4C,cAAcPc,OAEd,UC9/BX,SAAgB8C,QACZC,EACAjC,EACAKc,GAOF,IANA,IAAMC,EAAMF,EAAOG,WAAW,MAE1BC,EAAM,EAejC,EAAY,GAak,EAItV,KAAKuV,GADIB,EAAA,GAERC,EAAON,EAAO,EAAL,EAAL,EACnBzZ,GAakYz,EAAMzZ,GAakYz,EAAMzZ,GAak+Z,EACIC,IAAK,IAAIrX,GAak+W,EAAM/W,GAak+W,EAAM/W,GAakqX,EAAM,CAGxCH,GADIC,EAAYtV,KAAKyV,MAAMtX,EAAIA,EAALIC,EAAIA,OAI3C,IAASA,GAakYz,EAAMzZ,GAakYz,EAAMzZ,GAak+

Z,EACIC,IAASrX,GAAK+W,EAAM/W,GAAK+W,EAAM/W,GAAKqX,EACICL,EAAIO,YAAcJ,EACdtV,KAA KyV,MAAMtX,EAAIA,EAAIIC,EAAIA,OAA4B4Z,EAAMH,EAC7DC,EAAIQ,UAAU3c,EAAOmF,EAAG1C,G AG5B0Z,EAAIO,YAAc,ECzBpB,IAOME,qBAQN,SAASC,WACP,MAAQ,iCAAiCC,KAAKC,UAAUC,WAG1D, SAASC,qBACLrc,EACA8D,EAAiDwY,EACjDC,OAFQC,UAAgBC,WACHBC,UAAgBC,WAE1B,GAAIH,IAA WE,GAAUD,IAAYE,EACnC,MAAM,IAAIzK,MAAM,iCAAiCoK,qBAC7CE,MAAUC,OAAYF,qBAAwBG,MA AUC,GAIhE,SAASC,qBAAqBvB,GAC5B,IAAME,EAAMF,EAAOG,WAAW,MAC9BD,EAAIsB,OAAO,EAAG, GACdtB,EAAIuB,WAAWzB,EAAOpX,MAAO,GAG/B,SAAS8Y,oBACLxB,EACAnc,EACA4d,GACFzB,EAAIO B,yBAA2BD,EAC/BzB,EAAIQ,UAAU3c,EAAO,EAAG,GAG1B,SAAS8d,wBACP,GAAwB,oBAAbC,SACT,OA AOA,SAASC,cAAc,UACzB,GAA+B,oBAApB3K,gBACHB,OAAO,IAAIA,gBAAgB,EAAG,GAE9B,MAAM,IA AIP,MAAM,0CAIpB,SAASmL,6BAA6BIP,GAIPc,OAHK6N,kBAakB7N,KACrB6N,kBAakB7N,GAAM+O,yB AEnBIB,kBAakB7N,GAG3B,SAASmP,yBACLle,EAakBme,EAAoBIC,GACjC,IAAArX,EAAiB5E,SAAT6E,EA AS7E,QACIBmc,EAAMF,EAAOG,WAAW,MAC9BH,EAAOpX,MAAQA,EACfoX,EAAOrX,OAASA,EACHBu X,EAAiC,UAAU,EAAG,EAAGvZ,EAAOD,GAC3BuX,EAAIkC,OACAxB,WACFb,QAAQC,EAAQjc,EAAOme ,IAGtBhC,EAAYtQ,OAAS,QAAQsS,QAC9BhC,EAAIQ,UAAU3c,EAAO,EAAG,EAAG6E,EAAOD,IAEpCuX,E AAIImC,UAGN,SAASC,kCACLve,EAakBme,EACIBK,GACF,IAAMvC,EAASgC,6BAA6BO,GAM5C,OALmB,I AafL,EACFM,oBAAoBze,EAAOic,GAE3BiC,yBAAYble,EAAOme,EAAyIC,GAEvCA,EAGT,SAASwC,oBAA oBze,EAakBic,GACtC,IAAapX,EAAiB7E,QAAV4E,EAAU5E,SACxBic,EAAOpX,MAAQA,EACfoX,EAAOrX, OAASA,EACJqX,EAAOG,WAAW,MAE1BO,UAAU3c,EAAO,EAAG,EAAG6E,EAAOD,GAKpC,SAAS8Z,wB AAwb1e,EAakBic,GACjDA,EAAOpX,MAAQ7E,EAAM6E,MACrBoX,EAAOrX,OAAS5E,EAAM4E,OACVqX, EAAOG,WAAW,MAE1BuC,aAAa3e,EAAO,EAAG,GAG7B,SAAS4e,iCACL5e,EAakB6e,GACpB,IAAM5C,EA ASgC,6BAA6BY,GAG5C,OAFAH,wBAAwb1e,EAAOic,GAExBA,EAkCT,SAAgB6C,OACZC,EAEAC,EAMA C,EAMAC,EAAqBC,GACvB,gBAbEH,GACEI,EAAG,EACHC,EAAG,EACH/Y,EAAG,EACHX,EAAG,iBAELs Z,GACEG,EAAG,EACHC,EAAG,EACH/Y,EAAG,EACHX,EAAG,mBAELuZ,mBAAqBC,GAA2B,IAC9C5R,M AAM+R,QAAQP,IACsB,IAApCA,EAAYbjb,OAC3B,OAAO,KAGT,IAAIyb,EAUE3e,GAHJ2e,EAHGhS,MAAM +R,QAAQP,GAGeA,GAFCa,IAKMB,GAA/Cla,UAAOD,WACR4a,EAAQ,IAAIC,kBAakB5a,EAAQD,EAAS,G AErD,SAAS8a,EACLF,EAA0BG,EAAaC,EAAGb/a,EACvDgb,EAAGBC,gBAAAA,GAAGBV,EAAG,EAAGC,E AAG,IAAK/Y,EAAG,IAAKX,EAAG,MAC3D,IAAK,IAAIxB,GAAK0b,EAAQ1b,GAAK0b,EAAQ1b,IACjC,IAA K,IAAIqF,GAAKqW,EAAQrW,GAAKqW,EAAQrW,IACjC,GAAU,IAANrF,GAaiB,IAANqF,EAAS,CACtB,IA AMC,GAAKkW,EAAMxb,GAaku,GAAS+a,EAASpW,GACxCgW,EAAM,EAAlV,EAAl,GAAKqW,EAAMV, EACzBI,EAAM,EAAlV,EAAl,GAAKqW,EAAMT,EACzBG,EAAM,EAAlV,EAAl,GAAKqW,EAAMxZ,EACz BkZ,EAAM,EAAlV,EAAl,GAAKqW,EAAMna,GAMjC,SAASoa,EACLC,EACAL,EACAC,EACA/a,EACAsa,E ACAU,gBADAV,GAA2B,iBAC3BU,KAGF,IADA,IAAI,EAAYb,EACpB9b,GAAK0b,EAAQ1b,GAAK0b,EAA Q1b,IACjC,mBAASqF,GACP,GAAU,IAANrF,GAaiB,IAANqF,EAAS,CACtB,IAAM0W,GAAKP,EAAMxb,GA AKU,GAAS+a,EAASpW,GACnC2V,EAACL0,KAAK,SAAAlC,GAAM,OAAAA,IAAOiR,EAAiBE,OACpDD,GA A0B,KAJvBzW,GAAKqW,EAAQrW,GAAKqW,EAAQrW,MAA1BA,GASX,OAAOyW,EAAYb,EAG1C,IAAK,IA AI9b,EAAl,EAAGA,EAAS,EAQGT,GAAK,EAC/B,mBAASqF,GACP,IAAMC,EAAItF,EAAlU,EAAQ2E,EAC tBgW,EAAM,EAAlV,EAAl,GAAKwV,EAAWG,EAC9BI,EAAM,EAAlV,EAAl,GAAKwV,EAAWI,EAC9BG,E AAM,EAAlV,EAAl,GAAKwV,EAAW3Y,EAC9BkZ,EAAM,EAAlV,EAAl,GAAKwV,EAAWtZ,EAC9B,mBA ASmD,GACP,GAAlqW,EAACL0,KACV,SAAAlC,GAAM,OAAAA,IAAOwQ,EAA8BzW,GAAG0D,KAAK/C,K AAK,CAC9D+V,EAAM,EAAlV,GAAKuV,EAAWI,EAC1BI,EAAM,EAAlV,EAAl,GAAKuV,EAAWK,EAC9B G,EAAM,EAAlV,EAAl,GAAKuV,EAAW1Y,EAC9BkZ,EAAM,EAAlV,EAAl,GAAKuV,EAAWrZ,EAC9B,IA AMwa,EAAaJ,EACfR,EAA8BzW,GAAG0D,KAAMrL,EAAGqF,EAAG3E,EAC7Csa,GACAD,GAae/a,EAAl,GA AK,GAAKA,EAAl,EAAS,GAAU4E,EAAl,GAAK,GACxDA,EAAl,EAAl3E,GAASsb,GACnBT,EAAWF,EAAO rb,EAAGqF,EAAG3E,EAAO,KAZ5BiE,EAAl,EAAGA,EAAlYw,EAA8Bzb,OAAQgF,MAAJDA,IANFU,EAAl,E AAGA,EAAl3E,EAAO2E,GAAK,IAAvBA,GAYBX,OAAO,IAAI+J,UAAUIM,EAAO3a,EAAOD,GAGrC,IAAM wb,sBACH,IAAK,GAAl,MAAO,IAAK,GAAl,MAAO,IAAK,GAAl,MAAO,IAAK,GAAl,MACzD,IAAK,GAAl, MAAO,IAAK,GAAl,MAAO,IAAK,GAAl,KAAO,IAAK,IAAK,KAC1D,IAAK,IAAK,KAAM,IAAK,IAAK,KAA M,IAAK,IAAK,KAAM,IAAK,IAAK,KAC1D,IAAK,IAAK,KAAM,IAAK,IAAK,KAAM,GAAl,IAAK,KAAO,GA

AAI7O,MAAM+R,QAAQxS,IAAiD,IAA5BA,EAAiBhJ,OACtDqY,EAAIQ,UAAU5F,EAAC,EAAG,OADjC,CAI
A,IAAMM,EACFJ,mBAAMBrV,EAakBwV,EAAMBT,GAE5D1F,EAAIkC,OACAjJ,GACFoI,qBAAqBvB,GAGj
B,IAAArb,EAakBuS,aAAanT,GAA9B4E,OAAQC,OACfsX,EAAIQ,UAAU3c,EAAO,EAAG,EAAG6E,EAOD,
GAMIC+Y,oBAAoBxB,EAakOG,EAAC,kBAMvC5E,oBAAoBxB,EAak8F,EAAC,oBACvC9F,EAAImC,WC7IB
N,IAAakE,eACX,YACA,aACA,uBACA,sBACA,wBACA,uBACA,uBACA,sBACA,wBACA,uBACA,YACA,aAC
A,cACA,aACA,uBACA,sBACA,wBACA,uBACA,uBACA,sBACA,wBACA,uBACA,YACA,cCvCIC,QAAU"}

Found in path(s):

* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body-pix.esm.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"body-  
pix.js","sources":["../src/decode_part_map.ts","../src/base_model.ts","../src/mobilenet.ts","../src/keypoints.ts","../src/  
multi_person/util.ts","../src/multi_person/decode_multiple_masks_cpu.ts","../src/multi_person/decode_multiple_mas  
ks_webgl.ts","../src/multi_person/decode_instance_masks.ts","../src/multi_person/max_heap.ts","../src/multi_person  
/build_part_with_score_queue.ts","../src/multi_person/decode_pose.ts","../src/multi_person/decode_multiple_poses.t  
s","../src/resnet.ts","../src/saved_models.ts","../src/util.ts","../src/body_pix_model.ts","../src/blur.ts","../src/output_re  
ndering_util.ts","../src/part_channels.ts","../src/version.ts","../src/index.ts"],"sourcesContent":["/**\n * @license\n *  
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *  
=====\n *\nimport * as tf from '@tensorflow/tfjs-core';\n\n/**\n * Takes the sigmoid of the part heatmap output and  
generates a 2d one-hot\n * tensor with ones where the part's score has the maximum value.\n *\n * @param  
partHeatmapScores\n *\nfunction toFlattenedOneHotPartMap(partHeatmapScores: tf.Tensor3D): tf.Tensor2D {\n  const numParts = partHeatmapScores.shape[2];\n  const partMapLocations = tf.argmax(partHeatmapScores, 2);\n  const partMapFlattened = tf.reshape(partMapLocations, [-1]);\n  return tf.oneHot(partMapFlattened, numParts) as  
tf.Tensor2D;\n}\n\nfunction clipByMask2d(image: tf.Tensor2D, mask: tf.Tensor2D): tf.Tensor2D {\n  return  
tf.mul(image, mask);\n}\n\n/**\n * Takes the sigmoid of the segmentation output, and generates a segmentation\n * mask with a 1 or 0 at each pixel where there is a person or not a person. The\n * segmentation threshold determines  
the threshold of a score for a pixel for it\n * to be considered part of a person.\n * @param segmentScores A 3d-  
tensor of the sigmoid of the segmentation output.\n * @param segmentationThreshold The minimum that  
segmentation values must have\n * to be considered part of the person. Affects the generation of the\n *  
segmentation mask and the clipping of the colored part image.\n *\n * @returns A segmentation mask with a 1 or 0  
at each pixel where there is a\n * person or not a person.\n *\nexport function toMaskTensor(\n  segmentScores:  
tf.Tensor2D, threshold: number): tf.Tensor2D {\n  return tf.tidy(\n    () =>\n      (tf.cast(tf.greater(\n        segmentScores, tf.scalar(threshold)), 'int32') as tf.Tensor2D));\n  }\n}\n\n/**\n * Takes the sigmoid of the person and  
part map output, and returns a 2d tensor\n * of an image with the corresponding value at each pixel corresponding to  
the\n * part with the highest value. These part ids are clipped by the segmentation\n * mask. Wherever the a pixel is  
clipped by the segmentation mask, its value\n * will set to -1, indicating that there is no part in that pixel.\n *\n * @param segmentScores A 3d-tensor of the sigmoid of the segmentation output.\n * @param partHeatmapScores A  
3d-tensor of the sigmoid of the part heatmap\n * output. The third dimension corresponds to the part.\n *\n * @returns A 2d tensor of an image with the corresponding value at each pixel\n * corresponding to the part with the  
highest value. These part ids are clipped\n * by the segmentation mask. It will have values of -1 for pixels that are\n
```

```

* outside of the body and do not have a corresponding part.\n *^\nexport function decodePartSegmentation(\n
segmentationMask: tf.Tensor2D,\n partHeatmapScores: tf.Tensor3D): tf.Tensor2D {\n const [partMapHeight,\n
partMapWidth, numParts] = partHeatmapScores.shape;\n return tf.tidy(() => {\n const flattenedMap =\n
toFlattenedOneHotPartMap(partHeatmapScores);\n const partNumbers = tf.expandDims(tf.range(0, numParts, 1,\n
'int32'), 1);\n\n const partMapFlattened =\n tf.cast(tf.matmul(flattenedMap, partNumbers as tf.Tensor2D),\n
'int32');\n\n const partMap = tf.reshape(partMapFlattened, [partMapHeight, partMapWidth]);\n\n const\n
partMapShiftedUpForClipping = tf.add(partMap, tf.scalar(1, 'int32'));\n\n return tf.sub(clipByMask2d(\n
partMapShiftedUpForClipping as tf.Tensor2D, segmentationMask)\n , tf.scalar(1, 'int32')));\n });\n}\n\nexport\n
function decodeOnlyPartSegmentation(partHeatmapScores: tf.Tensor3D):\n tf.Tensor2D {\n const\n
[partMapHeight, partMapWidth, numParts] = partHeatmapScores.shape;\n return tf.tidy(() => {\n const\n
flattenedMap = toFlattenedOneHotPartMap(partHeatmapScores);\n const partNumbers =\n
tf.expandDims(tf.range(0, numParts, 1, 'int32'), 1);\n\n const partMapFlattened =\n
tf.cast(tf.matmul(flattenedMap, partNumbers as tf.Tensor2D), 'int32');\n\n return tf.reshape(partMapFlattened,\n
[partMapHeight, partMapWidth]);\n });\n}\n\n"/**\n * @license\n * Copyright 2019 Google Inc. All Rights\n
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *\n
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n
governing permissions and\n * limitations under the License.\n *\n
=====\n\n
*/\n\nimport * as tfconv from '@tensorflow/tfjs-converter';\nimport * as tf from '@tensorflow/tfjs-core';\nimport\n
{BodyPixOutputStride} from './types';\n\n/**\n * BodyPix supports using various convolution neural network\n
models\n * (e.g. ResNet and MobileNetV1) as its underlying base model.\n * The following BaseModel interface\n
defines a unified interface for\n * creating such BodyPix base models. Currently both MobileNet (in\n *\n
./mobilenet.ts) and ResNet (in ./resnet.ts) implements the BaseModel\n * interface. New base models that conform\n
to the BaseModel interface can be\n * added to BodyPix.\n */\n\nexport abstract class BaseModel {\n constructor(\n
protected readonly model: tfconv.GraphModel,\n public readonly outputStride: BodyPixOutputStride) {\n\n
const inputShape =\n this.model.inputs[0].shape as [number, number, number, number];\n tf.util.assert(\n
(inputShape[1] === -1) && (inputShape[2] === -1),\n () => `Input shape [${inputShape[1]}, ${inputShape[2]})\n
` +\n ` must both be equal to or -1`);\n }\n\n abstract preprocessInput(input: tf.Tensor3D): tf.Tensor3D;\n\n
/**\n * Predicts intermediate Tensor representations.\n * @param input The input RGB image of the base\n
model.\n * A Tensor of shape: [inputResolution, inputResolution, 3].\n * @return A dictionary of base\n
model's intermediate predictions.\n * The returned dictionary should contains the following elements:\n * -\n
heatmapScores: A Tensor3D that represents the keypoint heatmap scores.\n * - offsets: A Tensor3D that represents\n
the offsets.\n * - displacementFwd: A Tensor3D that represents the forward displacement.\n * -\n
displacementBwd: A Tensor3D that represents the backward displacement.\n * - segmentation: A Tensor3D that\n
represents the segmentation of all\n * people.\n * - longOffsets: A Tensor3D that represents the long offsets used\n
for\n * instance grouping.\n * - partHeatmaps: A Tensor3D that represents the body part segmentation.\n */\n\n
predict(input: tf.Tensor3D): {\n heatmapScores: tf.Tensor3D,\n offsets: tf.Tensor3D,\n displacementFwd:\n
tf.Tensor3D,\n displacementBwd: tf.Tensor3D,\n segmentation: tf.Tensor3D,\n partHeatmaps: tf.Tensor3D,\n\n
longOffsets: tf.Tensor3D,\n partOffsets: tf.Tensor3D\n }\n\n return tf.tidy(() => {\n const asFloat =\n
this.preprocessInput(tf.cast(input, 'float32'));\n const asBatch = tf.expandDims(asFloat, 0);\n const results =\n
this.model.predict(asBatch) as tf.Tensor4D[];\n const results3d: tf.Tensor3D[] = results.map(y => tf.squeeze(y,\n
[0]));\n const namedResults = this.nameOutputResults(results3d);\n\n return {\n heatmapScores:\n
tf.sigmoid(namedResults.heatmap),\n offsets: namedResults.offsets,\n displacementFwd:\n
namedResults.displacementFwd,\n displacementBwd: namedResults.displacementBwd,\n segmentation:\n
namedResults.segmentation,\n partHeatmaps: namedResults.partHeatmaps,\n longOffsets:\n

```

```

namedResults.longOffsets,\n      partOffsets: namedResults.partOffsets\n    });\n  }\n\n  // Because
MobileNet and ResNet predict() methods output a different order for\n  // these values, we have a method that needs
to be implemented to order them.\n  abstract nameOutputResults(results: tf.Tensor3D[]): {\n    heatmap:
tf.Tensor3D,\n    offsets: tf.Tensor3D,\n    displacementFwd: tf.Tensor3D,\n    displacementBwd: tf.Tensor3D,\n    segmentation: tf.Tensor3D,\n    partHeatmaps: tf.Tensor3D,\n    longOffsets: tf.Tensor3D,\n    partOffsets:
tf.Tensor3D\n  };\n\n  /**\n   * Releases the CPU and GPU memory allocated by the model.\n   */\n  dispose() {\n    this.model.dispose();\n  }\n}\n", "/*\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport * as tf from '@tensorflow/tfjs-core';\n\nimport { BaseModel } from './base_model';\n\nexport class
MobileNet extends BaseModel {\n  preprocessInput(input: tf.Tensor3D): tf.Tensor3D {\n    // Normalize the pixels
[0, 255] to be between [-1, 1].\n    return tf.tidy(() => tf.sub(tf.div(input, 127.5), 1.0));\n  }\n\n  nameOutputResults(results: tf.Tensor3D[]) {\n    const [\n      offsets,\n      segmentation,\n      partHeatmaps,\n      longOffsets,\n      heatmap,\n      displacementFwd,\n      displacementBwd,\n      partOffsets,\n    ] = results;\n    return [\n      offsets,\n      segmentation,\n      partHeatmaps,\n      longOffsets,\n      heatmap,\n      displacementFwd,\n      displacementBwd,\n      partOffsets\n    ];\n  }\n}\n", "/*\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nexport type Tuple<T> = [T, T];\nexport type StringTuple = Tuple<string>;\nexport type NumberTuple =
Tuple<number>;\n\nexport const PART_NAMES = [\n  'nose', 'leftEye', 'rightEye', 'leftEar', 'rightEar',
'leftShoulder',\n  'rightShoulder', 'leftElbow', 'rightElbow', 'leftWrist', 'rightWrist',\n  'leftHip', 'rightHip', 'leftKnee',
'rightKnee',\n  'leftAnkle', 'rightAnkle'];\n\nexport const NUM_KEYPOINTS = PART_NAMES.length;\n\nexport
interface NumberDict {\n  [jointName: string]: number;\n}\n\nexport const PART_IDS =\nPART_NAMES.reduce((result: NumberDict, jointName, i): NumberDict => {\n  result[jointName] = i;\n  return result;\n}, {});\n\nconst CONNECTED_PART_NAMES: StringTuple[] = [\n  ['leftHip', 'leftShoulder'],\n  ['leftElbow', 'leftShoulder'],\n  ['leftElbow', 'leftWrist'],\n  ['leftHip', 'leftKnee'],\n  ['leftKnee', 'leftAnkle'],\n  ['rightHip', 'rightShoulder'],\n  ['rightElbow', 'rightShoulder'],\n  ['rightElbow', 'rightWrist'],\n  ['rightHip', 'rightKnee'],\n  ['rightKnee', 'rightAnkle'],\n  ['leftShoulder', 'rightShoulder'],\n  ['leftHip', 'rightHip']\n];\n\n/*\n * Define the skeleton. This defines the parent->child relationships of our\n * tree. Arbitrarily this defines the nose as the root of the tree, however\n * since we will infer the displacement for both parent->child and\n * child->parent, we can define the tree root as any node.\n */\nexport const POSE_CHAIN: StringTuple[] = [\n  'nose', 'leftEye', ['leftEye', 'leftEar'],\n  ['nose', 'rightEye'],\n  ['rightEye', 'rightEar'],\n  ['nose', 'leftShoulder'],\n  ['leftShoulder', 'leftElbow'],\n  ['leftElbow', 'leftWrist'],\n  ['leftShoulder', 'leftHip'],\n  ['leftHip', 'leftKnee'],\n  ['leftKnee', 'leftAnkle'],\n  ['nose', 'rightShoulder'],\n  ['rightShoulder', 'rightElbow'],\n  ['rightElbow', 'rightWrist'],\n  ['rightShoulder', 'rightHip'],\n  ['rightHip', 'rightKnee'],\n  ['rightKnee', 'rightAnkle']\n];\n\nexport const CONNECTED_PART_INDICES =\nCONNECTED_PART_NAMES.map(([, [jointNameA, jointNameB]]) =>\n  ([PART_IDS[jointNameA], PART_IDS[jointNameB]]));\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in

```

compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {NUM_KEYPOINTS} from './keypoints';import {Padding, Part, TensorBuffer3D, Vector2D} from './types';\n\nexport function getScale(\n  [height, width]: [number, number],\n  [inputResolutionY, inputResolutionX]: [number, number],\n  padding: Padding): [number, number] {\n  const {top: padT, bottom: padB, left: padL, right: padR} = padding;\n  const scaleY = inputResolutionY / (padT + padB + height);\n  const scaleX = inputResolutionX / (padL + padR + width);\n  return [scaleX, scaleY];\n}\n\nexport function getOffsetPoint(\n  y: number, x: number, keypoint: number, offsets: TensorBuffer3D): Vector2D {\n  return {\n    y: offsets.get(y, x, keypoint),\n    x: offsets.get(y, x, keypoint + NUM_KEYPOINTS)\n  };\n}\n\nexport function getImageCoords(\n  part: Part, outputStride: number, offsets: TensorBuffer3D): Vector2D {\n  const {heatmapY, heatmapX, id: keypoint} = part;\n  const {y, x} = getOffsetPoint(heatmapY, heatmapX, keypoint, offsets);\n  return {\n    x: part.heatmapX * outputStride + x,\n    y: part.heatmapY * outputStride + y\n  };\n}\n\nexport function fillArray<T>(element: T, size: number): T[] {\n  const result: T[] = new Array(size);\n  for (let i = 0; i < size; i++) {\n    result[i] = element;\n  }\n  return result;\n}\n\nexport function clamp(a: number, min: number, max: number): number {\n  if (a < min) {\n    return min;\n  }\n  if (a > max) {\n    return max;\n  }\n  return a;\n}\n\nexport function squaredDistance(\n  y1: number, x1: number, y2: number, x2: number): number {\n  const dy = y2 - y1;\n  const dx = x2 - x1;\n  return dy * dy + dx * dx;\n}\n\nexport function addVectors(a: Vector2D, b: Vector2D): Vector2D {\n  return {x: a.x + b.x, y: a.y + b.y};\n}\n\nexport function clampVector(a: Vector2D, min: number, max: number): Vector2D {\n  return {y: clamp(a.y, min, max), x: clamp(a.x, min, max)};\n}\n\n"/**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\n
```

```
=====\n*\n\nimport {NUM_KEYPOINTS} from './keypoints';import {Padding, Pose} from './types';\n\nimport {getScale} from './util';\n\ninterface Pair {\n  x: number;\n  y: number;\n}\n\nfunction computeDistance(embedding: Pair[], pose: Pose, minPartScore = 0.3) {\n  let distance = 0.0;\n  let numKpt = 0;\n  for (let p = 0; p < embedding.length; p++) {\n    if (pose.keypoints[p].score > minPartScore) {\n      numKpt += 1;\n      distance += (embedding[p].x - pose.keypoints[p].position.x) ** 2 +\n        (embedding[p].y - pose.keypoints[p].position.y) ** 2;\n    }\n  }\n  if (numKpt === 0) {\n    distance = Infinity;\n  } else {\n    distance = distance / numKpt;\n  }\n  return distance;\n}\n\nfunction convertToPositionInOutput(\n  position: Pair, [padT, padL]: [number, number],\n  [scaleX, scaleY]: [number, number], stride: number): Pair {\n  const y = Math.round(((padT + position.y + 1.0) * scaleY - 1.0) / stride);\n  const x = Math.round(((padL + position.x + 1.0) * scaleX - 1.0) / stride);\n  return {x, y};\n}\n\nfunction getEmbedding(\n  location: Pair, keypointIndex: number,\n  convertToPosition: (pair: Pair) => Pair, outputResolutionX: number,\n  longOffsets: Float32Array, refineSteps: number, [height, width]: [number, number]): Pair {\n  const newLocation = convertToPosition(location);\n  const nn = newLocation.y * outputResolutionX + newLocation.x;\n  outputResolutionX + newLocation.x;\n  let dy = longOffsets[NUM_KEYPOINTS * (2 * nn) + keypointIndex];\n  let dx = longOffsets[NUM_KEYPOINTS * (2 * nn + 1) + keypointIndex];\n  let y = location.y + dy;\n  let x = location.x + dx;\n  for (let t = 0; t < refineSteps; t++) {\n    y = Math.min(y, height - 1);\n    x = Math.min(x, width - 1);\n    const newPos = convertToPosition({x, y});\n    const nn = newPos.y * outputResolutionX + newPos.x;\n    dy = longOffsets[NUM_KEYPOINTS * (2 * nn) + keypointIndex];\n    dx = longOffsets[NUM_KEYPOINTS * (2 * nn + 1) + keypointIndex];\n    y = y + dy;\n    x = x + dx;\n  }\n  return {x, y};\n}\n\nfunction\n
```



```

= longOffsets.shape.slice(0, 2);\n\n const shapedLongOffsets: tf.Tensor4D =\n  tf.reshape(longOffsets,\n [outHeight, outWidth, 2, NUM_KEYPOINTS]);\n\n // Make pose tensor of shape [MAX_NUM_PEOPLE,\n NUM_KEYPOINTS, 3] where\n // the last 3 coordinates correspond to the score, h and w coordinate of that\n // keypoint.\n const poseVals = new Float32Array(maxNumPeople * NUM_KEYPOINTS * 3).fill(0.0);\n for (let i =\n 0; i < posesAboveScore.length; i++) {\n  const poseOffset = i * NUM_KEYPOINTS * 3;\n  const pose =\n  posesAboveScore[i];\n  for (let kp = 0; kp < NUM_KEYPOINTS; kp++) {\n    const keypoint =\n    pose.keypoints[kp];\n    const offset = poseOffset + kp * 3;\n    poseVals[offset] = keypoint.score;\n    poseVals[offset + 1] = keypoint.position.y;\n    poseVals[offset + 2] = keypoint.position.x;\n  }\n}\n\n const\n [scaleX, scaleY] =\n  getScale([height, width], [inHeight, inWidth], padding);\n\n const posesTensor =\n  tf.tensor(poseVals, [maxNumPeople, NUM_KEYPOINTS, 3]);\n\n const {top: padT, left: padL} = padding;\n\n const program: tf_webgl.GPGPUProgram = {\n  variableNames: ['segmentation', 'longOffsets', 'poses'],\n  outputShape: [origHeight, origWidth],\n  userCode: `\n  int convertToPositionInOutput(int pos, int pad, float\n  scale, int stride) {\n    return round(((float(pos + pad) + 1.0) * scale - 1.0) / float(stride));\n  }\n\n  float\n  convertToPositionInOutputFloat(\n    int pos, int pad, float scale, int stride) {\n    return ((float(pos + pad) + 1.0)\n * scale - 1.0) / float(stride);\n  }\n\n  float dist(float x1, float y1, float x2, float y2) {\n    return pow(x1 - x2, 2.0)\n + pow(y1 - y2, 2.0);\n  }\n\n  float sampleLongOffsets(float h, float w, int d, int k) {\n    float fh = fract(h);\n    float fw = fract(w);\n    int clH = int(ceil(h));\n    int clW = int(ceil(w));\n    int flH = int(floor(h));\n    int flW =\n    int(floor(w));\n    float o11 = getLongOffsets(flH, flW, d, k);\n    float o12 = getLongOffsets(flH, clW, d, k);\n    float o21 = getLongOffsets(clH, flW, d, k);\n    float o22 = getLongOffsets(clH, clW, d, k);\n    float o1 =\n    mix(o11, o12, fw);\n    float o2 = mix(o21, o22, fw);\n    return mix(o1, o2, fh);\n  }\n\n  int\n  findNearestPose(int h, int w) {\n    float prob = getSegmentation(h, w);\n    if (prob < 1.0) {\n    return -1;\n  }\n\n  // Done(Tyler): convert from output space h/w to strided space.\n  float stridedH =\n  convertToPositionInOutputFloat(\n    h, ${padT}, ${scaleY}, ${stride});\n  float stridedW =\n  convertToPositionInOutputFloat(\n    w, ${padL}, ${scaleX}, ${stride});\n\n  float minDist = 1000000.0;\n  int iMin = -1;\n  for (int i = 0; i < ${maxNumPeople}; i++) {\n    float curDistSum = 0.0;\n    int numKpt =\n    0;\n    for (int k = 0; k < ${NUM_KEYPOINTS}; k++) {\n      float dy = sampleLongOffsets(stridedH,\n stridedW, 0, k);\n      float dx = sampleLongOffsets(stridedH, stridedW, 1, k);\n\n      float y = float(h) + dy;\n      float x = float(w) + dx;\n\n      for (int s = 0; s < ${refineSteps}; s++) {\n        int yRounded = round(min(y,\n float(${height - 1.0}));\n        int xRounded = round(min(x, float(${width - 1.0}));\n\n        float yStrided =\n        convertToPositionInOutputFloat(\n          yRounded, ${padT}, ${scaleY}, ${stride});\n        float xStrided =\n        convertToPositionInOutputFloat(\n          xRounded, ${padL}, ${scaleX}, ${stride});\n\n        float dy =\n        sampleLongOffsets(yStrided, xStrided, 0, k);\n        float dx = sampleLongOffsets(yStrided, xStrided, 1, k);\n\n        y = y + dy;\n        x = x + dx;\n      }\n\n      float poseScore = getPoses(i, k, 0);\n      float poseY =\n      getPoses(i, k, 1);\n      float poseX = getPoses(i, k, 2);\n      if (poseScore > ${minKptScore}) {\n        numKpt = numKpt + 1;\n        curDistSum = curDistSum + dist(x, y, poseX, poseY);\n      }\n    }\n    if\n    (numKpt > 0 && curDistSum / float(numKpt) < minDist) {\n      minDist = curDistSum / float(numKpt);\n      iMin = i;\n    }\n  }\n  return iMin;\n}\n\n void main() {\n  ivec2 coords = getOutputCoords();\n  int nearestPose = findNearestPose(coords[0], coords[1]);\n  setOutput(float(nearestPose));\n}\n\n`;\n\n const webglBackend = tf.backend() as tf_webgl.MathBackendWebGL;\n return webglBackend.compileAndRun(\n  program, [segmentation, shapedLongOffsets, posesTensor]);\n\n"/*\n * @license\n * Copyright 2019 Google\n Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *  

=====
*/\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport {getBackend} from '@tensorflow/tfjs-core';\nimport

```

```

{Padding, PartSegmentation, PersonSegmentation, Pose} from './types';\n\nimport {decodeMultipleMasksCPU,
decodeMultiplePartMasksCPU} from './decode_multiple_masks_cpu';\nimport {decodeMultipleMasksWebGl} from
 './decode_multiple_masks_webgl';\n\nexport function toPersonKSegmentation(\n  segmentation: tf.Tensor2D, k:
number): tf.Tensor2D {\n  return tf.tidy(\n    () => (tf.cast(tf.equal(\n      segmentation, tf.scalar(k)), 'int32') as
tf.Tensor2D));\n  }\n}\n\nexport function toPersonKPartSegmentation(\n  segmentation: tf.Tensor2D, bodyParts:
tf.Tensor2D, k: number): tf.Tensor2D {\n  return tf.tidy(\n    () => tf.sub(tf.mul(tf.cast(tf.equal(\n
segmentation, tf.scalar(k)), 'int32'), tf.add(bodyParts, 1)), 1));\n  }\n}\n\nfunction isWebGLBackend() {\n  return
getBackend() === 'webgl';\n}\n\nexport async function decodePersonInstanceMasks(\n  segmentation:
tf.Tensor2D, longOffsets: tf.Tensor3D, poses: Pose[],\n  height: number, width: number, stride: number,\n  [inHeight, inWidth]: [number, number], padding: Padding, minPoseScore = 0.2,\n  refineSteps = 8, minKeypointScore = 0.3,\n  maxNumPeople = 10): Promise<PersonSegmentation[]> {\n  // Filter out poses with
smaller score.\n  const posesAboveScore = poses.filter(pose => pose.score >= minPoseScore);\n\n  let
personSegmentationsData: Uint8Array[];\n\n  if (isWebGLBackend()) {\n    const personSegmentations = tf.tidy(()
=> {\n      const masksTensorInfo = decodeMultipleMasksWebGl(\n        segmentation, longOffsets,
posesAboveScore, height, width, stride,\n          [inHeight, inWidth], padding, refineSteps, minKeypointScore,\n          maxNumPeople);\n      const masksTensor = tf.engine().makeTensorFromDataId(\n        masksTensorInfo.dataId,
masksTensorInfo.shape,\n        masksTensorInfo.dtype) as tf.Tensor2D;\n      return posesAboveScore.map(\n
        (_, k) => toPersonKSegmentation(masksTensor, k));\n    });\n\n    personSegmentationsData =\n      (await
Promise.all(personSegmentations.map(mask => mask.data())) as\n        Uint8Array[]);\n\n    personSegmentations.forEach(x => x.dispose());\n  } else {\n    const segmentationsData = await
segmentation.data() as Uint8Array;\n    const longOffsetsData = await longOffsets.data() as Float32Array;\n\n    personSegmentationsData = decodeMultipleMasksCPU(\n      segmentationsData, longOffsetsData,
posesAboveScore, height, width,\n        stride, [inHeight, inWidth], padding, refineSteps);\n  }\n\n  return
personSegmentationsData.map(\n    (data, i) => ({data, pose: posesAboveScore[i], width, height});\n  );\n}\n\nexport
async function decodePersonInstancePartMasks(\n  segmentation: tf.Tensor2D, longOffsets: tf.Tensor3D,\n  partSegmentation: tf.Tensor2D, poses: Pose[], height: number, width: number,\n  stride: number, [inHeight,
inWidth]: [number, number], padding: Padding,\n  minPoseScore = 0.2, refineSteps = 8, minKeypointScore =
0.3,\n  maxNumPeople = 10): Promise<PartSegmentation[]> {\n  const posesAboveScore = poses.filter(pose =>
pose.score >= minPoseScore);\n\n  let partSegmentationsByPersonData: Int32Array[];\n\n  if (isWebGLBackend())
{\n    const partSegmentations = tf.tidy(() => {\n      const masksTensorInfo = decodeMultipleMasksWebGl(\n
segmentation, longOffsets, posesAboveScore, height, width, stride,\n        [inHeight, inWidth], padding,
refineSteps, minKeypointScore,\n        maxNumPeople);\n      const masksTensor =
tf.engine().makeTensorFromDataId(\n        masksTensorInfo.dataId, masksTensorInfo.shape,\n        masksTensorInfo.dtype) as tf.Tensor2D;\n      return posesAboveScore.map(\n
        (_, k) =>\n        toPersonKPartSegmentation(masksTensor, partSegmentation, k));\n    });\n\n    partSegmentationsByPersonData =\n      (await Promise.all(partSegmentations.map(x => x.data())) as\n        Int32Array[]);\n\n    partSegmentations.forEach(x => x.dispose());\n  } else {\n    const segmentationsData = await segmentation.data()
as Uint8Array;\n    const longOffsetsData = await longOffsets.data() as Float32Array;\n    const
partSegmentaionData = await partSegmentation.data() as Uint8Array;\n\n    partSegmentationsByPersonData =
decodeMultiplePartMasksCPU(\n      segmentationsData, longOffsetsData, partSegmentaionData,\n      posesAboveScore, height, width, stride, [inHeight, inWidth], padding,\n        refineSteps);\n  }\n\n  return
partSegmentationsByPersonData.map(\n    (data, k) => ({pose: posesAboveScore[k], data, height,
width});\n  );\n}\n\n"/**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the

```

License.\n *

```
=====\n
*\n\n// algorithm based on Coursera Lecture from Algorithms, Part 1:\n\n//
https://www.coursera.org/learn/algorithms-part1/lecture/ZjoSM/heapsort\n\nfunction half(k: number) {\n return
Math.floor(k / 2);\n}\n\nexport class MaxHeap<T> {\n private priorityQueue: T[];\n private numberOfElements:
number;\n private getElementValue: (element: T) => number;\n\n constructor(maxSize: number, getElementValue:
(element: T) => number) {\n this.priorityQueue = new Array(maxSize);\n this.numberOfElements = -1;\n
this.getElementValue = getElementValue;\n }\n\n public enqueue(x: T): void {\n
this.priorityQueue[++this.numberOfElements] = x;\n this.swim(this.numberOfElements);\n }\n\n public
dequeue(): T {\n const max = this.priorityQueue[0];\n this.exchange(0, this.numberOfElements--);\n
this.sink(0);\n this.priorityQueue[this.numberOfElements + 1] = null;\n return max;\n }\n\n public empty():
boolean {\n return this.numberOfElements === -1;\n }\n\n public size(): number {\n return
this.numberOfElements + 1;\n }\n\n public all(): T[] {\n return this.priorityQueue.slice(0, this.numberOfElements
+ 1);\n }\n\n public max(): T {\n return this.priorityQueue[0];\n }\n\n private swim(k: number): void {\n while
(k > 0 && this.less(half(k), k)) {\n this.exchange(k, half(k));\n k = half(k);\n }\n }\n\n private sink(k:
number): void {\n while (2 * k <= this.numberOfElements) {\n let j = 2 * k;\n if (j < this.numberOfElements
&& this.less(j, j + 1)) {\n j++;\n }\n if (!this.less(k, j)) {\n break;\n }\n this.exchange(k, j);\n
k = j;\n }\n }\n\n private getValueAt(i: number): number {\n return
this.getElementValue(this.priorityQueue[i]);\n }\n\n private less(i: number, j: number): boolean {\n return
this.getValueAt(i) < this.getValueAt(j);\n }\n\n private exchange(i: number, j: number): void {\n const t =
this.priorityQueue[i];\n this.priorityQueue[i] = this.priorityQueue[j];\n this.priorityQueue[j] = t;\n }\n\n\n",/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {PartWithScore, TensorBuffer3D} from './types';\n\nimport {MaxHeap} from
'./max_heap';\n\nfunction scoreIsMaximumInLocalWindow(\n keypointId: number, score: number, heatmapY:
number, heatmapX: number,\n localMaximumRadius: number, scores: TensorBuffer3D): boolean {\n const
[height, width] = scores.shape;\n\n let localMaximum = true;\n const yStart = Math.max(heatmapY -
localMaximumRadius, 0);\n const yEnd = Math.min(heatmapY + localMaximumRadius + 1, height);\n for (let
yCurrent = yStart; yCurrent < yEnd; ++yCurrent) {\n const xStart = Math.max(heatmapX - localMaximumRadius,
0);\n const xEnd = Math.min(heatmapX + localMaximumRadius + 1, width);\n for (let xCurrent = xStart;
xCurrent < xEnd; ++xCurrent) {\n if (scores.get(yCurrent, xCurrent, keypointId) > score) {\n localMaximum
= false;\n break;\n }\n }\n if (!localMaximum) {\n break;\n }\n }\n\n return
localMaximum;\n }\n\n\n/**\n * Builds a priority queue with part candidate positions for a specific image in\n * the
batch. For this we find all local maxima in the score maps with score\n * values above a threshold. We create a
single priority queue across all parts.\n */\n\nexport function buildPartWithScoreQueue(\n scoreThreshold: number,
localMaximumRadius: number,\n scores: TensorBuffer3D): MaxHeap<PartWithScore> {\n const [height, width,
numKeypoints] = scores.shape;\n\n const queue = new MaxHeap<PartWithScore>(\n height * width *
numKeypoints, ({score}) => score);\n\n for (let heatmapY = 0; heatmapY < height; ++heatmapY) {\n for (let
heatmapX = 0; heatmapX < width; ++heatmapX) {\n for (let keypointId = 0; keypointId < numKeypoints;
++keypointId) {\n const score = scores.get(heatmapY, heatmapX, keypointId);\n\n // Only consider parts
with score greater or equal to threshold as\n // root candidates.\n if (score < scoreThreshold) {\n
continue;\n }\n\n // Only consider keypoints whose score is maximum in a local window.\n if
(scoreIsMaximumInLocalWindow(\n keypointId, score, heatmapY, heatmapX, localMaximumRadius,\n
```



```

        scores)) {\n        queue.enqueue({score, part: {heatmapY, heatmapX, id: keypointId}});\n        }\n    }\n    }\n    return queue;\n}\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in\n * compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {NumberTuple, PART_IDS, PART_NAMES, POSE_CHAIN} from './keypoints';\nimport {Keypoint,\nPartWithScore, TensorBuffer3D, Vector2D} from './types';\nimport {clamp, getOffsetPoint} from './util';\nimport {\naddVectors, getImageCoords} from './util';\n\nconst parentChildrenTuples: NumberTuple[] =\nPOSE_CHAIN.map(\n  ([parentJoinName, childJoinName]): NumberTuple =>\n  ([PART_IDS[parentJoinName], PART_IDS[childJoinName]]);\n\nconst parentToChildEdges: number[] =\nparentChildrenTuples.map(([, childJointId]) => childJointId);\n\nconst childToParentEdges: number[] =\nparentChildrenTuples.map(([\n  parentJointId,\n  childJointId\n]) =>\n  parentJointId);\n\nfunction getDisplacement(\n  edgeId: number, point: Vector2D, displacements:\n  TensorBuffer3D): Vector2D {\n  const numEdges = displacements.shape[2] / 2;\n  return {\n    y:\n  displacements.get(point.y, point.x, edgeId),\n    x: displacements.get(point.y, point.x, numEdges + edgeId)\n  };\n}\n\nfunction getStridedIndexNearPoint(\n  point: Vector2D, outputStride: number, height: number,\n  width:\n  number): Vector2D {\n  return {\n    y: clamp(Math.round(point.y / outputStride), 0, height - 1),\n    x:\n  clamp(Math.round(point.x / outputStride), 0, width - 1)\n  };\n}\n\n/**\n * We get a new keypoint along the\n * `edgeId` for the pose instance, assuming\n * that the position of the `idSource` part is already known. For this, we\n * follow the displacement vector from the source to target part (stored in\n * the `i`-t channel of the displacement\n * tensor). The displaced keypoint\n * vector is refined using the offset vector by `offsetRefineStep` times.\n */\nfunction traverseToTargetKeypoint(\n  edgeId: number, sourceKeypoint: Keypoint, targetKeypointId:\n  number,\n  scoresBuffer: TensorBuffer3D, offsets: TensorBuffer3D, outputStride: number,\n  displacements:\n  TensorBuffer3D, offsetRefineStep = 2): Keypoint {\n  const [height, width] = scoresBuffer.shape;\n  // Nearest\n  neighbor interpolation for the source->target displacements.\n  const sourceKeypointIndices =\n  getStridedIndexNearPoint(\n    sourceKeypoint.position, outputStride, height, width);\n  const displacement =\n  getDisplacement(edgeId, sourceKeypointIndices, displacements);\n  const displacedPoint =\n  addVectors(sourceKeypoint.position, displacement);\n  let targetKeypoint = displacedPoint;\n  for (let i = 0; i <\n  offsetRefineStep; i++) {\n    const targetKeypointIndices =\n    getStridedIndexNearPoint(targetKeypoint,\n    outputStride, height, width);\n    const offsetPoint = getOffsetPoint(\n    targetKeypointIndices.y,\n    targetKeypointIndices.x, targetKeypointId,\n    offsets);\n    targetKeypoint = addVectors(\n    {\n      x:\n    targetKeypointIndices.x * outputStride,\n      y: targetKeypointIndices.y * outputStride\n    },\n    {\n      x:\n    offsetPoint.x, y: offsetPoint.y\n    });\n  }\n  const targetKeypointIndices =\n  getStridedIndexNearPoint(targetKeypoint, outputStride, height, width);\n  const score = scoresBuffer.get(\n  targetKeypointIndices.y, targetKeypointIndices.x, targetKeypointId);\n  return {position: targetKeypoint, part:\n  PART_NAMES[targetKeypointId], score};\n}\n\n/**\n * Follows the displacement fields to decode the full pose of\n * the object\n * instance given the position of a part that acts as root.\n */\n * @return An array of decoded keypoints\n * and their scores for a single pose\n */\nexport function decodePose(\n  root: PartWithScore, scores:\n  TensorBuffer3D, offsets: TensorBuffer3D,\n  outputStride: number, displacementsFwd: TensorBuffer3D,\n  displacementsBwd: TensorBuffer3D): Keypoint[] {\n  const numParts = scores.shape[2];\n  const numEdges =\n  parentToChildEdges.length;\n  const instanceKeypoints: Keypoint[] = new Array(numParts);\n  // Start a new\n  detection instance at the position of the root.\n  const {part: rootPart, score: rootScore} = root;\n  const rootPoint =\n  getImageCoords(rootPart, outputStride, offsets);\n  instanceKeypoints[rootPart.id] = {\n    score: rootScore,\n    part: PART_NAMES[rootPart.id],\n    position: rootPoint\n  };\n  // Decode the part positions upwards in the tree,\n
```

```

following the backward\n // displacements.\n for (let edge = numEdges - 1; edge >= 0; --edge) {\n  const
sourceKeypointId = parentToChildEdges[edge];\n  const targetKeypointId = childToParentEdges[edge];\n  if
(instanceKeypoints[sourceKeypointId] &&\n    !instanceKeypoints[targetKeypointId]) {\n
instanceKeypoints[targetKeypointId] = traverseToTargetKeypoint(\n    edge,
instanceKeypoints[sourceKeypointId], targetKeypointId, scores,\n    offsets, outputStride, displacementsBwd);\n
  }\n }\n\n // Decode the part positions downwards in the tree, following the forward\n // displacements.\n for (let
edge = 0; edge < numEdges; ++edge) {\n  const sourceKeypointId = childToParentEdges[edge];\n  const
targetKeypointId = parentToChildEdges[edge];\n  if (instanceKeypoints[sourceKeypointId] &&\n
!instanceKeypoints[targetKeypointId]) {\n    instanceKeypoints[targetKeypointId] = traverseToTargetKeypoint(\n
    edge, instanceKeypoints[sourceKeypointId], targetKeypointId, scores,\n    offsets, outputStride,
displacementsFwd);\n  }\n }\n\n return instanceKeypoints;\n}\n", "/*\n * @license\n * Copyright 2019 Google
Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport { Keypoint, Pose, TensorBuffer3D } from './types';\n\nimport { buildPartWithScoreQueue } from
 './build_part_with_score_queue';\n\nimport { decodePose } from './decode_pose';\n\nimport { getImageCoords,
squaredDistance } from './util';\n\nfunction withinNmsRadiusOfCorrespondingPoint(\n  poses: Pose[],
squaredNmsRadius: number, {x, y}: {x: number, y: number},\n  keypointId: number): boolean {\n  return
poses.some(({ keypoints }) => {\n    const correspondingKeypoint = keypoints[keypointId].position;\n    return
squaredDistance(\n      y, x, correspondingKeypoint.y, correspondingKeypoint.x) <= \n
squaredNmsRadius;\n  });\n}\n\n/* Score the newly proposed object instance without taking into account\n * the
scores of the parts that overlap with any previously detected\n * instance.\n */\nfunction getInstanceScore(\n
existingPoses: Pose[], squaredNmsRadius: number,\n  instanceKeypoints: Keypoint[]): number {\n  let
notOverlappedKeypointScores = instanceKeypoints.reduce(\n    (result, { position, score }, keypointId): number =>
{\n    if (!withinNmsRadiusOfCorrespondingPoint(\n      existingPoses, squaredNmsRadius, position,
keypointId)) {\n      result += score;\n    }\n    return result;\n  }, 0.0);\n\n  return
notOverlappedKeypointScores /= instanceKeypoints.length;\n}\n\n// A point (y, x) is considered as root part
candidate if its score is a\n// maximum in a window |y - y'| <= kLocalMaximumRadius, |x - x'| <= \n//
kLocalMaximumRadius.\nconst kLocalMaximumRadius = 1;\n\n/**\n * Detects multiple poses and finds their parts
from part scores and\n * displacement vectors. It returns up to `maxDetections` object instance\n * detections in
decreasing root score order. It works as follows: We first\n * create a priority queue with local part score maxima
above\n * `scoreThreshold`, considering all parts at the same time. Then we\n * iteratively pull the top element of
the queue (in decreasing score order)\n * and treat it as a root candidate for a new object instance. To avoid\n *
duplicate detections, we reject the root candidate if it is within a disk\n * of `nmsRadius` pixels from the
corresponding part of a previously detected\n * instance, which is a form of part-based non-maximum suppression
(NMS). If\n * the root candidate passes the NMS check, we start a new object instance\n * detection, treating the
corresponding part as root and finding the\n * positions of the remaining parts by following the displacement
vectors\n * along the tree-structured part graph. We assign to the newly detected\n * instance a score equal to the
sum of scores of its parts which have not\n * been claimed by a previous instance (i.e., those at least `nmsRadius`\n
 * pixels away from the corresponding part of all previously detected\n * instances), divided by the total number of
parts `numParts`.\n * @param heatmapScores 3-D tensor with shape `[height, width, numParts]`.\n * The value
of heatmapScores[y, x, k] is the score of placing the `k`-th\n * object part at position `(y, x)`.\n * @param
offsets 3-D tensor with shape `[height, width, numParts * 2]`.\n * The value of [offsets[y, x, k], offsets[y, x, k +
numParts]] is the\n * short range offset vector of the `k`-th object part at heatmap\n * position `(y, x)`.\n *

```

```

@param displacementsFwd 3-D tensor of shape`[height, width, 2 * num_edges]`, where `num_edges =
num_parts - 1` is the`number of edges (parent-child pairs) in the tree. It contains the forward`displacements
between consecutive part from the root towards the leaves.`
@param displacementsBwd 3-D tensor of
shape`[height, width, 2 * num_edges]`, where `num_edges = num_parts - 1` is the`number of edges (parent-
child pairs) in the tree. It contains the backward`displacements between consecutive part from the root towards
the leaves.`
@param outputStride The output stride that was used when feed-forwarding`through the
PoseNet model. Must be 32, 16, or 8.`
@param maxPoseDetections Maximum number of returned instance
detections per`image.`
@param scoreThreshold Only return instance detections that have root part`
score greater or equal to this value. Defaults to 0.5.`
@param nmsRadius Non-maximum suppression part
distance. It needs to be`strictly positive. Two parts suppress each other if they are less than`nmsRadius`
pixels away. Defaults to 20.`
@return An array of poses and their scores, each containing keypoints and`
the corresponding keypoint scores.`
/export function decodeMultiplePoses(`scoresBuffer: TensorBuffer3D,
offsetsBuffer: TensorBuffer3D,`displacementsFwdBuffer: TensorBuffer3D,`displacementsBwdBuffer:
TensorBuffer3D, outputStride: number,`maxPoseDetections: number, scoreThreshold = 0.5, nmsRadius = 20):
Pose[] {
  const poses: Pose[] = [];
  const queue = buildPartWithScoreQueue(`scoreThreshold,
kLocalMaximumRadius, scoresBuffer);
  const squaredNmsRadius = nmsRadius * nmsRadius;
  // Generate
at most maxDetections object instances per image in`// decreasing root part score order.
  while (poses.length <
maxPoseDetections && !queue.empty()) {
    // The top element in the queue is the next root candidate.
    const
root = queue.dequeue();
    // Part-based non-maximum suppression: We reject a root candidate if it`
is
within a disk of`nmsRadius`pixels from the corresponding part of`
// a previously detected instance.
    const
rootImageCoords =`getImageCoords(root.part, outputStride, offsetsBuffer);
    if
(withinNmsRadiusOfCorrespondingPoint(`poses, squaredNmsRadius, rootImageCoords, root.part.id)) {
      continue;
    }
    // Start a new detection instance at the position of the root.
    const keypoints =
decodePose(`root, scoresBuffer, offsetsBuffer, outputStride, displacementsFwdBuffer,`
displacementsBwdBuffer);
    const score = getInstanceScore(poses, squaredNmsRadius, keypoints);
    poses.push({keypoints, score});
  }
  return poses;
}
}
`/*`
@license`
Copyright 2019 Google Inc. All
Rights Reserved.`
Licensed under the Apache License, Version 2.0 (the`"License");
you may not use this
file except in compliance with the License.`
You may obtain a copy of the License at`
https://www.apache.org/licenses/LICENSE-2.0`
Unless required by applicable law or agreed to in writing,
software`
distributed under the License is distributed on an`"AS IS"`BASIS,`
WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.`
See the License for the specific language
governing permissions and`
limitations under the License.`
=====
import`
as tf from '@tensorflow/tfjs-core';
import {BaseModel} from './base_model';
const
imageNetMean = [-123.15, -115.90, -103.06];
export class ResNet extends BaseModel {
  preprocessInput(input: tf.Tensor3D): tf.Tensor3D {
    return tf.add(input, imageNetMean);
  }
  nameOutputResults(results: tf.Tensor3D[]) {
    const [`displacementBwd,`displacementFwd,`
heatmap,`longOffsets,`offsets,`partHeatmaps,`segmentation,`partOffsets,`] = results;
    return [`offsets,`segmentation,`partHeatmaps,`longOffsets,`heatmap,`
displacementFwd,`displacementBwd,`partOffsets`];
  }
}
`/*`
@license`
Copyright 2019
Google Inc. All Rights Reserved.`
Licensed under the Apache License, Version 2.0 (the`"License");
you
may not use this file except in compliance with the License.`
You may obtain a copy of the License at`
https://www.apache.org/licenses/LICENSE-2.0`
Unless required by applicable law or agreed to in writing,
software`
distributed under the License is distributed on an`"AS IS"`BASIS,`
WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.`
See the License for the specific language
governing permissions and`
limitations under the License.`
=====
const RESNET50_BASE_URL =`
https://storage.googleapis.com/tfjs-

```

```

models/savedmodel/bodypix/resnet50/';\nconst MOBILENET_BASE_URL =\n
'https://storage.googleapis.com/tfjs-models/savedmodel/bodypix/mobilenet/';\n\n// The BodyPix 2.0 ResNet50
models use the latest TensorFlow.js 1.0 model\n// format.\nexport function resNet50SavedModel(stride: number,
quantBytes: number): string {\n  const graphJson = `model-stride${stride}.json`;\n  // quantBytes=4 corresponding
to the non-quantized full-precision SavedModel.\n  if (quantBytes === 4) {\n    return RESNET50_BASE_URL +
`float` + graphJson;\n  } else {\n    return RESNET50_BASE_URL + `quant${quantBytes}` + graphJson;\n
}\n}\n\n// The BodyPix 2.0 MobileNetV1 models use the latest TensorFlow.js 1.0 model\n// format.\nexport
function mobileNetSavedModel(\n  stride: number, multiplier: number, quantBytes: number): string {\n  const
toStr: {[key: number]: string} = {1.0: '100', 0.75: '075', 0.50: '050'};\n  const graphJson = `model-
stride${stride}.json`;\n  // quantBytes=4 corresponding to the non-quantized full-precision SavedModel.\n  if
(quantBytes === 4) {\n    return MOBILENET_BASE_URL + `float/${toStr[multiplier]}` + graphJson;\n  } else
{\n    return MOBILENET_BASE_URL + `quant${quantBytes}/${toStr[multiplier]}` +\n    graphJson;\n
}\n}\n\n", /**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport * as tf from '@tensorflow/tfjs-core';\n\nimport {BodyPixInput, BodyPixOutputStride, Padding} from
 './types';\nimport {Pose, TensorBuffer3D} from './types';\nimport {BodyPixInternalResolution} from
 './types';\n\nfunction getSizeFromImageLikeElement(input: HTMLImageElement|\n
HTMLCanvasElement|\n
OffscreenCanvas): [number, number] {\n  if ('offsetHeight' in input
&& input.offsetHeight !== 0\n  && 'offsetWidth' in input && input.offsetWidth !== 0) {\n    return
[input.offsetHeight, input.offsetWidth];\n  } else if (input.height !== null && input.width !== null) {\n    return
[input.height, input.width];\n  } else {\n    throw new Error(\n    `HTMLImageElement must have height and
width attributes set.`);\n  }\n}\n\nfunction getSizeFromVideoElement(input: HTMLVideoElement): [number,
number] {\n  if (input.hasAttribute('height') && input.hasAttribute('width')) {\n    // Prioritizes user
specified height
and width.\n    // We can't test the .height and .width properties directly,\n    // because they evaluate to 0 if
unset.\n    return [input.height, input.width];\n  } else {\n    return [input.videoHeight, input.videoWidth];\n
}\n}\n\nexport
function getInputSize(input: BodyPixInput): [number, number] {\n  if ((typeof (HTMLCanvasElement) !==
'undefined' &&\n  input instanceof HTMLCanvasElement) ||\n  (typeof (OffscreenCanvas) !== 'undefined'
&&\n  input instanceof OffscreenCanvas) ||\n  (typeof (HTMLImageElement) !== 'undefined' &&\n
input instanceof HTMLImageElement)) {\n    return getSizeFromImageLikeElement(input);\n  } else if (typeof
(ImageData) !== 'undefined' && input instanceof ImageData) {\n    return [input.height, input.width];\n
} else if (\n  typeof (HTMLVideoElement) !== 'undefined' &&\n  input instanceof HTMLVideoElement) {\n    return
getSizeFromVideoElement(input);\n  } else if (input instanceof tf.Tensor) {\n    return [input.shape[0],
input.shape[1]];\n  } else {\n    throw new Error(`error: Unknown input type: ${input}.`);\n  }\n}\n\nfunction
isValidInputResolution(\n  resolution: number, outputStride: number): boolean {\n  return (resolution - 1) %
outputStride === 0;\n}\n\nexport function toValidInputResolution(\n  inputResolution: number, outputStride:
BodyPixOutputStride): number {\n  if (isValidInputResolution(inputResolution, outputStride)) {\n    return
inputResolution;\n  }\n  return Math.floor(inputResolution / outputStride) * outputStride + 1;\n}\n\nconst
INTERNAL_RESOLUTION_STRING_OPTIONS = {\n  low: 'low',\n  medium: 'medium',\n  high: 'high',\n  full:
'full'\n};\n\nconst INTERNAL_RESOLUTION_PERCENTAGES = {\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.low]: 0.25,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.medium]: 0.5,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.high]: 0.75,\n
[INTERNAL_RESOLUTION_STRING_OPTIONS.full]: 1.0\n};\n\nconst MIN_INTERNAL_RESOLUTION =

```

```

0.1;\nconst MAX_INTERNAL_RESOLUTION = 2.0;\n\nfunction toInternalResolutionPercentage(\n
internalResolution: BodyPixInternalResolution): number {\n  if (typeof internalResolution === 'string') {\n    const
result = INTERNAL_RESOLUTION_PERCENTAGES[internalResolution];\n\n    tf.util.assert(\n      typeof result
=== 'number',\n      () => `string value of inputResolution must be one of ${\n
Object.values(INTERNAL_RESOLUTION_STRING_OPTIONS)\n        .join(',')\n      } but was
${internalResolution}.`);\n    return result;\n  } else {\n    tf.util.assert(\n      typeof internalResolution === 'number'
&&\n      internalResolution <= MAX_INTERNAL_RESOLUTION &&\n      internalResolution >=
MIN_INTERNAL_RESOLUTION,\n      () =>\n        `inputResolution must be a string or number between ${\n
MIN_INTERNAL_RESOLUTION}\n        } and ${MAX_INTERNAL_RESOLUTION}, but ` +\n        `was
${internalResolution}`);\n\n    return internalResolution;\n  }\n}\n\n\nexport function
toInputResolutionHeightAndWidth(\n  internalResolution: BodyPixInternalResolution,\n  outputStride:
BodyPixOutputStride,\n  [inputHeight, inputWidth]: [number, number]): [number, number] {\n  const
internalResolutionPercentage =\n    toInternalResolutionPercentage(internalResolution);\n\n  return [\n
toValidInputResolution(\n    inputHeight * internalResolutionPercentage, outputStride),\n
toValidInputResolution(\n    inputWidth * internalResolutionPercentage, outputStride)\n  ];\n}\n\n\nexport function
toInputTensor(input: BodyPixInput) {\n  // TODO: tf.browser.fromPixels types to support OffscreenCanvas\n  //
@ts-ignore\n  return input instanceof tf.Tensor ? input : tf.browser.fromPixels(input);\n}\n\n\nexport function
resizeAndPadTo(\n  imageTensor: tf.Tensor3D, [targetH, targetW]: [number, number],\n  flipHorizontal = false):
{\n  resizedAndPadded: tf.Tensor3D,\n  paddedBy: [[number, number], [number, number]]\n} {\n  const [height,
width] = imageTensor.shape;\n\n  const targetAspect = targetW / targetH;\n  const aspect = width / height;\n\n  let
resizeW: number;\n  let resizeH: number;\n  let padL: number;\n  let padR: number;\n  let padT: number;\n  let
padB: number;\n\n  if (aspect > targetAspect) {\n    // resize to have the larger dimension match the shape.\n
resizeW = targetW;\n    resizeH = Math.ceil(resizeW / aspect);\n\n    const padHeight = targetH - resizeH;\n    padL
= 0;\n    padR = 0;\n    padT = Math.floor(padHeight / 2);\n    padB = targetH - (resizeH + padT);\n  } else {\n
resizeH = targetH;\n    resizeW = Math.ceil(targetH * aspect);\n\n    const padWidth = targetW - resizeW;\n    padL
= Math.floor(padWidth / 2);\n    padR = targetW - (resizeW + padL);\n    padT = 0;\n    padB = 0;\n  }\n\n  const
resizedAndPadded = tf.tidy(() => {\n    // resize to have largest dimension match image\n    let resized:
tf.Tensor3D;\n\n    if (flipHorizontal) {\n      resized = tf.image.resizeBilinear(\n        tf.reverse(imageTensor, 1),
[resizeH, resizeW]);\n    } else {\n      resized = tf.image.resizeBilinear(imageTensor, [resizeH, resizeW]);\n    }\n\n
const padded = tf.pad3d(resized, [[padT, padB], [padL, padR], [0, 0]]);\n\n    return padded;\n  });\n\n  return
{\n    resizedAndPadded, paddedBy: [[padT, padB], [padL, padR]]\n  };\n}\n\n\nexport function
scaleAndCropToInputTensorShape(\n  tensor: tf.Tensor3D,\n  [inputTensorHeight, inputTensorWidth]: [number,
number],\n  [resizedAndPaddedHeight, resizedAndPaddedWidth]: [number, number],\n  [[padT, padB], [padL,
padR]]: [[number, number], [number, number]],\n  applySigmoidActivation = false): tf.Tensor3D {\n  return
tf.tidy(() => {\n    let inResizedAndPadded: tf.Tensor3D = tf.image.resizeBilinear(tensor,\n
[resizedAndPaddedHeight, resizedAndPaddedWidth], true);\n\n    if (applySigmoidActivation) {\n      inResizedAndPadded
= tf.sigmoid(inResizedAndPadded);\n    }\n\n    return removePaddingAndResizeBack(\n
inResizedAndPadded, [inputTensorHeight, inputTensorWidth],\n      [[padT, padB], [padL, padR]]);\n  });\n}\n\n\nexport function removePaddingAndResizeBack(\n
resizedAndPadded: tf.Tensor3D,\n  [originalHeight, originalWidth]: [number, number],\n  [[padT, padB], [padL,
padR]]: [[number, number], [number, number]]):\n  tf.Tensor3D {\n  return tf.tidy(() => {\n    const batchedImage:
tf.Tensor4D = tf.expandDims(resizedAndPadded);\n\n    return tf.squeeze(tf.image\n      .cropAndResize(\n
batchedImage, [[\n        padT / (originalHeight +\n        padT + padB - 1.0),\n        padL / (originalWidth + padL + padR - 1.0),\n        (padT + originalHeight - 1.0)\n      ]\n      / (originalHeight + padT + padB - 1.0),\n        (padL + originalWidth - 1.0) / (originalWidth + padL
+ padR - 1.0)\n      ]),\n      [0, [originalHeight, originalWidth], [0]]);\n  });\n}\n\n\nexport function resize2d(\n
tensor: tf.Tensor2D, resolution: [number, number],\n  nearestNeighbor?: boolean): tf.Tensor2D {\n  return
tf.tidy(() => {\n    const batchedImage: tf.Tensor4D = tf.expandDims(tensor, 2);\n\n    return tf.squeeze(\n
tf.image.resizeBilinear(batchedImage, resolution, nearestNeighbor));\n  });\n}\n\n\nexport function

```

```

padAndResizeTo(\n  input: BodyPixInput, [targetH, targetW]: [number, number]):\n  {resized: tf.Tensor3D,\n  padding: Padding} {\n  const [height, width] = getInputSize(input);\n  const targetAspect = targetW / targetH;\n  const aspect = width / height;\n  let [padT, padB, padL, padR] = [0, 0, 0, 0];\n  if (aspect < targetAspect) {\n    // pads the width\n    padT = 0;\n    padB = 0;\n    padL = Math.round(0.5 * (targetAspect * height - width));\n    padR = Math.round(0.5 * (targetAspect * height - width));\n  } else {\n    // pads the height\n    padT = Math.round(0.5 * ((1.0 / targetAspect) * width - height));\n    padB = Math.round(0.5 * ((1.0 / targetAspect) * width - height));\n    padL = 0;\n    padR = 0;\n  }\n  const resized: tf.Tensor3D = tf.tidy(() => {\n    let imageTensor =\n    toInputTensor(input);\n    imageTensor = tf.pad3d(imageTensor, [[padT, padB], [padL, padR], [0, 0]]);\n    return\n    tf.image.resizeBilinear(imageTensor, [targetH, targetW]);\n  });\n  return {resized, padding: {top: padT, left: padL,\n  right: padR, bottom: padB}};\n}\n\n\nexport async function toTensorBuffers3D(tensors: tf.Tensor3D[]):\n  Promise<TensorBuffer3D[]> {\n  return Promise.all(tensors.map(tensor => tensor.buffer()));\n}\n\n\nexport function\n  scalePose(\n  pose: Pose, scaleY: number, scaleX: number, offsetY = 0,\n  offsetX = 0): Pose {\n  return {\n  score: pose.score,\n  keypoints: pose.keypoints.map(({score, part, position}) => ({\n    score,\n    part,\n    position: {\n      x: position.x * scaleX +\n      offsetX,\n      y: position.y * scaleY + offsetY\n    }\n  }))\n  };\n}\n\n\nexport function scalePoses(\n  poses: Pose[], scaleY: number, scaleX: number, offsetY = 0, offsetX\n  = 0) {\n  if (scaleX === 1 && scaleY === 1 && offsetY === 0 && offsetX === 0) {\n    return poses;\n  }\n  return\n  poses.map(pose => scalePose(pose, scaleY, scaleX, offsetY, offsetX));\n}\n\n\nexport function\n  flipPoseHorizontal(pose: Pose, imageWidth: number): Pose {\n  return {\n  score: pose.score,\n  keypoints:\n  pose.keypoints.map(\n    ({score, part, position}) => ({\n      score,\n      part,\n      position: {x:\n      imageWidth - 1 - position.x, y: position.y\n      })\n    })\n  };\n}\n\n\nexport function flipPosesHorizontal(poses: Pose[],\n  imageWidth: number) {\n  if (imageWidth <= 0) {\n    return poses;\n  }\n  return poses.map(pose =>\n  flipPoseHorizontal(pose, imageWidth));\n}\n\n\nexport function scaleAndFlipPoses(\n  poses: Pose[], [height,\n  width]: [number, number],\n  [inputResolutionHeight, inputResolutionWidth]: [number, number],\n  padding:\n  Padding, flipHorizontal: boolean): Pose[] {\n  const scaleY =\n    (height + padding.top + padding.bottom) /\n    (inputResolutionHeight);\n  const scaleX =\n    (width + padding.left + padding.right) /\n    (inputResolutionWidth);\n  const scaledPoses =\n    scalePoses(poses, scaleY, scaleX, -padding.top, -\n    padding.left);\n  if (flipHorizontal) {\n    return flipPosesHorizontal(scaledPoses, width);\n  } else {\n    return\n    scaledPoses;\n  }\n}\n\n\n",\n  "\n  * @license\n  * Copyright 2019 Google Inc. All Rights Reserved.\n  * Licensed\n  * under the Apache License, Version 2.0 (the \"License\");\n  * you may not use this file except in compliance with the\n  * License.\n  * You may obtain a copy of the License at\n  * http://www.apache.org/licenses/LICENSE-2.0\n  * \n  * Unless required by applicable law or agreed to in writing, software\n  * distributed under the License is distributed\n  * on an \"AS IS\" BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n  * implied.\n  * See the License for the specific language governing permissions and\n  * limitations under the\n  * License.\n  *

```

```

=====\n
*\n\nimport * as tfconv from '@tensorflow/tfjs-converter';\nimport * as tf from '@tensorflow/tfjs-core';\nimport\n  {BaseModel} from './base_model';\nimport {decodeOnlyPartSegmentation, decodePartSegmentation,\n  toMaskTensor} from './decode_part_map';\nimport {MobileNet} from './mobilenet';\nimport\n  {decodePersonInstanceMasks, decodePersonInstancePartMasks} from\n  './multi_person/decode_instance_masks';\nimport {decodeMultiplePoses} from\n  './multi_person/decode_multiple_poses';\nimport {ResNet} from './resnet';\nimport {mobileNetSavedModel,\n  resNet50SavedModel} from './saved_models';\nimport {BodyPixArchitecture, BodyPixInput,\n  BodyPixInternalResolution, BodyPixMultiplier, BodyPixOutputStride, BodyPixQuantBytes, Padding} from\n  './types';\nimport {PartSegmentation, PersonSegmentation, SemanticPartSegmentation,\n  SemanticPersonSegmentation} from './types';\nimport {getInputSize, padAndResizeTo,\n  scaleAndCropToInputTensorShape, scaleAndFlipPoses, toInputResolutionHeightAndWidth, toTensorBuffers3D}\n  from './util';\n\nconst APPLY_SIGMOID_ACTIVATION = true;\nconst FLIP_POSES_AFTER_SCALING =

```

```

false;

 * BodyPix model loading is configurable using the following config dictionary.
 *
 * `architecture`: BodyPixArchitecture. It determines which BodyPix architecture
 * to load. The supported architectures are: MobileNetV1 and ResNet50.
 *
 * `outputStride`: Specifies the output stride of the BodyPix model.
 * The smaller the value, the larger the output resolution, and more accurate
 * the model at the cost of speed. Set this to a larger value to increase speed
 * at the cost of accuracy. Stride 32 is supported for ResNet and
 * stride 8,16,32 are supported for various MobileNetV1 models.
 *
 * `multiplier`: An optional number with values: 1.01, 1.0, 0.75, or
 * 0.50. The value is used only by MobileNet architecture. It is the float
 * multiplier for the depth (number of channels) for all convolution ops.
 * The larger the value, the larger the size of the layers, and more accurate
 * the model at the cost of speed. Set this to a smaller value to increase speed
 * at the cost of accuracy.
 *
 * `modelUrl`: An optional string that specifies custom url of the model. This
 * is useful for area/countries that don't have access to the model hosted on
 * GCP.
 *
 * `quantBytes`: An optional number with values: 1, 2, or 4. This parameter
 * affects weight quantization in the models. The available options are
 * 1 byte, 2 bytes, and 4 bytes. The higher the value, the larger the model size
 * and thus the longer the loading time, the lower the value, the shorter the
 * loading time but lower the accuracy.
 *
 * ^export interface ModelConfig {
 *   architecture: BodyPixArchitecture;
 *   outputStride: BodyPixOutputStride;
 *   multiplier?: BodyPixMultiplier;
 *   modelUrl?: string;
 *   quantBytes?: BodyPixQuantBytes;
 * }
 *
 * // The default configuration for loading MobileNetV1 based BodyPix.
 * // (And for references, the default configuration for loading ResNet based
 * // PoseNet is also included).
 * //
 * // const RESNET_CONFIG = {
 * //   architecture: 'ResNet50',
 * //   outputStride: 32,
 * //   quantBytes: 4,
 * // } as ModelConfig;
 * //
 * // const MOBILENET_V1_CONFIG = {
 * //   architecture: 'MobileNetV1',
 * //   outputStride: 16,
 * //   quantBytes: 4,
 * //   multiplier: 0.75,
 * // } as ModelConfig;
 * //
 * // const VALID_ARCHITECTURE: BodyPixArchitecture[] = ['MobileNetV1', 'ResNet50'];
 * //
 * // const VALID_STRIDE: {[id: string]: BodyPixOutputStride[]} = {
 * //   'MobileNetV1': [8, 16, 32],
 * //   'ResNet50': [32, 16]
 * // };
 * //
 * // const VALID_MULTIPLIER: {[id: string]: BodyPixMultiplier[]} = {
 * //   'MobileNetV1': [0.50, 0.75, 1.0],
 * //   'ResNet50': [1.0]
 * // };
 * //
 * // const VALID_QUANT_BYTES: BodyPixQuantBytes[] = [1, 2, 4];
 * //
 * // function validateModelConfig(config: ModelConfig): ModelConfig {
 * //   config = config || MOBILENET_V1_CONFIG;
 * //   if (config.architecture == null) {
 * //     config.architecture = 'MobileNetV1';
 * //   }
 * //   if (VALID_ARCHITECTURE.indexOf(config.architecture) < 0) {
 * //     throw new Error(
 * //       `Invalid architecture ${config.architecture}. ` +
 * //       `Should be one of ${VALID_ARCHITECTURE}`);
 * //   }
 * //   if (config.outputStride == null) {
 * //     config.outputStride = 16;
 * //   }
 * //   if (VALID_STRIDE[config.architecture].indexOf(config.outputStride) < 0) {
 * //     throw new Error(
 * //       `Invalid outputStride ${config.outputStride}. ` +
 * //       `Should be one of ${VALID_STRIDE[config.architecture]} ` +
 * //       `for architecture ${config.architecture}.`);
 * //   }
 * //   if (config.multiplier == null) {
 * //     config.multiplier = 1.0;
 * //   }
 * //   if (VALID_MULTIPLIER[config.architecture].indexOf(config.multiplier) < 0) {
 * //     throw new Error(
 * //       `Invalid multiplier ${config.multiplier}. ` +
 * //       `Should be one of ${VALID_MULTIPLIER[config.architecture]} ` +
 * //       `for architecture ${config.architecture}.`);
 * //   }
 * //   if (config.quantBytes == null) {
 * //     config.quantBytes = 4;
 * //   }
 * //   if (VALID_QUANT_BYTES.indexOf(config.quantBytes) < 0) {
 * //     throw new Error(
 * //       `Invalid quantBytes ${config.quantBytes}. ` +
 * //       `Should be one of ${VALID_QUANT_BYTES} ` +
 * //       `for architecture ${config.architecture}.`);
 * //   }
 * //   return config;
 * // }
 *
 * * BodyPix inference is configurable using the following config dictionary.
 * *
 * * `flipHorizontal`: If the left-right keypoint of poses/part segmentation
 * * should be flipped/mirrored horizontally. This should be set to true for
 * * videos where the video is by default flipped horizontally (i.e. a webcam),
 * * and you want the person & body part segmentation to be returned in the proper
 * * orientation.
 * *
 * * `internalResolution`: Defaults to 'medium'. The internal resolution
 * * percentage that the input is resized to before inference. The larger the
 * * internalResolution the more accurate the model at the cost of slower
 * * prediction times. Available values are 'low', 'medium', 'high', 'full', or a
 * * percentage value between 0 and 1. The values 'low', 'medium', 'high', and
 * * 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.
 * *
 * * `segmentationThreshold`: The minimum that segmentation values must
 * * have to be considered part of the person. Affects the generation of the
 * * segmentation mask. More specifically, it is the threshold used to binarize

```

intermediate person segmentation probability. The probability of each pixel belongs to a person is in range [0, 1]. If the probability is greater than the `segmentationThreshold`, it will be set to 1 otherwise 0.

```

export interface InferenceConfig {
  flipHorizontal?: boolean;
  internalResolution?: BodyPixInternalResolution;
  segmentationThreshold?: number;
}

export interface PersonInferenceConfig extends InferenceConfig {
  maxDetections?: number;
  scoreThreshold?: number;
  nmsRadius?: number;
}

export interface MultiplePersonInstanceInferenceConfig extends PersonInferenceConfig {
  minKeypointScore?: number;
  refineSteps?: number;
}

export const PERSON_INFERENCE_CONFIG: PersonInferenceConfig = {
  flipHorizontal: false,
  internalResolution: 'medium',
  segmentationThreshold: 0.7,
  maxDetections: 10,
  scoreThreshold: 0.4,
  nmsRadius: 20,
};

export const MULTI_PERSON_INSTANCE_INFERENCE_CONFIG: MultiplePersonInstanceInferenceConfig = {
  flipHorizontal: false,
  internalResolution: 'medium',
  segmentationThreshold: 0.7,
  maxDetections: 10,
  scoreThreshold: 0.4,
  nmsRadius: 20,
  minKeypointScore: 0.3,
  refineSteps: 10,
};

function validatePersonInferenceConfig(config: PersonInferenceConfig) {
  const { segmentationThreshold, maxDetections, scoreThreshold, nmsRadius } = config;
  if (segmentationThreshold < 0.0 || segmentationThreshold > 1.0) {
    throw new Error(`segmentationThreshold ${segmentationThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (maxDetections <= 0) {
    throw new Error(`Invalid maxDetections ${maxDetections}. Should be > 0`);
  }
  if (scoreThreshold < 0.0 || scoreThreshold > 1.0) {
    throw new Error(`Invalid scoreThreshold ${scoreThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (nmsRadius <= 0) {
    throw new Error(`Invalid nmsRadius ${nmsRadius}.`);
  }
}

function validateMultiPersonInstanceInferenceConfig(config: MultiplePersonInstanceInferenceConfig) {
  const { segmentationThreshold, maxDetections, scoreThreshold, nmsRadius, minKeypointScore, refineSteps } = config;
  if (segmentationThreshold < 0.0 || segmentationThreshold > 1.0) {
    throw new Error(`segmentationThreshold ${segmentationThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (maxDetections <= 0) {
    throw new Error(`Invalid maxDetections ${maxDetections}. Should be > 0`);
  }
  if (scoreThreshold < 0.0 || scoreThreshold > 1.0) {
    throw new Error(`Invalid scoreThreshold ${scoreThreshold}. Should be in range [0.0, 1.0]`);
  }
  if (nmsRadius <= 0) {
    throw new Error(`Invalid nmsRadius ${nmsRadius}.`);
  }
  if (minKeypointScore < 0 || minKeypointScore > 1) {
    throw new Error(`Invalid minKeypointScore ${minKeypointScore}. Should be in range [0.0, 1.0]`);
  }
  if (refineSteps <= 0 || refineSteps > 20) {
    throw new Error(`Invalid refineSteps ${refineSteps}. Should be in range [1, 20]`);
  }
}

export class BodyPix {
  baseModel: BaseModel;

  constructor(net: BaseModel) {
    this.baseModel = net;
  }

  private predictForPersonSegmentation(input: tf.Tensor3D): {
    segmentLogits: tf.Tensor3D,
    heatmapScores: tf.Tensor3D,
    offsets: tf.Tensor3D,
    displacementFwd: tf.Tensor3D,
    displacementBwd: tf.Tensor3D,
  } {
    const { segmentation, heatmapScores, offsets, displacementFwd, displacementBwd } = this.baseModel.predict(input);
    return {
      segmentLogits: segmentation,
      heatmapScores,
    };
  }
}

```



```

offsets,\n displacementFwd,\n displacementBwd,\n };\n }\n\n private
predictForPersonSegmentationAndPart(input: tf.Tensor3D): {\n segmentLogits: tf.Tensor3D,\n
partHeatmapLogits: tf.Tensor3D,\n heatmapScores: tf.Tensor3D,\n offsets: tf.Tensor3D,\n displacementFwd:
tf.Tensor3D,\n displacementBwd: tf.Tensor3D,\n } {\n const {\n segmentation,\n partHeatmaps,\n
heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd\n } = this.baseModel.predict(input);\n
return {\n segmentLogits: segmentation,\n partHeatmapLogits: partHeatmaps,\n heatmapScores,\n
offsets,\n displacementFwd,\n displacementBwd,\n };\n }\n\n private
predictForMultiPersonInstanceSegmentationAndPart(input: tf.Tensor3D):\n { \n segmentLogits:
tf.Tensor3D,\n longOffsets: tf.Tensor3D,\n heatmapScores: tf.Tensor3D,\n offsets: tf.Tensor3D,\n
displacementFwd: tf.Tensor3D,\n displacementBwd: tf.Tensor3D,\n partHeatmaps: tf.Tensor3D\n } {\n
const {\n segmentation,\n longOffsets,\n heatmapScores,\n offsets,\n displacementFwd,\n
displacementBwd,\n partHeatmaps,\n } = this.baseModel.predict(input);\n return {\n segmentLogits:
segmentation,\n longOffsets,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd,\n
partHeatmaps\n };\n }\n\n /**\n * Given an image with people, returns a dictionary of all intermediate\n *
tensors including: 1) a binary array with 1 for the pixels that are part of\n * the person, and 0 otherwise, 2)
heatmapScores, 3) offsets, and 4) paddings.\n * \n * @param input
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n * The input image to feed
through the network.\n * \n * @param internalResolution Defaults to 'medium'. The internal resolution\n * that
the input is resized to before inference. The larger the\n * internalResolution the more accurate the model at the
cost of slower\n * prediction times. Available values are 'low', 'medium', 'high', 'full', or\n * a percentage value
between 0 and 1. The values 'low', 'medium', 'high', and\n * 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.\n
*\n * @param segmentationThreshold The minimum that segmentation values must have\n * to be considered
part of the person. Affects the generation of the\n * segmentation mask.\n * \n * @return A dictionary containing
`segmentation`, `heatmapScores`, `offsets`,\n * and `padding`:\n * - `segmentation`: A 2d Tensor with 1 for the
pixels that are part of the\n * person, and 0 otherwise. The width and height correspond to the same\n *
dimensions of the input image.\n * - `heatmapScores`: A 3d Tensor of the keypoint heatmaps used by\n * pose
estimation decoding.\n * - `offsets`: A 3d Tensor of the keypoint offsets used by pose\n * estimation decoding.\n
*\n * - `displacementFwd`: A 3d Tensor of the keypoint forward displacement used\n * by pose estimation
decoding.\n * - `displacementBwd`: A 3d Tensor of the keypoint backward displacement used\n * by pose estimation
decoding.\n * - `padding`: The padding (unit pixels) being applied to the input image\n * before it is fed into the
model.\n * \n * \n * segmentPersonActivation(\n input: BodyPixInput, internalResolution:
BodyPixInternalResolution,\n segmentationThreshold = 0.5): {\n segmentation: tf.Tensor2D,\n
heatmapScores: tf.Tensor3D,\n offsets: tf.Tensor3D,\n displacementFwd: tf.Tensor3D,\n displacementBwd:
tf.Tensor3D,\n padding: Padding,\n internalResolutionHeightAndWidth: [number, number]\n } {\n const
[height, width] = getInputSize(input);\n const internalResolutionHeightAndWidth =
toInputResolutionHeightAndWidth(\n internalResolution, this.baseModel.outputStride, [height, width]);\n
const {resized, padding} =\n padAndResizeTo(input, internalResolutionHeightAndWidth);\n\n const {\n
segmentation,\n heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd\n } = tf.tidy(() =>
{\n const {\n segmentLogits,\n heatmapScores,\n offsets,\n displacementFwd,\n
displacementBwd\n } = this.predictForPersonSegmentation(resized);\n\n const [resizedHeight, resizedWidth]
= resized.shape;\n\n const scaledSegmentScores = scaleAndCropToInputTensorShape(\n segmentLogits,
[height, width], [resizedHeight, resizedWidth],\n [[padding.top, padding.bottom], [padding.left,
padding.right]],\n APPLY_SIGMOID_ACTIVATION);\n\n return {\n segmentation: toMaskTensor(\n
tf.squeeze(scaledSegmentScores), segmentationThreshold),\n heatmapScores,\n offsets,\n
displacementFwd,\n displacementBwd,\n };\n });\n resized.dispose();\n return {\n segmentation,\n
heatmapScores,\n offsets,\n displacementFwd,\n displacementBwd,\n padding,\n
internalResolutionHeightAndWidth\n };\n }\n\n /**\n * Given an image with many people, returns a
PersonSegmentation dictionary\n * that contains the segmentation mask for all people and a single pose.\n * \n *

```

Note: The segmentation mask returned by this method covers all people but the pose works well for one person. If you want to estimate instance-level multiple person segmentation & pose for each person, use `segmentMultiPerson` instead.

`@param input ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement` The input image to feed through the network.

`@param config PersonInferenceConfig` object that contains parameters for the BodyPix inference using person decoding.

`@return` A `SemanticPersonSegmentation` dictionary that contains height, width, the flattened binary segmentation mask and the poses for all people. The width and height correspond to the same dimensions of the input image.

- `height`: The height of the segmentation data in pixel unit.
- `width`: The width of the segmentation data in pixel unit.
- `data`: The flattened `Uint8Array` of segmentation data. 1 means the pixel belongs to a person and 0 means the pixel doesn't belong to a person. The size of the array is equal to `height` x `width` in row-major order.
- `allPoses`: The 2d poses of all people.

```

async segmentPerson(
  input: BodyPixInput,
  config: PersonInferenceConfig =
    PERSON_INFERENCE_CONFIG): Promise<SemanticPersonSegmentation> {
  config = {...PERSON_INFERENCE_CONFIG, ...config};
  validatePersonInferenceConfig(config);
  const {
    segmentation,
    heatmapScores,
    offsets,
    displacementFwd,
    displacementBwd,
    padding,
    internalResolutionHeightAndWidth
  } = this.segmentPersonActivation(
    input,
    config.internalResolution,
    config.segmentationThreshold);
  const [height, width] = segmentation.shape;
  const result = await segmentation.data() as Uint8Array;
  segmentation.dispose();
  const tensorBuffers =
    await toTensorBuffers3D(
      [heatmapScores, offsets, displacementFwd, displacementBwd]);
  const [scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf] =
    tensorBuffers;
  let poses =
    decodeMultiplePoses(
      scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,
      this.baseModel.outputStride, config.maxDetections,
      config.scoreThreshold, config.nmsRadius);
  poses =
    scaleAndFlipPoses(
      poses, [height, width], internalResolutionHeightAndWidth, padding,
      FLIP_POSES_AFTER_SCALING);
  heatmapScores.dispose();
  offsets.dispose();
  displacementFwd.dispose();
  displacementBwd.dispose();
  return {height, width, data: result, allPoses: poses};
}

```

`/** Given an image with multiple people, returns an array of PersonSegmentation object. Each element in the array corresponding to one of the people in the input image. In other words, it predicts instance-level multiple person segmentation & pose for each person. The model does standard ImageNet pre-processing before inferring through the model. The image pixels should have values [0-255].`

`@param input ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement` The input image to feed through the network.

`@param config MultiPersonInferenceConfig` object that contains parameters for the BodyPix inference using multi-person decoding.

`@return` An array of `PersonSegmentation` object, each containing a width, height, a binary array (1 for the pixels that are part of the person, and 0 otherwise) and 2D pose. The array size corresponds to the number of pixels in the image. The width and height correspond to the dimensions of the image the binary array is shaped to, which are the same dimensions of the input image.

```

async segmentMultiPerson(
  input: BodyPixInput,
  config: MultiPersonInstanceInferenceConfig =
    MULTI_PERSON_INSTANCE_INFERENCE_CONFIG): Promise<PersonSegmentation[]> {
  config = {...MULTI_PERSON_INSTANCE_INFERENCE_CONFIG, ...config};
  validateMultiPersonInstanceInferenceConfig(config);
  const [height, width] =
    getInputSize(input);
  const internalResolutionHeightAndWidth =
    toInputResolutionHeightAndWidth(
      config.internalResolution, this.baseModel.outputStride,
      [height, width]);
  const {resized, padding} =
    padAndResizeTo(input, internalResolutionHeightAndWidth);
  const {
    segmentation,
    longOffsets,
    heatmapScoresRaw,
    offsetsRaw,
    displacementFwdRaw,
    displacementBwdRaw,
  } = tf.tidy(() => {
    const {
      segmentLogits,
      longOffsets,
      heatmapScores,
      offsets,
      displacementFwd,
      displacementBwd,
    } =
      this.predictForMultiPersonInstanceSegmentationAndPart(resized);
    const scaledSegmentScores =
      scaleAndCropToInputTensorShape(
        segmentLogits, [height, width], internalResolutionHeightAndWidth,
        [[padding.top, padding.bottom], [padding.left, padding.right]],
        APPLY_SIGMOID_ACTIVATION);
  });
  return segmentation.map(
    (segmentation, i) => {
      const [height, width] =
        internalResolutionHeightAndWidth;
      const [scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf] =
        scaledSegmentScores[i];
      let poses =
        decodeMultiplePoses(
          scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,
          this.baseModel.outputStride, config.maxDetections,
          config.scoreThreshold, config.nmsRadius);
      poses =
        scaleAndFlipPoses(
          poses, [height, width], internalResolutionHeightAndWidth, padding,
          FLIP_POSES_AFTER_SCALING);
      return {
        height,
        width,
        data: segmentation.data() as Uint8Array,
        allPoses: poses,
      };
    });
}

```

```

const longOffsetsResized = false;\n    let scaledLongOffsets;\n    if (longOffsetsResized) {\n    scaledLongOffsets = scaleAndCropToInputTensorShape(\n        longOffsets, [height, width],\n    internalResolutionHeightAndWidth,\n        [[padding.top, padding.bottom], [padding.left, padding.right]],\n    APPLY_SIGMOID_ACTIVATION);\n    } else {\n    scaledLongOffsets = longOffsets;\n    }\n\n    const\n    segmentation = toMaskTensor(\n        tf.squeeze(scaledSegmentScores), config.segmentationThreshold);\n\n    return {\n    segmentation,\n    longOffsets: scaledLongOffsets,\n    heatmapScoresRaw: heatmapScores,\n    offsetsRaw: offsets,\n    displacementFwdRaw: displacementFwd,\n    displacementBwdRaw:\n    displacementBwd,\n    };\n\n    const tensorBuffers = await toTensorBuffers3D(\n    [heatmapScoresRaw,\n    offsetsRaw, displacementFwdRaw, displacementBwdRaw]);\n    const [scoresBuf, offsetsBuf,\n    displacementsFwdBuf, displacementsBwdBuf] =\n    tensorBuffers;\n\n    let poses = decodeMultiplePoses(\n    scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,\n    this.baseModel.outputStride,\n    config.maxDetections,\n    config.scoreThreshold, config.nmsRadius);\n\n    poses = scaleAndFlipPoses(\n    poses, [height, width], internalResolutionHeightAndWidth, padding,\n    FLIP_POSES_AFTER_SCALING);\n\n    const instanceMasks = await decodePersonInstanceMasks(\n    segmentation, longOffsets, poses, height, width,\n    this.baseModel.outputStride, internalResolutionHeightAndWidth, padding,\n    config.scoreThreshold,\n    config.refineSteps, config.minKeypointScore,\n    config.maxDetections);\n\n    resized.dispose();\n    segmentation.dispose();\n    longOffsets.dispose();\n    heatmapScoresRaw.dispose();\n    offsetsRaw.dispose();\n    displacementFwdRaw.dispose();\n    displacementBwdRaw.dispose();\n\n    return instanceMasks;\n    }\n\n    /**\n     * Given an image with many people, returns a dictionary containing: height,\n     * width, a tensor with a part id from 0-24 for the pixels that are\n     * part of a corresponding body part, and -1 otherwise. This does standard\n     * ImageNet pre-processing before inferring through the model. The image\n     * should pixels should have values [0-255].\n     *\n     * @param input ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement\n     * The input image to feed through the network.\n     *\n     * @param internalResolution Defaults to 'medium'. The internal\n     * resolution\n     * percentage that the input is resized to before inference. The larger the\n     * internalResolution the more accurate the model at the cost of slower\n     * prediction times. Available values are 'low', 'medium', 'high',\n     * 'full', or\n     * a percentage value between 0 and 1. The values 'low', 'medium', 'high', and\n     * 'full' map to 0.25, 0.5, 0.75, and 1.0 correspondingly.\n     *\n     * @param segmentationThreshold The minimum that segmentation values\n     * must have\n     * to be considered part of the person. Affects the clipping of the colored\n     * part image.\n     *\n     * @return A dictionary containing `partSegmentation`, `heatmapScores`,\n     * `offsets`, and `padding`:\n     * -\n     * `partSegmentation`: A 2d Tensor with a part id from 0-24 for\n     * the pixels that are part of a corresponding body part, and -1 otherwise.\n     * - `heatmapScores`: A 3d Tensor of the keypoint heatmaps used by\n     * single-person pose estimation decoding.\n     * - `offsets`: A 3d Tensor of the keypoint offsets used by single-person pose\n     * estimation decoding.\n     * - `displacementFwd`: A 3d Tensor of the keypoint forward displacement\n     * used by\n     * pose estimation decoding.\n     * - `displacementBwd`: A 3d Tensor of the keypoint backward displacement used\n     * by\n     * pose estimation decoding.\n     * - `padding`: The padding (unit pixels) being applied to the input image\n     * before it is fed into the model.\n     *\n     */\n    segmentPersonPartsActivation(\n    input: BodyPixInput,\n    internalResolution: BodyPixInternalResolution,\n    segmentationThreshold = 0.5): {\n    partSegmentation:\n    tf.Tensor2D,\n    heatmapScores: tf.Tensor3D,\n    offsets: tf.Tensor3D,\n    displacementFwd: tf.Tensor3D,\n    displacementBwd: tf.Tensor3D,\n    padding: Padding,\n    internalResolutionHeightAndWidth: [number, number]\n    }\n\n    const [height, width] = getInputSize(input);\n    const internalResolutionHeightAndWidth =\n    toInputResolutionHeightAndWidth(\n    internalResolution, this.baseModel.outputStride, [height, width]);\n\n    const {\n    resized,\n    padding,\n    } = padAndResizeTo(input, internalResolutionHeightAndWidth);\n\n    const\n    {\n    partSegmentation,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd\n    } =\n    tf.tidy(() => {\n    const {\n    segmentLogits,\n    partHeatmapLogits,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd\n    } = this.predictForPersonSegmentationAndPart(resized);\n\n    const [resizedHeight, resizedWidth] = resized.shape;\n\n    const scaledSegmentScores =\n    scaleAndCropToInputTensorShape(\n    segmentLogits, [height, width], [resizedHeight, resizedWidth],\n    [[padding.top, padding.bottom], [padding.left, padding.right]],\n    APPLY_SIGMOID_ACTIVATION);\n

```

```

const scaledPartHeatmapScore = scaleAndCropToInputTensorShape(\n      partHeatmapLogits, [height, width],
[resolvedHeight, resolvedWidth],\n      [[padding.top, padding.bottom], [padding.left, padding.right]]);\n
APPLY_SIGMOID_ACTIVATION);\n  const segmentation =\n
toMaskTensor(tf.squeeze(scaledSegmentScores), segmentationThreshold);\n  return {\n    partSegmentation:\n      decodePartSegmentation(segmentation, scaledPartHeatmapScore),\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n      };\n  });\n  resized.dispose();\n  return {\n    partSegmentation,\n    heatmapScores,\n    offsets,\n    displacementFwd,\n    displacementBwd,\n    padding,\n    internalResolutionHeightAndWidth\n  };\n  }\n  /**\n   * Given an image with many people,
returns a PartSegmentation dictionary that\n   * contains the body part segmentation mask for all people and a single
pose.\n   * \n   * Note: The body part segmentation mask returned by this method covers all\n   * people but the pose
works well when there is one person. If you want to\n   * estimate instance-level multiple person body part
segmentation & pose for\n   * each person, use `segmentMultiPersonParts` instead.\n   * \n   * @param input
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement)\n   * The input image to feed
through the network.\n   * \n   * @param config PersonInferenceConfig object that contains\n   * parameters for the
BodyPix inference using single person decoding.\n   * \n   * @return A SemanticPartSegmentation dictionary that
contains height, width,\n   * the flattened binary segmentation mask and the pose for the person. The\n   * width and
height correspond to the same dimensions of the input image.\n   * - `height`: The height of the person part
segmentation data in pixel unit.\n   * - `width`: The width of the person part segmentation data in pixel unit.\n   * -
`data`: The flattened Int32Array of person part segmentation data with a\n   * part id from 0-24 for the pixels that are
part of a corresponding body\n   * part, and -1 otherwise. The size of the array is equal to `height` x\n   * `width` in
row-major order.\n   * - `allPoses`: The 2d poses of all people.\n   */\n  async segmentPersonParts(\n    input:
BodyPixInput,\n    config: PersonInferenceConfig = PERSON_INFERENCE_CONFIG):\n
Promise<SemanticPartSegmentation> {\n    config = {...PERSON_INFERENCE_CONFIG, ...config};\n    validatePersonInferenceConfig(config);\n    const {\n      partSegmentation,\n      heatmapScores,\n      offsets,\n      displacementFwd,\n      displacementBwd,\n      padding,\n      internalResolutionHeightAndWidth\n    } =\n
this.segmentPersonPartsActivation(\n      input, config.internalResolution, config.segmentationThreshold);\n    const [height, width] = partSegmentation.shape;\n    const data = await partSegmentation.data() as Int32Array;\n    partSegmentation.dispose();\n    const tensorBuffers = await toTensorBuffers3D(\n      [heatmapScores, offsets,
displacementFwd, displacementBwd]);\n    const [scoresBuf, offsetsBuf, displacementsFwdBuf,
displacementsBwdBuf] =\n      tensorBuffers;\n    let poses = decodeMultiplePoses(\n      scoresBuf, offsetsBuf,
displacementsFwdBuf, displacementsBwdBuf,\n      this.baseModel.outputStride, config.maxDetections,\n      config.scoreThreshold, config.nmsRadius);\n    poses = scaleAndFlipPoses(\n      poses, [height, width],
internalResolutionHeightAndWidth, padding,\n      FLIP_POSES_AFTER_SCALING);\n    heatmapScores.dispose();\n    offsets.dispose();\n    displacementFwd.dispose();\n    displacementBwd.dispose();\n    return {height, width, data, allPoses: poses};\n  };\n  /**\n   * Given an image with multiple people, returns an
*array* of PartSegmentation\n   * object. Each element in the array corresponding to one\n   * of the people in the
input image. In other words, it predicts\n   * instance-level multiple person body part segmentation & pose for
each\n   * person.\n   * \n   * This does standard ImageNet pre-processing before inferring through\n   * the model.
The image pixels should have values [0-255].\n   * \n   * @param input\n   *
ImageData|HTMLImageElement|HTMLCanvasElement|HTMLVideoElement) The input\n   * image to feed
through the network.\n   * \n   * @param config MultiPersonInferenceConfig object that contains\n   * parameters for the
BodyPix inference using multi-person decoding.\n   * \n   * @return An array of PartSegmentation object, each
containing a width,\n   * height, a flattened array (with part id from 0-24 for the pixels that are\n   * part of a
corresponding body part, and -1 otherwise) and 2D pose. The width\n   * and height correspond to the dimensions of
the image. Each flattened part\n   * segmentation array size is equal to `height` x `width`.\n   */\n  async
segmentMultiPersonParts(\n    input: BodyPixInput,\n    config: MultiPersonInstanceInferenceConfig =\n
MULTI_PERSON_INSTANCE_INFERENCE_CONFIG): Promise<PartSegmentation[]> {\n    config =
{...MULTI_PERSON_INSTANCE_INFERENCE_CONFIG, ...config};\n

```

```

validateMultiPersonInstanceInferenceConfig(config);\n  const [height, width] = getInputSize(input);\n  const\n  internalResolutionHeightAndWidth = toInputResolutionHeightAndWidth(\n    config.internalResolution,\n    this.baseModel.outputStride,\n    [height, width]);\n  const {resized, padding} =\n    padAndResizeTo(input,\n    internalResolutionHeightAndWidth);\n  const {\n    segmentation,\n    longOffsets,\n    heatmapScoresRaw,\n    offsetsRaw,\n    displacementFwdRaw,\n    displacementBwdRaw,\n    partSegmentation,\n  } = tf.tidy(() =>\n    {\n      const {\n        segmentLogits,\n        longOffsets,\n        heatmapScores,\n        offsets,\n        displacementFwd,\n        displacementBwd,\n        partHeatmaps\n      } =\n        this.predictForMultiPersonInstanceSegmentationAndPart(resized);\n      // decoding with scaling.\n      const\n      scaledSegmentScores = scaleAndCropToInputTensorShape(\n        segmentLogits, [height, width],\n        internalResolutionHeightAndWidth,\n        [[padding.top, padding.bottom], [padding.left, padding.right]],\n        APPLY_SIGMOID_ACTIVATION);\n      // decoding with scaling.\n      const scaledPartSegmentationScores =\n        scaleAndCropToInputTensorShape(\n          partHeatmaps, [height, width], internalResolutionHeightAndWidth,\n          [[padding.top, padding.bottom], [padding.left, padding.right]],\n          APPLY_SIGMOID_ACTIVATION);\n      const scaledLongOffsets = longOffsets;\n      const segmentation = toMaskTensor(\n        tf.squeeze(scaledSegmentScores), config.segmentationThreshold);\n      const partSegmentation =\n        decodeOnlyPartSegmentation(scaledPartSegmentationScores);\n      return {\n        segmentation,\n        longOffsets:\n        scaledLongOffsets,\n        heatmapScoresRaw: heatmapScores,\n        offsetsRaw: offsets,\n        displacementFwdRaw: displacementFwd,\n        displacementBwdRaw: displacementBwd,\n        partSegmentation\n      };\n    });\n  const tensorBuffers = await toTensorBuffers3D(\n    [heatmapScoresRaw,\n    offsetsRaw, displacementFwdRaw, displacementBwdRaw]);\n  const [scoresBuf, offsetsBuf,\n    displacementsFwdBuf, displacementsBwdBuf] =\n    tensorBuffers;\n  let poses = decodeMultiplePoses(\n    scoresBuf, offsetsBuf, displacementsFwdBuf, displacementsBwdBuf,\n    this.baseModel.outputStride,\n    config.maxDetections,\n    config.scoreThreshold, config.nmsRadius);\n  poses = scaleAndFlipPoses(\n    poses, [height, width], internalResolutionHeightAndWidth, padding,\n    FLIP_POSES_AFTER_SCALING);\n  const instanceMasks = await decodePersonInstancePartMasks(\n    segmentation, longOffsets, partSegmentation,\n    poses, height, width,\n    this.baseModel.outputStride, internalResolutionHeightAndWidth, padding,\n    config.scoreThreshold, config.refineSteps, config.minKeypointScore,\n    config.maxDetections);\n  resized.dispose();\n  segmentation.dispose();\n  longOffsets.dispose();\n  heatmapScoresRaw.dispose();\n  offsetsRaw.dispose();\n  displacementFwdRaw.dispose();\n  displacementBwdRaw.dispose();\n  partSegmentation.dispose();\n  return instanceMasks;\n}\n\npublic dispose() {\n  this.baseModel.dispose();\n}\n\n/**\n * Loads the MobileNet BodyPix model.\n */\n\n@nasync function loadMobileNet(config: ModelConfig):\n  Promise<BodyPix> {\n  const outputStride = config.outputStride;\n  const quantBytes = config.quantBytes;\n  const\n  multiplier = config.multiplier;\n  if (tf == null) {\n    throw new Error(\n      `Cannot find TensorFlow.js. If you are\n      using a <script> tag, please ` +\n      `also include @tensorflow/tfjs on the page before using this\n      model.`);\n  }\n  const url = mobileNetSavedModel(outputStride, multiplier, quantBytes);\n  const graphModel = await\n  tfconv.loadGraphModel(config.modelUrl || url);\n  const mobilenet = new MobileNet(graphModel, outputStride);\n  return new BodyPix(mobilenet);\n}\n\n/**\n * Loads the ResNet BodyPix model.\n */\n\n@nasync function\n  loadResNet(config: ModelConfig): Promise<BodyPix> {\n  const outputStride = config.outputStride;\n  const\n  quantBytes = config.quantBytes;\n  if (tf == null) {\n    throw new Error(\n      `Cannot find TensorFlow.js. If you\n      are using a <script> tag, please ` +\n      `also include @tensorflow/tfjs on the page before using this\n      model.`);\n  }\n  const url = resNet50SavedModel(outputStride, quantBytes);\n  const graphModel = await\n  tfconv.loadGraphModel(config.modelUrl || url);\n  const resnet = new ResNet(graphModel, outputStride);\n  return\n  new BodyPix(resnet);\n}\n\n/**\n * Loads the BodyPix model instance from a checkpoint, with the ResNet * or\n * MobileNet architecture. The model to be loaded is configurable using the\n * config dictionary ModelConfig. Please\n * find more details in the\n * documentation of the ModelConfig.\n * @param config ModelConfig dictionary that\n * contains parameters for\n * the BodyPix loading process. Please find more details of each parameters\n * in the\n * documentation of the ModelConfig interface. The predefined\n * `MOBILENET_V1_CONFIG` and\n * `RESNET_CONFIG` can also be used as references\n * for defining your customized config.\n */\n\nexport async

```

```
function load(config: ModelConfig = MOBILENET_V1_CONFIG):\n Promise<BodyPix> {\n config =
validateModelConfig(config);\n if (config.architecture === 'ResNet50') {\n return loadResNet(config);\n } else if
(config.architecture === 'MobileNetV1') {\n return loadMobileNet(config);\n } else {\n return null;\n
}\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\n// method copied from bGluR in https://codepen.io/zhaojun/pen/zZmRQe\nexport function cpuBlur(\n
canvas: HTMLCanvasElement|OffscreenCanvas,\n image:
HTMLImageElement|HTMLVideoElement|HTMLCanvasElement|OffscreenCanvas,\n blur: number) {\n const
ctx = canvas.getContext('2d');\n let sum = 0;\n const delta = 5;\n const alphaLeft = 1 / (2 * Math.PI * delta *
delta);\n const step = blur < 3 ? 1 : 2;\n for (let y = -blur; y <= blur; y += step) {\n for (let x = -blur; x <= blur; x
+= step) {\n const weight =\n alphaLeft * Math.exp(-(x * x + y * y) / (2 * delta * delta));\n sum +=
weight;\n }\n }\n for (let y = -blur; y <= blur; y += step) {\n for (let x = -blur; x <= blur; x += step) {\n
ctx.globalAlpha = alphaLeft *\n Math.exp(-(x * x + y * y) / (2 * delta * delta)) / sum * blur;\n
ctx.drawImage(image, x, y);\n }\n }\n ctx.globalAlpha = 1;\n}\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {cpuBlur} from './blur';\nimport {Color, PartSegmentation, PersonSegmentation} from
 './types';\nimport {SemanticPartSegmentation, SemanticPersonSegmentation} from './types';\nimport {getInputSize}
from './util';\nexport type Canvas = HTMLCanvasElement | OffscreenCanvas;\n\nconst offScreenCanvases:
{[name: string]: Canvas} = {};\n\ntype ImageType = HTMLImageElement|HTMLVideoElement|Canvas;\ntype
HasDimensions = {\n width: number,\n height: number\n};\n\nfunction isSafari() {\n return
(/^(?!chrome|android).*safari/i.test(navigator.userAgent));\n}\n\nfunction assertSameDimensions(\n {width:
widthA, height: heightA}: HasDimensions,\n {width: widthB, height: heightB}: HasDimensions, nameA: string,\n
nameB: string) {\n if (widthA !== widthB || heightA !== heightB) {\n throw new Error(`error: dimensions must
match. ${nameA} has dimensions ${\n widthA}x${heightA}, ${nameB} has dimensions
${widthB}x${heightB}`);\n }\n}\n\nfunction flipCanvasHorizontal(canvas: Canvas) {\n const ctx =
canvas.getContext('2d');\n ctx.scale(-1, 1);\n ctx.translate(-canvas.width, 0);\n}\n\nfunction
drawWithCompositing(\n ctx: CanvasRenderingContext2D|OffscreenCanvasRenderingContext2D,\n image:
Canvas|ImageType,\n compositeOperation: string) {\n ctx.globalCompositeOperation = compositeOperation;\n
ctx.drawImage(image, 0, 0);\n}\n\nfunction createOffScreenCanvas(): Canvas {\n if (typeof document !==
'undefined') {\n return document.createElement('canvas');\n } else if (typeof OffscreenCanvas !== 'undefined')
{\n return new OffscreenCanvas(0, 0);\n } else {\n throw new Error('Cannot create a canvas in this context');\n
}\n}\n\nfunction ensureOffscreenCanvasCreated(id: string): Canvas {\n if (!offScreenCanvases[id]) {\n
offScreenCanvases[id] = createOffScreenCanvas();\n }\n return offScreenCanvases[id];\n}\n\nfunction
drawAndBlurImageOnCanvas(\n image: ImageType, blurAmount: number, canvas: Canvas) {\n const {height,
width} = image;\n const ctx = canvas.getContext('2d');\n canvas.width = width;\n canvas.height = height;\n
ctx.clearRect(0, 0, width, height);\n ctx.save();\n if (isSafari()) {\n cpuBlur(canvas, image, blurAmount);\n } else
{\n // tslint:disable:no-any\n (ctx as any).filter = `blur(${blurAmount}px)`;\n ctx.drawImage(image, 0, 0,
```

```

width, height);\n }\n ctx.restore();\n}\n\nfunction drawAndBlurImageOnOffScreenCanvas(\n  image: ImageType,\n  blurAmount: number,\n  offscreenCanvasName: string): Canvas {\n  const canvas =\n  ensureOffscreenCanvasCreated(offscreenCanvasName);\n  if (blurAmount === 0) {\n  renderImageToCanvas(image, canvas);\n  } else {\n  drawAndBlurImageOnCanvas(image, blurAmount, canvas);\n  }\n  return canvas;\n}\n\nfunction renderImageToCanvas(image: ImageType, canvas: Canvas) {\n  const {width,\n  height} = image;\n  canvas.width = width;\n  canvas.height = height;\n  const ctx = canvas.getContext('2d');\n  ctx.drawImage(image, 0, 0, width, height);\n}\n\n/**\n * Draw an image on a canvas\n */\nfunction\n  renderImageDataToCanvas(image: ImageData, canvas: Canvas) {\n  canvas.width = image.width;\n  canvas.height\n  = image.height;\n  const ctx = canvas.getContext('2d');\n  ctx.putImageData(image, 0, 0);\n}\n\nfunction\n  renderImageDataToOffScreenCanvas(\n  image: ImageData, canvasName: string): Canvas {\n  const canvas =\n  ensureOffscreenCanvasCreated(canvasName);\n  renderImageDataToCanvas(image, canvas);\n  return\n  canvas;\n}\n\n/**\n * Given the output from estimating multi-person segmentation, generates an\n * image with\n  foreground and background color at each pixel determined by the\n * corresponding binary segmentation value at\n  the pixel from the output. In\n * other words, pixels where there is a person will be colored with foreground\n * color and where there is not a person will be colored with background color.\n */\n * @param\n  personOrPartSegmentation The output from\n * `segmentPerson`, `segmentMultiPerson`,\n * `segmentPersonParts`\n  or `segmentMultiPersonParts`. They can\n * be SemanticPersonSegmentation object, an array of\n  PersonSegmentation object,\n * SemanticPartSegmentation object, or an array of PartSegmentation object.\n * @param foreground Default to {r:0, g:0, b:0, a: 0}. The foreground color\n * (r,g,b,a) for visualizing pixels that\n  belong to people.\n * @param background Default to {r:0, g:0, b:0, a: 255}. The background color\n * (r,g,b,a)\n  for visualizing pixels that don't belong to people.\n * @param drawContour Default to false. Whether to draw\n  the contour around each\n * person's segmentation mask or body part mask.\n * @param foregroundIds Default\n  to [1]. The integer values that represent\n * foreground. For person segmentation, 1 is the foreground. For body\n  part\n * segmentation, it can be a subset of all body parts ids.\n * @returns An ImageData with the same width\n  and height of\n * all the PersonSegmentation in multiPersonSegmentation, with opacity and\n * transparency at each\n  pixel determined by the corresponding binary\n * segmentation value at the pixel from the output.\n */\nexport\n  function toMask(\n  personOrPartSegmentation: SemanticPersonSegmentation|\n  SemanticPartSegmentation|PersonSegmentation[]|PartSegmentation[],\n  foreground: Color = {\n  r: 0,\n  g:\n  0,\n  b: 0,\n  a: 0\n },\n  background: Color = {\n  r: 0,\n  g: 0,\n  b: 0,\n  a: 255\n },\n  drawContour = false, foregroundIds: number[] = [1]): ImageData {\n  if (Array.isArray(personOrPartSegmentation)\n  &&\n  personOrPartSegmentation.length === 0) {\n  return null;\n  }\n  let multiPersonOrPartSegmentation:\n  Array<SemanticPersonSegmentation|SemanticPartSegmentation|\n  PersonSegmentation|PartSegmentation>;\n  if (!Array.isArray(personOrPartSegmentation)) {\n  multiPersonOrPartSegmentation = [personOrPartSegmentation];\n  } else {\n  multiPersonOrPartSegmentation =\n  personOrPartSegmentation;\n  }\n  const {width, height} = multiPersonOrPartSegmentation[0];\n  const bytes =\n  new Uint8ClampedArray(width * height * 4);\n  function drawStroke(\n  bytes: Uint8ClampedArray, row:\n  number, column: number, width: number,\n  radius: number, color: Color = {r: 0, g: 255, b: 255, a: 255}) {\n  for (let i = -radius; i <= radius; i++) {\n  for (let j = -radius; j <= radius; j++) {\n  if (i !== 0 && j !== 0) {\n  const n = (row + i) * width + (column + j);\n  bytes[4 * n + 0] = color.r;\n  bytes[4 * n + 1] = color.g;\n  bytes[4 * n + 2] = color.b;\n  bytes[4 * n + 3] = color.a;\n  }\n  }\n  }\n  }\n  function\n  isSegmentationBoundary(\n  segmentationData: Uint8Array|Int32Array,\n  row: number,\n  column:\n  number,\n  width: number,\n  foregroundIds: number[] = [1],\n  radius = 1,\n  ): boolean {\n  let\n  numberBackgroundPixels = 0;\n  for (let i = -radius; i <= radius; i++) {\n  for (let j = -radius; j <= radius; j++)\n  {\n  if (i !== 0 && j !== 0) {\n  const n = (row + i) * width + (column + j);\n  if\n  (!foregroundIds.some(id => id === segmentationData[n])) {\n  numberBackgroundPixels += 1;\n  }\n  }\n  }\n  }\n  return numberBackgroundPixels > 0;\n  }\n  for (let i = 0; i < height; i += 1) {\n  for (let j = 0; j\n  < width; j += 1) {\n  const n = i * width + j;\n  bytes[4 * n + 0] = background.r;\n  bytes[4 * n + 1] =\n  background.g;\n  bytes[4 * n + 2] = background.b;\n  bytes[4 * n + 3] = background.a;\n  for (let k = 0; k <

```



```

* @param maskImage An ImageData containing the mask. Ideally this should be
* generated by toColoredPartMask.
* @param maskOpacity The opacity of the mask when drawing it on top of the
* image. Defaults to 0.7. Should be a float between 0 and 1.
* @param maskBlurAmount How many pixels to blur the mask by. Defaults to 0.
* Should be an integer between 0 and 20.
* @param flipHorizontal If the result should be flipped horizontally. Defaults
* to false.
* @param pixelCellWidth The width of each pixel cell. Default to 10 px.
*/
export function drawPixelatedMask(
  canvas: Canvas, image: ImageType,
  maskImage: ImageData,
  maskOpacity = 0.7, maskBlurAmount = 0, flipHorizontal = false,
  pixelCellWidth = 10.0) {
  const [height, width] = getInputSize(image);
  assertSameDimensions({ width, height }, maskImage,
  'image', 'mask');
  const mask = renderImageDataToOffScreenCanvas(maskImage, CANVAS_NAMES.mask);
  const blurredMask = drawAndBlurImageOnOffScreenCanvas(
    mask, maskBlurAmount,
    CANVAS_NAMES.blurredMask);
  canvas.width = blurredMask.width;
  canvas.height = blurredMask.height;
  const ctx = canvas.getContext('2d');
  ctx.save();
  if (flipHorizontal) {
    flipCanvasHorizontal(canvas);
  }
  const offscreenCanvas =
  ensureOffscreenCanvasCreated(CANVAS_NAMES.lowresPartMask);
  const offscreenCanvasCtx =
  offscreenCanvas.getContext('2d');
  offscreenCanvas.width = blurredMask.width * (1.0 / pixelCellWidth);
  offscreenCanvas.height = blurredMask.height * (1.0 / pixelCellWidth);
  offscreenCanvasCtx.drawImage(
  blurredMask, 0, 0, blurredMask.width, blurredMask.height, 0, 0,
  offscreenCanvas.width,
  offscreenCanvas.height);
  ctx.imageSmoothingEnabled = false;
  ctx.drawImage(
  offscreenCanvas, 0, 0,
  offscreenCanvas.width, offscreenCanvas.height, 0, 0,
  canvas.width, canvas.height);
  // Draws vertical grid
  lines that are `pixelCellWidth` apart from each other.
  for (let i = 0; i < offscreenCanvas.width; i++) {
    ctx.beginPath();
    ctx.strokeStyle = '#ffffff';
    ctx.moveTo(pixelCellWidth * i, 0);
    ctx.lineTo(pixelCellWidth
  * i, canvas.height);
    ctx.stroke();
  }
  // Draws horizontal grid lines that are `pixelCellWidth` apart from
  each
  // other.
  for (let i = 0; i < offscreenCanvas.height; i++) {
    ctx.beginPath();
    ctx.strokeStyle =
  '#ffffff';
    ctx.moveTo(0, pixelCellWidth * i);
    ctx.lineTo(canvas.width, pixelCellWidth * i);
    ctx.stroke();
  }
  ctx.globalAlpha = 1.0 - maskOpacity;
  ctx.drawImage(image, 0, 0, blurredMask.width,
  blurredMask.height);
  ctx.restore();
}

function createPersonMask(
  multiPersonSegmentation:
  PersonSegmentation[]|SemanticPersonSegmentation,
  edgeBlurAmount: number): Canvas {
  const
  backgroundMaskImage = toMask(
  multiPersonSegmentation, {r: 0, g: 0, b: 0, a: 255},
  {r: 0, g: 0, b: 0, a:
  0});
  const backgroundMask =
  renderImageDataToOffScreenCanvas(backgroundMaskImage,
  CANVAS_NAMES.mask);
  if (edgeBlurAmount === 0) {
    return backgroundMask;
  } else {
    return
  drawAndBlurImageOnOffScreenCanvas(
    backgroundMask, edgeBlurAmount,
    CANVAS_NAMES.blurredMask);
  }
}

/**
 * Given a personSegmentation and an image, draws the image
 * with its background
 * blurred onto the canvas.
 * @param canvas The canvas to draw the background-blurred
 * image onto.
 * @param image The image to blur the background of and draw.
 * @param
 * personSegmentation A SemanticPersonSegmentation or an array of
 * PersonSegmentation object.
 * @param
 * backgroundBlurAmount How many pixels in the background blend into each
 * other. Defaults to 3. Should be an
 * integer between 1 and 20.
 * @param edgeBlurAmount How many pixels to blur on the edge between the
 * person
 * and the background by. Defaults to 3. Should be an integer between 0 and 20.
 * @param
 * flipHorizontal If the output should be flipped horizontally. Defaults
 * to false.
 */
export function
  drawBokehEffect(
  canvas: Canvas, image: ImageType,
  multiPersonSegmentation:
  SemanticPersonSegmentation|PersonSegmentation[],
  backgroundBlurAmount = 3, edgeBlurAmount = 3,
  flipHorizontal = false) {
  const blurredImage = drawAndBlurImageOnOffScreenCanvas(
  image,
  backgroundBlurAmount, CANVAS_NAMES.blurred);
  canvas.width = blurredImage.width;
  canvas.height =
  blurredImage.height;
  const ctx = canvas.getContext('2d');
  if (Array.isArray(multiPersonSegmentation)
  &&
  multiPersonSegmentation.length === 0) {
    ctx.drawImage(blurredImage, 0, 0);
    return;
  }
  const personMask = createPersonMask(multiPersonSegmentation, edgeBlurAmount);
  ctx.save();
  if (flipHorizontal) {
    flipCanvasHorizontal(canvas);
  }
  // draw the original image on the final canvas
  const
  [height, width] = getInputSize(image);
  ctx.drawImage(image, 0, 0, width, height);
  // "destination-in" - "The

```

```

existing canvas content is kept where both the\n // new shape and existing canvas content overlap. Everything else
is made\n // transparent.\n // crop what's not the person using the mask from the original image\n
drawWithCompositing(ctx, personMask, 'destination-in');\n // \"destination-over\" - \"The existing canvas content is
kept where both the\n // new shape and existing canvas content overlap. Everything else is made\n //
transparent.\n // draw the blurred background on top of the original image where it doesn't\n // overlap.\n
drawWithCompositing(ctx, blurredImage, 'destination-over');\n ctx.restore();\n}\n\nfunction
createBodyPartMask(\n  multiPersonPartSegmentation: SemanticPartSegmentation|PartSegmentation[],\n
bodyPartIdsToMask: number[], edgeBlurAmount: number): Canvas {\n  const backgroundMaskImage = toMask(\n
  multiPersonPartSegmentation, {r: 0, g: 0, b: 0, a: 0},\n    {r: 0, g: 0, b: 0, a: 255}, true, bodyPartIdsToMask);\n\n
const backgroundMask =\n  renderImageDataToOffScreenCanvas(backgroundMaskImage,
CANVAS_NAMES.mask);\n  if (edgeBlurAmount === 0) {\n    return backgroundMask;\n  } else {\n    return
drawAndBlurImageOnOffScreenCanvas(\n      backgroundMask, edgeBlurAmount,
CANVAS_NAMES.blurredMask);\n  }\n}\n\n/**\n * Given a personSegmentation and an image, draws the image
with its background\n * blurred onto the canvas.\n * \n * @param canvas The canvas to draw the background-blurred
image onto.\n * \n * @param image The image to blur the background of and draw.\n * \n * @param
partSegmentation A SemanticPartSegmentation or an array of\n * PartSegmentation object.\n * \n * @param
bodyPartIdsToBlur Default to [0, 1] (left-face and right-face). An\n * array of body part ids to blur. Each must be
one of the 24 body part ids.\n * \n * @param backgroundBlurAmount How many pixels in the background blend into
each\n * other. Defaults to 3. Should be an integer between 1 and 20.\n * \n * @param edgeBlurAmount How many
pixels to blur on the edge between the person\n * and the background by. Defaults to 3. Should be an integer
between 0 and 20.\n * \n * @param flipHorizontal If the output should be flipped horizontally. Defaults\n * to
false.\n */\nexport function blurBodyPart(\n  canvas: Canvas, image: ImageType,\n  partSegmentation:
SemanticPartSegmentation|PartSegmentation[],\n  bodyPartIdsToBlur = [0, 1], backgroundBlurAmount = 3,
edgeBlurAmount = 3,\n  flipHorizontal = false) {\n  const blurredImage =
drawAndBlurImageOnOffScreenCanvas(\n    image, backgroundBlurAmount, CANVAS_NAMES.blurred);\n\n
canvas.width = blurredImage.width;\n  canvas.height = blurredImage.height;\n\n  const ctx =
canvas.getContext('2d');\n  if (Array.isArray(partSegmentation) && partSegmentation.length === 0) {\n
ctx.drawImage(blurredImage, 0, 0);\n  return;\n  }\n  const bodyPartMask =\n  createBodyPartMask(partSegmentation, bodyPartIdsToBlur, edgeBlurAmount);\n\n  ctx.save();\n  if (flipHorizontal)
{\n    flipCanvasHorizontal(canvas);\n  }\n  // draw the original image on the final canvas\n  const [height, width] =
getInputSize(image);\n  ctx.drawImage(image, 0, 0, width, height);\n\n  // \"destination-in\" - \"The existing canvas
content is kept where both the\n // new shape and existing canvas content overlap. Everything else is made\n //
transparent.\n // crop what's not the person using the mask from the original image\n  drawWithCompositing(ctx,
bodyPartMask, 'destination-in');\n  // \"destination-over\" - \"The existing canvas content is kept where both the\n //
new shape and existing canvas content overlap. Everything else is made\n // transparent.\n // draw the blurred
background on top of the original image where it doesn't\n // overlap.\n  drawWithCompositing(ctx, blurredImage,
'destination-over');\n  ctx.restore();\n}\n\n\"/**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n * \n */\n\n
===== \n
**/\n\nexport const PART_CHANNELS: string[] = [\n  'left_face',\n  'right_face',\n  'left_upper_arm_front',\n
'left_upper_arm_back',\n  'right_upper_arm_front',\n  'right_upper_arm_back',\n  'left_lower_arm_front',\n
'left_lower_arm_back',\n  'right_lower_arm_front',\n  'right_lower_arm_back',\n  'left_hand',\n  'right_hand',\n
'torso_front',\n  'torso_back',\n  'left_upper_leg_front',\n  'left_upper_leg_back',\n  'right_upper_leg_front',\n
];

```

'right_upper_leg_back',\n 'left_lower_leg_front',\n 'left_lower_leg_back',\n 'right_lower_leg_front',\n 'right_lower_leg_back',\n 'left_feet',\n 'right_feet'\n];\n","/** @license See the LICENSE file. */\n\n// This code is auto-generated, do not modify this file!\nconst version = '2.2.0';\nexport { version};\n","/**\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * https://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */

```
=====\n\n*/\nexport {BodyPix, load} from './body_pix_model';\nexport {blurBodyPart, drawBokehEffect, drawMask,\ndrawPixelatedMask, toColoredPartMask, toMask} from './output_rendering_util';\nexport {PART_CHANNELS}\nfrom './part_channels';\nexport {PartSegmentation, PersonSegmentation, SemanticPartSegmentation,\nSemanticPersonSegmentation} from './types';\nexport {flipPoseHorizontal, resizeAndPadTo,\nscaleAndCropToInputTensorShape} from './util';\nexport {version} from\n './version';\n}, "names": ["tf.argmax", "tf.reshape", "tf.oneHot", "tf.mul", "tf.tidy", "tf.cast", "tf.greater", "tf.scalar", "tf.ex\npandDims", "tf.range", "tf.matmul", "tf.add", "tf.sub", "tf.util", "tf.squeeze", "tf.sigmoid", "tf.div", "tf.tensor", "tf.backend"\n, "tf.equal", "getBackend", "tf.engine", "tf.Tensor", "tf.browser", "tf.image", "tf.reverse", "tf.pad3d", "tfconv.loadGraphM\nodel"], "mappings": ";;;;;;;;;;;;;IAAA;;;;;;;;;;;;;AAiBA,IA\nAEA;;;;;;;;;IAMA,SAAS,wBAAwB,CAAC,iBAA8B;QAC9D,IAAM,QAAQ,GAAG,iBAAiB,CAAC,KAAC,CAAC,\nCAAC,CAAC,CAAC;QAC5C,IAAM,gBAAgB,GAAGA,SAAS,CAAC,iBAAiB,EAAE,CAAC,CAAC,CAAC;QA\nEzD,IAAM,gBAAgB,GAAGC,UAAU,CAAC,gBAAgB,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;QAE5\nD,OAAOC,SAAS,CAAC,gBAAgB,EAAE,QAAQ,CAAgB,CAAC;IAC9D,CAAC;IAED,SAAS,YAAy,CAAC,KA\nAkB,EAAE,IAAiB;QACzD,OAAOC,MAAM,CAAC,KAAC,EAAE,IAAI,CAAC,CAAC;IAC7B,CAAC;IAED;;;;\n\n;;;;;AAaA,aAAgB,YAAy,CACxB,aAA0B,EAAE,SAAiB;QAC/C,OAAOC,OAAO,CACV;YACI,OAAOC,OAA\nO,CAACC,UAAU,CACf,aAAa,EAAEC,SAAS,CAAC,SAAS,CAAC,CAAC,EAAE,OAAO,CAAiB;SAAA,CAAC,\nCAAC;IAC9E,CAAC;IAED;;;;;;;;;;;;;AAeA,aAAgB,sBAAsB,CACIC,gBAA6B,EAC7B,iBAA8B;QAC1B,IAAA,\nKAA0C,iBAAiB,CAAC,KAAC,EAAhE,aAAa,QAAA,EAAE,YAAy,QAAA,EAAE,QAAQ,QAA2B,CAAC;QAC\nxE,OAAOH,OAAO,CAAC;YACb,IAAM,YAAy,GAAG,wBAAwB,CAAC,iBAAiB,CAAC,CAAC;YACjE,IAAM\n,WAAW,GAAGI,aAAa,CAACC,QAAQ,CAAC,CAAC,EAAE,QAAQ,EAAE,CAAC,EAAE,OAAO,CAAC,EAAE,\nCAAC,CAAC,CAAC;YAExE,IAAM,gBAAgB,GACIBJ,OAAO,CAACK,SAAS,CAAC,YAAy,EAAE,WAA0B,C\nAAC,EAAE,OAAO,CAAC,CAAC;YAE1E,IAAM,OAAO,GAAGT,UAAU,CAAC,gBAAgB,EAAE,CAAC,aAAa,\nEAAE,YAAy,CAAC,CAAC,CAAC;YAE5E,IAAM,2BAA2B,GAAGU,MAAM,CAAC,OAAO,EAAEJ,SAAS,CA\nAC,CAAC,EAAE,OAAO,CAAC,CAAC,CAAC;YAE3E,OAAOK,MAAM,CAAC,YAAy,CACf,2BAA0C,EAAE,\ngBAAgB,CAAC,EACIEL,SAAS,CAAC,CAAC,EAAE,OAAO,CAAC,CAAC,CAAC;SAC9B,CAAC,CAAC;IACL\n,CAAC;AAED,aAAgB,0BAA0B,CAAC,iBAA8B;QAEjE,IAAA,KAA0C,iBAAiB,CAAC,KAAC,EAAhE,aAAa,Q\nAAA,EAAE,YAAy,QAAA,EAAE,QAAQ,QAA2B,CAAC;QACxE,OAAOH,OAAO,CAAC;YACb,IAAM,YAAy,\nGAAG,wBAAwB,CAAC,iBAAiB,CAAC,CAAC;YACjE,IAAM,WAAW,GAAGI,aAAa,CAACC,QAAQ,CAAC,C\nAAC,EAAE,QAAQ,EAAE,CAAC,EAAE,OAAO,CAAC,EAAE,CAAC,CAAC,CAAC;YAExE,IAAM,gBAAgB,G\nACIBJ,OAAO,CAACK,SAAS,CAAC,YAAy,EAAE,WAA0B,CAAC,EAAE,OAAO,CAAC,CAAC;YAE1E,OAA\nOT,UAAU,CAAC,gBAAgB,EAAE,CAAC,aAAa,EAAE,YAAy,CAAC,CAAC,CAAC;SACpE,CAAC,CAAC;IAC\nL,CAAC;;IC1GD;;;;;;;;;;;;;AAkBA,IAGA;;;;;;;;;;;;;IASA;QACE,mBACuB,KAAwB,EAC3B,YAAiC;YAD9B,UAA\nK,GAAL,KAAC,CAAmB;YAC3B,iBAAy,GAAG,YAAy,CAAqB;YACnD,IAAM,UAAU,GACZ,IAAI,CAAC,K\nAAK,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,KAAYC,CAAC;YACnEY,OAAO,CAAC,MAAM,CACV,CAA\nC,UAAU,CAAC,CAAC,CAAC,KAAC,CAAC,MAAM,UAAU,CAAC,CAAC,CAAC,KAAC,CAAC,CAA\nC,CAAC,EAChD,cAAM,OAAA,kBAAgB,UAAU,CAAC,CAAC,CAAC,UAAK,UAAU,CAAC,CAAC,CAAC,OA\nAI;gBACrD,6BAA6B,GAAA,CAAC,CAAC;SACxC;;;;;;;;;;;;;QASBD,2BAAO,GAAP,UAAQ,KAAkB;YAA1\nB,iBA4BC;YAIbc,OAAOT,OAAO,CAAC;gBACb,IAAM,OAAO,GAAG,KAAl,CAAC,eAAe,CAACC,OAAO,C
```

AAC,KAAK,EAAE,SAAS,CAAC,CAAC,CAAC;gBACHe,IAAM,OAAO,GAAGG,aAAa,CAAC,OAAO,EAAE,C
AAC,CAAC,CAAC;gBAC1C,IAAM,OAAO,GAAG,KAAI,CAAC,KAAK,CAAC,OAAO,CAAC,OAAO,CAAkB,
CAAC;gBAC7D,IAAM,SAAS,GAakB,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAAM,UAAU,CAA
C,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;gBACtE,IAAM,YAAy,GAAG,KAAI,CAAC
,iBAaiB,CAAC,SAAS,CAAC,CAAC;gBAEvD,OAAO;oBACL,aAAa,EAAEC,UAAU,CAAC,YAAy,CAAC,OA
AO,CAAC;oBAC/C,OAAO,EAAE,YAAy,CAAC,OAAO;oBAC7B,eAAe,EAAE,YAAy,CAAC,eAAe;oBAC7C,e
AAe,EAAE,YAAy,CAAC,eAAe;oBAC7C,YAAy,EAAE,YAAy,CAAC,YAAy;oBACvC,YAAy,EAAE,YAAy,
CAAC,YAAy;oBACvC,WAAW,EAAE,YAAy,CAAC,WAAW;oBACrC,WAAW,EAAE,YAAy,CAAC,WAAW;i
BACtC,CAAC;aACH,CAAC,CAAC;SACJ;;;QakBD,2BAAO,GAAP;YACE,IAAI,CAAC,KAAK,CAAC,OAAO,
EAAE,CAAC;SACtB;QACH,gBAAC;IAAD,CAAC,IAAA;;IChHD;;;;;;;;;;;;;IAqBA;QAA+B,6BAAS;QAAxC;;S
A4BC;QA3BC,mCAAe,GAaf,UAAgB,KAAkB;;YAEhC,OAAOX,OAAO,CAAC,cAAM,OAAAQ,MAAM,CAA
CI,MAAM,CAAC,KAAK,EAAE,KAAK,CAAC,EAAE,GAAG,CAAC,GAAA,CAAC,CAAC;SACzD;QAED,qCA
AiB,GAAjB,UAAkB,OAAsB;YAEpC,IAAA,OAAO,GAQP,OAAO,GARA,EACP,YAAy,GAOZ,OAAO,GAPK,E
ACZ,YAAy,GAMZ,OAAO,GANK,EACZ,WAAW,GAKX,OAAO,GALI,EACX,OAAO,GAIP,OAAO,GAJA,EA
CP,eAAe,GAGf,OAAO,GAHQ,EACf,eAAe,GAef,OAAO,GAFQ,EACf,WAAW,GACX,OAAO,GADI,CACH;YA
CV,OAAO;gBACL,OAAO,SAaA;gBACP,YAAy,cAAa;gBACZ,YAAy,cAAa;gBACZ,WAAW,aAAa;gBACX,
OAAO,SAaA;gBACP,eAAe,iBAAA;gBACf,eAAe,iBAAA;gBACf,WAAW,aAAa;aACZ,CAAC;SACH;QACH,g
BAAC;IAAD,CAAC,CA5B8B,SAAS,GA4BvC;;ICjDD;;;;;;;;;;;;;AAqBA,IAAO,IAAM,UAAU,GAAG;QACxB,
MAAM,EAAE,SAAS,EAAE,UAAU,EAAE,SAAS,EAAE,UAAU,EAAE,cAAc;QACpE,eAAe,EAAE,WAAW,EA
AE,YAAy,EAAE,WAAW,EAAE,YAAy;QACrE,SAAS,EAAE,UAAU,EAAE,UAAU,EAAE,WAAW,EAAE,WA
AW,EAAE,YAAy;KAC1E,CAAC;AAEF,IAAO,IAAM,aAAa,GAAG,UAAU,CAAC,MAAM,CAAC;AAM/C,IAA
O,IAAM,QAAQ,GACjB,UAAU,CAAC,MAAM,CAAC,UAAU,MAAkB,EAAE,SAAS,EAAE,CAAC;QACjD,MA
AM,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC;QACtB,OAAO,MAAM,CAAC;IACb,CAAC,EAAE,EAAE,CA
AC,CAAC;IAEX,IAAM,oBAAoB,GAakB;QAC1C,CAAC,SAAS,EAAE,cAAc,CAAC,EAAE,CAAC,WAAW,EA
AE,cAAc,CAAC;QAC1D,CAAC,WAAW,EAAE,WAAW,CAAC,EAAE,CAAC,SAAS,EAAE,UAAU,CAAC;QA
CnD,CAAC,UAAU,EAAE,WAAW,CAAC,EAAE,CAAC,UAAU,EAAE,eAAe,CAAC;QACxD,CAAC,YAAy,EA
AE,eAAe,CAAC,EAAE,CAAC,YAAy,EAAE,YAAy,CAAC;QAC7D,CAAC,UAAU,EAAE,WAAW,CAAC,EAA
E,CAAC,WAAW,EAAE,YAAy,CAAC;QACtD,CAAC,cAAc,EAAE,eAAe,CAAC,EAAE,CAAC,SAAS,EAAE,U
AAU,CAAC;KAC3D,CAAC;IAEF;;;;;;;;;AAMA,IAAO,IAAM,UAAU,GAakB;QACvC,CAAC,MAAM,EAAE,SAAS,
CAAC,EAAE,CAAC,SAAS,EAAE,SAAS,CAAC,EAAE,CAAC,MAAM,EAAE,UAAU,CAAC;QACjE,CAAC,
UAAU,EAAE,UAAU,CAAC,EAAE,CAAC,MAAM,EAAE,cAAc,CAAC;QACID,CAAC,cAAc,EAAE,WAAW,C
AAC,EAAE,CAAC,WAAW,EAAE,WAAW,CAAC;QACzD,CAAC,cAAc,EAAE,SAAS,CAAC,EAAE,CAAC,SA
AS,EAAE,UAAU,CAAC;QACpD,CAAC,UAAU,EAAE,WAAW,CAAC,EAAE,CAAC,MAAM,EAAE,eAAe,CA
AC;QACpD,CAAC,eAAe,EAAE,YAAy,CAAC,EAAE,CAAC,YAAy,EAAE,YAAy,CAAC;QAC7D,CAAC,eAA
e,EAAE,UAAU,CAAC,EAAE,CAAC,UAAU,EAAE,WAAW,CAAC;QACxD,CAAC,WAAW,EAAE,YAAy,CAA
C;KAC5B,CAAC;AAEF,IAAO,IAAM,sBAAsB,GAAG,oBAAoB,CAAC,GAAG,CAC1D,UAAU,EAAwB;YAAv
B,UAAU,QAAA,EAAE,UAAU,QAAA;QACpB,QAAC,CAAC,QAAQ,CAAC,UAAU,CAAC,EAAE,QAAQ,CAA
C,UAAU,CAAC,CAAC;IAA7C,CAA8C,CAAC,CAAC;;ICnExD;;;;;;;;;;;;;AAiBA,aAGgB,QAAQ,CACpB,EAAi
C,EACjC,EAAsD,EACtD,OAAgB;YAFf,MAAM,QAAA,EAAE,KAAK,QAAA;YACb,gBAAgB,QAAA,EAAE,g
BAAgB,QAAA;QAE9B,IAAK,IAAI,GAA2C,OAAO,IAAID,EAAU,IAAI,GAA6B,OAAO,OAApC,EAAQ,IAAI,
GAAiB,OAAO,KAAxB,EAAS,IAAI,GAAI,OAAO,MAAX,CAAY;QACnE,IAAM,MAAM,GAAG,gBAAgB,IAAI
,IAAI,GAAG,IAAI,GAAG,MAAM,CAAC,CAAC;QACzD,IAAM,MAAM,GAAG,gBAAgB,IAAI,IAAI,GAAG,IA
AI,GAAG,KAAK,CAAC,CAAC;QACxD,OAAO,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC;IAC1B,CAAC;A
AED,aAAGB,cAAc,CAC1B,CAAS,EAAE,CAAS,EAAE,QAAgB,EAAE,OAAuB;QACjE,OAAO;YACL,CAAC,E
AAE,OAAO,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,EAAE,QAAQ,CAAC;YAC9B,CAAC,EAAE,OAAO,CA
AC,GAAG,CAAC,CAAC,EAAE,CAAC,EAAE,QAAQ,GAAG,aAAa,CAAC;SAC/C,CAAC;IACJ,CAAC;AAED,a
AAGB,cAAc,CAC1B,IAAU,EAAE,YAAoB,EAAE,OAAuB;QACpD,IAAA,QAAQ,GAA4B,IAAI,SAAhC,EAAE,
QAAQ,GAakB,IAAI,SAAtB,EAAM,QAAQ,GAAL,IAAI,GAAR,CAAS;QAC1C,IAAA,KAAK,cAAc,CAAC,QAA

Q,EAAE,QAAQ,EAAE,QAAQ,EAAE,OAAO,CAAC,EAA7D,CAAC,OAAA,EAAE,CAAC,OAAyD,CAAC;QAC
rE,OAAO;YAcl,CAAC,EAAE,IAAI,CAAC,QAAQ,GAAG,YAAY,GAAG,CAAC;YACnC,CAAC,EAAE,IAAI,C
AAC,QAAQ,GAAG,YAAY,GAAG,CAAC;SACpC,CAAC;IACJ,CAAC;AAED,aAUgB,KAAK,CAAC,CAAS,EA
AE,GAAW,EAAE,GAAW;QACvD,IAAI,CAAC,GAAG,GAAG,EAAE;YACX,OAAO,GAAG,CAAC;SACZ;QAC
D,IAAI,CAAC,GAAG,GAAG,EAAE;YACX,OAAO,GAAG,CAAC;SACZ;QACD,OAAO,CAAC,CAAC;IACX,C
AAC;AAED,aAAgB,eAAe,CAC3B,EAAU,EAAE,EAAU,EAAE,EAAU,EAAE,EAAU;QAChD,IAAM,EAAE,GA
AG,EAAE,GAAG,EAAE,CAAC;QACnB,IAAM,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC;QACnB,OAAO,EA
AE,GAAG,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC;IAC3B,CAAC;AAED,aAAgB,UAAU,CAAC,CAAW,EA
AE,CAAW;QACjD,OAAO,EAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE,CAA
C,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC;IACtC,CAAC;;IC7ED;;;;;;;AAi
BA,IAUA,SAAS,eAAe,CAAC,SAAiB,EAAE,IAAU,EAAE,YAAkB;QAAIB,6BAAA,EAAA,kBAAkB;QACxE,IA
AI,QAAQ,GAAG,GAAG,CAAC;QACnB,IAAI,MAAM,GAAG,CAAC,CAAC;QACf,KAAK,IAAI,CAAC,GAAG,
CAAC,EAAE,CAAC,GAAG,SAAS,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACzC,IAAI,IAAI,CAAC,SA
S,CAAC,CAAC,CAAC,CAAC,KAAK,GAAG,YAAY,EAAE;gBAC1C,MAAM,IAAI,CAAC,CAAC;gBACZ,QAA
Q,IAAI,UAAc,SAAS,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,CA
AC,QAAQ,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,GA
AG,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC;aAC1D
;SACF;QACD,IAAI,MAAM,KAAK,CAAC,EAAE;YACb,QAAQ,GAAG,QAAQ,CAAC;SACrB;aAAM;YAcl,
QAAQ,GAAG,QAAQ,GAAG,MAAM,CAAC;SAC9B;QACD,OAAO,QAAQ,CAAC;IACIB,CAAC;IAED,SAAS,
wBAAwB,CAC7B,QAAc,EAAE,EAA8B,EAC9C,EAAkC,EAAE,MAAc;YADjC,IAAI,QAAA,EAAE,IAAI,QAA
A;YAC1B,MAAM,QAAA,EAAE,MAAM,QAAA;QACjB,IAAM,CAAC,GAAG,IAAI,CAAC,KAAK,CAAC,CAA
C,CAAC,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,GAAG,IAAI,MAAM,GAAG,GAAG,IAAI,MAAM,CAAC,C
AAC;QAC1E,IAAM,CAAC,GAAG,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,GAAG,QAAQ,CAAC,CAA
C,GAAG,GAAG,IAAI,MAAM,GAAG,GAAG,IAAI,MAAM,CAAC,CAAC;QAC1E,OAAO,EAAC,CAAC,GAAA
,EAAE,CAAC,GAAA,EAAC,CAAC;IACb,CAAC;IAED,SAAS,YAAY,CACjB,QAAc,EAAE,aAAqB,EACrC,iB
AAuC,EAAE,iBAAYB,EACIE,WAAyB,EAAE,WAAmB,EAC9C,EAAiC;YAAhC,MAAM,QAAA,EAAE,KAAK,
QAAA;QACb,IAAM,WAAW,GAAG,iBAAiB,CAAC,QAAQ,CAAC,CAAC;QAEhD,IAAM,EAAE,GAAG,WA
AW,CAAC,CAAC,GAAG,iBAAiB,GAAG,WAAW,CAAC,CAAC,CAAC;QAC7D,IAAI,EAAE,GAAG,WAAW,C
AAC,aAAa,IAAI,CAAC,GAAG,EAAE,CAAC,GAAG,aAAa,CAAC,CAAC;QAC/D,IAAI,EAAE,GAAG,WAAW,
CAAC,aAAa,IAAI,CAAC,GAAG,EAAE,GAAG,CAAC,CAAC,GAAG,aAAa,CAAC,CAAC;QACnE,IAAI,CAAC
,GAAG,QAAQ,CAAC,CAAC,GAAG,EAAE,CAAC;QACxB,IAAI,CAAC,GAAG,QAAQ,CAAC,CAAC,GAAG,E
AAE,CAAC;QACxB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,WAAW,EAAE,CAAC,EAAE,EA
AE;YACpC,CAAC,GAAG,IAAI,CAAC,GAAG,CAAC,CAAC,EAAE,MAAM,GAAG,CAAC,CAAC,CAAC;YAC
5B,CAAC,GAAG,IAAI,CAAC,GAAG,CAAC,CAAC,EAAE,KAAK,GAAG,CAAC,CAAC,CAAC;YAC3B,IAAM
,MAAM,GAAG,iBAAiB,CAAC,EAAC,CAAC,GAAA,EAAE,CAAC,GAAA,EAAC,CAAC,CAAC;YACzC,IAA
M,IAAE,GAAG,MAAM,CAAC,CAAC,GAAG,iBAAiB,GAAG,MAAM,CAAC,CAAC,CAAC;YACnD,EAAE,G
AAG,WAAW,CAAC,aAAa,IAAI,CAAC,GAAG,IAAE,CAAC,GAAG,aAAa,CAAC,CAAC;YAC3D,EAAE,GAA
G,WAAW,CAAC,aAAa,IAAI,CAAC,GAAG,IAAE,GAAG,CAAC,CAAC,GAAG,aAAa,CAAC,CAAC;YAC/D,C
AAC,GAAG,CAAC,GAAG,EAAE,CAAC;YACX,CAAC,GAAG,CAAC,GAAG,EAAE,CAAC;SACZ;QAED,OA
AO,EAAC,CAAC,GAAA,EAAE,CAAC,GAAA,EAAC,CAAC;IACb,CAAC;IAED,SAAS,wBAAwB,CAC7B,Q
AAc,EAAE,WAAyB,EAAE,KAAa,EACxD,iBAAYB,EAAE,EAA8B,EACzD,EAAkC,EAAE,iBAAYB,EAC7D,EA
AiC,EAAE,MAAc,EACjD,WAAmB;YAHs,IAAI,QAAA,EAAE,IAAI,QAAA;YACrC,MAAM,QAAA,EAAE,MA
AM,QAAA;YACd,MAAM,QAAA,EAAE,KAAK,QAAA;QAEhB,IAAM,KAAK,GAAG,EAAE,CAAC;QACzB,IA
AM,iBAAiB,GAAG,UAAc,IAAU;YACjC,OAAA,wBAAwB,CAAC,IAAI,EAAE,CAAC,IAAI,EAAE,IAAI,CA
AC,EAAE,CAAC,MAAM,EAAE,MAAM,CAAC,EAAE,MAAM,CAAC;SAAA,CAAC;QAE3E,KAAK,IAAI,cAA
c,GAAG,CAAC,EAAE,cAAc,GAAG,iBAAiB,EAC1D,cAAc,EAAE,EAAE;YACrB,IAAM,SAAS,GAAG,YAAY,
CACIB,QAAQ,EAAE,cAAc,EAAE,iBAAiB,EAAE,iBAAiB,EAC9D,WAAW,EAAE,WAAW,EAAE,CAAC,MA
AM,EAAE,KAAK,CAAC,CAAC,CAAC;YAE/C,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC;SACvB;QAE

D,IAAI,IAAI,GAAG,CAAC,CAAC,CAAC;QACd,IAAI,QAAQ,GAAG,QAAQ,CAAC;QACxB,KAAK,IAAI,CAA
C,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACrC,IAAM,IAAI,
GAAG,eAAe,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;YAC9C,IAAI,IAAI,GAAG,QAA
Q,EAAE;gBACnB,IAAI,GAAG,CAAC,CAAC;gBACT,QAAQ,GAAG,IAAI,CAAC;aACjB;SACF;QACD,OAAO,
IAAI,CAAC;IACd,CAAC;IAED,SAAS,mBAAMb,CACxB,EAA5D,EACtD,MAAc;YADb,gBAAgB,QAAA,EAA
E,gBAAgB,QAAA;QAErC,IAAM,iBAAiB,GAAG,IAAI,CAAC,KAAK,CAAC,CAAC,gBAAgB,GAAG,GAAG,I
AAI,MAAM,GAAG,GAAG,CAAC,CAAC;QAC9E,IAAM,iBAAiB,GAAG,IAAI,CAAC,KAAK,CAAC,CAAC,gB
AAgB,GAAG,GAAG,IAAI,MAAM,GAAG,GAAG,CAAC,CAAC;QAC9E,OAAO,CAAC,iBAAiB,EAAE,iBAAi
B,CAAC,CAAC;IACHd,CAAC;AAED,aAAgB,sBAAsB,CAClC,YAAwB,EAAE,WAAyB,EACnD,eAAuB,EAAE
,MAAc,EAAE,KAAa,EAAE,MAAc,EACtE,EAAqC,EAAE,OAAgB,EACvD,WAAmB,EAAE,iBAAqB;YADzC,Q
AAQ,QAAA,EAAE,OAAO,QAAA;QACG,kCAAA,EAAA,qBAAqB;QAC5C,IAAM,UAAU,GACZ,eAAe,CAAC,
GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,IAAI,UAAU,CAAC,MAAM,GAAG,KAAK,CAAC,CAAC,IAAI,CAA
C,CAAC,CAAC,GAAA,CAAC,CAAC;QAE9D,IAAK,IAAI,GAAGB,OAAO,IAAvB,EAAQ,IAAI,GAAL,OAAO,K
AAX,CAAY;QAEIC,IAAA,KACF,QAAQ,CAAC,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,CAAC,QAAQ,EA
AE,OAAO,CAAC,EAAE,OAAO,CAAC,EADpD,MAAM,QAAA,EAAE,MAAM,QACsC,CAAC;QACrD,IAAA,i
BAAiB,GACtB,mBAAMb,CAAC,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE,MAAM,CAAC,GAD1B,CAC2B;Q
ACnD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,EAAE,CAAC,IAAI,CAAC,EAAE;YACI
C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,EAAE,CAAC,IAAI,CAAC,EAAE;gBACjC,I
AAM,CAAC,GAAG,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC;gBACxB,IAAM,IAAI,GAAG,YAAy,CAAC,C
AAC,CAAC,CAAC;gBAC7B,IAAI,IAAI,KAAK,CAAC,EAAE;oBACd,IAAM,IAAI,GAAG,wBAAwB,CACjC,E
AAC,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAC,EAAE,WAAW,EAAE,eAAe,EAAE,iBAAiB,EAC
7D,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,MAAM,EAAE,MAAM,CAAC,EAAE,iBAAiB,EAAE,CAAC,
MAAM,EAAE,KAAK,CAAC,EACIE,MAAM,EAAE,WAAW,CAAC,CAAC;oBACzB,IAAI,IAAI,IAAI,CAAC,E
AAE;wBACb,UAAU,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;qBACzB;iBACF;aACF;SA
CF;QAED,OAAO,UAAU,CAAC;IACpB,CAAC;AAED,aAAgB,0BAA0B,CACtC,YAAwB,EAAE,WAAyB,EACn
D,eAA2B,EAAE,eAAuB,EAAE,MAAc,EACpE,KAAa,EAAE,MAAc,EAAE,EAAqC,EACpE,OAAgB,EAAE,WA
AmB,EACrC,iBAAqB;YAFW,QAAQ,QAAA,EAAE,OAAO,QAAA;QAEjD,kCAAA,EAAA,qBAAqB;QACvB,IA
AM,UAAU,GACZ,eAAe,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,IAAI,UAAU,CAAC,MAAM,GAAG,
KAAK,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;QAE/D,IAAK,IAAI,GAAGB,OA
AO,IAAvB,EAAQ,IAAI,GAAL,OAAO,KAAK,CAAY;QAEIC,IAAA,KACF,QAAQ,CAAC,CAAC,MAAM,EAAE
,KAAK,CAAC,EAAE,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE,OAAO,CAAC,EADpD,MAAM,QAAA,EAAE,
MAAM,QACsC,CAAC;QACrD,IAAA,iBAAiB,GACtB,mBAAMb,CAAC,CAAC,QAAQ,EAAE,OAAO,CAAC,E
AAE,MAAM,CAAC,GAD1B,CAC2B;QAE9D,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,
EAAE,CAAC,IAAI,CAAC,EAAE;YACIC,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,EAA
E,CAAC,IAAI,CAAC,EAAE;gBACjC,IAAM,CAAC,GAAG,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC;gBACx
B,IAAM,IAAI,GAAG,YAAy,CAAC,CAAC,CAAC,CAAC;gBAC7B,IAAI,IAAI,KAAK,CAAC,EAAE;oBACd,IA
AM,IAAI,GAAG,wBAAwB,CACjC,EAAC,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAC,EAAE,WA
AW,EAAE,eAAe,EAAE,iBAAiB,EAC7D,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,MAAM,EAAE,MAAM
,CAAC,EAAE,iBAAiB,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EACIE,MAAM,EAAE,WAAW,CAAC,CAA
C;oBACzB,IAAI,IAAI,IAAI,CAAC,EAAE;wBACb,UAAU,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,GAAG,eA
Ae,CAAC,CAAC,CAAC,CAAC;qBAClC;iBACF;aACF;SACF;QAED,OAAO,UAAU,CAAC;IACpB,CAAC;;ICx
LD;:::;AAiBA,aAOgB,wBAAwB,CACpC,YAAyB,EAAE,WAAwB,EACnD,eAAuB,EAAE,MAAc,EAAE,
KAAa,EAAE,MAAc,EACtE,EAAqC,EAAE,OAAgB,EACvD,WAAmB,EAAE,WAAmB,EACxC,YAAoB;YAFnB
,QAAQ,QAAA,EAAE,OAAO,QAAA;;QAId,IAAA,KAA0B,YAAy,CAAC,KAAK,EAA3C,UAAU,QAAA,EAAE
,SAAS,QAAsB,CAAC;;QAE7C,IAAA,KAAwB,WAAW,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CA
AC,CAAC,EAApD,SAAS,QAAA,EAAE,QAAQ,QAAiC,CAAC;QAE5D,IAAM,iBAAiB,GACnBf,UAAU,CAAC,
WAAW,EAAE,CAAC,SAAS,EAAE,QAAQ,EAAE,CAAC,EAAE,aAAa,CAAC,CAAC,CAAC;;;QAKrE,IAAM,Q
AAQ,GAAG,IAAI,YAAy,CAAC,YAAy,GAAG,aAAa,GAAG,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,

CAAC;QAC9E,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,eAAe,CAAC,MAAM,EAAE,CAAC,EA
AE,EAAE;YAC/C,IAAM,UAAU,GAAG,CAAC,GAAG,aAAa,GAAG,CAAC,CAAC;YACzC,IAAM,IAAI,GAAG
,eAAe,CAAC,CAAC,CAAC,CAAC;YAChC,KAAK,IAAI,EAAE,GAAG,CAAC,EAAE,EAAE,GAAG,aAAa,EA
E,EAAE,EAAE,EAAE;gBACzC,IAAM,QAAQ,GAAG,IAAI,CAAC,SAAS,CAAC,EAAE,CAAC,CAAC;gBACpC
,IAAM,MAAM,GAAG,UAAU,GAAG,EAAE,GAAG,CAAC,CAAC;gBACnC,QAAQ,CAAC,MAAM,CAAC,GA
AG,QAAQ,CAAC,KAAK,CAAC;gBACIC,QAAQ,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,QAAQ,CAAC,Q
AAQ,CAAC,CAAC,CAAC;gBAC3C,QAAQ,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,QAAQ,CAAC,QAAQ,
CAAC,CAAC,CAAC;aAC5C;SACF;QAEK,IAAA,KACF,QAAQ,CAAC,CAAC,MAAM,EAAE,KAAK,CAAC,E
AAE,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE,OAAO,CAAC,EADpD,MAAM,QAAA,EAAE,MAAM,QACsC,
CAAC;QAE5D,IAAM,WAAW,GAAGgB,SAAS,CAAC,QAAQ,EAAE,CAAC,YAAyB,EAAE,aAAa,EAAE,CAAC
,CAAC,CAAC,CAAC;QAEhE,IAAK,IAAI,GAAGb,OAAO,IAAvB,EAAQ,IAAI,GAAI,OAAO,KAAx,CAAY;QA
ExC,IAAM,OAAO,GAA0B;YACrC,aAAa,EAAE,CAAC,cAAc,EAAE,aAAa,EAAE,OAAO,CAAC;YACvD,WAA
W,EAAE,CAAC,UAAU,EAAE,SAAS,CAAC;YACpC,QAAQ,EAAE,kyCAsCD,IAAI,UAAK,MAAM,UAAK,MA
AM,+EAE1B,IAAI,UAAK,MAAM,UAAK,MAAM,gGAIx,YAAyB,wGAGV,aAAa,kQAOx,WAAW,iEACK,MA
AM,GAAG,GAAG,8DACZ,KAAK,GAAG,GAAG,uGAGjC,IAAI,UAAK,MAAM,UAAK,MAAM,kGAE1B,IAAI,
UAAK,MAAM,UAAK,MAAM,6XAYxB,WAAW,kfAkBpC;SACA,CAAC;QACF,IAAM,YAAyB,GAAGC,UAAU
,EAA+B,CAAC;QAC/D,OAAO,YAAyB,CAAC,aAAa,CAC7B,OAAO,EAAE,CAAC,YAAyB,EAAE,iBAAiB,EAA
E,WAAW,CAAC,CAAC,CAAC;IAC/D,CAAC;;IChKD;::::::::::;aAyBgB,qBAaQB,CACjC,YAAyB,EAAE,CA
AS;QACtC,OAAOd,OAAO,CACV,cAAM,OAACC,OAAO,CAACc,QAAQ,CACnB,YAAyB,EAAEZ,SAAS,CAA
C,CAAC,CAAC,CAAC,EAAE,OAAO,CAAiB,GAAA,CAAC,CAAC;IACjE,CAAC;AAED,aAAgB,yBAAyB,CA
CrC,YAAyB,EAAE,SAAsB,EAAE,CAAS;QAC9D,OAAOH,OAAO,CACV,cAAM,OAAAQ,MAAM,CAACT,M
AAM,CAACE,OAAO,CAACc,QAAQ,CAChC,YAAyB,EAAEZ,SAAS,CAAC,CAAC,CAAC,CAAC,EAAE,OAA
O,CAAC,EAAEI,MAAM,CAAC,SAAS,EAAE,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,GAAA,CAAC,CAAC;
IAC5E,CAAC;IAED,SAAS,cAAc;QACrB,OAAOS,aAAU,EAAE,KAAK,OAAO,CAAC;IACIC,CAAC;AAED,aA
AsB,yBAAyB,CAC3C,YAAyB,EAAE,WAAwB,EAAE,KAAa,EACIE,MAAc,EAAE,KAAa,EAAE,MAAc,EAC7
C,EAAqC,EAAE,OAAgB,EAAE,YAAkB,EAC3E,WAAe,EAAE,gBAAsB,EACvC,YAAiB;YAFhB,QAAQ,QAA
A,EAAE,OAAO,QAAA;QAAuC,6BAAA,EAAA,kBAaKB;QAC3E,4BAAA,EAAA,eAAe;QAAE,iCAA,EAAA,
sBAAsB;QACvC,6BAAA,EAAA,iBAAiB;::::;wBAEb,eAAe,GAAG,KAAK,CAAC,MAAM,CAAC,UAAA,IAAI,I
AAI,OAAA,IAAI,CAAC,KAAK,IAAI,YAAyB,GAAA,CAAC,CAAC;6BAIrE,cAAc,EAAE,EAAhB,wBAAGB;wB
ACZ,mBAAmB,GAAGhB,OAAO,CAAC;4BACIC,IAAM,eAAe,GAAG,wBAAwB,CAC5C,YAAyB,EAAE,WAA
W,EAAE,eAAe,EAAE,MAAM,EAAE,KAAK,EAAE,MAAM,EACjE,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE
,OAAO,EAAE,WAAW,EAAE,gBAAGB,EAC3D,YAAyB,CAAC,CAAC;4BACIB,IAAM,WAAW,GAAGiB,SAAS,
EAAE,CAAC,oBAAoB,CAChD,eAAe,CAAC,MAAM,EAAE,eAAe,CAAC,KAAK,EAC7C,eAAe,CAAC,KAAK,
CAAGB,CAAC;4BAE1C,OAAO,eAAe,CAAC,GAAG,CACtB,UAAC,CAAC,EAAE,CAAC,IAAK,OAAA,qBAaQ
B,CAAC,WAAW,EAAE,CAAC,CAAC,GAAA,CAAC,CAAC;yBACtD,CAAC,CAAC;wBAGE,qBAAM,OAAO,
CAAC,GAAG,CAAC,mBAAmB,CAAC,GAAG,CAAC,UAAA,IAAI,IAAI,OAAA,IAAI,CAAC,IAAI,EAAE,GAA
A,CAAC,CAAC,EAAA;;wBADpE,uBAAuB;6BACIB,SACa,CAAA,CAAC;wBAEnB,mBAAmB,CAAC,OAAO,C
AAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,OAAO,EAAE,GAAA,CAAC,CAAC;;4BAEpB,qBAAM,YAAyB,
CAAC,IAAI,EAAE,EAAA;;wBAA7C,iBAAiB,GAAG,SAAuC;wBACzC,qBAAM,WAAW,CAAC,IAAI,EAAE,E
AAA;;wBAA1C,eAAe,GAAG,SAAwC;wBAEhE,uBAAuB,GAAG,sBAAsB,CAC5C,iBAAiB,EAAE,eAAe,EAAE
,eAAe,EAAE,MAAM,EAAE,KAAK,EACIE,MAAM,EAAE,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE,OAAO,E
AAE,WAAW,CAAC,CAAC;;4BAGzD,sBAAO,uBAAuB,CAAC,GAAG,CAC9B,UAAC,IAAI,EAAE,CAAC,IAA
K,QAAC,EAAC,IAAI,MAAA,EAAE,IAAI,EAAE,eAAe,CAAC,CAAC,CAAC,EAAE,KAAK,OAAA,EAAE,MA
AM,QAAA,EAAC,IAAC,CAAC,EAAC;;;KACrE;AAED,aAAsB,6BAA6B,CAC/C,YAAyB,EAAE,WAAwB,EA
CnD,gBAA6B,EAAE,KAAa,EAAE,MAAc,EAAE,KAAa,EAC3E,MAAc,EAAE,EAAqC,EAAE,OAAgB,EACvE,
YAAkB,EAAE,WAAe,EAAE,gBAAsB,EAC3D,YAAiB;YAFa,QAAQ,QAAA,EAAE,OAAO,QAAA;QACIC,6B
AAA,EAAA,kBAaKB;QAAE,4BAAA,EAAA,eAAe;QAAE,iCAA,EAAA,sBAAsB;QAC3D,6BAAA,EAAA,iB
AAiB;::::;wBACb,eAAe,GAAG,KAAK,CAAC,MAAM,CAAC,UAAA,IAAI,IAAI,OAAA,IAAI,CAAC,KAAK,IA

AI,YAAY,GAAA,CAAC,CAAC;6BAIrE,cAAc,EAAE,EAaHb,wBAAGb;wBACZ,iBAaIB,GAAGjB,OAAO,CAAC;4BACHc,IAAM,eAAe,GAAG,wBAAwB,CAC5C,YAAY,EAAE,WAAW,EAAE,eAAe,EAAE,MAAM,EAAE, KAAK,EAAE,MAAM,EACjE,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE,OAAO,EAAE,WAAW,EAAE,gBAAG B,EAC3D,YAAY,CAAC,CAAC;4BACIB,IAAM,WAAW,GAAGiB,SAAS,EAAE,CAAC,oBAAoB,CACID,eAAe, CAAC,MAAM,EAAE,eAAe,CAAC,KAAK,EAC7C,eAAe,CAAC,KAAK,CAAGb,CAAC;4BAExC,OAAO,eAAe, CAAC,GAAG,CACtB,UAAC,CAAC,EAAE,CAAC;gCACD,OAAA,yBAAYb,CAAC,WAAW,EAAE,gBAAGb,E AAE,CAAC,CAAC;6BAAA,CAAC,CAAC;yBACtE,CAAC,CAAC;wBAGE,qBAAM,OAAO,CAAC,GAAG,CAA C,iBAaIB,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,IAAI,EAAE,GAAA,CAAC,CAAC,E AAA;;wBAD5D,6BAA6B;6BACxB,SAAuD,CAC5C,CAAC;wBAEjB,iBAaIB,CAAC,OAAO,CAAC,UAAA,CA AC,IAAI,OAAA,CAAC,CAAC,OAAO,EAAE,GAAA,CAAC,CAAC;;4BAEIB,qBAAM,YAAY,CAAC,IAAI,EAA E,EAAA;;wBAA7C,iBAaIB,GAAG,SAAuC;wBACzC,qBAAM,WAAW,CAAC,IAAI,EAAE,EAAA;;wBAA1C,e AAe,GAAG,SAAwC;wBACpC,qBAAM,gBAAGb,CAAC,IAAI,EAAE,EAAA;;wBAAnD,mBAAmB,GAAG,SA A2C;wBAEvE,6BAA6B,GAAG,0BAA0B,CACtD,iBAaIB,EAAE,eAAe,EAAE,mBAAmB,EACvD,eAAe,EAAE,M AAM,EAAE,KAAK,EAAE,MAAM,EAAE,CAAC,QAAQ,EAAE,OAAO,CAAC,EAAE,OAAO,EACpE,WAAW, CAAC,CAAC;;4BAGnB,sBAAO,6BAA6B,CAAC,GAAG,CACpC,UAAC,IAAI,EAAE,CAAC,IAAK,QAAC,EA AC,IAAI,EAAE,eAAe,CAAC,CAAC,CAAC,EAAE,IAAI,MAAA,EAAE,MAAM,QAAA,EAAE,KAAK,OAAA,E AAC,IAAC,CAAC,EAAC;;;KACrE;;ICjID;;;;;;;IAiBA;IACA;IAEA,SAAS,IAAI,CAAC,CAAS;QACrB,OA AO,IAAI,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC;IAC3B,CAAC;IAED;QAKE,iBAAY,OAAe, EAAE,eAAuC;YACIE,IAAI,CAAC,aAAa,GAAG,IAAI,KAAK,CAAC,OAAO,CAAC,CAAC;YACxC,IAAI,CAA C,gBAAGb,GAAG,CAAC,CAAC,CAAC;YAC3B,IAAI,CAAC,eAAe,GAAG,eAAe,CAAC;SACxC;QAEM,yBAA O,GAAd,UAAe,CAAI;YACjB,IAAI,CAAC,aAAa,CAAC,EAAE,IAAI,CAAC,gBAAGb,CAAC,GAAG,CAAC,CA AC;YACb,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,gBAAGb,CAAC,CAAC;SACIC;QAEM,yBAAO,GAAd;YAC E,IAAM,GAAG,GAAG,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC;YACIC,IAAI,CAAC,QAAQ,CAAC,CA AC,EAAE,IAAI,CAAC,gBAAGb,EAAE,CAAC,CAAC;YAC1C,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC; YACb,IAAI,CAAC,aAAa,CAAC,IAAI,CAAC,gBAAGb,GAAG,CAAC,CAAC,GAAG,IAAI,CAAC;YACrD,OAA O,GAAG,CAAC;SACZ;QAEM,uBAAK,GAAZ;YACE,OAAO,IAAI,CAAC,gBAAGb,KAAK,CAAC,CAAC,CAA C;SACrC;QAEM,sBAAI,GAAX;YACE,OAAO,IAAI,CAAC,gBAAGb,GAAG,CAAC,CAAC;SACIC;QAEM,qBA AG,GAAV;YACE,OAAO,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,EAAE,IAAI,CAAC,gBAAGb,GAAG, CAAC,CAAC,CAAC;SAC/D;QAEM,qBAAG,GAAV;YACE,OAAO,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,C AAC;SAC9B;QAEO,sBAAI,GAAZ,UAAa,CAAS;YACpB,OAAO,CAAC,GAAG,CAAC,IAAI,IAAI,CAAC,IAAI, CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE;gBACrC,IAAI,CAAC,QAAQ,CAAC,CAAC,EA AE,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;gBAC1B,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;aAcB; SACF;QAEO,sBAAI,GAAZ,UAAa,CAAS;YACpB,OAAO,CAAC,GAAG,CAAC,IAAI,IAAI,CAAC,gBAAGb,EA AE;gBACrC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC;gBACd,IAAI,CAAC,GAAG,IAAI,CAAC,gBAAG b,IAAI,IAAI,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,CAAC,EAAE;oBACpD,CAAC,EAAE,CA AC;iBACL;gBACD,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE;oBACpB,MAAM ;iBACP;gBACD,IAAI,CAAC,QAAQ,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC;gBACpB,CAAC,GAAG,CAAC, CAAC;aACP;SACF;QAEO,4BAAU,GAAlB,UAAmB,CAAS;YAC1B,OAAO,IAAI,CAAC,eAAe,CAAC,IAAI,CA AC,aAAa,CAAC,CAAC,CAAC,CAAC,CAAC;SACpD;QAEO,sBAAI,GAAZ,UAAa,CAAS,EAAE,CAAS;YAC/B ,OAAO,IAAI,CAAC,UAAU,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC;SAC hD;QAEO,0BAAQ,GAaHb,UAAiB,CAAS,EAAE,CAAS;YACnC,IAAM,CAAC,GAAG,IAAI,CAAC,aAAa,CAA C,CAAC,CAAC,CAAC;YACb,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,aAAa,CAAC,CA AC,CAAC,CAAC;YAC9C,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;SAC3B;QACH,cAAC ;IAAD,CAAC,IAAA;;ICIGD;;;;;;;AAmBA,IAEA,SAAS,2BAA2B,CACHc,UAAkB,EAAE,KAAa,EAAE,Q AAgB,EAAE,QAAgB,EACrE,kBAA0B,EAAE,MAAsB;QAC9C,IAAA,KAAkB,MAAM,CAAC,KAAK,EAA7B, MAAM,QAAA,EAAE,KAAK,QAAgB,CAAC;QAErC,IAAI,YAAY,GAAG,IAAI,CAAC;QACxB,IAAM,MAAM, GAAG,IAAI,CAAC,GAAG,CAAC,QAAQ,GAAG,kBAaKB,EAAE,CAAC,CAAC,CAAC;QAC1D,IAAM,IAAI,GA AG,IAAI,CAAC,GAAG,CAAC,QAAQ,GAAG,kBAaKB,GAAG,CAAC,EAAE,MAAM,CAAC,CAAC;QACjE,

KAAK,IAAI,QAAQ,GAAG,MAAM,EAAE,QAAQ,GAAG,IAAI,EAAE,EAAE,QAAQ,EAAE;YACvD,IAAM,M
AAM,GAAG,IAAI,CAAC,GAAG,CAAC,QAAQ,GAAG,kBAakB,EAAE,CAAC,CAAC,CAAC;YAC1D,IAAM,I
AAI,GAAG,IAAI,CAAC,GAAG,CAAC,QAAQ,GAAG,kBAakB,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC;YA
ChE,KAAK,IAAI,QAAQ,GAAG,MAAM,EAAE,QAAQ,GAAG,IAAI,EAAE,EAAE,QAAQ,EAAE;gBACvD,IAA
I,MAAM,CAAC,GAAG,CAAC,QAAQ,EAAE,QAAQ,EAAE,UAAU,CAAC,GAAG,KAAK,EAAE;oBACtD,YAA
Y,GAAG,KAAK,CAAC;oBACrB,MAAM;iBACP;aACF;YACD,IAAI,CAAC,YAA,Y,EAAE;gBACjB,MAAM;aA
CP;SACF;QAED,OAAO,YAA,Y,CAAC;IACtB,CAAC;IAED;;;;;AAKA,aAAgB,uBAAuB,CACnC,cAAsB,EAAE,
kBAAOB,EACID,MAAsB;QAC1B,IAAA,KAAgC,MAAM,CAAC,KAAK,EAA3C,MAAM,QAAA,EAAE,KAAK,
QAAA,EAAE,YAA,Y,QAAgB,CAAC;QAEhD,IAAM,KAAK,GAAG,IAAI,OAAO,CACrB,MAAM,GAAG,KAA
K,GAAG,YAA,Y,EAAE,UAA,U,EAAO;gBAAN,KAAK,WAAA;YAAM,OAAA,KAAK;SAAA,CAAC,CAAC;QA
EvD,KAAK,IAAI,QAAQ,GAAG,CAAC,EAAE,QAAQ,GAAG,MAAM,EAAE,EAAE,QAAQ,EAAE;YACpD,KA
AK,IAAI,QAAQ,GAAG,CAAC,EAAE,QAAQ,GAAG,KAAK,EAAE,EAAE,QAAQ,EAAE;gBACnD,KAAK,IAA
I,UAAU,GAAG,CAAC,EAAE,UAAU,GAAG,YAA,Y,EAAE,EAAE,UAAU,EAAE;oBAChE,IAAM,KAAK,GAA
G,MAAM,CAAC,GAAG,CAAC,QAAQ,EAAE,QAAQ,EAAE,UAAU,CAAC,CAAC;;;oBAIzD,IAAI,KAAK,GA
AG,cAAc,EAAE;wBAC1B,SAAS;qBACV;;oBAGD,IAAI,2BAA2B,CACvB,UAAU,EAAE,KAAK,EAAE,QAAQ,
EAAE,QAAQ,EAAE,kBAakB,EACzD,MAAM,CAAC,EAAE;wBACf,KAAK,CAAC,OAAO,CAAC,EAAC,KAA
K,OAAA,EAAE,IAAI,EAAE,EAAC,QAAQ,UAAA,EAAE,QAAQ,UAAA,EAAE,EAAE,EAAE,UAAU,EAAC,E
AAC,CAAC,CAAC;qBACpE;iBACF;aACF;SACF;QAED,OAAO,KAAK,CAAC;IACf,CAAC;;ICjFD;;;;;;A
AiBA,IAMA,IAAM,oBAAoB,GAakB,UAAU,CAAC,GAAG,CACtD,UAA,U,EAA+B;YAA9B,cAAc,QAAA,EAA
E,aAAa,QAAA;QAC3B,QAAC,CAAC,QAAQ,CAAC,cAAc,CAAC,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC;I
AApD,CAAqD,CAAC,CAAC;IAE/D,IAAM,kBAakB,GACpB,oBAAoB,CAAC,GAAG,CAAC,UAA,U,EAAgB;Y
AAb,YAA,Y,QAAA;QAAM,OAAA,YAA,Y;IAAZ,CAAY,CAAC,CAAC;IAEjE,IAAM,kBAakB,GACpB,oBAAo
B,CAAC,GAAG,CAAC,UAA,U,EAEA;YADC,aAAa,QAAA;QACT,OAAA,aAAa;IAAb,CAaa,CAAC,CAAC;IAE
lD,SAAS,eAAe,CACpB,MAAc,EAAE,KAAe,EAAE,aAA6B;QACHE,IAAM,QAAQ,GAAG,aAAa,CAAC,KAAK,
CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;QAC5C,OAAO;YAcl,CAAC,EAAE,aAAa,CAAC,GAAG,CAAC,K
AAK,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,EAAE,MAAM,CAAC;YAC9C,CAAC,EAAE,aAAa,CAAC,GA
AG,CAAC,KAAK,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,EAAE,QAAQ,GAAG,MAAM,CAAC;SAC1D,CA
AC;IACJ,CAAC;IAED,SAAS,wBAAwB,CAC7B,KAAe,EAAE,YAAoB,EAAE,MAAc,EACrD,KAAa;QACf,OA
AO;YAcl,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,GAAG,YAA,Y,CAAC
,EAAE,CAAC,EAAE,MAAM,GAAG,CAAC,CAAC;YAC3D,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,KAAK,C
AAC,KAAK,CAAC,CAAC,GAAG,YAA,Y,CAAC,EAAE,CAAC,EAAE,KAAK,GAAG,CAAC,CAAC;SAC3D,C
AAC;IACJ,CAAC;IAED;;;;;IAOA,SAAS,wBAAwB,CAC7B,MAAc,EAAE,cAAwB,EAAE,gBAAwB,EACIE,Y
AA4B,EAAE,OAAuB,EAAE,YAAoB,EAC3E,aAA6B,EAAE,gBAAoB;QAAPB,iCAAA,EAAA,oBAAoB;QAC/C
,IAAA,KAAkB,YAA,Y,CAAC,KAAK,EAAhC,MAAM,QAAA,EAAE,KAAK,QAAsB,CAAC;;QAG3C,IAAM,qB
AAqB,GAAG,wBAAwB,CACID,cAAc,CAAC,QAAQ,EAAE,YAA,Y,EAAE,MAAM,EAAE,KAAK,CAAC,CAA
C;QAE1D,IAAM,YAA,Y,GACd,eAAe,CAAC,MAAM,EAAE,qBAAqB,EAAE,aAAa,CAAC,CAAC;QAEIE,IAA
M,cAAc,GAAG,UAAU,CAAC,cAAc,CAAC,QAAQ,EAAE,YAA,Y,CAAC,CAAC;QACzE,IAAI,cAAc,GAAG,cA
Ac,CAAC;QACpC,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,gBAAgB,EAAE,CAAC,EAAE,EAA
E;YACzC,IAAM,qBAAqB,GACvB,wBAAwB,CAAC,cAAc,EAAE,YAA,Y,EAAE,MAAM,EAAE,KAAK,CAAC,
CAAC;YAE1E,IAAM,WAAW,GAAG,cAAc,CAC9B,qBAAqB,CAAC,CAAC,EAAE,qBAAqB,CAAC,CAAC,EA
AE,gBAAgB,EACIE,OAAO,CAAC,CAAC;YAEb,cAAc,GAAG,UAAU,CACvB;gBACE,CAAC,EAAE,qBAAqB,
CAAC,CAAC,GAAG,YAA,Y;gBACzC,CAAC,EAAE,qBAAqB,CAAC,CAAC,GAAG,YAA,Y;aAC1C,EACD,EA
AC,CAAC,EAAE,WAAW,CAAC,CAAC,EAAE,CAAC,EAAE,WAAW,CAAC,CAAC,EAAC,CAAC,CAAC;SAC
3C;QACD,IAAM,qBAAqB,GACvB,wBAAwB,CAAC,cAAc,EAAE,YAA,Y,EAAE,MAAM,EAAE,KAAK,CAAC,
CAAC;QAC1E,IAAM,KAAK,GAAG,YAA,Y,CAAC,GAAG,CAC1B,qBAAqB,CAAC,CAAC,EAAE,qBAAqB,C
AAC,CAAC,EAAE,gBAAgB,CAAC,CAAC;QAExE,OAAO,EAAC,QAAQ,EAAE,cAAc,EAAE,IAAI,EAAE,UA
AU,CAAC,gBAAgB,CAAC,EAAE,KAAK,OAAA,EAAC,CAAC;IAC/E,CAAC;IAED;;;;;AAMA,aAAgB,UAAU,
CACtB,IAAmB,EAAE,MAAsB,EAAE,OAAuB,EACpE,YAAoB,EAAE,gBAAgC,EACtD,gBAAgC;QACIC,IAA

M,QAAQ,GAAG,MAAM,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;QACjC,IAAM,QAAQ,GAAG,kBAaKB,C
AAC,MAAM,CAAC;QAE3C,IAAM,iBAaIB,GAAe,IAAI,KAAK,CAAC,QAAQ,CAAC,CAAC;;QAEhD,IAAM,
QAAQ,GAAsB,IAAI,KAA1B,EAAS,SAAS,GAAL,IAAI,MAAR,CAAS;QACHd,IAAM,SAAS,GAAG,cAAc,CAA
C,QAAQ,EAAE,YAAY,EAAE,OAAO,CAAC,CAAC;QAEIE,iBAaIB,CAAC,QAAQ,CAAC,EAAE,CAAC,GAA
G;YAC/B,KAAK,EAAE,SAAS;YACHb,IAAI,EAAE,UAAU,CAAC,QAAQ,CAAC,EAAE,CAAC;YAC7B,QAAQ
,EAAE,SAAS;SACpB,CAAC;;;QAIF,KAAK,IAAI,IAAI,GAAG,QAAQ,GAAG,CAAC,EAAE,IAAI,IAAI,CAAC,
EAAE,EAAE,IAAI,EAAE;YAC/C,IAAM,gBAaGB,GAAG,kBAaKB,CAAC,IAAI,CAAC,CAAC;YACID,IAAM,
gBAaGB,GAAG,kBAaKB,CAAC,IAAI,CAAC,CAAC;YACID,IAAI,iBAaIB,CAAC,gBAaGB,CAAC;gBACnC,C
AAC,iBAaIB,CAAC,gBAaGB,CAAC,EAAE;gBACxC,iBAaIB,CAAC,gBAaGB,CAAC,GAAG,wBAaWB,CAC1
D,IAAI,EAAE,iBAaIB,CAAC,gBAaGB,CAAC,EAAE,gBAaGB,EAAE,MAAM,EACnE,OAAO,EAAE,YAAY,E
AAE,gBAaGB,CAAC,CAAC;aAC9C;SACF;;;QAID,KAAK,IAAI,IAAI,GAAG,CAAC,EAAE,IAAI,GAAG,QAA
Q,EAAE,EAAE,IAAI,EAAE;YAC1C,IAAM,gBAaGB,GAAG,kBAaKB,CAAC,IAAI,CAAC,CAAC;YACID,IAA
M,gBAaGB,GAAG,kBAaKB,CAAC,IAAI,CAAC,CAAC;YACID,IAAI,iBAaIB,CAAC,gBAaGB,CAAC;gBACn
C,CAAC,iBAaIB,CAAC,gBAaGB,CAAC,EAAE;gBACxC,iBAaIB,CAAC,gBAaGB,CAAC,GAAG,wBAaWB,C
AC1D,IAAI,EAAE,iBAaIB,CAAC,gBAaGB,CAAC,EAAE,gBAaGB,EAAE,MAAM,EACnE,OAAO,EAAE,YAA
Y,EAAE,gBAaGB,CAAC,CAAC;aAC9C;SACF;QAED,OAAO,iBAaIB,CAAC;IAC3B,CAAC;;ICrJD;:::;
AAmBA,IAIA,SAAS,mCAAmC,CACxC,KAAa,EAAE,gBAaWB,EAAE,EAA8B,EACvE,UAAkB;YADwB,CAA
C,OAAA,EAAE,CAAC,OAAA;QAEhD,OAAO,KAAK,CAAC,IAAI,CAAC,UAAc,EAAW;gBAaV,SAAS,eAAA
;YAC3B,IAAM,qBAaQB,GAAG,SAAS,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC;YAC7D,OAAO,eAAe,CAC
X,CAAC,EAAE,CAAC,EAAE,qBAaQB,CAAC,CAAC,EAAE,qBAaQB,CAAC,CAAC,CAAC;gBAC9D,gBAaG
B,CAAC;SACtB,CAAC,CAAC;IACL,CAAC;IAED;:::;IAIA,SAAS,gBAaGB,CACrB,aAAqB,EAAE,gBAaWB,EA
C/C,iBAa6B;QAC/B,IAAI,2BAA2B,GAAG,iBAaIB,CAAC,MAAM,CACtD,UAAc,MAAM,EAAE,EAAiB,EA
E,UAAU;gBAa5B,QAAQ,cAAA,EAAE,KAAK,WAAA;YACvB,IAAI,CAAC,mCAAmC,CAChC,aAAa,EAAE,g
BAaGB,EAAE,QAAQ,EAAE,UAAU,CAAC,EAAE;gBAC9D,MAAM,IAAI,KAAK,CAAC;aACjB;YACD,OAAO
,MAAM,CAAC;SACf,EAAE,GAAG,CAAC,CAAC;QAEZ,OAAO,2BAA2B,IAAI,iBAaIB,CAAC,MAAM,CAAC
;IACjE,CAAC;IAED;IACA;IACA;IACA,IAAM,mBAaMB,GAAG,CAAC,CAAC;IAE9B;:::;
:::;AAuDA,aAAgB,mBAaMB,CAC/B,YAA4B,EAAE,aAA6B,EAC3D,sBAAsC,EACtC,sBAAsC,EAA
E,YAAoB,EAC5D,iBAayB,EAAE,cAAoB,EAAE,SAAC;QAAPc,+BAAA,EAAA,oBAaOB;QAAE,0BAAA,EA
A,cAAc;QACjE,IAAM,KAAK,GAAW,EAAE,CAAC;QAEzB,IAAM,KAAK,GAAG,uBAaUB,CACjC,cAAc,EA
E,mBAaMB,EAAE,YAAY,CAAC,CAAC;QAEvD,IAAM,gBAaGB,GAAG,SAAS,GAAG,SAAS,CAAC;;QAI/C,
OAAO,KAAK,CAAC,MAAM,GAAG,iBAaIB,IAAI,CAAC,KAAK,CAAC,KAAK,EAAE,EAAE;;YAEzD,IAAM,
IAAI,GAAG,KAAK,CAAC,OAAO,EAAE,CAAC;:::;YAK7B,IAAM,eAAe,GACjB,cAAc,CAAC,IAAI,CAAC,IAA
I,EAAE,YAAY,EAAE,aAAa,CAAC,CAAC;YAC3D,IAAI,mCAAmC,CAC/B,KAAK,EAAE,gBAaGB,EAAE,eA
Ae,EAAE,IAAI,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE;gBAC/D,SAAS;aACV;;YAGD,IAAM,SAAS,GAAG,U
AAU,CACxB,IAAI,EAAE,YAAY,EAAE,aAAa,EAAE,YAAY,EAAE,sBAAsB,EACvE,sBAAsB,CAAC,CAAC;Y
AE5B,IAAM,KAAK,GAAG,gBAaGB,CAAC,KAAK,EAAE,gBAaGB,EAAE,SAAS,CAAC,CAAC;YAEhE,KAA
K,CAAC,IAAI,CAAC,EAAC,SAAS,WAAA,EAAE,KAAK,OAAA,EAAC,CAAC,CAAC;SACHc;QAED,OAAO,
KAAK,CAAC;IACf,CAAC;;ICxJD;:::;IAqBA,IAAM,YAAY,GAAG,CAAC,CAAC,MAAM,EAAE,CAAC,
MAAM,EAAE,CAAC,MAAM,CAAC,CAAC;IAEjD;QAA4B,0BAAS;QAARc;;SA2BC;QA1BC,gCAAE,GAaf,U
AAgB,KAAkB;YACHc,OAAOV,MAAM,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;SACpC;QAED,kCAaIB,G
AAjB,UAAkB,OAAsB;YAEpC,IAAA,eAAe,GAQf,OAAO,GARQ,EACf,eAAe,GAOf,OAAO,GAPQ,EACf,OAA
O,GAMP,OAAO,GANA,EACP,WAAW,GAKX,OAAO,GALL,EACX,OAAO,GAIP,OAAO,GAJA,EACP,YAAY,
GAGZ,OAAO,GAHK,EACZ,YAAY,GAEZ,OAAO,GAFK,EACZ,WAAW,GACX,OAAO,GADI,CACH;YACV,O
AAO;gBACL,OAAO,SAAs;gBACP,YAAY,cAAA;gBACZ,YAAY,cAAA;gBACZ,WAAW,aAAA;gBACX,OAA
O,SAAs;gBACP,eAAe,iBAAA;gBACf,eAAe,iBAAA;gBACf,WAAW,aAAA;aACZ,CAAC;SACH;QACH,aAAC;
IAAD,CAAC,CA3B2B,SAAS,GA2BpC;;ICIDD;:::;IAiBA,IAAM,iBAaIB,GACnB,yEAAyE,CAAC;IAC9
E,IAAM,kBAaKB,GACpB,0EAA0E,CAAC;IAE/E;IACA;AACA,aAAgB,kBAaKB,CAAC,MAAc,EAAE,UAAkB
;QACnE,IAAM,SAAS,GAAG,iBAaE,MAAM,UAAO,CAAC;;QAE/C,IAAI,UAAU,KAAK,CAAC,EAAE;YACpB

,OAAO,iBAAiB,GAAG,QAAQ,GAAG,SAAS,CAAC;SACjD;aAAM;YAACL,OAAO,iBAAiB,IAAG,UAAQ,UAAU,MAAG,CAAA,GAAG,SAAS,CAAC;SAC9D;IACH,CAAC;IAED;IACA;AACA,aAAGB,mBAAMB,CAC/B,MAAc,EAAE,UAAkB,EAAE,UAAkB;QACxD,IAAM,KAAC,GAAG,GAAG,EAAE,KAAC,EAAE,IAAI,EA AE,KAAC,EAAE,IAAI,EAAE,KAAC,EAAC,CAAC;QAC9E,IAAM,SAAS,GAAG,iBAAE,MAAM,UAAO,CAAC;;QAE/C,IAAI,UAAU,KAAC,CAAC,EAAE;YACpB,OAAO,kBAaKB,IAAG,WAAS,KAAC,CAAC,UAAU,CAAC,MAAG,CAAA,GAAG,SAAS,CAAC;SACvE;aAAM;YAACL,OAAO,kBAaKB,IAAG,UAAQ,UAAU,SAAI,KAAC,CAAC,UAAU,CAAC,MAAG,CAAA;gBACIE,SAAS,CAAC;SACf;IACH,CAAC;;IC/CD;;;;;;;;;;;;;;IAwBA,SAAS,2BAA2B,CAAC,KAEE;QACID,IAAI,cAAc,IAAI,KAAC,IAAI,KAAC,CAAC,YAAY,KAAC,CAAC;eAchD,aAAa,IAAI,KAAC,IAAI,KAAC,CAAC,WAAW,KAAC,CAAC,EAAE;YACxD,OAAO,CAAC,KAAC,CAAC,YAAY,EAAE,KAAC,CAAC,WAAW,CAAC,CAAC;SACd; aAAM,IAAI,KAAC,CAAC,MAAM,IAAI,IAAI,IAAI,KAAC,CAAC,KAAC,IAAI,IAAI,EAAE;YACtD,OAAO,CAAC,KAAC,CAAC,MAAM,EAAE,KAAC,CAAC,KAAC,CAAC,CAAC;SACpC;aAAM;YAACL,MAAM,IAAI,KAAC,CACX,6DAA6D,CAAC,CAAC;SACpE;IACH,CAAC;IAED,SAAS,uBAaB,CAAC,KAAuB;QACtD,IAAI,KAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,IAAI,KAAC,CAAC,YAAY,CAAC,OAAO,CAAC,EAAE;;;YAI/D,OAAO,CAAC,KAAC,CAAC,MAAM,EAAE,KAAC,CAAC,KAAC,CAAC,CAAC;SACpC;aAAM;YAACL,OAAO,CAAC,KAAC,CAAC,WAAW,EAAE,KAAC,CAAC,UAAU,CAAC,CAAC;SAC9C;IACH,CAAC;AAED,aAAGB,YAAY,CAAC,KAAmB;QAC9C,IAAI,CAAC,QAAQ,iBAAiB,CAAC,KAAC,WAAW;YAC1C,KAAC,YAAY,iBAAiB;aACIC,QAAQ,eAAe,CAAC,KAAC,WAAW;gBACrC,KAAC,YAAY,eAAe,CAAC;aACpC,QAAQ,gBAAGB,CAAC,KAAC,WAAW;gBACzC,KAAC,YAAY,gBAAGB,CAAC,EAAE;YACvC,OAAO,2BAA2B,CAAC,KAAC,CAAC,CAAC;SAC3C;aAAM,IAAI,QAAQ,SAAS,CAAC,KAAC,WAAW,IAAI,KAAC,YAAY,SAAS,EAAE;YAC3E,OAAO,CAAC,KAAC,CAAC,MAAM,EAAE,KAAC,CAAC,KAAC,CAAC,CAAC;SACpC;aAAM,IACH,QAAQ,gBAAGB,CAAC,KAAC,WAAW;YACzC,KAAC,YAAY,gBAAGB,EAAE;YACrC,OAAO,uBAaB,CAAC,KAAC,CAAC,CAAC;SACvC;aAAM,IAAI,KAAC,YAAYW,SAAS,EAAE;YACrC,OAAO,CAAC,KAAC,CAAC,KAAC,CAAC,CAAC,EAAE,KAAC,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC;SACzC;aAAM;YAACL,MAAM,IAAI,KAAC,CAAC,gCAA8B,KAAC,MAAG,CAAC,CAAC;SACzD;IACH,CAAC;IAED,SAAS,sBAAsB,CAC3B,UAAkB,EAAE,YAAoB;QAC1C,OAAO,CAAC,UAAU,GAAG,CAAC,IAAI,YAAY,KAAC,CAAC,CAAC;IAC/C,CAAC;AAED,aAAGB,sBAAsB,CACIC,eAAuB,EAAE,YAAiC;QAC5D,IAAI,sBAAsB,CAAC,eAAe,EAAE,YAAY,CAAC,EAAE;YACzD,OAAO,eAAe,CAAC;SACxB;QAED,OAAO,IAAI,CAAC,KAAC,CAAC,eAAe,GAAG,YAAY,CAAC,GAAG,YAAY,GAAG,CAAC,CAAC;IACvE,CAAC;IAED,IAAM,kCAaK,GAAG;QACzC,GAAG,EAAE,KAAC;QACV,MAAM,EAAE,QAAQ;QACb,IAAI,EAAE,MAAM;QACZ,IAAI,EAAE,MAAM;KACb,CAAC;IAEF,IAAM,+BAA+B;QACnC,GAAC,kCAaK,CAAC,GAAG,IAAG,IAAI;QAC9C,GAAC,kCAaK,CAAC,MAAM,IAAG,GAAG;QACd,GAAC,kCAaK,CAAC,IAAI,IAAG,IAAI;QAC/C,GAAC,kCAaK,CAAC,IAAI,IAAG,GAAG;WAC/C,CAAC;IAEF,IAAM,uBAaB,GAAG,GAAG,CAAC;IACpC,IAAM,uBAaB,GAAG,GAAG,CAAC;IAEpC,SAAS,8BAA8B,CACnC,kBAa6C;QAC/C,IAAI,OAAO,kBAaKB,KAAC,QAAQ,EAAE;YAC1C,IAAM,MAAM,GAAG,+BAA+B,CAAC,kBAaKB,CAAC,CAAC;YAEtET,OAAO,CAAC,MAAM,CACV,OAAO,MAAM,KAAC,QAAQ,EAC1B,cAAM,OAAA,oDACF,MAAM,CAAC,MAAM,CAAC,kCAaK,CAAC;IBAC5C,IAAI,CAAC,GAAG,CAAC,iBAAY,kBAaKB,MAAG,GAAA,CAAC,CAAC;YACzD,OAAO,MAAM,CAAC;SACf;aAAM;YACLA,OAAO,CAAC,MAAM,CACV,OAAO,kBAaKB,KAAC,QAAQ;gBACIC,kBAaKB,IAAI,uBAaB;gBAC7C,kBAaKB,IAAI,uBAaB,EACjD;gBACI,OAAA,wDACI,uBAaB,aAAQ,uBAaB,WAAQ;qBACIE,SAAO,kBAAoB,CAAA;aAAA,CAAC,CAAC;YAErC,OAAO,kBAaKB,CAAC;SAC3B;IACH,CAAC;AAED,aAAGB,+BAA+B,CAC3C,kBAa6C,EAC7C,YAAiC,EACjC,EAA2C;YAA1C,WAAW,QAAA,EAAE,UAAU,QAAA;QAC1B,IAAM,4BAA4B,GAC9B,8BAA8B,CAAC,kBAaKB,CAAC,CAAC;QAEvD,OAAO;YAACL,sBAAsB,CACIB,WAAW,GAAG,4BAA4B,EAAE,YAAY,CAAC;YAC7D,sBAAsB,CACIB,UAAU,GAAG,4BAA4B,EAAE,YAAY,CAAC;SAC7D,CAAC;IACJ,CAAC;AAED,aAAGB,aAAa,CAAC,KAAmB;;;QAG/C,OAAO,KAAC,YAAYS,SAAS,GAAG,KAAC,GAAGC,UAAU,CAAC,UAAU,CAAC,KAAC,CAAC,CAAC;IAC3E,CAAC;AAED,aAAGB,cAAc,CAC1B,WAAwB,EAAE,EAAoC,EAC9D,cAAsB;YADK,OAAO,QAAA,EAAE,OAAO,QAAA;QAC3C,+BAAA,EAAA,sBAAsB;QAIIB,IAAA,KAaKB,WAAW,CAAC,KAAC,EAAIC,MAAM,QAAA,EAAE,KAAC,QAAqB,CAAC;QAE1C,IAAM,YAAY,GAAG,OAAO,GAAG,OAAO,CAAC;QACvC,IAAM,MAAM,GAAG,KAAC,GAAG,MAAM,CAAC;QAE9B,

IAAI,OAAe,CAAC;QACpB,IAAI,OAAe,CAAC;QACpB,IAAI,IAAY,CAAC;QACjB,IAAI,IAAY,CAAC;QACjB,IAAI,IAAY,CAAC;QACjB,IAAI,IAAY,CAAC;QAEjB,IAAI,MAAM,GAAG,YAAY,EAAE;;YAEzB,OAAO,GAAG,OAAO,CAAC;YACIB,OAAO,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,GAAG,MAAM,CAAC,CAAC;YAEtC,IAAM,SAAS,GAAG,OAAO,GAAG,OAAO,CAAC;YACpC,IAAI,GAAG,CAAC,CAAC;YACT,IAAI,GAAG,CAAC,CAAC;YACT,IAAI,GAAG,IAAI,CAAC,KAAC,CAAC,SAAS,GAAG,CAAC,CAAC,CAAC;YACjC,IAAI,GAAG,OAAO,IAAI,OAAO,GAAG,IAAI,CAAC,CAAC;SACnC;aAAM;YAEL,OAAO,GAAG,OAAO,CAAC;YACIB,OAAO,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,GAAG,MAAM,CAAC,CAAC;YAEtC,IAAM,QAAQ,GAAG,OAAO,GAAG,OAAO,CAAC;YACnC,IAAI,GAAG,IAAI,CAAC,KAAC,CAAC,QAAQ,GAAG,CAAC,CAAC,CAAC;YACHc,IAAI,GAAG,OAAO,IAAI,OAAO,GAAG,IAAI,CAAC,CAAC;YACIC,IAAI,GAAG,CAAC,CAAC;YACT,IAAI,GAAG,CAAC,CAAC;SACV;QAED,IAAM,gBAAGb,GAAGnB,OAAO,CAAC;;YAE/B,IAAI,OAoB,CAAC;YACzB,IAAI,cAAc,EAAE;gBACIB,OAAO,GAAGoB,QAAQ,CAAC,cAAc,CAC7BC,UAAU,CAAC,WAAW,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO,EAAE,OAAO,CAAC,CAAC,CAAC;aACrD;iBAAM;gBACL,OAAO,GAAGD,QAAQ,CAAC,cAAc,CAAC,WAAW,EAAE,CAAC,OAAO,EAAE,OAAO,CAAC,CAAC,CAAC;aACpE;YAED,IAAM,MAAM,GAAGE,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;YAEvE,OAAO,MAAM,CAAC;SACf,CAAC,CAAC;QAEH,OAAO,EAAE,gBAAGb,kBAAA,EAAE,QAAQ,EAAE,CAAC,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;IACpE,CAAC;AAED,aAAGb,8BAA8B,CAC1C,MAAmB,EACnB,EAAuD,EACvD,EAAiE,EACjE,EAAkE,EACIE,sBAA8B;YAH7B,iBAAiB,QAAA,EAAE,gBAAGb,QAAA;YACnC,sBAAsB,QAAA,EAAE,qBAAqB,QAAA;YAC7C,UAAy,EAAx,IAAI,QAAA,EAAE,IAAI,QAAA,EAAE,UAAy,EAAx,IAAI,QAAA,EAAE,IAAI,QAAA;QAC1B,uCAA A,EAAA,8BAA8B;QACHc,OAAOtB,OAAO,CAAC;YACb,IAAI,kBAAkB,GAAGBoB,QAAQ,CAAC,cAAc,CAAC,MAAM,EACHc,CAAC,sBAAsB,EAAE,qBAAqB,CAAC,EAAE,IAAI,CAAC,CAAC;YAE3D,IAAI,sBAAsB,EAAE;gBAC1B,kBAAkB,GAAGT,UAAU,CAAC,kBAAkB,CAAC,CAAC;aACrD;YAED,OAAO,0BAA0B,CAC7B,kBAAkB,EAAE,CAAC,iBAAiB,EAAE,gBAAGb,CAAC,EACzD,CAAC,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,IAAI,EAAE,IAAI,CAAC,CAAC,CAAC,CAAC;SACnC,CAAC,CAAC;IACL,CAAC;AAED,aAAGb,0BAA0B,CACtC,gBAA6B,EAC7B,EAAiD,EACjD,EAAkE;YADjE,cAAc,QAAA,EAAE,aAAa,QAAA;YAC7B,UAAy,EAAx,IAAI,QAAA,EAAE,IAAI,QAAA,EAAE,UAAy,EAAx,IAAI,QAAA,EAAE,IAAI,QAAA;QAE5B,OAAX,OAAO,CAAC;YACb,IAAM,YAAY,GAAGbI,aAAa,CAAC,gBAAGb,CAAC,CAAC;YACIE,OAAOM,UAAU,CAACU,QAAQ;iBACrB,aAAa,CACV,YAAY,EAAE,CAAC;oBACb,IAAI,IAAI,cAAc,GAAG,IAAI,GAAG,IAAI,GAAG,GAAG,CAAC;oBAC3C,IAAI,IAAI,aAAa,GAAG,IAAI,GAAG,IAAI,GAAG,GAAG,CAAC;oBAC1C,CAAC,IAAI,GAAG,cAAc,GAAG,GAAG;yBACvB,cAAc,GAAG,IAAI,GAAG,IAAI,GAAG,GAAG,CAAC;oBACxC,CAAC,IAAI,GAAG,aAAa,GAAG,GAAG,KAAC,aAAa,GAAG,IAAI,GAAG,IAAI,GAAG,GAAG,CAAC;iBACnE,CAAC,EACF,CAAC,CAAC,CAAC,EAAE,CAAC,cAAc,EAAE,aAAa,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;SACrD,CAAC,CAAC;IACL,CAAC;AAED,aAUgB,cAAc,CAC1B,KAAmB,EAAE,EAAoC;YAAnc,OAAO,QAAA,EAAE,OAAO,QAAA;QAEIC,IAAA,KAAkB,YAAY,CAAC,KAAC,CAAC,EAApC,MAAM,QAAA,EAAE,KAAK,QAAuB,CAAC;QAC5C,IAAM,YAAY,GAAG,OAAO,GAAG,OAAO,CAAC;QACvC,IAAM,MAAM,GAAG,KAAC,GAAG,MAAM,CAAC;QAC1B,IAAA,KAA2B,CAAC,CAAC,EAAE,CAAC,EAAE,C AAC,EAAE,CAAC,CAAC,EAAtC,IAAI,QAAA,EAAE,IAAI,QAAA,EAAE,IAAI,QAAA,EAAE,IAAI,QAAgB,C AAC;QAC5C,IAAI,MAAM,GAAG,YAAY,EAAE;;YAEzB,IAAI,GAAG,CAAC,CAAC;YACT,IAAI,GAAG,CAAC,CAAC;YACT,IAAI,GAAG,IAAI,CAAC,KAAC,CAAC,GAAG,IAAI,YAAY,GAAG,MAAM,GAAG,KAAC,CAAC,CAAC,CAAC;YACzD,IAAI,GAAG,IAAI,CAAC,KAAC,CAAC,GAAG,IAAI,YAAY,GAAG,MAAM,GAAG,KAAC,CAAC,CAAC,CAAC;SAC1D;aAAM;;YAEI,IAAI,GAAG,IAAI,CAAC,KAAC,CAAC,GAAG,IAAI,CAAC,GAAG,GAAG,YAAY,IAAI,KAAC,GAAG,MAAM,CAAC,CAAC,CAAC;YACjE,IAAI,GAAG,IAAI,CAAC,KAAC,CAAC,GAAG,IAAI,CAAC,GAAG,GAAG,YAAY,IAAI,KAAC,GAAG,MAAM,CAAC,CAAC,CAAC;YACjE,IAAI,GAAG,CAAC,CAAC;YACT,IAAI,GAAG,CAAC,CAAC;SACV;QAED,IAAM,OAAO,GAAGbPb,OAAO,CAAC;YACnC,IAAI,WAAW,GAAG,aAAa,CAAC,KAAC,CAAC,CAAC;YACvC,WAAW,GAAGsB,QAAQ,CAAC,WAAW,EAAE,CAAC,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,IAAI,EAAE,IAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;YAEIE,OAAOF,QAAQ,CAAC,cAAc,CAAC,WAA

W,EAAE,CAAC,OAAO,EAAE,OAAO,CAAC,CAAC,CAAC;SACjE,CAAC,CAAC;QAEH,OAAO,EAAC,OAAO
,SAAA,EAAE,OAAO,EAAE,EAAC,GAAG,EAAE,IAAI,EAAE,IAAI,EAAE,IAAI,EAAE,IAAI,EA
AE,MAAM,EAAE,IAAI,EAAC,EAAC,CAAC;IACHF,CAAC;AAED,aAAsB,iBAAiB,CAAC,OAA
sB,BAAO,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,UAAA,MAAM,IAAI,OAAA,MAAM,CAAC,
MAAM,EAAE,GAAA,CAAC,CAAC,EAAC;;;KAC5D;AAED,aAAgB,SAAS,CACrB,IAAU,EAAE,MAAc,EAAE
,MAAc,EAAE,OAAW,EACvD,OAAW;QADiC,wBAAA,EAAA,WAAW;QACvD,wBAAA,EAAA,WAAW;QAC
b,OAAO;YACL,KAAK,EAAE,IAAI,CAAC,KAAK;YACjB,SAAS,EAAE,IAAI,CAAC,SAAS,CAAC,GAAG,CA
AC,UAAc,EAAuB;oBAAtB,KAAK,WAAA,EAAE,IAAI,UAAA,EAAE,QAAQ,cAAA;gBAAM,QAAC;oBAC5B,
KAAK,OAAA;oBACL,IAAI,MAAA;oBACJ,QAAQ,EAAE;wBACR,CAAC,EAAE,QAAQ,CAAC,CAAC,GAAG,
MAAM,GAAG,OAAO;wBACHc,CAAC,EAAE,QAAQ,CAAC,CAAC,GAAG,MAAM,GAAG,OAAO;qBACjC;iB
ACF;aAAC,CAAC;SACiC,CAAC;IACJ,CAAC;AAED,aAAgB,UAAU,CACtB,KAAa,EAAE,MAAc,EAAE,MAA
c,EAAE,OAAW,EAAE,OAAW;QAAxB,wBAAA,EAAA,WAAW;QAAE,wBAAA,EAAA,WAAW;QACzE,IAAI,
MAAM,KAAK,CAAC,IAAI,MAAM,KAAK,CAAC,IAAI,OAAO,KAAK,CAAC,IAAI,OAAO,KAAK,CAAC,EA
AE;YACIE,OAAO,KAAK,CAAC;SACd;QACD,OAAO,KAAK,CAAC,GAAG,CAAC,UAAA,IAAI,IAAI,OAAA,
SAAS,CAAC,IAAI,EAAE,MAAM,EAAE,MAAM,EAAE,OAAO,EAAE,OAAO,CAAC,GAAA,CAAC,CAAC;IA
C9E,CAAC;AAED,aAAgB,kBAakB,CAAC,IAAU,EAAE,UAAkB;QAC/D,OAAO;YACL,KAAK,EAAE,IAAI,C
AAC,KAAK;YACjB,SAAS,EAAE,IAAI,CAAC,SAAS,CAAC,GAAG,CACzB,UAAc,EAAuB;oBAAtB,KAAK,
WAAA,EAAE,IAAI,UAAA,EAAE,QAAQ,cAAA;gBAAM,QAAC;oBAC5B,KAAK,OAAA;oBACL,IAAI,MAAA
;oBACJ,QAAQ,EAAE,EAAC,CAAC,EAAE,UAAU,GAAG,CAAC,GAAG,QAAQ,CAAC,CAAC,EAAE,CAAC,E
AAE,QAAQ,CAAC,CAAC,EAAC;iBAC1D;aAAC,CAAC;SACR,CAAC;IACJ,CAAC;AAED,aAAgB,mBAAmB,
CAAC,KAAa,EAAE,UAAkB;QACnE,IAAI,UAAU,IAAI,CAAC,EAAE;YACnB,OAAO,KAAK,CAAC;SACd;QA
CD,OAAO,KAAK,CAAC,GAAG,CAAC,UAAA,IAAI,IAAI,OAAA,kBAakB,CAAC,IAAI,EAAE,UAAU,CAAC,
GAAA,CAAC,CAAC;IACjE,CAAC;AAED,aAAgB,iBAAiB,CAC7B,KAAa,EAAE,EAaiC,EACnD,EAAD,EAC
/D,OAAgB,EAAE,cAAuB;YAFzB,MAAM,QAAA,EAAE,KAAK,QAAA;YAC5B,qBAAqB,QAAA,EAAE,oBAA
oB,QAAA;QAE9C,IAAM,MAAM,GACR,CAAC,MAAM,GAAG,OAAO,CAAC,GAAG,GAAG,OAAO,CAAC,M
AAM,KAAK,qBAAqB,CAAC,CAAC;QACtE,IAAM,MAAM,GACR,CAAC,KAAK,GAAG,OAAO,CAAC,IAAI,
GAAG,OAAO,CAAC,KAAK,KAAK,oBAAoB,CAAC,CAAC;QAEpE,IAAM,WAAW,GACb,UAAU,CAAC,KAA
K,EAAE,MAAM,EAAE,MAAM,EAAE,CAAC,OAAO,CAAC,GAAG,EAAE,CAAC,OAAO,CAAC,IAAI,CAAC,
CAAC;QAEhE,IAAI,cAAc,EAAE;YACiB,OAAO,mBAAmB,CAAC,WAAW,EAAE,KAAK,CAAC,CAAC;SACH
D;aAAM;YACL,OAAO,WAAW,CAAC;SACpB;IACH,CAAC;;IC7VD;::::::::::;IA+BA,IAAM,wBAAwB,GAA
G,IAAI,CAAC;IACiC,IAAM,wBAAwB,GAAG,KAAK,CAAC;IAuCvC;IACA;IACA;IACA;IACA;IACA;I
ACA;IACA;IACA;IACA;IAEA,IAAM,mBAAmB,GAAG;QAC1B,YAAy,EAAE,aAAa;QAC3B,YAAy,EA
AE,EAAE;QACb,UAAU,EAAE,CAAC;QACb,UAAU,EAAE,IAAI;KACF,CAAC;IAEjB,IAAM,kBAakB,GAA
0B,CAAC,aAAa,EAAE,UAAU,CAAC,CAAC;IAC9E,IAAM,YAAy,GAA0C;QAC1D,aAAa,EAAE,CAAC,CAA
C,EAAE,EAAE,EAAE,EAAE,CAAC;QAC1B,UAAU,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC;KACrB,CAAC;
IACF,IAAM,gBAAgB,GAAwC;QAC5D,aAAa,EAAE,CAAC,IAAI,EAAE,IAAI,EAAE,GAAG,CAAC;QACb,U
AAU,EAAE,CAAC,GAAG,CAAC;KACiB,CAAC;IACF,IAAM,iBAAiB,GAAwB,CAAC,CAAC,EAAE,CAAC,E
AAE,CAAC,CAAC,CAAC;IAEzD,SAAS,mBAAmB,CAAC,MAAmB;QAC9C,MAAM,GAAG,MAAM,IAAI,mB
AAmB,CAAC;QAEvC,IAAI,MAAM,CAAC,YAAy,IAAI,IAAI,EAAE;YAC/B,MAAM,CAAC,YAAy,GAAG,aA
Aa,CAAC;SACrC;QACD,IAAI,kBAakB,CAAC,OAAO,CAAC,MAAM,CAAC,YAAy,CAAC,GAAG,CAAC,EA
AE;YACvD,MAAM,IAAI,KAAK,CACX,0BAAwB,MAAM,CAAC,YAAy,OAAI;iBAC/C,sBAAoB,kBAAoB,CA
AA,CAAC,CAAC;SAC/C;QACD,IAAI,MAAM,CAAC,YAAy,IAAI,IAAI,EAAE;YAC/B,MAAM,CAAC,YAAy,
GAAG,EAAE,CAAC;SAC1B;QACD,IAAI,YAAy,CAAC,MAAM,CAAC,YAAy,CAAC,CAAC,OAAO,CAAC,
MAAM,CAAC,YAAy,CAAC,GAAG,CAAC,EAAE;YACtE,MAAM,IAAI,KAAK,CACX,0BAAwB,MAAM,CA
AC,YAAy,OAAI;iBAC/C,sBAAoB,YAAy,CAAC,MAAM,CAAC,YAAy,CAAC,MAAG,CAAA;iBACxD,sBAA
oB,MAAM,CAAC,YAAy,MAAG,CAAA,CAAC,CAAC;SACjD;QAED,IAAI,MAAM,CAAC,UAAU,IAAI,IAAI,
EAAE;YAC7B,MAAM,CAAC,UAAU,GAAG,GAAG,CAAC;SACzB;QACD,IAAI,gBAAgB,CAAC,MAAM,CA
AC,YAAy,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,CAAC,EAAE;YACxE,MAAM,IA

AI,KAAK,CACX,wBAAsB,MAAM,CAAC,UAAU,OAAI;iBAC3C,sBAAoB,gBAAgB,CAAC,MAAM,CAAC,YA
AY,CAAC,MAAG,CAAA;iBAC5D,sBAAoB,MAAM,CAAC,YAA Y,MAAG,CAAA,CAAC,CAAC;SACjD;QAE
D,IAAI,MAAM,CAAC,UAAU,IAAI,IAAI,EAAE;YAC7B,MAAM,CAAC,UAAU,GAAG,CAAC,CAAC;SACvB;
QACD,IAAI,iBAAiB,CAAC,OAAO,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,CAAC,EAAE;YACpD,MAA
M,IAAI,KAAK,CACX,wBAAsB,MAAM,CAAC,UAAU,OAAI;iBAC3C,sBAAoB,iBAAiB,MAAG,CAAA;iBACx
C,sBAAoB,MAAM,CAAC,YAA Y,MAAG,CAAA,CAAC,CAAC;SACjD;QAED,OAAO,MAAM,CAAC;IACHb,C
AAC;AAiFD,IAAO,IAAM,uBAAuB,GAA0B;QAC5D,cAAc,EAAE,KAAK;QACrB,kBAaKB,EAAE,QAAQ;QAC
5B,qBAAqB,EAAE,GAAG;QAC1B,aAAa,EAAE,EAAE;QACjB,cAAc,EAAE,GAAG;QACnB,SAAS,EAAE,EAA
E;KACd,CAAC;AAEF,IAAO,IAAM,sCAAsC,GACV;QACnC,cAAc,EAAE,KAAK;QACrB,kBAaKB,EAAE,QA
AQ;QAC5B,qBAAqB,EAAE,GAAG;QAC1B,aAAa,EAAE,EAAE;QACjB,cAAc,EAAE,GAAG;QACnB,SAAS,E
AAE,EAAE;QACb,gBAAgB,EAAE,GAAG;QACrB,WAAW,EAAE,EAAE;KACHb,CAAC;IAEN,SAAS,6BAA6
B,CAAC,MAA6B;QAC3D,IAAA,qBAAqB,GACxB,MAAM,sBADkB,EAAE,aAAa,GACvC,MAAM,cADiC,EAA
E,cAAc,GACvD,MAAM,eADiD,EAAE,SAAS,GACIE,MAAM,UAD4D,CAC3D;QAEX,IAAI,qBAAqB,GAAG,G
AAG,IAAI,qBAAqB,GAAG,GAAG,EAAE;YAC9D,MAAM,IAAI,KAAK,CACX,2BAAYb,qBAAqB,OAAI;gBA
CID,+BAA+B,CAAC,CAAC;SACtC;QAED,IAAI,aAAa,IAAI,CAAC,EAAE;YActB,MAAM,IAAI,KAAK,CACX
,2BAAYb,aAAa,OAAI;gBAC1C,eAAe,CAAC,CAAC;SActB;QAED,IAAI,cAAc,GAAG,GAAG,IAAI,cAAc,GAA
G,GAAG,EAAE;YACHd,MAAM,IAAI,KAAK,CACX,4BAA0B,cAAc,OAAI;gBAC5C,+BAA+B,CAAC,CAAC;S
ACtC;QAED,IAAI,SAAS,IAAI,CAAC,EAAE;YACIB,MAAM,IAAI,KAAK,CAAC,uBAAqB,SAAS,MAAG,CAA
C,CAAC;SACpD;IACH,CAAC;IAED,SAAS,0CAA0C,CAC/C,MAA0C;QAE1C,IAAA,qBAAqB,GAMnB,MAA
M,sBANa,EACrB,aAAa,GAKX,MAAM,cALK,EACb,cAAc,GAIZ,MAAM,eAJM,EACd,SAAS,GAGP,MAAM,U
AHC,EACT,gBAAgB,GAEd,MAAM,iBAFQ,EACHb,WAAW,GACT,MAAM,YADG,CACF;QAEX,IAAI,qBAAq
B,GAAG,GAAG,IAAI,qBAAqB,GAAG,GAAG,EAAE;YAC9D,MAAM,IAAI,KAAK,CACX,2BAAYb,qBAAqB,
OAAI;gBACID,+BAA+B,CAAC,CAAC;SACtC;QAED,IAAI,aAAa,IAAI,CAAC,EAAE;YActB,MAAM,IAAI,K
AAK,CACX,2BAAYb,aAAa,OAAI;gBAC1C,eAAe,CAAC,CAAC;SActB;QAED,IAAI,cAAc,GAAG,GAAG,IAA
I,cAAc,GAAG,GAAG,EAAE;YACHd,MAAM,IAAI,KAAK,CACX,4BAA0B,cAAc,OAAI;gBAC5C,+BAA+B,C
AAC,CAAC;SACtC;QAED,IAAI,SAAS,IAAI,CAAC,EAAE;YACIB,MAAM,IAAI,KAAK,CAAC,uBAAqB,SAA
S,MAAG,CAAC,CAAC;SACpD;QAED,IAAI,gBAAgB,GAAG,CAAC,IAAI,gBAAgB,GAAG,CAAC,EAAE;YA
ChD,MAAM,IAAI,KAAK,CACX,8BAA4B,gBAAgB,MAAG;gBAC/C,+BAA+B,CAAC,CAAC;SACtC;QAED,IA
AI,WAAW,IAAI,CAAC,IAAI,WAAW,GAAG,EAAE,EAAE;YACxC,MAAM,IAAI,KAAK,CACX,yBAAuB,WA
AW,MAAG;gBACrC,4BAA4B,CAAC,CAAC;SACnC;IACH,CAAC;AAED;QAGE,iBAAY,GAAC;YACxB,IAAI,
CAAC,SAAS,GAAG,GAAG,CAAC;SActB;QAEO,8CAA4B,GAAPc,UAAqC,KAAkB;YAO/C,IAAA,KAMF,IA
AI,CAAC,SAAS,CAAC,OAAO,CAAC,KAAK,CAAC,EAL/B,YAA Y,kBAAA,EACZ,aAAa,mBAAA,EACb,OAA
O,aAAA,EACP,eAAe,qBAAA,EACf,eAAe,qBACgB,CAAC;YACiC,OAAO;gBACL,aAAa,EAAE,YAA Y;gBAC3
B,aAAa,eAAA;gBACb,OAAO,SAAA;gBACP,eAAe,iBAAA;gBACf,eAAe,iBAAA;aChB,CAAC;SACH;QAEO,
qDAAmC,GAA3C,UAA4C,KAAkB;YAQtD,IAAA,KAOF,IAAI,CAAC,SAAS,CAAC,OAAO,CAAC,KAAK,CA
AC,EAN/B,YAA Y,kBAAA,EACZ,YAA Y,kBAAA,EACZ,aAAa,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,qBA
AA,EACf,eAAe,qBACgB,CAAC;YACiC,OAAO;gBACL,aAAa,EAAE,YAA Y;gBAC3B,iBAAiB,EAAE,YAA Y;g
BAC/B,aAAa,eAAA;gBACb,OAAO,SAAA;gBACP,eAAe,iBAAA;gBACf,eAAe,iBAAA;aChB,CAAC;SACH;Q
AEO,kEAAgD,GAAxD,UAAyD,KAAkB;YAUne,IAAA,KAQF,IAAI,CAAC,SAAS,CAAC,OAAO,CAAC,KAAK
,CAAC,EAP/B,YAA Y,kBAAA,EACZ,WAAW,iBAAA,EACX,aAAa,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,
qBAAA,EACf,eAAe,qBAAA,EACf,YAA Y,kBACmB,CAAC;YACiC,OAAO;gBACL,aAAa,EAAE,YAA Y;gBAC
3B,WAAW,aAAA;gBACX,aAAa,eAAA;gBACb,OAAO,SAAA;gBACP,eAAe,iBAAA;gBACf,eAAe,iBAAA;gBA
Cf,YAA Y,cAAA;aCcb,CAAC;SACH;;;;;;;;;;;;;;QAqCD,yCAAuB,GAAvB,UACI,KAAmB,EAAE,k
BAA6C,EACIE,qBAA2B;YAF/B,iBA0DC;YAxDG,sCAAA,EAAA,2BAA2B;YASvB,IAAA,KAAkB,YAA Y,CA
AC,KAAK,CAAC,EAAPc,MAAM,QAAA,EAAE,KAAK,QAAuB,CAAC;YAC5C,IAAM,gCAA gC,GAAG,+BA
A+B,CACpE,kBAaKB,EAAE,IAAI,CAAC,SAAS,CAAC,YAA Y,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,C
AAC,CAAC;YACHe,IAAA,KACF,cAAc,CAAC,KAAK,EAAE,gCAA gC,CAAC,EADpD,OAAO,aAAA,EAAE,O
AAO,aACoC,CAAC;YAEtD,IAAA,KAMFPb,OAAO,CAAC;gBACJ,IAAA,KAMF,KAAI,CAAC,4BAA4B,CAA

C,OAAO,CAAC,EAL5C,aAAa,mBAAA,EACb,aAAa,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,qBAAA,EACf,
eAAe,qBAC6B,CAAC;gBAEzC,IAAA,KAAgC,OAAO,CAAC,KAAK,EAA5C,aAAa,QAAA,EAAE,YAAY,QAAi
B,CAAC;gBAEpD,IAAM,mBAAmB,GAAG,8BAA8B,CACtD,aAAa,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC
,EAAE,CAAC,aAAa,EAAE,YAAY,CAAC,EAC7D,CAAC,CAAC,OAAO,CAAC,GAAG,EAAE,OAAO,CAAC,M
AAM,CAAC,EAAE,CAAC,OAAO,CAAC,IAAI,EAAE,OAAO,CAAC,KAAK,CAAC,CAAC,EAC9D,wBAAwB,
CAAC,CAAC;gBAE9B,OAAO;oBACL,YAAY,EAAE,YAAY,CACtBU,UAAU,CAAC,mBAAmB,CAAC,EAAE,
qBAAqB,CAAC;oBAC3D,aAAa,eAAA;oBACb,OAAO,SAAA;oBACP,eAAe,iBAAA;oBACf,eAAe,iBAAA;iBA
ChB,CAAC;aACH,CAAC,EA7BA,YAAY,kBAAA,EACZ,aAAa,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,qBA
AA,EACf,eAAe,qBAyBf,CAAC;YACH,OAAO,CAAC,OAAO,EAAE,CAAC;YACIB,OAAO;gBACL,YAAY,cA
AA;gBACZ,aAAa,eAAA;gBACb,OAAO,SAAA;gBACP,eAAe,iBAAA;gBACf,eAAe,iBAAA;gBACf,OAAO,SAA
A;gBACP,gCAAgC,kCAAA;aACjC,CAAC;SACH;;;;;;;;;;;;;QA2BK,+BAAa,GAAnB,UACI,KAAmB,EA
CnB,MAAuD;YAAvD,uBAAA,EAAA,gCAAuD;;;;;4BAEzD,MAAM,yBAAO,uBAAuB,GAAK,MAAM,CAAC,
CAAC;4BAEjD,6BAA6B,CAAC,MAAM,CAAC,CAAC;4BAEhC,KASF,IAAI,CAAC,uBAAuB,CACxB,KAAK,E
AAE,MAAM,CAAC,kBAaKB,EAAE,MAAM,CAAC,qBAAqB,CAAC,EATrE,YAAY,kBAAA,EACZ,aAAa,mBA
AA,EACb,OAAO,aAAA,EACP,eAAe,qBAAA,EACf,eAAe,qBAAA,EACf,OAAO,aAAA,EACP,gCAAgC,sCAAA
,CAGsC;4BAEIE,KAAkB,YAAY,CAAC,KAAK,EAAnc,MAAM,QAAA,EAAE,KAAK,QAAA,CAAuB;4BAE5B
,qBAAM,YAAY,CAAC,IAAI,EAAE,EAAA;;4BAaIC,MAAM,GAAG,SAAuC;4BACtD,YAAY,CAAC,OAAO,E
AAE,CAAC;4BAED,qBAAM,iBAAiB,CACzC,CAAC,aAAa,EAAE,OAAO,EAAE,eAAe,EAAE,eAAe,CAAC,CA
AC,EAAA;;4BADzD,aAAa,GAAG,SACyC;4BACxD,SAAS,GACZ,aAAa,GADD,EAAE,UAAU,GACxB,aAAa,G
ADW,EAAE,mBAAmB,GAC7C,aAAa,GADgC,EAAE,mBAAmB,GACIE,aAAa,GADqD,CACpD;4BAEd,KAAK,
GAAG,mBAAmB,CAC3B,SAAS,EAAE,UAAU,EAAE,mBAAmB,EAAE,mBAAmB,EAC/D,IAAI,CAAC,SAAS,
CAAC,YAAY,EAAE,MAAM,CAAC,aAAa,EACjD,MAAM,CAAC,cAAc,EAAE,MAAM,CAAC,SAAS,CAAC,C
AAC;4BAE7C,KAAK,GAAG,iBAAiB,CACrB,KAAK,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAA
gC,EAAE,OAAO,EACjE,wBAAwB,CAAC,CAAC;4BAE9B,aAAa,CAAC,OAAO,EAAE,CAAC;4BACxB,OAAO
,CAAC,OAAO,EAAE,CAAC;4BACIB,eAAe,CAAC,OAAO,EAAE,CAAC;4BAC1B,eAAe,CAAC,OAAO,EAAE,
CAAC;4BAE1B,sBAAO,EAAC,MAAM,QAAA,EAAE,KAAK,OAAA,EAAE,IAAI,EAAE,MAAM,EAAE,QAAQ
,EAAE,KAAK,EAAC,EAAC;;;;SACvD;;;;;;;;;;;;;QAYBK,oCAAKB,GAAXB,UACI,KAAmB,EACnB,MAC
0C;YAD1C,uBAAA,EAAA,+CAC0C;;;;;4BAE5C,MAAM,yBAAO,sCAAsC,GAAK,MAAM,CAAC,CAAC;4BA
ChE,0CAA0C,CAAC,MAAM,CAAC,CAAC;4BAC7C,KAAkB,YAAY,CAAC,KAAK,CAAC,EAAPC,MAAM,Q
AAA,EAAE,KAAK,QAAA,CAAwB;4BACtC,gCAAgC,GAAG,+BAA+B,CACpE,MAAM,CAAC,kBAaKB,EAA
E,IAAI,CAAC,SAAS,CAAC,YAAY,EACtD,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC,CAAC;4BAEf,KACF,c
AAc,CAAC,KAAK,EAAE,gCAAgC,CAAC,EADpD,OAAO,aAAA,EAAE,OAAO,aAAA,CACqC;4BACtD,KAOF
V,OAAO,CAAC;gCACJ,IAAA,KAOF,KAAI,CAAC,gDAAgD,CAAC,OAAO,CAAC,EANhE,aAAa,mBAAA,EA
Cb,WAAW,iBAAA,EACX,aAAa,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,qBAAA,EACf,eAAe,qBACiD,CAA
C;gCACnE,IAAM,mBAAmB,GAAG,8BAA8B,CACtD,aAAa,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE
,gCAAgC,EACHC,CAAC,CAAC,OAAO,CAAC,GAAG,EAAE,OAAO,CAAC,MAAM,CAAC,EAAE,CAAC,OAA
O,CAAC,IAAI,EAAE,OAAO,CAAC,KAAK,CAAC,CAAC,EAC9D,wBAAwB,CAAC,CAAC;gCAC9B,IAAM,kB
AAkB,GAAG,KAAK,CAAC;gCACjC,IAAI,iBAAiB,CAAC;gCACtB,IAAI,kBAaKB,EAAE;oCACtB,iBAAiB,G
AAG,8BAA8B,CAC9C,WAAW,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAAgC,EAC9D,CAAC,C
AAC,OAAO,CAAC,GAAG,EAAE,OAAO,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,IAAI,EAAE,OAA
O,CAAC,KAAK,CAAC,CAAC,EAC9D,wBAAwB,CAAC,CAAC;iCAC/B;qCAAM;oCACL,iBAAiB,GAAG,WA
AW,CAAC;iCACjC;gCAED,IAAM,YAAY,GAAG,YAAY,CAC7BU,UAAU,CAAC,mBAAmB,CAAC,EAAE,M
AAM,CAAC,qBAAqB,CAAC,CAAC;gCAEnE,OAAO;oCACL,YAAY,cAAA;oCACZ,WAAW,EAAE,iBAAiB;o
CAC9B,gBAAgB,EAAE,aAAa;oCAC/B,UAAU,EAAE,OAAO;oCACnB,kBAaKB,EAAE,eAAe;oCACnC,kBAaK
B,EAAE,eAAe;iCACpC,CAAC;6BACH,CAAC,EAzCA,YAAY,kBAAA,EACZ,WAAW,iBAAA,EACX,gBAAgB,
sBAAA,EACHB,UAAU,gBAAA,EACV,kBAaKB,wBAAA,EACIB,kBAaKB,wBAAA,CAoCjB;4BAEmB,qBAA
M,iBAAiB,CACzC,CAAC,gBAAgB,EAAE,UAAU,EAAE,kBAaKB,EAAE,kBAaKB,CAAC,CAAC,EAAA;;4BA
DrE,aAAa,GAAG,SACqD;4BACpE,SAAS,GACZ,aAAa,GADD,EAAE,UAAU,GACxB,aAAa,GADW,EAAE,mB

AAmB,GAC7C,aAAa,GADgC,EAAE,mBAAmB,GACIE,aAAa,GADqD,CACpD;4BAEd,KAAK,GAAG,mBAAmB,CAC3B,SAAS,EAAE,UAAU,EAAE,mBAAmB,EAAE,mBAAmB,EAC/D,IAAI,CAAC,SAAS,CAAC,YAAy,EAAE,MAAM,CAAC,aAAa,EACjD,MAAM,CAAC,cAAc,EAAE,MAAM,CAAC,SAAS,CAAC,CAAC;4BAE7C,KAAK,GAAG,iBAaIB,CACrB,KAAK,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAAgC,EAAE,OAAO,EACjE,wBAawB,CAAC,CAAC;4BAER,qBAAM,yBAayB,CACjD,YAAy,EAAE,WAAW,EAAE,KAAK,EAAE,MAAM,EAAE,KAAK,EAC/C,IAAI,CAAC,SAAS,CAAC,YAAy,EAAE,gCAAgC,EAAE,OAAO,EACIE,MAAM,CAAC,cAAc,EAAE,MAAM,CAAC,WAAW,EAAE,MAAM,CAAC,gBAAgB,EACIE,MAAM,CAAC,aAAa,CAAC,EAAA;;4BAJnB,aAAa,GAAG,SAIG;4BAEzB,OAAO,CAAC,OAAO,EAAE,CAAC;4BACIB,YAAy,CAAC,OAAO,EAAE,CAAC;4BACvB,WAAW,CAAC,OAAO,EAAE,CAAC;4BACtB,gBAAgB,CAAC,OAAO,EAAE,CAAC;4BAC3B,UAAU,CAAC,OAAO,EAAE,CAAC;4BACrB,kBAaKB,CAAC,OAAO,EAAE,CAAC;4BAC7B,kBAaKB,CAAC,OAAO,EAAE,CAAC;4BAE7B,sBAAO,aAAa,EAAC;;;SACtB;;;QAsCD,8CAA4B,GAA5B,UACI,KAAmB,EAAE,kBAA6C,EACIE,qBAA2B;YAF/B,iBAAmEC;YAjEG,sCAA,EAAA,2BA A2B;YASvB,IAAA,KAAkB,YAAy,CAAC,KAAK,CAAC,EAAPC,MAAM,QAAA,EAAE,KAAK,QAAuB,CAAC ;YAC5C,IAAM,gCAAgC,GAAG,+BAA+B,CACpE,kBAaKB,EAAE,IAAI,CAAC,SAAS,CAAC,YAAy,EAAE,C AAC,MAAM,EAAE,KAAK,CAAC,CAAC,CAAC;YACHe,IAAA,KAGF,cAAc,CAAC,KAAK,EAAE,gCAAgC,C AAC,EAfzD,OAAO,aAAA,EACP,OAAO,aACKD,CAAC;YAEtD,IAAA,KAMFV,OAAO,CAAC;gBACJ,IAAA,K AOF,KAAI,CAAC,mCAAmC,CAAC,OAAO,CAAC,EANnD,aAAa,mBAAA,EACb,iBAaIB,uBAAA,EACjB,aAA a,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,qBAAA,EACf,eAAe,qBACoC,CAAC;gBAEHd,IAAA,KAAgC,OA AO,CAAC,KAAK,EAA5C,aAAa,QAAA,EAAE,YAAy,QAAiB,CAAC;gBAEpD,IAAM,mBAAmB,GAAG,8BAA 8B,CACtD,aAAa,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,CAAC,aAAa,EAAE,YAAy,CAAC,EAC7D ,CAAC,CAAC,OAAO,CAAC,GAAG,EAAE,OAAO,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,IAAI,E AAE,OAAO,CAAC,KAAK,CAAC,CAAC,EAC9D,wBAawB,CAAC,CAAC;gBAE9B,IAAM,sBAAsB,GAAG,8B AA8B,CACzD,iBAaIB,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,CAAC,aAAa,EAAE,YAAy,CAAC,E ACjE,CAAC,CAAC,OAAO,CAAC,GAAG,EAAE,OAAO,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,IA AI,EAAE,OAAO,CAAC,KAAK,CAAC,CAAC,EAC9D,wBAawB,CAAC,CAAC;gBAC9B,IAAM,YAAy,GACd, YAAy,CAACU,UAAU,CAAC,mBAAmB,CAAC,EAAE,qBAAqB,CAAC,CAAC;gBACzE,OAAO;oBACL,gBAA gB,EACZ,sBAAsB,CAAC,YAAy,EAAE,sBAAsB,CAAC;oBACHe,aAAa,eAAA;oBACb,OAAO,SAAA;oBACP,e AAe,iBAAA;oBACf,eAAe,iBAAA;iBACHb,CAAC;aACH,CAAC,EApCA,gBAAgB,sBAAA,EACHb,aAAa,mBA AA,EACb,OAAO,aAAA,EACP,eAAe,qBAAA,EACf,eAAe,qBAGCf,CAAC;YACH,OAAO,CAAC,OAAO,EAAE, CAAC;YACIB,OAAO;gBACL,gBAAgB,kBAAA;gBACHb,aAAa,eAAA;gBACb,OAAO,SAAA;gBACP,eAAe,iB AAA;gBACf,eAAe,iBAAA;gBACf,OAAO,SAAA;gBACP,gCAAgC,kCAAa;aCjC,CAAC;SACH;;; ;;;QA4BK,oCAAKB,GAAxB,UACI,KAAmB,EACnB,MAAuD;YAAvD,uBAAA,EAAA,gCAAuD;;;;4BAEzD, MAAM,yBAAO,uBAAuB,GAAG,MAAM,CAAC,CAAC;4BAEjD,6BAA6B,CAAC,MAAM,CAAC,CAAC;4BAC hC,KASF,IAAI,CAAC,4BAA4B,CAC7B,KAAK,EAAE,MAAM,CAAC,kBAaKB,EAAE,MAAM,CAAC,qBAAq B,CAAC,EATrE,gBAAgB,sBAAA,EACHb,aAAa,mBAAA,EACb,OAAO,aAAA,EACP,eAAe,qBAAA,EACf,eAA e,qBAAA,EACf,OAAO,aAAA,EACP,gCAAgC,sCAAa,CAGsC;4BAEIE,KAAkB,gBAAgB,CAAC,KAAK,EAav C,MAAM,QAAA,EAAE,KAAK,QAAA,CAA2B;4BACIC,qBAAM,gBAAgB,CAAC,IAAI,EAAE,EAAA;;4BAAP C,IAAI,GAAG,SAA2C;4BACxD,gBAAgB,CAAC,OAAO,EAAE,CAAC;4BAEL,qBAAM,iBAaIB,CACzC,CAA C,aAAa,EAAE,OAAO,EAAE,eAAe,EAAE,eAAe,CAAC,CAAC,EAAA;;4BADzD,aAAa,GAAG,SACyC;4BACx D,SAAS,GACZ,aAAa,GADD,EAAE,UAAU,GACxB,aAAa,GADW,EAAE,mBAAmB,GAC7C,aAAa,GADgC,EA AE,mBAAmB,GACIE,aAAa,GADqD,CACpD;4BAEd,KAAK,GAAG,mBAAmB,CAC3B,SAAS,EAAE,UAAU,E AAE,mBAAmB,EAAE,mBAAmB,EAC/D,IAAI,CAAC,SAAS,CAAC,YAAy,EAAE,MAAM,CAAC,aAAa,EACj D,MAAM,CAAC,cAAc,EAAE,MAAM,CAAC,SAAS,CAAC,CAAC;4BAE7C,KAAK,GAAG,iBAaIB,CACrB,K AAK,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAAgC,EAAE,OAAO,EACjE,wBAawB,CAAC,CAA C;4BAE9B,aAAa,CAAC,OAAO,EAAE,CAAC;4BACxB,OAAO,CAAC,OAAO,EAAE,CAAC;4BACIB,eAAe,CA AC,OAAO,EAAE,CAAC;4BAC1B,eAAe,CAAC,OAAO,EAAE,CAAC;4BAE1B,sBAAO,EAAC,MAAM,QAAA, EAAE,KAAK,OAAA,EAAE,IAAI,MAAA,EAAE,QAAQ,EAAE,KAAK,EAAC,EAAC;;;SAC/C;;; ;;QAYbK,yCAAuB,GAA7B,UACI,KAAmB,EACnB,MAC0C;YAD1C,uBAAA,EAAA,+CAC0C;;;;;4BAC5C,MA

AM,yBAAO,sCAAsC,GAAK,MAAM,CAAC,CAAC;4BAEhE,0CAA0C,CAAC,MAAM,CAAC,CAAC;4BAC7C,
KAAkB,YAAY,CAAC,KAAK,CAAC,EAAPc,MAAM,QAAA,EAAE,KAAK,QAAA,CAAwB;4BACtC,gCAAgC,
GAAG,+BAA+B,CACpE,MAAM,CAAC,kBAAkB,EAAE,IAAI,CAAC,SAAS,CAAC,YAAY,EACtD,CAAC,MA
AM,EAAE,KAAK,CAAC,CAAC,CAAC;4BACf,KACF,cAAc,CAAC,KAAK,EAAE,gCAAgC,CAAC,EADpD,OA
AO,aAAA,EAAE,OAAO,aAAA,CACqC;4BACtD,KAQFV,OAAO,CAAC;gCACJ,IAAA,KAQF,KAAI,CAAC,gD
AAgD,CAAC,OAAO,CAAC,EAPhE,aAAa,mBAAA,EACb,WAAW,iBAAA,EACX,aAAa,mBAAA,EACb,OAAO,
aAAA,EACP,eAAe,qBAAA,EACf,eAAe,qBAAA,EACf,YAAY,kBACoD,CAAC;;gCAGnE,IAAM,mBAAmB,GA
AG,8BAA8B,CACtD,aAAa,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAAgC,EACHE,CAAC,CAAC,
OAAO,CAAC,GAAG,EAAE,OAAO,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,IAAI,EAAE,OAAO,CA
AC,KAAK,CAAC,CAAC,EAC9D,wBAAwB,CAAC,CAAC;;gCAG9B,IAAM,4BAA4B,GAAG,8BAA8B,CAC/D,
YAAY,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAAgC,EAC/D,CAAC,CAAC,OAAO,CAAC,GAA
G,EAAE,OAAO,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,IAAI,EAAE,OAAO,CAAC,KAAK,CAAC,
CAAC,EAC9D,wBAAwB,CAAC,CAAC;gCAE9B,IAAM,iBAAiB,GAAG,WAAW,CAAC;gCACtC,IAAM,YAA
Y,GAAG,YAAY,CAC/BU,UAAU,CAAC,mBAAmB,CAAC,EAAE,MAAM,CAAC,qBAAqB,CAAC,CAAC;gCA
CjE,IAAM,gBAAgB,GACIB,0BAA0B,CAAC,4BAA4B,CAAC,CAAC;gCAC7D,OAAO;oCACL,YAAY,cAAA;o
CACZ,WAAW,EAAE,iBAAiB;oCAC9B,gBAAgB,EAAE,aAAa;oCAC/B,UAAU,EAAE,OAAO;oCACnB,kBAAk
B,EAAE,eAAe;oCACnC,kBAAkB,EAAE,eAAe;oCACnC,gBAAgB,kBAAA;iCACjB,CAAC;6BACH,CAAC,EA5
CA,YAAY,kBAAA,EACZ,WAAW,iBAAA,EACX,gBAAgB,sBAAA,EAChB,UAAU,gBAAA,EACV,kBAAkB,w
BAAA,EACIB,kBAAkB,wBAAA,EACIB,gBAAgB,sBAAA,CAsCf;4BAEmB,qBAAM,iBAAiB,CACzC,CAAC,g
BAAgB,EAAE,UAAU,EAAE,kBAAkB,EAAE,kBAAkB,CAAC,CAAC,EAAA;;4BADrE,aAAa,GAAG,SACqD;4
BACpE,SAAS,GACZ,aAAa,GADD,EAAE,UAAU,GACxB,aAAa,GADW,EAAE,mBAAmB,GAC7C,aAAa,GADg
C,EAAE,mBAAmB,GACIE,aAAa,GADqD,CACpD;4BAEd,KAAK,GAAG,mBAAmB,CAC3B,SAAS,EAAE,UA
AU,EAAE,mBAAmB,EAAE,mBAAmB,EAC/D,IAAI,CAAC,SAAS,CAAC,YAAY,EAAE,MAAM,CAAC,aAAa,
EACjD,MAAM,CAAC,cAAc,EAAE,MAAM,CAAC,SAAS,CAAC,CAAC;4BAE7C,KAAK,GAAG,iBAAiB,CAC
rB,KAAK,EAAE,CAAC,MAAM,EAAE,KAAK,CAAC,EAAE,gCAAgC,EAAE,OAAO,EACjE,wBAAwB,CAAC,
CAAC;4BAER,qBAAM,6BAA6B,CACrD,YAAY,EAAE,WAAW,EAAE,gBAAgB,EAAE,KAAK,EAAE,MAAM,
EAAE,KAAK,EACjE,IAAI,CAAC,SAAS,CAAC,YAAY,EAAE,gCAAgC,EAAE,OAAO,EACtE,MAAM,CAAC,c
AAc,EAAE,MAAM,CAAC,WAAW,EAAE,MAAM,CAAC,gBAAgB,EACIE,MAAM,CAAC,aAAa,CAAC,EAAA
;;4BAJnB,aAAa,GAAG,SAIG;4BAEzB,OAAO,CAAC,OAAO,EAAE,CAAC;4BACIB,YAAY,CAAC,OAAO,EA
AE,CAAC;4BACvB,WAAW,CAAC,OAAO,EAAE,CAAC;4BACtB,gBAAgB,CAAC,OAAO,EAAE,CAAC;4BA
C3B,UAAU,CAAC,OAAO,EAAE,CAAC;4BACrB,kBAAkB,CAAC,OAAO,EAAE,CAAC;4BAC7B,kBAAkB,CA
AC,OAAO,EAAE,CAAC;4BAC7B,gBAAgB,CAAC,OAAO,EAAE,CAAC;4BAE3B,sBAAO,aAAa,EAAC;;;SAC
tB;QAEM,yBAAO,GAAd;YACE,IAAI,CAAC,SAAS,CAAC,OAAO,EAAE,CAAC;SAC1B;QACH,cAAC;IAAD,
CAAC,IAAA;IAED;;;IAGA,SA Ae,aAAa,CAAC,MAAmB;;;wBACxC,YAAY,GAAG,MAAM,CAAC,YAAY,C
AAC;wBACnC,UAAU,GAAG,MAAM,CAAC,UAAU,CAAC;wBAC/B,UAAU,GAAG,MAAM,CAAC,UAAU,C
AAC;wBACrC,IAAI,EAAE,IAAI,IAAI,EAAE;4BACd,MAAM,IAAI,KAAK,CACX,qEAAqE;gCACrE,6EACO,C
AAC,CAAC;yBACd;wBAEK,GAAG,GAAG,mBAAmB,CAAC,YAAY,EAAE,UAAU,EAAE,UAAU,CAAC,CAA
C;wBACnD,qBAAMa,qBAAqB,CAAC,MAAM,CAAC,QAAQ,IAAI,GAAG,CAAC,EAAA;;wBAAhE,UAAU,GA
AG,SAAmD;wBACHE,SAAS,GAAG,IAAI,SAAS,CAAC,UAAU,EAAE,YAAY,CAAC,CAAC;wBAC1D,sBAAO,
IAAI,OAAO,CAAC,SAAS,CAAC,EAAC;;;KAC/B;IAED;;IAGA,SA Ae,UAAU,CAAC,MAAmB;;;wBACrC,Y
AAY,GAAG,MAAM,CAAC,YAAY,CAAC;wBACnC,UAAU,GAAG,MAAM,CAAC,UAAU,CAAC;wBACrC,IA
AI,EAAE,IAAI,IAAI,EAAE;4BACd,MAAM,IAAI,KAAK,CACX,qEAAqE;gCACrE,6EACO,CAAC,CAAC;yBA
Cd;wBAEK,GAAG,GAAG,kBAAkB,CAAC,YAAY,EAAE,UAAU,CAAC,CAAC;wBACtC,qBAAMA,qBAAqB,
CAAC,MAAM,CAAC,QAAQ,IAAI,GAAG,CAAC,EAAA;;wBAAhE,UAAU,GAAG,SAAmD;wBACHE,MAAM,
GAAG,IAAI,MAAM,CAAC,UAAU,EAAE,YAAY,CAAC,CAAC;wBACpD,sBAAO,IAAI,OAAO,CAAC,MAAM
,CAAC,EAAC;;;KAC5B;IAED;;;AAYA,aAAsB,IAAI,CAAC,MAAyC;QAAzC,uBAAA,EAAA,4BAAyC;;
gBAEIE,MAAM,GAAG,mBAAmB,CAAC,MAAM,CAAC,CAAC;gBACrC,IAAI,MAAM,CAAC,YAAY,KAAK,
UAAU,EAAE;oBACtC,sBAAO,UAAU,CAAC,MAAM,CAAC,EAAC;iBAC3B;qBAAM,IAAI,MAAM,CAAC,Y

AAy,KAaK,aAAa,EAAE;oBAChD,sBAAO,aAAa,CAAC,MAAM,CAAC,EAAC;iBAC9B;qBAAM;oBACL,sBA
AO,IAAI,EAAC;iBACb;;;KACF;;IClhCD;;;;;;;IAiBA;AACa,aAAgB,OAAO,CACnB,MAAyC,EACzC,KA
A0E,EAC1E,IAAY;QACd,IAAM,GAAG,GAAG,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC;QAEpC,IAA
I,GAAG,GAAG,CAAC,CAAC;QACZ,IAAM,KAaK,GAAG,CAAC,CAAC;QACbB,IAAM,SAAS,GAAG,CAAC,
IAAI,CAAC,GAAG,IAAI,CAAC,EAAE,GAAG,KAaK,GAAG,KAaK,CAAC,CAAC;QACpD,IAAM,IAAI,GAA
G,IAAI,GAAG,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC;QAC9B,KAaK,IAAI,CAAC,GAAG,CAAC,IAAI,EA
AE,CAAC,IAAI,IAAI,EAAE,CAAC,IAAI,IAAI,EAAE;YACxC,KAaK,IAAI,CAAC,GAAG,CAAC,IAAI,EAAE,
CAAC,IAAI,IAAI,EAAE,CAAC,IAAI,IAAI,EAAE;gBACxC,IAAM,MAAM,GACR,SAAS,GAAG,IAAI,CAAC,G
AAG,CAAC,EAAE,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,GAAG,KAaK,GAA
G,KAaK,CAAC,CAAC,CAAC;gBACjE,GAAG,IAAI,MAAM,CAAC;aACf;SACF;QACD,KAaK,IAAI,CAAC,G
AAG,CAAC,IAAI,EAAE,CAAC,IAAI,IAAI,EAAE,CAAC,IAAI,IAAI,EAAE;YACxC,KAaK,IAAI,CAAC,GAA
G,CAAC,IAAI,EAAE,CAAC,IAAI,IAAI,EAAE,CAAC,IAAI,IAAI,EAAE;gBACxC,GAAG,CAAC,WAAW,GAA
G,SAAS;oBACvB,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC
,IAAI,CAAC,GAAG,KAaK,GAAG,KAaK,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,CAAC;gBACIE,GAAG,C
AAC,SAAS,CAAC,KAaK,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;aAC5B;SACF;QACD,GAAG,CAAC,WA
AW,GAAG,CAAC,CAAC;IACtB,CAAC;;IC3CD;;;;;;;AAiBA,IAOA,IAAM,iBAAiB,GAA6B,EAAE,CAAC
;IAQvD,SAAS,QAAQ;QACf,QAAQ,gCAAgC,CAAC,IAAI,CAAC,SAAS,CAAC,SAAS,CAAC,EAAE;IACtE,CA
AC;IAED,SAAS,oBAAoB,CACzB,EAA+C,EAC/C,EAA+C,EAAE,KAAa,EAC9D,KAAa;YAFL,MAAM,WAAA,
EAAU,OAAO,YAAA;YACvB,MAAM,WAAA,EAAU,OAAO,YAAA;QAEjC,IAAI,MAAM,KAaK,MAAM,IAA
I,OAAO,KAaK,OAAO,EAAE;YAC5C,MAAM,IAAI,KAaK,CAAC,mCAAiC,KAaK,wBACID,MAAM,SAAI,O
AAO,UAAK,KAaK,wBAAmB,MAAM,SAAI,OAAS,CAAC,CAAC;SACxE;IACH,CAAC;IAED,SAAS,oBAAoB
,CAAC,MAAc;QAC1C,IAAM,GAAG,GAAG,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC;QACpC,GAAG
,CAAC,KAaK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC;QACjB,GAAG,CAAC,SAAS,CAAC,CAAC,M
AAM,CAAC,KAaK,EAAE,CAAC,CAAC,CAAC;IACIC,CAAC;IAED,SAAS,mBAAmB,CACxB,GAA+D,EAC/
D,KAAuB,EACvB,kBAA0B;QAC5B,GAAG,CAAC,wBAAwB,GAAG,kBAaKB,CAAC;QACID,GAAG,CAAC,S
AAS,CAAC,KAaK,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;IAC7B,CAAC;IAED,SAAS,qBAAqB;QAC5B,IA
AI,OAAO,QAAQ,KAaK,WAAW,EAAG;YACpC,OAAO,QAAQ,CAAC,aAAa,CAAC,QAAQ,CAAC,CAAC;SA
CzC;aAAM,IAAI,OAAO,eAAe,KAaK,WAAW,EAAE;YACjD,OAAO,IAAI,eAAe,CAAC,CAAC,EAAE,CAAC,
CAAC,CAAC;SACIC;aAAM;YAFL,MAAM,IAAI,KAaK,CAAC,wCAAwC,CAAC,CAAC;SAC3D;IACH,CAAC
;IAED,SAAS,4BAA4B,CAAC,EAAU;QAC9C,IAAI,CAAC,iBAAiB,CAAC,EAAE,CAAC,EAAE;YAC1B,iBAAi
B,CAAC,EAAE,CAAC,GAAG,qBAAqB,EAAE,CAAC;SACjD;QACD,OAAO,iBAAiB,CAAC,EAAE,CAAC,CA
AC;IAC/B,CAAC;IAED,SAAS,wBAAwB,CAC7B,KAaGB,EAAE,UAAkB,EAAE,MAAc;QAC/C,IAAA,MAAM,
GAAW,KAaK,OAaH,EAAE,KAaK,GAAI,KAaK,MAAT,CAAU;QAC9B,IAAM,GAAG,GAAG,MAAM,CAA
C,UAAU,CAAC,IAAI,CAAC,CAAC;QACpC,MAAM,CAAC,KAaK,GAAG,KAaK,CAAC;QACrB,MAAM,CA
AC,MAAM,GAAG,MAAM,CAAC;QACvB,GAAG,CAAC,SAAS,CAAC,CAAC,EAAE,CAAC,EAAE,KAaK,EA
AE,MAAM,CAAC,CAAC;QACnC,GAAG,CAAC,IAAI,EAAE,CAAC;QACX,IAAI,QAAQ,EAAE,EAAE;YACd,
OAAO,CAAC,MAAM,EAAE,KAaK,EAAE,UAAU,CAAC,CAAC;SACpC;aAAM;;YAEJ,GAAW,CAAC,MAA
M,GAAG,UAAQ,UAAU,QAAK,CAAC;YAC9C,GAAG,CAAC,SAAS,CAAC,KAaK,EAAE,CAAC,EAAE,CAA
C,EAAE,KAaK,EAAE,MAAM,CAAC,CAAC;SAC3C;QACD,GAAG,CAAC,OAAO,EAAE,CAAC;IACbB,CAA
C;IAED,SAAS,iCAAiC,CACtC,KAaGB,EAAE,UAAkB,EACpC,mBAA2B;QAC7B,IAAM,MAAM,GAAG,4BAA
4B,CAAC,mBAAmB,CAAC,CAAC;QACjE,IAAI,UAAU,KAaK,CAAC,EAAE;YACpB,mBAAmB,CAAC,KAA
K,EAAE,MAAM,CAAC,CAAC;SACpC;aAAM;YAFL,wBAAwB,CAAC,KAaK,EAAE,UAAU,EAAE,MAAM,C
AAC,CAAC;SACrD;QACD,OAAO,MAAM,CAAC;IACbB,CAAC;IAED,SAAS,mBAAmB,CAAC,KAaGB,EA
E,MAAc;QACpD,IAAA,KAaK,GAAY,KAaK,MAAjB,EAAE,MAAM,GAAI,KAaK,OAAT,CAAU;QAC9B,MA
AM,CAAC,KAaK,GAAG,KAaK,CAAC;QACrB,MAAM,CAAC,MAAM,GAAG,MAAM,CAAC;QACvB,IAAM
,GAAG,GAAG,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC;QAEpC,GAAG,CAAC,SAAS,CAAC,KAaK,
EAAE,CAAC,EAAE,CAAC,EAAE,KAaK,EAAE,MAAM,CAAC,CAAC;IAC5C,CAAC;IACD;;;IAGA,SAAS,uB
AAuB,CAAC,KAaGB,EAAE,MAAc;QAC/D,MAAM,CAAC,KAaK,GAAG,KAaK,CAAC,KAaK,CAAC;QAC3

B,MAAM,CAAC,MAAM,GAAG,KAAK,CAAC,MAAM,CAAC;QAC7B,IAAM,GAAG,GAAG,MAAM,CAAC,U
AAU,CAAC,IAAI,CAAC,CAAC;QAEpC,GAAG,CAAC,YAAY,CAAC,KAAK,EAAE,CAAC,EAAE,CAAC,CA
AC,CAAC;IACHc,CAAC;IAED,SAAS,gCAAgC,CACrC,KAAgB,EAAE,UAAkB;QACtC,IAAM,MAAM,GAAG,
4BAA4B,CAAC,UAAU,CAAC,CAAC;QACxD,uBAAuB,CAAC,KAAK,EAAE,MAAM,CAAC,CAAC;QAEvC,O
AAO,MAAM,CAAC;IACHb,CAAC;IAED;;;;;;;;;;;;;AA+BA,aAAgB,MAAM,CACIB,wBACgE,EACH
E,UAKC,EACD,UAKC,EACD,WAAmB,EAAE,aAA6B;QAZID,2BAAA,EAAA;YACE,CAAC,EAAE,CAAC;YA
CJ,CAAC,EAAE,CAAC;YACJ,CAAC,EAAE,CAAC;YACJ,CAAC,EAAE,CAAC;SACL;QACD,2BAAA,EAAA;
YACE,CAAC,EAAE,CAAC;YACJ,CAAC,EAAE,CAAC;YACJ,CAAC,EAAE,CAAC;YACJ,CAAC,EAAE,GAA
G;SACP;QACD,4BAAA,EAAA,mBAAmB;QAAE,8BAAA,EAAA,iBAA2B,CAAC,CAAC;QACpD,IAAI,KAAK,
CAAC,OAAO,CAAC,wBAAwB,CAAC;YACvC,wBAAwB,CAAC,MAAM,KAAK,CAAC,EAAE;YACzC,OAAO
,IAAI,CAAC;SACb;QAED,IAAI,6BAE0C,CAAC;QAE/C,IAAI,CAAC,KAAK,CAAC,OAAO,CAAC,wBAAwB,
CAAC,EAAE;YAC5C,6BAA6B,GAAG,CAAC,wBAAwB,CAAC,CAAC;SAC5D;aAAM;YACL,6BAA6B,GAAG
,wBAAwB,CAAC;SAC1D;QAEK,IAAA,KAAkB,6BAA6B,CAAC,CAAC,CAAC,EAAjD,KAAK,WAAA,EAAE,
MAAM,YAAoC,CAAC;QACzD,IAAM,KAAK,GAAG,IAAI,iBAAiB,CAAC,KAAK,GAAG,MAAM,GAAG,CAA
C,CAAC,CAAC;QAExD,SAAS,UAAU,CACf,KAAwB,EAAE,GAAW,EAAE,MAAc,EAAE,KAAa,EACpE,MAA
c,EAAE,KAA6C;YAA7C,sBAAA,EAAA,UAAgB,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,GAAG,EAAE,CA
AC,EAAE,GAAG,EAAE,CAAC,EAAE,GAAG,EAAC;YAC/D,KAAK,IAAI,CAAC,GAAG,CAAC,MAAM,EAA
E,CAAC,IAAI,MAAM,EAAE,CAAC,EAAE,EAAE;gBACtC,KAAK,IAAI,CAAC,GAAG,CAAC,MAAM,EAAE,
CAAC,IAAI,MAAM,EAAE,CAAC,EAAE,EAAE;oBACtC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CAA
C,EAAE;wBACtB,IAAM,CAAC,GAAG,CAAC,GAAG,GAAG,CAAC,IAAI,KAAK,IAAI,MAAM,GAAG,CAAC,
CAAC,CAAC;wBAC3C,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAA
C,CAAC;wBAC3B,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAAC,CA
AC;wBAC3B,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAAC,CAAC;w
BAC3B,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAAC,CAAC;qBAC5
B;iBACF;aACF;SACF;QAED,SAAS,sBAAsB,CAC3B,gBAAuC,EACvC,GAAW,EACX,MAAc,EACd,KAAa,EA
Cb,aAA6B,EAC7B,MAAU;YADV,8BAAA,EAAA,iBAA2B,CAAC,CAAC;YAC7B,uBAAA,EAAA,UAAU;YAE
Z,IAAI,sBAAsB,GAAG,CAAC,CAAC;YAC/B,KAAK,IAAI,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,IAAI,
MAAM,EAAE,CAAC,EAAE,EAAE;wCAC7B,CAAC;oBACR,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,C
AAC,EAAE;wBACtB,IAAM,GAAC,GAAG,CAAC,GAAG,GAAG,CAAC,IAAI,KAAK,IAAI,MAAM,GAAG,CA
AC,CAAC,CAAC;wBAC3C,IAAI,CAAC,aAAa,CAAC,IAAI,CAAC,UAAA,EAAE,IAAI,OAAA,EAAE,KAAK,g
BAAgB,CAAC,GAAC,CAAC,GAAA,CAAC,EAAE;4BACzD,sBAAsB,IAAI,CAAC,CAAC;yBAC7B;qBACF;;g
BANH,KAAK,IAAI,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,IAAI,MAAM,EAAE,CAAC,EAAE;4BAA7B,C
AAC;iBAOT;aACF;YACD,OAAO,sBAAsB,GAAG,CAAC,CAAC;SACnC;QAED,KAAK,IAAI,CAAC,GAAG,C
AAC,EAAE,CAAC,GAAG,MAAM,EAAE,CAAC,IAAI,CAAC,EAAE;oCACzB,CAAC;gBACR,IAAM,CAAC,G
AAG,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC;gBACxB,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,
CAAC,GAAG,UAAU,CAAC,CAAC,CAAC;gBACHc,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC
,GAAG,UAAU,CAAC,CAAC,CAAC;gBACHc,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAA
G,UAAU,CAAC,CAAC,CAAC;gBACHc,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,UA
AU,CAAC,CAAC,CAAC;wCACvB,CAAC;oBACR,IAAI,aAAa,CAAC,IAAI,CACd,UAAA,EAAE,IAAI,OAAA,
EAAE,KAAK,6BAA6B,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,GAAA,CAAC,EAAE;wBAC9D
,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,CAAC;wBAC5B,KAAK,CAAC,CAA
C,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,CAAC;wBACHc,KAAK,CAAC,CAAC,GA
AG,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,CAAC;wBACHc,KAAK,CAAC,CAAC,GAAG,C
AAC,GAAG,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,CAAC;wBACHc,IAAM,UAAU,GAAG,sBAAsB,CACr
C,6BAA6B,CAAC,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,EAAE,KAAK,EACID,aAAa,CAAC,
CAAC;wBACnB,IAAI,WAAW,IAAI,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,MA
AM,IAAI,CAAC,GAAG,CAAC,IAAI,CAAC;4BACzD,CAAC,GAAG,CAAC,GAAG,KAAK,IAAI,UAAU,EAAE;
4BAC/B,UAAU,CAAC,KAAK,EAAE,CAAC,EAAE,CAAC,EAAE,KAAK,EAAE,CAAC,CAAC,CAAC;yBACnC

;qBACF;;gBAdH,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,6BAA6B,CAAC,MAAM,EAAE,CAA
C,EAAE;4BAApD,CAAC;iBAeT;;YArBH,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,EAA
E,CAAC,IAAI,CAAC;wBAAxB,CAAC;aAsBT;SACF;QAED,OAAO,IAAI,SAAS,CAAC,KAAK,EAAE,KAAK,E
AAE,MAAM,CAAC,CAAC;IAC7C,CAAC;IAED,IAAM,mBAAmB,GAAoC;QAC3D,CAAC,GAAG,EAAE,EAA
E,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,EAAE,E
AAE,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,
EAAE,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,GAAG,CAAC;QAC9D,CAAC,GAAG,EA
AE,EAAE,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,GAAG,CAAC,EAAE,CAAC,GAAG,
EAAE,EAAE,EAAE,EAAE,CAAC,EAAG,CAAC,GAAG,EAAE,GAAG,EAAE,EAAE,CAAC;QAC9D,CAAC,G
AAG,EAAE,GAAG,EAAE,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,EAAE,CAAC,EAAE,CAA
C,GAAG,EAAE,GAAG,EAAE,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,EAAE,CAAC;QAC9D,
CAAC,GAAG,EAAE,GAAG,EAAE,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,EAAE,CAAC,EA
AE,CAAC,EAAE,EAAE,GAAG,EAAE,EAAE,CAAC,EAAG,CAAC,EAAE,EAAE,GAAG,EAAE,GAAG,CAAC;
QAC9D,CAAC,EAAE,EAAE,GAAG,EAAE,GAAG,CAAC,EAAE,CAAC,EAAE,EAAE,GAAG,EAAE,GAAG,C
AAC,EAAE,CAAC,EAAE,EAAE,GAAG,EAAE,GAAG,CAAC,EAAE,CAAC,EAAE,EAAE,GAAG,EAAE,GAA
G,CAAC;QAC9D,CAAC,EAAE,EAAE,GAAG,EAAE,GAAG,CAAC,EAAE,CAAC,EAAE,EAAE,GAAG,EAAE,
GAAG,CAAC,EAAE,CAAC,EAAE,EAAE,GAAG,EAAE,GAAG,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,EA
AE,GAAG,CAAC;KAC9D,CAAC;IAEF;;;;;;;AAiBA,aAAGB,iBAAiB,CAC7B,gBAA6D,EAC7D,UACuB;
QADvB,2BAAA,EAAA,gCACuB;QACzB,IAAI,KAAK,CAAC,OAAO,CAAC,gBAAGB,CAAC,IAAI,gBAAGB,C
AAC,MAAM,KAAK,CAAC,EAAE;YACpE,OAAO,IAAI,CAAC;SACb;QAED,IAAI,2BAA2B,CAAC;QACbC,IA
AI,CAAC,KAAK,CAAC,OAAO,CAAC,gBAAGB,CAAC,EAAE;YACpC,2BAA2B,GAAG,CAAC,gBAAGB,CAA
C,CAAC;SACID;aAAM;YACL,2BAA2B,GAAG,gBAAGB,CAAC;SACbD;QACK,IAAA,KAAkB,2BAA2B,CAA
C,CAAC,CAAC,EAA/C,KAAK,WAAA,EAAE,MAAM,YAAkC,CAAC;QACvD,IAAM,KAAK,GAAG,IAAI,iBA
AiB,CAAC,KAAK,GAAG,MAAM,GAAG,CAAC,CAAC,CAAC;QAExD,KAAK,IAAI,CAAC,GAAG,CAAC,EA
AE,CAAC,GAAG,MAAM,GAAG,KAAK,EAAE,EAAE,CAAC,EAAE;;YAEvC,IAAM,CAAC,GAAG,CAAC,GA
AG,CAAC,CAAC;YACbB,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC;YACnB,KAAK,C
AAC,CAAC,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC;YACnB,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,G
AAG,GAAG,CAAC;YACnB,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC;YACnB,KAAK,
IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,2BAA2B,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;gBAC3D
,IAAM,MAAM,GAAG,2BAA2B,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;gBACtD,IAAI,
MAAM,KAAK,CAAC,CAAC,EAAE;oBACjB,IAAM,KAAK,GAAG,UAAU,CAAC,MAAM,CAAC,CAAC;oBA
CjC,IAAI,CAAC,KAAK,EAAE;wBACV,MAAM,IAAI,KAAK,CAAC,yCAAuC,MAAQ,CAAC,CAAC;qBACIE;o
BACD,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;oBACxB,KAAK
,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;oBACxB,KAAK,CAAC,CAA
C,GAAG,CAAC,CAAC,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;oBACxB,KAAK,CAAC,CAAC,GAAG,CA
AC,CAAC,GAAG,GAAG,CAAC;iBACpB;aACF;SACF;QACD,OAAO,IAAI,SAAS,CAAC,KAAK,EAAE,KAAK
,EAAE,MAAM,CAAC,CAAC;IAC7C,CAAC;IAED,IAAM,YAAY,GAAG;QACnB,OAAO,EAAE,SAAS;QACIB,
WAAW,EAAE,cAAc;QAC3B,IAAI,EAAE,MAAM;QACZ,cAAc,EAAE,kBAAkB;KACnC,CAAC;IAEF;;;;;;;
;;;;;AAoBA,aAAGB,QAAQ,CACpB,MAAc,EAAE,KAAgB,EAAE,SAAYB,EAC3D,WAAiB,EAAE,cAAkB,EAA
E,cAAkB;QAA7D,4BAAA,EAAA,iBAAiB;QAAE,+BAAA,EAAA,kBAAkB;QAAE,+BAAA,EAAA,sBAAsB;QA
CzD,IAAA,KAAkB,YAAY,CAAC,KAAK,CAAC,EAApC,MAAM,QAAA,EAAE,KAAK,QAAuB,CAAC;QAC5
C,MAAM,CAAC,KAAK,GAAG,KAAK,CAAC;QACrB,MAAM,CAAC,MAAM,GAAG,MAAM,CAAC;QAEvB,I
AAM,GAAG,GAAG,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC;QACpC,GAAG,CAAC,IAAI,EAAE,CA
AC;QACX,IAAI,cAAc,EAAE;YACIB,oBAAoB,CAAC,MAAM,CAAC,CAAC;SAC9B;QAED,GAAG,CAAC,SA
AS,CAAC,KAAK,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;QAE3B,GAAG,CAAC,WAAW,GAAG,WAAW,C
AAC;QAC9B,IAAI,SAAS,EAAE;YACb,oBAAoB,CAAC,EAAC,KAAK,OAAA,EAAE,MAAM,QAAA,EAAC,E
AAE,SAAS,EAAE,OAAO,EAAE,MAAM,CAAC,CAAC;YAEIE,IAAM,IAAI,GAAG,gCAAgC,CAAC,SAAS,EA
AE,YAAY,CAAC,IAAI,CAAC,CAAC;YAE5E,IAAM,WAAW,GAAG,iCAAiC,CACjD,IAAI,EAAE,cAAc,EAAE
,YAAY,CAAC,WAAW,CAAC,CAAC;YACpD,GAAG,CAAC,SAAS,CAAC,WAAW,EAAE,CAAC,EAAE,CAA

C,EAAE,KAAK,EAAE,MAAM,CAAC,CAAC;SACjD;QACD,GAAG,CAAC,OAAO,EAAE,CAAC;IACbB,CAA
C;IAED;,,,,,,;,,,,,;,,,,,;AAsBA,aAAGB,iBAaIB,CAC7B,MAAc,EAAE,KAAgB,EAAE,SAAoB,EACtD,WAAiB,E
AAE,cAAkB,EAAE,cAAsB,EAC7D,cAAqB;QADrB,4BAAA,EAAA,iBAaIB;QAAE,+BAAA,EAAA,kBAaKB;Q
AAE,+BAAA,EAAA,sBAAsB;QAC7D,+BAAA,EAAA,qBAaQB;QACjB,IAAA,KAAkB,YAAY,CAAC,KAAK,C
AAC,EAAPC,MAAM,QAAA,EAAE,KAAK,QAAuB,CAAC;QAC5C,oBAAoB,CAAC,EAAC,KAAK,OAAA,EA
AE,MAAM,QAAA,EAAC,EAAE,SAAS,EAAE,OAAO,EAAE,MAAM,CAAC,CAAC;QAEIE,IAAM,IAAI,GAAG
,gCAAGC,CAAC,SAAS,EAAE,YAAY,CAAC,IAAI,CAAC,CAAC;QAC5E,IAAM,WAAW,GAAG,iCAAiC,CACj
D,IAAI,EAAE,cAAc,EAAE,YAAY,CAAC,WAAW,CAAC,CAAC;QAEpD,MAAM,CAAC,KAAK,GAAG,WAA
W,CAAC,KAAK,CAAC;QACjC,MAAM,CAAC,MAAM,GAAG,WAAW,CAAC,MAAM,CAAC;QAEnC,IAAM,
GAAG,GAAG,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC;QACpC,GAAG,CAAC,IAAI,EAAE,CAAC;Q
ACX,IAAI,cAAc,EAAE;YACiB,oBAAoB,CAAC,MAAM,CAAC,CAAC;SAC9B;QAED,IAAM,eAAe,GACjB,4B
AA4B,CAAC,YAAY,CAAC,cAAc,CAAC,CAAC;QAC9D,IAAM,kBAaKB,GAAG,eAAe,CAAC,UAAU,CAAC,I
AAI,CAAC,CAAC;QAC5D,eAAe,CAAC,KAAK,GAAG,WAAW,CAAC,KAAK,IAAI,GAAG,GAAG,cAAc,CAA
C,CAAC;QACnE,eAAe,CAAC,MAAM,GAAG,WAAW,CAAC,MAAM,IAAI,GAAG,GAAG,cAAc,CAAC,CAAC
;QACrE,kBAaKB,CAAC,SAAS,CACxB,WAAW,EAAE,CAAC,EAAE,CAAC,EAAE,WAAW,CAAC,KAAK,EA
AE,WAAW,CAAC,MAAM,EAAE,CAAC,EAAE,CAAC,EAC9D,eAAe,CAAC,KAAK,EAAE,eAAe,CAAC,MAA
M,CAAC,CAAC;QACnD,GAAG,CAAC,qBAaQB,GAAG,KAAK,CAAC;QACiC,GAAG,CAAC,SAAS,CACT,eA
Ae,EAAE,CAAC,EAAE,CAAC,EAAE,eAAe,CAAC,KAAK,EAAE,eAAe,CAAC,MAAM,EAAE,CAAC,EACvE,
CAAC,EAAE,MAAM,CAAC,KAAK,EAAE,MAAM,CAAC,MAAM,CAAC,CAAC;;QAGpC,KAAK,IAAI,CAAC
,GAAG,CAAC,EAAE,CAAC,GAAG,eAAe,CAAC,KAAK,EAAE,CAAC,EAAE,EAAE;YAC9C,GAAG,CAAC,S
AAS,EAAE,CAAC;YACbB,GAAG,CAAC,WAAW,GAAG,SAAS,CAAC;YAC5B,GAAG,CAAC,MAAM,CAAC,
cAAc,GAAG,CAAC,EAAE,CAAC,CAAC,CAAC;YACiC,GAAG,CAAC,MAAM,CAAC,cAAc,GAAG,CAAC,E
AAE,MAAM,CAAC,MAAM,CAAC,CAAC;YAC9C,GAAG,CAAC,MAAM,EAAE,CAAC;SACd;;QAID,KAAK,
IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,eAAe,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YAC/C,GA
AG,CAAC,SAAS,EAAE,CAAC;YACbB,GAAG,CAAC,WAAW,GAAG,SAAS,CAAC;YAC5B,GAAG,CAAC,M
AAM,CAAC,CAAC,EAAE,cAAc,GAAG,CAAC,CAAC,CAAC;YACiC,GAAG,CAAC,MAAM,CAAC,MAAM,C
AAC,KAAK,EAAE,cAAc,GAAG,CAAC,CAAC,CAAC;YAC7C,GAAG,CAAC,MAAM,EAAE,CAAC;SACd;QA
ED,GAAG,CAAC,WAAW,GAAG,GAAG,GAAG,WAAW,CAAC;QACpC,GAAG,CAAC,SAAS,CAAC,KAAK,E
AAE,CAAC,EAAE,CAAC,EAAE,WAAW,CAAC,KAAK,EAAE,WAAW,CAAC,MAAM,CAAC,CAAC;QACIE,
GAAG,CAAC,OAAO,EAAE,CAAC;IACbB,CAAC;IAED,SAAS,gBAAGB,CACrB,uBAAwE,EACxE,cAAsB;QA
CxB,IAAM,mBAAmB,GAAG,MAAM,CAC9B,uBAAuB,EAAE,EAAC,CAAC,EAAE,CAAC,EAAE,CAAC,EAA
E,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,GAAG,EAAC,EACnD,EAAC,CAAC,EAAE,CAAC,E
AAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAC,CAAC,CAAC;QAE9
B,IAAM,cAAc,GACbB,gCAAGC,CAAC,mBAAmB,EAAE,YAAY,CAAC,IAAI,CAAC,CAAC;QAC7E,IAAI,cA
Ac,KAAK,CAAC,EAAE;YACxB,OAAO,cAAc,CAAC;SACvB;aAAM;YACL,OAAO,iCAAiC,CACpC,cAAc,EA
AE,cAAc,EAAE,YAAY,CAAC,WAAW,CAAC,CAAC;SAC/D;IACH,CAAC;IAED;,,,,,,;,,,,,;AAoBA,aAAGB,
eAAe,CAC3B,MAAc,EAAE,KAAgB,EACbC,uBAAwE,EACxE,oBAAwB,EAAE,cAAkB,EAAE,cAAsB;QAAPe,
qCAAA,EAAA,wBAAwB;QAAE,+BAAA,EAAA,kBAaKB;QAAE,+BAAA,EAAA,sBAAsB;QACtE,IAAM,YAA
Y,GAAG,iCAAiC,CACID,KAAK,EAAE,oBAAoB,EAAE,YAAY,CAAC,OAAO,CAAC,CAAC;QACvD,MAAM,
CAAC,KAAK,GAAG,YAAY,CAAC,KAAK,CAAC;QACiC,MAAM,CAAC,MAAM,GAAG,YAAY,CAAC,MAA
M,CAAC;QAEpC,IAAM,GAAG,GAAG,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC;QAEpC,IAAI,KAAK
,CAAC,OAAO,CAAC,uBAAuB,CAAC;YACtC,uBAAuB,CAAC,MAAM,KAAK,CAAC,EAAE;YACxC,GAAG,
CAAC,SAAS,CAAC,YAAY,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;YACiC,OAAO;SACR;QAED,IAAM,UA
AU,GAAG,gBAAGB,CAAC,uBAAuB,EAAE,cAAc,CAAC,CAAC;QAE7E,GAAG,CAAC,IAAI,EAAE,CAAC;Q
ACX,IAAI,cAAc,EAAE;YACiB,oBAAoB,CAAC,MAAM,CAAC,CAAC;SAC9B;;QAEK,IAAA,KAAkB,YAAY,
CAAC,KAAK,CAAC,EAAPC,MAAM,QAAA,EAAE,KAAK,QAAuB,CAAC;QAC5C,GAAG,CAAC,SAAS,CAA
C,KAAK,EAAE,CAAC,EAAE,CAAC,EAAE,KAAK,EAAE,MAAM,CAAC,CAAC;,,,,;QAMiC,mBAAmB,CAAC
,GAAG,EAAE,UAAU,EAAE,gBAAGB,CAAC,CAAC;,,,,;QAMvD,mBAAmB,CAAC,GAAG,EAAE,YAAY,EA

E,kBAakB,CAAC,CAAC;QAC3D,GAAG,CAAC,OAAO,EAAE,CAAC;IACHB,CAAC;IAED,SAAS,kBAakB,CACvB,2BAAwE,EACxE,iBAA2B,EAAE,cAAsB;QACrD,IAAM,mBAAmB,GAAG,MAAM,CAC9B,2BAA2B,EA AE,EAAC,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE, CAAC,EAAC,EACrD,EAAC,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EA AE,CAAC,EAAE,GAAG,EAAC,EAAE,IAAI,EAAE,iBAAiB,CAAC,CAAC;QAEzD,IAAM,cAAc,GACHB,gCAA gC,CAAC,mBAAmB,EAAE,YAAY,CAAC,IAAI,CAAC,CAAC;QAC7E,IAAI,cAAc,KAAK,CAAC,EAAE;YACx B,OAAO,cAAc,CAAC;SACvB;aAAM;YACL,OAAO,iCAAiC,CACpC,cAAc,EAAE,cAAc,EAAE,YAAY,CAAC, WAAW,CAAC,CAAC;SAC/D;IACH,CAAC;IAED;;;;;;;;;;;;;AAuBA,aAAgB,YAAY,CACxB,MAAc,EAAE ,KAAgB,EACHC,gBAA6D,EAC7D,iBAA0B,EAAE,oBAAwB,EAAE,cAAkB,EACxE,cAAsB;QADtB,kCAAA,E AAA,qBAAqB,CAAC,EAAE,CAAC,CAAC;QAAE,qCAAA,EAAA,wBAAwB;QAAE,+BAAA,EAAA,kBAakB; QACxE,+BAAA,EAAA,sBAAsB;QACxB,IAAM,YAAY,GAAG,iCAAiC,CACID,KAAK,EAAE,oBAAoB,EAAE, YAAY,CAAC,OAAO,CAAC,CAAC;QACvD,MAAM,CAAC,KAAK,GAAG,YAAY,CAAC,KAAK,CAAC;QACI C,MAAM,CAAC,MAAM,GAAG,YAAY,CAAC,MAAM,CAAC;QAEpC,IAAM,GAAG,GAAG,MAAM,CAAC,U AAU,CAAC,IAAI,CAAC,CAAC;QAEpC,IAAI,KAAK,CAAC,OAAO,CAAC,gBAAgB,CAAC,IAAI,gBAAgB,C AAC,MAAM,KAAK,CAAC,EAAE;YACpE,GAAG,CAAC,SAAS,CAAC,YAAY,EAAE,CAAC,EAAE,CAAC,C AAC,CAAC;YACIC,OAAO;SACR;QACD,IAAM,YAAY,GACd,kBAakB,CAAC,gBAAgB,EAAE,iBAAiB,EAA E,cAAc,CAAC,CAAC;QAE5E,GAAG,CAAC,IAAI,EAAE,CAAC;QACX,IAAI,cAAc,EAAE;YACIB,oBAAoB,C AAC,MAAM,CAAC,CAAC;SAC9B;;QAEK,IAAA,KAAkB,YAAY,CAAC,KAAK,CAAC,EAApC,MAAM,QAA A,EAAE,KAAK,QAAuB,CAAC;QAC5C,GAAG,CAAC,SAAS,CAAC,KAAK,EAAE,CAAC,EAAE,CAAC,EAA E,KAAK,EAAE,MAAM,CAAC,CAAC;;;QAM1C,mBAAmB,CAAC,GAAG,EAAE,YAAY,EAAE,gBAAgB,CA AC,CAAC;;;QAMzD,mBAAmB,CAAC,GAAG,EAAE,YAAY,EAAE,kBAakB,CAAC,CAAC;QAC3D,GAAG, CAAC,OAAO,EAAE,CAAC;IACHB,CAAC;;IChnBD;;;;;;;;;;;;;AAkBA,QAAa,aAAa,GAAa;QACrC,WAAW;Q ACX,YAAY;QACZ,sBAAsB;QACtB,qBAAqB;QACrB,uBAAuB;QACvB,sBAAsB;QACtB,sBAAsB;QACtB,qB AAqB;QACrB,uBAAuB;QACvB,sBAAsB;QACtB,WAAW;QACX,YAAY;QACZ,aAAa;QACb,YAAY;QACZ,sB AAsB;QACtB,qBAAqB;QACrB,uBAAuB;QACvB,sBAAsB;QACtB,sBAAsB;QACtB,qBAAqB;QACrB,uBAAuB ;QACvB,sBAAsB;QACtB,WAAW;QACX,YAAY;KACb;;IC3CD;IAEA;AACA,QAAM,OAAO,GAAG,OAAO;;I CHvB;;;;;;;;;;;;;OAeG;;;;;;;;;;;;;"} }

Found in path(s):

* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body-pix.js.map

No license file was found, but licenses were detected in source scan.

/**

* @license

* Copyright 2019 Google Inc. All Rights Reserved.

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*

=====

*/

Found in path(s):

- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_instance_masks.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/mobilenet.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_multiple_masks_webgl.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_multiple_poses.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/max_heap.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/base_model.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_multiple_masks_cpu.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_multiple_masks_cpu.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body_pix_model.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/max_heap.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/base_model.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_instance_masks.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body_pix_model.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_multiple_poses.d.ts
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/mobilenet.js
- * /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/multi_person/decode_multiple_masks_webgl.d.ts

No license file was found, but licenses were detected in source scan.

/**

- * @license
- * Copyright 2020 Google Inc. All Rights Reserved.
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <http://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
* =====
*/

Found in path(s):

* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/util.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/part_channels.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/types.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/types.js
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/part_channels.d.ts
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/util.d.ts

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2021 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

/*! *****

Copyright (c) Microsoft Corporation.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR

OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

***** */

/**

* @license
* Copyright 2019 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.

* =====

*/

/**

* @license
* Copyright 2019 Google Inc. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.

* =====

*/

/**

* @license
* Copyright 2020 Google Inc. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and

* limitations under the License.

*

* =====
*/

Found in path(s):

* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/dist/body-pix.js

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "sources": [ "../src/backends/backend.ts", "../src/util_base.ts", "../src/environment.ts", "node_modules/process/browser.js", "../src/global_util.ts", "../src/kernel_names.ts", "../src/kernel_registry.ts", "../src/util.ts", "../src/profile_r.ts", "../src/tape.ts", "../src/tensor_format.ts", "../src/tensor.ts", "../src/types.ts", "../src/tensor_util.ts", "../src/engine.ts", "../src/device_util.ts", "../src/flags.ts", "../src/tensor_util_env.ts", "../src/ops/operation.ts", "../src/ops/complex.ts", "../src/ops/tensor_ops_util.ts", "../src/ops/tensor.ts", "../src/io/types.ts", "node_modules/base64-js/index.js", "node_modules/ieee754/index.js", "node_modules/isarray/index.js", "node_modules/buffer/index.js", "../src/io/io_utils.ts", "../src/io/router_registry.ts", "../src/io/indexed_db.ts", "../src/io/local_storage.ts", "../src/io/model_management.ts", "../src/platforms/platform_browser.ts", "../src/platforms/platform_node.ts", "../src/ops/buffer.ts", "../src/ops/cast.ts", "../src/ops/clone.ts", "../src/ops/print.ts", "../src/base_side_effects.ts", "../src/io/browser_files.ts", "../src/io/progress.ts", "../src/io/weights_loader.ts", "../src/io/http.ts", "../src/io/passthrough.ts", "../src/io/io.ts", "../src/ops/mat_mul.ts", "../src/ops/one_hot.ts", "../src/ops/transpose.ts", "../src/ops/confusion_matrix.ts", "../src/math.ts", "../src/ops/tensor3d.ts", "../src/ops/browser.ts", "../src/ops/gather_nd_util.ts", "../src/ops/scatter_nd_util.ts", "../src/ops/slice_util.ts", "../src/serialization.ts", "../src/test_util.ts", "../src/version.ts", "../src/globals.ts", "../src/ops/add.ts", "../src/ops/floorDiv.ts", "../src/ops/div.ts", "../src/ops/mul.ts", "../src/ops/abs.ts", "../src/ops/acos.ts", "../src/ops/acosh.ts", "../src/ops/add_n.ts", "../src/ops/all.ts", "../src/ops/any.ts", "../src/ops/arg_max.ts", "../src/ops/arg_min.ts", "../src/ops/asin.ts", "../src/ops/asinh.ts", "../src/ops/atan.ts", "../src/ops/atan2.ts", "../src/ops/atanh.ts", "../src/ops/conv_util.ts", "../src/ops/reshape.ts", "../src/ops/avg_pool.ts", "../src/ops/avg_pool_3d.ts", "../src/ops/concat.ts", "../src/ops/sigmoid.ts", "../src/ops/slice.ts", "../src/ops/tanh.ts", "../src/ops/basic_lstm_cell.ts", "../src/ops/batch_to_space_nd.ts", "../src/ops/batchnorm_util.ts", "../src/ops/batchnorm.ts", "../src/ops/batchnorm2d.ts", "../src/ops/batchnorm3d.ts", "../src/ops/batchnorm4d.ts", "../src/ops/bincount.ts", "../src/ops/broadcast_to.ts", "../src/ops/ceil.ts", "../src/ops/clip_by_value.ts", "../src/ops/concat_1d.ts", "../src/ops/concat_2d.ts", "../src/ops/concat_3d.ts", "../src/ops/concat_4d.ts", "../src/ops/conv2d.ts", "../src/ops/conv1d.ts", "../src/ops/conv2d_backprop_input.ts", "../src/ops/conv2d_transpose.ts", "../src/ops/conv3d.ts", "../src/ops/conv3d_backprop_input.ts", "../src/ops/conv3d_transpose.ts", "../src/ops/cos.ts", "../src/ops/cosh.ts", "../src/ops/cumsum.ts", "../src/ops/dense_bincount.ts", "../src/ops/depth_to_space.ts", "../src/ops/depthwise_conv2d.ts", "../src/ops/diag.ts", "../src/ops/dilation2d.ts", "../src/ops/broadcast_util.ts", "../src/ops/equal.ts", "../src/ops/where.ts", "../src/ops/zeros_like.ts", "../src/ops/div_no_nan.ts", "../src/ops/dot.ts", "../src/ops/elu.ts", "../src/ops/erf.ts", "../src/ops/exp.ts", "../src/ops/expand_dims.ts", "../src/ops/expm1.ts", "../src/ops/tile.ts", "../src/ops/eye.ts", "../src/ops/fill.ts", "../src/ops/floor.ts", "../src/ops/gather.ts", "../src/ops/greater.ts", "../src/ops/greater_equal.ts", "../src/ops/imag.ts", "../src/ops/is_finite.ts", "../src/ops/is_inf.ts", "../src/ops/is_nan.ts", "../src/ops/leaky_relu.ts", "../src/ops/less.ts", "../src/ops/less_equal.ts", "../src/ops/linspace.ts", "../src/ops/local_response_normalization.ts", "../src/ops/log.ts", "../src/ops/log1p.ts", "../src/ops/gradients.ts", "../src/ops/neg.ts", "../src/ops/softplus.ts", "../src/ops/log_sigmoid.ts", "../src/ops/max.ts", "../src/ops/sub.ts", "../src/ops/sum.ts", "../src/ops/log_softmax.ts", "../src/ops/axis_util.ts", "../src/ops/log_sum_exp.ts", "../src/ops/logical_and.ts", "../src/ops/logical_not.ts", "../src/ops/logical_or.ts", "../src/ops/logical_xor.ts", "../src/ops/max_pool.ts", "../src/ops/max_pool_3d.ts", "../src/ops/max_pool_with_argmax.ts", "../src/ops/maximum.ts", "../src/ops/mean.ts", "../src/ops/min.ts", "../src/ops/minimum.ts", "../src/ops/mirror_pad.ts", "../src/ops/mod.ts", "../src/ops/square.ts", "../src/ops/moments.ts", "../src/ops/multi_rnn_cell.ts", "../src/ops/multinomial.ts", "../src/ops/not_equal.ts", "../src/ops/zeros.ts", "../src/ops/ones.ts", ..
```

/src/ops/ones_like.ts", "../src/ops/outer_product.ts", "../src/ops/pad.ts", "../src/ops/pad1d.ts", "../src/ops/pad2d.ts",
"../src/ops/pad3d.ts", "../src/ops/pad4d.ts", "../src/ops/space_to_batch_nd.ts", "../src/ops/pool.ts", "../src/ops/
pow.ts", "../src/ops/prelu.ts", "../src/ops/prod.ts", "../src/ops/rand.ts", "node_modules/seedrandom/lib/alea.js", "no
de_modules/seedrandom/lib/xor128.js", "node_modules/seedrandom/lib/xorwow.js", "node_modules/seedrandom/lib/
xorshift7.js", "node_modules/seedrandom/lib/xor4096.js", "node_modules/seedrandom/lib/tychei.js", "node_modules/
seedrandom/seedrandom.js", "node_modules/seedrandom/index.js", "../src/ops/rand_util.ts", "../src/ops/random_ga
mma.ts", "../src/ops/random_normal.ts", "../src/ops/random_uniform.ts", "../src/ops/range.ts", "../src/ops/real.ts",
"../src/ops/reciprocal.ts", "../src/ops/relu.ts", "../src/ops/relu6.ts", "../src/ops/reverse.ts", "../src/ops/reverse_1
d.ts", "../src/ops/reverse_2d.ts", "../src/ops/reverse_3d.ts", "../src/ops/reverse_4d.ts", "../src/ops/round.ts", "../s
rc/ops/rsqrt.ts", "../src/ops/scalar.ts", "../src/ops/selu.ts", "../src/ops/separable_conv2d.ts", "../src/ops/setdiff1d_
async.ts", "../src/ops/sign.ts", "../src/ops/sin.ts", "../src/ops/sinh.ts", "../src/ops/slice1d.ts", "../src/ops/slice2d.ts",
"../src/ops/slice3d.ts", "../src/ops/slice4d.ts", "../src/ops/softmax.ts", "../src/ops/spectral/fft.ts", "../src/op
s/spectral/ifft.ts", "../src/ops/spectral/irfft.ts", "../src/ops/split.ts", "../src/ops/spectral/rfft.ts", "../src/ops/sqrt.t
s", "../src/ops/squared_difference.ts", "../src/ops/squeeze.ts", "../src/ops/stack.ts", "../src/ops/step.ts", "../src/op
s/strided_slice.ts", "../src/ops/tan.ts", "../src/ops/tensor1d.ts", "../src/ops/tensor2d.ts", "../src/ops/tensor4d.ts", "../
src/ops/tensor5d.ts", "../src/ops/tensor6d.ts", "../src/ops/topk.ts", "../src/ops/truncated_normal.ts", "../src/ops/u
nique.ts", "../src/ops/unordered_segment_sum.ts", "../src/ops/unstack.ts", "../src/ops/variable.ts", "../src/backends
/where_impl.ts", "../src/ops/where_async.ts", "../src/ops/boolean_mask.ts", "../src/ops/norm.ts", "../src/ops/mov
ing_average.ts", "../src/ops/scatter_nd.ts", "../src/ops/sparse_to_dense_util.ts", "../src/ops/sparse_to_dense.ts", "../
src/ops/gather_nd.ts", "../src/ops/dropout_util.ts", "../src/ops/dropout.ts", "../src/ops/signal_ops_util.ts", "../src
/ops/in_top_k.ts", "../src/ops/conv2d_backprop_filter.ts", "../src/ops/fused_util.ts", "../src/ops/fused/conv2d.ts",
"../src/ops/depthwise_conv2d_native_backprop_filter.ts", "../src/ops/depthwise_conv2d_native_backprop_input.
ts", "../src/ops/fused/depthwise_conv2d.ts", "../src/ops/fused/mat_mul.ts", "../src/ops/fused_ops.ts", "../src/ops
/ops/signal/hamming_window.ts", "../src/ops/signal/hann_window.ts", "../src/ops/signal/frame.ts", "../src/ops/o
ps/signal/stft.ts", "../src/ops/image/crop_and_resize.ts", "../src/ops/image/flip_left_right.ts", "../src/ops/ima
ge/rotate_with_offset.ts", "../src/ops/nonmax_util.ts", "../src/ops/image/non_max_suppression.ts", "../src/backe
nds/non_max_suppression_util.ts", "../src/backends/non_max_suppression_impl.ts", "../src/ops/image/non_max
_suppression_async.ts", "../src/ops/image/non_max_suppression_with_score.ts", "../src/ops/image/non_max_s
uppression_with_score_async.ts", "../src/ops/image/non_max_suppression_padded.ts", "../src/ops/image/non_
max_suppression_padded_async.ts", "../src/ops/image/resize_bilinear.ts", "../src/ops/image/resize_nearest_nei
ghbor.ts", "../src/ops/linalg/band_part.ts", "../src/ops/linalg/gram_schmidt.ts", "../src/ops/linalg/qr.ts", "../s
rc/ops/loss_ops_utils.ts", "../src/ops/losses/compute_weighted_loss.ts", "../src/ops/losses/absolute_difference.t
s", "../src/ops/losses/cosine_distance.ts", "../src/ops/losses/hinge_loss.ts", "../src/ops/losses/huber_loss.ts", "
../src/ops/losses/log_loss.ts", "../src/ops/losses/mean_squared_error.ts", "../src/ops/losses/sigmoid_cross_e
ntropy.ts", "../src/ops/losses/softmax_cross_entropy.ts", "../src/ops/ops.ts", "../src/optimizers/optimizer.ts", "../
src/optimizers/adadelta_optimizer.ts", "../src/optimizers/adagrad_optimizer.ts", "../src/optimizers/adam_optimize
r.ts", "../src/optimizers/adamax_optimizer.ts", "../src/optimizers/sgd_optimizer.ts", "../src/optimizers/momentum
_optimizer.ts", "../src/optimizers/rmsprop_optimizer.ts", "../src/optimizers/optimizer_constructors.ts", ../src/train.t
s", ../src/browser_util.ts", ../src/ops/concat_util.ts", ../src/ops/reduce_util.ts", ../src/ops/rotate_util.ts", ../src/
ops/array_ops_util.ts", ../src/ops/selu_util.ts", ../src/ops/erf_util.ts", ../src/log.ts", ../src/backends/complex_uti
l.ts", ../src/ops/split_util.ts", ../src/ops/segment_util.ts", ../src/backends/backend_util.ts", ../src/backends/ker
nel_impls.ts", ../src/base.ts", ../src/index.ts", ../src/canvas_util.ts", ../src/tex_util.ts", ../src/webgl_util.ts", ../src/flag
s_webgl.ts", ../src/glsl_version.ts", ../src/shader_compiler_util.ts", ../src/decode_matrix_gpu.ts", ../src/decode_matr
ix_packed_gpu.ts", ../src/encode_float_gpu.ts", ../src/encode_float_packed_gpu.ts", ../src/encode_matrix_gpu.ts", "
../src/encode_matrix_packed_gpu.ts", ../src/gpgpu_util.ts", ../src/gpgpu_context.ts", ../src/shader_compiler.ts", ../src
/gpgpu_math.ts", ../src/cpu_util.ts", ../src/kernels/Abs.ts", ../src/utils/binary_impl.ts", ../src/kernels/Complex.t
s", ../src/utils/zeros_impl.ts", ../src/kernels/Identity.ts", ../src/kernels/Real.ts", ../src/kernels/Cast.ts", ../src
/utils/binary_utils.ts", ../src/kernels/Add.ts", ../src/kernels/Bincount_impl.ts", ../src/utils/unary_impl.ts", ../s

rc/utils/unary_utils.ts", "../src/kernels/Ceil.ts", "../src/kernels/Concat_impl.ts", "../src/kernels/Exp.ts", "../src/kernels/Expml.ts", "../src/kernels/Floor.ts", "../src/kernels/GatherV2_impl.ts", "../src/kernels/Greater.ts", "../src/kernels/Less.ts", "../src/kernels/LinSpace_impl.ts", "../src/kernels/Log.ts", "../src/kernels/Max_impl.ts", "../src/kernels/Maximum.ts", "../src/kernels/Minimum.ts", "../src/kernels/Multiply.ts", "../src/kernels/Neg.ts", "../src/kernels/NotEqual.ts", "../src/kernels/Transpose_impl.ts", "../src/kernels/Transpose.ts", "../src/kernels/Prod.ts", "../src/kernels/Range_impl.ts", "../src/kernels/Rsqrt.ts", "../src/kernels/Slice.ts", "../src/kernels/SquaredDifference.ts", "../src/kernels/StridedSlice_impl.ts", "../src/kernels/Sub.ts", "../src/kernels/Tile_impl.ts", "../src/kernels/TopK_impl.ts", "../src/kernels/Unique_impl.ts", "../src/shared.ts", "../src/kernel_utils/shared.ts", "../src/packing_util.ts", "../src/pack_gpu.ts", "../src/reshape_packed_gpu.ts", "../src/texture_manager.ts", "../src/unaryop_gpu.ts", "../src/unaryop_packed_gpu.ts", "../src/unpack_gpu.ts", "../src/backend_webgl.ts", "../src/webgl.ts", "../src/binaryop_gpu.ts", "../src/binaryop_packed_gpu.ts", "../src/kernels/LeakyRelu.ts", "../src/kernels/Prelu.ts", "../src/kernel_utils/kernel_funcs_utils.ts", "../src/mulmat_packed_gpu.ts", "../src/binaryop_complex_gpu.ts", "../src/kernel_utils/reshape.ts", "../src/kernels/Reshape.ts", "../src/mean_gpu.ts", "../src/reduce_gpu.ts", "../src/kernel_utils/reduce.ts", "../src/transpose_gpu.ts", "../src/transpose_packed_gpu.ts", "../src/kernels/Sum_impl.ts", "../src/kernels/Sum.ts", "../src/kernels/BatchMatMul_impl.ts", "../src/kernels/_FusedMatMul.ts", "../src/kernels/Acos.ts", "../src/kernels/Acosh.ts", "../src/addn_gpu.ts", "../src/addn_packed_gpu.ts", "../src/kernels/AddN.ts", "../src/kernels/All.ts", "../src/kernels/Any.ts", "../src/argminmax_gpu.ts", "../src/argminmax_packed_gpu.ts", "../src/kernel_utils/arg_min_max.ts", "../src/kernels/ArgMax.ts", "../src/kernels/ArgMin.ts", "../src/kernels/Asin.ts", "../src/kernels/Asinh.ts", "../src/kernels/Atan.ts", "../src/kernels/Atan2.ts", "../src/kernels/Atanh.ts", "../src/pool_gpu.ts", "../src/kernels/AvgPool.ts", "../src/kernels/AvgPool3D.ts", "../src/avg_pool_backprop_gpu.ts", "../src/kernels/AvgPool3DGrad.ts", "../src/kernels/AvgPoolGrad.ts", "../src/kernels/BatchMatMul.ts", "../src/batchnorm_gpu.ts", "../src/batchnorm_packed_gpu.ts", "../src/kernels/BatchNorm.ts", "../src/slice_gpu.ts", "../src/slice_packed_gpu.ts", "../src/kernels/BatchToSpaceND.ts", "../src/kernels/Bincount.ts", "../src/kernel_utils/int.ts", "../src/clip_gpu.ts", "../src/clip_packed_gpu.ts", "../src/kernels/ClipByValue.ts", "../src/complex_abs_gpu.ts", "../src/kernels/ComplexAbs.ts", "../src/concat_gpu.ts", "../src/concat_packed_gpu.ts", "../src/kernels/Imag.ts", "../src/kernels/Concat.ts", "../src/conv_gpu.ts", "../src/im2col_packed_gpu.ts", "../src/kernels/Conv2D_impl.ts", "../src/kernels/Conv2D.ts", "../src/conv_backprop_gpu.ts", "../src/kernels/Conv2DBackpropFilter.ts", "../src/kernels/Conv2DBackpropInput.ts", "../src/kernels/Conv3D.ts", "../src/kernels/Conv3DBackpropFilterV2.ts", "../src/kernels/Conv3DBackpropInputV2.ts", "../src/kernels/Cos.ts", "../src/kernels/Cosh.ts", "../src/crop_and_resize_gpu.ts", "../src/kernels/CropAndResize.ts", "../src/cumsum_gpu.ts", "../src/kernels/Cumsum.ts", "../src/kernels/DenseBincount.ts", "../src/depth_to_space_gpu.ts", "../src/kernels/DepthToSpace.ts", "../src/conv_gpu_depthwise.ts", "../src/conv_packed_gpu_depthwise.ts", "../src/kernels/DepthwiseConv2dNative.ts", "../src/conv_backprop_gpu_depthwise.ts", "../src/kernels/DepthwiseConv2dNativeBackpropFilter.ts", "../src/kernels/DepthwiseConv2dNativeBackpropInput.ts", "../src/diag_gpu.ts", "../src/kernels/Diag.ts", "../src/dilation_gpu.ts", "../src/kernels/Dilation2D.ts", "../src/kernels/Elu.ts", "../src/kernels/EluGrad.ts", "../src/kernels/Equal.ts", "../src/kernels/Erf.ts", "../src/kernels/ExpandDims.ts", "../src/fft_gpu.ts", "../src/kernels/FFT_impl.ts", "../src/kernels/FFT.ts", "../src/flip_gpu.ts", "../src/kernels/Flip.ts", "../src/flip_left_right_gpu.ts", "../src/kernels/FlipLeftRight.ts", "../src/kernels/FloorDiv.ts", "../src/kernels/FromPixels_utils/from_pixels_gpu.ts", "../src/kernels/FromPixels_utils/from_pixels_packed_gpu.ts", "../src/kernels/FromPixels.ts", "../src/kernels/FusedConv2D.ts", "../src/kernels/FusedDepthwiseConv2D.ts", "../src/gather_nd_gpu.ts", "../src/kernels/GatherNd.ts", "../src/gather_gpu.ts", "../src/kernels/GatherV2.ts", "../src/kernels/GreaterEqual.ts", "../src/kernels/IFFT.ts", "../src/kernels/IsFinite.ts", "../src/kernels/IsInf.ts", "../src/kernels/IsNaN.ts", "../src/kernels/LessEqual.ts", "../src/kernels/LinSpace.ts", "../src/kernels/Log1p.ts", "../src/kernels/LogicalAnd.ts", "../src/kernels/LogicalNot.ts", "../src/kernels/LogicalOr.ts", "../src/lrn_gpu.ts", "../src/lrn_packed_gpu.ts", "../src/kernels/LRN.ts", "../src/lrn_grad_gpu.ts", "../src/kernels/LRNGrad.ts", "../src/kernels/Max.ts", "../src/kernels/MaxPool.ts", "../src/kernels/MaxPool3D.ts", "../src/max_pool_backprop_gpu.ts", "../src/kernels/MaxPool3DGrad.ts", "../src/kernels/MaxPoolGrad.ts", "../src/kernels/MaxPoolWithArgmax_impl.ts", "../src/kernels/MaxPoolWithArgmax.ts", "../src/kernels/Mean_impl.ts", "../src/kernels/Mean.ts", "../src/kernels/Min.ts", "../src/mirror_pad_gpu.ts", "../src/mirror_pad_packed_gpu.ts", "../src/kernels/MirrorPad.ts", "../src/kernels/Mod.ts", "../src/multinomial_gpu.ts", "../src/kernels/RealDiv.ts", "../src/kernels/Softmax.ts", "../src/kernels/Multinomi

al.ts", "../src/kernels/NonMaxSuppressionV3.ts", "../src/kernels/NonMaxSuppressionV4.ts", "../src/kernels/NonMaxSuppressionV5.ts", "../src/onehot_gpu.ts", "../src/kernels/OneHot.ts", "../src/kernels/ZerosLike.ts", "../src/kernels/OnesLike.ts", "../src/kernels/Pack.ts", "../src/pad_gpu.ts", "../src/pad_packed_gpu.ts", "../src/kernels/PadV2.ts", "../src/kernels/Pow.ts", "../src/kernels/Range.ts", "../src/kernels/Reciprocal.ts", "../src/kernels/Relu.ts", "../src/kernels/Relu6.ts", "../src/resize_bilinear_gpu.ts", "../src/resize_bilinear_packed_gpu.ts", "../src/kernels/ResizeBilinear.ts", "../src/resize_bilinear_backprop_gpu.ts", "../src/kernels/ResizeBilinearGrad.ts", "../src/resize_nearest_neighbor_gpu.ts", "../src/kernels/ResizeNearestNeighbor.ts", "../src/resize_nearest_neighbor_backprop_gpu.ts", "../src/kernels/ResizeNearestNeighborGrad.ts", "../src/reverse_gpu.ts", "../src/reverse_packed_gpu.ts", "../src/kernels/Reverse.ts", "../src/rotate_gpu.ts", "../src/kernels/RotateWithOffset.ts", "../src/kernels/Round.ts", "../src/scatter_gpu.ts", "../src/kernels/ScatterNd.ts", "../src/select_gpu.ts", "../src/kernels/Select.ts", "../src/kernels/Selu.ts", "../src/kernels/Sigmoid.ts", "../src/kernels/Sign.ts", "../src/kernels/Sin.ts", "../src/kernels/Sinh.ts", "../src/kernels/Softplus.ts", "../src/kernels/SpaceToBatchND.ts", "../src/kernels/SparseToDense.ts", "../src/kernels/SplitV.ts", "../src/kernels/Sqrt.ts", "../src/kernels/Square.ts", "../src/kernels/Step.ts", "../src/strided_slice_gpu.ts", "../src/kernels/StridedSlice.ts", "../src/kernels/Tan.ts", "../src/kernels/Tanh.ts", "../src/tile_gpu.ts", "../src/kernels/Tile.ts", "../src/kernels/TopK.ts", "../src/kernels/Unique.ts", "../src/kernels/Unpack.ts", "../src/segment_gpu.ts", "../src/kernels/UnsortedSegmentSum.ts", "../src/register_all_kernels.ts", "../src/data/compiled_api.ts", "../src/operations/custom_op/register.ts", "../src/operations/executors/utils.ts", "../src/operations/op_list/arithmetic.ts", "../src/operations/op_list/basic_math.ts", "../src/operations/op_list/control.ts", "../src/operations/op_list/convolution.ts", "../src/operations/op_list/creation.ts", "../src/operations/op_list/dynamic.ts", "../src/operations/op_list/evaluation.ts", "../src/operations/op_list/graph.ts", "../src/operations/op_list/hash_table.ts", "../src/operations/op_list/image.ts", "../src/operations/op_list/logical.ts", "../src/operations/op_list/matrices.ts", "../src/operations/op_list/normalization.ts", "../src/operations/op_list/reduction.ts", "../src/operations/op_list/slice_join.ts", "../src/operations/op_list/spectral.ts", "../src/operations/op_list/transformation.ts", "../src/operations/operation_mapper.ts", "../src/operations/custom_op/node_value_impl.ts", "../src/ops/ops_for_converter.ts", "../src/operations/executors/arithmetic_executor.ts", "../src/operations/executors/basic_math_executor.ts", "../src/executor/tensor_utils.ts", "../src/executor/tensor_array.ts", "../src/executor/tensor_list.ts", "../src/operations/executors/control_executor.ts", "../src/operations/executors/convolution_executor.ts", "../src/operations/executors/creation_executor.ts", "../src/operations/executors/dynamic_executor.ts", "../src/operations/executors/evaluation_executor.ts", "../src/operations/executors/graph_executor.ts", "../src/executor/hash_table.ts", "../src/operations/executors/hash_table_executor.ts", "../src/operations/executors/image_executor.ts", "../src/operations/executors/logical_executor.ts", "../src/operations/executors/matrices_executor.ts", "../src/operations/executors/normalization_executor.ts", "../src/operations/executors/reduction_executor.ts", "../src/operations/executors/slice_join_executor.ts", "../src/operations/executors/spectral_executor.ts", "../src/operations/executors/transformation_executor.ts", "../src/operations/operation_executor.ts", "../src/executor/execution_context.ts", "../src/executor/model_analysis.ts", "../src/executor/graph_executor.ts", "../src/executor/resource_manager.ts", "../src/executor/graph_model.ts", "../src/decode_part_map.ts", "../src/base_model.ts", "../src/mobilenet.ts", "../src/keypoints.ts", "../src/multi_person/util.ts", "../src/multi_person/decode_multiple_masks_cpu.ts", "../src/multi_person/decode_multiple_masks_webgl.ts", "../src/multi_person/decode_instance_masks.ts", "../src/multi_person/max_heap.ts", "../src/multi_person/build_part_with_score_queue.ts", "../src/multi_person/decode_pose.ts", "../src/multi_person/decode_multiple_poses.ts", "../src/resnet.ts", "../src/saved_models.ts", "../src/body_pix_model.ts", "../src/blur.ts", "../src/output_rendering_util.ts", "../src/part_channels.ts", "../src/dat/index.js", "../src/dat/color/toString.js", "../src/dat/utils/common.js", "../src/dat/color/interpret.js", "../src/dat/color/math.js", "../src/dat/color/Color.js", "../src/dat/controllers/Controller.js", "../src/dat/dom/dom.js", "../src/dat/controllers/BooleanController.js", "../src/dat/controllers/OptionController.js", "../src/dat/controllers/StringController.js", "../src/dat/controllers/NumberController.js", "../src/dat/controllers/NumberControllerBox.js", "../src/dat/controllers/NumberControllerSlider.js", "../src/dat/controllers/FunctionController.js", "../src/dat/controllers/ColorController.js", "../src/dat/utils/css.js", "../src/dat/gui/saveDialogue.html.js", "../src/dat/controllers/ControllerFactory.js", "../src/dat/utils/requestAnimationFrame.js", "../src/dat/dom/CenteredDiv.js", "../src/dat/gui/GUI.js", "node_modules/stats.js/build/stats.min.js", "node_modules/@tensorflow-

models/posenet/dist/posenet.esm.js", "demo_util.js", "part_color_scales.js", "index.js"], "names": ["cachedSetTimeout", "cachedClearTimeout", "process", "module", "exports", "defaultSetTimeout", "Error", "defaultClearTimeout", "runTimeout", "fun", "setTimeout", "e", "call", "runClearTimeout", "marker", "clearTimeout", "currentQueue", "queue", "draining", "queueIndex", "cleanUpNextTick", "length", "concat", "drainQueue", "timeout", "len", "run", "Item", "array", "noop", "nextTick", "args", "Array", "arguments", "i", "push", "prototype", "apply", "title", "env", "argv", "version", "versions", "on", "addListener", "once", "off", "removeListener", "removeAllListeners", "emit", "prependListener", "prependOnceListener", "listeners", "name", "binding", "cwd", "chdir", "dir", "umask", "color", "forceCSSHex", "colorFormat", "__state", "conversionName", "toString", "r", "Math", "round", "g", "b", "a", "h", "s", "toFixed", "v", "str", "hex", "ARR_EACH", "forEach", "ARR_SLICE", "slice", "Common", "target", "each", "obj", "isObject", "Object", "keys", "key", "isUndefined", "bind", "toCall", "itr", "scope", "l", "BREAK", "fnc", "func", "threshold", "callImmediately", "callNow", "delayed", "toArray", "undefined", "isNaN", "isArray", "constructor", "INTERPRETATIONS", "common", "isString", "original", "test", "match", "parseInt", "parseFloat", "isNumber", "result", "toReturn", "interpret", "family", "litmus", "conversions", "conversion", "read", "tmpComponent", "ColorMath", "hi", "floor", "f", "p", "q", "t", "c", "min", "max", "delta", "NaN", "hex_with_component", "componentIndex", "value", "Color", "colorToString", "write", "defineRGBComponent", "component", "componentHexIndex", "defineProperty", "space", "recalculateRGB", "defineHSVComponent", "recalculateHSV", "math", "component_from_hex", "extend", "hsv_to_rgb", "rgb_to_hsv", "COMPONENTS", "rgb_to_hex", "Controller", "object", "property", "initialValue", "domElement", "document", "createElement", "__onChange", "__onFinishChange", "newValue", "updateDisplay", "getValue", "EVENT_MAP", "EVENT_MAP_INV", "k", "CSS_VALUE_PIXELS", "cssValueToPixels", "val", "isNull", "dom", "elem", "selectable", "style", "onselectstart", "MozUserSelect", "KHTMLUserSelect", "unselectable", "hor", "vert", "vertical", "horizontal", "position", "left", "right", "top", "bottom", "eventType", "pars", "aux", "params", "className", "evt", "createEvent", "clientX", "x", "clientY", "y", "initMouseEvent", "bubbles", "cancelable", "window", "clickCount", "init", "initKeyboardEvent", "initKeyEvent", "defaults", "ctrlKey", "altKey", "shiftKey", "metaKey", "keyCode", "charCode", "initEvent", "dispatchEvent", "event", "newBool", "bool", "addEventListener", "attachEvent", "removeEventListener", "detachEvent", "classes", "split", "indexOf", "join", "replace", "removeAttribute", "index", "splice", "RegExp", "getComputedStyle", "width", "height", "el", "offset", "offsetParent", "offsetLeft", "offsetTop", "activeElement", "type", "href", "BooleanController", "_this", "__prev", "__checkbox", "setAttribute", "onChange", "setValue", "appendChild", "checked", "OptionController", "opts", "options", "__select", "map", "element", "opt", "innerHTML", "desiredValue", "selectedIndex", "isActive", "StringController", "__input", "onBlur", "blur", "numDecimals", "_x", "NumberController", "_params", "__min", "__max", "__step", "step", "__impliedStep", "pow", "log", "abs", "LN10", "__precision", "_v", "minValue", "maxValue", "stepValue", "roundToDecimal", "decimals", "tenTo", "NumberControllerBox", "__truncationSuspended", "prevY", "onFinish", "onMouseDown", "diff", "onMouseUp", "unbind", "attempted", "onMouseDown", "i1", "i2", "o1", "o2", "NumberControllerSlider", "preventDefault", "bgRect", "__background", "getBoundingClientRect", "onTouchMove", "touches", "onTouchEnd", "__foreground", "onTouchStart", "addClass", "pct", "FunctionController", "text", "__button", "fire", "ColorController", "__color", "__temp", "makeSelectable", "__selector", "__saturation_field", "__field_knob", "__field_knob_border", "__hue_knob", "__hue_field", "__input_textShadow", "removeClass", "valueField", "fieldDown", "setSV", "fieldUpSV", "fieldDownH", "setH", "fieldUpH", "toOriginal", "fieldRect", "mismatch", "flip", "_flip", "toHexString", "marginTop", "vendors", "linearGradient", "background", "vendor", "cssText", "hueGradient", "css", "url", "indoc", "doc", "link", "rel", "getElementsByTagName", "cssContent", "injected", "head", "saveDialogContents", "ControllerFactory", "isFunction", "isBoolean", "requestAnimationFrame", "callback", "webkitRequestAnimationFrame", "mozRequestAnimationFrame", "onRequestAnimationFrame", "msRequestAnimationFrame", "CenteredDiv", "backgroundElement", "makeFullscreen", "body", "hide", "display", "opacity", "webkitTransform", "layout", "defer", "innerWidth", "getWidth", "innerHeight", "getHeight", "inject", "styleSheet", "CSS_NAMESPACE", "HIDE_KEY_CODE", "CLOSE_BUTTON_HEIGHT", "DEFAULT_DEFAULT_PRESET_NAME", "SUPPORTS_LOCAL_STORAGE", "localStorage", "SAVE_DIALOGUE", "autoPlaceVirgin", "autoPlaceContainer", "hideableGuis", "GUI", "_ul", "__folders", "__controllers", "__rememberedObjects", "__rememberedObjectIndexesToControllers", "__listening", "DEFAULT_WIDTH", "autoPlace", "load", "preset", "parent", "hideable", "resizable", "scrollable", "useLocalStorage", "root", "getItem", "getLocalStorageHash", "saveToLocalStorage", "titleRow", "defineProperties", "closeOnTop", "getRoot", "revert", "closed", "CLASS_CLOSED", "onResize", "__closeButton", "TEXT_OPEN", "TEXT_CLOSED", "setItem", "CLASS_MAIN", "savedGui", "JSON", "parse", "CLA

SS_CLOSE_BUTTON", "CLASS_CLOSE_TOP", "insertBefore", "childNodes", "CLASS_CLOSE_BOTTOM", "title
RowName", "createTextNode", "addRow", "CLASS_AUTO_PLACE_CONTAINER", "CLASS_AUTO_PLACE", "
resizeHandler", "onResizeDebounce", "stringify", "getSaveObject", "saveToLocalStorageIfPossible", "gui", "newDom
", "liBefore", "li", "removeListeners", "markPresetModified", "modified", "__preset_select", "augmentController", "contr
oller", "__li", "__gui", "nextSibling", "nextElementSibling", "add", "remove", "firstElementChild", "listen", "box", "metho
d", "pc", "pb", "returned", "oldName", "wasListening", "newController", "compose", "fakeEvent", "stopPropagation", "bor
derLeftColor", "isModified", "recallSavedValue", "matchedIndex", "controllerMap", "remembered", "presetMap", "facto
ryArgs", "before", "container", "CLASS_CONTROLLER_ROW", "location", "addPresetOption", "setSelected", "showH
ideExplain", "explain", "addSaveMenu", "div", "__save_row", "firstChild", "gears", "button", "button2", "button3", "select
", "getElementById", "localStorageCheckBox", "newConstructorTextArea", "which", "show", "focus", "save", "presetNa
me", "prompt", "saveAs", "addResizeHandle", "pmouseX", "drag", "dragStop", "CLASS_DRAG", "dragStart", "__resize_
handle", "setWidth", "w", "getCurrentPreset", "useInitialValues", "savedValues", "setPresetSelectIndex", "updateDisplay
s", "controllerArray", "toggleHide", "CLASS_TOO_TALL", "_keydownHandler", "removeChild", "subfolder", "remove
Folder", "newGuiParams", "folders", "folder", "parentElement", "getOffset", "node", "offsetHeight", "debounce", "saveDi
alogueContents", "controllers", "domImport", "GUIImport", "VALID_OUTPUT_STRIDES", "assertValidOutputStride
", "assert", "util", "assertValidResolution", "toFloatIfInt", "dtype", "toFloat", "MobileNet", "model", "inputs", "shape", "out
putStride", "predict", "expandDims", "n", "o", "heatmapScores", "squeeze", "sigmoid", "offsets", "displacementFwd", "dis
placementBwd", "dispose", "half", "MaxHeap", "priorityQueue", "numberOfElements", "getElementValue", "enqueue", "
swim", "dequeue", "exchange", "sink", "empty", "size", "all", "less", "getValueAt", "scoreIsMaximumInLocalWindow", "
u", "d", "m", "get", "buildPartWithScoreQueue", "score", "part", "heatmapY", "heatmapX", "id", "partNames", "NUM_KE
YPOINTS", "partIds", "reduce", "connectedPartNames", "poseChain", "connectedPartIndices", "partChannels", "getOffs
etPoint", "getImageCoords", "clamp", "squaredDistance", "addVectors", "parentChildrenTuples", "parentToChildEdges
", "childToParentEdges", "getDisplacement", "getStridedIndexNearPoint", "traverseToTargetKeypoint", "_", "decodePo
se", "withinNmsRadiusOfCorrespondingPoint", "some", "keypoints", "getInstanceScore", "kLocalMaximumRadius", "d
ecodeMultiplePoses", "__assign", "assign", "hasOwnProperty", "__awaiter", "Promise", "next", "throw", "done", "then", "
__generator", "label", "sent", "trys", "ops", "return", "Symbol", "iterator", "TypeError", "pop", "eitherPointDoesntMeetCo
nfidence", "getAdjacentKeyPoints", "NEGATIVE_INFINITY", "Number", "POSITIVE_INFINITY", "getBoundingBo
x", "maxX", "maxY", "minX", "minY", "getBoundingBoxPoints", "toTensorBuffer", "data", "toTensorBuffers3D", "scale
Pose", "scalePoses", "flipPoseHorizontal", "flipPosesHorizontal", "getInputTensorDimensions", "Tensor", "toInputTens
or", "browser", "fromPixels", "padAndResizeTo", "resized", "resizeBilinear", "padding", "scaleAndFlipPoses", "mod", "s
ub", "mul", "argmax2d", "reshape", "argMax", "getPointsConfidence", "Float32Array", "getOffsetPoint\$1", "getOffsetVe
ctors", "valueOf", "getOffsetPoints", "toTensor", "decodeSinglePose", "from", "MOBILENET_BASE_URL", "RESNET
50_BASE_URL", "resNet50Checkpoint", "mobileNetCheckpoint", "toFloatIfInt\$1", "ResNet", "MOBILENET_V1_C
ONFIG", "architecture", "multiplier", "inputResolution", "VALID_ARCHITECTURE", "VALID_STRIDE", "MobileN
etV1", "ResNet50", "VALID_INPUT_RESOLUTION", "VALID_MULTIPLIER", "VALID_QUANT_BYTES", "vali
dateModelConfig", "quantBytes", "SINGLE_PERSON_INFERENCE_CONFIG", "flipHorizontal", "MULTI_PERSO
N_INFERENCE_CONFIG", "maxDetections", "scoreThreshold", "nmsRadius", "validateMultiPersonInputConfig", "P
oseNet", "baseModel", "estimateMultiplePoses", "I", "E", "N", "T", "estimateSinglePose", "estimatePoses", "decodingMet
hod", "loadMobileNet", "tf", "modelUrl", "loadResNet", "COLOR", "BOUNDING_BOX_COLOR", "LINE_WIDTH", "
TRY_RESNET_BUTTON_NAME", "TRY_RESNET_BUTTON_TEXT", "TRY_RESNET_BUTTON_TEXT_CSS
", "TRY_RESNET_BUTTON_BACKGROUND_CSS", "isAndroid", "navigator", "userAgent", "isiOS", "isMobile", "se
tDatGuiPropertyCss", "propertyText", "liCssString", "spanCssString", "spans", "getElementsByClassName", "textConte
nt", "innerText", "parentNode", "updateTryResNetButtonDatGuiCss", "toggleLoadingUI", "showLoadingUI", "loading
DivId", "mainDivId", "drawPoint", "ctx", "beginPath", "arc", "PI", "fillStyle", "fill", "drawSegment", "ay", "ax", "by", "bx",
"scale", "moveTo", "lineTo", "lineWidth", "strokeStyle", "stroke", "drawSkeleton", "minConfidence", "toTuple", "posenet
", "drawKeypoints", "keypoint", "drawBoundingBox", "boundingBox", "rect", "boundingBoxColor", "renderToCanvas",
"imageData", "ImageData", "j", "putImageData", "renderImageToCanvas", "image", "canvas", "getContext", "drawImage
", "drawHeatMapValues", "heatMapValues", "drawPoints", "scalar", "points", "radius", "buffer", "values", "pointY", "poin

tX","drawOffsetVectors","offsetPoints","singlePose","heatmapData","offsetPointsData","rainbow","warm","spectral","stats","Stats","state","video","stream","net","videoConstraints","changingArchitecture","changingMultiplier","changingStride","changingResolution","changingQuantBytes","getVideoInputs","mediaDevices","enumerateDevices","console","videoDevices","filter","device","kind","stopExistingVideoCapture","srcObject","getTracks","track","stop","getDeviceIdForLabel","cameraLabel","videoInputs","videoInput","deviceId","getFacingMode","toLowerCase","includes","getConstraints","facingMode","setupCamera","getUserMedia","videoElement","resolve","onloadedmetadata","videoWidth","videoHeight","loadVideo","info","play","defaultQuantBytes","defaultMobileNetMultiplier","defaultMobileNetStride","defaultMobileNetInternalResolution","defaultResNetMultiplier","defaultResNetStride","defaultResNetInternalResolution","guiState","algorithm","estimate","camera","input","internalResolution","multiPersonDecoding","numKeypointForMatching","refineSteps","segmentation","segmentationThreshold","effect","maskBackground","backgroundBlurAmount","maskBlurAmount","edgeBlurAmount","partMap","colorScale","blurBodyPartAmount","bodyPartEdgeBlurAmount","showFps","toCameraOptions","cameras","default","setupGui","dat","architectureController","changingCamera","algorithmController","addFolder","outputStrideController","updateGuiOutputStride","outputStrideArray","internalResolutionController","updateGuiInternalResolution","internalResolutionArray","multiplierController","updateGuiMultiplier","multiplierArray","quantBytesController","updateGuiInputSection","updateGuiQuantBytes","quantBytesArray","open","estimateController","segmentationEffectController","darknessLevel","bokehBlurAmount","close","singlePersonDecoding","effectType","partColorScales","setShownPartColorScales","estimationType","colors","partColors","bodyPix","PART_CHANNELS","partColor","child","setupFPS","showPanel","estimateSegmentation","segmentMultiPerson","segmentPerson","multiPersonSegmentation","estimatePartSegmentation","segmentMultiPersonParts","segmentPersonParts","multiPersonPartSegmentation","drawPoses","personOrPersonPartSegmentation","flipHorizontally","personSegmentation","pose","allPoses","loadBodyPix","segmentBodyInRealTime","bodySegmentationFrame","begin","foregroundColor","backgroundColor","mask","toMask","drawMask","drawBokehEffect","coloredPartImageData","toColoredPartMask","pixelCellWidth","drawPixelatedMask","blurBodyPartIds","blurBodyPart","end","bindPage","webkitGetUserMedia","mozGetUserMedia"],"mappings": "AyDGA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,MAAM,EAU,QAAhB,QAAA,QAAgB;AzDoJf,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,YAAA,QAAA,gBAAA,QAAA,qBAAA,EAnIM,MAAM,EAakB,KAmI9B,QAAA,gBAAA,EAiIM,MAAM,EAakB,KAKI9B,QAAA,gBAAA,EA1GK,MAAO,EAIX,YAAoB,EAAGc,GAAhc,KAAA,QAAA,EAAGc,KAAA,UAAA,EAH5C,KAAA,KAAO,IAAI,QACX,KAAA,aAAe,EAIVB,IAAI,GAIK,OAHF,KAAK,KAAK,IAAI,IACZ,KAAA,UAAU,SAAS,KAAK,QAAS,GAejC,KAAK,KAAK,IAAI,GAGvB,IAAI,EAAGB,GACb,KAAA,eACA,KAAA,KAAK,IAAI,EAQ,GAGxB,IAAI,GACK,OAAA,KAAK,KAAK,IAAI,GAGvB,OAAO,GAEE,OADF,KAAA,eACE,KAAK,KAAK,OAAO,GAG1B,aACS,OAAA,KAAK,cA8Ef,QAAA,YAAA,EARDK,MAAO,EACX,SAAS,GACA,OAAA,EAakB,YAE3B,OAAO,GACE,OAAA,EAakB,UAE3B,iBACS,OAAA,EAET,KAAK,GACI,OAAA,EAakB,QAE3B,KAAK,GACI,OAAA,EAakB,QAE3B,SAAS,GACA,OAAA,EAakB,YAE3B,aACS,OAAA,EAakB,cAE3B,YAAY,EAAGB,GACnB,OAAA,EAakB,eAE3B,MAAM,EAauB,EAaiB,GACrC,OAAA,EAakB,SAE3B,KACI,EAAGB,EAauB,EAaiB,EACxD,GACK,OAAA,EAakB,QAE3B,SACS,OAAA,EAakB,UAG3B,iBACS,OAAA,EAakB,kBAG3B,UACS,OAA0B,KAA1B,KAAK,iBAA0B,EAakB,EAe1D,UACS,OAAA,EAakB,YAI7B,SAAS,EAakB,GACnB,MAAA,IAAI,UACF,wDACJ,wEACL,QAAA,cAAA;;ACKlBA,aAxsBK,SAAU,EAQ,GAeIB,IAAA,EAU,EAAM,OChB,EAAO,EACP,EAQ,EAEL,KAAA,EAU,GAef,EAAS,KAAK,SAAW,EAAW,EAIpC,EAAO,IAFP,GAGA,EAAM,GAAW,EAAM,GACvB,EAAM,GAAS,EAqBb,SAAU,EAaa,EAEP,GAehB,GA AA,EAAM,SAAW,EAAO,OACpB,MAAA,MACJ,4EAC0B,EAAM,oCACL,EAAO,UAEIC,IACA,EAAM,EADN,EA AU,EAAM,OAehB,EAQ,EAEL,KAAA,EAU,GAef,EAAS,KAAK,SAAW,EAAW,EAIpC,EAAO,IAFP,GA GA,EAQ,EA AO,GACf,EAAM,GAAW,EAAM,GACvB,EAAO,GAAW,EAAO,GACzB,EAAM,GAAS,EACf,EA AO,GAAS,EAKd,SAAU,EAAM,EAaa,EA AW,GACrC,OAAA,KAAK,IAAI,EAk,KAAK,IAAI,EAAG,IAG7B,SAAU,EAakB,GACzB,OAAA,EAAM,GAAM,EAai,EAAM,EAAM,EAG/B,SAAU,EAai,GACd,IAAA,EAAM,EA CL,IAAA,IAAI,EAai,EAAG,EAai,EAai,OAAQ,IAC9B,GA AO,EAai,GAEN,OAAA,EAUH,SAAU,EAAY,EA AW,GAC/B,MAAA,EAai,KAAK,SACP,OAAA,EAai,GAAM,EAai,GAk,EAIVB,SAAU,EAAY,EAae,GAC rC,IAAA,EAAS,EACR,IAAA,IAAI,EAai,EAAG,EAai,EAae,OAAQ,IAAK,CAC3B,MAAA,EAAO,OAAO,EA

AE,IAAM,OAAO,EAAE,IACrC,GAAU,EAAO,EAEZ,OAAA,EakBH,SAAU,EAAO,EAAe,GAChC,IAAC,EACG
,MAAA,IAAI,MAAqB,iBAAR,EAAMB,EAAM,KAI9C,SAAU,EACZ,EAakB,EAakB,EAAqB,IAC3D,EACI,EA
AY,EAAQ,GACpB,IAAM,aAAgC,SAAc,gBAGpD,SAAU,EAAC,GAC5B,EACS,MAAL,EACA,IAAM,iEAsBN,S
ACN,EACI,EAA0B,EAAC,GAAl,GAaiB,GAI3D,GAHU,MAAV,IACF,EAAS,IAEP,MAAM,QAAQ,IAAQ,EAAa
,KAAS,EACzC,IAAA,IAAI,EAAl,EAAG,EAAl,EAAl,SAAU,EAChC,EAAQ,EAAl,GAAl,EAAQ,QAG1B,EA
O,KAak,GAEP,OAAA,EACh,SAAU,EAAC,GACxB,GAaiB,IAAjB,EAAM,OAED,OAAA,EAEL,IAAA,EAAO,
EAAM,GACZ,IAAA,IAAI,EAAl,EAAG,EAAl,EAAM,OAAQ,IAChC,GAAQ,EAAM,GAET,OAAA,EAGH,SA
U,EAAC,GACrB,OAaiB,IAAjB,EAAM,OAGT,SAAU,EAAY,EAAGB,GACtC,GAAA,IAAO,EACF,OAAA,EAEL
,GAAM,MAAN,GAAoB,MAAN,EACT,OAAA,EAGL,GAAA,EAAG,SAAW,EAAG,OACZ,OAAA,EAEJ,IAAA,
IAAI,EAAl,EAAG,EAAl,EAAG,OAAQ,IACzB,GAAA,EAAG,KAAO,EAAG,GACR,OAAA,EAGJ,OAAA,EAG
H,SAAU,EAAM,GACb,OAAA,EAAl,GAAM,EAGb,SAAU,EAak,GAEd,GAAqB,MAArB,KAAa,KAER,OAAA
,KAAa,KAak,GAExB,GAAA,IAAM,EAAA,EACD,OAAA,EACF,GAAl,KAAO,EAAA,EACT,OAAC,EACH,C
ACC,MAAA,EAAM,KAak,IAAI,EAAl,GACiB,OAAC,EAAM,IAAM,EAAM,IAIxB,SAAU,EAaoB,GAC5B,M
AAA,EAAQ,KAak,KAak,KAak,KAak,IAC3B,MAAA,CAAC,EAAO,KAak,KAak,EAAO,IAe5B,SAAU,E
AAsB,GAC9B,MAAA,EAakB,IAAI,YAAY,GACnC,IAAA,IAAI,EAAl,EAAG,EAAl,IAAK,EACvB,EAAGB,GA
AK,EAGhB,OADP,EAAQ,GACD,EAGH,SAAU,EAAS,EAaw,GAC9B,OAAA,GAAQ,EAAE,OACL,EAEF,EA
Al,IAAI,OAAO,EAAO,EAAE,QAG3B,SAAU,EACZ,EAawB,EAaw,CAAA,GAAoB,GACvD,GACK,OAAA,IA
Al,QAAc,CAAC,EAAS,KAC7B,IAAA,EAaw,EAET,MAAA,EAAQ,KACR,GAAA,IAEF,YADA,IAMI,MAAA,
EAAC,IAFpB,GAikB,MAAd,GAAsB,GAAY,EACpC,IAGF,WAaw,EAAO,IAGpB,MAAE,SAAU,EACZ,EAaiB,
GACf,IAAA,EAAY,EACZ,GAae,EAEd,IAAA,IAAI,EAAl,EAAG,EAAl,EAAM,SAAU,EAC9B,GAAA,EAAM,I
AAM,EACd,GAAa,EAAM,QACd,IAakB,IAAd,EAAM,GAaw,CACtB,IAaiB,IAAjB,EACI,MAAA,MACF,4DA
CmB,aAAuB,KAehD,EAAC,OACT,GAAl,EAAM,GAak,EACd,MAAA,sCAAsC,EAAM,aAAa,KAI/D,IAaiB,IA
AjB,EAaoB,CACiB,GAAA,EAAO,GAak,IAAS,EACjB,MAAA,cAAc,sCAAYC,KAExD,OAAA,EAGL,GAAC,I
AAd,EACI,MAAA,2CACmC,WACrC,wBAEF,GAAA,EAAO,GAAC,EACjB,MAAA,MACF,2DACO,OAAU,KA
GjB,MAAA,EAaw,EAAM,QAehB,OADP,EAAS,GAae,EAAO,EACxB,EAGH,SAAU,EACZ,EAauB,GACnB,
MAAA,EAAO,EAAM,OAmBZ,OAbP,GAHA,EAae,MAAR,EAae,EAAM,IAAI,CAAC,EAAG,IAAM,GAak,G
AAG,OAAO,IAIHd,MAAM,GAAM,IAAO,GAAQ,EAak,GACrC,mDACmD,MAAS,sBAC5C,KAGpB,EACI,EA
AK,MAAM,GAAM,EAAM,IACvB,IAAM,6DACU,KAGb,EAak,IAAI,GAak,EAAl,EAAl,EAAO,EAAl,GAIpC
,SAAU,EAAa,EAaiB,GAETC,MAAA,EAaqB,GACrB,EAaqB,GACrB,EAauB,MAAR,GAAGB,MAAM,QAAQ,I
AAyB,IAAhB,EAak,OAC3D,EAAGB,MAAR,GAAGB,EAC1B,KACA,EAae,EAAM,GAAO,OAC5B,IAAA,EA
Al,EACH,IAAA,IAAI,EAAl,EAAG,EAAl,EAAM,SAAU,EAAG,CACjC,GAAQ,MAAR,EAAC,CACZ,GAAA,EA
AK,KAAO,GAakB,IAAb,EAAM,GACnB,MAAA,IAAI,4BACgB,oBAAoB,EAAM,iBAEtC,MAAX,EAak,IAAc
,EAak,GAak,IAAmB,IAAb,EAAM,KAC5C,EAAS,KAak,EAAM,IACpB,EAAS,KAak,IAEZ,EAak,IAAM,G
ACb,IAGa,IAAb,EAAM,KACR,EAAS,KAak,EAAM,IACpB,EAAS,KAak,IAGX,MAAA,CAAC,SAAS,EAU,
SAAS,GAGd,SAAU,EACZ,EAau,GACR,IAAA,EAAS,KACT,GAAS,MAAT,GAA2B,YAAV,EACnB,EAAS,IA
Al,aAAa,QACrB,GAAC,UAAV,EACT,EAAS,IAAI,WAaw,OACnB,CAAA,GAAC,SAAV,EAGH,MAAA,IAAI,2
BAA2B,KAFrC,EAAS,IAAI,WAaw,GAInB,OAAA,EAGH,SAAU,EACZ,EAau,GACR,IAAA,EAAS,KACT,G
AAS,MAAT,GAA2B,YAAV,EACnB,EAAS,IAAI,aAAa,QACrB,GAAC,UAAV,EACT,EAAS,IAAI,WAaw,QAC
nB,GAAC,SAAV,EACT,EAAS,IAAI,WAaw,OACnB,CAAA,GAAC,WAAV,EAGH,MAAA,IAAI,2BAA2B,KAFr
C,EAAS,IAAI,MAAGB,GAixB,OAAA,EAGH,SAAU,EACZ,EAa+B,GAC5B,IAAA,IAAI,EAAl,EAAG,EAAl,E
AAK,OAAQ,IAAK,CAC9B,MAAA,EAAM,EAak,GACb,GAAA,MAAM,KAAS,SAAS,GACpB,MAAA,0BAA0
B,6BAAiC,OAMjE,SAAU,EAAa,GACpB,MAAU,SAAV,GAA8B,cAAV,GAAMc,YAAV,GACtC,UAAV,GAA+
B,WAAV,EAOrB,SAAU,EAAGB,EAAMB,GAC7C,MAAY,cAAZ,KAGY,YAAZ,GAAqC,cAAZ,MAGb,UAAZ,G
AAMc,YAAZ,GAAqC,cAAZ,KAGpC,SAAZ,GAakC,SAAZ,KAMtB,SAAU,EAAa,GACpB,OAAA,aAAa,cAAg
B,aAAa,YAC7C,aAAa,WAGb,SAAU,EAAGB,GAC1B,GAAU,YAAV,GAaiC,UAAV,EACiB,OAAA,EACF,GAA
c,cAAV,EACF,OAAA,EACF,GAAC,SAAV,EACF,OAAA,EAED,MAAA,IAAI,uBAAuB,KAU/B,SAAU,EAaqB,
GAC/B,GAAO,MAAP,EACK,OAAA,EAEL,IAAA,EAAQ,EAEL,OADP,EAAl,QAAQ,GAak,GAAS,EAAE,QA
CrB,EAIH,SAAU,EAAS,GACHB,MAaiB,iBAAV,GAAsB,aAAiB,OAGjD,SAAU,EAau,GACjB,MAaiB,kBAA

V,EAGV,SAAU,EAAS,GACbB,MAAiB,iBAAV,EAGV,SAAU,EAAW,GACrB,OAAA,MAAM,QAAQ,GACT,E
AAW,EAAO,IAEvB,aAAkB,aACb,UACE,aAAkB,YAAc,aAAkB,WACpD,QACE,EAAS,GACX,UACE,EAAS,G
ACX,SACE,EAAU,GACZ,OAEF,UAGH,SAAU,EAAW,GACIB,SAAG,GAAK,EAAE,aAAe,EAAE,MAAQ,EAA
E,OAGxC,SAAU,EAAe,EAAC,GACTC,IAAA,IAAI,EAAL,EAAO,EAAL,IAAQ,EACIB,GAAA,EAAO,GAAM,EA
CR,OAAA,EAGJ,OAAA,EAGH,SAAU,EAAe,GACvB,MAAA,EAAO,EAAM,OACf,GAAA,EAAO,EACF,MAA
A,GAKH,MAAA,EAAU,IAAI,MAAM,EAAO,GACjC,EAAQ,EAAO,GAAK,EAAM,EAAO,GAC5B,IAAA,IAAI,
EAAL,EAAO,EAAG,GAAK,IAAK,EAC/B,EAAQ,GAAK,EAAQ,EAAL,GAAK,EAAM,EAAL,GAEnC,OAAA,EA
GT,SAAS,EAakB,EAagB,EAaiB,GACpD,MAAA,EAAM,IAAI,MACZ,GAAiB,IAAjB,EAAM,OAAc,CACbB,
MAAA,EAAL,EAAM,GACX,IAAA,IAAI,EAAL,EAAG,EAAL,EAAG,IACrB,EAAL,GAAK,EAAE,EAAS,OAEjB,
CACC,MAAA,EAAL,EAAM,GACV,EAAO,EAAM,MAAM,GACnB,EAAM,EAakB,OAAO,CAAC,EAakB,IAAM,
EAAM,GACrC,IAAA,IAAI,EAAL,EAAG,EAAL,EAAG,IACrB,EAAL,GAAK,EAakB,EAAS,EAAL,EAakB,EAAM
,GAGhD,OAAA,EAIH,SAAU,EAAC,EAaiB,GACzC,GAAiB,IAAjB,EAAM,OAED,OAAA,EAAE,GAEL,MAAA
,EAAO,EAAM,OAAO,CAAC,EAakB,IAAM,EAAM,GACxC,GAAS,IAAT,EAekB,MAAA,GAEL,GAAA,IAAS,E
AAE,OACP,MAAA,IAAI,UAAU,oCAAwC,EAAE,WAGzD,OAAA,EAakB,EAAG,EAAO,GAG/B,SAAU,EACZ
,EAAc,GACV,MAAA,EAAQ,EAAoB,EAAM,GACnC,IAAA,IAAI,EAAL,EAAG,EAAL,EAAM,OAAQ,IAChC,E
AAM,GAakB,EAEN,OAAA,EAGH,SAAU,EACZ,EAAc,GACZ,GAAS,MAAT,GAA2B,YAAV,GAAiC,cAAV,EA
CnC,OAAA,IAAI,aAAa,GACnB,GAAc,UAAV,EACF,OAAA,IAAI,WAAW,GACjB,GAAc,SAAV,EACF,OAAA,
IAAI,WAAW,GAehB,MAAA,IAAI,2BAA2B,KASnC,SAAU,EACZ,EAaiB,GACb,MAAA,EAAO,EAAM,OAA
O,CAAC,EAAM,IAAS,EAAO,EAAM,GACnD,GAAS,MAAT,GAA2B,YAAV,EACZ,OAAA,EAAc,EAAO,IAAI,
aAAa,IACxC,GAAc,UAAV,EACF,OAAA,EAAc,EAAO,IAAI,WAAW,IACtC,GAAc,SAAV,EACF,OAAA,EAAC
,EAAO,IAAI,WAAW,IAErC,MAAA,IAAI,2BAA2B,KAlnC,SAAU,EAAMc,GACjD,EAAM,QAAQ,IACZ,EACI,
OAAO,UAAU,IAAY,GAAW,EACxC,IACI,6EACU,SAYhB,SAAU,EACZ,EAagB,EAAc,GAC5B,GAAS,IAAT,E
ACK,OAAA,EACF,GAAa,IAAT,EACF,OAAA,EAakB,GAEV,IAAA,EAAQ,EAakB,EAakB,OAAS,GACIB,IAAA
,IAAI,EAAL,EAAG,EAAL,EAakB,OAAS,IAAK,EACrC,GAAS,EAAQ,GAakB,EAakB,GAETB,OAAA,EAWH,SA
U,EACZ,EAAe,EAAC,GAC3B,GAAS,IAAT,EACK,MAAA,GACF,GAAa,IAAT,EACF,MAAA,CAAC,GAejB,MA
AA,EAAiB,IAAI,MAAM,GAC5B,IAAA,IAAI,EAAL,EAAG,EAAL,EAakB,OAAS,IAAK,EACrC,EAakB,GAakB,K
AAK,MAAM,EAAQ,EAAQ,IACrC,GAAS,EAakB,GAakB,EAAQ,GAGtB,OADP,EAakB,EAakB,OAAS,GAakB,E
ACjB,EAQH,SAAU,EAAU,GAOjB,OAAA,GAAU,EAAO,MAA+B,mBAAhB,EAAO,KAC/C,OAAA,eAAA,QA
AA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,QAAA,aAAA,EAAA,QAAA,MAAA,EAAA,QAAA,kBA
AA,EAAA,QAAA,IAAA,EAAA,QAAA,YAAA,EAAA,QAAA,YAAA,EAAA,QAAA,OAAA,EAAA,QAAA,kBA
AA,EAAA,QAAA,cAAA,EAAA,QAAA,QAAA,EAAA,QAAA,cAAA,EAAA,QAAA,cAAA,EAAA,QAAA,YAA
A,EAAA,QAAA,MAAA,EAAA,QAAA,KAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,sBAAA,EAAA,QAAA,SA
AA,EAAA,QAAA,YAAA,EAAA,QAAA,uBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,aAAA,EAAA,QAAA,uB
AAA,EAAA,QAAA,kBAAA,EAAA,QAAA,yBAAA,EAAA,QAAA,aAAA,EAAA,QAAA,gBAAA,EAAA,QAAA
,aAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,qBAAA,EAAA,QAAA,SAAA,EAAA,QAAA,UAAA,EAAA,QAA
A,SAAA,EAAA,QAAA,WAAA,EAAA,QAAA,WAAA,EAAA,QAAA,eAAA,EAAA,QAAA,eAAA,EAAA,QAA
A,cAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,0BAAA,EAAA,QAAA,mCAAA,EAAA,
QAAA,WAAA,EAAA,QAAA,WAAA,EAAA,QAAA,UAAA;;ACzhBA,IAAA,EAAA,UAAA,GAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,IAAA,EAAA,QAAA,qBAAA,EAAA,QAA
A,IAAA,QAAA,iBAAA,EA9LD,IAAA,EAAA,QAAA,eAGA,MAAM,EA4B,YAmB5B,MAAO,EAUX,YAAmB
,GAAA,KAAA,OAAA,EATX,KAAA,MAAE,GACf,KAAA,aAAwD,GAExD,KAAA,SAakB,GAOnB,KAAA,mB
AGP,YAAY,EAASB,GACX,MAAjB,KAAK,UACP,QAAQ,iBACQ,KAAK,uEACgB,MAEIC,KAAA,aAAe,EACf,
KAAA,SAAW,EAGIB,aACI,EAakB,EACIB,GAKE,GAJC,KAAA,aAAa,GAAY,CAAC,aAAA,EAAC,QAAA,GA
Id,MAA3B,KAAK,SAAS,GAAMB,CAC7B,MAAA,EAAY,KAAK,SAAS,GACHC,QAAQ,0CACiC,MAAa,MACj
D,KAAA,IAAI,EAAL,IAIjB,eAAS,GACT,OAAA,KAAY,KAAK,MACZ,KAAK,MAAM,IAGf,KAAA,MAAM,S
AAkB,KAAK,aAAa,GACxC,KAAK,MAAM,IAGpB,IAAI,GACE,GAAA,KAAY,KAAK,MACZ,OAAA,KAAK,
MAAM,GAGd,MAAA,EAAY,KAAK,aAAa,GACHC,IAAA,EAAL,EAAA,WAAA,GACN,MAAA,IAAI,cACE,w
CACR,kCAKC,OAFF,KAAA,MAAM,GAAY,EAehB,KAAK,MAAM,GAGpB,UAAU,GACD,OAAA,KAAK,IA

AI,GAGIB,QAAQ,GACC,OAAA,KAAK,IAAI,GAGIB,WACS,OAAA,KAAK,MAGV,eACK,OAAA,KAAK,MA
Gd,IAAI,EAakB,GACbB,GAA+B,MAA/B,KAAK,aAAa,GACd,MAAA,IAAI,yBACa,oCAEpB,KAAA,MAAM,G
AAY,EACoB,MAAvC,KAAK,aAAa,GAAU,SACzB,KAAA,aAAa,GAAU,QAAQ,GAIhC,aAAa,GACf,GAA+B,M
AA/B,KAAK,aAAa,GACd,MAAA,IAAI,+BACmB,qCAExB,OAAA,KAAK,aAAa,GAAU,eAGrC,SAAS,GACF,K
AAA,MAAQ,OAAO,OAAO,GAAl,GAGjC,QACO,KAAA,MAAQ,GACR,KAAA,SAAW,GACX,KAAA,mBAGC
,mBACF,QAAuB,IAAhB,KAAK,aACoB,IAAzB,KAAK,OAAO,eACoB,IAAhC,KAAK,OAAO,SAAS,OAC9B,O
AGI,MAAA,EAAY,EAAe,KAAK,OAAO,SAAS,QACID,GAAA,KAA6B,EAAW,CACxB,EAAU,GAA2B,MAA
M,KACnD,QAAQ,IACV,MAAC,EAak,GAAS,EAAS,MAAM,KAC/B,KAAA,SAAS,GAAO,EAAW,EAak,OA
MvC,SAAU,EAAe,GACvB,MAAA,EAAS,GAKR,OAJp,EAAY,QAAQ,8BAA+B,CAAC,KAAM,KACxD,EAAY,
EAAQ,EAAE,GAAl,EAAE,IACrB,EAAE,KAAK,OAET,EAGT,SAAS,EACL,EAaiC,EAAC,GACjD,EAAO,mBA
AmB,IAAS,mBAAmB,GAAS,IAGjE,SAAS,EAAW,EAakB,GAehC,GAAU,UADd,EAAQ,EAAM,gBACoB,UA
AV,EACf,MAAU,SAAV,EACF,OAAS,MAAY,EACnB,OAAC,EAEJ,MAAA,IAAI,0CAC8B,cAAkB,MAWtD,SA
AU,IACP,OAAA,EAMR,QAAA,YAAA,EAHM,IAAI,EAAMb,KACxB,SAAU,EAaqB,GACnC,QAAA,IAAA,EA
AM,EACP,QAAA,IAAA;;;AC/MD,IAOIA,EACAC,EARAC,EAAUC,OAAOC,QAAU,GAU/B,SAASC,IACC,MA
AA,IAAIC,MAAM,mCAEpB,SAASC,IACC,MAAA,IAAID,MAAM,qCAsBpB,SAASE,EAAWC,GACZT,GAAA
A,IAAQBU,WAEaD,OAAAA,WAAWD,EAak,GAGvB,IAACT,IAAQbK,IAAQbL,IAAQBU,WAEzDA,OADPV,
EAAMBU,WACZA,WAAWD,EAak,GAevB,IAEOT,OAAAA,EAaiBS,EAak,GAC/B,MAAME,GACA,IAEOX
,OAAAA,EAaiBY,KAAK,KAAMH,EAak,GAC1C,MAAME,GAEGX,OAAAA,EAaiBY,KAAK,KAAMH,EA
K,KAMpD,SAASI,EAagBC,GACjBb,GAAAA,IAAuBc,aAEhBA,OAAAA,aAAaD,GAGpB,IAACb,IAAuBM,IA
AwBN,IAAuBc,aAEhEA,OADPd,EAaqBc,aACdA,aAAaD,GAepB,IAEOB,OAAAA,EAAMBa,GAC5B,MAAOH,
GACD,IAEOV,OAAAA,EAAMBW,KAAK,KAAME,GACvC,MAAOH,GAGEV,OAAAA,EAAMBW,KAAK,KA
AME,MAJehD,WACO,IAEId,EADsB,mBAAFU,WACYA,WAEAL,EAezB,MAAOM,GACLX,EAAMBK,EAEnB
,IAEIJ,EADwB,mBAAjBc,aACcA,aAEAR,EAe3B,MAAOI,GACLv,EAaqBM,GAjB5B,GAwED,IAEIS,EAfAC,
EAAQ,GACRC,GAAW,EAEXC,GAAC,EAeIB,SAASC,IACAF,GAAaF,IAGIBE,GAAW,EACPF,EAaAK,OACbJ
,EAAQD,EAaAM,OAAOL,GAe5BE,GAAC,EAEdF,EAAMI,QACNE,KAIR,SAASA,IACDL,IAAAA,EAAAA,C
AGAM,IAAAA,EAUhb,EAAYW,GACzBF,GAAW,EAGLO,IADFA,IAAAA,EAAMR,EAAMI,OACVI,GAak,
CAGA,IAFPT,EAaeC,EACfA,EAaq,KACCE,EAaAM,GACdT,GACAA,EAaAG,GAAYO,MAGjCP,GAAC,EAC
dM,EAAMR,EAAMI,OAehBL,EAae,KACfE,GAAW,EACXL,EAagBW,IAiBpB,SAASG,EAakIB,EAakmB,G
ACVnB,KAAAA,IAAMA,EACNmB,KAAAA,MAAQa,EAyJB,SAASC,KA5BT3B,EAQ4B,SAAW,SAAUrB,G
ACrBsB,IAAAA,EAao,IAAIC,MAAMC,UAAUZ,OAAS,GACpCY,GAAAA,UAAUZ,OAAS,EACd,IAAA,IAAI
a,EAAl,EAAGA,EAAlD,UAAUZ,OAAQa,IACICH,EAakG,EAAl,GAakD,UAAUC,GAGhCjB,EAAMkB,KAA
K,IAAIR,EAakIB,EAaksB,IACJ,IAAjBd,EAAMI,QAaiBH,GACvBV,EAWe,IASnBI,EAaks,UAAUV,IAA
M,WACZjB,KAAAA,IAAI4B,MAAM,KAAM,KAAKT,QAE9B1B,EAQoC,MAAQ,UAehBpC,EAQqC,IAA
M,GACdrC,EAQsC,KAAO,GACfC,EAQuc,QAAU,GACIBvC,EAQwC,SAAW,GAInBxC,EAQyC,GAak
d,EACb3B,EAQ0C,YAAcf,EACtB3B,EAQ2C,KAAOhB,EACf3B,EAQ4C,IAAMjB,EACd3B,EAQ6C,eAA
iBIB,EACz3B,EAQ8C,mBAaqBnB,EAC7B3B,EAQ+C,KAAOpB,EACf3B,EAQgD,gBAakBrB,EAC1B3
B,EAQiD,oBAAsBtB,EAe9B3B,EAQkD,UAYY,SAAUc,GAae,MAAA,IAE7CnD,EAQoD,QAAU,SAAUD
,GACIB,MAAA,IAAI/C,MAAM,qCAGpBJ,EAQqD,IAAM,WAAqB,MAAA,KACnCrD,EAQsD,MAAQ,SA
UC,GACbB,MAAA,IAAIInD,MAAM,mCAEpBJ,EAQwD,MAAQ,WAAoB,OAAA;;;ACnHnC,IAAA,EAAA,U
AAA,GAAA,EAAA,QAAA,WA/CD,IAAI,EAEE,SAAU,IACV,GAAMb,MAAnB,EAyB,CAEvB,IAAA,EACA,
GAAoB,oBAAZ,OACV,EAak,YACA,QAAwB,IAAZ,EACjB,EAak,OACA,QAAyB,IAAb,EACjB,EAak,MAC
A,CAAA,GAAsB,oBAAV,KAGX,MAAA,IAAI,MAAM,kCAFhB,EAak,KAIP,EAakB,EAeb,OAAA,EAIT,SA
S,IACD,MAAA,EAak,IAIJ,OAHC,MAAjB,EAAG,aACL,EAAG,WAAa,IAAI,KAef,EAAG,WAUN,SAAU,EA
a,EAaA,GACIC,MAAA,EAAY,IACd,GAAA,EAU,IAAI,GACT,OAAA,EAU,IAAI,GACbB,CACC,MAAA,EA
AY,IAEX,OADP,EAU,IAAI,EAak,GACZ,EAU,IAAI,IAExB,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,mBAAA,EAAA,QAAA,UAAA;;AC+zBM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,
QAAA,oBAAA,QAAA,SAAA,QAAA,IAAA,QAAA,SAAA,QAAA,YAAA,QAAA,IAAA,QAAA,UAAA,QAAA,
QAAA,QAAA,IAAA,QAAA,KAAA,QAAA,kBAAA,QAAA,cAAA,QAAA,UAAA,QAAA,YAAA,QAAA,QAAA

,QAAA,QAAA,QAAA,IAAA,QAAA,QAAA,QAAA,IAAA,QAAA,WAAA,QAAA,UAAA,QAAA,WAAA,QAAA
,WAAA,QAAA,MAAA,QAAA,IAAA,QAAA,SAAA,QAAA,UAAA,QAAA,KAAA,QAAA,UAAA,QAAA,MAA
A,QAAA,MAAA,QAAA,SAAA,QAAA,KAAA,QAAA,KAAA,QAAA,SAAA,QAAA,aAAA,QAAA,QAAA,QAA
A,SAAA,QAAA,SAAA,QAAA,eAAA,QAAA,SAAA,QAAA,MAAA,QAAA,cAAA,QAAA,KAAA,QAAA,IAAA,
QAAA,MAAA,QAAA,WAAA,QAAA,IAAA,QAAA,MAAA,QAAA,IAAA,QAAA,QAAA,QAAA,IAAA,QAAA,
QAAA,QAAA,yBAAA,QAAA,wBAAA,QAAA,WAAA,QAAA,KAAA,QAAA,mCAAA,QAAA,oCAAA,QAAA,
sBAAA,QAAA,aAAA,QAAA,cAAA,QAAA,cAAA,QAAA,OAAA,QAAA,KAAA,QAAA,IAAA,QAAA,sBAAA,
QAAA,uBAAA,QAAA,OAAA,QAAA,oBAAA,QAAA,qBAAA,QAAA,OAAA,QAAA,OAAA,QAAA,WAAA,Q
AAA,QAAA,QAAA,YAAA,QAAA,KAAA,QAAA,KAAA,QAAA,YAAA,QAAA,SAAA,QAAA,eAAA,QAAA,Y
AAA,QAAA,cAAA,QAAA,UAAA,QAAA,YAAA,QAAA,QAAA,QAAA,MAAA,QAAA,MAAA,QAAA,KAAA,
QAAA,MAAA,QAAA,KAAA,QAAA,OAAA,QAAA,OAAA,QAAA,IAAA,QAAA,IAAA,QAAA,KAAA,QAAA,I
AAA,QAAA,MAAA,QAAA,KAAA,QAAA,SAAA,EAAA,QAAA,qBAAA,QAAA,YAAA,QAAA,aAAA,QAAA,i
BAAA,QAAA,WAAA,QAAA,KAAA,QAAA,UAAA,QAAA,mBAAA,QAAA,OAAA,QAAA,OAAA,QAAA,UA
AA,QAAA,KAAA,QAAA,KAAA,QAAA,KAAA,QAAA,IAAA,QAAA,aAAA,QAAA,cAAA,QAAA,IAAA,QAA
A,OAAA,QAAA,kBAAA,QAAA,QAAA,QAAA,OAAA,QAAA,eAAA,QAAA,IAAA,QAAA,KAAA,QAAA,SAA
A,QAAA,QAAA,QAAA,KAAA,QAAA,KAAA,QAAA,IAAA,QAAA,MAAA,QAAA,KAAA,QAAA,OAAA,QA
AA,UAAA,QAAA,MAAA,QAAA,MAAA,QAAA,QAAA,QAAA,MAAA,QAAA,mBAAA,QAAA,eAAA,QAAA,
0BAAA,QAAA,sBAAA,QAAA,QAAA,QAAA,KAAA,QAAA,WAAA,QAAA,KAAA,QAAA,MAAA,QAAA,KA
AA,QAAA,MAAA,QAAA,IAAA,QAAA,KAAA,QAAA,MAAA,QAAA,KAAA,QAAA,OAAA,QAAA,SAAA,Q
AAA,oBAAA,QAAA,yBAAA,EA12BA,MAAM,EAAM,MA02BZ,QAAA,IAAA,EAv2BA,MAAM,EAAO,OAu2
Bb,QAAA,KAAA,EAp2BA,MAAM,EAAQ,QAo2Bd,QAAA,MAAA,EAj2BA,MAAM,EAAM,MAi2BZ,QAAA,I
AAA,EA91BA,MAAM,EAAO,OA81Bb,QAAA,KAAA,EA31BA,MAAM,EAAM,MA21BZ,QAAA,IAAA,EAp1B
A,MAAM,EAAM,MAo1BZ,QAAA,IAAA,EA70BA,MAAM,EAAS,SA60Bf,QAAA,OAAA,EAv0BA,MAAM,EA
AS,SAu0Bf,QAAA,OAAA,EAj0BA,MAAM,EAAO,OAi0Bb,QAAA,KAAA,EA9zBA,MAAM,EAAQ,QA8zBd,Q
AAA,MAAA,EA3zBA,MAAM,EAAO,OA2zBb,QAAA,KAAA,EAxzBA,MAAM,EAAQ,QAwxzBd,QAAA,MAA
A,EARzBA,MAAM,EAAQ,QAqzBd,QAAA,MAAA,EA1zBA,MAAM,EAAU,UAkzBhB,QAAA,QAAA,EAzyBA,
MAAM,EAAC,cAyyBpB,QAAA,YAAA,EAjyBA,MAAM,EAAY,YAiyBIB,QAAA,UAAA,EAvxBA,MAAM,EA
AgB,gBAuxBtB,QAAA,cAAA,EA9wBA,MAAM,EAAC,cA8wBpB,QAAA,YAAA,EAvwBA,MAAM,EAiB,iBA
uwBvB,QAAA,eAAA,EA9vBA,MAAM,EAAW,WA8vBjB,QAAA,SAAA,EAxvBA,MAAM,EAAC,cAwvBpB,QA
AA,YAAA,EAjvBA,MAAM,EAAO,OAivBb,QAAA,KAAA,EA3uBA,MAAM,EAAO,OA2uBb,QAAA,KAAA,E
AxuBA,MAAM,EAAC,cAwuBpB,QAAA,YAAA,EAjuBA,MAAM,EAAU,UAiuhBhB,QAAA,QAAA,EA9tBA,MA
AM,EAaA,aA8tBnB,QAAA,WAAA,EA3tBA,MAAM,EAAS,SA2tBf,QAAA,OAAA,EArtBA,MAAM,EAAS,SAqt
Bf,QAAA,OAAA,EA3sBA,MAAM,EAauB,uBA2sB7B,QAAA,qBAAA,EAjsBA,MAAM,EAASB,sBAisB5B,QA
AA,oBAAA,EAvrBA,MAAM,EAAS,SAurBf,QAAA,OAAA,EA9qBA,MAAM,EAAY,yBA8qB/B,QAAA,uBAA
A,EARqBA,MAAM,EAawB,wBAqqB9B,QAAA,sBAAA,EA5pBA,MAAM,EAAM,MA4pBZ,QAAA,IAAA,EAzp
BA,MAAM,EAAO,OAypBb,QAAA,KAAA,EAtpBA,MAAM,EAAS,SAspBf,QAAA,OAAA,EA9oBA,MAAM,E
AAgB,gBA8oBtB,QAAA,cAAA,EAroBA,MAAM,EAAGB,gBAqoBtB,QAAA,cAAA,EA9nBA,MAAM,EAae,eA
8nBrB,QAAA,aAAA,EAvnBA,MAAM,EAawB,wBAunB9B,QAAA,sBAAA,EA5mBA,MAAM,EACT,sCA2mB
G,QAAA,oCAAA,EAhmBA,MAAM,EACT,qCA+IBG,QAAA,mCAAA,EAplBA,MAAM,EAAO,OAolBb,QAAA,
KAAA,EAjlBA,MAAM,EAaA,aAilBnB,QAAA,WAAA,EAzkBA,MAAM,EAA0B,0BAykBhC,QAAA,wBAAA,E
ArkBA,MAAM,EAA2B,2BAqkBjC,QAAA,yBAAA,EAjkBA,MAAM,EAAU,UaikBhB,QAAA,QAAA,EA9jBA,
MAAM,EAAM,MA8jBZ,QAAA,IAAA,EA3jBA,MAAM,EAAU,UA2jBhB,QAAA,QAAA,EAxjBA,MAAM,EAA
M,MAwjBZ,QAAA,IAAA,EARjBA,MAAM,EAAQ,QAqjBd,QAAA,MAAA,EA1jBA,MAAM,EAAM,MAkjBZ,Q
AAA,IAAA,EAiBA,MAAM,EAaA,aA+iBnB,QAAA,WAAA,EAziBA,MAAM,GAAQ,QAyibD,QAAA,MAAA,G
AtiBA,MAAM,GAAM,MAsiBZ,QAAA,IAAA,GAniBA,MAAM,GAAO,OAmiBb,QAAA,KAAA,GA5hBA,MAA
M,GAAgB,gBA4hBtB,QAAA,cAAA,GAzhBA,MAAM,GAAQ,QAyhBd,QAAA,MAAA,GAthBA,MAAM,GAA
W,WashBjB,QAAA,SAAA,GanhBA,MAAM,GAAiB,iBAmhBvB,QAAA,eAAA,GA5gBA,MAAM,GAAW,WA4
gBjB,QAAA,SAAA,GArgBA,MAAM,GAAW,WAqgBjB,QAAA,SAAA,GAlgBA,MAAM,GAAU,UAkghBhB,QA

AA,QAAA,GA/fA,MAAM,GAAe,eA+frB,QAAA,aAAA,GA5fA,MAAM,GAAW,WA4fjB,QAAA,SAAA,GAzfA,MAAM,GAAO,OAYfb,QAAA,KAAA,GAtfA,MAAM,GAAO,OAsfb,QAAA,KAAA,GAnfA,MAAM,GAAW,WA mfjB,QAAA,SAAA,GAhfA,MAAM,GAAQ,QA gfd,QAAA,MAAA,GA7eA,MAAM,GAAQ,QA6ed,QAAA,MAA A,GA1eA,MAAM,GAAY,YA0elB,QAAA,UAAA,GApeA,MAAM,GAAO,OAoeb,QAAA,KAAA,GAjeA,MAAM, GAAY,YAielB,QAAA,UAAA,GA9dA,MAAM,GAAW,WA8djB,QAAA,SAAA,GaxdA,MAAM,GAAM,MAwdZ ,QAAA,IAAA,GArDA,MAAM,GAAQ,QAqdd,QAAA,MAAA,GAlDA,MAAM,GAAa,aAkdnB,QAAA,WAAA,GA /cA,MAAM,GAAa,aA+cnB,QAAA,WAAA,GA5cA,MAAM,GAAY,YA4c1B,QAAA,UAAA,GAzcA,MAAM,GA Aa,aAycnB,QAAA,WAAA,GAncA,MAAM,GAAM,MAmcZ,QAAA,IAAA,GA1bA,MAAM,GAAU,UA0bhB,QA AA,QAAA,GAjbA,MAAM,GAAM,MAibZ,QAAA,IAAA,GA1aA,MAAM,GAAU,UA0ahB,QAAA,QAAA,GAva A,MAAM,GAAU,UaUahB,QAAA,QAAA,GA9ZA,MAAM,GAAC,cA8ZpB,QAAA,YAAA,GArZA,MAAM,GAA Y,YAqZIB,QAAA,UAAA,GA3YA,MAAM,GAAgB,gBA2YtB,QAAA,cAAA,GAjYA,MAAM,GAAoB,oBAiY1B, QAAA,kBAAA,GaxXA,MAAM,GAAO,OAwxB,QAAA,KAAA,GAjXA,MAAM,GAAM,MAiXZ,QAAA,IAAA, GA1WA,MAAM,GAAU,UA0WhB,QAAA,QAAA,GAvWA,MAAM,GAAY,YAuWIB,QAAA,UAAA,GAhWA,M AAM,GAAM,MAgWZ,QAAA,IAAA,GA7VA,MAAM,GAAC,cA6VpB,QAAA,YAAA,GArVA,MAAM,GAAW, WAqVjB,QAAA,SAAA,GA1VA,MAAM,GAAM,MAkVZ,QAAA,IAAA,GA/UA,MAAM,GAAW,WA+UjB,QAA A,SAAA,GA5UA,MAAM,GAAsB,sBA4U5B,QAAA,oBAAA,GAnUA,MAAM,GAAsB,sBAmU5B,QAAA,oBAA A,GAzTA,MAAM,GAAsB,sBAyT5B,QAAA,oBAAA,GA/SA,MAAM,GAAW,WA+SjB,QAAA,SAAA,GA5SA, MAAM,GAAS,SA4Sf,QAAA,OAAA,GApSA,MAAM,GAAO,OAoSb,QAAA,KAAA,GA9RA,MAAM,GAAQ,Q A8Rd,QAAA,MAAA,GAvRA,MAAM,GAAO,OAuRb,QAAA,KAAA,GApRA,MAAM,GAAM,MAoRZ,QAAA,I AAA,GAjRA,MAAM,GAAQ,QAiRd,QAAA,MAAA,GA9QA,MAAM,GAAO,OA8Qb,QAAA,KAAA,GAvQA,M AAM,GAAQ,QAuQd,QAAA,MAAA,GA/PA,MAAM,GAAO,OA+Pb,QAAA,KAAA,GA5PA,MAAM,GAAa,aA4 PnB,QAAA,WAAA,GAzPA,MAAM,GAAO,OAYpb,QAAA,KAAA,GAtPA,MAAM,GAAU,UAsPhB,QAAA,QA AA,GAhPA,MAAM,GAAwB,wBAgP9B,QAAA,sBAAA,GaxOA,MAAM,GAA4B,4BAwOIC,QAAA,OBAAA,G AnOA,MAAM,GAAiB,iBAmOvB,QAAA,eAAA,GA3NA,MAAM,GAAqB,qBA2N3B,QAAA,mBAAA,GAvNA, MAAM,GAAQ,QAuNd,QAAA,MAAA,GApNA,MAAM,GAAU,UAoNhB,QAAA,QAAA,GA9MA,MAAM,GAA Q,QA8Md,QAAA,MAAA,GA3MA,MAAM,GAAQ,QA2Md,QAAA,MAAA,GaxMA,MAAM,GAAY,YAwMIB, QAAA,UAAA,GAIMA,MAAM,GAAS,SAkMf,QAAA,OAAA,GA/LA,MAAM,GAAO,OA+Lb,QAAA,KAAA,G A5LA,MAAM,GAAQ,QA4Ld,QAAA,MAAA,GAtLA,MAAM,GAAM,MAsLZ,QAAA,IAAA,GAnLA,MAAM,G AAO,OAmLb,QAAA,KAAA,GAhLA,MAAM,GAAO,OAglb,QAAA,KAAA,GA7KA,MAAM,GAAU,UA6KhB, QAAA,QAAA,GA1KA,MAAM,GAAW,WA0KjB,QAAA,SAAA,GAvKA,MAAM,GAAO,OAuKb,QAAA,KAAA ,GApKA,MAAM,GAAM,MAoKZ,QAAA,IAAA,GA7JA,MAAM,GAAiB,iBA6JvB,QAAA,eAAA,GAtJA,MAAM ,GAAS,SA5Jf,QAAA,OAAA,GA/IA,MAAM,GAAU,UA+IhB,QAAA,QAAA,GAzIA,MAAM,GAAoB,oBAyI1B, QAAA,kBAAA,GAtIA,MAAM,GAAS,SA5If,QAAA,OAAA,GAnIA,MAAM,GAAM,MAmIZ,QAAA,IAAA,GAh IA,MAAM,GAAgB,gBAgItB,QAAA,cAAA,GAzHA,MAAM,GAAe,eAyHrB,QAAA,aAAA,GA5GA,MAAM,GA AM,MA4GZ,QAAA,IAAA,GAzGA,MAAM,GAAO,OAYGb,QAAA,KAAA,GAtGA,MAAM,GAAO,OAsGb,QA AA,KAAA,GAhGA,MAAM,GAAO,OAglb,QAAA,KAAA,GAzFA,MAAM,GAAY,YAYfIB,QAAA,UAAA,GAn FA,MAAM,GAAS,SAmFf,QAAA,OAAA,GA3EA,MAAM,GAAS,SA2Ef,QAAA,OAAA,GAReA,MAAM,GAAq B,qBAqE3B,QAAA,mBAAA,GA9DA,MAAM,GAAY,YA8DIB,QAAA,UAAA,GaxDA,MAAM,GAAO,OAwdB, QAAA,KAAA,GAIDA,MAAM,GAAa,aAkDnB,QAAA,WAAA,GAzCA,MAAM,GAAMB,mBAyCzB,QAAA,iBA AA,GAjCA,MAAM,GAAe,eAiCrB,QAAA,aAAA,GAjBA,MAAM,GAAC,cAiBpB,QAAA,YAAA,GAAA,MAAM ,GAAuB,uBAA7B,QAAA,qBAAA;;AC7qBN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,U AAA,EAAA,QAAA,YAAA,EAAA,QAAA,qBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,iB AAA,EAAA,QAAA,mBAAA,EAAA,QAAA,sBAAA,EAtMD,IAAA,EAAA,QAAA,iBAEA,EAAA,QAAA,iBA KA,MAAM,GACF,EAAU,EAAA,WAAA,iBAakB,IAAM,IAAI,KACpC,GACF,EAAU,EAAA,WAAA,eAAgB,IA AM,IAAI,KAOEIC,SAAU,EACZ,EAAoB,GACHB,MAAA,EAAM,EAQ,EAAY,GACzB,OAAA,EAe,IAAI,GA OtB,SAAU,EAAY,GACnB,OAAA,EAAa,IAAI,GAGpB,SAAU,EAQb,GAC7B,MAAA,EAk,EAe,UACpB,EA AyB,GAExB,OAAM,CACL,MAAA,KAAC,EAAD,MAAO,GAAS,EAAG,OACrB,GAAA,EACF,MAEI,MAAC, EAAK,GAAU,GACf,GAAa,EAAl,MAAM,KAC1B,IAAY,GACd,EAAO,KAAK,GAGT,OAAA,EAch,SAAU,EA

Ae,GACvB,MAAA,WAAC,EAAD,YAAa,GAAe,EAC5B,EAAM,EAAQ,EAAY,GAC5B,EAAe,IAAI,IACrB,QAA
Q,oBACW,sBACX,4BAEV,EAAe,IAAI,EAAK,GAWpB,SAAU,EAAiB,GACzB,MAAA,WAAC,GAAC,EAejB,E
AAa,IAAI,KAGf,EAAM,EAAA,OAAA,QAAQ,UACHb,QAAQ,qCAAqC,MAGjD,EAAa,IAAI,EAAY,GAUZB,S
AAU,EACZ,EAAoB,GACHb,MAAA,EAAM,EAAQ,EAAY,GAC5B,IAAC,EAAe,IAAI,GACHb,MAAA,IAAI,qB
ACS,sBACX,wBAEV,EAAe,OAAO,GAIIB,SAAU,EAAMb,GAC7B,IAAC,EAAa,IAAI,GACd,MAAA,IAAI,uBA
CW,oCAEvB,EAAa,OAAO,GAShB,SAAU,EACZ,EAA+B,GACjB,EAAqB,GAC7B,QAAQ,IAGd,EADI,OAAO,
OAAO,GAAI,EAAC,CAAC,YAAa,OAKtD,SAAS,EAAQ,EAAoB,GAC5B,SAAG,KAAe;;ACIF1B,aAAA,OAAA,
eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,IAAA,EAAA,CAAA,mBAAA,EAAA,cAAA,EAAA,KAAA,EAAA,O
AAA,EAAA,cAAA,EAAA,cAAA,GAAA,QAAA,kBAAA,EAAA,QAAA,aAAA,EAAA,QAAA,IAAA,EAAA,QA
AA,MAAA,EAAA,QAAA,aAAA,EAAA,QAAA,aAAA,EAIHD,IAAA,EAAA,QAAA,iBAEA,EAAA,EAAA,QAA
A,gBAgHC,SAAS,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WA
AA,OAAA,GAAA,EAAA,SAAS,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAA
A,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,
CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,
KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,E
AAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GA
AA,EAAA,IAAA,EAAA,GAAA,EA1GK,SAAU,EACZ,EAAiB,GACf,MAAU,WAAV,EACK,EAAa,GAGf,EAAa
,CAAC,GAAQ,GAG/B,SAAS,EAAMb,EAAe,GACjC,OAAA,aAAa,cAA0B,YAAV,GACHc,aAAa,YAAwB,UAA
V,GAC3B,aAAa,YAAwB,SAAV,EAG5B,SAAU,EAAa,EAAe,GACTc,GAAU,WAAV,EACI,MAAA,IAAI,MAA
M,6CASd,GAPA,MAAM,QAAQ,KACHb,EAAI,EAAK,QAAQ,KAGf,EAAM,EAAA,OAAA,QAAQ,UACHb,EA
AK,yBAAyB,EAAe,GAE3C,EAAMb,EAAG,GACjB,OAAA,EAEL,GAAS,MAAT,GAA2B,YAAV,GAAiC,cAA
V,EACnC,OAAA,IAAI,aAAa,GACnB,GAAC,UAAV,EACF,OAAA,IAAI,WAAW,GACjB,GAAC,SAAV,EAakB,
CACrB,MAAA,EAAO,IAAI,WAAV,EAAe,QACvC,IAAA,IAAI,EAAI,EAAG,EAAI,EAAK,SAAU,EACM,IAAn
C,KAAK,MAAO,EAAe,MAC7B,EAAK,GAAC,GAGP,OAAA,EAED,MAAA,IAAI,2BAA2B,KAenC,SAAU,IAC
P,OAAA,EAAM,EAAA,OAAA,SAAS,MAmBIB,SAAU,EACZ,EAAc,GACT,OAAA,EAAM,EAAA,OAAA,SAAS,
MAAM,EAAM,GAW9B,SAAU,EAAa,EAAW,EAAW,SAE1C,OADP,EAAW,GAAY,SACHb,EAAM,EAAA,O
AAA,SAAS,OAAO,EAAG,GAW5B,SAAU,EAAa,EAAMb,EAAW,SAE1D,OADP,EAAW,GAAY,SACHb,EAAM
,EAAA,OAAA,SAAS,OAAO,EAAO,GA9GtC,OAAA,KAAA,GAAA,QAAA,SAAS,GAAA,YAAA,GAAA,eAAA
,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,EAAA;;ACwFmB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,0BAAA,EAAA
,QAAA,OAAA,QAAA,cAAA,EA1FnB,IAAA,EAAA,QAAA,iBAIA,EAAA,EAAA,QAAA,WAsFmB,SAAS,IAA
A,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EA
AA,SAAS,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAA
A,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,
OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,
CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,e
AAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EA
AA,GAAA,EA5Eb,MAAO,EACX,YAAoB,EAAoC,GAAPc,KAAA,aAAA,EAAoC,KAAA,OAAA,EACxC,MAA
V,IACG,KAAA,OAAS,IAAI,GAItB,cAAc,EAAoB,EAawB,GAEPd,IAAA,EACE,MAAA,EAAsB,KAC1B,EA
U,KAER,IAAA,EACE,MAAA,EAAQ,EAAK,MAQf,GAPA,KAAK,aAAa,iBACpB,EAAQ,KAAK,aAAa,KAAK,I
AE/B,IACA,EAAQ,IAAI,GAAU,EAAO,YAC7B,EAAQ,QAAQ,QAAQ,CAAC,SAAU,EAAK,MAAQ,MAE9C,E
AAM,EAAA,OAAA,QAAQ,gCACX,IAAA,IAAI,EAAI,EAAG,EAAI,EAAQ,OAAQ,IAAK,CACjC,MAAA,EA
S,EAAQ,GAGvB,EAAO,OAAO,KAAK,IACjB,EAA0B,EAAY,EAAO,MAAO,KAenD,MAVe,CACpB,WAAA,E
ACA,QAAA,EACA,OAAA,EACA,OAAQ,EAAM,KAAK,GAAU,EAAO,UACpC,UAAW,EAAM,KACb,GAAwC
,MAA9B,EAAO,oBACb,EAAO,sBACP,KAKZ,iBAAiB,GACT,MAAA,WAAC,EAAD,QAAa,EAAb,OAsB,EA
AtB,OAA8B,EAA9B,UAsC,GAAa,EAEdZ,EAAQ,QAAQ,IACd,QAAQ,IAAI,CAAC,EAAO,OAAQ,EAAQ,IAA
Y,KAAK,IAC9C,KAAA,OAAO,iBACR,EAAY,EAAQ,EAAe,GAAI,EAAe,GAAI,EAC1D,EAAe,SAMrB,SAAU,
EACZ,EAAsB,EAAU,GAC9B,GAAU,YAAV,EAek,OAAA,EAej,IAAA,IAAI,EAAI,EAAG,EAAI,EAAK,OAA

Q,IAAK,CAC9B,MAAA,EAAM,EAAC,GACb,GAAA,MAAM,KAAS,SAAS,GAGnB,OADP,QAAQ,cAAc,uBA
AyB,OACxC,EAGJ,OAAA,EAGU,QAAA,SAAA,EAAb,MAAO,EACX,iBACI,EAAC,EAAGB,EAC9B,EAAGC,E
AChC,GACI,MAAA,EAAYB,iBAAX,EAASB,EAAC,YAAY,MAAY,GAC7B,EAAM,MAC1C,EAaA,EAAC,SA
S,EAAM,IACjC,EAAO,EAAO,KACd,EAAO,EAAO,KACd,EAAQ,EAAC,SAAS,EAAO,MAAM,WAAAY,IACjD,I
AAA,EAAYB,GAExB,IAAA,MAAM,KAAQ,EAAQ,CACnB,MAAA,EAAQ,EAAO,GACjB,GAAS,MAAT,EAaE,
CAGX,MAAA,EAaA,EAAM,OAAS,EAAO,MACnC,EAAY,EAAW,OAC7B,MACO,MAAS,MAAc,EAAY,EA
A,EAaA,OAI/D,QAAQ,SACC,QAAiB,QAAW,MAAS,QAAY,QACID,QAA6B,IACjC,mBAAoB,YAAa,aAAc,gBA
C/C,eAAgB,qBA7BL,QAAA,OAAA;;ACoFIB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,q
BAAA,EAAA,QAAA,uBAAA,EA7KD,IAAA,EAAA,EAAA,QAAA,WA6KC,SAAA,IAAA,GAAA,mBAAA,QA
AA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAA
A,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,
EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,y
BAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EA
AA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GA
AA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA rJK,SAU
,EACZ,EAakB,EAAC,GAG5B,MAAA,EA8C,GAC9C,EAA0C,GAC3C,IAAA,IAAI,EAAI,EAAG,EA
AI,EAAG,
OAAQ,IAC7B,EAaA,EAAG,GAAG,KAAM,EAGtB,IAAA,IAAI,EAAI,EAAG,EAAI,EAAC,OAAQ,IAAC,CAC9
B,MAAA,EAAO,EAAC,GACZ,EAaA,EAAC,OACnB,IAAA,MAAM,KAAa,EAAY,CAC5B,MAAA,EAAQ,EA
W,GAErB,IAAA,GAAGB,EACf,IAAA,IAAI,EAAI,EAAG,EAAI,EAAG,OAAQ,IACzB,GAAA,EAaA,EAAM,IA
AK,CAC1B,EAAC,QAAQ,QAAQ,GAAU,EAaA,EAAO,KAAM,GACzD,GAAGB,EACbB,EAAW,EAAC,KAAM,
EACtB,MAIA,GAAA,EACF,OAMA,MAAA,EAAGD,GACtD,EAaE,EAaE,KAAM,EACjB,MAAA,EAaWc,GA
zC,IAAA,IAAI,EAAI,EAAC,OAAS,EAAG,GAAC,EAAG,IAAC,CACnC,MAAA,EAAO,EAAC,GACZ,EAaA,E
AAC,OAGnB,IAAA,IAAI,EAAI,EAAG,EAAI,EAAC,QAAQ,OAAQ,IACnC,GAAA,EAaE,EAAC,QAAQ,GAAG
,IAAC,CACjC,IAAA,MAAM,KAAa,EACtB,EAaE,EAAW,GAAW,KAAM,EAC3C,EAAS,EAAC,KAAM,EA
EtB,
OAMA,MAAA,EA2B,GAC5B,IAAA,IAAI,EAAI,EAAG,EAAI,EAAC,OAAQ,IAAC,CAC9B,MAAA,EAAO,E
AAC,GAEd,GAAA,EAAW,EAAC,KAAO,EAAS,EAAC,IAAC,CAEtC,MAAA,EA8C,GAC/C,IAAA,MAAM,K
AAa,EAAC,OAAQ,CAC7B,MAAA,EAAY,EAAC,OAAO,GAC1B,EAaA,EAU,MACzB,EAaA,GAaA,GAKxB,
MAAA,EAaA,OAAO,OAAO,GAAI,GACrC,EAAW,OAAS,EACpB,EAAW,QAAU,EAAC,QAElB,EAaA,KAAC
,IAIf,OAAA,EAUH,SAAU,EACZ,EACA,EA0B,EAC1B,GAEG,IAAA,IAAI,EAAI,EAaA,OAAS,EAAG,GAAC,
EAAG,IAAC,CAC3C,MAAA,EAAO,EAaA,GAEPB,EAAGB,GAYIB,GAXJ,EAAC,QAAQ,QAAQ,IACb,MAAA,
EAaA,EA6B,EAaE,IACbC,MAAd,EACF,EAAI,KAAC,GAIT,EAAI,KAAC,QAIQ,MAAjB,EAAC,SACD,MA
AA,IAAI,MACN,+DACO,EAAC,eAIZ,MAAA,EAiB,EAAC,SAAS,GAhC,IAAA,MAAM,KAAa,EAAC,OA
Q,CAC/B,KAAE,KAAa,GACX,MAAA,IAAI,uCAC2B,oCACH,OAAO,KAAC,OAI1C,MAAA,EAAC,EAAC,IA
AM,EAaE,MACjC,GAAa,YAAb,EAAG,MACC,MAAA,IAAI,kCAEF,EAAC,wCACN,yCAAiD,EAAG,UAeVd,
MAAA,EAAI,EAAC,OAAO,GACIB,IAAC,EAAC,YAAY,EAAG,MAAO,EAaE,OAC1B,MAAA,IAAI,kCAEF,E
AAC,yCACL,iBAAYB,EAAG,2DAcl,EAaE,UAG/B,GAAsC,MAAtC,EA6B,EAaE,IACjC,EA6B,EAaE,IA
AM,MAChC,CACC,MAAA,EAAC,EA6B,EAaE,IACnD,EA6B,EAaE,IAAM,EAAI,EAaA,GACtD,EAAY;;A
CQnB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAiLD,IAAA,EAAA,QAAA,UA
GA,MAAM,EAaWb,GAExB,EA6B,EA7B,EAaWb,EAExB,SAAU,EACZ,EA2B,EAiB,EAC5C,GACI,MA
AA,GAU,EAaE,EAAA,gBAAA,GACzB,EAAY,EAaWb,EAAM,EAAO,EAAO,GACxD,EAAO,EAAM,OAcB,
EAAY,EAkB,EAAM,EAAO,EAAO,EAAS,GAC3D,EAAQ,CAAC,UAQR,OAPH,IACF,EAAM,iBAAiB,KACv
B,EAAM,gBAAGB,KACtB,EAAM,kBAkB,MACxB,EAAM,KAAC,cAEb,EAAM,KAAC,EAU,IAAI,GAAC,O
AAS,GAAG,KAAC,OACxC,EAAM,KAAC,MAGpB,SAAS,EACL,EA2B,EAiB,EAC5C,GACI,MAAA,GAAI,
EAAC,EAAA,eAAA,GACIB,EAU,EAAQ,EAAQ,OAAS,GACnC,EAAY,IAAI,MAAM,GAAS,KAAC,GACpC,E
AAO,EAAM,OAcB,EACQ,cAAV,EAaWb,EAoB,GAAG,EAEPD,GAAA,EAAO,EACJ,IAAA,IAAI,EAAM,EA
AG,EAAM,EAAI,EAAS,IAAO,CACpC,MAAA,EAAS,EAAM,EACbB,IAAA,IAAI,EAAI,EAAG,EAAI,EAAS,IA
C3B,EAU,GAAC,KAAC,IACbB,EAU,GACV,EAAY,EAaE,EAAS,GAAI,EAAG,GAO,QAIrD,OAAA,EAG
T,SAAS,EACL,EAqC,EAaA,GAChD,IAAA,EAYG,OAVL,EADE,MAAM,QAAQ,MACJ,WAAW,EAAI,GAAG

,QAAQ,YAC/B,WAAW,EAAI,GAAG,QAAQ,QACxB,EAAS,EAAA,UAAA,OACL,KACM,SAAV,EACA,EAAG
B,GAeHb,WAAW,EAAI,QAAQ,IAAwB,YAGnD,EAAS,EAAA,UAAA,EAAQ,GAG1B,SAAS,EAAGB,GACHB,
OAMM,IAAN,EAAU,QAAU,OAG7B,SAAS,EACL,EAA2B,EAAiB,EAC5C,EAAMb,EAAqB,GAAS,GAC7C,M
AAA,EAA8B,cAAV,EAAwB,EAAI,EAehD,EAAO,EAAM,GACb,EAAO,EAAM,OACf,GAAS,IAAT,EAAY,CA
CV,GAAU,cAAV,EAAuB,CAEiB,MAAA,CAAC,EADa,EAAoB,GACR,GAAI,EAAG,IAEtC,MAAU,SAAV,EA
CK,CAAC,EAAGB,EAAK,KAExB,CAAC,EAAK,GAAG,YAGd,GAAS,IAAT,EAAY,CACV,GAAA,EAAO,EAA
uB,CAC1B,MAAA,EAAGB,EAA6B,EAE/C,IAAA,EAAY,MAAM,KACiB,EAAK,MAAM,EAAG,IACd,EAAW,
MAAM,KAAqC,EAAK,OAC1D,EAAO,GAA8B,EACtC,EAAO,IAKJ,MAJO,cAAV,IACF,EAAY,EAAoB,GACH
C,EAAW,EAAoB,IAE1B,CACL,IACA,EAAU,IAAI,CAAC,EAAG,IAAM,EAAY,EAAG,EAAU,GAAI,IACHD,K
AAK,MACV,UACA,EACK,IACG,CAAC,EAAG,IAAM,EACN,EAAG,EAAU,EAAO,EAA6B,GAAI,IAC5D,KA
AK,MACV,KAOG,MAAA,CACL,KAJY,cAAV,EAAwB,EAAoB,GACpB,MAAM,KAAoB,IAIxC,IAAI,CAAC,E
AAG,IAAM,EAAY,EAAG,EAAU,GAAI,IACID,KAAK,MACV,KAKE,MAAA,EAAW,EAAM,MAAM,GACvB,
EAAa,EAAQ,MAAM,GAC3B,EAAS,EAAQ,GAAK,EACtB,EAAkB,GACpB,GAAA,EAAO,EAAuB,CAC3B,IA
AA,IAAI,EAAI,EAAG,EAAI,EAA4B,IAAK,CAC7C,MAAA,EAAQ,EAAI,EACZ,EAAM,EAAQ,EACpB,EAAM,
QAAQ,EACV,EAAK,MAAM,EAAO,GAAM,EAAU,EAAO,EAAY,GACrD,IAEN,EAAM,KAAK,OACN,IAAA,I
AAI,EAAI,EAAO,EAA4B,EAAI,EAAM,IAAK,CACvD,MAAA,EAAQ,EAAI,EACZ,EAAM,EAAQ,EACpB,EA
AM,QAAQ,EACV,EAAK,MAAM,EAAO,GAAM,EAAU,EAAO,EAAY,EACrD,IAAM,EAAO,UAGd,IAAA,IAAI,
EAAI,EAAG,EAAI,EAAM,IAAK,CACvB,MAAA,EAAQ,EAAI,EACZ,EAAM,EAAQ,EACpB,EAAM,QAAQ,E
ACV,EAAK,MAAM,EAAO,GAAM,EAAU,EAAO,EAAY,EACrD,IAAM,EAAO,IAGf,MAAA,EAAe,IAAT,EA
a,IAAM,GAC/B,EAAM,GAAK,IAAM,EAAM,GAAK,EACvB,IAAA,IAAI,EAAI,EAAG,EAAI,EAAM,OAAS,E
AAG,IACpC,EAAM,GAAK,IAAM,EAAM,GAAK,EAE1B,IAAA,EAAa,MACZ,IAAA,IAAI,EAAI,EAAG,EAAI,
EAAM,IACxB,GAAc,KAIT,OAFP,EAAM,EAAM,OAAS,GACjB,IAAM,EAAM,EAAM,OAAS,GAAK,KAAO,E
AAS,GAAK,GACID,EAGT,SAAS,EAAoB,GAErB,MAAA,EAAYc,GAC1C,IAAA,IAAI,EAAI,EAAG,EAAI,EA
AK,OAAQ,GAAK,EACpC,EAAC,KAAK,CAAC,EAAK,GAAI,EAAK,EAAI,KAejC,OAAA;;AC0VT,aAAA,OA
AA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAAA,QAAA,aAAA,EAAA,QAAA,wBAAA,EA
AA,QAAA,qBAAA,EAAA,QAAA,SAAA,QAAA,OAAA,QAAA,kBAAA,EA5gBA,IAAA,EAAA,QAAA,iBACA,
EAAA,QAAA,mBAEA,EAAA,EAAA,QAAA,WaygBA,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IA
AA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EA
AA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA
,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,
KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,
EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,E
AAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EArfM,MAAO,EAMX,YAAY,EA
A2B,EAAU,GAI3C,GAJiC,KAAA,MAAA,EACH,KAAA,MAAQ,EAAM,QACd,KAAA,KAAO,EAAK,cAAc,G
AEjB,MAAV,EAAGB,CACZ,MAAA,EAAI,EAAO,OACjB,EAAK,OACD,IAAM,KAAK,KACX,yBAA2B,wDAC
G,KAAK,UAErC,GAAU,cAAV,EACI,MAAA,IAAI,MACN,8JAID,KAAA,OAAS,GAAU,EAAK,kBAakB,EA
O,KAAK,MACtD,KAAA,SAAU,EA Ae,EAAA,gBAAA,GAWhC,IAAI,KAA6B,GACX,IAAhB,EAAK,SACP,EA
AO,CAAC,IAEV,EAAK,OACD,EAAK,SAAW,KAAK,KACrB,2CAA6C,EAAK,mCAC3B,KAAK,SAE1B,MAA
A,EAAQ,KAAK,WAAW,GACzB,KAAA,OA AO,GAAS,EAUvB,OA AO,GACe,IAAhB,EAAK,SACP,EAAO,CA
AC,IAEN,IAAA,EAAI,EACH,IAAA,MAAM,KAAO,EAAM,CACiB,GAAA,EAAM,GAAK,GA AO,KAAK,MAA
M,GAAI,CAC7B,MAAA,uCAA2C,wBAC3B,KAAK,QACrB,MAAA,IAAI,MAAM,GAEiB,IAEE,IAAA,EAAQ,E
AAK,EAAK,OAAS,GAC1B,IAAA,IAAI,EAAI,EAAG,EAAI,EAAK,OAAS,IAAK,EACrC,GAAS,KAAK,QAAQ,
GAAK,EAAK,GAE3B,OAAA,KAAK,OA AO,GAGrB,WAAW,GACL,GAAC,IAAd,KAAK,KACA,OAAA,EACF,
GAakB,IAAd,KAAK,KACP,OAAA,EAAK,GAEV,IAAA,EAAQ,EAAK,EAAK,OAAS,GAC1B,IAAA,IAAI,EA
AI,EAAG,EAAI,EAAK,OAAS,IAAK,EACrC,GAAS,KAAK,QAAQ,GAAK,EAAK,GAE3B,OAAA,EAGT,WAA
W,GACL,GAAC,IAAd,KAAK,KACA,MAAA,GACF,GAakB,IAAd,KAAK,KACP,MAAA,CAAC,GA EJ,MAAA,
EAAiB,IAAI,MAAM,KAAK,MAAM,QACvC,IAAA,IAAI,EAAI,EAAG,EAAI,EAAK,OAAS,IAAK,EACrC,EA
K,GAAK,KAAK,MAAM,EAAQ,KAAK,QAAQ,IAC1C,GAAS,EAAK,GAAK,KAAK,QAAQ,GAG3B,OADP,EA

AK,EAAK,OAAS,GAACK,EACjB,EAGL,WACK,OAAA,KAAK,MAAM,OAQpB,WACS,OAAA,IAAY,WAAW,
KAAK,OAAQ,KAAK,MAAO,KAAK,QAoYhE,QAAA,aAAA,EAnWA,IAAI,EAAiC,KAeJc,EAAuB,KAeVb,EA
A8C,KAW5C,SAAU,EAAiB,GAC/B,EAAY,EAQR,SAAU,EAAa,GAC3B,EAAY,EAOR,SAAU,EAAwB,GACtC,
EAAuB,EAuBnB,MAAO,EA6BX,YAAY,EAAoB,EAAiB,EAAGB,GAXjE,KAAA,MAAO,EAoIG,KAAA,oBAAq
B,EAxHxB,KAAA,MAAQ,EAAM,QACd,KAAA,MAAQ,GAAS,UACjB,KAAA,KAAO,EAAK,cAAc,GAC1B,K
AAA,SAAU,EAae,EAAA,gBAAA,GACzB,KAAA,OAAS,EACT,KAAA,GAACK,EACL,KAAA,SAAY,KAAK,K
AAO,EAAI,KAAK,KAAK,WAAa,SAGtD,WACK,OAAA,KAAK,MAAM,OAQd,eACE,MAAA,QAAa,KAAK,O
ACjB,OAAA,EAAU,OAAO,KAAK,MAAO,KAAK,MAAY,GAOvD,aACS,OAAA,EAAU,OAAO,KAAK,MAAO,
KAAK,MAAY,KAAK,YAStD,cACE,MAAA,QAAa,KAAK,OACjB,OAAA,EAAC,EAAA,eAAA,KAAK,MAAO,
GASnC,YACS,OAAA,EAAC,EAAA,eAAA,KAAK,MAAO,KAAK,YASIC,aACC,KAAA,kBACC,MAAA,EAAO,
IAAY,KAAK,KAAK,QAC/B,GAAe,WAAf,KAAK,MAAoB,CACrB,MAAA,QAAc,EACHB,IACK,OAAA,EAAM
,IAAI,GAACK,EAAK,aAAa,IACxC,MAAA,GACM,MAAA,IAAI,MACN,kGAID,OAAA,EAST,WACO,KAAA,kB
ACC,MAAA,EAAO,IAAY,SAAS,KAAK,QACnC,GAAe,WAAf,KAAK,MACH,IACM,OAAA,EAASB,IAAI,GA
AK,EAAK,aAAa,IAEzD,MAAA,GACM,MAAA,IAAI,MACN,iGAID,OAAA,EAIH,cACC,KAAA,kBACC,MAA
A,QAAa,IAAY,KAAK,KAAK,QACrC,MAAE,WAAf,KAAK,MACA,EAEA,IAAI,WAAy,EAAoB,QAS/C,UAC
M,KAAK,aAGT,IAAY,cAAc,MACrB,KAAA,oBAAqB,GAlxB,iBACK,OAAA,KAAK,mBAGd,kBACM,GAAA,
KAAK,WACD,MAAA,IAAI,MAAM,uBAYpB,MAAM,GAAU,GACP,OAAA,EAAU,MAAM,KAAM,GAO/B,Q
AES,OADF,KAAA,kBACE,EAAU,MAAM,MAQzB,SAAS,GAAU,GACX,MAAA,EAAO,KAAK,WACX,OAAA,
EAAe,EAAA,gBAAA,EAAM,KAAK,MAAO,KAAK,MAAO,GAGtD,KAAqB,GAEZ,OADF,KAAA,kBACE,EA
AU,KAAK,KAAW,GAEnC,SAAS,GAAY,EAAM,EAAe,GAeJc,OADF,KAAA,kBACE,IAAY,aAAa,KAAM,EA
AW,EAAM,IAgBrD,SAAU,IAIP,OAAA,EAAU,EAAA,WAAA,SAAU,IACIB,GAGfX,QAAA,OAAA,EAjGA,OA
AO,eAAe,EAAQ,OAAO,YAAa,CACHD,MAAQ,KAMG,GAA6B,MAAjB,EAAS,MAAQc,MAArB,EAAS,UACv
B,MAA5B,EAAS,kBAcJb,IaKCM,MAAO,UAAwC,EAGnD,YACI,EAAgC,EAAoB,EACpD,GAEE,MAAA,EAA
a,MAAO,EAAa,MAAO,EAAa,OAAQ,GAH/B,KAAA,UAAA,EAI7B,KAAA,KAAO,EAwd,OAAO,GACD,GAA
A,EAAS,QAAU,KAAK,MACpB,MAAA,IAAI,iCACqB,EAAS,iCACjB,KAAK,qBAE1B,IAAC,EAAK,YAAY,E
AAS,MAAO,KAAK,OACnC,MAAA,IAAI,iCACqB,EAAS,iCACjB,KAAK,qBAE9B,IAAY,cAAc,MACrB,KAA
A,OAAS,EAAS,OACvB,IAAY,OAAO,KAAM,MAG3B,UACE,IAAY,gBAAgB,MACvB,KAAA,oBAAqB,GAI9
B,QAAA,SAAS,EAAA,OAAO,eAAe,EAAU,OAAO,YAAa,CACID,MAAQ,GACC,aAAoB,GAA6B,MAAnB,EA
AS,QAC1C,EAAS,kBAakB;;AC3ZIC,aArED,IAAY,EAqBP,EAOA,EAOA,EAOA,EA2BJ,OAAA,eAAA,QAAA,
aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,WAAA,EAAA,QAAA,UAAA,EAAA,QAAA,KAAA,
EArED,SAAY,GACV,EAAA,GAAA,KACA,EAAA,GAAA,KACA,EAAA,GAAA,KACA,EAAA,GAAA,KACA,
EAAA,GAAA,KACA,EAAA,GAAA,KACA,EAAA,GAAA,KAPF,CAAY,IAAA,QAAA,KAAA,EAAI,KaQbHb,S
AAK,GACH,EAAA,QAAA,UACA,EAAA,MAAA,QACA,EAAA,KAAA,QACA,EAAA,UAAA,YAJF,CAAK,IA
AA,EAAiB,KAotB,SAAK,GACH,EAAA,QAAA,UACA,EAAA,MAAA,QACA,EAAA,KAAA,OACA,EAAA,UA
AA,YAJF,CAAK,IAAA,EAAGB,KAOrB,SAAK,GACH,EAAA,QAAA,UACA,EAAA,MAAA,UACA,EAAA,KA
AA,UACA,EAAA,UAAA,YAJF,CAAK,IAAA,EAAMb,KAOxB,SAAK,GACH,EAAA,QAAA,YACA,EAAA,MA
AA,YACA,EAAA,KAAA,YACA,EAAA,UAAA,YAJF,CAAK,IAAA,EAAGB,KAO1B,MAAM,EAAGB,CACT,Q
AAA,EACF,MAAA,EACD,KAAA,EACK,UAAA,GAGT,SAAU,EAAW,EAAiB,GACtC,GAAU,WAAV,GAAGC,
WAAV,EAAoB,CACxC,GAAU,WAAV,GAAGC,WAAV,EACjB,MAAA,SAEH,MAAA,IAAI,wBAAwB,UAAc,
KAE3C,OAAA,EAAC,GAao,GAlxB,SAAU,EAAW,GACIB,OAAA,EAAW,EAAM;;AC9CzB,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,eAAA,EAAA,QAA
A,sBAAA,EArED,IAAA,EAAA,QAAA,YAEA,EAAA,QAAA,WACA,EAAA,QAAA,UAEM,SAAU,EAAiC,EA
AM,GACjD,GAAA,EAAE,QAAU,EAAE,MACT,MAAA,CAAC,EAAG,GAEP,MAAA,GAAQ,EAAW,EAAA,YA
AA,EAAE,MAAO,EAAE,OAC7B,MAAA,CAAC,EAAE,KAAK,GAAQ,EAAE,KAAK,IAG1B,SAAU,EAAiB,EA
AW,IAEtC,EAAA,EAAA,QAAA,EAAE,QAAU,EAAE,MACd,+BAAiC,EAAE,wBACpB,EAAE,2BAGjB,SAAU,
EAAe,EAAGB,GACtC,OAAA,EAAW,KAAK,GAACK,EAAE,KAAO,EAAO,IAexC,SAAU,EAASB,GAC9B,MAA
A,EAAiB,GAGhB,OADP,EAAoB,EAAQ,EADf,IAAI,KAeV,EAGT,SAAS,EACL,EAA4B,EAAGB,GAC1C,GAA
a,MAAb,EACF,OAEE,GAAA,aAAqB,EAazB,OAEE,YADA,EAAK,KAAK,GAGR,IAAC,EAAW,GACd,OAGI,

MAAA,EA AW,EACZ,IAAA,MAAM,KAAK,EAAU,CACIB,MAAA,EAAM,EAAS,GACHB,EA AK,IAAI,KACZ,
EA AK,IAAI,GACT,EA AoB,EA AK,EAAM,KAMrC,SAAS,EA AW,GACX,OAAA,MAAM,QAAQ,IAAuB,iBAAR
;;ACgrCrC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAAA,QAAA,IAAA,EAA
A,QAAA,OAAA,QAAA,YAAA,EApvCD,IAAA,EAAA,QAAA,sBACA,EAAA,QAAA,iBACA,EAAA,QAAA,iB
ACA,EAAA,QAAA,kBACA,EAAA,QAAA,qBACA,EAAA,QAAA,cACA,EAAA,QAAA,UACA,EAAA,QAAA,
YAEA,EAAA,QAAA,iBAEA,EAAA,EAAA,QAAA,WayuCC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KA
AA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAA
A,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,
GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,
IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yB
AAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GA
AA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAjqCD,SAAS,EAEL,GAG
M,OAAiE,MAAjE,EAAM,D,WAG7D,MAAM,EAAN,cAEE,KAAA,oBAAwC,GAExC,KAAA,eAAiB,EACjB,KA
AA,SAAW,EACX,KAAA,WAAa,EACb,KAAA,iBAAmB,EACnB,KAAA,eAAiB,EAMjB,KAAA,cAAgB,EAGhB
,KAAA,YAAc,EAId,KAAA,WAA2B,GAK3B,KAAA,kBAA8B,GAC9B,KAAA,YAAc,EAEd,KAAA,WAAa,IAA
I,QAOjB,KAAA,WAAY,EACZ,KAAA,cAA6B,CAC3B,SAAU,EACV,WAAY,EACZ,UAAW,EACX,QAAS,GAC
T,OAAQ,KACJ,kBAES,OAAA,MAAM,KAAK,IAAI,IAAI,KAAK,QAAQ,IAAI,GA AK,EA AE,UAI1D,UACO,IA
AA,MAAM,KAAgB,KAAK,oBACzB,KAAA,oBAAoB,GAAC,WAKvC,MAAO,EAgBX,YAAmB,GAAA,KAAA,
IAAA,EAbnB,KAAA,SAA0C,GAC1C,KAAA,gBAKI,GAKI,KAAA,qBAAuB,EAGxB,KAAA,MAAQ,IAAI,EAG
b,cACA,GAA2B,MAA3B,KAAK,mBACA,OAAA,KAAK,mBAAmB,KAAK,QAEIC,GA AwB,MAAxB,KAAK,g
BACP,OAEI,MAAA,EAAiB,KAAK,oBAEvB,IAAA,IAAI,EA AI,EAAG,EA AI,EA Ae,OAAQ,IAAK,CACxC,MA
AA,EAAC,EA Ae,GA E/B,SADkB,KAAK,kBAakB,GAAa,QAGxD,kBADM,KAAK,WAAW,IAKpB,MAAA,IAAI
,MACN,0EAI F,cACE,GAA2B,MAA3B,KAAK,mBACD,MAAA,IAAI,kBACM,KAAK,mDACjB,kFAGF,GA Aw
B,MAAxB,KAAK,gBAAYB,CAC1B,MAAA,KAAC,EAAD,UAAO,GAAa,KAAK,kCAC3B,GAAA,EACI,MAAA
,IAAI,uCAC2B,uBACjC,oGAGD,KAAA,WAAW,GAEX,OAAA,KAAK,gBAGd,eACS,OAAA,OAAO,KAAK,K
AAK,iBAG1B,YAAY,GACN,KAAE,KAAe,KAAK,UAAW,CAG/B,KAAA,KAAe,KAAK,iBAOf,OAAA,KAPgC,
CACjC,MAAA,UAAC,GAAa,KAAK,kBAakB,GACvC,GAAA,EA EK,OAAA,MAMN,OAAA,KAAK,SAAS,GA
GvB,mBAAmB,GA Eb,OAAE,KAAe,KAAK,gBAGnB,KAAK,gBAAgB,GAAa,QAFhC,KAKX,gBACI,EACA,EA
CA,EA AW,GACT,OAAA,KAAe,KAAK,iBACtB,QAAQ,QACD,qCACH,sCACG,IAEJ,KAAA,gBAAgB,GAAe,C
AAC,QAAA,EAAS,SAAA,IACvC,GAGH,iBAAW,GACX,GAAqC,MAArC,KAAK,gBAAgB,GACjB,MAAA,IA
AI,uBAAuB,4BAG/B,GADC,KAAA,YAAc,EACe,MAA9B,KAAK,SAAS,GAASB,CACjC,KAAA,gBAakB,KAC
jB,MAAA,QAAC,EAAD,UAAU,GAAa,KAAK,kBAakB,GA EhD,KADW,QAakB,EAAU,GAEIC,OAAA,EAQJ,
OALF,KAAA,gBAakB,KAAK,SAAS,GACHC,KAAA,yBAEA,KAAA,SAAW,IAAI,EA AJ,SAAa,KAAK,kBAE3
B,EAGD,0BACU,EAAqB,EAAA,sBAAA,KAAK,aACIC,QAAQ,IACU,MAApB,EAAO,WACT,EAAO,UAAU,K
AAK,mBAKpB,yBAAYB,IACf,EAAqB,EAAA,sBAAA,GAC7B,QAAQ,IACY,MAAtB,EAAO,aACT,EAAO,YA
AY,KAAK,SAAS,MAW/B,kBAakB,GA EIB,MAAA,EAAuB,KAAK,gBAAgB,GAC9C,GAAwB,MAAxB,EACI,
MAAA,IAAI,mCACuB,6BAG/B,IACI,MAAA,EAAU,EAAqB,UAMjC,IAAA,GAAa,aAAmB,EA ArB,eACa,mBA
AjB,EAAQ,KA4BV,OADF,KAAA,SAAS,GAAe,EACtB,CAAC,SAAS,EAAM,WAAW,GA5BI,CACHC,MAAA,I
AAc,KAAK,qBACnB,EACF,EACK,KAAK,KA EA,EAAY,KAAK,wBAGhB,KAAA,SAAS,GAAe,EACxB,KAAA
,mBAAqB,MACnB,IAER,MAAM,KAED,EAAY,KAAK,wBAGhB,KAAA,mBAAqB,KAC1B,QAAQ,kCACyB,Y
ACjC,QAAQ,KAAK,EA AI,OAAS,EA AI,UACvB,IAGV,OADF,KAAA,mBAAqB,EACnB,CAAC,QAAA,EAAS,
WAAW,IAK9B,MAAO,GAGA,OAFP,QAAQ,kCAakC,YAC1C,QAAQ,KAAK,EA AI,OAAS,EA AI,SACvB,CAA
C,SAAS,EAAO,WAAW,IAIvC,cAAc,GACR,KAAE,KAAe,KAAK,iBACIB,MAAA,IAAI,SAAS,mCAEjB,KAAK
,cAAgB,GAA0C,MAA3B,KAAK,oBAGtC,KAAA,uBAGH,KAAe,KAAK,WACjB,KAAA,yBAAYB,GACzB,KA
AA,SAAS,GAAa,iBACpB,KAAK,SAAS,WAGhB,KAAK,gBAAgB,GAGxB,KAAK,cAAgB,IACIB,KAAA,mBA
AqB,KACrB,KAAA,YAAc,KACd,KAAA,gBAakB,MAInB,oBACF,GAA6C,IAA7C,OAAO,KAAK,KAAK,iBA
AiB,OAC9B,MAAA,IAAI,MAAM,iCAEX,OAAA,OAAO,KAAK,KAAK,iBAAiB,KAAK,CAAC,EA AW,IAEjD,
KAAK,gBAAgB,GAAG,SAC3B,KAAK,gBAAgB,GAAG,UAIxB,kCAEA,MAAA,EAAiB,KAAK,oBAEvB,IAAA

,IAAI,EAAl,EAAG,EAAl,EA Ae, OAAQ,IAAK,CACxC,MAAA,EA Ac,EA Ae,IAC7B,QAAC,EAAD,UAAU,GAA a,KAAK,kBAAkB,GACHd,GAAA,GAAa,EACR,MAAA,CAAC,KAAM,EA Aa,UAAA,GAGzB,MAAA,IAAI,MA CN,0EAIN,SAAS,EA AwB,GACzB,MAAA,EAAO,KAAK,MAAM,WA AW,IAAI,GACjC,EA Aa,EA AK,QACIB,E AAS,KAAK,SAAS,GACvB,EA AW,EA AW,SAAS,GAGrC,EA AW,YAAY,GAAQ,GAC/B,EA AK,QAAU,EACf,E AAQ,KAAK,EA AQ,EA AQ,EA AK,MAAO,EA AK,MAAO,GACjD,KAAK,0BAGF,KAAA,MAAM,kBAAkB,KA AK,MAAM,kBAAkB,OAAS,KAIvE,KAAgC,EA A6B,GA EvD,IAuBA,EA vBA,EA Ae,KACf,GAAM,MAAN,EA A Y,CAEV,GAAoB,mBAAb,EACH,MAAA,IAAI,MAAM,uCAEIB,EA AK,MACA,CAED,GAAoB,iBAAb,KAA2B, aAAoB,QACID,MAAA,IAAI,MACN,kFAGF,GA Ac,mBAAP,EACH,MAAA,IAAI,MACN,kFAGN,EAAO,EAKF, OAAA,KAAK,UACR,IAAM,KAAK,WA AW,GAAO,IAAM,KAAK,SAAS,GAAS,MACxD,EAAS,eACa,SACpB, QAAQ,MAAM,2CAET,IAIP,UAAa,EA AmB,EA AiB,GACvD,IACI,IACI,MAAA,EAAM,IAEL,OADP,IACO,EA CP,MAAO,GAED,MADN,IACM,GAKF,eACC,OAAA,EAAO,eAIR,iBACC,OAAA,EAAO,iBASR,MAAM,GAC N,MAAA,EAAY,EAAO,UAAU,EA AjB,SAA2B,CAAC,EAAA,IACxC,EAAS,CAAC,EAAA,GA eT,OADF,KAA A,YAAY,KAAK,MAAM,YAAY,KAAM,EA AQ,CAAC,GA bzC,IA AgB,CAC5B,EAAG,KACK,MACA,EA Aa,CA AC,EAAG,GACjB,EA AQ,CAAC,MAFD,WAIP,OAAA,EAAO,UACH,EADJ,KACU,EAEN,MAGS,GACgD,IACj E,EA gBT,UACI,EA AoB,EA AwB,GA E1C,KADyD,OAA3C,EAAU,EAAA,WAAA,EAAY,KAAK,cAErC,MAAA, IAAI,iBA AiB,kCACvB,KAAK,gBAEJ,OAAA,KAAK,cAAc,CAAC,WAAA,EAAY,OAAA,EA AQ,MAAA,IAGz C,yBACC,OAAA,KAAK,IAAI,QAAQ,WAGIB,sBACJ,EA AoB,EACpB,GACI,MAAA,EA AkB,KAAK,QAAQ,aA GjC,IAAA,EA AmB,EACvB,EAAS,QAAQ,IAGf,GAAoC,cAAf,EA AK,MA AwB,EA AI,IAQID,MAAA,EACF,KA AK,MAAM,kBAAkB,KAAK,MAAM,kBAAkB,OAAS,GACjE,EACF,EA AkB,EA AmB,EA AmB,EACxD,GAAA, EA AgB,EACZ,MAAA,IAAI,kBACM,KAAK,gDACb,8BAA0C,MAS9C,cACJ,GAEE,IAAA,EACA,EA AkB,GAC hB,MAAA,EA AW,KAAK,WAEhB,EA AoB,KAAK,MAAM,SAC/B,EA AqB,KAAK,MAAM,WAMIC,IAAA,EAU A,EA dA,KAAK,0BACF,KAAA,MAAM,kBAAkB,KAAK,GAIZ,MA ApB,KAAK,aAMF,KAAA,QAKD,MAAA,E AAoB,EA A6B,GACnD,EA Aa,WACa,MAA1B,KAAK,MAAM,YA AsB,KAAK,MAAM,YAAY,KAAO,GAM/D,G AAA,EA A6B,GA Ae,CACxC,MAAA,WAAC,EAAD,OAAa,EA Ab,MAAqB,GAAS,EACZ,MA ApB,KAAK,aAMF ,KAAA,QAED,MAAA,GAAS,EAAU,EAAA,WAAA,EAAY,KAAK,aAC1C,EA AK,OACS,MAAV,EACA,sCAA wC,mBACpC,KAAK,gBAEb,EA Aa,MA CL,MAAA,EA AmB,KAAK,QAAQ,aACtC,EAAM,EAAO,WA AW,CAA C,OAAA,EA AQ,MAAA,EAAO,QAAS,KAAK,UACHd,MAAA,EA AW,MAAM,QAAQ,GAAO,EAAM,CAAC,G ACzC,KAAK,0BACF,KAAA,sBAAsB,EAAY,EA AkB,GAGrD,MAAA,EA Aa,EAAS,IAAK,IAI1B,GAA2B,MAA 3B,EA AmB,KACf,OAAA,EA EH,MAAA,OAAC,EAAD,MAAS,EAAT,MA AgB,GAAS,EACxB,OAAA,KAAK,q BAAqB,EA AQ,EA AO,KAQ9C,GAAA,EAAU,CACN,MAAA,EACF,KAAK,sBAAsB,EAAY,EA AQ,GACnD,EA AQ,KAAK,2BAA2B,GA EnC,OAAA,QA EJ,CACC,MAAA,YAAC,GA Ae,EA EhB,EA A0B,IAIzB,IAGL,EA AQ,E AAQ,IAAI,GAAU,KAAK,KAAK,KAAK,MAAM,OAGrD,EA Aa,MA CL,MAAA,EA AmB,KAAK,QAAQ,aACtC, EAAM,KAAK,KAAK,IAAM,EAAY,KAAK,QAAS,IAC1C,MAAA,EA AQ,MAAM,QAAQ,GAAO,EAAM,CAAC ,GAKnC,OAJH,KAAK,0BAEF,KAAA,sBAAsB,EA AmB,EA AkB,GA E3D,IAOL,MAAA,OAAC,EAAD,MAAS,G AAS,EACIB,EA AgB,EA A6B,GAC/C,KACA,EA Aa,cAEb,IAAA,EAmCI,OAICH,KAAA,UAEK,IAAA,KAAK,M AAM,cAAe,IAAM,KAAK,MAAM,cAAe,KACzD,KAAK,IAAI,QAAQ,UAAa,KAAK,MAAM,WAG5C,EA AgB, KAAK,SAAS,cAC1B,EA AmB,EA AQ,IAAM,KACjC,KAAK,IAAI,QAAQ,UACd,KAAA,SAAS,iBA AiB,GA EjC, EAAU,EA Ac,SAPxB,EAAU,MAWd,GACG,KAAA,YACD,EA AmB,EA AQ,EAAS,EA Ae,EAAO,GAG5D,KAAK ,MAAM,WACR,KAAA,MAAM,cAAc,QAAQ,KAAK,CACpC,KAAM,EACN,WAAY,KAAK,MAAM,SAAW,EA C1C,mBA AoB,KAAK,MAAM,SAC/B,aAAc,KAAK,MAAM,WAAa,EACtC,qBAAsB,KAAK,MAAM,WACjC,Y AAa,OAAO,KAAK,GAAQ,IAC7B,GAAsB,MAAf,EAAO,GA Ae,EAAO,GA AK,MAAQ,MACrD,aAAc,EA AQ,IA AI,GAAQ,EA AK,OACvC,aAAc,EA Ac,OAC5B,UAAW,EA Ac,YAGrB,MAAM,QAAQ,GAAO,EAAU,EA AQ,GA QzC,2BAA2B,GA E1B,OADO,EA AQ,IAAI,GAAU,KAAK,KAAK,KAAK,MAAM,KAWnD,sBACJ,EA AoB,EAC pB,GACI,MAAA,GAAa,EAAY,EAAA,aAAA,GAC3B,GA Ac,MAAd,EA AoB,CACHB,MAAA,EAAYB,EA AW,cA AgB,GACpD,EA A2B,EA AW,eAAiB,GA IzD,IAAA,EACA,EA AW,eACb,EA AK,OACD,MAAM,QAAQ,GACd,I AAM,0DAEV,EA AqB,OAAO,KAAK,GAAQ,IAAK,GAAQ,EAAO,KA E7D,EA AqB,EA Aa,IAAK,GA Ac,EAAO,I AGxD,MAAA,EACF,EA AQ,OAAO,CAAC,EAAG,IAAM,EA Ac,IA EpC,OAAA,EA AmB,OAAO,GAQ5B,MAAA ,GAQT,WACI,EA AoB,EA AiB,EACrC,GACE,GAAU,MAAV,EACI,MAAA,IAAI,MAAM,iDAEIB,EA AQ,GAAS

,UACjB,EAAU,GAAW,KAAK,QACtB,IAAA,EAAC,EACJ,WAAV,GAASB,EAAG,SAAS,EAAO,MAC7C,EAAE,
EAAoB,IAAI,GAAG,EAAG,aAAa,KAE1D,MAAA,EAAS,EAAQ,MAAM,EAAa,EAAO,GAC3C,EAAI,IAAI,EA
AJ,OAAW,EAAO,EAAO,EAAQ,KAAK,gBAI5C,GAHC,KAAA,YAAY,EAAG,GAGN,WAAV,EAAoB,CACbB,
MAAA,EAAO,KAAK,MAAM,WAAW,IAAI,GACjC,GAAW,EAAqB,EAAA,sBAAA,GACjC,KAAA,MAAM,U
AAY,EAAG,EAAG,MACvC,EAAG,MAAQ,EAER,OAAA,EAQT,qBACI,EAAgB,EAAiB,EACjC,GACF,EAAQ,
GAAS,UACX,MAAA,EAAI,IAAI,EAAG,OAAW,EAAO,EAAO,EAAQ,KAAK,gBAEzC,OADF,KAAA,YAAY,E
AAG,GACb,EAGT,aACI,EAASB,GAAY,EAAM,EACxG,GACF,EAAO,GAAQ,KAAK,iBAAiB,WACxB,MAAT,
GAAiB,IAAU,EAAa,QAC1C,EAAE,EAAa,KAAK,IAE7B,MAAA,EAAI,IAAI,EAAG,SAAa,EAAC,EAAG,EAAM
,KAAK,gBACvD,GAA0C,MAA1C,KAAK,MAAM,oBAAoB,EAAE,MAC7B,MAAA,IAAI,4BAA4B,EAAE,+BA
InC,OAFF,KAAA,MAAM,oBAAoB,EAAE,MAAQ,EACpC,KAAA,OAAO,EAAG,KAAK,SACb,EAGT,YAAY,E
AAW,GACb,KAAA,MAAM,aACK,WAAZ,EAAE,OACC,KAAA,MAAM,mBAIT,IAAA,EAAQ,EACI,cAAZ,E
AAE,OAAqC,WAAZ,EAAE,QAC/B,EAAQ,EAAE,KAAO,EAAG,gBAAGB,EAAE,QAERc,KAAA,MAAM,UAA
Y,EAEB,KAAK,MAAM,WAAW,IAAI,EAAE,UAC1B,KAAA,MAAM,iBACN,KAAA,MAAM,WAAW,IAAI,E
AAE,OAAQ,CACIC,QAAS,GAAG,KAAK,QACzB,MAAO,EAAE,MACT,MAAO,EAAE,MACT,MAAA,KAIE,a
AAa,EAaf,UACG,KAAA,MAAM,GASf,OAAO,EAAG,GACX,KAAA,YAAY,EAAG,GACf,KAAA,QAAQ,OA
AO,EAAE,QAGxB,aAAa,EAAGB,GACvB,KAAK,MAAM,WAAW,IAAI,IAC1B,KAAK,MAAM,WAAW,IAAI,G
AAQ,UAAAY,IAC3C,KAAA,MAAM,WAAW,OAAO,GACxB,KAAA,MAAM,kBAGf,cAAc,GACR,IAAC,KAAK,
MAAM,WAAW,IAAI,EAAE,QAC/B,OAEI,MAAA,EAAO,KAAK,MAAM,WAAW,IAAI,EAAE,QASrC,GAPC,
KAAA,MAAM,aACK,WAAZ,EAAE,QACC,KAAA,MAAM,mBACN,KAAA,MAAM,UAAAY,EAAG,OAIId,cAA
Z,EAAE,OAAqC,WAAZ,EAAE,MAAoB,CAC7C,MAAA,EAAQ,EAAE,KAAO,EAAG,gBAAGB,EAAE,OACzC,
KAAA,MAAM,UAAAY,EAIB,EAAG,QAAQ,YAAY,EAAE,SACxB,KAAA,aAAa,EAAE,OAAQ,EAAG,SAQRc,
mBACO,IAAA,MAAM,KAAG,KAAK,MAAM,oBAAqB,CAC9C,MAAA,EAAI,KAAK,MAAM,oBAAoB,GACp
C,KAAA,gBAAGB,IAIzB,gBAAGB,GACT,KAAA,cAAc,GAC2B,MAA1C,KAAK,MAAM,oBAAoB,EAAE,cAC5
B,KAAK,MAAM,oBAAoB,EAAE,MAI5C,SACQ,MAAA,EAAO,KAAK,QAAQ,SAanB,OAZP,EAAG,WAAa,K
AAK,MAAM,WAC7B,EAAG,eAAiB,KAAK,MAAM,eACjC,EAAG,SAAG,KAAK,MAAM,SACvB,KAAK,MA
AM,iBAAmB,IACb,EAAG,YAAa,EACE,MAAhB,EAAG,UACP,EAAG,QAAU,IAEjB,EAAG,QAAQ,KACT,OE
AGC,EAGH,cAAQ,GAEP,KAAA,MAAM,WAAAY,EAEB,MAAA,EAAa,KAAK,MAAM,SACxB,EAAGB,KAAK
,MAAM,WAE9B,KAAA,MAAM,cAAc,QAAU,GAC9B,KAAA,MAAM,cAAc,aAAe,IAEnC,KAAA,MAAM,WA
AY,EAEB,KAAA,MAAM,cAAc,UAAAY,KAAK,OACnC,KAAK,MAAM,cAAc,QAAQ,IAAI,GAAG,EAAE,qBA
C9C,KAAA,MAAM,cAAc,SAAG,KAAK,MAAM,SAAG,EACrD,KAAA,MAAM,cAAc,WACrB,KAAK,MAAM
,WAAa,EACvB,IAAA,MAAM,KAAG,KAAK,MAAM,cAAc,QAC5C,EAAO,mBAAqB,EAAO,aACnC,EAAO,gB
AAkB,EAAO,UAE3B,OAAA,KAAK,MAAM,cAGpB,WACS,OAAA,KAAK,MAAM,cAAgB,GAAgC,IAA3B,K
AAK,MAAM,YAG5C,YACJ,EAAoB,EAawB,EAC5C,EAAYB,EAiB,GACtC,MAAA,EACF,CAAC,GAAG,KA
AK,MAAM,iBAAGB,WAAA,EAAY,OAAA,EAAQ,QAAA,EAAS,MAAA,GAE7D,GAAa,EAAY,EAAA,aAAA,
GACb,MAAd,IACF,EAAGB,EAAG,UAER,MAAjB,IACF,EAAS,SAAY,CAAA,IAGnB,EAAM,EAAI,IAAI,CAA
C,EAAI,KACb,GAAM,MAAN,EAAY,CACR,MAAA,EAAS,EAAQ,GACjB,EAAO,EAAG,oBAAoB,EAAO,KA
AM,EAAO,OACnD,OAAA,KAAK,WAAW,EAAM,EAAO,MAAO,EAAO,OAE7C,OAAA,IAIF,EAAc,EAAG,OA
AS,EAAG,EAAM,EAAG,GAAG,EAAO,MAG1D,KAAA,MAAM,WAAW,KAAK,GAG7B,KAAuB,GAEd,OADP,E
AAO,MAAO,EACP,EAGD,YAC2B,IAA7B,KAAK,MAAM,gBACR,KAAA,MAAM,WAAa,IAERB,KAAA,MAA
M,gBAGL,UACD,KAAA,MAAM,gBAOb,WAAW,GACH,MAAA,EAawB,CAC5B,MAAO,GACP,KAAM,gBA
CN,GAAG,KAAK,MAAM,eAEb,IACF,EAAG,KAAO,GAEd,KAAA,MAAM,WAAW,KAAK,GACtB,KAAA,MA
AM,YAAc,EA03B,SAAS,GACD,MAAA,GAAYB,EAASB,EAAA,uBAAA,GAC/C,EACF,IAAI,IAAI,EAAGB,IA
AI,GAAG,EAAE,KAGzC,IAAA,IAAI,EAAG,EAAG,KAAK,MAAM,YAAY,MAAM,OAAQ,IAAG,CACtD,
MAAA,EAAS,KAAK,MAAM,YAAY,MAAM,GACvC,EAAO,MAAS,EAA0B,IAAI,EAAO,KACxD,EAAO,UAI
L,MAAA,EAAG,KAAK,MAAM,WAAW,MACIC,KAAA,MAAM,YAA+C,IAAjC,KAAK,MAAM,WAAW,OAC
3C,KACA,KAAK,MAAM,WAAW,KAAK,MAAM,WAAW,OAAAS,GAGzD,EAAuB,QAAQ,IAGxB,EAAO,MAA
Q,EAAO,UAAAY,EAAS,IACzC,KAAA,MAAM,KAWjB,UACI,EAAY,EAAc,EAC1B,GAAGB,GAGjB,GAFJ,EA
AK,OACD,EAAG,OAAS,EAAG,IAAM,6CACf,MAAN,GAA2B,YAAb,EAAG,MACb,MAAA,IAAI,gDAAgD,E

AAG,UAGzD,MAAA,EAAI,KAAK,UACX,IAAM,KAAK,YAAa,IAAM,KAAK,UACnC,IAAM,KAAK,KAAK,U
AAW,IAE/B,EAAK,OACD,aAAa,EADjB,OAEl,IAAM,kDAEJ,MAAA,GAAe,EAAqB,EAAA,sBAAA,KAAK,M
AAM,WAAy,EAAI,GACjE,IAAC,GAA4C,IAAxB,EAAa,QAAgB,EAAG,OAAS,EAC1D,MAAA,IAAI,MACN,u
IAKC,OAAA,KAAK,KAAK,WAAy,KACrB,MAAA,EAAuD,GAC7D,EAAuB,EAAE,IAAa,MAAN,EAAc,EAA
K,EAAE,OAAS,GAI1D,EAAA,EAAA,wBAAA,EAAwB,EAExB,GAAK,KAAK,KAAK,GAef,GACE,MAAA,EA
AQ,EAAG,IAAI,GAAK,EAAuB,EAAE,KAY5C,OAV0B,IAA7B,KAAK,MAAM,gBAGR,KAAA,MAAM,WAA
W,QAAQ,IACvB,IAAA,MAAM,KAAU,EAAK,MACxB,EAAO,YAGN,KAAA,MAAM,WAAa,MAEnB,CAAC,
MAAO,EAAG,MAAA,KAItB,WAA6B,GAKpB,OAHP,EAAK,OACD,EAAK,WAAW,GACHB,IAAM,qDACH,IA
AI,KAML,IAAA,EALJ,EAAK,OACD,EAAO,MAAM,GAAK,aAAa,EAA/B,QACA,IAAM,oEAOJ,MAAA,EA2
B,GACjC,EAAO,QAAQ,CAAC,EAAO,KACrB,EAAS,GAAK,IAoCT,OAAA,KAAK,cAAc,CACxB,YAIcK,CA
AC,EAAG,KACtC,EAAM,KAAS,EAAQ,GACvB,EAAK,OACD,EAAI,iBAaiB,EADzB,OAEl,IAAM,8FAEV,EA
AK,OACD,EAAK,WAAW,EAAI,UACpB,IAAM,oGAEH,EAAI,OAYBX,cAtBoB,CAAC,EAAO,KACtB,MAAA,
EAAU,EAAI,SAAS,EAAI,GAC3B,EAakB,MAAM,QAAQ,GAAW,EAAU,CAAC,GAC5D,EAAK,OACD,EAAM
,SAAW,EAAO,OACxB,IAAM,uKAGV,EAAK,OACD,EAAM,MAAM,GAAK,aAAa,EAA9B,QACA,IAAM,wIA
GJ,MAAA,EAAyC,GAIxC,OAHP,EAAM,QAAQ,CAAC,EAAM,KACnB,EAAQ,GAAK,KAAM,KAEd,GAMP,O
AAQ,KAKd,SAAS,GAGA,OADM,KAAK,MAAM,WAAW,IAAI,GAC3B,QAAQ,SAAS,GAEB,KAAK,GAGI,O
ADM,KAAK,MAAM,WAAW,IAAI,GAC3B,QAAQ,KAAK,GAGrB,WAAK,GACH,MAAA,GAAQ,EAAd,EAA
A,OACM,QAAmB,KAAK,QAAQ,KAAK,GAEPc,OADP,EAAW,QAAS,EAAQ,EAAA,OAAA,EACrB,EASD,M
AAwB,GAMvB,OALuB,MAA1B,KAAK,MAAM,cACb,EAAO,QAAU,KAAK,MAAM,YAAy,GACnC,KAAA,M
AAM,YAAy,MAAM,KAAK,IAG7B,EAGL,0BACK,OAAA,KAAK,MAAM,oBAOpB,QAEO,KAAA,uBAEA,K
AAA,MAAM,UACN,KAAA,IAAI,QACJ,KAAA,MAAQ,IAAI,EAEZ,IAAA,MAAM,KAAe,KAAK,SACxB,KAA
A,yBAAYB,GACzB,KAAA,SAAS,GAAa,iBACpB,KAAK,SAAS,GAElB,KAAA,YAAc,KACd,KAAA,gBAaKB,
KACIB,KAAA,mBAAqB,MAI9B,SAAS,EAAK,GACN,MAAA,GAAS,EAAMB,EAAA,qBAAA,EAAc,EAAA,eA
AA,GAAQ,WACjD,OAAA,EAAO,WAAW,EAAQ,EAAO,WAGpC,SAAU,IACR,MAAA,GAAK,EAAX,EAAA,s
BACI,GAAgB,MAAhB,EAAG,UAAmB,CACIB,MAAA,EAAc,IAAI,EAJ,YAAgB,GACpC,EAAG,UAAy,IAAI
,EAAO,GAOrB,OALc,EAAA,EAAA,sBAAA,EAAG,UAAU,MAIjB,EAAA,EAAA,kBAAA,IAAM,EAAG,WACn
B,EAAG,UAEx,QAAA,OAAA,EA/xBgB,EAAA,aAAe,EAKf,EAAA,eAAiB,EA8wB3B,MAAM,EAAS,IAQhB,S
AAU,EAAI,EAAW,GAEvB,MAAA,EAAS,CAAC,EAAA,EAAG,EAAA,GACZ,OAAA,EAAO,UAAU,EAajB,IA
AsB,GAC9B,QAAA,OAAA;;AC7tCA,aAtBD,SAAS,IACA,MAAqB,oBAAd,WAA0C,MAAb,UAGvC,SAAU,IA
CV,GAAA,IAAuB,CAEnB,MAAA,EAAI,UAAU,WAAa,UAAU,QAAW,OAAe,MAE9D,MAAA,2TACK,KAAK,
IAGR,0kDAAA,KAAK,EAAE,OAEO,EAAG,IAErB,OAAA,EAGH,SAAU,IACN,MAaKB,oBAAX,QAA6C,MA
AnB,OAEO,UAEd,oBAAtB,kBACb,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,QA
AA,UAAA;;ACkCD,IAAA,EAAA,QAAA,WA1DA,QAAA,YAEA,IAAA,EAAA,EAAA,QAAA,kBACA,EAAA,
QAAA,iBAuDA,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA
,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,
IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EA
AA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eA
AA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KA
AA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAA
A,GAAA,EAAA,IAAA,EAAA,GAAA,EArdA,MAAM,GAAM,EAaz,EAAA,OAoA,EAAI,aAAa,QAAS,KAAM,
EAAO,IACjC,GACF,QAAQ,KACJ,iJAOR,EAAI,aAAa,aAAc,IAAM,EAAY,aAGjD,EAAI,aACA,UACA,SAa0B,
IAAZ,QACmB,IAArB,EAAQ,eACKB,IAA1B,EAAQ,SAAS,MAGjC,EAAI,aACA,YACA,IAA2B,oBAAd,WAA0
C,MAAb,WACf,MAAvB,UAAU,WAAqB,SAAS,KAAK,UAAU,YACvD,aAAa,KAAK,UAAU,SAMpC,EAAI,aA
Aa,OAQK,KAAM,GAM/B,EAAI,aACA,qCAAsC,IAAM,EAAI,QAAQ,UAG5D,EAAI,aAAa,+BAAGC,KAAM,G
AGvD,EAAI,aAAa,UAAW,KAAM,GAGIC,EAAI,aAAa,+BAAGC,KAAM;;AC6DtD,aAAA,OAAA,eAAA,QAAA
,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,qBAAA,EAthD,IAAA,EAA
A,QAAA,YACA,EAAA,QAAA,iBACA,EAAA,QAAA,YAEA,EAAA,QAAA,UAEM,SAAU,EAAW,EAaiB,GAC
tC,IAAA,EAAwB,EAExB,IAAA,EAAa,EAAA,cAAA,GACR,MAAU,WAAV,EAAqB,GAAK,CAAC,EAAI,QA

pC,IAAC,MAAM,QAAQ,GACV,MAAA,GAEH,MAAA,EAakB,GAejB,KAAA,MAAM,QAAQ,KACd,EAAa,E
AAA,cAAA,IAAwB,WAAV,GACChC,EAAM,KAak,EAAU,QACrB,EAAY,EAAU,GAOjB,OALH,MAAM,QAA
Q,KACd,EAAM,EAAA,OAAA,QAAQ,uCACHB,EAA2B,EAak,EAAO,IAGIC,EAGT,SAAS,EACL,EAAiB,EA
iB,GAehC,GADJ,EAAU,GAaw,IACf,MAAM,QAAQ,MAAU,EAAa,EAAA,cAAA,GAKzC,YAHI,EAAA,EAAA
,QAAiB,IAAjB,EAAM,OACN,mBAAqB,EAAQ,KAak,kEACU,EAAM,gBAIpD,EAAA,EAAA,QAAA,EAAM,O
AAS,EACf,mBAAqB,EAAQ,KAak,uDACR,EAAl,oBAE9B,EAAA,EAAA,QAAA,EAAl,SAAW,EAAM,GACrB
,mBAAqB,EAAQ,KAak,sBAAsB,EAAM,2BACrC,EAAl,mBAC3B,MAAA,EAaw,EAAM,MAAM,GACxB,IA
AA,IAAI,EAAl,EAAG,EAAl,EAAl,SAAU,EACHC,EAA2B,EAAl,GAAl,EAAU,EAAQ,OAAO,IAIhE,SAAS,EA
CL,EACA,EAauB,EAAiB,GACtC,GAakB,sBAAiB,EAAA,CAGA,GAaiB,MAAjB,EACI,MAAA,IAAI,MAAM,
kCAEd,GAakB,YAAiB,GAA+B,IAakB,GAC/B,YAAiB,GAA+C,WAAhB,EAC3B,MAAA,IAAI,mBACO,iBAA
uB,iBAC9B,qBAAiC,aAIzC,SAAU,EACZ,EAAiB,EAAiB,EACIC,EAauD,WACrD,GAAA,aAAa,EAajB,OAES,
OADP,EAAY,EAac,EAae,MAAO,EAAS,GACrC,EAEL,IAAA,GAagB,EAaw,EAAA,YAAA,GAS1B,GANiB,
WAAiB,GACA,CAAC,OAAQ,QAAS,WAAW,QAAQ,IAAiB,IACxD,EAagB,GAeIB,EAAY,EAac,EAae,EAAS,
GAExC,MAAL,KACC,EAAa,EAAA,cAAA,KAAO,MAAM,QAAQ,IAAmB,iBAAN,GACnC,kBAAN,GAagC,iB
AAN,EAaiB,CAC/C,MAAA,EAAY,MAAL,EAAY,OAAU,EAAS,YAAY,KACID,MAAA,IAAI,mBACO,iBAAu
B,kDACF,MAEIC,MAAA,EAagB,EAaw,EAAG,IAC/B,EAAa,EAAA,cAAA,IAAO,MAAM,QAAQ,KACrC,EA
Al,CAAC,IAED,MACA,EAA2B,WAAiB,GACX,EAAa,EAAA,cAAA,EAAG,IACHB,EAAQ,EAAA,SAAA,EAae
,IAHJ,GAiHb,OAAA,EAAO,OAAA,WAAW,EAAQ,EAae,GAG5C,SAAU,EACZ,EAA0B,EAaiB,EAC3C,EAau
D,WACrD,IAAC,MAAM,QAAQ,GACX,MAAA,IAAI,kBACM,eAAqB,eACjC,gCAGC,OADS,EACD,IACX,CA
AC,EAAG,IACA,EAagB,KAAM,KAaw,KAAM,EAac;;ACrE9D,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,GAAA,EAAA,QAAA,qBAAA,EAjDD,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,WAE0,M
AAM,EAakB,OAozB,SAAU,EAauB,GAC/B,MAAA,EAAO,OAAO,KAak,GACrB,GAagB,IAAhB,EAak,OA
CD,MAAA,IAAI,MACN,4GAEG,EAak,gBAGV,IAAA,EAAS,EAak,GACZ,MAAA,EAak,EAae,GAGT,EA
O,SAAS,OACiB,EAAS,EAAO,UAAU,EAAG,EAAO,OAAS,IAI/C,GAakB,EAGZ,MAAA,EAak,IAAI,KACN,E
AAA,OAAA,WAAW,GACd,IACI,MAAA,EAAS,KAAM,GAKd,OAjH,EAAU,EAAA,WAAA,IACZ,QAAQ,MA
AM,2CAET,EAAA,OAAA,SAAS,GACT,EACP,MAAO,GAED,MADC,EAAA,OAAA,SAAS,MACV,IAMH,OA
HP,OAAO,eAAe,EAAl,OAAQ,CAAC,MAAO,EAAQ,cAAc,IAGzD,EACR,QAAA,gBAAA;;ACPM,aAAA,OAA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EA1CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,m
BAGA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eAkCO,SAAA,IAAA,GAAA,mBAAA
,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,
GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,O
AAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OA
AA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EA
A,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EA
A,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAZP,S
AAS,EAA2B,EAAoB,GACHD,MAAA,GAaQ,EAagB,EAAA,iBAAA,EAAM,OAAQ,WACtC,GAaQ,EAagB,E
AAA,iBAAA,EAAM,OAAQ,WAC5C,EAak,kBACD,EAAM,MAAO,EAAM,+BACM,EAAM,aAAa,EAAM,UA
C9C,uCAEF,MAAA,EAawB,CAAC,KAAM,EAAO,KAAM,GAC3C,OAAA,EAAO,OAAA,UAAU,EAajB,QAA
0B,GAG5B,MAAM,GAau,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACiBN,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA1DD,IAAA,EAAA,QAAA,aAIA,EAAA,QAAA,WAG
M,SAAU,EACZ,EAAoB,EAAiB,EACrC,GAIE,GAHS,MAAT,IACF,GAaQ,EAaw,EAAA,YAAA,IAEP,cAAV,E
ACI,MAAA,IAAI,MACN,oFAGF,KAAC,EAAa,EAAA,cAAA,KAAy,MAAM,QAAQ,IACtB,iBAAX,GAayC,kB
AAX,GACnB,iBAAX,EACH,MAAA,IAAI,MACN,4HAGF,GAAS,MAAT,EAae,EACkB,EAAA,EAAA,oCAAA,
GAe7B,MAAA,GAae,EAac,EAAA,eAAA,GAC7B,GAae,EAac,EAAA,eAAA,IAE/B,EAAA,EAAA,QAAA,IA
AiB,EACjB,qCACqC,iCAC9B,oBAA+B,KAerC,IAAA,IAAI,EAAl,EAAG,EAAl,EAac,SAAU,EAAG,CACvC,M
AAA,EAaw,EAac,GACzB,EAAoB,IAAM,EAac,OAAS,GACnD,KAAa,EAac,EAAA,eAAA,EAAM,MAAM,K
AGvC,EAAA,EAAA,QAAA,EAac,KAAO,EAAM,KAAO,EACIC,IAAM,mDACE,4CACM,SAYf,OARF,EAAa,E
AAA,cAAA,IAAY,MAAM,QAAQ,KAC1C,EAAS,CAAC,IAGZ,EAAQ,GAAS,EACjB,EAAMB,WAAV,GACL,E

AAa,EAAA,cAAA,EAAQ,IACrB,EAAQ,EAAA,SAAA,EAAoB,IAAI,GAC7B,EAAO,OAAA,WAAW,EAAaB,E
AAO;;ACIBvD,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAtCD,IAAA,EAAA,Q
AAA,sBAIA,EAAA,QAAA,qBA8BM,SAAU,EACZ,EAAoB,EAAqB,GACrC,MAAA,GAAgB,EAAW,EAAA,YA
AA,EAAQ,GACIC,OAAA,EAAW,EAAA,YAAA,EAAQ,EAAO,EAAe;;ACjC3C,aAAA,OAAA,eAAA,QAAA,aA
AA,CAAA,OAAA,IAAA,QAAA,0BAAA,EAAA,MAAM,EAakD,CACID,QAAA,EACA,QAAA,EACF,MAAA,E
ACC,OAAA,EACD,MAAA,EACD,KAAA,EACK,UAAA,GAPR,QAAA,qBAAA;;ACtBP,aAEA,QAAA,WAAA,
EACA,QAAA,YAAA,EACA,QAAA,cAAA,EAOA,IALA,IAAA,EAAA,GACA,EAAA,GACA,EAAA,oBAAA,W
AAA,WAAA,MAEA,EAAA,mEACA,EAAA,EAAA,EAAA,EAAA,OAAA,EAAA,IAAA,EACA,EAAA,GAAA,E
AAA,GACA,EAAA,EAAA,WAAA,IAAA,EAQA,SAAA,EAAA,GACA,IAAA,EAAA,EAAA,OAEA,GAAA,EAA
A,EAAA,EACA,MAAA,IAAA,MAAA,kDAKA,IAAA,EAAA,EAAA,QAAA,KAOA,ONAN,IAAA,IAAA,EAAA,
GAMA,CAAA,EAJA,IAAA,EACA,EACA,EAAA,EAAA,GAMA,SAAA,EAAA,GACA,IAAA,EAAA,EAAA,GA
CA,EAAA,EAAA,GACA,EAAA,EAAA,GACA,OAAA,GAAA,EAAA,GAAA,EAAA,EAGA,SAAA,EAAA,EAA
A,EAAA,GACA,OAAA,GAAA,EAAA,GAAA,EAAA,EAGA,SAAA,EAAA,GACA,IAAA,EAcA,EAbA,EAAA,E
AAA,GACA,EAAA,EAAA,GACA,EAAA,EAAA,GAEA,EAAA,IAAA,EAAA,EAAA,EAAA,EAAA,IAEA,EAA
A,EAGA,EAAA,EAAA,EACA,EAAA,EACA,EAGA,IAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EACA,EACA,E
AAA,EAAA,WAAA,KAAA,GACA,EAAA,EAAA,WAAA,EAAA,KAAA,GACA,EAAA,EAAA,WAAA,EAAA,
KAAA,EACA,EAAA,EAAA,WAAA,EAAA,IACA,EAAA,KAAA,GAAA,GAAA,IACA,EAAA,KAAA,GAAA,E
AAA,IACA,EAAA,KAAA,IAAA,EAmBA,OAhBA,IAAA,IACA,EACA,EAAA,EAAA,WAAA,KAAA,EACA,EA
AA,EAAA,WAAA,EAAA,KAAA,EACA,EAAA,KAAA,IAAA,GAGA,IAAA,IACA,EACA,EAAA,EAAA,WAA
A,KAAA,GACA,EAAA,EAAA,WAAA,EAAA,KAAA,EACA,EAAA,EAAA,WAAA,EAAA,KAAA,EACA,EAA
A,KAAA,GAAA,EAAA,IACA,EAAA,KAAA,IAAA,GAGA,EAGA,SAAA,EAAA,GACA,OAAA,EAAA,GAAA,
GAAA,IACA,EAAA,GAAA,GAAA,IACA,EAAA,GAAA,EAAA,IACA,EAAA,GAAA,GAGA,SAAA,EAAA,EA
AA,EAAA,GAGA,IAFA,IAAA,EACA,EAAA,GACA,EAAA,EAAA,EAAA,EAAA,GAAA,EACA,GACA,EAAA,
IAAA,GAAA,WACA,EAAA,EAAA,IAAA,EAAA,QACA,IAAA,EAAA,EAAA,IACA,EAAA,KAAA,EAAA,IAE
A,OAAA,EAAA,KAAA,IAGA,SAAA,EAAA,GAQA,IAPA,IAAA,EACA,EAAA,EAAA,OACA,EAAA,EAAA,E
ACA,EAAA,GAIA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GAHA,MAIA,EAAA,KAAA,EACA,EAA
A,EAAA,EALA,MAKA,EAAA,EAAA,EALA,QA2BA,OajBA,IAAA,GACA,EAAA,EAAA,EAAA,GACA,EAA
A,KACA,EAAA,GAAA,GACA,EAAA,GAAA,EAAA,IACA,OAEA,IAAA,IACA,GAAA,EAAA,EAAA,IAAA,G
AAA,EAAA,EAAA,GACA,EAAA,KACA,EAAA,GAAA,IACA,EAAA,GAAA,EAAA,IACA,EAAA,GAAA,EAA
A,IACA,MAIA,EAAA,KAAA,IApIA,EAAA,IAAA,WAAA,IAAA,GACA,EAAA,IAAA,WAAA,IAAA;;ACnBA,
QAAA,KAAA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,IAAA,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,EA
CA,GAAA,GAAA,GAAA,EACA,EAAA,GAAA,EACA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,EACA,EAA
A,GAAA,EAAA,EACA,EAAA,EAAA,EAAA,GAOA,IALA,GAAA,EAEA,EAAA,GAAA,IAAA,GAAA,EACA,K
AAA,EACA,GAAA,EACA,EAAA,EAAA,EAAA,IAAA,EAAA,EAAA,EAAA,GAAA,GAAA,EAAA,GAAA,GA
KA,IAHA,EAAA,GAAA,IAAA,GAAA,EACA,KAAA,EACA,GAAA,EACA,EAAA,EAAA,EAAA,IAAA,EAAA,
EAAA,EAAA,GAAA,GAAA,EAAA,GAAA,GAEA,GAAA,IAAA,EACA,EAAA,EAAA,MACA,CAAA,GAAA,I
AAA,EACA,OAAA,EAAA,IAAA,EAAA,GAAA,GAAA,EAAA,GAEA,GAAA,KAAA,IAAA,EAAA,GACA,GA
AA,EAEA,OAAA,GAAA,EAAA,GAAA,EAAA,KAAA,IAAA,EAAA,EAAA,IAGA,QAAA,MAAA,SAAA,EAA
A,EAAA,EAAA,EAAA,EAAA,GACA,IAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,EACA,GAAA,
GAAA,GAAA,EACA,EAAA,GAAA,EACA,EAAA,KAAA,EAAA,KAAA,IAAA,GAAA,IAAA,KAAA,IAAA,GA
AA,IAAA,EACA,EAAA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,GAAA,EACA,EAAA,EAAA,GAAA,IAAA,
GAAA,EAAA,EAAA,EAAA,EAAA,EAmCA,IAjCA,EAAA,KAAA,IAAA,GAEA,MAAA,IAAA,IAAA,EAAA,G
ACA,EAAA,MAAA,GAAA,EAAA,EACA,EAAA,IAEA,EAAA,KAAA,MAAA,KAAA,IAAA,GAAA,KAAA,KA
CA,GAAA,EAAA,KAAA,IAAA,GAAA,IAAA,IACA,IACA,GAAA,IAGA,GADA,EAAA,GAAA,EACA,EAAA,E
AEA,EAAA,KAAA,IAAA,EAAA,EAAA,IAEA,GAAA,IACA,IACA,GAAA,GAGA,EAAA,GAAA,GACA,EAAA
,EACA,EAAA,GACA,EAAA,GAAA,GACA,GAAA,EAAA,EAAA,GAAA,KAAA,IAAA,EAAA,GACA,GAAA,I
AEA,EAAA,EAAA,KAAA,IAAA,EAAA,EAAA,GAAA,KAAA,IAAA,EAAA,GACA,EAAA,IAIA,GAAA,EAAA
,EAAA,EAAA,GAAA,IAAA,EAAA,GAAA,EAAA,GAAA,IAAA,GAAA,GAIA,IAFA,EAAA,GAAA,EAAA,EA

CA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,GAAA,IAAA,EAAA,GAAA,EAAA,GAAA,IAAA,GAAA,GAEA
,EAAA,EAAA,EAAA,IAAA,IAAA;;ACIFA,IAAA,EAAA,GAAA,SAEA,OAAA,QAAA,MAAA,SAAA,SAAA,G
ACA,MAAA,kBAAA,EAAA,KAAA;;;AC0vDA,IAAA,EAAA,UAAA,GAnvDA,EAAA,QAAA,aACA,EAAA,Q
AAA,WACA,EAAA,QAAA,WAuCA,SAAA,IACA,IACA,IAAA,EAAA,IAAA,WAAA,GAEA,OADA,EAAA,UA
AA,CAAA,UAAA,WAAA,UAAA,IAAA,WAAA,OAAA,KACA,KAAA,EAAA,OACA,mBAAA,EAAA,UACA,I
AAA,EAAA,SAAA,EAAA,GAAA,WACA,MAAA,GACA,OAAA,GAIA,SAAA,IACA,OAAA,EAAA,oBACA,W
ACA,WAGA,SAAA,EAAA,EAAA,GACA,GAAA,IAAA,EACA,MAAA,IAAA,WAAA,8BAcA,OAZA,EAAA,qB
AEA,EAAA,IAAA,WAAA,IACA,UAAA,EAAA,WAGA,OAAA,IACA,EAAA,IAAA,EAAA,IAEA,EAAA,OAA
A,GAGA,EAaA,SAAA,EAAA,EAAA,EAAA,GACA,KAAA,EAAA,qBAAA,gBAAA,GACA,OAAA,IAAA,EAA
A,EAAA,EAAA,GAIA,GAAA,iBAAA,EAAA,CACA,GAAA,iBAAA,EACA,MAAA,IAAA,MACA,qEAGA,OAA
A,EAAA,KAAA,GAEA,OAAA,EAAA,KAAA,EAAA,EAAA,GAWA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA
,GAAA,iBAAA,EACA,MAAA,IAAA,UAAA,yCAGA,MAAA,oBAAA,aAAA,aAAA,YACA,EAAA,EAAA,EAA
A,EAAA,GAGA,iBAAA,EACA,EAAA,EAAA,EAAA,GAGA,EAAA,EAAA,GA4BA,SAAA,EAAA,GACA,GAA
A,iBAAA,EACA,MAAA,IAAA,UAAA,oCACA,GAAA,EAAA,EACA,MAAA,IAAA,WAAA,wCAIA,SAAA,EA
AA,EAAA,EAAA,EAAA,GAEA,OADA,EAAA,GACA,GAAA,EACA,EAAA,EAAA,QAEA,IAAA,EAIA,iBAAA
,EACA,EAAA,EAAA,GAAA,KAAA,EAAA,GACA,EAAA,EAAA,GAAA,KAAA,GAEA,EAAA,EAAA,GAWA,
SAAA,EAAA,EAAA,GAGA,GAGA,EAAA,GACA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,K
ACA,EAAA,oBACA,IAAA,IAAA,EAAA,EAAA,EAAA,IAAA,EACA,EAAA,GAAA,EAGA,OAAA,EAgBA,SA
AA,EAAA,EAAA,EAAA,GAKA,GAJA,iBAAA,GAAA,KAAA,IACA,EAAA,SAGA,EAAA,WAAA,GACA,MA
AA,IAAA,UAAA,8CAGA,IAAA,EAAA,EAAA,EAAA,EAAA,GAGA,GAGA,EAAA,EAAA,EAAA,IAEA,MAA
A,EAAA,GASA,OAPA,IAAA,IAIA,EAAA,EAAA,MAAA,EAAA,IAGA,EAGA,SAAA,EAAA,EAAA,GACA,IA
AA,EAAA,EAAA,OAAA,EAAA,EAAA,EAAA,EAAA,QACA,EAAA,EAAA,EAAA,GACA,IAAA,IAAA,
EAAA,EAAA,EAAA,EAAA,GAAA,EACA,EAAA,GAAA,IAAA,EAAA,GAEA,OAAA,EAGA,SAAA,EAAA,EA
AA,EAAA,EAAA,GAGA,GAGA,EAAA,WAEA,EAAA,GAAA,EAAA,WAAA,EACA,MAAA,IAAA,WAAA,6B
AGA,GAAA,EAAA,WAAA,GAAA,GAAA,GACA,MAAA,IAAA,WAAA,6BAmBA,OafA,OADA,IAAA,QAAA,
IAAA,EACA,IAAA,WAAA,QACA,IAAA,EACA,IAAA,WAAA,EAAA,GAEA,IAAA,WAAA,EAAA,EAAA,GA
GA,EAAA,qBAEA,EAAA,GACA,UAAA,EAAA,UAGA,EAAA,EAAA,EAAA,GAEA,EAGA,SAAA,EAAA,EA
A,GACA,GAAA,EAAA,SAAA,GAAA,CACA,IAAA,EAAA,EAAA,EAAA,EAAA,QAGA,OAAA,KAFA,EAAA,
EAAA,EAAA,IAEA,OACA,GAGA,EAAA,KAAA,EAAA,EAAA,EAAA,GACA,GAGA,GAAA,EAAA,CACA,G
AAA,oBAAA,aACA,EAAA,kBAAA,aAAA,WAAA,EACA,MAAA,iBAAA,EAAA,QAAA,EAAA,EAAA,QACA,
EAAA,EAAA,GAEA,EAAA,EAAA,GAGA,GAAA,WAAA,EAAA,MAAA,EAAA,EAAA,MACA,OAAA,EAAA,
EAAA,EAAA,MAIA,MAAA,IAAA,UAAA,sFAGA,SAAA,EAAA,GAGA,GAAA,GAAA,IACA,MAAA,IAAA,W
AAA,0DACA,IAAA,SAAA,IAAA,UAEA,OAAA,EAAA,EAGA,SAAA,EAAA,GAIA,OAHA,GAAA,IACA,EA
A,GAEA,EAAA,OAAA,GA+EA,SAAA,EAAA,EAAA,GACA,GAAA,EAAA,SAAA,GACA,OAAA,EAAA,OAE
A,GAAA,oBAAA,aAAA,mBAAA,YAAA,SACA,YAAA,OAAA,IAAA,aAAA,aACA,OAAA,EAAA,WAEA,iBA
AA,IACA,EAAA,GAAA,GAGA,IAAA,EAAA,EAAA,OACA,GAAA,IAAA,EAAA,OAAA,EAIA,IADA,IAAA,G
AAA,IAEA,OAAA,GACA,IAAA,QACA,IAAA,SACA,IAAA,SACA,OAAA,EACA,IAAA,OACA,IAAA,QACA,
UAAA,EACA,OAAA,EAAA,GAAA,OACA,IAAA,OACA,IAAA,QACA,IAAA,UACA,IAAA,WACA,OAAA,EA
AA,EACA,IAAA,MACA,OAAA,IAAA,EACA,IAAA,SACA,OAAA,EAAA,GAAA,OACA,QACA,GAAA,EAAA
,OAAA,EAAA,GAAA,OACA,GAAA,GAAA,GAAA,cACA,GAAA,GAMA,SAAA,EAAA,EAAA,EAAA,GACA,I
AAA,GAAA,EAcA,SALA,IAAA,GAAA,EAAA,KACA,EAAA,GAIA,EAAA,KAAA,OACA,MAAA,GAOA,SAJ
A,IAAA,GAAA,EAAA,KAAA,UACA,EAAA,KAAA,QAGA,GAAA,EACA,MAAA,GAOA,IAHA,KAAA,KACA
,KAAA,GAGA,MAAA,GAKA,IAFA,IAAA,EAAA,UAGA,OAAA,GACA,IAAA,MACA,OAAA,EAAA,KAAA,E
AAA,GAEA,IAAA,OACA,IAAA,QACA,OAAA,EAAA,KAAA,EAAA,GAEA,IAAA,QACA,OAAA,EAAA,KAA
A,EAAA,GAEA,IAAA,SACA,IAAA,SACA,OAAA,EAAA,KAAA,EAAA,GAEA,IAAA,SACA,OAAA,EAAA,K
AAA,EAAA,GAEA,IAAA,OACA,IAAA,QACA,IAAA,UACA,IAAA,WACA,OAAA,EAAA,KAAA,EAAA,GA
E,QACA,GAAA,EAAA,MAAA,IAAA,UAAA,qBAAA,GACA,GAAA,EAAA,IAAA,cACA,GAAA,GASA,SAAA
,EAAA,EAAA,EAAA,GACA,IAAA,EAAA,EAAA,GACA,EAAA,GAAA,EAAA,GACA,EAAA,GAAA,EAmIA,S

AAA,EAAA,EAAA,EAAA,EAAA,EAAA,GAEA,GAAA,IAAA,EAAA,OAAA,OAAA,EAmBA,GAhBA,iBAAA,
GACA,EAAA,EACA,EAAA,GACA,EAAA,WACA,EAAA,WACA,GAAA,aACA,GAAA,YAEA,GAAA,EACA,
MAAA,KAEA,EAAA,EAAA,EAAA,EAAA,OAAA,GAIA,EAAA,IAAA,EAAA,EAAA,OAAA,GACA,GAAA,E
AAA,OAAA,CACA,GAAA,EAAA,OAAA,EACA,EAAA,EAAA,OAAA,OACA,GAAA,EAAA,EAAA,CACA,IA
AA,EACA,OAAA,EADA,EAAA,EAUA,GALA,iBAAA,IACA,EAAA,EAAA,KAAA,EAAA,IAIA,EAAA,SAAA,
GAEA,OAAA,IAAA,EAAA,QACA,EAEA,EAAA,EAAA,EAAA,EAAA,GACA,GAAA,iBAAA,EAEA,O
ADA,GAAA,IACA,EAAA,qBACA,mBAAA,WAAA,UAAA,QACA,EACA,WAAA,UAAA,QAAA,KAAA,EAAA
,EAAA,GAEA,WAAA,UAAA,YAAA,KAAA,EAAA,EAAA,GAGA,EAAA,EAAA,CAAA,GAAA,EAAA,EAAA,
GAGA,MAAA,IAAA,UAAA,wCAGA,SAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GACA,IA0BA,EA1BA,EAAA
,EACA,EAAA,EAAA,OACA,EAAA,EAAA,OAEA,QAAA,IAAA,IAEA,UADA,EAAA,OAAA,GAAA,gBACA,U
AAA,GACA,YAAA,GAAA,aAAA,GAAA,CACA,GAAA,EAAA,OAAA,GAAA,EAAA,OAAA,EACA,OAAA,E
AEA,EAAA,EACA,GAAA,EACA,GAAA,EACA,GAAA,EAIA,SAAA,EAAA,EAAA,GACA,OAAA,IAAA,EAC
A,EAAA,GAEA,EAAA,aAAA,EAAA,GAKA,GAAA,EAAA,CACA,IAAA,GAAA,EACA,IAAA,EAAA,EAAA,E
AAA,EAAA,IACA,GAAA,EAAA,EAAA,KAAA,EAAA,GAAA,IAAA,EAAA,EAAA,EAAA,IAEA,IADA,IAAA,
IAAA,EAAA,GACA,EAAA,EAAA,IAAA,EAAA,OAAA,EAAA,OAEA,IAAA,IAAA,GAAA,EAAA,GACA,GAA
A,OAKA,IADA,EAAA,EAAA,IAAA,EAAA,EAAA,GACA,EAAA,EAAA,GAAA,EAAA,IAAA,CAEA,IADA,IA
AA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,IACA,GAAA,EAAA,EAAA,EAAA,KAAA,EAAA,EAAA,GAA
A,CACA,GAAA,EACA,MAGA,GAAA,EAAA,OAAA,EAIA,OAAA,EAeA,SAAA,EAAA,EAAA,EAAA,EAAA,
GACA,EAAA,OAAA,IAAA,EACA,IAAA,EAAA,EAAA,OAAA,EACA,GAGA,EAAA,OAAA,IACA,IACA,EA
A,GAJA,EAAA,EASA,IAAA,EAAA,EAAA,OACA,GAAA,EAAA,GAAA,EAAA,MAAA,IAAA,UAAA,sBAEA,
EAAA,EAAA,IACA,EAAA,EAAA,GAEA,IAAA,IAAA,EAAA,EAAA,EAAA,IAAA,EAAA,CACA,IAAA,EAAA
,SAAA,EAAA,OAAA,EAAA,EAAA,GAAA,IACA,GAAA,MAAA,GAAA,OAAA,EACA,EAAA,EAAA,GAAA,E
AEA,OAAA,EAGA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,OAAA,EAAA,EAAA,EAAA,EAAA,OAAA,GA
AA,EAAA,EAAA,GAGA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,OAAA,EAAA,EAAA,GAAA,EAAA,EA
A,GAGA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,OAAA,EAAA,EAAA,EAAA,EAAA,GAGA,SAAA,EAAA,
EAAA,EAAA,EAAA,GACA,OAAA,EAAA,EAAA,GAAA,EAAA,EAAA,GAGA,SAAA,EAAA,EAAA,EAAA,E
AAA,GACA,OAAA,EAAA,EAAA,EAAA,OAAA,GAAA,EAAA,EAAA,GAKFA,SAAA,EAAA,EAAA,E
AAA,GACA,OAAA,IAAA,GAAA,IAAA,EAAA,OACA,EAAA,cAAA,GAEA,EAAA,cAAA,EAAA,MAAA,EA
A,IAIA,SAAA,EAAA,EAAA,EAAA,GACA,EAAA,KAAA,IAAA,EAAA,OAAA,GAIA,IAHA,IAAA,EAAA,GA
EA,EAAA,EACA,EAAA,GAAA,CACA,IAQA,EAAA,EAAA,EAAA,EARA,EAAA,EAAA,GACA,EAAA,KACA
,EAAA,EAAA,IAAA,EACA,EAAA,IAAA,EACA,EAAA,IAAA,EACA,EAEA,GAAA,EAAA,GAAA,EAGA,OA
AA,GACA,KAAA,EACA,EAAA,MACA,EAAA,GAEA,MACA,KAAA,EAEA,MAAA,KADA,EAAA,EAAA,EA
AA,OAEA,GAAA,GAAA,IAAA,EAAA,GAAA,GACA,MACA,EAAA,GAGA,MACA,KAAA,EACA,EAAA,EA
AA,EAAA,GACA,EAAA,EAAA,EAAA,GACA,MAAA,IAAA,IAAA,MAAA,IAAA,KACA,GAAA,GAAA,IAAA
,IAAA,GAAA,IAAA,EAAA,GAAA,GACA,OAAA,EAAA,OAAA,EAAA,SACA,EAAA,GAGA,MACA,KAAA,E
ACA,EAAA,EAAA,EAAA,GACA,EAAA,EAAA,EAAA,GACA,EAAA,EAAA,EAAA,GACA,MAAA,IAAA,IA
A,MAAA,IAAA,IAAA,MAAA,IAAA,KACA,GAAA,GAAA,IAAA,IAAA,GAAA,IAAA,IAAA,GAAA,IAAA,EA
AA,GAAA,GACA,OAAA,EAAA,UACA,EAAA,GAMA,OAAA,GAGA,EAAA,MACA,EAAA,GACA,EAAA,QA
EA,GAAA,MACA,EAAA,KAAA,IAAA,GAAA,KAAA,OACA,EAAA,MAAA,KAAA,GAGA,EAAA,KAAA,GA
CA,GAAA,EAGA,OAAA,EAAA,GA98BA,QAAA,OAAA,EACA,QAAA,WAAA,EACA,QAAA,kBAAA,GA0B
A,EAAA,yBAAA,IAAA,EAAA,oBACA,EAAA,oBACA,IAKA,QAAA,WAAA,IAkEA,EAAA,SAAA,KAGA,EA
AA,SAAA,SAAA,GAEA,OADA,EAAA,UAAA,EAAA,UACA,GA2BA,EAAA,KAAA,SAAA,EAAA,EAAA,GA
CA,OAAA,EAAA,KAAA,EAAA,EAAA,IAGA,EAAA,sBACA,EAAA,UAAA,UAAA,WAAA,UACA,EAAA,UA
AA,WACA,oBAAA,QAAA,OAAA,SACA,EAAA,OAAA,WAAA,GAEA,OAAA,eAAA,EAAA,OAAA,QAAA,C
ACA,MAAA,KACA,cAAA,KaICA,EAAA,MAAA,SAAA,EAAA,EAAA,GACA,OAAA,EAAA,KAAA,EAAA,E
AAA,IAiBA,EAAA,YAAA,SAAA,GACA,OAAA,EAAA,KAAA,IAKA,EAAA,gBAAA,SAAA,GACA,OAAA,EA
AA,KAAA,IAiHA,EAAA,SAAA,SAAA,GACA,QAAA,MAAA,IAAA,EAAA,YAGA,EAAA,QAAA,SAAA,EA
A,GACA,IAAA,EAAA,SAAA,KAAA,EAAA,SAAA,GACA,MAAA,IAAA,UAAA,6BAGA,GAAA,IAAA,EAAA,

OAAA,EAKA,IAHA,IAAA,EAAA,EAAA,OACA,EAAA,EAAA,OAEA,EAAA,EAAA,EAAA,KAAA,IAAA,EA
AA,GAAA,EAAA,IAAA,EACA,GAAA,EAAA,KAAA,EAAA,GAAA,CACA,EAAA,EAAA,GACA,EAAA,EAA
A,GACA,MAIA,OAAA,EAAA,GAAA,EACA,EAAA,EAAA,EACA,GAGA,EAAA,WAAA,SAAA,GACA,OAAA
,OAAA,GAAA,eACA,IAAA,MACA,IAAA,OACA,IAAA,QACA,IAAA,QACA,IAAA,SACA,IAAA,SACA,IAAA
,SACA,IAAA,OACA,IAAA,QACA,IAAA,UACA,IAAA,WACA,OAAA,EACA,QACA,OAAA,IAIA,EAAA,OAA
A,SAAA,EAAA,GACA,IAAA,EAAA,GACA,MAAA,IAAA,UAAA,+CAGA,GAAA,IAAA,EAAA,OACA,OAAA
,EAAA,MAAA,GAGA,IAAA,EACA,QAAA,IAAA,EAEA,IADA,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,SA
AA,EACA,GAAA,EAAA,GAAA,OAlA,IAAA,EAAA,EAAA,YAAA,GACA,EAAA,EACA,IAAA,EAAA,EAAA,
EAAA,EAAA,SAAA,EAAA,CACA,IAAA,EAAA,EAAA,GACA,IAAA,EAAA,SAAA,GACA,MAAA,IAAA,UA
AA,+CAEA,EAAA,KAAA,EAAA,GACA,GAAA,EAAA,OAEA,OAAA,GA8CA,EAAA,WAAA,EA0EA,EAAA,
UAAA,WAAA,EAQA,EAAA,UAAA,OAAA,WACA,IAAA,EAAA,KAAA,OACA,GAAA,EAAA,GAAA,EACA,
MAAA,IAAA,WAAA,6CAEA,IAAA,IAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EACA,EAAA,KAAA,EAAA,E
AAA,GAEA,OAAA,MAGA,EAAA,UAAA,OAAA,WACA,IAAA,EAAA,KAAA,OACA,GAAA,EAAA,GAAA,E
ACA,MAAA,IAAA,WAAA,6CAEA,IAAA,IAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EACA,EAAA,KAAA,EA
AA,EAAA,GACA,EAAA,KAAA,EAAA,EAAA,EAAA,GAEA,OAAA,MAGA,EAAA,UAAA,OAAA,WACA,IA
AA,EAAA,KAAA,OACA,GAAA,EAAA,GAAA,EACA,MAAA,IAAA,WAAA,6CAEA,IAAA,IAAA,EAAA,EA
A,EAAA,EAAA,GAAA,EACA,EAAA,KAAA,EAAA,EAAA,GACA,EAAA,KAAA,EAAA,EAAA,EAAA,GACA,
EAAA,KAAA,EAAA,EAAA,EAAA,GACA,EAAA,KAAA,EAAA,EAAA,EAAA,GAEA,OAAA,MAGA,EAAA,U
AAA,SAAA,WACA,IAAA,EAAA,EAAA,KAAA,OACA,OAAA,IAAA,EAAA,GACA,IAAA,UAAA,OAAA,EA
A,KAAA,EAAA,GACA,EAAA,MAAA,KAAA,YAGA,EAAA,UAAA,OAAA,SAAA,GACA,IAAA,EAAA,SAAA
,GAAA,MAAA,IAAA,UAAA,6BACA,OAAA,OAAA,GACA,IAAA,EAAA,QAAA,KAAA,IAGA,EAAA,UAAA,
QAAA,WACA,IAAA,EAAA,GACA,EAAA,QAAA,kBAKA,OAJA,KAAA,OAAA,IACA,EAAA,KAAA,SAAA,
MAAA,EAAA,GAAA,MAAA,SAAA,KAAA,KACA,KAAA,OAAA,IAAA,GAAA,UAEA,WAAA,EAAA,KAGA,
EAAA,UAAA,QAAA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,IAAA,EAAA,SAAA,GACA,MAAA,IAAA,UA
AA,6BAgBA,QAbA,IAAA,IACA,EAAA,QAEA,IAAA,IACA,EAAA,EAAA,EAAA,OAAA,QAEA,IAAA,IACA,
EAAA,QAEA,IAAA,IACA,EAAA,KAAA,QAGA,EAAA,GAAA,EAAA,EAAA,QAAA,EAAA,GAAA,EAAA,KA
AA,OACA,MAAA,IAAA,WAAA,sBAGA,GAAA,GAAA,GAAA,GAAA,EACA,OAAA,EAEA,GAAA,GAAA,E
ACA,OAAA,EAEA,GAAA,GAAA,EACA,OAAA,EAQA,GAAA,OAAA,EAAA,OAAA,EASA,IAPA,IAAA,GAJ
A,KAAA,IADA,KAAA,GAMA,GAPA,KAAA,IADA,KAAA,GASA,EAAA,KAAA,IAAA,EAAA,GAEA,EAAA,
KAAA,MAAA,EAAA,GACA,EAAA,EAAA,MAAA,EAAA,GAEA,EAAA,EAAA,EAAA,IAAA,EACA,GAAA,E
AAA,KAAA,EAAA,GAAA,CACA,EAAA,EAAA,GACA,EAAA,EAAA,GACA,MAIA,OAAA,EAAA,GAAA,EA
CA,EAAA,EAAA,EACA,GA6HA,EAAA,UAAA,SAAA,SAAA,EAAA,EAAA,GACA,OAAA,IAAA,KAAA,QAA
A,EAAA,EAAA,IAGA,EAAA,UAAA,QAAA,SAAA,EAAA,EAAA,GACA,OAAA,EAAA,KAAA,EAAA,EAAA,
GAAA,IAGA,EAAA,UAAA,YAAA,SAAA,EAAA,EAAA,GACA,OAAA,EAAA,KAAA,EAAA,EAAA,GAAA,I
AkDA,EAAA,UAAA,MAAA,SAAA,EAAA,EAAA,EAAA,GAEA,QAAA,IAAA,EACA,EAAA,OACA,EAAA,K
AAA,OACA,EAAA,OAEA,QAAA,IAAA,GAAA,iBAAA,EACA,EAAA,EACA,EAAA,KAAA,OACA,EAAA,MA
EA,CAAA,IAAA,SAAA,GAWA,MAAA,IAAA,MACA,2EAXA,GAAA,EACA,SAAA,IACA,GAAA,OACA,IAA
A,IAAA,EAAA,UAEA,EAAA,EACA,OAAA,GASA,IAAA,EAAA,KAAA,OAAA,EAGA,SAFA,IAAA,GAAA,E
AAA,KAAA,EAAA,GAEA,EAAA,OAAA,IAAA,EAAA,GAAA,EAAA,IAAA,EAAA,KAAA,OACA,MAAA,IAA
A,WAAA,0CAGA,IAAA,EAAA,QAGA,IADA,IAAA,GAAA,IAEA,OAAA,GACA,IAAA,MACA,OAAA,EAAA,
KAAA,EAAA,EAAA,GAEA,IAAA,OACA,IAAA,QACA,OAAA,EAAA,KAAA,EAAA,EAAA,GAEA,IAAA,QA
CA,OAAA,EAAA,KAAA,EAAA,EAAA,GAEA,IAAA,SACA,IAAA,SACA,OAAA,EAAA,KAAA,EAAA,EAAA,
GAEA,IAAA,SAEA,OAAA,EAAA,KAAA,EAAA,EAAA,GAEA,IAAA,OACA,IAAA,QACA,IAAA,UACA,IAA
A,WACA,OAAA,EAAA,KAAA,EAAA,EAAA,GAEA,QACA,GAAA,EAAA,MAAA,IAAA,UAAA,qBAAA,GAC
A,GAAA,GAAA,GAAA,cACA,GAAA,IAKA,EAAA,UAAA,OAAA,WACA,MAAA,CACA,KAAA,SACA,KAA
A,MAAA,UAAA,MAAA,KAAA,KAAA,MAAA,KAAA,KAwFA,IAAA,EAAA,KAEA,SAAA,EAAA,GACA,IAA
A,EAAA,EAAA,OACA,GAAA,GAAA,EACA,OAAA,OAAA,aAAA,MAAA,OAAA,GAMA,IAFA,IAAA,EAAA,
GACA,EAAA,EACA,EAAA,GACA,GAAA,OAAA,aAAA,MACA,OACA,EAAA,MAAA,EAAA,GAAA,IAGA,O

AAA,EAGA,SAAA,EAAA,EAAA,EAAA,GACA,IAAA,EAAA,GACA,EAAA,KAAA,IAAA,EAAA,OAAA,GAE
A,IAAA,IAAA,EAAA,EAAA,EAAA,IAAA,EACA,GAAA,OAAA,aAAA,IAAA,EAAA,IAEA,OAAA,EAGA,SA
AA,EAAA,EAAA,EAAA,GACA,IAAA,EAAA,GACA,EAAA,KAAA,IAAA,EAAA,OAAA,GAEA,IAAA,IAAA,
EAAA,EAAA,EAAA,IAAA,EACA,GAAA,OAAA,aAAA,EAAA,IAEA,OAAA,EAGA,SAAA,EAAA,EAAA,EA
AA,GACA,IAAA,EAAA,EAAA,SAEA,GAAA,EAAA,KAAA,EAAA,KACA,GAAA,EAAA,GAAA,EAAA,KAA
A,EAAA,GAGA,IADA,IAAA,EAAA,GACA,EAAA,EAAA,EAAA,IAAA,EACA,GAAA,EAAA,EAAA,IAEA,O
AAA,EAGA,SAAA,EAAA,EAAA,EAAA,GAGA,IAFA,IAAA,EAAA,EAAA,MAAA,EAAA,GACA,EAAA,GAC
A,EAAA,EAAA,EAAA,EAAA,OAAA,GAAA,EACA,GAAA,OAAA,aAAA,EAAA,GAAA,IAAA,EAAA,EAAA,I
AEA,OAAA,EA0CA,SAAA,EAAA,EAAA,EAAA,GACA,GAAA,EAAA,GAAA,GAAA,EAAA,EAAA,MAAA,I
AAA,WAAA,sBACA,GAAA,EAAA,EAAA,EAAA,MAAA,IAAA,WAAA,yCa+JA,SAAA,EAAA,EAAA,EAAA,
EAAA,EAAA,EAAA,GACA,IAAA,EAAA,SAAA,GAAA,MAAA,IAAA,UAAA,+CACA,GAAA,EAAA,GAAA,E
AAA,EAAA,MAAA,IAAA,WAAA,qCACA,GAAA,EAAA,EAAA,EAAA,OAAA,MAAA,IAAA,WAAA,sBakD
A,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,EAAA,IAAA,EAAA,MAAA,EAAA,GACA,IAAA,IAAA,EAAA,E
AAA,EAAA,KAAA,IAAA,EAAA,OAAA,EAAA,GAAA,EAAA,IAAA,EACA,EAAA,EAAA,IAAA,EAAA,KAA
A,GAAA,EAAA,EAAA,EAAA,MACA,GAAA,EAAA,EAAA,EAAA,GA8BA,SAAA,EAAA,EAAA,EAAA,EAA
A,GACA,EAAA,IAAA,EAAA,WAAA,EAAA,GACA,IAAA,IAAA,EAAA,EAAA,EAAA,KAAA,IAAA,EAAA,O
AAA,EAAA,GAAA,EAAA,IAAA,EACA,EAAA,EAAA,GAAA,IAAA,GAAA,EAAA,EAAA,EAAA,GAAA,IAm
JA,SAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GACA,GAAA,EAAA,EAAA,EAAA,OAAA,MAAA,IAAA
,WAAA,sBACA,GAAA,EAAA,EAAA,MAAA,IAAA,WAAA,sBAGA,SAAA,EAAA,EAAA,EAAA,EAAA,EAA
A,GAKA,OAJA,GACA,EAAA,EAAA,EAAA,EAAA,EAAA,uBAAA,uBAEA,EAAA,MAAA,EAAA,EAAA,EAA
A,EAAA,GAAA,GACA,EAAA,EAWA,SAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GAKA,OAJA,GACA,EAAA,
EAAA,EAAA,EAAA,EAAA,wBAAA,wBAEA,EAAA,MAAA,EAAA,EAAA,EAAA,EAAA,GAAA,GACA,EAA
A,EA/cA,EAAA,UAAA,MAAA,SAAA,EAAA,GACA,IAoBA,EApBA,EAAA,KAAA,OAqBA,IApBA,IAAA,GA
GA,GACA,GAAA,GACA,IAAA,EAAA,GACA,EAAA,IACA,EAAA,IANA,OAAA,IAAA,EAAA,IAAA,GASA,G
ACA,GAAA,GACA,IAAA,EAAA,GACA,EAAA,IACA,EAAA,GAGA,EAAA,IAAA,EAAA,GAGA,EAAA,qBA
CA,EAAA,KAAA,SAAA,EAAA,IACA,UAAA,EAAA,cACA,CACA,IAAA,EAAA,EAAA,EACA,EAAA,IAAA,E
AAA,OAAA,GACA,IAAA,IAAA,EAAA,EAAA,EAAA,IAAA,EACA,EAAA,GAAA,KAAA,EAAA,GAIA,OAA
A,GAWA,EAAA,UAAA,WAAA,SAAA,EAAA,EAAA,GACA,GAAA,EACA,GAAA,EACA,GAAA,EAAA,EAA
A,EAAA,KAAA,QAKA,IAHA,IAAA,EAAA,KAAA,GACA,EAAA,EACA,EAAA,IACA,EAAA,IAAA,GAAA,M
ACA,GAAA,KAAA,EAAA,GAAA,EAGA,OAAA,GAGA,EAAA,UAAA,WAAA,SAAA,EAAA,EAAA,GACA,G
AAA,EACA,GAAA,EACA,GACA,EAAA,EAAA,EAAA,KAAA,QAKA,IAFA,IAAA,EAAA,KAAA,IAAA,GAC
A,EAAA,EACA,EAAA,IAAA,GAAA,MACA,GAAA,KAAA,IAAA,GAAA,EAGA,OAAA,GAGA,EAAA,UAAA,
UAAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,KAAA,IAGA,EAAA,UAAA,a
AAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,KAAA,GAAA,KAAA,EAAA,IA
AA,GAGA,EAAA,UAAA,aAAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,KAA
A,IAAA,EAAA,KAAA,EAAA,IAGA,EAAA,UAAA,aAAA,SAAA,EAAA,GAGA,OFA,GAAA,EAAA,EAAA,E
AAA,KAAA,SAEA,KAAA,GACA,KAAA,EAAA,IAAA,EACA,KAAA,EAAA,IAAA,IACA,SAAA,KAAA,EAA
A,IAGA,EAAA,UAAA,aAAA,SAAA,EAAA,GAGA,OFA,GAAA,EAAA,EAAA,EAAA,KAAA,QAEA,SAAA,
KAAA,IACA,KAAA,EAAA,IAAA,GACA,KAAA,EAAA,IAAA,EACA,KAAA,EAAA,KAGA,EAAA,UAAA,UA
AA,SAAA,EAAA,EAAA,GACA,GAAA,EACA,GAAA,EACA,GAAA,EAAA,EAAA,EAAA,KAAA,QAKA,IAH
A,IAAA,EAAA,KAAA,GACA,EAAA,EACA,EAAA,IACA,EAAA,IAAA,GAAA,MACA,GAAA,KAAA,EAAA,
GAAA,EAMA,OFA,IAFA,GAAA,OAEA,GAAA,KAAA,IAAA,EAAA,EAAA,IAEA,GAGA,EAAA,UAAA,UA
AA,SAAA,EAAA,EAAA,GACA,GAAA,EACA,GAAA,EACA,GAAA,EAAA,EAAA,EAAA,KAAA,QAKA,IAH
A,IAAA,EAAA,EACA,EAAA,EACA,EAAA,KAAA,IAAA,GACA,EAAA,IAAA,GAAA,MACA,GAAA,KAAA,I
AAA,GAAA,EAMA,OFA,IAFA,GAAA,OAEA,GAAA,KAAA,IAAA,EAAA,EAAA,IAEA,GAGA,EAAA,UA
A,SAAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,IAAA,KAAA,IACA,GAAA,I
AAA,KAAA,GAAA,GADA,KAAA,IAIA,EAAA,UAAA,YAAA,SAAA,EAAA,GACA,GAAA,EAAA,EAAA,EA
AA,KAAA,QACA,IAAA,EAAA,KAAA,GAAA,KAAA,EAAA,IAAA,EACA,OAAA,MAAA,EAAA,WAAA,EAA

A,GAGA,EAAA,UAAA,YAAA,SAAA,EAAA,GACA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,IAAA,EAAA,
KAAA,EAAA,GAAA,KAAA,IAAA,EACA,OAAA,MAAA,EAAA,WAAA,EAAA,GAGA,EAAA,UAAA,YAAA,
SAAA,EAAA,GAGA,OAF A,GAAA,EAAA,EAAA,EAAA,KAAA,QAEA,KAAA,GACA,KAAA,EAAA,IAAA,E
ACA,KAAA,EAAA,IAAA,GACA,KAAA,EAAA,IAAA,IAGA,EAAA,UAAA,YAAA,SAAA,EAAA,GAGA,OAF
A,GAAA,EAAA,EAAA,EAAA,KAAA,QAEA,KAAA,IAAA,GACA,KAAA,EAAA,IAAA,GACA,KAAA,EAAA,
IAAA,EACA,KAAA,EAAA,IAGA,EAAA,UAAA,YAAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EA
AA,KAAA,QACA,EAAA,KAAA,KAAA,GAAA,EAAA,GAAA,IAGA,EAAA,UAAA,YAAA,SAAA,EAAA,GA E
A,OADA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,EAAA,KAAA,KAAA,GAAA,EAAA,GAAA,IAGA,EAAA
,UAAA,aAAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EAAA,KAAA,QACA,EAAA,KAAA,KAAA,
GAAA,EAAA,GAAA,IAGA,EAAA,UAAA,aAAA,SAAA,EAAA,GAEA,OADA,GAAA,EAAA,EAAA,EAAA,K
AAA,QACA,EAAA,KAAA,KAAA,GAAA,EAAA,GAAA,IASA,EAAA,UAAA,YAAA,SAAA,EAAA,EAAA,EA
AA,IACA,GAAA,EACA,GAAA,EACA,GAAA,EACA,IAEA,EAAA,KAAA,EAAA,EAAA,EADA,KAAA,IAAA,
EAAA,EAAA,GAAA,EACA,GAGA,IAAA,EAAA,EACA,EAAA,EAEA,IADA,KAAA,GAAA,IAAA,IACA,EA A
A,IAAA,GAAA,MACA,KAAA,EAAA,GAAA,EAAA,EAAA,IAGA,OAAA,EAAA,GAGA,EAAA,UAAA,YAAA
,SAAA,EAAA,EAAA,EAAA,IACA,GAAA,EACA,GAAA,EACA,GAAA,EACA,IAEA,EAAA,KAAA,EAAA,EA
AA,EADA,KAAA,IAAA,EAAA,EAAA,GAAA,EACA,GAGA,IAAA,EAAA,EAAA,EACA,EAAA,EAEA,IADA,
KAAA,EAAA,GAAA,IAAA,IACA,GAAA,IAAA,GAAA,MACA,KAAA,EAAA,GAAA,EAAA,EAAA,IAGA,OA
AA,EAAA,GAGA,EAAA,UAAA,WAAA,SAAA,EAAA,EAAA,GAMA,OALA,GAAA,EACA,GAAA,EACA,GA
AA,EAAA,KAAA,EAAA,EAAA,EAAA,IAAA,GACA,EAAA,sBAAA,EAAA,KAAA,MAAA,IACA,KAAA,GAA
A,IAAA,EACA,EAAA,GAWA,EAAA,UAAA,cAAA,SAAA,EAAA,EAAA,GAUA,OATA,GAAA,EACA,GAAA,
EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,MAAA,GACA,EAAA,qBACA,KAAA,GAAA,IAAA,EACA,
KAAA,EAAA,GAAA,IAAA,GAEA,EAAA,KAAA,EAAA,GAAA,GAEA,EAAA,GAGA,EAAA,UAAA,cAAA,S
AAA,EAAA,EAAA,GAUA,OATA,GAAA,EACA,GAAA,EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,M
AAA,GACA,EAAA,qBACA,KAAA,GAAA,IAAA,EACA,KAAA,EAAA,GAAA,IAAA,GAEA,EAAA,KAAA,EA
AA,GAAA,GAEA,EAAA,GAUA,EAAA,UAAA,cAAA,SAAA,EAAA,EAAA,GAYA,OAXA,GAAA,EACA,GAA
A,EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,WAAA,GACA,EAAA,qBACA,KAAA,EAAA,GAAA,IAA
A,GACA,KAAA,EAAA,GAAA,IAAA,GACA,KAAA,EAAA,GAAA,IAAA,EACA,KAAA,GAAA,IAAA,GAEA,
EAAA,KAAA,EAAA,GAAA,GAEA,EAAA,GAGA,EAAA,UAAA,cAAA,SAAA,EAAA,EAAA,GAYA,OAXA,G
AAA,EACA,GAAA,EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,WAAA,GACA,EAAA,qBACA,KAAA,G
AAA,IAAA,GACA,KAAA,EAAA,GAAA,IAAA,GACA,KAAA,EAAA,GAAA,IAAA,EACA,KAAA,EAAA,GAA
A,IAAA,GAEA,EAAA,KAAA,EAAA,GAAA,GAEA,EAAA,GAGA,EAAA,UAAA,WAAA,SAAA,EAAA,EAAA
,EAAA,GAGA,GAFA,GAAA,EACA,GAAA,GACA,EAAA,CACA,IAAA,EAAA,KAAA,IAAA,EAAA,EAAA,E
AAA,GAEA,EAAA,KAAA,EAAA,EAAA,EAAA,EAAA,GAAA,GAGA,IAAA,EAAA,EACA,EAAA,EACA,EA A
A,EAEA,IADA,KAAA,GAAA,IAAA,IACA,EAAA,IAAA,GAAA,MACA,EAAA,GAAA,IAAA,IAAA,KA
AA,EAAA,EAAA,KACA,EAAA,GAEA,KAAA,EAAA,IAAA,EAAA,GAAA,GAAA,EAAA,IAGA,OAAA,EAAA
,GAGA,EAAA,UAAA,WAAA,SAAA,EAAA,EAAA,EAAA,GAGA,GAFA,GAAA,EACA,GAAA,GACA,EAAA,
CACA,IAAA,EAAA,KAAA,IAAA,EAAA,EAAA,EAAA,GAEA,EAAA,KAAA,EAAA,EAAA,EAAA,EAAA,GA
AA,GAGA,IAAA,EAAA,EAAA,EACA,EAAA,EACA,EAAA,EAEA,IADA,KAAA,EAAA,GAAA,IAAA,IACA,G
AAA,IAAA,GAAA,MACA,EAAA,GAAA,IAAA,GAAA,IAAA,KAAA,EAAA,EAAA,KACA,EAAA,GAEA,KA
AA,EAAA,IAAA,EAAA,GAAA,GAAA,EAAA,IAGA,OAAA,EAAA,GAGA,EAAA,UAAA,UAAA,SAAA,EA A
A,EAAA,GAOA,ON A,GAAA,EACA,GAAA,EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,KAAA,KAC
A,EAAA,sBAAA,EAAA,KAAA,MAAA,IACA,EAAA,IAAA,EAAA,IAAA,EAAA,GACA,KAAA,GAAA,IAAA,
EACA,EAAA,GAGA,EAAA,UAAA,aAAA,SAAA,EAAA,EAAA,GAUA,OATA,GAAA,EACA,GAAA,EACA,G
AAA,EAAA,KAAA,EAAA,EAAA,EAAA,OAAA,OACA,EAAA,qBACA,KAAA,GAAA,IAAA,EACA,KAAA,E
AAA,GAAA,IAAA,GAEA,EAAA,KAAA,EAAA,GAAA,GAEA,EAAA,GAGA,EAAA,UAAA,aAAA,SAAA,EA
AA,EAAA,GAUA,OATA,GAAA,EACA,GAAA,EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,OAAA,OAC
A,EAAA,qBACA,KAAA,GAAA,IAAA,EACA,KAAA,EAAA,GAAA,IAAA,GAEA,EAAA,KAAA,EAAA,GAAA
,GAEA,EAAA,GAGA,EAAA,UAAA,aAAA,SAAA,EAAA,EAAA,GAYA,OAXA,GAAA,EACA,GAAA,EACA,G

AAA,EAAA,KAAA,EAAA,EAAA,EAAA,YAAA,YACA,EAAA,qBACA,KAAA,GAAA,IAAA,EACA,KAAA,E
AAA,GAAA,IAAA,EACA,KAAA,EAAA,GAAA,IAAA,GACA,KAAA,EAAA,GAAA,IAAA,IAEA,EAAA,KAA
A,EAAA,GAAA,GAEA,EAAA,GAGA,EAAA,UAAA,aAAA,SAAA,EAAA,EAAA,GAaA,OAZA,GAAA,EACA,
GAAA,EACA,GAAA,EAAA,KAAA,EAAA,EAAA,EAAA,YAAA,YACA,EAAA,IAAA,EAAA,WAAA,EAAA,G
ACA,EAAA,qBACA,KAAA,GAAA,IAAA,GACA,KAAA,EAAA,GAAA,IAAA,GACA,KAAA,EAAA,GAAA,IA
AA,EACA,KAAA,EAAA,GAAA,IAAA,GAEA,EAAA,KAAA,EAAA,GAAA,GAEA,EAAA,GAgBA,EAAA,UA
AA,aAAA,SAAA,EAAA,EAAA,GACA,OAAA,EAAA,KAAA,EAAA,GAAA,EAAA,IAGA,EAAA,UAAA,aAAA
,SAAA,EAAA,EAAA,GACA,OAAA,EAAA,KAAA,EAAA,GAAA,EAAA,IAWA,EAAA,UAAA,cAAA,SAAA,E
AAA,EAAA,GACA,OAAA,EAAA,KAAA,EAAA,GAAA,EAAA,IAGA,EAAA,UAAA,cAAA,SAAA,EAAA,EA
AA,GACA,OAAA,EAAA,KAAA,EAAA,GAAA,EAAA,IAIA,EAAA,UAAA,KAAA,SAAA,EAAA,EAAA,EAAA
,GAQA,GAPA,IAAA,EAAA,GACA,GAAA,IAAA,IAAA,EAAA,KAAA,QACA,GAAA,EAAA,SAAA,EAAA,EA
AA,QACA,IAAA,EAAA,GACA,EAAA,GAAA,EAAA,IAAA,EAAA,GAGA,IAAA,EAAA,OAAA,EACA,GAAA,
IAAA,EAAA,QAAA,IAAA,KAAA,OAAA,OAAA,EAGA,GAAA,EAAA,EACA,MAAA,IAAA,WAAA,6BAEA,
GAAA,EAAA,GAAA,GAAA,KAAA,OAAA,MAAA,IAAA,WAAA,6BACA,GAAA,EAAA,EAAA,MAAA,IAAA
,WAAA,2BAGA,EAAA,KAAA,SAAA,EAAA,KAAA,QACA,EAAA,OAAA,EAAA,EAAA,IACA,EAAA,EAAA,
OAAA,EAAA,GAGA,IACA,EADA,EAAA,EAAA,EAGA,GAAA,OAAA,GAAA,EAAA,GAAA,EAAA,EAEA,IA
AA,EAAA,EAAA,EAAA,GAAA,IAAA,EACA,EAAA,EAAA,GAAA,KAAA,EAAA,QAEA,GAAA,EAAA,MAA
A,EAAA,oBAEA,IAAA,EAAA,EAAA,EAAA,IAAA,EACA,EAAA,EAAA,GAAA,KAAA,EAAA,QAGA,WAAA
,UAAA,IAAA,KACA,EACA,KAAA,SAAA,EAAA,EAAA,GACA,GAIA,OAAA,GAOA,EAAA,UAAA,KAAA,S
AAA,EAAA,EAAA,EAAA,GAEA,GAAA,iBAAA,EAAA,CASA,GARA,iBAAA,GACA,EAAA,EACA,EAAA,E
ACA,EAAA,KAAA,QACA,iBAAA,IACA,EAAA,EACA,EAAA,KAAA,QAEA,IAAA,EAAA,OAAA,CACA,IAA
A,EAAA,EAAA,WAAA,GACA,EAAA,MACA,EAAA,GAGA,QAAA,IAAA,GAAA,iBAAA,EACA,MAAA,IAA
A,UAAA,6BAEA,GAAA,iBAAA,IAAA,EAAA,WAAA,GACA,MAAA,IAAA,UAAA,qBAAA,OAEA,iBAAA,IA
CA,GAAA,KAIA,GAAA,EAAA,GAAA,KAAA,OAAA,GAAA,KAAA,OAAA,EACA,MAAA,IAAA,WAAA,sBA
GA,GAAA,GAAA,EACA,OAAA,KAQA,IAAA,EACA,GANA,KAAA,EACA,OAAA,IAAA,EAAA,KAAA,OAA
A,IAAA,EAEA,IAAA,EAAA,GAGA,iBAAA,EACA,IAAA,EAAA,EAAA,EAAA,IAAA,EACA,KAAA,GAAA,M
AEA,CACA,IAAA,EAAA,EAAA,SAAA,GACA,EACA,EAAA,IAAA,EAAA,EAAA,GAAA,YACA,EAAA,EAA
A,OACA,IAAA,EAAA,EAAA,EAAA,EAAA,IAAA,EACA,KAAA,EAAA,GAAA,EAAA,EAAA,GAIA,OAAA,M
AMA,IAAA,EAAA,qBAEA,SAAA,EAAA,GAIA,IAFA,EAAA,EAAA,GAAA,QAAA,EAAA,KAEA,OAAA,EAA
A,MAAA,GAEA,KAAA,EAAA,OAAA,GAAA,GACA,GAAA,IAEA,OAAA,EAGA,SAAA,EAAA,GACA,OAAA
,EAAA,KAAA,EAAA,OACA,EAAA,QAAA,aAAA,IAGA,SAAA,EAAA,GACA,OAAA,EAAA,GAAA,IAAA,EA
AA,SAAA,IACA,EAAA,SAAA,IAGA,SAAA,EAAA,EAAA,GAEA,IAAA,EADA,EAAA,GAAA,EAAA,EAMA,I
AJA,IAAA,EAAA,EAAA,OACA,EAAA,KACA,EAAA,GAEA,EAAA,EAAA,EAAA,IAAA,EAAA,CAIA,IAHA,
EAAA,EAAA,WAAA,IAGA,OAAA,EAAA,MAAA,CAEA,IAAA,EAAA,CAEA,GAAA,EAAA,MAAA,EAEA,G
AAA,IAAA,GAAA,EAAA,KAAA,IAAA,IAAA,KACA,SACA,GAAA,EAAA,IAAA,EAAA,EAEA,GAAA,IAAA,
GAAA,EAAA,KAAA,IAAA,IAAA,KACA,SAIA,EAAA,EAEA,SAIA,GAAA,EAAA,MAAA,EACA,GAAA,IAA
A,GAAA,EAAA,KAAA,IAAA,IAAA,KACA,EAAA,EACA,SAIA,EAAA,OAAA,EAAA,OAAA,GAAA,EAAA,Y
ACA,IAEA,GAAA,IAAA,GAAA,EAAA,KAAA,IAAA,IAAA,KAMA,GAHA,EAAA,KAGA,EAAA,IAAA,CAC
A,IAAA,GAAA,GAAA,EAAA,MACA,EAAA,KAAA,QACA,GAAA,EAAA,KAAA,CACA,IAAA,GAAA,GAAA
,EAAA,MACA,EAAA,KACA,GAAA,EAAA,IACA,GAAA,EAAA,UAEA,GAAA,EAAA,MAAA,CACA,IAAA,G
AAA,GAAA,EAAA,MACA,EAAA,KACA,GAAA,GAAA,IACA,GAAA,EAAA,GAAA,IACA,GAAA,EAAA,SA
EA,CAAA,KAAA,EAAA,SASA,MAAA,IAAA,MAAA,sBARA,IAAA,GAAA,GAAA,EAAA,MACA,EAAA,KA
CA,GAAA,GAAA,IACA,GAAA,GAAA,GAAA,IACA,GAAA,EAAA,GAAA,IACA,GAAA,EAAA,MAOA,OAA
A,EAGA,SAAA,EAAA,GAEA,IADA,IAAA,EAAA,GACA,EAAA,EAAA,EAAA,EAAA,SAAA,EAEA,EAAA,K
AAA,IAAA,EAAA,WAAA,IAEA,OAAA,EAGA,SAAA,EAAA,EAAA,GAGA,IAFA,IAAA,EAAA,EAAA,EACA
,EAAA,GACA,EAAA,EAAA,EAAA,EAAA,WACA,GAAA,GAAA,KADA,EAIA,GADA,EAAA,EAAA,WAAA,
KACA,EACA,EAAA,EAAA,IACA,EAAA,KAAA,GACA,EAAA,KAAA,GAGA,OAAA,EAGA,SAAA,EAAA,G
ACA,OAAA,EAAA,YAAA,EAAA,IAGA,SAAA,EAAA,EAAA,EAAA,EAAA,GACA,IAAA,IAAA,EAAA,EAA

A,EAAA,KACA,EAAA,GAAA,EAAA,QAAA,GAAA,EAAA,UADA,EAEA,EAAA,EAAA,GAAA,EAAA,GAEA
,OAAA,EAGA,SAAA,EAAA,GACA,OAAA,GAAA;;;ACvwCC,IAAA,EAAA,QAAA,UAAA,OAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAA,QAAA,cAAA,EAAA,QAAA,uBAAA,EAAA,QAAA
,iBAAA,EAAA,QAAA,0BAAA,EAAA,QAAA,0BAAA,EAAA,QAAA,wBAAA,EAAA,QAAA,SAAA,EAAA,QA
AA,6BAAA,EAAA,QAAA,kBAAA,EAnE,IAAA,EAAA,QAAA,kBAEA,EAAA,QAAA,iBAGA,EAAA,QAAA,
WAEA,EAAA,QAAA,WAGA,MAAM,EAA0B,EAmBzB,eAAe,EACIB,EAAuC,GAGnC,MAAA,EAAgC,GAChC
,EAA2C,GAE3C,EAakB,MAAM,QAAQ,GACIC,EAAQ,IAAI,GAAU,EAAO,MAC7B,OAAO,KAAK,GAEX,IA
AA,IAAI,EAAL,EAAG,EAAL,EAAM,SAAU,EAAG,CAC/B,MAAA,EAAO,EAAM,GACb,EAAL,MAAM,QAAQ,
GAAW,EAAQ,GAAG,OAAS,EAAQ,GAC3D,GAAY,YAAZ,EAAE,OAAMC,UAAZ,EAAE,OAaiC,SAAZ,EAA
E,OACtC,WAAZ,EAAE,OAakC,cAAZ,EAAE,MACtB,MAAA,IAAI,sCAAsC,OAAU,EAAE,SAExD,MAAA,EA
A6B,CAAC,KAAA,EAAM,MAAO,EAAE,MAAO,MAAO,EAAE,OAC/D,GAAY,WAAZ,EAAE,MAAoB,CACIB
,MAAA,EAAY,IAAI,QAAoB,MAAA,IACIC,MAAA,QAAa,EAAE,QACf,EAAGb,EAAK,OAAO,CAAC,EAAG,I
AAM,EAAL,EAAE,OAQ,GACtD,EAA0B,EAAK,OAC7B,EAAQ,IAAI,WAAW,GACzB,IAAA,EAAS,EACR,IA
AA,IAAI,EAAL,EAAG,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,
GAAU,EAAL,OAehB,EAAQ,KAeV,EAAa,KAAK,QAEIB,EAAa,KAAK,EAAE,QAET,MAAT,IACF,EAAL,MA
AQ,GAef,EAAM,KAAK,GAIN,MAAA,CAAC,KAAM,QADa,QAAQ,IAAI,IACa,MAAA,GakBhD,SAAU,EACZ
,EAAqB,GAejB,MAAA,EAAsB,GACxB,IAAA,EACA,EAAS,EACR,IAAA,MAAM,KAAQ,EAAO,CACIB,MAA
A,EAAO,EAAL,KACZ,EAAQ,EAAL,MACb,EAAQ,EAAL,MACb,GAAO,EAAC,EAAA,eAAA,GACvB,IAAA,
EAEA,GAAA,iBAakB,EAAM,CACpB,MAAA,EAae,EAAL,aACtB,GAAuB,UAAvB,EAAa,OAA4C,WAAvB,E
AAa,OAC7C,KAAE,QAAS,GAAgB,UAAW,GACIC,MAAA,IAAI,gBACI,EAAL,0BAA0B,EAAa,SACtD,0DAE
D,CAAA,GAA2B,YAAvB,EAAa,MAOhB,MAAA,IAAI,gBACI,EAAL,0CACO,EAAa,UACnC,wEATA,GAAU,
YAAV,EACI,MAAA,IAAI,gBACI,EAAL,0BAA0B,EAAa,4DACH,MASrD,MAAA,EAAYB,EAAqB,qBAAA,EA
Aa,OAC3D,EACF,EAAO,MAAM,EAAQ,EAAS,EAAO,GACnC,EAAYC,UAAvB,EAAa,MACjC,IAAI,WAAW,G
ACf,IAAI,YAAY,GACb,GAAU,YAAV,EACE,GAAuB,UAAvB,EAAa,OAA4C,WAAvB,EAAa,MAAoB,CACr
E,EAAS,IAAI,aAAa,EAAe,QACpC,IAAA,IAAI,EAAL,EAAG,EAAL,EAAe,OAQ,IAAK,CACxC,MAAA,EAAL,
EAAe,GACzB,EAAO,GAAL,EAAL,EAAa,MAAQ,EAAa,SAE/C,CAAA,GAA2B,YAAvB,EAAa,MAMhB,MAA
A,IAAI,uCAC2B,EAAa,SAC9C,iCAPkB,IAAIB,IACF,EAAGb,KAEIB,EAAS,EAAC,OAMpB,CAAA,GAAC,UAA
V,EAYH,MAAA,IAAI,sCAAsC,OAAU,KAXtD,GAAuB,UAAvB,EAAa,OAA4C,WAAvB,EAAa,MAC3C,MAA
A,IAAI,uCAC2B,EAAa,SAC9C,0BAEN,EAAS,IAAI,WAAW,EAAe,QACIC,IAAA,IAAI,EAAL,EAAG,EAAL,EA
Ae,OAQ,IAAK,CACxC,MAAA,EAAL,EAAe,GACzB,EAAO,GAAL,KAAK,MAAM,EAAL,EAAa,MAAQ,EA
a,MAKjE,GAAU,EAAO,OACZ,GAAC,WAAV,EAAoB,CACvB,MAAA,GAAO,EAAC,EAAA,eAAA,EAAL,OAC
hC,EAAS,GACJ,IAAA,IAAI,EAAL,EAAG,EAAL,EAAM,IAAK,CACvB,MAAA,EAAa,IAAI,YACnB,EAAO,MA
AM,EAAQ,EAAS,IAA0B,GAC5D,GAAU,EACJ,MAAA,EAAQ,IAAI,WAAW,EAAO,MAAM,EAAQ,EAAS,IAC
ID,EAAwB,KAAK,GAC9B,GAAU,OAEP,CACC,MAAA,EAAC,EAAqB,qBAAA,GACnC,EAAa,EAAO,MAAM,
EAAQ,EAAS,EAAO,GAEPD,GAAU,YAAV,EACF,EAAS,IAAI,aAAa,QACrB,GAAC,UAAV,EACT,EAAS,IAAI,
WAAW,QACnB,GAAC,SAAV,EACT,EAAS,IAAI,WAAW,OACnB,CAAA,GAAC,cAAV,EAcH,MAAA,IAAI,sC
AAsC,OAAU,KAd1B,CAChC,EAAS,IAAI,aAAa,GACpB,MAAA,EAAO,IAAI,aAAa,EAAO,OAAS,GACxC,EA
AQ,IAAI,aAAa,EAAO,OAAS,GAC1C,IAAA,IAAI,EAAL,EAAG,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,
AW,EAAL,GACjB,EAAM,GAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,EAAL,
AO,WACjC,GAAC,EAAO,EAAA,QAAA,EAAO,EAAO,WACzC,EAAL,IAAQ,EAAQ,EAAA,SAAA,EAAY,GAC
hC,EAAL,UACX,EAAY,WAlD,GAAU,EAAO,EAEL,cAAV,IACF,EAAL,IAAQ,EAAO,EAAA,QAAA,EAAQ,E
AAO,IAG/B,OAAA,EAMH,SAAU,EAAuB,GAejC,GAAO,OAAP,EACI,MAAA,IAAI,8BAA8B,KAAK,UAAU,
MAGrD,IAAA,EAAL,EAShB,MAAA,EAA6B,GACnC,EAAG,QAAS,IAMN,GALJ,GAAMb,EAAE,WAERB,EA
Aa,KACT,EAAE,aAAe,EAAE,OAAO,WAAa,EACA,IAAK,EAAE,YAAoB,MACHe,aAAoB,cAAgB,aAAoB,YA
CxD,aAAoB,YACIB,MAAA,IAAI,yCAAYC,EAAE,YAAY,UAK/D,MAAA,EAAL,IAAI,WAAW,GACrB,IAAA,E
AAS,EAMN,OALP,EAAa,QAAS,IACpB,EAAE,IAAI,IAAI,WAAW,EAAE,QAAS,GAChC,GAAU,EAAE,aAGP,
EAAE,OAIX,MAAM,OAAL,IAAX,IACR,oBAAT,MAAwC,oBAAT,MACtB,oBAAT,MAWN,SAAU,EAALiB,G

AC3B,OAAA,EACK,EAAO,WAAW,GAEPB,IAAI,KAAK,CAAC,IAAM,KASnB,SAAU,EAA0B,GACpC,GAAA
,EACK,OAAA,EAAO,KAAK,GAAQ,SAAS,UAEhC,MAAA,EAAM,IAAI,WAAW,GACvB,IAAA,EAAI,GACH,I
AAA,IAAI,EAAI,EAAG,EAAL,EAAL,OAAQ,EAAL,EAAG,IACrC,GAAG,OAAO,aAAa,EAAI,IAExB,OAAA,KA
AK,GASR,SAAU,EAA0B,GACpC,GAAA,EAAe,CACX,MAAA,EAAM,EAAO,KAAK,EAAG,UACtB,OAAA,E
AAI,OAAO,MAAM,EAAI,WAAW,EAAI,WAAa,EAAI,YAEzD,MAAA,EAAI,KAAK,GACT,EAAS,IAAI,WAA
W,EAAE,QAC3B,IAAA,IAAI,EAAI,EAAG,EAAL,EAAE,SAAU,EAC9B,EAAO,IAAI,CAAC,EAAE,WAAW,IA
AK,GAEB,OAAA,EAAO,OASV,SAAU,EAAwB,GACIC,GAAMB,IAAnB,EAAQ,OACH,OAAA,EAAQ,GAGb,I
AAA,EAAkB,EACtB,EAAQ,QAAS,IACf,GAAMB,EAAO,aAGtB,MAAA,EAAO,IAAI,WAAW,GACxB,IAAA,E
AAS,EAKN,OAJp,EAAQ,QAAS,IACf,EAAK,IAAI,IAAI,WAAW,GAAS,GACjC,GAAU,EAAO,aAEZ,EAAK,O
AUR,SAAU,EAAS,GAGhB,IADP,EAAO,EAAK,OACL,EAAK,SAFM,MAGhB,EAAO,EAAK,MAAM,EAAG,E
AAK,OAAS,GAEB,MAAA,EAAQ,EAAK,MALD,KAMX,OAAA,EAAM,EAAM,OAAS,GAQxB,SAAU,EAA6B
,GAEvC,GAAA,EAAe,yBAAYB,YACpC,MAAA,IAAI,MAAM,uDAGX,MAAA,CACL,UAAW,IAAI,KACf,kBA
AmB,OACnB,mBAAoD,MAAhC,EAAe,cAC/B,EACA,EAAiB,KAAK,UAAU,EAAe,gBACnD,iBAAgD,MAA9B,
EAAe,YAC7B,EACA,EAAiB,KAAK,UAAU,EAAe,cACnD,gBAA8C,MAA7B,EAAe,WAC5B,EACA,EAAe,WA
AW,YAUIc,SAAS,IACD,MAAA,EAAMB,IACnB,IAAA,EAAI,GAAG,GACT,EAAL,EAED,KAAqB,IAAhB,QA
AJ,IACN,GAAG,QAAL,IAAM,EAKD,OAHP,IAAK,UACL,GAAG,YAKD,EAAe,IAAI,YAAY,MAErC,EAAa,G
AAK,EACb,IAAA,IAAI,EAAI,EAAG,EAAL,KAAM,IACxB,EAAa,GAAG,EAAGB,GAEB,IAAA,IAAI,EAAI,K
AAM,EAAI,KAAM,IAC3B,EAAa,GAAG,WAAE,EAAI,MAAS,IAGzC,OAAA,EAST,SAAS,IACD,MAAA,EAAG
B,IAAI,YAAY,IAEtC,EAAc,GAAG,EACnB,EAAc,IAAM,WACpB,EAAc,IAAM,WACpB,EAAc,IAAM,WACf,I
AAA,IAAI,EAAI,EAAG,EAAL,GAAL,IACtB,EAAc,GAAG,GAAG,GAERB,IAAA,IAAI,EAAI,GAAL,EAAL,GAAL
,IACvB,EAAc,GAAG,YAAE,EAAI,IAAO,IAGxC,OAAA,EAST,SAAS,IACD,MAAA,EAAc,IAAI,YAAY,IAE/B,
IAAA,IAAI,EAAI,EAAG,EAAL,GAAL,IACtB,EAAY,GAAG,KAIZ,OAFP,EAAY,GAAG,EAAY,IAAM,EAESB,E
AUH,SAAU,IAKR,MAAA,EAAE,IACf,EAAGB,IACb,EAAc,IAEZ,OAAA,IACA,MAAA,EAAS,IAAI,YAAY,E
AAI,EAAE,QAC5C,EAAMB,IAAI,YAAY,GACpC,IAAA,IAAI,EAAQ,EAAG,EAAQ,EAAE,OAAQ,IAAS,CACp
D,MAAA,EAAc,EAAE,GAC7B,EACF,EAAa,EAAY,GAAG,KAAGB,KAAD,IAC/C,EAAc,GAAG,IACjC,EAAiB,G
AAS,EAERB,OAAA,IAAI,aAAa;;ACrYrB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBA
AA,QAAA,gBAAA,QAAA,mBAAA,QAAA,mBAAA,QAAA,sBAAA,EAvFD,MAAO,EAOX,cACO,KAAA,YA
Ac,GACd,KAAA,YAAc,GAGN,qBAIN,OAHOB,MAA7B,EAAiB,WACnB,EAAiB,SAAW,IAAI,GAEB,EAAiB,
SASnB,0BAAMB,GACxB,EAAiB,cAAc,YAAY,KAAK,GAS3C,0BAAMB,GACxB,EAAiB,cAAc,YAAY,KAAK,
GAW3C,uBAAGB,GACd,OAAA,EAAiB,YAAY,EAAK,QAWpC,uBAAGB,EAASB,GAEPc,OAAA,EAAiB,YAA
Y,EAAK,OAAQ,GAGpC,mBACX,EAASB,EACtB,GACI,MAAA,EAA6B,GAU5B,OATyB,SAAhB,EACZ,EAAi
B,cAAc,YAC/B,EAAiB,cAAc,aAC3B,QAAQ,IACR,MAAA,EAAU,EAAO,EAAK,GACZ,OAAZ,GACF,EAAc,K
AAK,KAGhB,GAUJ,QAAA,iBAAA,EANA,MAAM,EAASB,GAC/B,EAAiB,mBAAmB,GAKjC,QAAA,mBAAA,
EAJA,MAAM,EAASB,GAC/B,EAAiB,mBAAmB,GAGjC,QAAA,mBAAA,EAFA,MAAM,EAAMB,GAC5B,EAA
iB,gBAAGB,GAC9B,QAAA,gBAAA,EAAA,MAAM,EACT,CAAC,EAASB,IACnB,EAAiB,gBAAGB,EAAK,GAF
vC,QAAA,gBAAA;;AC8I6B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QA
AA,iBAAA,EAAA,QAAA,wBAAA,QAAA,gBAAA,QAAA,sBAAA,EA1OpC,QAAA,YAEA,IAAA,EAAA,QAA
A,kBAEA,EAAA,QAAA,cACA,EAAA,QAAA,qBAGA,MAAM,EAAGB,eAChB,EAAMB,EAKnB,EAAMB,eAI
nB,EAAkB,mBAKjB,eAAE,IACd,MAAA,EAAa,IAEZ,OAAA,IAAI,QAAC,CAAC,EAAS,KAC3B,MAAA,EAAGB,
EAAW,eAAE,GACHD,EAAc,UAAW,KAAM,KACHC,EAAc,QAAU,CAAA,GAAS,EAAO,MAI5C,SAAS,IACH,K
AAC,EAAM,EAAA,OAAA,QAAQ,cAIX,MAAA,IAAI,MACN,2FAIA,MAAA,EAAMc,oBAAX,OAAyB,KAAO,
OACxD,EAAU,EAAU,WAAa,EAAU,cAC7C,EAAU,iBAAmB,EAAU,aACvC,EAAU,cACV,GAAW,MAAX,EA
CI,MAAA,IAAI,MACN,6DAEC,OAAA,EAGT,SAAS,EAAc,GACf,MAAA,EAAK,EAAY,OACvB,EAAG,kBAA
kB,EAAkB,CAAC,QAAS,cACjD,EAAG,kBAkB,EAAiB,CAAC,QAAS,cAQ5C,MAAO,EAMX,YAAY,GAGN,
GAFc,KAAA,UAAW,IAEA,MAAb,IAASB,EACIB,MAAA,IAAI,MACN,KEAED,KAAA,UAAW,EAGb,WAAK,G
AEL,GAAA,EAAE,yBAAYB,YACpC,MAAA,IAAI,MACN,4FAIC,OAAA,KAAK,eAAE,KAAK,UAAW,GAIvC,a
ACG,OAAA,KAAK,eAAE,KAAK,WAIb1B,eAAE,EAAMB,GAEjC,OAAA,IAAI,QAAMC,CAAC,EAAS,KACHD,
MAAA,EAAc,KAAK,UAAU,KAAK,EAAE,GACvD,EAAY,gBAkB,KAAM,EAAc,IAEID,EAAY,UAAW,MACH

B,MAAA,EAAK,EAAY,OAEnB,GAakB,MAAIB,EAAwB,CAEpB,MAAA,EAAU,EAAG,YAAy,EAakB,YAE3C,EDAa,EAAQ,YAAy,GACT,IAAI,KAAK,WACvC,EAaw,UAAy,MACjB,GAaqB,MAArB,EAaw,OAEN,OADP,EAAG,QACI,EAAO,IAAI,sCACKB,KAAK,cACrC,kBAEJ,EAAQ,EAaw,OAAO,kBAG9B,EAaw,QAAU,CAAA,IACnB,EAAG,QACI,EAAO,EAaw,SAE3B,EAAQ,WAAa,KAAM,EAAG,aACzB,CAEC,MAAA,GACF,EAa6B,EAAA,8BAAA,GAE3B,EAAS,EAAG,YAAy,EAaiB,aAC3C,IAAA,EAAY,EAAO,YAAy,GAC7B,MAAA,EACF,EAAU,IAAI,CAAC,UAAW,KAAK,UAAW,mBAAA,IAC1C,IAAA,EACJ,EAAe,UAAy,MAGnB,MACA,GAFN,EAAU,EAAG,YAAy,EAakB,cAChB,YAAy,GACJ,IAAI,CACrC,UAAW,KAAK,UACHB,eAAA,EACA,mBAAA,IAEF,EAAgB,UAAy,KAAM,EAAQ,CAAC,mBAAA,KAC3C,EAAGB,QAAU,CAAA,IAIIB,MAAA,GADN,EAAY,EAAO,YAAy,IACK,OAAO,KAAK,WACHD,EAakB,UAAy,MAC5B,EAAG,QACI,EAAO,EAAGB,SAEHc,EAakB,QAAU,CAAA,IAC1B,EAAG,QACI,EAAO,EAAGB,aAIpC,EAAe,QAAU,CAAA,IACvB,EAAG,QACI,EAAO,EAAe,SAE/B,EAAO,WAAa,MACH,MAAX,EACF,EAAG,QAeH,EAAQ,WAAa,KAAM,EAAG,cAKtC,EAAY,QAAU,CAAA,GAAS,EAAO,EAAY,WA8CpB,QAAA,iBAAA,EArKIB,EAAA,WAAa,eA4HxB,MAAM,EAa6B,IACnC,EAAM,EAAA,OAAA,QAAQ,gBAGZ,MAAM,QAAQ,IAAQ,EAAl,WAAW,EAaiB,YACID,EAaiB,EAAl,MAAM,EAaiB,WAAW,SAHzD,KA6BL,SAAU,EAaiB,GACxB,OAAA,IAAI,EAaiB,GAG9B,SAAS,EAaiB,GACjB,OAAA,EAAl,WAAW,EAaiB,YACnC,EAAl,MAAM,EAaiB,WAAW,QACtC,EAG8B,QAAA,gBAAA,EA9BpC,EAaiB,iBAAA,mBAAmB,GACpC,EAaiB,iBAAA,mBAAmB,GA6B9B,MAAO,EAGX,cACCO,KAAA,UAAy,IAGb,mBACG,OAAA,IAAI,QACP,CAAC,EAAS,KACF,MAAA,EACF,KAAK,UAAU,KAAK,EAAe,GACvC,EAAY,gBAakB,KAAM,EAAC,IAEID,EAAY,UAAy,MACHB,MAAA,EAAK,EAAY,OACjB,EAAK,EAAG,YAAy,EAaiB,YAUrC,EATQ,EAAG,YAAy,GASY,SACzC,EAakB,UAAy,MActB,MAAA,EAa4C,GAC7C,IAAA,MAAM,KAAQ,EAakB,OACnC,EAAl,EAak,WAAa,EAak,mBAE7B,EAAQ,KAeV,EAakB,QAAU,CAAA,IAC1B,EAAG,QACI,EAAO,EAakB,SAEIC,EAAG,WAAa,KAAM,EAAG,WAE3B,EAAY,QAAU,CAAA,GAAS,EAAO,EAAY,UAIpD,kBAAY,GAET,OADP,EAAO,EAaiB,GACjB,IAAI,QAA4B,CAAC,EAAS,KACzC,MAAA,EAAC,KAAK,UAAU,KAAK,EAAe,GACvD,EAAY,gBAakB,KAAM,EAAC,IAEID,EAAY,UAAy,MACHB,MAAA,EAAK,EAAY,OACjB,EAAS,EAAG,YAAy,EAaiB,aACzC,EAAY,EAAO,YAAy,GAE/B,EAaiB,EAAU,IAAI,GACjC,IAAA,EACJ,EAAe,UAAy,MACrB,GAAyB,MAAZB,EAAe,OAeV,OADP,EAAG,QACI,EAAO,IAAI,sCACKB,MACHC,kBACC,CAEC,MAAA,EAAoB,EAAU,OAAO,GACrC,EAakB,KAGhB,MACA,GAFN,EAAU,EAAG,YAAy,EAakB,cAChB,YAAy,GACD,OAAO,GAC7C,EAAmB,UAAy,KAC3B,EAAQ,EAae,OAAO,qBACIC,EAAmB,QAAU,CAAA,GACzB,EAAO,EAAe,SAI5B,EAakB,UAAy,EAC9B,EAakB,QAAU,CAAA,IAC1B,IACA,EAAG,QACI,EAAO,EAAe,YAIInC,EAAe,QAAU,CAAA,IACvB,EAAG,QACI,EAAO,EAae,SAG/B,EAAO,WAAa,MACH,MAAX,EACF,EAAG,QAeH,EAAQ,WAAa,KAAM,EAAG,aAIpC,EAAY,QAAU,CAAA,GAAS,EAAO,EAAY,WAnGpB,QAAA,wBAAA;;ACmEG,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,2BAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,2BAAA,QAAA,mBAAA,QAAA,yBAAA,EA7SvC,QAAA,YACA,IAAA,EAAA,QAAA,kBAEA,EAAA,QAAA,WACA,EAAA,QAAA,cACA,EAAA,QAAA,qBAGA,MAAM,EAaiB,IACjB,EAAC,sBACd,EAAC,OACd,EAAwB,iBACxB,EAAsB,eActB,EAaqB,cACrB,EAawB,iBAOxB,SAAU,IACV,KAAC,EAAM,EAAA,OAAA,QAAQ,eAAmC,oBAAX,aACR,IAAxB,OAAO,aACV,MAAA,IAAI,MACN,6GAGA,MAAA,EAAK,OAAO,aACZ,EAa6B,GAC9B,IAAA,IAAI,EAAl,EAAG,EAAl,EAAG,SAAU,EAAG,CAC5B,MAAA,EAAM,EAAG,IAAI,GACb,EAAS,EAAC,EACzB,GAAA,EAAl,WAAW,IAAW,EAAl,OAAS,EAAO,OAAQ,CACxD,EAAG,WAAW,GACR,MAAA,EAAY,EAAoB,IACO,IAAzC,EAaiB,QA AQ,IAC3B,EAaiB,KAAK,IAIrB,OAAA,EAGT,SAAS,EAAa,GAOb,MAAA,CACL,KAAM,CAAC,EAAa,EAAM,GAAa,KAAK,GAC5C,SAAU,CAAC,EAAa,EAAM,GAAuB,KAAK,GAC1D,YAAa,CAAC,EAAa,EAAM,GAAqB,KAAK,GAC3D,WAAy,CAAC,EAAa,EAAM,GAAoB,KAAK,GACzD,cACI,CAAC,EAAa,EAAM,GAAuB,KAAK,IAWxD,SAAS,EAAoB,GACrB,MAAA,EAAQ,EAAl,MAAM,GACpB,GAAA,EAAM,OAAS,EACX,MAAA,IAAI,6BAA6B,KAEIC,OAAA,EAAM,MAAM,EAAG,EAAM,OAAS,GAAG,KAAK,GAG/C,SAAS,EAaiB,GACjB,OAAA,EAAl,WAAW,EAAoB,YACtC,EAAl,MAAM,EAAoB,WAAW,QACzC,EAGBA,MAAO,EAox,YAAy,GACN,KAAC,EAAM,EAAA,OAAA,QAAQ,eAAmC,oBAAX,aACR,IAAxB,OAAO,aAKV,MAAA,IAAI,MACN,2DAIF,GAFC,KAAA,GAak,OAAO,aAEA,MAAb,IAAsB,EACIB,MAAA,IAAI,MACN,sEAED,KAAA,UAAy,EACZ,KAAA,KAAO,EAAa,KAAK,WAY1B,WAAK,GACL,GAAA,EAAe,yBAAYB,YACpC,MAAA,IAAI,MACN,4FAEC,CACC,MAAA,EAaw,KAAK,UAAU,EAAe,eACzC,EAAC,KAAK,UAAU,EAAe,aAE5C,GACF,EAa6B,

EAAA,8BAAA,GAE7B,IACG,KAAA,GAAG,QAAQ,KAAK,KAAK,KAAM,KAAK,UAAU,IAC1C,KAAA,GAA
G,QAAQ,KAAK,KAAK,SAAU,GAC/B,KAAA,GAAG,QAAQ,KAAK,KAAK,YAAa,GACIC,KAAA,GAAG,QA
CJ,KAAK,KAAK,YACV,EAA0B,EAAA,2BAAA,EAAe,aACvC,MAAA,EAAYB,CAC7B,OAAQ,EAAe,OACvB,
YAAa,EAAe,YAC5B,YAAa,EAAe,aAvB,OAXyB,MAA5B,EAAe,YACjB,EAAO,UAAy,EAAe,WAEM,MAAtC
,EAAe,sBACjB,EAAO,oBAAsB,EAAe,qBAEP,MAAnC,EAAe,mBACjB,EAAO,iBAAmB,EAAe,kBAEtC,KAAA
,GAAG,QAAQ,KAAK,KAAK,cAAe,KAAK,UAAU,IAEjD,CAAC,mBAAA,GACR,MAAO,GAQD,MAND,KAA
A,GAAG,WAAW,KAAK,KAAK,MACxB,KAAA,GAAG,WAAW,KAAK,KAAK,UACxB,KAAA,GAAG,WAA
W,KAAK,KAAK,aACxB,KAAA,GAAG,WAAW,KAAK,KAAK,YACxB,KAAA,GAAG,WAAW,KAAK,KAAK,
eAEvB,IAAI,+BACmB,KAAK,gCAC9B,wFACsB,EAAMB,2CACrB,EAAMB,wCACpB,EAAMB,sBAa1C,aACE,
MAAA,EACF,KAAK,MAAM,KAAK,GAAG,QAAQ,KAAK,KAAK,OACrC,GAAQ,MAAR,EACI,MAAA,IAAI,
wDAC4C,KAAK,cAGzD,GAA2B,SAA3B,EAAK,kBACD,MAAA,IAAI,MACN,6EAIA,MAAA,EAAsB,GAGtB,
EAAW,KAAK,MAAM,KAAK,GAAG,QAAQ,KAAK,KAAK,WACID,GAAY,MAAZ,EACI,MAAA,IAAI,kDACs
C,KAAK,cACjD,eAEN,EAAI,cAAgB,EAGd,MAAA,EAAC,KAAK,MAAM,KAAK,GAAG,QAAQ,KAAK,KAAK
,cACrD,GAAe,MAAf,EACI,MAAA,IAAI,sDAC0C,KAAK,cACrD,gBAEN,EAAI,YAAc,EAGZ,MAAA,EAaiB,K
AAK,GAAG,QAAQ,KAAK,KAAK,eAC7C,GAakB,MAAIB,EAAwB,CACpB,MAAA,EAAW,KAAK,MAAM,G
AC5B,EAAI,OAAS,EAAQ,OACrB,EAAI,YAAc,EAAQ,YAC1B,EAAI,YAAc,EAAQ,YACG,MAAZB,EAAQ,YA
CV,EAAI,UAAy,EAAQ,WAEa,MAAnC,EAAQ,sBACV,EAAI,oBAAsB,EAAQ,qBAEA,MAAhC,EAAQ,mBAC
V,EAAI,iBAAmB,EAAQ,kBAK7B,MAAA,EAAMB,KAAK,GAAG,QAAQ,KAAK,KAAK,YAC/C,GAAoB,MAA
pB,EACI,MAAA,IAAI,MACN,2DACI,KAAK,2BAIR,OAFP,EAAI,YAAa,EAA0B,EAAA,2BAAA,GAEPc,GA+
C4B,QAAA,oBAAA,EAZMrB,EAAA,WAAa,kBA8JxB,MAAM,EAAGC,IACtC,EAAM,EAAA,OAAA,QAAQ,gB
AGZ,MAAM,QAAQ,IAAQ,EAAI,WAAW,EAAoB,YACrD,EACH,EAAI,MAAM,EAAoB,WAAW,SAJxC,KAAQ
L,SAAU,EAAoB,GAC3B,OAAA,IAAI,EAAoB,GAGM,QAAA,mBAAA,EA/BvC,EAaiB,iBAAA,mBAAMB,GA
CpC,EAaiB,iBAAA,mBAAMB,GA8B9B,MAAO,EAGX,eAEM,EAAA,EAAA,SAAA,EAAM,EAAA,OAAA,QA
AQ,cACd,IAAM,6CAEN,EAAA,EAAA,QAakB,oBAAX,aAC4B,IAAxB,OAaO,aACIB,IAAM,2DAcL,KAAA,G
AAK,OAaO,aAGb,mBACE,MAAA,EAA4C,GAC5C,EAAS,EAAC,EACvB,EAAS,EAaiB,EAC3B,IAAA,IAAI,E
AAI,EAAG,EAAI,KAAK,GAAG,SAAU,EAAG,CACjC,MAAA,EAAM,KAAK,GAAG,IAAI,GACpB,GAAA,EA
AI,WAAW,IAAW,EAAI,SAAS,GAAS,CAEID,EADkB,EAAoB,IACrB,KAAK,MAAM,KAAK,GAAG,QAAQ,K
AGzC,OAAA,EAGH,kBAAY,GAEV,MAAA,EAAO,EADb,EAAO,EAaiB,IAEPB,GAA8B,MAA9B,KAAK,GAA
G,QAAQ,EAak,MACjB,MAAA,IAAI,oCAAoC,MAE1C,MAAA,EAAO,KAAK,MAAM,KAAK,GAAG,QAAQ,
EAak,OAMtC,OAJF,KAAA,GAAG,WAAW,EAak,MACnB,KAAA,GAAG,WAAW,EAak,UACnB,KAAA,GA
AG,WAAW,EAak,aACnB,KAAA,GAAG,WAAW,EAak,YACjB,GAXC4B,QAAA,2BAAA;;ACmCtC,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,QAAA,UAAA,EAAA,QAAA,YAAA,EA
AA,QAAA,WAAA,EAAA,QAAA,+BAAA,EAruD,IAAA,EAAA,QAAA,WAEA,EAAA,QAAA,qBAGA,MAAM,
EAAoB,MAEPB,MAAO,EAMX,cACO,KAAA,SAAW,GAGH,qBAIN,OAHmC,MAAtC,EAA0B,WAC5B,EAA0
B,SAAW,IAAI,GAEPc,EAA0B,SAS5B,uBAAGB,EAAGB,IAC9B,EAAA,EAAA,QAAU,MAAV,EAAGB,IAAM,y
CACzB,EAAO,SAAS,KACIB,EAAS,EAAO,MAAM,EAAG,EAAO,QAAQ,MAEnC,EAAA,EAAA,QAAA,EAAO
,OAAS,EAAG,IAAM,uCAC1B,MAAA,EAAW,EAA0B,eAEvC,EAAA,EAAA,QAA6B,MAA7B,EAAS,SAAS,G
ACIB,+DACI,OACR,EAAS,SAAS,GAAU,EAGvB,kBAAW,GACV,MAAA,EAAU,KAAK,cAAc,SAAS,GACxC,
GAAW,MAAX,EACI,MAAA,IAAI,+CAA+C,MAEPD,OAAA,EAGF,oBACE,OAAA,OAaO,KAAK,KAAK,cAA
c,WAY1C,SAAS,EAAS,GACZ,IAAoC,IAAPC,EAAI,QAAQ,GACR,MAAA,IAAI,MACN,gFAEG,EAA0B,aAAa,
KAAK,QAE9C,MAAA,CACL,OAAQ,EAAI,MAAM,GAAMB,GACrC,KAAM,EAAI,MAAM,GAAMB,IAIvC,eA
Ae,EACX,EAAMB,EACnB,GAAe,IAEb,EAAA,EAAA,QAAA,IAAc,EACd,4CAA8C,MAE5C,MAAA,EAAe,EA
AiB,iBAAA,gBAAGB,IAEID,EAAA,EAAA,QAAA,EAAa,OAAS,EACtB,sEACI,OAEJ,EAAA,EAAA,QAAA,EA
Aa,OAAS,EACtB,6CAA+C,EAAa,2CACxB,MACIC,MAAA,EAAC,EAAa,GAE3B,EAAe,EAaiB,iBAAA,gBAAG
B,IAEID,EAAA,EAAA,QAAA,EAAa,OAAS,EACtB,IAAM,0EACK,OAEX,EAAA,EAAA,QAAA,EAAa,OAAS,
EACtB,6CAA+C,EAAa,gDACnB,MACvC,MAAA,EAAC,EAAa,GAE3B,EAAe,EAAS,GAAW,OACnC,EAAa,EA
AS,GAAW,KACjC,EAAa,IAAiB,EAAS,GAAW,OAEID,QAAuB,EAAY,OAKrC,GAAGB,SACZ,EAA0B,WAAW
,GACtC,YAAy,GAGb,MAAA,QAAmB,EAAY,KAAK,GAUnC,OALH,IAAiB,SACb,EAA0B,WAAW,GACtC,Y

AAy,GAGZ,EAaw,mBAsCpB,eAAe,IACP,MAAA,EAAU,EAA0B,aACpC,EAA2C,GAC5C,IAAA,MAAM,KA
AU,EAAS,CACTb,MAAA,QACl,EAA0B,WAAW,GAAQ,aACID,IAAA,MAAM,KAAQ,EAaw,CAE5B,EADY,E
AAS,EAAoB,GAC9B,EAAU,IAGIB,OAAA,EAoCT,eAAe,EAAY,GACnB,MAAA,EAAGb,EAAS,GAExB,OADS
,EAA0B,WAAW,EAAC,QACpD,YAAY,EAAC,MAkD3C,eAAe,EACX,EAAMb,GAEd,OAAA,EAAMb,EAaw,G
ADhb,GAkdVb,eAAe,EACX,EAAMb,GAEd,OAAA,EAAMb,EAaw,GADhb,GAETb,QAAA,0BAAA;;AC3RA,
aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EArdD,QAAA,YAEA,IAAA,EAAA,Q
AAA,kBACA,EAAA,QAAA,oBACA,EAAA,QAAA,uBACA,EAAA,QAAA,0BAIM,MAAO,EAKX,MAAM,EA
c,GACX,OAAA,MAAM,EAAM,GAGrB,MACS,OAAA,YAAY,MAGrB,OAAO,EAAC,GACf,GAAa,UAAb,GAA
qC,SAAb,EACpB,MAAA,IAAI,wDAC4C,KAKjD,OAHiB,MAApB,KAAK,cACf,KAAA,YAAc,IAAI,aAEiB,KA
AK,YAAY,OAAO,GAejC,OAAO,EAAMb,GACjB,OAAA,IAAI,YAAY,GAAU,OAAO,IAI5C,GAgBC,QAAA,g
BAAA,GAhBG,EAAM,EAAA,OAAA,IAAI,cAAe,EACrB,EAAA,EAAA,OAAA,YAAY,UAAW,IAAI,GAG7B,I
ACwB,EAAA,0BAAA,gBACtB,EAAoB,oBAAA,WAAy,IAAI,EAaj,4BACpC,MAAO,IAIL,IACwB,EAAA,0BA
AA,gBACtB,EAaiB,iBAAA,WAAy,IAAI,EAaj,yBACjC,MAAO;;;;ACkBV,IAAA,EAAA,QAAA,WAAA,OAA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,eAAA,EAAA,
QAAA,aAAA,QAAA,kBAAA,EAteD,IAAA,EAAA,QAAA,kBAKO,MAAM,EAae,CAE1B,YAAa,IAAM,QAAQ
,eAI7B,IAAI,EAGE,SAAU,IACd,EAAC,KAeV,SAAU,EAae,GAC7B,EAAC,EAeV,SAAU,IACP,OAAA,EAiDR,
QAAA,aAAA,EA9CK,MAAO,EAKX,cAEO,KAAA,KAAO,QAAQ,QAGf,KAAA,YAAc,IAAI,KAAK,KAAK,YA
GnC,MAAM,EAAC,GACd,OAAsB,OAAtB,EAAM,EAAA,OAAA,OAAO,OACR,EAAM,EAAA,OAAA,OAAO,
MAAM,EAAM,IAGf,MAAf,IACf,EAAC,EAaA,eAEtB,EAAY,EAAM,IAG3B,MACQ,MAAA,EAao,EAaQ,SA
Cd,OAAU,IAAV,EAak,GAAY,EAak,GAak,IAGpC,OAAO,EAAC,GACf,GAAa,UAAb,GAAqC,SAAb,EACpB
,MAAA,IAAI,4DACgD,KAerD,OAAA,KAAK,YAAY,OAAO,GAejC,OAAO,EAAMb,GACpB,OAaiB,IAAjB,E
AAM,OACD,GAef,IAAI,KAAK,KAAK,YAAY,GAAU,OAAO,IAMrD,QAAA,aAAA,GAfg,EAAM,EAAA,OA
AA,IAAI,aACN,EAAA,EAAA,OAAA,YAAY,OAAQ,IAAI;;AChC/B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,OAAA,EApcD,IAAA,EAAA,QAAA,aAEA,EAAA,EAAA,QAAA,YakCC,SAAA,IAAA,G
AAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,S
AAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IA
AA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAA
A,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAA
A,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA
,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,G
AAA,EANK,SAAU,EACZ,EAAoB,EAaw,UAC/B,GAGK,OAFP,EAaQ,GAAS,UACjB,EAak,mCAAmC,GACj
C,IAAI,EAaj,aAAuB,EAao,EAao;;ACMvC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
UAAA,EAiCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,
YAEA,EAAA,QAAA,eAiCO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,O
AAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,I
AAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAA
A,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAA
A,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA
,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,Q
AAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAnBP,SAAS,EAawB,EAaiB,GAC1C,MAAA,GAak,EAAGb
,EAAA,iBAAA,EAAG,IAAK,QAG/B,IAAC,EAak,aAAa,GACf,MAAA,IAAI,yCAAYC,KAejD,GAAU,WAAV,
GAAMc,WAAb,EAAG,OACf,WAAV,GAAMc,WAAb,EAAG,MACrB,MAAA,IAAI,MAAM,yCAGZ,MAAA,E
AAqB,CAAC,EAAG,GACzB,EAAMb,CAAC,MAAA,GAEnB,OAAA,EAao,OAAA,UACV,EADG,KACG,EA
gC,GAGrC,MAAM,GAao,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACTA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAhCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBA
GA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAgBA,SAAS,EAAYb,GAC1B,MACA,EAAYb,CAAC,GADrB,EAAG
B,EAAA,iBAAA,EAAG,IAAK,QAAS,sBAKrC,OAAA,EAao,OAAA,UAAU,EAajB,SAA2B,GAG7B,MAAM,G
AAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAiB,QAAA,MAAA;;ACfN,aAFK,SAAU,EAawB,EAAM,GAAU,G

ACtD,QAAQ,IAAI,EAAE,SAAS,IACxB,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,MAAA;;AC
OD,aArBA,IAAA,EAAA,QAAA,YAIA,QAAA,WAEA,QAAA,gCACA,QAAA,6BAGA,IAAA,EAAA,QAAA,gB
ACA,EAAA,QAAA,cACA,EAAA,QAAA,eACA,EAAA,QAAA,eACA,EAAA,QAAA,aAbA,EAEA,EAAA,mBA
YA,MAAM,EAAuB,CAC3B,OAAA,EAD2B,OAE3B,KAAA,EAF2B,KAG3B,MAAA,EAH2B,MAI3B,MAAA,E
AAA,QAEF,EAAa,EAAA,cAAA;;ACwUZ,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBA
AA,EAAA,QAAA,aAAA,EAAA,QAAA,uBAAA,QAAA,sBAAA,EA3VD,QAAA,YACA,IAAA,EAAA,QAAA,k
BAEA,EAAA,QAAA,cACA,EAAA,QAAA,qBAGA,MAAM,EAA2B,QAC3B,EAA8B,QAC9B,EAAqC,eAE3C,S
AAS,EAAS,GACT,OAAA,IAAI,QAAQ,GAAW,WAAW,IAAU,KAAK,GAGpD,MAAO,EAQX,YAAY,GACN,K
AAC,EAAM,EAAA,OAAA,QAAQ,cAGX,MAAA,IAAI,MACN,uFAIF,EAAe,WAAW,EAAiB,cAC7C,EAAiB,E
AAe,MAAM,EAAiB,WAAW,SAE9C,MAAiB,GAAoD,IAA1B,EAAe,SAC3C,EAAiB,GAGd,KAAA,sBAAwB,E
AAiB,EACzC,KAAA,mBACD,EAAiB,EAGjB,WAAK,GACL,GAAsB,oBAAd,SACJ,MAAA,IAAI,MACN,2FAG
A,MAAA,EAAa,OAAO,IAAI,gBAAgB,IAAI,KAC9C,CAAC,EAAe,YAAa,CAAC,KAAM,8BAEpC,GAAA,EAA
e,yBAAyB,YACpC,MAAA,IAAI,MACN,yFAEC,CACC,MAAA,EAAyC,CAAC,CAC9C,MAAO,CAAC,KAAO,
KAAK,oBACpB,QAAS,EAAe,cAEPB,EAA4C,CAChD,cAAe,EAAe,cAC9B,OAAQ,EAAe,OACvB,YAAa,EAAe,
YAC5B,YAAa,EAAe,YAC5B,gBAAA,GAE8B,MAA5B,EAAe,YACjB,EAA+B,UAAy,EAAe,WAEiB,MAAtC,E
AAe,sBACjB,EAA+B,oBAC3B,EAAe,qBAEkB,MAAnC,EAAe,mBACjB,EAA+B,iBAC3B,EAAe,kBAEf,MAAA
,EACF,OAAO,IAAI,gBAAgB,IAAI,KAC3B,CAAC,KAAK,UAAU,IAChB,CAAC,KAAM,sBAIT,EAAgC,MAAn
B,KAAK,WAAqB,SAAS,cAAc,KACvB,KAAK,WAQ9C,GAPJ,EAAW,SAAW,KAAK,sBAC3B,EAAW,KAAO,
QAIz,EAAM,IAAM,EAAW,cAAc,IAAI,WAAW,WAEzB,MAA7B,EAAe,WAAoB,CAC/B,MAAA,EAA4C,MA
AzB,KAAK,iBAC1B,SAAS,cAAc,KACvB,KAAK,iBACT,EAAiB,SAAW,KAAK,mBACjC,EAAiB,KAAO,QACI
B,EACF,IAAM,EAAiB,cAAc,IAAI,WAAW,WAGnD,MAAA,CAAC,oBAAoB,EAA6B,EAAA,8BAAA,MAiP9D,
QAAA,iBAAA,EatUiB,EAAA,WAAa,eA0F/B,MAAM,EAGJ,YAAY,GACN,GAAS,MAAT,GAAiB,EAAM,OA
AS,EAC5B,MAAA,IAAI,MACN,2EACgB,KAejB,KAAA,MAAQ,EAGT,aACE,MAAA,EAAW,KAAK,MAAM,
GACtB,EAAc,KAAK,MAAM,MAAM,GAE9B,OAAA,IAAI,QAAwB,CAAC,EAAS,KACrC,MAAA,EAAa,IAAI,
WACvB,EAAW,OAAU,CAAA,IAEb,MAAA,EAAy,KAAK,MAAO,EAAM,OAAe,QAC7C,EAAgB,EAAU,cAC
5B,GAAiB,MAAjB,EAGF,YAFA,EAAO,IAAI,kDACqC,EAAS,SAIhC,IAAvB,EAAy,QACd,EAAQ,CAAC,cAA
A,IAGL,MAAA,EAakB,EAAU,gBAC9B,GAAMB,MAAnB,EAGF,YAFA,EAAO,IAAI,mDACsC,EAAS,SAIxD,I
AAA,EACA,IACF,EACI,KAAK,4BAA4B,EAAiB,GACtD,MAAO,GAEP,YADA,EAAO,GAIH,MAAA,EAAsC,G
ACtC,EAakB,GACiB,EAAgC,GACtC,EAAgB,QAAQ,IACtB,EAAa,MAAM,QAAQ,IACzB,EAAM,KAAK,GAC
X,EAAe,KAAK,QAETB,EAAy,QAAQ,EAAa,WAGnC,EAAgB,QAAQ,IACtB,EAAa,MAAM,QAAQ,IACnB,MA
AA,EAAmB,IAAI,WAC7B,EAAiB,OAAU,CAAA,IAEnB,MAAA,EAAc,EAAM,OAAe,OACnC,EAAQ,EAAM,Q
AAQ,GAExB,GADJ,EAAe,GAAS,GACc,IAAIC,EAAe,QAAQ,MAAc,CACjC,MAAA,EAAyB,CAC7B,cAAA,EA
CA,YAAA,EACA,YAAY,EAawB,EAAA,yBAAA,GACpC,OAAQ,EAAU,OACiB,YAAa,EAAU,YACvB,YAAa,
EAAU,aAEE,MAAvB,EAAU,YACZ,EAAO,UAAy,EAAU,WAEM,MAAjC,EAAU,sBACZ,EAAO,oBAAsB,EA
AU,qBAEP,MAA9B,EAAU,mBACZ,EAAO,iBAAmB,EAAU,kBAEtC,EAAQ,MAGZ,EAAiB,QAAU,CAAA,GA
CvB,+CAAoD,QACxD,EAAiB,kBAakB,EAaw,UAIpD,EAaw,QAAU,CAAA,GAAS,EAC1B,yEAcC,EAAS,w
CACvB,yCACJ,EAaw,WAAW,KAOiB,4BACJ,EAAiC,GAC7B,MAAA,EAAsB,GACtB,EAAy,EAAM,IAAI,IA
AQ,EAAS,EAAA,UAAA,EAak,OAC5C,EAAqC,GACtC,IAAA,MAAM,KAAS,EACiB,EAAM,MAAM,QAAQ,I
ACZ,MAAA,GAAe,EAAS,EAAA,UAAA,GAC1B,IAAqC,IAArC,EAAU,QAAQ,GACd,MAAA,IAAI,MACN,0D
ACI,MAGN,GADJ,EAAU,KAAK,IAC0B,IAArC,EAAU,QAAQ,GACd,MAAA,IAAI,oCACwB,uBAEiC,EAaw,
GAAQ,EAAM,EAAU,QAAQ,MAK7C,GAAA,EAAU,SAAW,EAAM,OACvB,MAAA,IAAI,MACN,2DACI,EAA
U,uDACV,EAAM,YAET,OAAA,GAIJ,MAAM,EAAoC,IAC1C,EAAM,EAAA,OAAA,QAAQ,gBAGZ,MAAM,Q
AAQ,IAAQ,EAai,WAAW,EAAiB,YACiD,EAAiB,EAai,MAAM,EAAiB,WAAW,SAHzD,KakDL,SAAU,EAai
B,EAAiB,SACzC,OAAA,IAAI,EAAiB,GA2CxB,SAAU,EAAa,GACpB,OAAA,IAAI,EAAa,GACzB,QAAA,uBA
AA,EAvFD,EAAiB,iBAAA,mBAAmB;;ACINnC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,wBAAA,EAvDD,IAAA,EAAA,QAAA,WAYM,SAAU,EACZ,EAAMC,EACnC,EAAwB,IAkBJB,SAAc,IAEjB,
EAAA,EAAA,QAAY,MAAZ,GAAoB,MAAM,QAAQ,IAAa,EAAS,OAAS,EACjE,IAAM,uCApBZ,CAAc,GAuB
L,SAAc,EAAuB,IAExC,EAAA,EAAA,QAAA,GAAiB,GAAK,GAAiB,EACvC,IAAM,uEACmB,MAEzB,EAAA,

EAAA,QAAA,GAAe,GAACK,GAAe,EACnC,IAAM,qEACiB,MAEvB,EAAA,EAAA,QAAA,GAAe,EACf,IAAM,4
EACmB,wBACiB,KAjCb,CAFA,EAaiC,MAAjB,EAawB,EAai,EAC5C,EAA6B,MAaf,EAAsB,EAai,GAEPc,I
AAA,EAakB,EAmCf,OAAA,QAAQ,IAAI,EAAS,IAjCH,IACvB,EAAQ,KAAK,IACL,MAAA,EAaw,KACX,EA
AkB,EAAS,QAAU,EAac,GAGID,OADP,EAaw,GACJ,IAEF;;ACwMV,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,yBAAA,EAAA,QAAA,YAAA,EAAA,QAAA,qBAAA,EAroD,IAAA,EAAA,QAAA,kB
AGA,EAAA,EAAA,QAAA,YACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,WA+NC,SAAA,IA
AA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,E
AAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EA
AA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA
,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA
,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,
eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EA
AA,GAAA,EAINM,eAAe,EACiB,EAaqB,GACJ,MAaf,IACF,EAac,IAGV,MAAA,EAaqC,MAazB,EAAY,WA
AoB,EAAM,EAAA,OAAA,SAAS,MACf,EAAY,UAGxD,EAaw,EAau,IACvB,GACI,EAau,EAau,EAAY,YA
Aa,CAAC,UAAU,KAWID,GANsC,MAA1B,EAAY,iBacPb,QAAQ,IAAI,SACZ,EACF,EAAA,yBAAA,EAau,E
AAY,WANH,EACF,KAQQ,IAAI,GAAY,EAAS,eAUd,OALmC,MAA1B,EAAY,iBACiB,QAAQ,IAAI,SACZ,E
ACF,EAAA,yBAAA,EAagB,EAAY,WANR,GACF,GAmBrB,eAAe,EACiB,EAaiC,EAaiB,GACID,EACA,GAW
K,OAFa,EAFE,GACiB,EAayB,EAaw,CAAC,YAAA,IAGIC,CAAY,EAau,EAagB,GA2BzC,SAAU,EACZ,GA
GK,OAAA,MACI,EAaiC,EAaiB,GACID,KAGH,MAAA,EAayB,EAAS,IAAI,KAAM,GAC5C,EAKF,GACE,EA
Ca,MAaf,EAAsB,EAAY,IAAI,KAAM,GAAS,GACnD,EAamC,GAwCrC,GAvCJ,EAAS,QAAQ,CAAC,EAaqB,
KACjC,IAAA,EAac,EACiB,EAaoB,QAAQ,QAAQ,IAC5B,MAAA,EAAY,iBAakB,EAChC,EAAa,aAAa,MACI
B,EAAa,MAEX,EAAe,EAaqB,qBAAA,GACiC,EAak,cAAc,EAAa,OAE9B,EAA8B,KACIC,EAauB,IAAc,EAC
E,MAAnC,EAaoB,KACtB,EAaoB,GAac,IAGpC,EAaoB,GAAY,KAAK,CACnC,cAAe,EACf,YAAA,EACA,U
AAW,KAI,MAaf,EACF,EAAY,QAAQ,CAAC,EAAY,KAC3B,IAAe,EAAa,OAC9B,IACA,EAAa,IAAe,KAIhC,I
AGF,EAauB,KAAK,EAAa,MACzC,GAAe,OAIId,EAAa,MAAM,GAAS,GAAQ,CACjC,MAAA,EAakB,EAAY,O
AAO,CAAC,EAAG,KAAO,EAAa,IAC7D,MAAA,IAAI,MACN,qDACG,EAagB,KAAK,YACxB,4CACG,EAau
B,KAAK,UAK/B,MAAA,EACF,EAauB,OAAO,CAAC,EAAa,EAAa,KACnD,GACF,EAAY,KAAK,GAEZ,GAC
N,IAED,EAAsB,GAC5B,EAaoB,QAAQ,IAC1B,EAAS,GAAG,MAAM,QAAQ,IACiB,MAAA,EAaw,GACX,EA
Ae,SAAS,KAAa,GAAN,KAAY,EACjD,EAau,KAAK,OAGb,MAAA,QAagB,EAaqB,GAerC,EAamC,GACrC,I
AAA,EAaoB,EAkcjB,OajCP,EAaoB,QAAQ,IACpB,MAAA,EAAa,EAAS,GAAG,MAAM,OAEjC,IAAA,EAAa,
EACZ,IAAA,IAAI,EAai,EAAG,EAai,EAAY,IAC9B,GAac,EAAQ,EAaoB,GAAG,WAIzC,MAAA,EAac,IAAI,
YAAY,GAC9B,EAakB,IAAI,WAAW,GACnC,IAAA,EAaoB,EACnB,IAAA,IAAI,EAai,EAAG,EAai,EAAY,IA
AK,CAC7B,MAAA,EAAS,IAAI,WAAW,EAAQ,EAaoB,IAC1D,EAagB,IAAI,EAAQ,GAC5B,GAAqB,EAao,
WAGP,EAaoB,GAC5B,QAAQ,IACf,MAAA,EAAa,EAAY,MAC3B,EAAa,YACb,EAAa,YAAc,EAAa,WACtC,G
ACF,EAac,EAAA,eAAA,EAAY,CAAC,EAAa,gBACvC,IAAA,MAAM,KAAQ,EACjB,EAaiB,GAAQ,EAagB,K
AI7C,GAAqB,IAGhB;;ACyJV,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,Q
AAA,aAAA,EAAA,QAAA,KAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,WAAA,QAAA,iBAAA,EAtdX,IAAA,
EAAA,QAAA,kBAEA,EAAA,QAAA,WACA,EAAA,QAAA,cACA,EAAA,QAAA,qBAEA,EAAA,QAAA,oBAE
A,MAAM,EAayB,2BACzB,EAAY,mBACZ,MAAO,EACX,YAAY,EAac,GAGCpB,GAvcG,KAAA,eAAiB,OAQ
L,MAaf,IACF,EAac,IAEX,KAAA,iBAAmB,EAAY,iBAC/B,KAAA,WAAa,EAAY,WACzB,KAAA,mBAAqB,E
AAY,mBAET,MAazB,EAAY,YAEV,EAAA,EAAA,QAaiC,mBAA1B,EAAY,UACnB,IAAM,+HAGL,KAAA,M
AAQ,EAAY,WAEPB,KAAA,OAAQ,EAAM,EAAA,OAAA,SAAS,OAI1B,EAAA,EAAA,QAAQ,MAAR,GAagB,
EAAK,OAAS,EAC9B,IAAM,2DAGN,MAAM,QAAQ,KAEZ,EAAA,EAAA,QAagB,IAAhB,EAAK,OACL,IAA
M,oEACmB,EAAK,YAE/B,KAAA,KAAO,EAEmB,MAA3B,EAAY,aCoB,MAAhC,EAAY,YAAY,KACpB,MA
AA,IAAI,MACN,sEAED,KAAA,YAAc,EAAY,aAAe,GAG1C,WAAK,GACL,GAAA,EAae,yBAayB,YACpC,M
AAA,IAAI,MACN,2FAIA,MAAA,EAao,OAAO,OAAO,CAAC,OAAQ,KAAK,gBAaiB,KAAK,aAC/D,EAAK,K
AAO,IAAI,SAEV,MAAA,EAayC,CAAC,CAC9C,MAAO,CAAC,uBACR,QAAS,EAae,cAEPB,EA4C,CAChD,
cAAe,EAae,cAC9B,OAAQ,EAae,OACvB,YAAa,EAae,YAC5B,YAAa,EAae,YAC5B,gBAAA,GAe8B,MAA5

B,EAAe,YACjB,EAA+B,UAAy,EAAe,WAEIB,MAAtC,EAAe,sBACjB,EAA+B,oBAC3B,EAAe,qBAEkB,MAAnC,EAAe,mBACjB,EAA+B,iBAC3B,EAAe,kBAGrB,EAAK,KAAC,OACN,aACA,IAAI,KACA,CAAC,KAAC,UA AU,IACbB,CAAC,KAAM,IACX,cAE6B,MAA7B,EAAe,YACjB,EAAK,KAAC,OACN,oBACA,IAAI,KAAC,CA AC,EAAe,YAAa,CAAC,KAAM,IAC7C,qBAGA,MAAA,QAAiB,KAAC,MAAM,KAAC,KAAM,GAEzC,GAAA, EAAS,GACJ,MAAA,CACL,oBAAoB,EAA6B,EAAA,8BAAA,GACjD,UAAW,CAAC,IAGR,MAAA,IAAI,MAC N,mEACG,EAAS,WAYd,aACE,MAAA,QAA2B,KAAC,MAAM,KAAC,KAAM,KAAC,aAExD,IAAC,EAAMb, GACHb,MAAA,IAAI,oBACQ,KAAC,mCACHb,EAAMb,4CACtB,wCAEF,IAAA,EACA,IACF,QAAoB,EAAMb, OACvC,MAAO,GACH,IAAA,iDAAyD,KAAC,QAc5D,MAXF,KAAC,KAAC,SAAS,OACrB,GAAW,+UAOX,G AA W,uEAGP,IAAI,MAAM,GAEZ,MAAA,EAAGb,EAAY,cAC5B,EAakB,EAAY,gBAC9B,EAAC,EAAY,YAC1 B,EAAC,EAAY,YAC1B,EAAS,EAAY,OACrB,EAAY,EAAY,UACxB,EAAsB,EAAY,oBAGpC,GAAiB,MAAjB, GAA4C,MAAnB,EACrB,MAAA,IAAI,iCACqB,KAAC,+BACHc,qCAGF,IAAA,EACA,EACA,GAAMb,MAAnB ,EAAYB,CACrB,MAAA,QAAgB,KAAC,YAAY,IACtC,EAAa,GAAC,EAGxB,MAAA,EAA4B,CACHc,cAAA,EA CA,YAAA,EACA,WAAA,EACA,YAAA,EACA,YAAA,EACA,OAAA,GAGe,MAAb,IACF,EA AU,UAAy,GAE G,MAAvB,IACF,EA AU,oBAAsB,GAG5B,MAAA,EAAC,EAAY,iBAKzB,OAJH,IACF,EA AU,iBAAMb,GAGxB, EAGK,kBAAY,GAEIB,MAAA,EAAa,MAAM,QAAQ,KAAC,MAAQ,KAAC,KAAC,GAAC,KAAC,MAC3D,EA AQ,GA AU,EAAS,GAC5B,EAAa,KAAC,kBAAoB,EAETc,EAAC,GACf,IAAA,MAAM,KAAS,EACIB,EAAY,QA AQ,EAAM,SAGtB,MAAA,EAAsB,GACtB,EAAsC,GACvC,IAAA,MAAM,KAAGb,EACpB,IAAA,MAAM,KAA Q,EAAa,MACC,MAA3B,KAAC,mBACP,EAAY,KAAC,KAAC,mBAAMb,IAEzC,EA AU,KAAC,EAAa,EAAO, GAKrC,KAAC,oBACP,EA AU,cAAc,QAAQ,IAAI,IAGhC,MAAA,QAAgB,EAAYB,EAAA,0BAAA,EA AW,CAC xD,YAAa,KAAC,YACIB,UAAW,KAAC,MAChB,WAAy,KAAC,aAEZ,MAAA,CAAC,GAAa,EA AWB,EAAA,y BAAA,KAe3C,SA AU,EAAS,GACjB,MAAA,EAAY,EA AI,YAAY,KAC5B,EAakB,EA AI,YAAY,KAIjC,MAAA, CAHQ,EA AI,UAAU,EAAG,GAGf,IADb,EAakB,EAAY,EA AI,UAAU,GAAMb,IAI/D,SA AU,EAAa,GACpB,OA A2C,MAA3C,EA AI,MAAM,EAAY,kBA6G9B,QAAA,YAAA,EAnWiB,EAAA,iBAAMb,eAyP9B,MAAM,EACT ,CAAC,EAAa,KACR,GAAiB,oBAAV,QACS,MAAf,GAAGd,MAAZB,EAAY,WAI/B,OAAA,KACF,CACD,IAA A,GAAS,EAMT,GAJF,EADE,MAAM,QAAQ,GACP,EA AI,MAAM,GA AW,EAAa,IAEIC,EAAa,GAGf,OAAA,E AAK,EAAC,GAGd,OAAA,MA2EP,SA AU,EAAC,EAAC,GAC1B,OAAA,IAAI,EAAY,EAAM,GAQzB,SA AU,E ACZ,EAAC,GACT,OAAA,EAAC,EAAM,GACnB,QAAA,WAAA,EA rFD,EA AiB,iBAAA,mBAAMb,GACpC,EA AiB,iBAAA,mBAAMb;;ACpMnC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAA A,QAAA,gBAAA,EA9FD,MAAM,EACJ,YAA6B,GAAA,KAAA,eAAA,EA EVB,aACG,OAAA,KAAC,gBAIhB, MAAM,EACJ,YACqB,GAAA,KAAA,YAAA,EAGf,WAAK,GACF,OAAA,KAAC,YAAY,IAyBtB,SA AU,EACZ, EAAMc,EACnC,EAA0B,GACxB,GAAqB,IAArB,UAAU,OAAc,CAItB,OAFoD,MAAnD,EAakC,eACe,MAAjD, EAakC,YAE9B,IAAI,EAakB,IAI7B,QAAQ,KACJ,yNAIG,IAAI,EAakB,CAAC,cAAe,KAUxC,OALP,QAAQ,K ACJ,yNAIG,IAAI,EAakB,CAC3B,cAAe,EACf,YAAA,EACA,WAAA,EACA,eAAA,IAoBA,SA AU,EACZ,GAE K,OAAA,IAAI,EA AiB;;ACtF9B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,OAAA,eAAA,QAAA, eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAAA,OAAA,eAAA,QAAA,qBAAA,CAAA,YAAA ,EAAA,IAAA,WAAA,OAAA,EAAA,sBAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA, OAAA,EAAA,QAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAAA, OAAA,eAAA,QAAA,0BAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,2BAAA,OAAA,eAAA,QAAA ,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,gBAAA,CAAA,YAA A,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,+BAAA,CAAA,YAAA,EAAA,IAAA,WA AA,OAAA,EAAA,gCAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,cA AA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,mBAAA,OAAA,eAAA,Q AAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,kBAAA,CAA A,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,qBAAA,CAAA,YAAA,EAAA,IA AA,WAAA,OAAA,EAAA,sBAAA,OAAA,eAAA,QAAA,qBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,E AAA,sBAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eA AA,QAAA,uBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,wBAAA,OAAA,eAAA,QAAA,YAAA,C AAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAA

A,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAA
A,aAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAXA,QAAA,gBACA
,QAAA,mBAEA,IAAA,EAAA,QAAA,mBACA,EAAA,QAAA,UACA,EAAA,QAAA,cACA,EAAA,QAAA,iBAC
A,EAAA,QAAA,qBAEA,EAAA,QAAA,oBAEA,EAAA,QAAA;;AC2BO,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,YAAA,EAzCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,kBA
CA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAkBA,SAAS,EACL,EAAsB,EAAsB,GAAa,EACzD,GAAa,GACX,IA
AA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAC7B,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,WACHC,
EAAI,IAAM,EAAe,EAAA,gBAAA,EAAI,GAExB,MAAA,EAA4B,CAAC,EAAG,EAAI,EAAG,GACvC,EAA0B,
CAAC,WAAA,EAAY,WAAA,GAEtC,OAAA,EAAO,OAAA,UACV,EADG,YACU,EAAGC,GAG5C,MAAM,GA
AS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACKA,aAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,OAAA,IAAA,QAAA,YAAA,EA7CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAG
A,EAAA,QAAA,eAqBA,SAAS,EACL,EAA4B,EAAe,EAAU,EACrD,EAAW,GACT,GAAA,EAAQ,EACJ,MAAA
,IAAI,uDAAuD,KAe7D,MAEA,EAAuB,CAAC,SAFb,EAAGB,EAAA,iBAAA,EAAS,UAAW,SAAU,UAGzD,EA
AqB,CAAC,MAAA,EAAO,QAAA,EAAS,SAAA,GAErC,OAAA,EAAO,OAAA,UACV,EADG,OACK,EACR,GA
GC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACaA,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA1DP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,
QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eAiDO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA
,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,
GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IA
AA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IA
AA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAA
A,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAA
A,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5BP,SAAS,EAA6B
,EAAiB,GAC/C,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAgB/B,GAdQ,MAAR,IACF,EAAO,EAA
G,MAAM,IAAI,CAAC,EAAG,IAAM,GAAG,WAEnc,EAAK,OACD,EAAG,OAAS,EAAK,OACjB,yCAA2C,EA
AG,qCACb,MACrC,EAAK,QAAQ,IACX,EAAK,OACD,GAAQ,GAAK,EAAO,EAAG,KACvB,mDAAqD,EAAG,
KAAO,gBAC/C,OAGiB,EAAG,MAAQ,EACN,OAAA,EAAG,QAGN,MAAA,EAA0B,CAAC,EAAG,GAC9B,EA
AwB,CAAC,KAAA,GAExB,OAAA,EAAO,OAAA,UACV,EADG,UACQ,EAAGC,GAG1C,MAAM,GAAY,EAA
G,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACoBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA
A,IAAA,QAAA,iBAAA,EAAA,QAAA,qBAAA,EA7EP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAE
A,EAAA,QAAA,UACA,EAAA,QAAA,aACA,EAAA,QAAA,aACA,EAAA,QAAA,eACA,EAAA,QAAA,eAqEO,
SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,
GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,G
AAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAA
A,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAA
A,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAA
A,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,
IAAA,EAAA,GAAA,EAtdCD,SAAU,EACZ,EAA6B,EAC7B,GACI,MAAA,GAUU,EAAGB,EAAA,iBAAA,EAAG
,SAAU,mBAC5C,GACF,EAAGB,EAAA,iBAAA,EAAa,cAAe,mBAEhD,EAAK,OACa,MAAd,GAAsB,EAAa,GA
AK,OAAO,UAAU,GACzD,IAAM,kEACS,KACnB,EAAK,OACgB,IAAjB,EAAGQ,KACR,oDAAsD,EAAGQ,QACI
E,EAAK,OACqB,IAAtB,EAAa,KACb,IAAM,wDACS,EAAa,QACb,EAAK,OACD,EAAGQ,MAAM,KAAO,EAA
a,MAAM,GACxC,IAAM,0CACC,EAAGQ,MAAM,UAAU,EAAa,MAAM,OAC9C,mEACR,EAAK,OACD,EAAa,G
AAK,OAAO,UAAU,GACnB,IAAM,+DACC,KAIL,MAAA,GAAe,EAAO,EAAA,SAAA,EAAK,EAAA,MAAA,E
AAS,SAAU,GAC9C,GACF,EAAO,EAAA,SAAA,EAAK,EAAA,MAAA,EAAC,SAAU,GACIC,GAA0B,EAAU,E
AAA,WAAA,GACpC,GAAoB,EAAO,EAAA,QAAA,EAAe,GACzC,OAAA,EAAK,EAAA,MAAA,EAAS,SAGh
B,MAAM,GAAB,EAAG,EAAA,IAAA,CAAC,iBAAA,IAA5B,QAAA,gBAAA;;AC1EP,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EA
AA,mBAAA,IAAA,EAAA,QAAA;;AC4CC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SA

AA,EA/CD,IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,WACA,EAAA,QAAA,qBAyBM,SAAU,EACZ,EAAsB,
EACtB,GAEI,IADU,EAAA,EAAA,eAAA,GACD,MAAT,GAakC,IAAjB,EAAM,OACnB,MAAA,IAAI,MAAM,
mDAEZ,MAAA,GAAgB,EAAW,EAAA,YAAA,EAAQ,GACrC,GAAYB,IAAzB,EAAC,QAAYC,IAAzB,EAAC,OA
CxC,MAAA,IAAI,MACN,oEAEF,GAAYB,IAAzB,EAAC,QAAYB,MAAT,EAC1B,MAAA,IAAI,MACN,2EAGC,
OAAA,EAAW,EAAA,YAAA,EAAQ,EAAO,EAae;;ACsM3C,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA
,IAAA,QAAA,SAAA,EAAA,QAAA,gBAAA,EArPP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBACA,EAAA,
QAAA,sBACA,EAAA,QAAA,aAEA,EAAA,QAAA,sBAGA,EAAA,QAAA,UACA,EAAA,QAAA,eACA,EAAA,
QAAA,cAEA,IAAI,EAyBJ,SAAS,EACL,EAEA,EAAC,GAEZ,GAAA,EAAC,EACV,MAAA,IAAI,MACN,kEAEF,
GAAU,MAAV,EACI,MAAA,IAAI,MAAM,4DAEd,IAAA,GAAC,EACd,GAAC,EACd,GAAU,EACV,GAAU,EAC
V,GAAe,EACf,GAAGB,EACf,GAAA,EAAqB,gBAAgB,WACxC,GAAC,OACT,GACoB,oBAAf,WAA8B,aAAkB,
UAC1D,GAAC,OACT,GAC2B,oBAAtB,kBACR,aAAkB,iBACpB,GAAU,OACL,GAC2B,oBAAtB,kBACR,aAAk
B,iBACpB,GAAU,OAEL,GAakC,MAA7B,EAae,WACzB,GAAe,MACV,CAAA,KACsB,oBAAjB,aACR,aAAkB
,aAGd,MAAA,IAAI,MACN,wPAIY,EAAC,YAAY,QAP1C,GAAGB,EASd,GAAA,EAAS,CACL,MAAA,EAAGC,
EACIC,GAAA,GACC,EAA4B,WACzB,EACA,MAAA,IAAI,MACN,yGAOJ,GAAU,OADC,EAAU,EAAA,WAA
A,EAAV,WAAsB,EAAO,OAAA,aACxB,CACZ,MAAA,EAA2B,CAAC,OAAA,GAC5B,EAAYB,CAAC,YAAA,
GACzB,OAAA,EAAO,OAAA,UACV,EADG,WACS,EACZ,GAGA,MAAC,EAAO,GAAU,EACpB,CACG,EAA4
B,WAC5B,EAA4B,aAE/B,CAAC,EAAO,MAAO,EAAO,QACtB,IAAA,EAkBA,EACA,GAjBA,EACF,EAek,EA
Ae,WAAW,MAAM,aAAa,EAAG,EAAG,EAAO,GAAQ,KAC9D,GAAe,EACxB,EAAQ,EAAiC,MACHC,GAAW,
GAAW,KACJ,MAAvB,IACF,EAAsB,SAAS,cAAc,UAAU,WAAW,OAEPe,EAAoB,OAAO,MAAQ,EACnC,EAA
oB,OAAO,OAAS,EACpC,EAAoB,UChB,EAA4B,EAAG,EAAG,EAAO,GAC7C,EAAO,EAAoB,aAAa,EAAG,E
AAG,EAAO,GAAQ,MAG3C,IAAhB,EACF,EAAS,IAAI,WAAW,OACnB,CACC,MAAA,EAAY,EAAQ,EAC1B,
EAAS,IAAI,WAAW,EAAY,GAC/B,IAAA,IAAI,EAAl,EAAG,EAAl,EAAW,IACxB,IAAA,IAAI,EAAU,EAAG,E
AAU,IAAe,EAC7C,EAAO,EAAl,EAAC,GAAW,EAAS,EAAl,EAAQ,GAJjD,MAAA,EAAqC,CAAC,EAAQ,EAA
O,GACpD,OAAA,EAAS,EAAA,UAAA,EAAQ,EAAU,SAsB7B,eAAe,EACIB,EACA,GACE,IAAA,GAAO,EAAG
B,EAAA,iBAAA,EAak,MAAO,YACnC,KAAE,aAAe,EAajB,QAA0B,CAEtB,MAAA,EAAoB,EAC1B,GAAO,E
AAK,EAAA,MAAA,EAAMB,SAC/B,EAakB,UAEhB,GAAC,IAAd,EAak,MAA4B,IAAd,EAak,KACpB,MAA
A,IAAI,8DACkD,EAak,SAE7D,MAAC,EAAQ,GAAS,EAak,MAAM,MAAM,EAAG,GACtC,EAAsB,IAAd,EA
AK,KAAa,EAAl,EAak,MAAM,GAE3C,GAAA,EAAQ,GAAe,IAAV,EACT,MAAA,IAAI,MACN,6DACqB,KA
GvB,GAAe,YAAf,EAak,OAAsC,UAAf,EAak,MAC7B,MAAA,IAAI,wCAC4B,EAak,SACvC,yCAGA,MAAA
,QAAa,EAak,OACIB,EAA4B,YAAf,EAak,MAAsB,IAAM,EAC9C,EAAQ,IAAI,kBAakB,EAAQ,EAAS,GAeh
D,IAAA,IAAI,EAAl,EAAG,EAAl,EAAS,IAAS,EAAG,CACjC,MAAA,EAAO,CAAC,EAAG,EAAG,EAAG,KA
EIB,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,IAAK,CACxB,MAAA,EAAQ,EAak,EAAl,EAAQ,GAE3B,GAAe,YA
Af,EAak,OACH,GAAA,EAAQ,GAak,EAAQ,EACjB,MAAA,IAAI,MACN,sFACiC,WAEIC,GAAmB,UAAf,EA
AK,QACV,EAAQ,GAak,EAAQ,KACjB,MAAA,IAAI,MACN,sFACmC,MAI7B,IAAV,GACF,EAak,GAak,EA
AQ,EACIB,EAak,GAak,EAAQ,EACIB,EAak,GAak,EAAQ,GAeIB,EAak,GAak,EAAQ,EAlhB,MAAA,EA
AQ,EAAl,EACV,EAAM,EAAl,GAak,KAAK,MAAM,EAak,IAC/B,EAAM,EAAl,GAak,KAAK,MAAM,EA
AK,IAC/B,EAAM,EAAl,GAak,KAAK,MAAM,EAak,IAC/B,EAAM,EAAl,GAak,KAAK,MAAM,EAak,IAG7
B,GAAU,MAAV,EAAGB,CACIB,EAAO,MAAQ,EACf,EAAO,OAAS,EACV,MAAA,EAAM,EAAO,WAAW,MA
CxB,EAAY,IAAI,UAAU,EAAO,EAAO,GAC9C,EAAl,aAAa,EAAW,EAAG,GAK1B,OAHH,IAAS,GACX,EA
K,UAEA,EAGF,MAAM,GAAa,EAAG,EAAA,IAAA,CAAC,YAAA,IAAvB,QAAA,WAAA;;ACILN,aAAA,OA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAnED,IAAA,EAAA,QAAA,WAUM,SAAU,EA
mB,EAAoB,GAE/C,MAAA,EAAa,EAAO,MAAM,OAC1B,EAAC,EAAQ,MAAM,OAC9B,GAAA,EAAa,EACT,
MAAA,IAAI,MACN,+EACqB,MAEvB,GAAA,EAAC,EACV,MAAA,IAAI,MACN,iFACqB,MAEvB,GAakB,UA
AlB,EAAQ,MACJ,MAAA,IAAI,MACN,4EACsB,EAAQ,UAEhC,GAAA,EAAQ,MAAM,EAAC,GAak,EAC7B,
MAAA,IAAI,MACN,oEACG,EAAQ,MAAM,EAAC,UAAU,KAG3C,GAAGC,KAAhC,EAAC,EAAA,eAAA,EA
O,OACjB,MAAA,IAAI,MACN,sEACiB,EAAO,UAGxB,MAAA,EAae,EAAQ,MACvB,EAAY,EAAa,EAAa,OA
AS,GAJjD,IAAA,EAAU,EACT,IAAA,IAAI,EAAl,EAAG,EAAl,EAAa,OAAS,IAAK,EAC7C,GAAW,EAAa,GAG
pB,MAAA,EAAa,EAAO,MAEPB,EAAC,EAAa,QACjC,EAAY,MAER,IAAA,EAAY,EACX,IAAA,IAAI,EAAl,E

AAW,EAAl,IAAc,EACxC,GAAa,EAaw,GACxB,EAAY,KAAK,EAaw,IAGxB,MAAA,EACF,KAAI,EAae,EA
AA,gBAAA,EAao,OAao,IAAI,GAAU,EAAS,GACvD,GAAG,MAAM,EAAG,GAEV,MAAA,CAAC,EAaa,EA
AS,EAaw;;ACIEIC,aAAA,OAaa,eAAA,QAAA,aAAA,CAAA,OAaa,IAAA,QAAA,oBAAA,EAAA,QAAA,cA
AA,EAAA,QAAA,gBAAA,EAIIID,IAAA,EAAA,QAAA,WAQM,SAAU,EACZ,EAaiB,EAaiB,GAC9B,MAAA,E
AAY,EAaQ,KAAO,EAaK,EAaQ,MAAM,EAaQ,KAAO,GAaK,EACIE,EAAY,EAaQ,KAAO,EAaK,EAaQ,K
AAO,EAaI,EAEnD,EAaa,gGACyB,EAaQ,4BAC5B,EAaQ,iBAaiB,mBAC9B,oBAA2B,KAEIC,GAAA,EAaQ,
KAAO,EACX,MAAA,IAAI,MAAM,oBAA+B,OAE7C,GAAA,EAAM,OAAS,GAAY,EAaQ,KAAO,GACtC,MA
AA,IAAI,MACN,4BAC0B,GAAY,EAaQ,KAAO,MAEvD,GAAA,EAaQ,OAAS,EAaw,EAAM,OAAS,EACvC,
MAAA,IAAI,MACN,qBAAgC,EAaw,EAAM,OAAS,KAE3D,IAAA,IAAI,EAaI,EAAG,EAaI,IAAY,EAC1B,G
AAA,EAaQ,MAAM,KAAO,EAaQ,MAAM,GAC/B,MAAA,IAAI,MACN,oBACKB,OAao,EAaQ,MAAM,wBA
AwB,OAC3D,EAaQ,MAAM,QAGrB,IAAA,IAAI,EAaI,EAAG,EAaI,EAaQ,KAAO,IAAY,EACzC,GAAA,EA
Q,MAAM,EAaI,KAAc,EAAM,EAaI,GACtC,MAAA,IAAI,MACN,oBACKB,EAaI,OACIB,EAaQ,MAAM,EAaI
,gBAauB,EAaI,OAC7C,EAAM,EAaI,OAmBIB,SAAU,EACZ,EAaiB,EAaiB,GAChC,GAAA,EAaQ,KAAO,E
ACX,MAAA,IAAI,MACN,kFACqB,EAaQ,SAE/B,GAAA,EAaQ,KAAO,EACX,MAAA,IAAI,MACN,kFACqB,
EAaQ,SAE/B,GAaKB,UAAIB,EAaQ,MACJ,MAAA,IAAI,gEACN,EAaQ,SAEV,GAAA,EAAM,OAAS,EACX,
MAAA,IAAI,mEACuD,KAG/D,GAaiB,IAAjB,EAAM,OAac,CACIB,GAaiB,IAAjB,EAaQ,KACJ,MAAA,IAAI,
4DACN,EAaQ,SAEV,GAaiB,IAAjB,EAaQ,KACJ,MAAA,IAAI,4DACN,EAaQ,SAIhB,EAaoB,EAao,EAAS,
GAYhC,SAAU,EACZ,EAaqB,EACrB,GAEl,MAAA,EAac,EAaQ,MAAM,OAC5B,EAaa,EAac,EAaK,EAaQ,
MAAM,EAac,GAaK,EAKjE,EAaU,EAAM,OAEIB,IAAA,EAAY,EACX,IAAA,IAAI,EAaI,EAaw,EAaI,IAA
W,EACrC,GAAa,EAAM,GAGf,MAAA,EAagB,EAAY,EAaK,EAaI,EAKpC,MAAA,CAAC,UAAA,EAaw,YAJ
A,EAac,EAAA,eAAA,EAaQ,OAAS,EAInB,UAAA,EAaw,QAF1B,KAAI,EAae,EAAA,gBAAA,EAAM,MAA
M,EAAG,IAAa,GAEZ,YADhC,EAac,EAAA,eAAA;;AC8RIC,aAAA,OAaa,eAAA,QAAA,aAAA,CAAA,OAaa
,IAAA,QAAA,kBAAA,EAAA,QAAA,WAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,sBAAA,EAAA,QAAA,kBA
AA,EAAA,QAAA,2BAAA,EAAA,QAAA,0BAAA,EAAA,QAAA,eAAA,EAAA,QAAA,aAAA,EAAA,QAAA,Y
AAA,EAAA,QAAA,iBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,UAAA,EA9ZD,IAAA,
EAAA,EAAA,QAAA,YA8ZC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAaa,KAAA,IAAA,EAAA,IAAA,QAAA,
OAaa,EAAA,WAAA,OAaa,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAaa,EAAA,
IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAaa,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GA
AA,MAAA,EAAA,CAAA,IAAA,EAAA,OAaa,gBAAA,OAaa,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OA
AA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAaa,yBAAA,EAAA,GAAA,KAAA,IAA
A,EAAA,KAAA,EAAA,KAAA,OAaa,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAaa,EAAA,
QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAIZK,SAAU,EACZ,EAaMB,EAaiB,GAChC,MAAA,EA
Y,EAAM,MAAM,OAC9B,EAaK,OACD,IAAc,EAAM,OACpB,qBAauB,uBAA+B,0CACIB,OACxC,EAaK,OA
CD,IAAc,EAaK,OACnB,qBAauB,sBAA8B,0CACjB,OAEnC,IAAA,IAAI,EAaI,EAAG,EAaI,IAAa,EAC/B,EA
AK,OACD,EAAM,GAaK,EAaK,IAAM,EAAM,MAAM,GACIC,qBAauB,aAAqB,aAAa,UACjD,EAAM,GAaK,
EAaK,kCAaKc,OAChD,EAAM,MAAM,OAkxB,SAAU,EAaw,GACnB,MAAA,EAao,GACT,IAAA,EAao,E
ACJ,KAAA,EAao,GACD,EAAP,GACF,EAaK,KAAK,GAEZ,GAAQ,EACR,IAEK,OAaa,EAIH,SAAU,EACZ,
EAaiB,EAae,GAC5B,MAAA,EAao,GACR,IAAA,IAAI,EAao,EAAG,EAao,EAAM,OAaQ,IACtC,EAaK,GA
AQ,KAAK,MAAM,EAaI,GAAQ,EAAM,IAAS,EAaQ,IAEtD,OAaa,EAKH,SAAU,EACZ,EAaMB,EAagC,EA
CnD,GACI,MAAA,EAaa,IAAI,GACIB,IAAA,IAAI,EAaI,EAaw,OAaQ,EAaI,EAaw,OAaQ,IACrD,EAaw,K
AAK,GAEB,IAAA,IAAI,EAaI,EAAG,EAaI,EAae,IACvB,IAAN,EACF,EAaw,GAA0B,GAErC,EAaw,OACP,
EAawB,EACxB,GACJ,EAaw,OAGR,OAaa,EAGT,SAAS,EACL,EAagC,EAChC,GACE,OAaa,GAaKB,EAC
b,EAGF,GAaKB,EAagB,GAG3C,SAAS,EAac,EAauB,GACtC,MAAA,EAaa,GACd,IAAA,IAAI,EAaI,EAAG,
EAaI,EAae,IACjC,EAaw,KAAK,EAayB,GAEPc,OAaa,EAIH,SAAU,EACZ,EAAsB,EAawB,EAC9C,EAaiB
,EAae,EAaMB,EACnD,EACA,GACI,MAAA,EAAY,EAaw,OACzB,IAAA,EAaKB,IAAI,MAAM,GAC5B,EA
gB,IAAI,MAAM,GAC1B,EAaoB,IAAI,MAAM,GAC9B,GAAA,EAaa,QAAU,EAAsB,EAAG,CAC5C,MAAA,E
AAY,EAaa,GAIZB,EAagB,EAAsB,EAC5C,EAaKB,EACd,EAaw,EAaw,EAae,EAao,GAChD,EAagB,EACZ
,EAAS,EAaw,EAae,EAaK,GAC5C,EACI,EAAsB,EAAS,EAaw,EAae,QAExD,IAAA,IAAI,EAao,EAAG,EA

AO,EA AW,IACn C,EA Ag B,GAAQ,EACp B,EA AW,EA AO,EA AS,EA AY,EA AM,GACj D,EA Ac,GACV,EA AY,E
A AS,EA AK,EA AS,EA AY,EA AM,GACz D,EA Ak B,GAAQ,EA Ae,EA AS,EA AM,GA Ir D,MAAA,CACL,MAAO,E
ACP,IAAK,EA CL,QAAS,GAMP,SA AU,EACZ,EA Am B,EA Ag C,EACn D,EA Ay B,GACr B,MAAA,EA Aa,IAAI,G
ACj B,EA Aa,EA Ac,EA Ae,GA E3C,IAAA,IAAI,EA AO,EA AG,EA AO,EA AW,OAAQ,IACv C,GAAA,EA AW,QAA
Q,IAAS,EAC9B,EA AW,GAAQ,MACd,CACC,MAAA,EACF,EA Ag B,EA Aw B,EA Ae,GACv D,IAAA,EA Ag B,EA
Ac,GAC9B,EA AY,GA AK,IACn B,EA Ag B,GAGIB,EA AW,GAAQ,EAGh B,OAAA,EAKH,SA AU,EACZ,EA Ai B,E
A Ag C,EACj D,EA Au B,GACn B,MAAA,EA Aa,IAAI,GACj B,EA Aa,EA Ac,EA Ae,GA E3C,IAAA,IAAI,EA AO,EA
G,EA AO,EA AW,OAAQ,IACv C,GAAA,EA AW,QAAQ,IAAS,EAC9B,EA AW,GAAQ,OAAO,qBACr B,CACC,M
AAA,EACF,EA Ag B,EA Aw B,EA Ae,GACv D,IAAA,EA Ag B,EA AY,GAC5B,EA AU,GA AK,IACj B,EA Ag B,OAA
O,kBAEz B,EA AW,GAAQ,EA IB,IAAA,IAAI,EA AI,EA AG,EA AI,EA AW,OAAQ,IAAK,CAEp C,MAAA,EA AW,
EA AW,GACx B,EA AW,GA AK,IACIB,EA AW,IA AM,GA En B,EA AW,GA AK,EA AK,MA AM,EA AG,EA AW,GA
AI,EA AW,IA En D,OAAA,EAGH,SA AU,EACZ,EA Am B,EA Ac,GAC/B,IAAA,EA AS,EA AQ,GAKd,OAJH,EA Ag
B,GA AK,GA Am B,MAAV,KACHC,EA AS,GAGJ,EAGH,SA AU,EACZ,EA Am B,EA Aw B,EAC3C,EA As B,EA Ac,
GAEIC,IAAA,EA AQ,EA Aa,GACn B,MAAA,EA AS,EA AQ,IAAS,GA I5B,EA AY,GA AK,GAAQ,EA Ae,GA AK,G
AAi B,MAAT,KAKr D,EAJE,EA AS,EA IH,OAAO,iBAGP,OAAO,kBAKb,MAAA,EA AW,EA AW,GA Qr B,OPH,
EA AQ,IACV,GA AS,GA IX,EA AQ,EA AK,MA AM,EA AG,EA AO,EA AW,GA Kp C,SA AU,EACZ,EA Ai B,EA Au B,
EACx C,EA As B,EA Ac,GAEIC,IAAA,EA AO,EA AY,GACj B,MAAA,EA AS,EA AQ,IAAS,GA I5B,EA AW,GA AK,
GA AS,EA Ag B,GA AK,GA Ai B,MAAR,KAIv D,EA HE,EA AS,EAGJ,OAAO,iBAGP,OAAO,kBAKZ,MAAA,EA
W,EA AW,GA gBr B,OA fH,EA AO,IACT,GAAQ,GA QR,EA FE,EA AS,EA EJ,EA AK,MA AM,EA AG,EA AM,GA Gp
B,EA AK,OAAO,EA AG,EA AM,EA AW,GA Ur C,SA AU,EACZ,EA Ai B,EA Ai B,GA Eh C,IAAA,EA Ak B,EA AK,OA
Ct B,IAAA,IAAI,EA AI,EA AG,EA AI,EA AK,OAAQ,IAC3B,GAAA,EA AK,GA AK,EA AG,CACf,EA Ak B,EACIB,
MAIC,IAAA,IAAI,EA AI,EA Ak B,EA AG,EA AI,EA AK,OAAQ,IAC7C,GAAA,EA AM,GA AK,GA AK,EA AK,KA
AO,EA AM,GAC7B,OAAA,EAGJ,OAAA,EAGH,SA AU,EA Ak B,EA Ai B,GAC7C,IAAA,EA Aa,EA AM,OA AS,EA
AI,EA AM,EA AM,OA AS,GA AK,EACz D,IAAA,IAAI,EA AI,EA AG,EA AI,EA AM,OA AS,EA AG,IACp C,GA Ac,E
A AM,GA AK,EA AQ,GA E5B,OAAA,EAGH,SA AU,EACZ,EA Ae,EA Aw B,GA Er C,IAAA,EACE,MAAA,EA AQ,E
AAE,MA AM,OAYIB,IAAA,EA qBG,OA/BL,EA Dm B,iBA AV,EACA,CAAC,KAAU,IAAI,MA AM,EA AQ,GA AG
,KAAK,IACr C,EA AM,OA AS,EACf,EA AM,OAAO,IAAI,MA AM,EA AQ,EA AM,QAAQ,KAAK,IAEID,EA AM,S
AEV,QAAQ,IACb,EA AK,QACM,IAAP,EA AU,IA AM,uDAYt B,GARE,EA DU,MA AR,EACM,IAAI,MA AM,GA
AO,MA AM,GACN,iBAAT,EACR,CAAC,KAAS,IAAI,MA AM,EA AQ,GA AG,MA AM,IACp C,EA AK,OA AS,EA
Cf,EA AK,OAAO,IAAI,MA AM,EA AQ,EA AK,QAAQ,MA AM,IAEj D,GA EI,IAAI,CAAC,EA AG,IACb,GA AK,E
ACA,GA EP,EA AK,QACM,IAAP,EACA,IA AM,wDACC,mCAAm C,MACv C,EAAE,MA AM,GA AK,EA AO,KAG
xB,CAAC,EA AQ,GAGZ,SA AU,EACZ,EA Ak B,EA Ai B,EA Ae,EACID,EA Am B,EA Ai B,EACp C,EA AQ B,GA En B,I
AAA,EA AS,EA AM,QACf,EA AO,EA AI,QACX,EA AW,EAEA,MA AX,IACF,EA AW,IAAI,MA AM,EA AO,SAGx
B,MAAA,EA Ae,EA AW,GAC5B,GAAA,EA Aa,OA AS,EACIB,MAAA,IAAI,MA AM,8CAGd,GA Ai B,IAAj B,GA A
sC,IAAh B,EACIB,MAAA,IAAI,MACN,iEAGF,GA Ai B,IAAj B,GA Ay C,IAAn B,EACIB,MAAA,IAAI,MACN,oE
AGA,MAAA,EA As B,EA AO,OA AS,EA AO,OAG7C,EA Aa,EA AW,GACx B,EA AW,EA AO,QACx B,EA AW,QAA
Q,IACj B,EA AO,GAAQ,EACf,EA AK,GAAQ,EACb,EA AS,OAAO,EA AM,EA AG,KAGr B,MACJ,MAAO,EACP,I
AAK,EA CL,QAAS,GA EP,EACI,EA AU,EA Ac,EA AQ B,EA AQ,EA AM,EAC3D,EA AW,EA AS,GAC5B,EA AS,EA
CT,EA AO,EACP,EA AW,EA EL,MAAA,EA Aa,EA AW,GA E9B,EA AW,QAAQ,IACj B,EA AK,GAAQ,EA AO,GA
AQ,EAC5B,EA AS,GAAQ,IAIb,MAAA,EA AO,EA Ag B,EA AQ,EA AM,GA Er C,EA AW,EA AK,OAAO,CAAC,EA
AG,KAAu C,IAA9B,EA AW,QAAQ,IAIt D,MAAA,CAAC,WAFW,EA AS,MA AM,GA AW,IAAN,GA En B,OAAA,
EA AQ,KAAA,EA AM,SAAA,EA AU,KAAA,EA AM,SAAA,EA AU,SAAA;;AC/P7D,aAAA,OAAA,eAAA,QAAA,
aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAA,QAAA,iBAAA,QAAA,kBAAA,EA/JD,IAAA,EAAA,QAAA,U
A6CM,MAAg B,EAYp B,eACU,OAAA,KAAK,YACR,UAIbA,kBACH,EA Ai C,GAC5B,OAAA,IAAI,EA AI,IAiFl
B,QAAA,aAAA,EA tEK,MAAO,EA OX,cACO,KAAA,aAAe,GAMf,gBAIE,OA H0B,MAA7B,EA Ai B,WACn B,EA
Ai B,SA AW,IAAI,GA E3B,EA Ai B,SAMn B,gBAAi C,GACt C,EA Ai B,SA AS,aAAA,EA AI,WACv C,CAAC,EA AK,E
AAI,aA4BZ,SA AU,EACZ,IAEE,EAAA,EAAA,QAAi B,MAAj B,EA AI,UACJ,IA AM,gFAGN,EAAA,EAAA,QAA
yB,iBA Ai B,EA AI,UACX,IA AM,6DACK,EA AI,YAEf,EAAA,EAAA,QAAA,EA AI,UAAU,OA AS,EACv B,IA AM,

qFAGV,EAaiB,SAAS,GAC3B,QAAA,iBAAA;;ACRA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,
QAAA,kBAAA,EAAA,QAAA,YAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,mBAAA,E
AAA,QAAA,oBAAA,EAAA,QAAA,wBAAA,EAAA,QAAA,cAAA,EAAA,QAAA,0BAAA,EA vJD,IAAA,EAAA
,QAAA,YACA,EAAA,QAAA,qBAEA,EAAA,QAAA,UAEA,MAAM,EA AuB,KAC hB,EA AuB,GA E9B,SA AU,E
ACZ,EACA,EAAoD,GAI/C,OA HQ,MAAX,IACF,EAAU,KAEL,EACH,EAAQ,EAAU,CAAC,EAAG,IAAM,EA
S,EAAa,EAAa,IAG/D,SA AU,IACP,OAAoC,KAApC,EAAO,OAAA,QAAQ,iBAA0B,EACA,EAGID,SAAS,EAC
L,EAAoB,EACpB,GACE,IAAA,GAAiB,EAOjB,KANA,EAAa,EAAA,cAAA,KAAW,EAAa,EAAA,cAAA,MACv
C,GAAiB,IAEf,EAAa,EAAA,cAAA,KAAW,EAAa,EAAA,cAAA,KACvC,GAAiB,GA Ef,EA AgB,CACZ,MAAA,
EAAQ,EAAO,YAAY,KAC3B,EAAQ,EAAS,YAAY,KA E/B,GAAA,IAAU,EACN,MAAA,IAAI,+CACmC,mBAC
5B,KAIjB,GAAA,MAAM,QAAQ,IAAW,MAAM,QAAQ,GA AW,CAC9C,MAAA,GA Ac,EA AW,EAAA,YAAA,
GACzB,GA AgB,EA AW,EAAA,YAAA,GAC7B,KAAC,EAAY,EAAA,aAAA,EAAa,GACtB,MAAA,IAAI,MACN
,6CACY,kBAA4B,MAI1C,MAAA,GACF,EAAa,EAAA,cAAA,GAAU,GAAS,EAAQ,EAAA,SAAA,GACtC,GAA
e,EAAa,EAAA,cAAA,GAC9B,GACA,EAAQ,EAAA,SAAA,GAER,GAAA,EA AW,SA AW,EAAa,OAC/B,MAAA
,IAAI,+CACmC,EA AW,0BACvC,EAAa,yBACb,oBACA,MAEd,IAAA,IAAI,EA AI,EAAG,EA AI,EAAa,SA AU,E
AAG,CACtC,MAAA,EA AI,EA AW,GACf,EA AI,EAAa,GA EnB,IAAC,EAAU,EAAG,GACV,MAAA,IAAI,+BAC
mB,QAAQ,eAAe,QAAQ,oBAC3C,oBACA,OA UjB,SA AU,EAAoB,EA AuB,GACzD,IAAK,KA AK,IAAM,EA AK,
OAAQ,IAAM,KAG/B,SA AU,EA AkB,EAAoB,GAC9C,MAAA,EAA0B,iBAAb,GAA6C,iBAAb,GACvB,kBAAb,
EACX,CAAC,GACD,EACA,OAAA,EAAS,EAAA,UAAA,KAAW,EAAU,EAAA,UAAA,EAAoB,MACID,EAAS,
EAAA,UAAA,KAAa,EA AU,EAAA,UAAA,EAAsB,IAEjD,EAAsB,EAAQ,EA AK,CAAC,EAAG,IAAM,GA AK,G
AEpD,EACH,EAAQ,EAAU,CAAC,EAAG,IAAM,EAAS,EAAa,EAAa,IAG/D,SA AU,EA AmB,EA AW,EA AW,G
AI nD,GA HW,MAAX,IACF,EAAU,MAEP,EAAS,EAAG,EAAG,GACZ,MAAA,IAAI,oCAAoC,mBA AmB,KAIrE
,SAAS,EAAS,EA AW,EA AW,GACIC,OA AC,SAAS,KAAO,SAAS,MAG1B,MAAM,IAAM,MAAM,IAAM,KAA
K,IAAI,EA AI,GA AK,GAM1C,SA AU,EACZ,EAA6B,EAAa,GACvC,IAAA,IAAI,EA AI,EAAG,EA AI,EAAO,OA
AQ,IAC7B,GAAA,EAAO,GA AK,GA AO,EAAO,GA AK,EAC3B,MAAA,IAAI,4BACgB,EAAO,WA AW,YAAc,K
AK1D,SA AU,EACZ,EAAqB,GAGvB,OAAO,IAAI,aAAa,IAAS,QAAQ,IAAI,aAAa,IAItD,SA AU,EA Ac,GA EvB,I
AAA,IAAI,EA AI,EAAG,EA AK,EA AgB,OAAQ,IAAK,CAC1C,MAAA,EAAM,EA AE,GACV,MAAM,QAAQ,G
AChB,EA Ac,GA Ed,EA AE,IAAK,EAAa,EAAA,cAAA,GAGjB,OAAA,EACR,QAAA,qBAAA;;ACrKD,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,MAAM,EA AU,QA AhB,QAAA,QA AgB;;
AC4Xf,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,gBAAA,EAAA,Q
AAA,2BAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,OAAA,EAAA,QAAA,OAAA,EAAA
,QAAA,QAAA,EAAA,QAAA,KAAA,EAAA,QAAA,QAAA,EAAA,QAAA,KAAA,EAAA,QAAA,KAAA,EAAA,
QAAA,WAAA,EAAA,QAAA,MAAA,EAAA,QAAA,WAAA,EAAA,QAAA,cAAA,EAAA,QAAA,YAAA,EAAA
,QAAA,mBAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,QAAA,EAAA,QAAA,YAAA,EA7WD,IAAA,EAAA,QA
AA,YACA,EAAA,QAAA,iBAGA,EAAA,QAAA,YAEA,EAAA,QAAA,iBAQM,SA AU,KACR,EAAA,EAAA,OA
AA,IAAI,QAAQ,GAiBd,SA AU,KACR,EAAA,EAAA,OAAA,IAAI,SAAS,GA If,SA AU,KACR,EAAA,EAAA,OA
AA,IAAI,gCAA gC,GAC1C,QAAQ,KA AK,0DAIT,SA AU,EA AgB,IAC1B,EAAM,EAAA,OAAA,QAAQ,iCACHB
,QAAQ,KACJ,EAAM,+EA WR,SA AU,IACP,EAAA,OAAA,mBAQH,SA AU,IACP,OAAA,EA AP,OA wBI,SA AU,
IACP,OAAA,EAAO,OAAA,SAkCV,SA AU,EAAQ,GA Ef,OAAA,EAAO,OAAA,QAAQ,GA2CIB,SA AU,EACZ,E
AA6B,GACxB,OAAA,EAAO,OAAA,KAAK,EA AU,GACzB,SA AU,EAAQ,IACN,EAAsB,EAAA,uBAAA,GAC9
B,QAAQ,GAAU,EAAO,WAmC7B,SA AU,EA AuB,GAC9B,OAAA,EAAO,OAAA,KAAK,GA4Bf,SA AU,EA AK,
GACZ,OAAA,EAAO,OAAA,KAAK,GakBf,SA AU,EA AW,GACIB,OAAA,EAAO,OAAA,WA AW,GA UrB,SA
U,IACP,OAAA,EAAO,OAAA,QASV,SA AU,IACP,OAAA,EAAO,OAAA,YA QV,SA AU,EA Ac,GACrB,EAAA,O
AAA,cAAc,GA OjB,SA AU,EAAY,GACnB,OAAA,EAAO,OAAA,YAAY,GA QtB,SA AU,EA AmB,GA E1B,OAAA
,EAAO,OAAA,mBA AmB,GakB7B,SA AU,EACZ,EA Ac,EACd,EA AW,GACN,OAAA,EAAO,OAAA,gBA AgB,E
AAM,EAAS,GA WzC,SA AU,IACP,OAAA,EAAO,OAAA,QASV,SA AU,EAAY,EAAsB,IAC1C,EAAA,EAAA,O
AAA,YAAY,EA Ac,IA1TIC,EA AwB,EAAA,yBAAA;;ACTjB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,
IAAA,QAAA,SAAA,EA3CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,
QAAA,sBAGA,EAAA,QAAA,eAyBA,SAAS,EA AuB,EAAsB,GACHd,IAAA,GA AK,EA AgB,EAAA,iBAAA,EA

CAAC,GAFhB,EAAGB,EAAA,iBAAA,EAAG,IAAK,MAAO,SAGpC,EAakB,CAAC,KAAA,EAAM,SAAA,GAE
xB,OAAA,EAAO,OAAA,UACV,EADG,IACE,EAAGC,GAGpC,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KA
AA,IAAhB,QAAA,IAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAnD
P,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA+BA,SAAS,EACL
,EAAsB,EAawB,KAAM,GAAW,GAC3D,MAEA,EAAoB,CAAC,GAFhB,EAAGB,EAAA,iBAAA,EAAG,IAAK,
MAAO,SAGpC,EAakB,CAAC,KAAA,EAAM,SAAA,GAExB,OAAA,EAAO,OAAA,UACV,EADG,IACE,EAAG
C,GAIpC,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACPA,aAAA,OAAA,eAAA
,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EA5CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,E
AAA,QAAA,sBAGA,EAAA,QAAA,eA0BA,SAAS,EAA0B,EAAsB,EAAO,GACxD,MAEA,EAAuB,CAAC,GAF
nB,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAG7B,EAaqB,CAAC,KAAA,GAErB,OAAA,EAAO,OAAA,UACV,E
ADG,OACK,EAAGC,GAGvC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACAA
,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EA5CP,IAAA,EAAA,QAAA,aACA,EA
AA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA0BA,SAAS,EAA0B,EAAsB,EAAO,GACxD,MAEA
,EAAuB,CAAC,GAFnB,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAG7B,EAaqB,CAAC,KAAA,GAErB,OAAA,E
AAO,OAAA,UACV,EADG,OACK,EAAGC,GAGvC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,
QAAA,OAAA;;ACIBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA1BP,IAAA,E
AAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAaA,SAAS,EAawB,GACzB,
MACA,EAaqB,CAAC,GADjB,EAAGB,EAAA,iBAAA,EAAG,IAAK,SAG5B,OAAA,EAAO,OAAA,UAAU,EA
jB,KAAuB,GAezB,MAAM,GAao,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACGA,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA7BP,IAAA,EAAA,QAAA,aACA,EAAA,QA
AA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAeA,SAAS,EAayB,GAC1B,MAEA,EAAsB,CAAC,GAFIB,
EAAGB,EAAA,iBAAA,EAAG,IAAK,UAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,MAawB,GAe1B,MAAM,G
AAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAIB,QAAA,MAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,UAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sB
AGA,EAAA,QAAA,eAcA,SAAS,EAawB,GACzB,MAEA,EAaqB,CAAC,GAFjB,EAAGB,EAAA,iBAAA,EAAG
,IAAK,SAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAezB,MAAM,GAao,EAAG,EAAA,IAAA,CAA
C,MAAA,IAAjB,QAAA,KAAA;;ACSA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA
,EArcP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,sBAGA,EA
A,QAAA,eAkBA,SAAS,EACL,EAAsB,GACpB,IAAA,GAak,EAAGB,EAAA,iBAAA,EAAG,IAAK,SAC7B,GA
AK,EAAGB,EAAA,iBAAA,EAAG,IAAK,UACH,EAai,IAAM,EAae,EAAA,gBAAA,EAai,GAExB,MAAA,EA
AsB,CAAC,EAAG,EAai,EAAG,GAehC,OAAA,EAAO,OAAA,UAAU,EAajB,MAawB,GAG1B,MAAM,GAA
Q,EAAG,EAAA,IAAA,CAAC,OAAA,IAAIB,QAAA,MAAA;;ACRA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,WAAA,EA7BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAG
A,EAAA,QAAA,eAeA,SAAS,EAayB,GAC1B,MAEA,EAAsB,CAAC,GAFIB,EAAGB,EAAA,iBAAA,EAAG,IA
AK,UAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,MAawB,GAe1B,MAAM,GAaq,EAAG,EAAA,IAAA,CAAC,
OAAA,IAAIB,QAAA,MAAA;;ACuiBN,aApfK,SAAU,EACZ,EACA,EAAuC,EACvC,EAA4B,EAaqB,OACjD,G
AUK,OAAA,EACH,EAJA,IAAI,EAfC,EAaw,IAMH,EAAS,EAaw,EAC9C,KAAyB,KAJT,EAawB,IAOxC,SA
AU,EACZ,EACA,EAAqC,EACrC,EAAoC,EACpC,EACA,EAA6C,gBACzC,MAAC,EAac,GAae,EAAGB,GAeh
D,IAAA,EACA,GAae,iBAaf,EACF,EAac,CAAC,EAac,EAAa,EAAQ,GAai,EAAQ,QACzD,CAAA,GAamB,k
BAaf,EAGH,MAAA,IAAI,4BAA4B,KAFtC,EAac,CAAC,EAac,EAAa,EAAQ,GAai,EAAQ,IAKzD,OAAA,EA
CH,EAAS,EAAa,EAAS,EAaw,EAak,GAac,EAC7D,GAMA,SAAU,EACZ,EACA,EACA,EACA,EAA4C,EAC5
C,EACA,EAA8B,SAC1B,MAAC,EAAa,EAac,GAae,EAaiB,GAe9D,IAAA,EACA,EACA,GAae,UAAf,EACF,
EAac,eACd,EACI,CAAC,EAAa,EAac,EAAa,EAAQ,GAai,EAAQ,QAC5D,CAAA,GAamB,UAAf,EAKH,MAA
A,IAAI,4BAA4B,KAJtC,EAac,gBACd,EACI,CAAC,EAAa,EAac,EAAa,EAAQ,GAai,EAAQ,IAK5D,OAAA,E
ACH,EAAS,EAAa,EAAS,EAaw,GAak,EAao,EACtD,GAOA,SAAU,EACZ,EACA,EACA,EAakC,EACIC,EA
CA,EAAuC,GAAY,EACnD,EAA6C,gBAC3C,IAAC,EAaw,EAAU,EAAS,GAac,EAae,GAai,GAai,GAai,GA
C3D,GAae,iBAaf,GACD,EAaw,EAAU,EAAS,GAac,MACxC,CAAA,GAamB,kBAaf,EAGH,MAAA,IAAI,4B
AA4B,MAFrC,EAaw,EAAY,EAAU,GAaw,EAKzC,MAAC,EAac,EAae,CAAA,GAakB,GAC/C,EAac,GAae,

EAAgB,IAC7C,EAAGB,GAAiB,EAAGB,GAElD,EACF,EAauB,EAac,GACnC,EACF,EAauB,EAaa,IACiC,QAAC,EAAD,UAau,EAav,SAAqB,GAAY,EACnC,EAak,EAau,EAAS,EAac,EAaa,EACnD,EAAsB,EAac,GAElC,EAac,EAAY,EAaiB,EAaa,EAElD,IAAA,EAOG,MANY,kBAaf,EACF,EAaw,CAAC,EAaw,EAaa,EAaw,GACvB,iBAaf,IACt,EAaw,CAAC,EAaw,EAaw,EAau,IAGvC,CACL,UAAA,EACA,WAAA,EACA,SAAA,EACA,QAAA,EACA,WAAA,EACA,UAAA,EACA,SAAA,EACA,YAAA,EACA,QAAA,EACA,aAAA,EACA,YAAA,EACA,aAAA,EACA,YAAA,EACA,sBAAA,EACA,qBAAA,EACA,eAAA,EACA,cAAA,EACA,QAAA,EACA,SAAA,EACA,YAAA,GA0CE,SAau,EACZ,EACA,EACA,EACA,EAa4C,EAC5C,GAAY,EACZ,EAa6C,eAC7C,GACE,IAAC,EAaw,EAAS,EAau,EAAS,GACxC,EAae,GAai,GAai,GAai,GAai,GACiB,GAae,iBAaf,GACD,EAaw,EAAS,EAau,EAAS,GAac,MACjD,CAAA,GAaMB,kBAaf,EAGH,MAAA,IAAI,4BAA4B,MAFrC,EAaw,EAAY,EAAS,EAau,GAaw,EAKiD,MAAC,EAaa,EAac,EAae,CAAA,GAC7C,GACG,EAaa,EAac,GAae,EAaiB,IAC3D,EAae,EAAGB,GACiC,EAaiB,GAef,EACF,EAauB,EAaa,GACiC,EACF,EAauB,EAac,GACnC,EACF,EAauB,EAaa,IACiC,QAAC,EAAD,SAau,EAav,UAAoB,EAapB,SAA+B,GAAY,EAC7C,EAak,EAAS,EAau,EAAS,EAaa,EAac,EAC5D,EAAsB,EAauB,EAC7C,GAEE,EAac,EAAY,EAaiB,EAaa,EAElD,IAAA,EAOG,MANY,kBAaf,EACF,EAaw,CAAC,EAaw,EAaa,EAau,EAaw,GACjC,iBAaf,IACt,EAaw,CAAC,EAaw,EAau,EAaw,EAau,IAGjD,CACL,UAAA,EACA,WAAA,EACA,QAAA,EACA,SAAA,EACA,QAAA,EACA,WAAA,EACA,SAAA,EACA,UAAA,EACA,SAAA,EACA,YAAA,EACA,QAAA,EACA,YAAA,EACA,aAAA,EACA,YAAA,EACA,qBAAA,EACA,sBAAA,EACA,qBAAA,EACA,cAAA,EACA,eAAA,EACA,cAAA,EACA,QAAA,EACA,SAAA,EACA,YAAA,GAiJ,SAAS,EAcl,EAa2B,EAaMB,EAC9C,EAakB,GACL,MAAX,IACF,EAau,EAakB,EAAS,EAaw,IAE5C,MAAA,EAAY,EAaQ,GACpB,EAAY,EAaQ,GAOnB,MAAA,CAJH,GAao,EAAY,EAAY,EAai,GAaw,EAAS,EAAG,GAElD,GAao,EAAY,EAAY,EAai,GAaw,EAAS,EAAG,IAKhE,SAAS,EAcl,EAa2C,EAC3C,EAaqB,EAAGB,EACrC,GACa,MAAX,IACF,EAau,EAakB,EAAS,EAaw,IAE5C,MAAA,EAaa,EAaQ,GACrB,EAAY,EAaQ,GACpB,EAAY,EAaQ,GASnB,MAAA,CANH,GAao,EAaa,EAAY,EAai,GAaw,EAAS,EAAG,GAElD,GAao,EAAY,EAAY,EAai,GAaw,EAAS,EAAG,GAElD,GAao,EAAY,EAAY,EAai,GAaw,EAAS,EAAG,GAehB,GAGiC,SAau,EACZ,EACA,EAaMB,EAAGB,EAaw,GACiC,MAAA,EAaqB,EAauB,EAaw,GACiD,OAAA,KAak,OACP,EAaw,IAAM,EAAS,GAak,EAAS,GAAsB,GAGrE,SAAS,EAAGB,GACnB,MAaiB,iBAav,EACF,CAAC,EAao,EAao,GAeh,IAajB,EAAM,OACD,CAAC,EAAM,GAai,EAAM,GAai,GAevB,EAGT,SAAS,EAaiB,GAejB,MAaiB,iBAav,EAaqB,CAAC,EAao,EAao,GAAS,EAc7D,SAAS,EAauB,EAaoB,GAC9C,OAAA,GAAY,EAcp,EAGF,GAac,EAaa,IAAM,EAaw,GAGrD,SAAS,EAcl,EAa4C,EAC5C,EAaiB,EAAsB,EACvC,EAAsB,EACtB,EACA,GAEE,IAAA,EACA,EACA,EAea,GAae,iBAAR,EAakB,CAE3B,EAau,CAAC,IAAK,EAak,OAaq,EAak,KAAM,EAak,MAAO,EAak,KADhC,IAAR,EAaa,QAau,UAElC,MAAA,EAaw,EACb,CAAC,EAau,GAau,EAac,EAac,EAak,GACiD,EAAY,EAAS,GACrB,EAaw,EAAS,QACf,GAAY,SAAR,EAAGB,CACzB,EAAY,KAak,KAak,EAaw,GACjC,EAaw,KAak,KAak,EAau,GACzB,MAAA,EACF,KAak,IAAI,GAai,EAAY,GAak,EAae,EAae,GACiD,EACF,KAak,IAAI,GAai,EAaw,GAak,EAac,EAac,GACvD,EAAM,KAak,MAAM,EAaiB,GACiC,EAAS,EAaiB,EACiB,EAao,KAak,MAAM,EAAGB,GAExC,EAau,CAAC,IAAA,EAak,OAAA,EAaQ,KAAA,EAAM,MADhB,EAAGB,EACO,KAAM,aACtC,GAAY,UAAR,EACT,EAau,C AAC,IAAK,EAAG,OAaQ,EAAG,KAAM,EAAG,MAAO,EAAG,KAAM,SACvD,EAAY,KAak,MAAM,EAaw,EAae,GAak,GACiD,EAaw,KAak,MAAM,EAau,EAac,GAak,OAC9C,CAAA,GAaMB,iBAAR,EAeV,MAAA,oCAAoC,KaFR,CAC5B,MAAA,EAaqB,iBAaf,EAAGC,EAai,GAAG,GAak,EAai,GAAG,GACzD,EAawB,iBAaf,EAAGC,EAai,GAAG,GAak,EAai,GAAG,GAC5D,EAAsB,iBAaf,EAAGC,EAai,GAAG,GAak,EAai,GAAG,GACiD,EAauB,iBAaf,EAAGC,EAai,GAAG,GAak,EAai,GAAG,GAIjE,EAau,CAAC,IAAA,EAak,OAAA,EAaQ,KAAA,EAAM,MAAA,EAao,KAHZ,IAAR,GAawB,IAAX,GAayB,IAAT,GAawB,IAAV,EACxD,QACA,YAEJ,EAAY,GACP,EAaw,EAae,EAAM,GAau,EAae,EACiD,GACJ,EAaw,GACN,EAau,EAac,EAao,GAAS,EAac,EAAG,IAIzD,MAAA,CAAC,QAAA,EAAS,UAAA,EAaw,SAAA,GAG9B,SAAS,EAcl,EAa4B,EAaiB,EAC7C,EAaiB,EAaqB,EACtC,EAaqB,EAaqB,EACiC,EAaqB,GAMnB,IAAA,EACA,EACA,EACA,EAea,GAae,iBAAR,EAakB,CAE3B,EAau,CACR,IAAK,EAcl,OAaQ,EACR,KAAM,EACN,MAAO,EACP,MAAO,EACP,KAAM,EACN,KARuB,IAAR,EAaa,QAau,UAuIC,MAAA,EAaw,EACb,CAAC,EAAS,EAau,E AAS,GAai,EAaa,EAAG,EAaa,EAC9D,GACJ,EAaw,EAAS,GACpB,EAAY,EAAS,GACrB,EAaw,EAAS,QA

Cf,GAAY,SAAR,EAAGB,CAInB,MAAA,IAHN,EAAW,KAAK,KAAK,EAAU,IAGG,GAAK,EAAC,EAAC,EAC7D,IAHN,EAAY,KAAK,KAAK,EAAW,IAIhB,GAAK,EAae,EAae,EAC9C,IAJN,EAAW,KAAK,KAAK,EAAU,IAIG,GAAK,EAAC,EAAC,EAC7D,EAAQ,KAAK,MAAM,EAAGB,GACnC,EAAO,EAAGB,EACvB,EAAM,KAAK,MAAM,EAAiB,GACIC,EAAS,EAAiB,EAC1B,EAAO,KAAK,MAAM,EAAGB,GAGxC,EAAU,CAAC,IAAA,EA AK,OAAA,EAAQ,KAAA,EAAM,MAFhB,EAAGB,EAEO,MAAA,EAAO,KAAA,EAAM,KAAM,YACnD,CAAA,GAAY,UAAR,EACH,MAAA,oCAAoC,KAb1C,EAAU,CACR,IAAK,EACL,OAAQ,EACR,KAAM,EACN,MAAO,EACP,MAAO,EACP,KAAM,EACN,KAAM,SAER,EAAW,KAAK,MAAM,EAAU,EAAC,GAAK,GACnD,EAAY,KAAK,MAAM,EAAW,EAae,GAAK,GACtD,EAAW,KAAK,MAAM,EAAU,EAAC,GAAK,GAI9C,MAAA,CAAC,QAAA,EAAS,SAAA,EAAU,UAAA,EAAW,SAAA,GASxC,SAAS,EAAM,EAae,GACxB,IAAC,EACI,OAAA,KAAK,MAAM,GAEZ,OAAA,GACD,IAAA,QAEI,OAAA,KAAK,MAAM,GACf,IAAA,OAEI,OAAA,KAAK,KAAK,GACd,IAAA,QACI,OAAA,KAAK,MAAM,GACpB,QACQ,MAAA,IAAI,8BAA8B,MAIxC,SAAU,EAakB,GAC1B,MAAC,EAAM,EAAM,GAAQ,EAAGB,GACpC,OAAS,IAAT,GAAuB,IAAT,GAAuB,IAAT,EAG/B,SAAU,EACZ,EAA0B,GACrB,OAAA,EAakB,IAAY,EAakB,GAUnD,SAAU,EAawB,GAElC,GAae,SAaf,EACK,MAAA,eACF,GAAMB,SAaf,EACF,MAAA,gBAED,MAAA,IAAI,4BAA4B,KAeZC,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,+BAAA,EAAA,QAAA,wBAAA;;ACvhBM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EA7CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA4BA,SAAS,EACL,EAAsB,GACIB,MAEA,EAawB,CAAC,GAfpB,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAAW,sBAGxC,EAAsB,CAAC,MAAA,GACtB,OAAA,EAAO,OAAA,UACV,EADG,QACM,EAAGC,GAExC,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAA A,IAApB,QAAA,QAAA;;ACqCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAIFP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,UACA,EAAA,EAAA,QAAA,gBACA,EAAA,QAAA,eACA,EAAA,QAAA,aAsEO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAhDP,SAAS,EACL,EAaiB,EACjB,EAakC,EACIC,GACI,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAAW,WAG9C,EAak,OACD,EAAU,+BAA+B,EAH3B,GAId,IAAM,2EACa,uBAEnB,IAAA,EAAM,EACN,GAae,EACH,IAAZ,EAAG,OACL,GAae,EACf,GAAM,EAAQ,EAAA,SAAA,EAai,CAAC,EAAG,EAAG,MAAM,GAai,EAAG,MAAM,GAai,EAAG,MAAM,MAG3D,EAak,OACY,IAAb,EAai,KACJ,uDAayD,EAai,SAE1C,MAAnB,GACF,EAak,OACD,EAak,MAAM,GACX,IAAM,2EACiB,iBAA+B,MAGtD,MAAA,EAawB,CAAC,EAAG,GAe5B,EAAsB,CAAC,WAAA,EAAY,QAAA,EAAS,IAAA,EAak,gBAAA,GAGnD,IAAA,EAAM,EAAO,OAAA,UACH,EADJ,QACa,EACT,GAIV,OAFJ,GAAM,EAak,EAAA,MAAA,EAak,EAAG,OAef,GACK,EA AQ,EAAA,SAAA,EAak,CAAC,EAai,MAAM,GAai,EAai,MAAM,GAai,EAai,MAAM,KAGtD,EAGF,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACiBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAnGP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,UACA,EAAA,QAAA,eACA,EAAA,QAAA,aAwFO,SAAA,IAAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EA A,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OA A,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAIDP,SAAS,EACL,EAaiB,EACjB,EAA0C,EAC1C,EACA,EAa8B,SAC1B,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,YAAa,WAE5C,IAAA,EAAM,EACN,GAae,EACH,IAAZ,EAAG,OACL,GAae,

EACf,GAAM,EAAQ,EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,MAGxE,EAkK,OACY,IAAb,EAAl,KACJ,yDAA2D,EAAl,SACnE,EAkK,OACc,UA Af,EACA,IAAM,mFACuB,KAeV,MAAnB,GACF,EAkK,OACD,EAkK,MAAM,GACX,IAAM,6EACiB,iBAA+ B,MAGtD,MAAA,EAA0B,CAAC,EAAG,GAE9B,EACe,CAAC,WAAA,EAAY,QAAA,EAAS,IAAA,EAkK,gBA AA,EAaiB,WAAA,GAG7D,IAAA,EAAM,EAAO,OAAA,UACH,EADJ,UACe,EACX,GAIV,OAFJ,GAAM,EA K,EAAA,MAAA,EAkK,EAAl,OAehB,GACK,EACI,EAAA,SAAA,EAkK,CAAC,EAAl,MAAM,GAAl,EAAl,M AAM,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM,KAIhE,EAGF,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WA AA,IAAtB,QAAA,UAAA;;ACtBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EA9 EP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,QAAA,WAEA,EAAA,QA AA,WACA,EAAA,QAAA,eA0CA,SAAS,EAA0B,EAA8B,EAAO,IAC/D,EAAA,EAAA,QAAA,EAAQ,QAAU,E AAG,IAAM,sCAE5B,MAAA,GACF,EAaqB,EAAA,sBAAA,EAAS,UAAW,SAAU,qBAWnD,GATsB,cAAtB,EA AS,GAAG,OACd,EAAS,QAAQ,IACX,GAaiB,cAAjB,EAAO,MACH,MAAA,IAAI,kFACK,EAAO,aAKJ,IAApB, EAAS,OACJ,OAAA,EAAM,EAAA,OAAA,EAAS,IAGiB,MAAA,EAauB,EACvB,EAAoB,CAAC,KAAA,GAEP B,OAAA,EAAO,OAAA,UACV,EADG,OACK,EAAGc,GAGvC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QA AA,IAAnB,QAAA,OAAA;;ACjDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EA5 BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAA 2B,GAC5B,MAEA,EAawB,CAAC,GAfpB,EAAGb,EAAA,iBAAA,EAAG,IAAK,YAI5B,OAAA,EAAO,OAAA, UAAU,EAajB,QAA0B,GAE5B,MAAM,GAauB,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;AC+ BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA3DP,IAAA,EAAA,QAAA,aACA ,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA0CA,SAAS,EACL,EAaiB,EAawB,GACrC,MA AA,GAkK,EAAGb,EAAA,iBAAA,EAAG,IAAK,QAAS,qBAExC,GAAY,IAAZ,EAAG,KACC,MAAA,IAAI,MA AM,kCAGZ,MAAA,EAAsB,CAAC,EAAG,GAC1B,EAAoB,CAAC,MAAA,EAAO,KAAA,GAE3B,OAAA,EAA O,OAAA,UACV,EADG,MACI,EAAGc,GAGtC,MAAM,GAaqB,EAAG,EAAA,IAAA,CAAC,OAAA,IAAI,QA A,A,MAAA;;AC/BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA5BP,IAAA,EA A,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAawB,GACzB,M AEA,EAaqB,CAAC,GAfjB,EAAGb,EAAA,iBAAA,EAAG,IAAK,SAI5B,OAAA,EAAO,OAAA,UAAU,EAajB, KAAuB,GAEzB,MAAM,GAaoB,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACkCA,aAAA,OA AA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EA7DP,IAAA,EAAA,QAAA,sBAGA,EAAA,QA AA,SACA,EAAA,QAAA,YACA,EAAA,QAAA,aACA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA ,aACA,EAAA,QAAA,WACA,EAAA,QAAA,UakBA,SAAS,EACL,EA+B,EAC/B,EAA+B,EAC/B,EAawB,GA CpB,MAAA,GACF,EAAGb,EAAA,iBAAA,EAAY,aAAc,iBACxC,GACF,EAAGb,EAAA,iBAAA,EAAY,aAAc,i BACxC,GAAY,EAAGb,EAAA,iBAAA,EAauB,WAAy,iBACiD,GAaqB,EAAGb,EAAA,iBAAA,EAAM,OAaqB,iB ACtC,GAkK,EAAGb,EAAA,iBAAA,EAAG,IAAK,iBAC7B,GAkK,EAAGb,EAAA,iBAAA,EAAG,IAAK,iBAE7 B,GAaw,EAAO,EAAA,QAAA,CAAC,EAAO,GAkK,GAC/B,GAaw,EAAO,EAAA,QAAA,EAauB,GAC5B,GA AgB,EAAl,EAAA,KAAA,EAauB,GAG9B,EAAY,EAAl,MAAM,GACtB,EAAY,EAAl,MAAM,GAkK,EAC3B,E AA8B,CAAC,EAaw,GAC1C,GAAl,EAAM,EAAA,OAAA,EAkK,CAAC,EAAG,GAAl,GACvB,GAAl,EAAM,E AAA,OAAA,EAkK,CAAC,EAAG,GAAY,GAC/B,GAAl,EAAM,EAAA,OAAA,EAkK,CAAC,EAae,EAaz,GA AgB,GACnC,GAAl,EAAM,EAAA,OAAA,EAkK,CAAC,EAae,EAaz,GAAGb,GAEnC,GACF,EAAl,EAAA,MA AA,EAAl,EAAA,MAAA,EAaqB,EAAA,SAAA,IAAI,EAkK,EAAA,MAAA,KACrB,EAAl,EAAA,KAAA,GAAl, EAAQ,EAAA,UAAA,EAAl,EAAA,KAAA,EAaa,MAEIC,MAAA,CAAC,GADe,EAAl,EAAA,MAAA,EAkK,EA AA,MAAA,IAAO,EAaqB,EAAA,SAAA,KAIIC,MAAM,GAAGb,EAAG,EAAA,IAAA,CAAC,eAAA,IAAI,QA AA,cAAA;;AC2BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAzFP,IAAA,EA AA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eA gFO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OA AA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAA A,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA, IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA, EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,K

AAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EA
AA,IAAA,EAAA,GAAA,EA9BP,SAAS,EACL,EAAiB,EAA sB,GACnC,MAAA,GAAK,EAAGB,EAAA,iBAAA,E
AAG,IAAK,kBAC7B,EA AO,EA AW,OAAO,CAAC,EAAG,IAAM,EA AI,GA E7C,EA AK,OACD,EAAG,MAAQ,E
AAI,EA AW,OAC1B,qBA AuB,EA AG,+CACtB,EA AW,UAEnB,EA AK,OACD,EA AM,SA AW,EA AW,OAC5B,u
BACI,EA AM,oDACN,EA AW,UAEnB,EA AK,OACD,EA AG,MAAM,GA AK,GA AS,EACvB,6BACU,EA AG,MA
AM,2EACe,EA AW,KAAK,cAAc,KAE9D,MAAA,EAA+B,CAAC,EA AG,GACnC,EAA6B,CAAC,WAAA,EAAY
,MAAA,GA EzC,OAAA,EA AO,OAAA,UACV,EADG,eACa,EAC hB,GAGC,MAAM,GAAiB,EA AG,EAAA,IAAA
,CAAC,gBAAA,IAA3B,QAAA,eAAA;;ACzEN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
MAAA,EAfD,IAAA,EAAA,QAAA,aAEM,SAAU,EAAsB,GAC hC,IAAA,EA WG,OATL,EADa,IAAX,EA AE,MA
AyB,IAAX,EA AE,MACd,EAAQ,EAAA,SAAA,EA AG,CAAC,EA AG,EA AG,EA AG,EA AE,OACT,IAAX,EA AE,
MACL,EAAQ,EAAA,SAAA,EA AG,CAAC,EA AG,EA AG,EA AE,MAAM,GA AI,EA AE,MAAM,KACxB,IAAX,E
AAE,MACL,EAAQ,EAAA,SAAA,EA AG,CAAC,EA AG,EA AG,EA AE,MAAM,GA AI,EA AE,MAAM,GA AI,EA AE,MA
AM,KAE/C;;ACiFH,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA7FP,IAAA,EA
A,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,oBA
CA,EAAA,QAAA,eACA,EAAA,QAAA,aAkFO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EA
AA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WA
AA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,
EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,
EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,
GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IA
AA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA tDP,SAAS,EACL,EA AyB,EACzB,EAC
A,EACA,EACA,GACqB,MAAnB,IACF,EA akB,MAEd,MAAA,GA AK,EA AgB,EAAA,iBAAA,EA AG,IAAK,aA
C7B,GAAQ,EA AgB,EAAA,iBAAA,EA AM,OAAQ,aACtC,GAAY,EA AgB,EAAA,iBAAA,EA AU,WAAY,aACp
D,IAAA,EA IA,EA HS,MAAT,IACF,GA AS,EA AgB,EAAA,iBAAA,EA AO,QAAS,cAG7B,MAAV,IACF,GAAU,E
AAgB,EAAA,iBAAA,EA AQ,SAAU,cAG9C,EA AK,OACD,EA AM,OAAS,EA AU,KACzB,IAAM,gFAEV,EA AK,
OACU,MAAX,GA AmB,EA AM,OAAS,EA AQ,KAC1C,IAAM,8EA EV,EA AK,OACS,MAAV,GA akB,EA AM,OA
AS,EA AO,KACxC,IAAM,6EAGJ,MAEA,EAA+B,CACnC,GA HoB,EA AM,EAAA,OAAA,GAI1B,MAAO,EACP,
OAAQ,EACR,KAAM,EACN,SAAU,GAGN,EAA6B,CAAC,gBAAA,GAG9B,EA AM,EA AO,OAAA,UACH,EAD
J,eACoB,EAC hB,GAET,OAAA,EA AQ,EAAA,SAAA,EA AK,EA AG,OAGIB,MAAM,GAAY,EA AG,EAAA,IAA
A,CAAC,WAAA,IAA tB,QAAA,UAAA;;AC/BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,iBAAA,EA9DP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAA
A,eAyDO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAA
A,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,
GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,C
AAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,K
AAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EA
AA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAA
A,EAAA,IAAA,EAAA,GAAA,EA5CP,SAAS,EACL,EA AwB,EACxB,EACA,EA AuC,EACvC,GACI,MAAA,GA
AK,EA AgB,EAAA,iBAAA,EA AG,IAAK,aAC7B,GAAQ,EA AgB,EAAA,iBAAA,EA AM,OAAQ,aACtC,GAAY,E
AAgB,EAAA,iBAAA,EA AU,WAAY,aACpD,IAAA,EA IA,EA6BG,OA hCM,MAAT,IACF,GA AS,EA AgB,EAAA,
iBAAA,EA AO,QAAS,cAG7B,MAAV,IACF,GAAU,EA AgB,EAAA,iBAAA,EA AQ,SAAU,cAE9C,EA AK,OACW
,IAAZ,EA AG,KACH,IAAM,0DACC,EA AG,SACd,EA AK,OACc,IAAf,EA AM,MAA6B,IAAf,EA AM,KAC1B,IA
AM,uEACU,EA AM,SAC1B,EA AK,OACkB,IAAnB,EA AU,MAAiC,IAAnB,EA AU,KACIC,IAAM,2EACc,EA AU
,SACpB,MAAV,GACF,EA AK,OACe,IAAhB,EA AO,MAA8B,IAAhB,EA AO,KAC5B,IAAM,wEACc,EA AO,SAE
IB,MAAX,GACF,EA AK,OACgB,IAAjB,EA AQ,MAA+B,IAAjB,EA AQ,KAC9B,IAAM,yEACc,EA AQ,UAG3B,E
AAU,EAAA,WAAA,EA AI,EA AO,EA AW,EA AS,EA AQ,GAGnD,MAAM,GA Ac,EA AG,EAAA,IAAA,CAAC,aA
AA,IAAxB,QAAA,YAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EA9
DP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,eAyDO,SAA

A,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAA
A,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,
EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EA
AA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GA
AA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OA
AA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA
,EAAA,GAAA,EA5CP,SAAS,EAACL,EAawB,EACxB,EACA,EAauC,EACvC,GACI,MAAA,GAAG,EAAGB,EA
AA,iBAAA,EAAG,IAAK,aAC7B,GAAQ,EAAGB,EAAA,iBAAA,EAAM,OAAQ,aACtC,GAAY,EAAGB,EAAA,i
BAAA,EAU,WAAy,aACpD,IAAA,EAIA,EA6BG,OAhCM,MAAT,IACF,GAAS,EAAGB,EAAA,iBAAA,EA
AO,QAAS,cAG7B,MAAV,IACF,GAAU,EAAGB,EAAA,iBAAA,EAAG,SAAU,cAE9C,EAAG,OACW,IAAZ,EAAG,
KACH,IAAM,0DACC,EAAG,SACd,EAAG,OACc,IAAf,EAAM,MAA6B,IAAf,EAAM,KAC1B,IAAM,uEACU,E
AAM,SAC1B,EAAG,OACkB,IAAnB,EAU,MAAiC,IAAnB,EAU,KACIC,IAAM,2EACc,EAU,SACpB,MAA
V,GACF,EAAG,OACe,IAAhB,EAAG,MAA8B,IAAhB,EAAG,KAC5B,IAAM,wEACc,EAAG,SAEIB,MAAX,GA
CF,EAAG,OACgB,IAAjB,EAAG,MAA+B,IAAjB,EAAG,KAC9B,IAAM,yEACc,EAAG,UAG3B,EAU,EAAA,
WAAA,EAAG,EAAG,EAAS,EAAG,GAGnD,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,aAAA,IAAxB,Q
AAA,YAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EA7DP,IAAA,EA
AA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,eAwDO,SAAA,IAAA,GA
AA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SA
AA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAA
A,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,
gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,
IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,E
AAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GA
AA,EA3CP,SAAS,EAACL,EAawB,EACxB,EACA,EAauC,EACvC,GACI,MAAA,GAAG,EAAGB,EAAA,iBAAA,
EAAG,IAAK,aAC7B,GAAQ,EAAGB,EAAA,iBAAA,EAAM,OAAQ,aACtC,GAAY,EAAGB,EAAA,iBAAA,EA
U,WAAy,aACpD,IAAA,EAIA,EA4BG,OA/BM,MAAT,IACF,GAAS,EAAGB,EAAA,iBAAA,EAAG,QAAS,cAG
7B,MAAV,IACF,GAAU,EAAGB,EAAA,iBAAA,EAAG,SAAU,cAE9C,EAAG,OACW,IAAZ,EAAG,KACH,IAA
M,0DACC,EAAG,SACd,EAAG,OACc,IAAf,EAAM,MAA6B,IAAf,EAAM,KAC1B,IAAM,uEACU,EAAM,SAC1
B,EAAG,OACkB,IAAnB,EAU,MAAiC,IAAnB,EAU,KACIC,IAAM,2EACc,EAU,SACpB,MAAV,GACF,E
AAG,OACe,IAAhB,EAAG,MAA8B,IAAhB,EAAG,KAC5B,IAAM,wEACc,EAAG,SAEIB,MAAX,GACF,EAAG,
OACgB,IAAjB,EAAG,MAA+B,IAAjB,EAAG,KAC9B,IAAM,yEACc,EAAG,UAE3B,EAU,EAAA,WAAA,EA
AG,EAAG,EAAS,EAAG,GAGnD,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,aAAA,IAAxB,QAAA,YAA
A;;ACVA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAnDP,IAAA,EAAA,QAAA,
aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eA0CO,SAAA,
IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,
EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,E
AAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EA
AA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAA
A,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAA
A,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,
EAAA,GAAA,EAvBP,SAAS,EAACL,EAaIB,EAuB,GACpC,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAA
K,YAC7B,GAAW,EAAGB,EAAA,iBAAA,EAAS,UAAW,YAErD,EAAG,OACY,UAAb,EAAG,MACH,IAAM,4D
AC8B,EAAG,SAC3C,EAAG,OAAO,GAAQ,EAAG,0CAA4C,MACnE,EAAG,OACD,EAAS,OAAS,EAAG,MAA
0B,IAAIB,EAAS,KACtC,IAAM,mGACgC,EAAG,4BACIC,EAAS,UAEEd,MAAA,EAyB,CAAC,EAAG,EAAG,
EAAG,GAC1C,EAuB,CAAC,KAAA,GAEvB,OAAA,EAAG,OAAA,UACV,EADG,SACO,EAAGC,GAGzC,MAA
M,GAAG,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;;ACoBA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,iBAAA,EAAG,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAA
A,sBAGA,EAAA,QAAA,WACA,EAAA,QAAA,eACA,EAAA,QAAA,aAgBA,SAAS,EAACL,EAAsB,GACpB,IAA

A,GAAQ,EAAgB,EAAA,iBAAA,EAAG,cAAe,KACxC,MAAA,EAAS,EAAM,MAEjB,GAAA,EAAM,KAAK,KA
AO,EAAI,IAAM,EAAI,GAAM,GACIC,MAAA,IAAI,iDAaID,OAGzD,GAAA,EAAM,OAAS,EAAM,KACjB,M
AAA,IAAI,qCAAqC,EAAM,uBACjD,EAAM,SAGR,GAAA,EAAM,OAAS,EAAM,KAAM,CACvB,MAAA,EAA
W,EAAM,MAAM,QACtB,KAAA,EAAS,OAAS,EAAM,QAC7B,EAAS,QAAQ,GAEnB,GAAQ,EAAQ,EAAA,SA
AA,EAAO,GAGnB,MAAA,EAAa,EAAM,MACnB,EAAiB,MAAM,KAAK,GAC7B,IAAA,IAAI,EAAI,EAAM,O
AAS,EAAG,GAAG,EAAG,IACjC,GAAA,EAAM,KAAO,EAAM,GAC1B,EAAG,GAAG,OAAC,GAAuB,IAAnB,
EAAM,MAAM,GACf,MAAA,IAAI,yBACa,8BAAmC,OAK1D,GAAgB,IAFP,EAAG,IAAI,CAAC,EAAG,IAAM,
EAAI,EAAI,GAAG,GAAG,OAAC,GAAG,GAAG,GAExD,OACA,OAAA,EAAM,EAAA,OAAA,GAIT,MAAA,E
AAqB,CAAC,EAAG,GACzB,EAAM,CAAC,KAAA,GACnB,OAAA,EAAO,OAAA,UACV,EADG,KACG,EAA
gC,GAGrC,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,aAAA,IAAxB,QAAA,YAAA;;AC5CA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBA
GA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAawB,GACzB,MAEA,EAAqB,CAAC,GAfjB,EAAGB,
EAAA,iBAAA,EAAG,IAAK,SAG5B,OAAA,EAAO,OAAA,UAAU,EAAjB,KAAuB,GAezB,MAAM,GAAO,EA
AG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACYA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA
A,IAAA,QAAA,iBAAA,EAxCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAA
A,EAAA,QAAA,YAEA,EAAA,QAAA,eA+BO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAA
A,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAA
A,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,E
AAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,E
AAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,G
AAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAA
A,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAfP,SAAS,EAAC,EAaiB,EAAsB,GACnC,
MAAA,GAAG,EAAG,EAAA,iBAAA,EAAG,IAAK,eACnC,EAAG,OAAC,GAAGB,EACjB,2BAA6B,4CACK,O
AEhC,MAAA,EAA4B,CAAC,EAAG,GACChC,EAA0B,CAAC,aAAA,EAAC,aAAA,GAExC,OAAA,EAAO,OAAA
,UACV,EADG,YACU,EAAGC,GAG5C,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,aAAA,IAAxB,QAAA,YAAA
;;ACnBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAIBP,IAAA,EAAA,QAAA,Y
ACA,EAAA,QAAA,eAaA,SAAS,EAU,GACV,OAAA,EAAO,EAAA,QAAA,EAAS,GAGIB,MAAM,GAAG,EA
AG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;;ACiBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA
A,IAAA,QAAA,cAAA,EAnCP,IAAA,EAAA,QAAA,YACA,EAAA,QAAA,eA6BA,SAAS,EAAC,EAAGC,GACCh
C,OAAA,EAAO,EAAA,QAAA,EAAS,GAGIB,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAA
A,SAAA;;ACIA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAxCP,IAAA,EAAA,Q
AAA,YACA,EAAA,QAAA,eAiCA,SAAS,EAAC,EAAGC,GACChC,OAAA,EAAO,EAAA,QAAA,EAAS,GAGIB,
MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;;ACvBA,aAAA,OAAA,eAAA,QAAA,
aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAhBP,IAAA,EAAA,QAAA,YACA,EAAA,QAAA,eAUA,SAAS,EA
CL,EAAGC,GACChC,OAAA,EAAO,EAAA,QAAA,EAAS,GAGIB,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,U
AAA,IAArB,QAAA,SAAA;;ACmFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,E
AtGP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,E
AAA,EAAA,QAAA,gBACA,EAAA,QAAA,eACA,EAAA,QAAA,aA2FO,SAAA,IAAA,GAAA,mBAAA,QAAA,
OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,G
AAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EA
AA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBA
AA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA
,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,
EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAzDP,SAAS,EA
CL,EAaiB,EACjB,EACA,EACA,EAA4B,OAC5B,EAAGC,CAAC,EAAG,GACzC,GACI,MAAA,GAAG,EAAGB,
EAAA,iBAAA,EAAG,IAAK,UAC7B,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,UAE9C,IAAA,EAAM,EAC
N,GAAe,EAeh,IAAZ,EAAG,OAAC,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAAL,CAAC,EAAG,EAAG,MA
AM,GAAL,EAAG,MAAM,GAAL,EAAG,MAAM,MAG3D,EAAG,OAAC,IAAb,EAAL,KACJ,2DAA6D,EAAL,SA

CrE,EAAK,OACgB,IAAjB,EAAQ,KACR,IAAM,2DACC,EAAQ,SACI,MAAnB,GACF,EAAK,OACD,EAAK,M
AAM,GACX,IAAM,0EACiB,iBAA+B,MAGtD,MAAA,EAAYB,SAAf,EAAwB,EAAl,MAAM,GAAK,EAAl,MA
AM,GACjE,EAAK,OACD,IAAY,EAAQ,MAAM,GAC1B,wCAA0C,2CACZ,EAAQ,MAAM,OAChD,EAAK,OA
CD,EAAU,+BAA+B,EAAS,GACID,IAAM,0EACa,oBAA0B,MAE3C,MAAA,EAAB,CAAC,EAAG,EAAK,OA
AQ,GACxC,EACY,CAAC,QAAA,EAAS,IAAA,EAAK,WAAA,EAAY,UAAA,EAAW,gBAAA,GAGID,EAAM,E
AAO,OAAA,UACH,EADJ,OACY,EACR,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAl,MAA
M,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM,KAEtD,EAGF,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,I
AAnB,QAAA,OAAA;;ACHA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAIGP,I
AAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,YACA,EAAA,EAAA,QAAA,gBACA,E
AAA,QAAA,eACA,EAAA,QAAA,aA2FO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IA
AA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,O
AAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA
,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA
,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,
KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OA
AA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA7DP,SAAS,EACL,EAAlB,EAA6B,EAC9C,EA
CA,EAA0B,MAAO,EAAW,EAC5C,GACI,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAC7B,GAU,
EAAGB,EAAA,iBAAA,EAAQ,SAAU,UAE9C,IAAA,EAAM,EACN,GAAe,EACH,IAAZ,EAAG,OACL,GAAe,E
ACf,GAAM,EAAQ,EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAAM,MAG9C,EAAK,O
ACY,IAAb,EAAl,KACJ,2DAA6D,EAAl,SACrE,EAAK,OACgB,IAAjB,EAAQ,KACR,IAAM,2DACC,EAAQ,SA
CI,MAAnB,GACF,EAAK,OACD,EAAK,MAAM,GACX,IAAM,0EACiB,iBAA+B,MAG5D,EAAK,OACD,EAAl,
MAAM,KAAO,EAAQ,MAAM,GAC/B,wCAA0C,EAAl,MAAM,4CACtB,EAAQ,MAAM,OACbD,EAAK,OACD,
EAAU,+BAA+B,EAAQ,GACjD,IAAM,uEACY,mBAAwB,MAC9C,EAAK,OACc,QAaf,EACA,0CACI,0CAEF,
MAAA,GAAW,EACb,EAAA,SAAA,EAAS,CAAC,EAAG,EAAQ,MAAM,GAAl,EAAQ,MAAM,GAAl,EAAQ,M
AAM,KAC7D,GAU,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAl,MAAM,GAAl,EAAG,EAAl,MAAM,GAAl,EA
Al,MAAM,KACjE,EAA4B,CAAC,EAAG,GACb,EAA8B,CAAC,EAAG,GAAlC,GAAM,EACP,EAAA,QAAA,E
AAuB,EAAuB,EAAS,EAHnC,OAIH,EAAW,GAE7B,OAAA,GACK,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAl,
MAAM,GAAl,EAAl,MAAM,MAGxC,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAl,MAAM,GAAl,EAAl,MAAM,
GAAl,EAAl,MAAM,KAGtD,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACEA,
aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAfGP,IAAA,EAAA,QAAA,aACA,EA
AA,QAAA,mBAIA,EAAA,EAAA,QAAA,YAGA,EAAA,QAAA,eACA,EAAA,QAAA,aA4FO,SAAA,IAAA,GA
AA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SA
AA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAA
A,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,
gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,
IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,E
AAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GA
AA,EAIEP,SAAS,EACL,EAAMe,EACnE,EAakB,EACiB,EACA,EAA4B,OAC5B,GACF,EAAK,OACD,EAAO,S
AAW,EAAG,KACrB,IAAM,yBACE,EAAO,2BAA2B,EAAG,oBAE7C,IAAA,EAAW,EACX,EAAO,EACP,GAAe
,EACH,IAAZ,EAAG,OACL,GAAe,EACf,GAAO,EAAQ,EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GA
Al,EAAG,MAAM,GAAl,EAAG,MAAM,KAC1D,EAAW,CAAC,EAAG,EAAO,GAAl,EAAO,GAAl,EAAO,KAG
9C,EAAK,OACmB,IAApB,EAAS,OACT,IACI,wEACG,EAAS,WACpB,EAAK,OACa,IAAd,EAAK,KACL,IAA
M,+DACM,EAAK,QACrB,EAAK,OACe,IAAhB,EAAO,KACP,IAAM,mEACM,EAAO,QACjB,MAAA,EAAYB,
SAAf,EAAwB,EAAS,GAAK,EAAS,GACzD,EAA0B,SAAf,EAAwB,EAAK,MAAM,GAAK,EAAK,MAAM,GAC
pE,EAAK,OACD,IAAY,EAAO,MAAM,GACzB,gDAaKd,2CACd,EAAO,MAAM,OACrD,EAAK,OACD,IAAa,E
AAO,MAAM,GAC1B,iDAAmD,4CACd,EAAO,MAAM,OAC/B,MAAnB,GACF,EAAK,OACD,EAAK,MAAM,G
ACX,IAAM,kFACiB,iBAA+B,MAGtD,MAAA,EAaOC,CAAC,GAAl,EAAM,OAAA,GAE/C,EACF,CAAC,QAA
A,EAAS,IAAA,EAAK,WAAA,EAAY,gBAAA,EAAlB,WAAy,GAGtD,EAAM,EAAO,OAAA,UACH,EADJ,oBA

CyB,EACrB,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAI,MAAM,GAAl,EAAI,MAAM,GAAI,EAAI,MAAM,GAAI,EAAI,MAAM,KAETD,EAGF,MAAM,GAAsB,EAAG,EAAA,IAAA,CAAC,qBAAA,IAAhC,QAAA,oBAAA;;AC9DA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAtCP,IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,2BACA,EAAA,QAAA,eAsBA,SAAS,EACL,EAAiB,EACjB,EACA,EAAkC,EACiC,GACI,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,mBAC7B,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,mBAE3C,OAAA,EACH,EAAA,qBAAA,EAAa,EAAI,EAAS,EAAS,EAAK,OAAQ,GAG/C,MAAM,GAakB,EAAG,EAAA,IAAA,CAAC,iBAAA,IAA5B,QAAA,gBAAA;;AC0DA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAAA,QAAA,YAAA,EAjGP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,eACA,EAAA,QAAA,aAsFO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EA AA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EA AA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA pD P,SAAS,EACL,EAAiB,EACjB,EAA0C,EACiC,EAA8B,QAC9B,EAA6C,CAAC,EAAG,EAAG,IACHd,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAC7B,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,UAE9C,IAAA,EAAM,EACN,GAAe,EA EH,IAAZ,EAAG,OACL,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAAI,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,MAExE,EAAK,OACY,IAAb,EAAI,KACJ,2DAA6D,EAAI,SACrE,EAAK,OACgB,IAAjB,EAAQ,KACR,IAAM,2DACC,EAAQ,SACnB,EAAK,OACD,EAAI,MAAM,KAAO,EAAQ,MAAM,GAC/B,wCAA0C,EAAI,MAAM,4CACtB,EAAQ,MAAM,OACHd,EAAK,QACD,EAA+B,EAAA,gCAAA,EAAS,GACxC,IAAM,0EACa,oBAA0B,MACjD,EAAK,OACc,UAAf,EACA,0CACI,4CAEF,MAAA,EA AuB,CAAC,EAAG,EAAK,OAAQ,GAExC,EAAqB,CAAC,QAAA,EAAS,IAAA,EAAK,WAAA,EAAY,UAAA,GAGhD,EAAM,EAAO,OAAA,UACH,EADJ,OACY,EACR,GAEZ,OAAA,GACK,EACI,EAAA,SAAA,EAAK,CAAC,EAAI,MAAM,GAAl,EAAI,MAAM,GAAl,EAAI,MAAM,GAAl,EAAI,MAAM,KAGhE,EAGF,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACPA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAIFP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,aAkFO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA9DP,SAAS,EACL,EAGA,EAAO,EAakB,EACzB,GACf,EAAK,OACD,EAAO,SAAW,EAAG,KACrB,IAAM,yBACE,EA AO,2BAA2B,EAAG,oBAE7C,IAAA,EA AW,EACX,EAAO,EACP,GAAe,EACH,IAAZ,EAAG,OACL,GAAe,EAC f,GAAO,EAAQ,EAAA,SAAA,EAAI,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,KACvE,EA AW,CAAC,EAAG,EAAO,GAAl,EAAO,GAAl,EAAO,GAAl,EAAO,KAGnD,MAAA,EA AU,EAAS,GACnB,EA AW,EAAK,MAAM,GAC5B,EAAK,OACmB,IAApB,EAAS,OACT,IACI,wEACG,EAAS,WACpB,EAAK,OACa,IAAd,EAAK,KACL,IAAM,+DACM,EAAK,QACrB,EAAK,OACe,IAAhB,EA AO,KACP,IAAM,mEACM,EAAO,QACvB,EAAK,OACD,IAAY,EAAO,MAAM,GACzB,gDAakD,2CACd,EAA O,MAAM,OACrD,EAAK,OACD,IAAa,EAAO,MAAM,GAC1B,iDAAmD,4CACd,EAAO,MAAM,OA EhD,MAA A,EAAsC,CAAC,GAAl,EAAM,OAAA,GAEjD,EAC2B,CAAC,IAAA,EAAK,QAAA,EAAS,WAAY,GAGtD,EAAM,EAAO,OAAA,UACH,EADJ,sBAC2B,EACvB,GAEZ,OAAA,GACK,EACI,EAAA,SAAA,EAAK,CAAC,EAAI,MAAM,GAAl,EAAI,MAAM,GAAl,EAAI,MAAM,GAAl,EAAI,MAAM,KAGhE,EAGF,MAAM,GAAsB,EAAG,EAAA,IAAA,CAAC,qBAAA,IAAhC,QAAA,oBAAA;;ACpDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EArCP,IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,2BACA,EAAA,QAAA,eAqBA,SAAS,EACL,EAAiB,EACjB,EAGA,EAA0C,GACtC,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,mBAC7B

,GAAU,EAAgB,EAAA,iBAAA,EAAQ,SAAU,mBAE3C,OAAA,EAAoB,EAAA,qBAAA,EAAa,EAAI,EAAS,EAAS,GAGzD,MAAM,GAakB,EAAG,EAAA,IAAA,CAAC,iBAAA,IAA5B,QAAA,gBAAA;;ACTA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAauB,GACxB,MAEA,EAAoB,CAAC,GAfhB,EAAGB,EAAA,iBAAA,EAAG,IAAK,QAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,IAAsB,GAExB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAawB,GACzB,MACA,EAaqB,CAAC,GADjB,EAAGB,EAAA,iBAAA,EAAG,IAAK,SAAG5B,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAezB,MAAM,GAao,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACiBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EA5CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAyBA,SAAS,EAcl,EAAsB,EAAO,EAAG,GAAY,EAAO,GAAU,GACzD,MAEA,EAauB,CAAC,GAfnB,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAG7B,EAaqB,CAAC,KAAA,EAAM,UAAA,EAaw,QAAA,GAetC,OAAA,EAAO,OAAA,UACV,EAADG,OACK,EAAGc,GAGvC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACgBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EA5DP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eAmDO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAsA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAsA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAsA,GAAA,EA9BP,SAAS,EAcl,EAaiB,EAauB,EACxC,GAAe,GACX,MAAA,GAak,EAAGB,EAAA,iBAAA,EAAG,IAAK,iBAC7B,GAaw,EAAGB,EAAA,iBAAA,EAAS,UAAW,iBAErD,EAak,OACy,UAAb,EAAG,MACh,IAAM,iEAC8B,EAAG,SAC3C,EAak,OACD,EAAG,MAAQ,EACX,IAAM,yEACM,EAAG,SACnB,EAak,OAao,GAAQ,EAAG,0CAA4C,MACnE,EAak,OACD,EAAS,OAAS,EAAG,MAA0B,IAAIB,EAAS,KACtC,IACI,kGAC8B,EAAG,4BAC9B,EAAS,UAEd,MAAA,EAa8B,CAAC,EAAG,EAai,QAAS,GAC/C,EAa4B,CAAC,KAAA,EAAM,aAAA,GAeIC,OAAA,EAAO,OAAA,UACV,EAADG,cACy,EACf,GAGC,MAAM,GAAGB,EAAG,EAAsA,IAAA,CAAC,eAAA,IAA1B,QAAA,cAAA;;ACuBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EAAnFP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAsA,QAAA,YAEA,EAAA,QAAA,eA0EO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAAnCP,SAAS,EAcl,EAa0B,EAC1B,EAa4B,QACxB,MAAA,GAak,EAAGB,EAAA,iBAAA,EAAG,IAAK,gBAE7B,EAa8B,SAaf,EAayB,EAAG,MAAM,GAak,EAAG,MAAM,GAC/D,EAa6B,SAaf,EAayB,EAAG,MAAM,GAak,EAAG,MAAM,GAepE,EAak,OACD,EAac,GAAa,EAC3B,wEACA,SAAmB,6CACnB,EAAG,SAEP,EAak,OACD,EAaa,GAAa,EAC1B,wEACA,SAakB,gDACd,EAAG,SAEX,EAak,OACA,GAac,EAAY,IAAe,EAC1C,kDACI,EAAY,YACZ,uCAAGD,EAAG,SAErD,MAAA,EAa6B,CAAC,EAAG,GACjC,EAa2B,CAAC,UAAA,EAaw,WAAA,GAetC,OAAA,EAAO,OAAA,UACV,EAADG,aACW,EACd,GAGC,MAAM,GAae,EAAG,EAAA,IAAA,CAAC,cAAA,IAAzB,QAAA,aAAA;;ACwBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EA5GP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAsA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,aAkGO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,O

AAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OA
AA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAA
A,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAA
A,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAnDP
,SAAS,EACL,EAAiB,EACjB,EAAkC,EACiC,EAA4B,OAC5B,EAAqC,CAAC,EAAG,GACzC,GACI,MAAA,GA
AK,EAAGB,EAAA,iBAAA,EAAG,IAAK,mBAC7B,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,mBAE9C,IAA
A,EAAM,EACN,GAAe,EACH,IAAZ,EAAG,OACL,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAAL,CAAC,EA
AG,EAAG,MAAM,GAAL,EAAG,MAAM,GAAL,EAAG,MAAM,MAE3D,EAAG,OACY,IAAb,EAAL,KACJ,IAA
M,mEACM,EAAL,SACpB,EAAG,OACgB,IAAjB,EAAQ,KACR,IAAM,oEACC,EAAQ,SACnB,EAAG,OACD,E
AAL,MAAM,KAAO,EAAQ,MAAM,GAC/B,IAAM,0DACE,EAAL,MAAM,wDACJ,EAAQ,MAAM,OAET,MAAn
B,GACF,EAAG,OACD,EAAG,MAAM,GACX,IAAM,mFACiB,iBAA+B,MAGtD,MAAA,EAAsC,CAAC,EAAG,
EAAG,OAAQ,GACvD,EACF,CAAC,QAAA,EAAS,IAAA,EAAG,WAAA,EAAY,UAAA,EAAG,gBAAA,GAGp
C,EAAM,EAAG,OAAA,UACH,EADJ,sBAC2B,EACvB,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAAG,CAA
C,EAAL,MAAM,GAAL,EAAL,MAAM,GAAL,EAAL,MAAM,KAETd,EAGF,MAAM,GAAGB,EAAG,EAAA,IAAA,
CAAC,iBAAA,IAA5B,QAAA,gBAAA;;ACtEA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA
,UAAA,EArcP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,eAuB
A,SAAS,EAAM,GACP,MAEA,EAAqB,CAAC,GAfjB,EAAGB,EAAA,iBAAA,EAAG,IAAK,SAI5B,OAAA,EA
O,OAAA,UAAU,EAAjB,KAAuB,GAGzB,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,K
AAA;;ACkDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAvFP,IAAA,EAAA,Q
AAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,E
AAA,QAAA,aA6EO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,E
AAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,E
AAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAA
A,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAA
A,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA
,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,E
AAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5CP,SAAS,EACL,EAAiB,EACjB,EAAkC,EACiC,EAAqC,CAAC,E
AAG,GACzC,EAAqB,QACjB,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,cAC7B,GAAU,EAAGB,EA
A,iBAAA,EAAQ,SAAU,cAEID,EAAG,OACW,IAAZ,EAAG,MAA0B,IAAZ,EAAG,KACpB,IAAM,mEACC,EA
AG,SACd,EAAG,OACgB,IAAjB,EAAQ,KACR,IAAM,+DACC,EAAQ,SACnB,EAAG,OACc,SAAf,EACA,IAA
M,mFACuB,KAET7B,IAAA,EAAM,EACN,GAAe,EAEH,IAAZ,EAAG,OACL,GAAM,EAAQ,EAAA,SAAA,EAAL
,CAAC,EAAG,EAAG,MAAM,GAAL,EAAG,MAAM,GAAL,EAAG,MAAM,KACzD,GAAe,GAGX,MAAA,EAAG2
B,CAAC,EAAG,EAAG,OAAQ,GAC5C,EAAYB,CAAC,QAAA,EAAS,IAAA,EAAG,UAAA,GAGxC,EAAM,EA
AO,OAAA,UACH,EADJ,WACgB,EACZ,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAAG,CAAC,EAAL,MAA
M,GAAL,EAAL,MAAM,GAAL,EAAL,MAAM,KAGtD,EAGF,MAAM,GAAa,EAAG,EAAA,IAAA,CAAC,YAAA,I
AAvB,QAAA,WAAA;;ACIBN,aA5DK,SAAU,EACZ,EAAGB,GACf,MAAA,EAAS,EAAQ,OACjB,EAAiB,GACI
B,IAAA,IAAL,EAAL,EAAG,EAAL,EAAQ,IAAG,CACzB,MAAA,EAAM,EAAS,EAAL,EACnB,EAAL,EAAQ,IAA
Q,GAChB,EAAS,EAAS,OAAS,EAAL,IAAM,GACvC,GAAG,IAAN,GACX,EAAG,QAAQ,GAGV,OAAA,EAOH
,SAAU,EACZ,EAAGB,GACf,MAAA,EAAGB,GACpB,IAAA,IAAL,EAAL,EAAG,EAAL,EAAS,OAAQ,IAAG,CA
CIC,MAAA,EAAQ,EAAQ,EAAQ,OAAS,EAAL,GACrC,EAAG,EAAS,OAAS,EAAL,EACHC,EAAS,EAAS,IACX,
MAAT,GAA4B,IAAV,GAAe,EAAS,IAC5C,EAAG,QAAQ,GAGZ,OAAA,EAGH,SAAU,EACZ,EAAGB,GACd,M
AAA,EAAGB,GACnB,EAAL,KAAK,IAAL,EAAG,OAAQ,EAAG,QAEPc,IAAA,IAAL,EAAL,EAAG,EAAL,EAAG
,IAAG,CACtB,IAAA,EAAL,EAAG,EAAG,OAAS,EAAL,GACiB,MAAL,IACF,EAAL,GAEF,IAAA,EAAL,EAAG,
EAAG,OAAS,EAAL,GAIB,GAHK,MAAL,IACF,EAAL,GAEL,IAAN,EACF,EAAG,QAAQ,QACV,GAAU,IAAN,
EACT,EAAG,QAAQ,OACV,CAAA,GAAL,IAAM,EAAG,CAGZ,MAAA,MAFS,2DACR,SAAG,MAGrB,EAAG,Q
AAQ,IAGZ,OAAA,EACR,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAAA,QAAA,iBAA
AA,EAAA,QAAA,2BAAA;;AC/BM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,E
AvCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,sBAGA,EAAA,

QAAA,oBACA,EAAA,QAAA,eAiBA,SAAS,EACL,EAAsB,GACpB,IAAA,GAACK,EAAGb,EAAA,iBAAA,EAA
G,IAAK,SAC7B,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,UACHc,EAAl,IAAM,EA Ae,EAAA,gBAAA,EAAl
,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,MAAA,EAAsB,CAAC,EAAG,EAAl,EAAG,GAEHc
,OAAA,EAAO,OAAA,UAAU,EAajB,MAAwB,GAG1B,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IA
AIB,QAAA,MAAA;;AC8BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAPEP,I
AAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,WAEA,EAAA,QAAA,
kBACA,EAAA,QAAA,oBACA,EAAA,QAAA,eAyBA,SAAS,EACL,EAAsB,EAiB,GAC3C,MAAA,GAACK,EA
AgB,EAAA,iBAAA,EAAG,IAAK,SAC7B,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,SAC7B,GAAa,EAAGb,E
AAA,iBAAA,EA AW,YAAa,QAAS,QAI9D,GAAiB,EAAsB,EAAA,4BAAA,EAAG,MAAO,EAAG,OACzD,GAA
gB,EAAY,EAAA,aAAA,EAAl,GACCh,GAAgB,EAAY,EAAA,aAAA,EAAl,GACd,IAApB,EA AW,OAIT,EAAA,
EAAA,QAAA,EA AW,MAAM,KAAO,EAAG,MAAM,GACjC,IAAM,kEAGY,IAApB,EA AW,OAGT,EAAA,EA
AA,mBAAA,EA AW,MAAO,EAAC,MAAO,oBAGvC,MAAA,EA AuB,CAC3B,UAAW,EACX,EAAG,EACH,EA
AG,GAEE,OAAA,EAAO,OAAA,UAAU,EAajB,OAAYB,GAG3B,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,O
AAA,IAAIB,QAAA,MAAA;;ACzCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA
3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAeA,SAAS,EA
A6B,GAC9B,MACA,EAAsB,CAAC,GADtB,EAAGb,EAAA,iBAAA,EAAG,IAAK,cAE5B,OAAA,EAAO,OAAA
,UAAU,EAajB,UAA4B,GAE9B,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;AC
2BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EA rDP,IAAA,EAAA,QAAA,kBAC
A,EAAA,QAAA,sBAGA,EAAA,QAAA,SACA,EAAA,QAAA,WACA,EAAA,QAAA,eACA,EAAA,QAAA,WAC
A,EAAA,QAAA,gBAGCA,SAAS,EACL,EAAsB,GAEPB,IAAA,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,OA
C7B,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,QACHc,EAAl,IAAM,EA Ae,EAAA,gBAAA,EAAl,GAExB,M
AAA,GAAY,EAAl,EAAA,KAAA,EAAl,GACpB,GAAQ,EA AU,EAAA,WAAA,GACIB,GAAC,EAAM,EAAA,O
AAA,EAAl,GACvB,OAAA,EAAM,EAAA,OAAA,EA Aa,EAAO,GAG5B,MAAM,GA AW,EAAG,EAAA,IAAA,C
AAC,UAAA,IAArB,QAAA,SAAA;;ACUA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SA
AA,EA/DP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,aACA,EAAA,QAAA,eAC
A,EAAA,QAAA,aAyDO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAA
A,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAA
A,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,
MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,
UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,E
AAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QA
AA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAiCP,SAAS,EA AK,EA AuB,GAC7B,MAAA,GAAM,EAAGb,E
AAA,iBAAA,EAAl,KAAM,OACHc,GAAM,EAAGb,EAAA,iBAAA,EAAl,KAAM,OAETc,EA AK,SACa,IAAb,E
AAI,MAA2B,IAAb,EAAl,MAA6B,IAAb,EAAl,MAA2B,IAAb,EAAl,MAC7D,IAAM,kEACC,EAAl,YAAY,EA
I,SAEzB,MAAA,EA AW,IAAb,EAAl,KAAa,EAAl,KAAO,EAAl,MAAM,GACjD,EA AW,IAAb,EAAl,KAAa,E
AAI,KAAO,EAAl,MAAM,GAOnD,GALJ,EA AK,OACD,IAAY,EACZ,IAAM,mEACC,SA Ae,MAET,IAAb,EAAl
,MAA2B,IAAb,EAAl,KAAY,CAC9B,MAAA,GAAO,EA AQ,EAAA,SAAA,EA AK,CAAC,GAAl,IACzB,GAAO,
EA AQ,EAAA,SAAA,EA AK,EA AE,EAAG,IACzB,GAAO,EAAO,EAAA,QAAA,EAAM,GACnB,OAAA,EA AQ,
EAAA,SAAA,EAAM,IACHb,GA AiB,IAAb,EAAl,MAA2B,IAAb,EAAl,KAAY,CACrC,MAAA,GAAO,EA AQ,E
AAA,SAAA,EA AK,CAAC,GAAl,IACzB,GAAO,EA AQ,EAAA,SAAA,EA AK,CAAC,EAAl,MAAM,GAAl,EAAl
,MAAM,KAC7C,GAAO,EAAO,EAAA,QAAA,EAAM,GACnB,OAAA,EA AQ,EAAA,SAAA,EAAM,CAAC,EA
AK,OACtB,GA AiB,IAAb,EAAl,MAA2B,IAAb,EAAl,KAAY,CACrC,MAAA,GAAO,EA AQ,EAAA,SAAA,EA AK,
EA AE,EAAG,IACzB,GAAO,EAAO,EAAA,QAAA,EA AK,GACIB,OAAA,EA AQ,EAAA,SAAA,EAAM,CAAC,E
AAK,OACtB,CACC,MAAA,GAAO,EA AQ,EAAA,SAAA,EA AK,CAAC,EAAl,MAAM,GAAl,EAAl,MAAM,KA
E5C,OADM,EAAO,EAAA,QAAA,EA AK,IAKiB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,Q
AAA,IAAA;;ACnCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA7BP,IAAA,EA
AA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EA AuB,GACxB,M
AEA,EA AoB,CAAC,GA FhB,EAAGb,EAAA,iBAAA,EAAG,IAAK,QAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,

IAAsB,GAGxB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACQA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EArcP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,UACA,EAAA,QAAA,eA4BO,SAAA,IAAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAbP,SAAS,EAAbB,GAC1B,IAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,OACjC,EAAK,OACY,UAb,EAAG,OAAkC,YAb,EAAG,MAC3B,IAAM,6CAEO,UAb,EAAG,QACL,GAAK,EAAK,EAAA,MAAA,EAAl,YAGV,MAAA,EAAbB,CAAC,EAAG,GACvB,OAAA,EAAO,OAAA,UAAU,EAAbB,IAAsB,GAExB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACVA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAAbB,GACxB,MAEA,EAAbB,CAAC,GAfHb,EAAGB,EAAA,iBAAA,EAAG,IAAK,QAG5B,OAAA,EAAO,OAAA,UAAU,EAAbB,IAAsB,GAExB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACYA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EArcP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eA8BO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAZP,SAAS,EA8B,EAAsB,EAAO,GAC5D,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAAc,qBAEjD,EAAK,OAAO,GAAQ,EAAG,KAAM,IAAM,sCAE7B,MAAA,EA2B,CAAC,MAAO,GACnC,EAAbB,CAAC,IAAK,GAE9B,OAAA,EAAO,OAAA,UACV,EADG,WACS,EAAGC,GAG3C,MAAM,GAAb,EAAG,EAAA,IAAA,CAAC,YAAA,IAAvB,QAAA,WAAA;;ACXA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAeA,SAAS,EAAbB,GAC1B,MAEA,EAAsB,CAAC,GAfHb,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAG5B,OAAA,EAAO,OAAA,UAAU,EAAbB,MAAwB,GAE1B,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAbB,QAAA,MAAA;;ACuBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAnDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eA0CO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAfP,SAAS,EAAbB,EAAbB,GAC1C,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,OAAQ,qBAC3C,EAAK,OACD,EAAG,OAAAS,EAAK,OACjB,yCAA2C,EAAG,qCACb,MAE/B,MAAA,EAAbB,CAAC,EAAG,GACzB,EAAbB,CAAC,KAAA,GAEnB,OAAA,EAAO,OAAA,UACV,EADG,KACG,EACN,GAGC,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,IAAbB,QAAA,KAAA;;ACaA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA7DP,IAAA,EAAA,QAAA,YACA,EAAA,QAAA,iBACA,EAAA,QAAA,eACA,EAAA,QAAA,aACA,EAAA,QAAA,UAgBA,SAAS,EAcl,EAAbB,EACjB,EAKA,EAAbB,WACF,MAAd,IACF,EAAa,GAET,MAAA,GAAO,EAAO,EAAB,QAAA,CAAC,EAAS,GAAb,GACrC,EAAl,GAAW,EAAa,EAU,EACvC,IAAA,IAAl,EAAl,EAAG,EAAl,IAAK,EACvB,EAAK,IAAl,EAAG,EAAG,GAEX,MAAA,GAAGB,EAAG,EAAA,SAAA,EAAK,WAAY,CAAC,EA

AS,IACrD,GAAC,MAAd,EACK,OAAA,EAEH,GAAsB,IAAtB,EAAW,OACN,OAAA,EAAK,EAAA,OAAA,EAA
W,EAAA,YAAA,EAAK,GAAl,CAAC,EAAW,GAAl,EAAG,IAC9C,GAA0B,IAAtB,EAAW,OAEb,OAAA,EACI,
EAAA,OAAA,EAAW,EAAA,aAAA,EAAW,EAAA,YAAA,EAAK,GAAl,GAC/B,CAAC,EAAW,GAAl,EAAW,G
AAl,EAAG,IACxC,GAA0B,IAAtB,EAAW,OAEb,OAAA,EAAK,EAAA,OAAA,EAAW,EAAA,aAAA,EAAW,E
AAA,aAAA,EAAW,EAAA,YAAA,EAAK,GAAl,GAAl,GAAl,CACrD,EAAW,GAAl,EAAW,GAAl,EAAW,GAA
I,EAAG,IAgnD,MAAA,IAAl,MACN,wEAE8B,EAAMb,YAKpD,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,K
AAA,IAAhB,QAAA,IAAA;;ACvCN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EA
zBD,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAmbA,SAAS,EACL,EAAoB,EAAsB,GACtC,MAAA,EAAM
B,CAAC,MAAA,EAAO,MAAA,EAAO,MAAA,GAEjC,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAAl;;A
CE7B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA3BP,IAAA,EAAA,QAAA,aA
CA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAyB,GAC1B,MAEA,EAAsB,
CAAC,GAFIB,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAG5B,OAAA,EAAO,OAAA,UAAU,EAajB,MAAwB,GA
E1B,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAlB,QAAA,MAAA;;ACsBA,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EahDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EA
AA,QAAA,sBAGA,EAAA,QAAA,eA4BA,SAAS,EACL,EAaiB,EAA4B,EAAO,EAAG,EAAY,GAC/D,MAGA,E
AAyB,CAAC,GAHrB,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAGI,SAFtB,EAAGB,EAAA,iBAAA,EAAS,UAAW,
SAAU,UAGzD,EAauB,CAAC,KAAA,EAAM,UAAA,GAE7B,OAAA,EAAO,OAAA,UACV,EADG,SACO,EAA
gC,GAGzC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACVA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAvCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAG
A,EAAA,QAAA,kBACA,EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eAiBA,SAAS,EACL,EA
AsB,GACpB,IAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAC7B,GAAK,EAAGB,EAAA,iBAAA,EAAG
,IAAK,YAchC,EAAl,IAAM,EAae,EAAA,gBAAA,EAAl,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,O
AEIC,MAAA,EAawB,CAAC,EAAG,EAAl,EAAG,GAEvC,OAAA,EAAO,OAAA,UAAU,EAajB,QAA0B,GAG5
B,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACAA,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EAvCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EA
A,QAAA,kBACA,EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eAiBA,SAAS,EACL,EAAsB,GA
CpB,IAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,gBAC7B,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,i
BACHc,EAAl,IAAM,EAae,EAAA,gBAAA,EAAl,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,M
AAA,EA6B,CAAC,EAAG,EAAl,EAAG,GAEvC,OAAA,EAAO,OAAA,UAAU,EAajB,aAA+B,GAGjC,MAAM
,GAAe,EAAG,EAAA,IAAA,CAAC,cAAA,IAAzB,QAAA,aAAA;;ACVA,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,UAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sB
AEA,EAAA,QAAA,eAeA,SAAS,EAawB,GACzB,MAEA,EAAqB,CAAC,OAFb,EAAGB,EAAA,iBAAA,EAAO,
QAAS,SAGxC,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAGzB,MAAM,GA AO,EAAG,EAAA,IAAA,CAA
C,MAAA,IAajB,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,
EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,
EAA4B,GAC7B,MAEA,EAyB,CAAC,GAFrB,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAI5B,OAAA,EAAO,OA
AA,UAAU,EAajB,SAA2B,GAE7B,MAAM,GA AW,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;;
ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA5BP,IAAA,EAAA,QAAA,aA
CA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAyB,GAC1B,MAEA,EAAsB,
CAAC,GAFIB,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,MAAwB,GA
E1B,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAlB,QAAA,MAAA;;ACDA,aAAA,OAAA,eAAA,QA
AA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EA
AA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAyB,GAC1B,MACA,EAAsB,CAAC,GADIB,EAAGB,EAAA,i
BAAA,EAAG,IAAK,UAG5B,OAAA,EAAO,OAAA,UAAU,EAajB,MAAwB,GAE1B,MAAM,GAAQ,EAAG,EA
AA,IAAA,CAAC,OAAA,IAAlB,QAAA,MAAA;;ACUA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA
A,QAAA,eAAA,EArcP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAA
A,eAmBA,SAAS,EA6B,EAaiB,EAQ,IACvD,MAEA,EAA0B,CAAC,GAFTB,EAAGB,EAAA,iBAAA,EAAG,I
AAK,cAG7B,EAawB,CAAC,MAAA,GAExB,OAAA,EAAO,OAAA,UACV,EADG,UACQ,EAAGC,GAG1C,MA

AM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,UAAA,EAtCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAA
A,kBACA,EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eAgBA,SAAS,EACL,EAAsB,GACpB,I
AAA,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,QAC7B,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,SACbC
,EAAI,IAAM,EAAe,EAAA,gBAAA,EAAL,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,MAAA,E
AAqB,CAAC,EAAG,EAAI,EAAG,GAEB,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAGzB,MAAM,GAA
O,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,eAAA,EAvCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,
EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eAiBA,SAAS,EACL,EAAsB,GACpB,IAAA,GAACK
,EAAGb,EAAA,iBAAA,EAAG,IAAK,aAC7B,GAACK,EAAGb,EAAA,iBAAA,EAAG,IAAK,cAChC,EAAI,IAAM,
EAAe,EAAA,gBAAA,EAAL,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,MAAA,EAA0B,CAAC,
EAAG,EAAI,EAAG,GAEPc,OAAA,EAAO,OAAA,UAAU,EAajB,UAA4B,GAG9B,MAAM,GAAY,EAAG,EA
A,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACdN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,
QAAA,SAAA,EAxBd,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAgBM,SAAU,EAAS,EAAe,EAAC,GACbD
,GAAA,GAO,EACh,MAAA,IAAI,MAAM,4CAGZ,MAAA,EAuB,CAAC,MAAA,EAAO,KAAA,EAAM,IA
A,GACpC,OAAA,EAAO,OAAA,UAAU,EAajB,SAA2B,GAAL;;ACuCjC,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,gCAA,EA9DP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sB
AEa,EAAA,EAAA,QAAA,YAEa,EAAA,QAAA,eACA,EAAA,QAAA,aAoDO,SAAA,IAAA,GAAA,mBAAA,Q
AAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GA
AA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAA
A,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA
,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,E
AAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,G
AAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAnCP,SA
AS,EACL,EAaiB,EAAC,EAAG,EAAO,EAAG,EAAQ,EAAG,EAAO,IAC1D,MAAA,GAACK,EAAGb,EAAA,iB
AA,EAAG,IAAK,8BACnC,EAACK,OACW,IAAZ,EAAG,MAA0B,IAAZ,EAAG,KACpB,-FACgB,EAAG,SACvB,
EAAK,OACD,EAAK,MAAM,GACX,IAAM,8FAC6B,MAEnC,IAAA,EAAM,EACN,GAae,EACH,IAAZ,EAAG,
OACL,GAae,EACf,GAAM,EAAQ,EAAA,SAAA,EAAL,CAAC,EAAG,EAAG,MAAM,GAAL,EAAG,MAAM,GA
AL,EAAG,MAAM,MAGrD,MAAA,EAAoB,CAAC,EAAG,GAExB,EAakB,CAAC,YAAA,EAAa,KAAA,EAAM,
MAAA,EAAO,KAAA,GAG7C,EAAM,EAAO,OAAA,UACH,EADJ,IACS,EACL,GAEZ,OAAA,GACK,EAAQ,E
AAA,SAAA,EAACK,CAAC,EAAI,MAAM,GAAL,EAAL,MAAM,GAAL,EAAL,MAAM,KAEPd,EALJ,MAAM,GAA
6B,EAAG,EAAA,IAAA,CAAC,4BAAA,IAAvC,QAAA,2BAAA;;ACnCA,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,SAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sB
AGA,EAAA,QAAA,eAcA,SAAS,EAuB,GACxB,MAEA,EAAoB,CAAC,GAfHb,EAAGb,EAAA,iBAAA,EAAG
,IAAK,QAG5B,OAAA,EAAO,OAAA,UAAU,EAajB,IAAsB,GAExB,MAAM,GAAM,EAAG,EAAA,IAAA,CAA
C,KAAA,IAAhB,QAAA,IAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,
EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAeA,SAAS,
EAayB,GAC1B,MAEA,EAAsB,CAAC,GAfIB,EAAGb,EAAA,iBAAA,EAAG,IAAK,UAG5B,OAAA,EAAO,OA
AA,UAAU,EAajB,MAAwB,GAElB,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAIb,QAAA,MAAA;
;ACoVN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,cAAA,EAAA,
QAAA,aAAA,EAAA,QAAA,cAAA,EAAA,QAAA,KAAA,EAAA,QAAA,MAAA,EAhXD,IAAA,EAAA,QAAA,
YACA,EAAA,QAAA,YAEa,EAAA,QAAA,qBAEA,EAAA,EAAA,QAAA,WA2WC,SAAA,IAAA,GAAA,mBA
AA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EA
A,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,
OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,O
AAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EA
AA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EA
AA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA

D,SAAS,EAAK,GAIL,OAFP,EAAK,OACD,EAAK,WAAW,GAAl,IAAM,8CACvB,CAAC,EAAsB,KAeTB,MAA
A,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,UAAW,qBACx,C,EACK,MAAN,GAAC,EAAGB,EAAA,iBAAA,E
AAI,KAAM,WAAa,KACnD,OAAA,EAAO,OAAA,KAAK,KACX,MAAA,MAAC,EAAD,MAAQ,GAAS,EAAO,
OAAA,UAAU,IAAM,EAAE,GAAK,CAAC,GAAK,GAQpD,OAPI,MAAP,GACF,EAAK,kBACD,EAAM,MAAO,
EAAI,MACjB,kFAGN,EAAW,GACJ,EAAM,MAkCnB,SAAS,EAAM,GAIN,OAFP,EAAK,OACD,EAAK,WAA
W,GAAl,IAAM,+CACvB,CAAC,EAAGC,KACtC,EAAK,OACD,MAAM,QAAQ,GACd,IAAM,oFAGJ,MAAA,G
ACF,EAAGB,EAAA,sBAAA,EAAM,OAAQ,WAAy,qBAC7C,EACK,MAAN,GAAC,EAAGB,EAAA,iBAAA,EA
AI,KAAM,YAAc,KACpD,OAAA,EAAO,OAAA,KAAK,KACX,MAAA,MAAC,EAAD,MAAQ,GAAS,EAAO,O
AAA,UAAU,IAAM,KAAK,GAAQ,EAAO,GAQ3D,OAPI,MAAP,GACF,EAAK,kBACD,EAAM,MAAO,EAAI,M
ACjB,iGAGN,EAAW,GACJ,KA8Bb,SAAS,EAAiD,GAQjD,OAHP,EAAK,OACD,EAAK,WAAW,GACHB,IAAM
,sDACH,CAAC,EAAM,KACZ,EAAK,OACD,aAAa,EADjB,OAEL,IAAM,uDACV,EAAK,OACK,MAAN,GAAC,a
AAc,EADhC,OAEL,IAAM,4DACJ,MAAA,MAAC,EAAD,MAAQ,GAAS,EAAO,OAAA,UAAU,IAAM,EAAE,G
AAI,CAAC,GAAl,GAElD,OADP,EAAW,GACJ,CAAC,KAAM,EAAM,GAAS,MAAA,IAMcJc,SAAS,EAAGC,G
AQhC,OAHP,EAAK,OACD,EAAK,WAAW,GACHB,IAAM,uDACH,CAAC,EAAGB,KACtB,EAAK,OACD,MA
AM,QAAQ,IAAS,EAAK,MAAM,GAAO,aAAe,EAAjC,QACvB,IAAM,sEAEV,EAAK,OACK,MAAN,GAAC,aA
Ac,EADhC,OAEL,IAAM,gEACJ,MAAA,EAAM,EAAO,OAAA,UAAU,IAAM,KAAK,GAAO,EAAM,GAQ9C,OA
PG,MAAN,GACF,EAAK,kBACD,EAAI,MAAM,MAAO,EAAG,MACpB,yGAGN,EAAW,EAAI,OACR,GAKCX,
SAAS,EAAC,EAAiB,GAETC,EAAK,OACD,EAAK,WAAW,GACHB,IAAM,uDACV,EAAK,OACU,MAAX,GACI
,MAAM,QAAQ,IAAY,EAAQ,MAAM,GAAK,aAAa,EAAhC,UAC9B,IACI,iFAGF,MAAA,EAASB,MAAX,EACr
B,IAAC,EAakB,CAErB,EAAU,GACL,IAAA,MAAM,KAaw,EAAO,OAAA,oBAC3B,EAAQ,KAAK,EAAO,OA
AA,oBAAoB,IAItC,MAAA,EACF,EAAMb,EAAQ,OAAO,IAAa,EAAS,WAAa,KAGnE,EAAMb,EAAQ,OACjC,
EAAU,EAAQ,OAAO,GAAY,EAAS,WAC9C,EAAK,OACD,EAAQ,OAAS,EACjB,IAAM,mGAC+B,kBACjC,cA
EF,MACA,MAAC,EAAD,MAAQ,GAAS,EAAO,OAAA,UAAU,EAAG,EAAS,MAD3B,GAGzB,EAAK,OACD,E
AAM,KAAK,GAAU,MAAL,GACHB,IAAM,gMAGV,EAAK,OACc,IAAf,EAAM,KACN,IAAM,oFACiB,EAAM,
eAE3B,MAAA,EAA6B,GAW5B,OAVP,EAAQ,QAAQ,CAAC,EAAG,KACF,MAAZ,EAAM,KACR,EAAW,EA
E,MAAQ,EAAM,MAGF,MAAZB,GAGF,EAAsB,QAAQ,GAAK,EAAW,EAAE,MAAQ,MAEnD,CAAC,MAAA,
EAAO,MAAO,GA2CxB,SAAS,EAA6B,GAE7B,OAAA,EAAO,OAAA,WAAW,GAG3B,SAAS,EAAW,GAEd,G
ADqB,EAAM,OAAO,GAAU,MAAL,GAAW,OAC/B,EACf,MAAA,IAAI,MACN;;ACjVD,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,E
AAA,QAAA,sBAGA,EAAA,QAAA,eAeA,SAAS,EAAuB,GACxB,MAEA,EAAoB,CAAC,GAfHb,EAAGB,EA
A,iBAAA,EAAG,IAAK,QAG5B,OAAA,EAAO,OAAA,UAAU,EAajB,IAAsB,GAExB,MAAM,GAAM,EAAG,E
AAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
A,QAAA,cAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QA
AA,eAcA,SAAS,EAA4B,GAC7B,MAEA,EAAYB,CAAC,GAfRb,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAG5B,O
AAA,EAAO,OAAA,UAAU,EAajB,SAA2B,GAE7B,MAAM,GAAW,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,
QAAA,SAAA;;ACkBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EA7CP,IAAA,
EAAA,QAAA,gBAEA,EAAA,QAAA,sBAGA,EAAA,QAAA,SACA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,
EAAA,QAAA,aACA,EAAA,QAAA,cAeA,SAAS,EAA8B,GAC/B,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,
IAAK,cAkB5B,ObU,EAAY,EAAA,YAAA,IAUpB,MAAA,CAAC,OANM,EAAI,EAAA,MAAA,EAAS,EAAA,
WAAA,EAAL,EAAA,KAAA,KAMhB,SAJG,IAET,OADM,EAAI,EAAA,KAAA,GAAl,EAQ,EAAA,UAAA,EA
AI,EAAA,KAAA,QAM9B,CAAS,GAEX,MAAM,GAaa,EAAG,EAAA,IAAA,CAAC,YAAA,IAAvB,QAAA,WA
AA;;ACKA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAIDP,IAAA,EAAA,QAA
A,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA+BA,SAAS,EACL,EAAsB,EAawB,KA
AM,GAAW,GAC3D,MAEA,EAAoB,CAAC,GAfHb,EAAGB,EAAA,iBAAA,EAAG,IAAK,QAG7B,EAakB,CAA
C,iBAakB,EAAM,SAAA,GAElC,OAAA,EAAO,OAAA,UACV,EADG,IACE,EAAGC,GAGpC,MAAM,GAAM,
EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACRA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAAA,QAAA,SAAA,EA3CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EA
AA,QAAA,sBAGA,EAAA,QAAA,eAyBA,SAAS,EAAuB,EAAsB,GACHD,IAAA,GAAK,EAAGB,EAAA,iBAAA,

EAAG,IAAK,OAC7B,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,QACHC,EAAL,IAAM,EAAE,EAAA,gBAAA,
EAAL,GAExB,MAAA,EAAG,CAAC,EAAG,EAAL,EAAG,GA9B,OAAA,EAAO,OAAA,UAAU,EAAL,IAASB
,GAGxB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACYA,aAAA,OAAA,eAAA
,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAADP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,E
AAA,QAAA,sBAGA,EAAA,QAAA,UACA,EAAA,QAAA,eAgCA,SAAS,EACL,EAASB,EAawB,KAAM,GAA
W,GAC7D,IAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,OACb,SAAb,EAAG,QACL,GAAG,EAAG,EA
A,MAAA,EAAL,UAGV,MAAA,EAAG,CAAC,EAAG,GACxB,EAAG,CAAC,KAAA,EAAM,SAAA,GAExB,O
AAA,EAAO,OAAA,UACV,EADG,IACE,EAAGC,GAGpC,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,I
AAhB,QAAA,IAAA;;ACkCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAxFP,I
AAA,EAAA,QAAA,gBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,UACA,EAAA,QAAA,SACA,EAAA,QAAA,S
ACA,EAAA,QAAA,SACA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA,SACA,EAAA,QAAA,SAu
BA,SAAS,EA8B,EAASB,GAAG,GAC5D,MAAA,GAAU,EAAGB,EAAA,iBAAA,EAAG,SAAU,cAK9C,IAHU,I
AAV,IACF,EAAO,EAAG,KAAG,GAEPB,IAAS,EAAG,KAAG,EACpB,MAAA,MACF,mFACmB,EAAG,qBAAG
B,KAGC/C,OAJBU,EAAG,EAAA,YAAA,CAAC,EAAGB,KACrC,MACA,GAAG,EAAL,EAAA,KAAA,EAAG,G
AAM,GACzB,GAAU,EAAL,EAAA,KAAA,EAAG,GACtB,GACF,EAAL,EAAA,MAAA,EAAG,EAAA,MAAA,E
AAS,YAAY,EAAL,EAAA,MAAA,EAAL,EAAA,MAAA,EAAL,EAAA,KAAA,GAAU,GAJvC,KAKjB,EAAG,CA
AC,IAQC,MAAA,CAAC,MAAA,EAAG,SANE,CAAC,EAAY,KACtB,MAAC,GAAS,EAEV,GAAU,EAAL,EA
A,KAAA,GACb,OAAA,EAAL,EAAA,KAAA,GAAL,EAAL,EAAA,MAAA,EAAL,EAAA,KAAA,EAAL,GAFV,GA
E2B,OAKzC,CAAS,GAUX,MAAM,GAAa,EAAG,EAAA,IAAA,CAAC,YAAA,IAAvB,QAAA,WAAA;;ACGN,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,0
BAAA,EAAA,QAAA,qBAAA,EAAA,QAAA,2BAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,uBAAA,EAAA,Q
AAA,iBAAA,EA3FD,IAAA,EAAA,EAAA,QAAA,YA2FC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,
IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,E
AAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAA
A,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAA
A,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAA
A,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,
EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA9FK,SAAU,EAAGB,EAAGB,
GAC9C,IAAA,IAAL,EAAL,EAAG,EAAL,EAAG,SAAU,EAC7B,GAAA,EAAG,EAAG,OAAS,EAAL,KAAG,EA
O,EAAL,EACpC,OAAA,EAGJ,OAAA,EAGH,SAAU,EACZ,EAAGB,EAAGB,GACtC,MAAA,EAAG,EAAL,OA
S,EAAL,EAAL,EAAM,GACR,IAAA,EAAS,EACT,EAAY,EACT,IAAA,IAAL,EAAM,EAAG,EAAM,EAAM,K
ACH,IAAvB,EAAG,QAAQ,GACf,EAAL,KAAG,EAAL,MAEnB,EAAL,KAAG,EAAL,MAGhB,OAAA,EAGH,S
AAU,EACZ,EAAGB,GACd,MAAA,EAAG,GACX,EAAG,EAAG,OACf,IAAA,IAAL,EAAM,EAAG,EAAM,EA
M,KACD,IAAvB,EAAG,QAAQ,IACf,EAAS,KAAG,EAAG,IAIB,MAAA,CAAC,EADY,EAAG,IAAL,GAAG,EA
AO,KAIvC,SAAU,EACZ,EAAGB,GAEZ,OAAA,EAAGB,EADD,EAAG,IAAL,GAAG,GACU,GAG3C,SAAU,EAC
Z,EAAGB,EAAGB,GAC/B,EAAG,OACD,EAAGB,EAAM,GAC3B,OAAS,wDAGO,cAAiB,YAQjC,SAAU,EAAGB,
EAAGB,GA97C,GAAA,EAAGB,EAAM,GACtB,OAAA,KAAG,MAAA,EAAGB,GACpB,IAAA,IAAL,EAAL,EA
G,EAAL,IAAG,GACD,IAArB,EAAG,QAAQ,IACf,EAAG,KAAG,GAIT,OADP,EAAG,QAAQ,GAAQ,EAAG,KA
AG,IAC1B,EAIH,SAAU,EAAGB,GAC9B,OAAA,EAAG,IAAL,CAAC,EAAM,IAAM,CAAC,EAAG,IAC5B,KAA
K,CAAC,EAAG,IAAM,EAAG,GAAG,EAAG,IACxB,IAAL,GAAG,EAAG,IAGZ,SAAU,EAAGB,EAAGB,GAC1C,
MAAA,EAAGB,GACjB,IAAA,IAAL,EAAL,EAAG,EAAS,EAAL,IAAG,EACvC,EAAL,KAAG,GA9J,OAAA;;AC3
BF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA9DP,IAAA,EAAA,QAAA,sBAEA
,EAAA,QAAA,WAEA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA,SACA,EAAA,QAAA,SACA,E
AAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA,aACA,EAAA,QAAA,SACA,EAAA,QAAA,SA+BA,SA
AS,EACL,EAASB,EAawB,KAAM,GAAG,GAC3D,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAG,aAE7B
,GAAG,EAAG,EAAA,gBAAA,EAAM,EAAG,OAC/B,GAAG,EAAL,EAAA,KAAA,EAAL,GAAM,GACrB,GAAL,
EAAL,EAAA,KAAA,EAAL,GACZ,GAAL,EAAL,EAAA,KAAA,GACR,GAAL,EAAL,EAAA,KAAA,EAAG,GACX,
GAAL,EAAL,EAAA,KAAA,GACR,GAAM,EAAL,EAAA,MAAA,EAAG,EAAA,SAAA,EAAM,EAAG,EAAG,GA

EpC,GAAA,EAAU,CACN,MAAA,GAAW,EAAqB,EAAA,sBAAA,EAAI,MAAO,GAC1C,OAAA,EAAQ,EAAA,
SAAA,EAAG,GAef,OAAA,EAGF,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;A
C5BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EApCP,IAAA,EAAA,QAAA,aA
CA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eAiBA,SAAS,EAcl,E
AAsB,GACIB,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAAc,QAC3C,GAAG,EAAGB,EAAA,iBAA
A,EAAG,IAAK,aAAc,SACtB,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,MAAA,EAA2B,CAAC,EAA
G,EAAI,EAAG,GAerC,OAAA,EAAO,OAAA,UAAU,EAajB,WAA6B,GAG/B,MAAM,GAAa,EAAG,EAAA,IA
AA,CAAC,YAAA,IAAvB,QAAA,WAAA;;ACRA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QA
AA,gBAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,e
AeA,SAAS,EAA8B,GAC/B,MACA,EAA2B,CAAC,GADvB,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAAc,SAE1C,
OAAA,EAAO,OAAA,UAAU,EAajB,WAA6B,GAG/B,MAAM,GAAa,EAAG,EAAA,IAAA,CAAC,YAAA,IAAv
B,QAAA,WAAA;;ACKA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAhCP,IAAA,
EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,oBACA,EAAA,QAAA,eAgB
A,SAAS,EAcl,EAAsB,GACIB,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,YAAa,QAC1C,GAAG,EA
AgB,EAAA,iBAAA,EAAG,IAAK,YAAa,SACrB,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,MAAA,E
AA0B,CAAC,EAAG,EAAI,EAAG,GACpC,OAAA,EAAO,OAAA,UAAU,EAajB,UAA4B,GAe9B,MAAM,GAA
Y,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACGA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,gBAAA,EA1CP,IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,iBAC
A,EAAA,QAAA,iBACA,EAAA,QAAA,gBACA,EAAA,QAAA,eAiBA,SAAS,EAcl,EAAsB,GACIB,MAAA,GA
AG,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAAc,QAC3C,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAAc,QAI
1C,OAHoB,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,QAGjC,EAAW,EAAA,aAAA,EAU,EAAA,WAAA,E
AAG,IAAI,EAAW,EAAA,aAAA,EAAW,EAAA,YAAA,EAAG,KAGvD,MAAM,GAAa,EAAG,EAAA,IAAA,CA
AC,YAAA,IAAvB,QAAA,WAAA;;AC8CA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aA
AA,EAjFP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAE
A,EAAA,EAAA,QAAA,gBACA,EAAA,QAAA,eACA,EAAA,QAAA,aAsEO,SAAA,IAAA,GAAA,mBAAA,QA
AA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAA
A,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,
EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,y
BAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EA
AA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GA
AA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA3CP,SAA
S,EAcl,EAaiB,EACjB,EAakC,EACiC,GACI,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAG/B,IA
AA,EAAM,EACN,GAae,EACH,IAAZ,EAAG,OACL,GAae,EACf,GAAM,EAAQ,EAAA,SAAA,EAAI,CAAC,E
AAG,EAAG,MAAM,GAAI,EAAG,MAAM,GAAI,EAAG,MAAM,MAG3D,EAAG,OACY,IAAb,EAAI,KACJ,2D
AA6D,EAAI,SACrE,EAAG,OACD,EAAU,+BAA+B,EA3B,GAcD,IAAM,2EACa,uBACA,MAAnB,GACF,EA
K,OACD,EAAG,MAAM,GACX,IAAM,2EACiB,iBAA+B,MAGtD,MAAA,EAawB,CAAC,EAAG,GAe5B,EAAs
B,CAAC,WAAA,EAAY,QAAA,EAAS,IAAA,EAAG,gBAAA,GAGjD,EAAM,EAAO,OAAA,UACH,EADJ,QACa
,EACT,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAAG,CAAC,EAAI,MAAM,GAAI,EAAG,MAAM,GAAI,EA
AI,MAAM,KAETd,EAGF,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACaA,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA9FP,IAAA,EAAA,QAAA,aACA,EAAA,
QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,aAoFO,
SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,
GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,G
AAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAA
A,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EA
A,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAA
A,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,
IAAA,EAAA,GAAA,EA/CP,SAAS,EAcl,EAaiB,EA8C,CAAC,EAAG,EAAG,GACtE,EAA0C,EAC1C,EACA,

EAA8B,SAC1B,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAE/B,IAAA,EAAM,EACN,GAAe,EACH,IAAZ,EAAG,OACL,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,MAGxE,EAAG,OAcy,IAAb,EAAl,KACJ,yDAA2D,EAAl,SACnE,EAAG,OAcy,UAAf,EACA,IAAM,mFACuB,KACV,MAAnB,GACF,EAAG,OAcy,EAAG,MAAM,GACX,IAAM,6EACiB,iBAA+B,MAGtD,MAAA,EAA0B,CAAC,EAAG,GAE9B,EACe,CAAC,WAAA,EAAY,QA AA,EAAS,IAAA,EAAG,gBAAA,EAAlB,WAAA,GAG3D,EAAM,EAAO,OAAA,UACH,EADJ,UACe,EACX,GA EZ,OAAA,GACK,EACI,EAAA,SAAA,EAAG,CAAC,EAAl,MAAM,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM, GAAl,EAAl,MAAM,KAlhE,EAGF,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;; ACjCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EA7DP,IAAA,EAAA,QAAA,a ACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAmCA,SAAS,EACL,EAAlB,EACjB,EAAGC ,EACIC,GAAsB,GACIB,MAEA,EAAGC,CAAC,GAF9B,EAAGB,EAAA,iBAAA,EAAG,IAAK,sBAG7B,EACuB, CAAC,WAAA,EAAY,QAAA,EAAS,IAAA,EAAG,oBAAA,GAGID,EAAS,EAAO,OAAA,UACH,EADJ,kBACuB ,EACnB,GAEZ,MAAA,CAAC,OAAQ,EAAO,GAAl,QAAS,EAAO,IAGtC,MAAM,GAAoB,EAAG,EAAA,IAAA, CAAC,mBAAA,IAA9B,QAAA,kBAAA;;ACLA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA ,aAAA,EAxDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,sBAG A,EAAA,QAAA,oBACA,EAAA,QAAA,UACA,EAAA,QAAA,eA6BA,SAAS,EACL,EAAsB,GACpB,IAAA,GA AK,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAC7B,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,YAChC,EAAl,I AAM,EAAG,EAAA,gBAAA,EAAl,GAEB,SAAb,EAAG,QACL,GAAG,EAAG,EAAA,MAAA,EAAl,SACd,GAA K,EAAG,EAAA,MAAA,EAAl,WAEW,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAElC,MAAA,EAAGwB,C AAC,EAAG,EAAl,EAAG,GAElC,OAAA,EAAO,OAAA,UAAU,EAAGjB,QAA0B,GAG5B,MAAM,GAAU,EAAG, EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACNA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA AA,QAAA,UAAA,EAIDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QA AA,eA+BA,SAAS,EACL,EAAsB,EAAGwB,KAAM,GAAGW,GAC3D,MAEA,EAAGqB,CAAC,GAFjB,EAAGB,EA A,iBAAA,EAAG,IAAK,SAG7B,EAAGmB,CAAC,KAAA,EAAM,SAAA,GAEzB,OAAA,EAAO,OAAA,UACV,EA DG,KACG,EAAGC,GAGrC,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACCA,a AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EApDP,IAAA,EAAA,QAAA,aACA,EA A,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA+BA,SAAS,EACL,EAAsB,EAAGwB,KAAM,GAAGW ,GAC3D,MAEA,EAAGoB,CAAC,GAFhB,EAAGB,EAAA,iBAAA,EAAG,IAAK,QAG7B,EAAGkB,CAAC,KAAA,E AAM,SAAA,GAGxB,OAAA,EAAO,OAAA,UACH,EADJ,IACS,EACL,GAGN,MAAM,GAAM,EAAG,EAAA,IA AA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACMA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA A,aAAA,EAzDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,sBA GA,EAAA,QAAA,oBACA,EAAA,QAAA,UACA,EAAA,QAAA,eA6BA,SAAS,EACL,EAAsB,GACpB,IAAA,G AAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAC7B,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,YAChC,EAAl, IAAM,EAAG,EAAA,gBAAA,EAAl,GAEB,SAAb,EAAG,QACL,GAAG,EAAG,EAAA,MAAA,EAAl,SACd,GAA K,EAAG,EAAA,MAAA,EAAl,WAGW,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAElC,MAAA,EAAGwB,C AAC,EAAG,EAAl,EAAG,GAElC,OAAA,EAAO,OAAA,UAAU,EAAGjB,QAA0B,GAG5B,MAAM,GAAU,EAAG, EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACgBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I AAA,QAAA,eAAA,EAzEP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,E AAA,QAAA,YAEA,EAAA,QAAA,eAgEO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,I AAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA, OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EA A,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EA A,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAA A,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA, OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EArcP,SAAS,EACL,EAAlB,EACjB,GACF,E AAG,OAcy,YAAT,GAA+B,cAAT,EACiB,IAAM,kEACK,MAET,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG ,IAAK,aAC/B,GAAY,IAAZ,EAAG,KACC,MAAA,IAAI,MACN,kEAGN,EAAG,OAcy,EAAS,SAAGW,EAAG,K ACvB,4CAA8C,EAAG,gBACtC,EAAS,WACIB,MAAA,EAAGuB,YAAT,EAAGqB,EAAl,EACxC,IAAA,IAAI,EA

I,EAAG,EAAl,EAAG,KAAM,IAC3B,EAAG,OACsB,IAAvB,EAAS,GAAG,OACZ,IAAM,yDACV,EAAG,OACD,EAAS,GAAG,IAAM,GAAG,EAAS,GAAG,IAAM,EAAG,MAAM,GAAG,GACnD,EAAS,GAAG,IAAM,GAAG,EAAS,GAAG,IAAM,EAAG,MAAM,GAAG,EAC3D,4BAA8B,2CACpB,EAAG,MAAM,GAAG,0CACX,EAAG,SAghB,MAAA,EAawB,CAAC,SAAA,EAAU,KAAA,GACnC,EAA0B,CAAC,EAAG,GAC7B,OAAA,EAAO,OA AA,UACV,EADG,UACQ,EAAGC,GAG1C,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACzBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAhDP,IAAA,EAAA,QA AA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,sBAGA,EAAA,QAAA,eA8BA,SAAS,EA AuB,EAAsB,GAChD,IAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAG,OAC7B,GAAG,EAAGB,EAAA,iBA AA,EAAG,IAAG,QAChC,EAAl,IAAM,EAAG,EAAA,gBAAA,EAAl,GAExB,MAAA,EAoB,CAAC,EAAG,EA Al,EAAG,GAe9B,OAAA,EAAO,OAAA,UAAU,EAajB,IAAsB,GAGxB,MAAM,GAAM,EAAG,EAAA,IAAA,C AAC,KAAA,IAAhB,QAAA,IAAA;;ACxBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,Y AAA,EAxBP,IAAA,EAAA,QAAA,aAEA,EAAA,QAAA,sBAEA,EAAA,QAAA,eAcA,SAAS,EAA0B,GAC3B,M AAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAG,UAE5B,OAAA,EAAO,OAAA,UAAU,SAAU,CAAC,EAAG, GADxB,IAIT,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,QAAA,IAAnB,QAAA,OAAA;;ACmBA,aAAA,OAAA ,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EA1CP,IAAA,EAAA,QAAA,sBAEA,EAAA,QAAA,W AEA,EAAA,QAAA,eACA,EAAA,QAAA,UACA,EAAA,QAAA,UACA,EAAA,QAAA,eACA,EAAA,QAAA,aAC A,EAAA,QAAA,YACA,EAAA,QAAA,SAGBA,SAAS,EACL,EAAsB,EAawB,KAC9C,GAAW,GACb,GAAl,EA AgB,EAAA,iBAAA,EAAG,IAAG,WACtB,MAAA,GAAG,EAAG,EAAA,gBAAA,EAAM,EAAG,EAAE,OAC9B,GAAG, EAAG,EAAA,MAAA,EAAG,EAAM,GACxB,IAAA,EAAGB,EAAM,MACrB,IACH,GAAGB,EAAGB,EAAA,sBA AA,EAAM,MAAO,IAE9C,MAAA,GACF,EAAO,EAAA,SAAA,EAAl,EAAA,MAAA,EAAG,EAAA,MAAA,EA AG,YAAY,EAAG,EAAA,SAAA,EAAO,KAE3C,MAAA,CAAC,KAAM,EAAO,UADJ,EAAG,EAAA,MAAA,EA AY,EAAM,IAInC,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACQA,aAAA,OA AA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EAnDP,IAAA,EAAA,QAAA,sBAEA,EAAA,QA AA,eAyBA,SAAS,EACL,EAA2B,EAC3B,EACA,GACI,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAM,OAAQ,g BACtC,GAAG,EAAGB,EAAA,sBAAA,EAAG,IAAG,gBACIC,GAAG,EAAGB,EAAA,sBAAA,EAAG,IAAG,gBA EpC,IAAA,EAAG,EACN,MAAA,EAAY,GACb,IAAA,IAAl,EAAl,EAAG,EAAl,EAAU,OAAQ,IAAG,CACnC,M AAA,EAAS,EAAU,GAAG,EAAO,EAAG,GAAl,EAAG,IAC7C,EAAU,KAAK,EAAO,IACtB,EAAU,KAAK,EAA O,IACtB,EAAG,EAAO,GAEX,MAAA,EAAMb,GACnB,EAAMb,GACpB,IAAA,IAAl,EAAl,EAAG,EAAl,EAA U,OAAQ,GAAG,EACzC,EAAG,KAAK,EAAU,IACpB,EAAG,KAAK,EAAU,EAAl,IAEnB,MAAA,CAAC,EAAM,GAET,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,cAAA,IAAzB,QAAA,aAAA;;ACcA,aAAA,OAAA,eAAA, QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAjEP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,E AAA,QAAA,sBAGA,EAAA,QAAA,eACA,EAAA,QAAA,aAsBA,SAAS,EACL,EAAsC,EAAoB,EAC1D,GAAG, GACT,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,SAAU,eAC5C,EAAG,EAAG,KACtB,EAAG,EAAG,KACr B,GAAA,EAAG,EACV,MAAA,IAAl,MACN,KEACG,MAEL,GAAA,EAAG,EACP,MAAA,IAAl,sDAAsD,KAlIE ,EAAO,GAAG,KAAK,SAGd,MAGA,EAA4B,CAAC,OAFIB,IAAb,GAAl,EAAG,EAAA,SAAA,EAAS,CAAC, GAAl,IAAM,GAG3C,EAA0B,CAAC,WAAA,EAAY,KAAA,EAAM,WAAA,GAG7C,EAAM,EAAO,OAAA,UA CH,EADJ,YACiB,EACb,GAGT,OAAa,IAAb,GAAl,EAAG,EAAA,SAAA,EAAG,CAAC,EAAl,OAAqB,EAG1D ,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,aAAA,IAAxB,QAAA,YAAA;;AC5BA,aAAA,OAAA,eAAA,QAAA, aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAtCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,Q AAA,kBACA,EAAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eAgBA,SAAS,EACL,EAAsB,GACp B,IAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAG,YAC7B,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAG,aAC hC,EAAl,IAAM,EAAG,EAAA,gBAAA,EAAl,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAEIC,MAA A,EAAYB,CAAC,EAAG,EAAl,EAAG,GAEnC,OAAA,EAAO,OAAA,UAAU,EAajB,SAA2B,GAG7B,MAAM,GA AW,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;;ACRN,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IAAA,QAAA,MAAA,EA7BD,IAAA,EAAA,QAAA,aAGA,EAAA,QAAA,WAEA,EAAA,QAAA,aAe M,SAAU,EACZ,EAAoB,EAAGB,WACpC,GAAG,cAAV,EAAGB,CACnB,MAAA,EAAO,EAAM,EAAO,WACpB ,EAAO,EAAM,EAAO,WACnB,OAAA,EAAG,EAAA,SAAA,EAAM,GAejB,MAAA,GAAS,EAAoB,EAAA,sBA AA,EAAG,EAAA,eAAA,GAAG,GACID,OAAA,EAAO,OAAA,WAAW,EAAG,EAAO;;ACEzC,aAAA,OAAA,eA

AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EA9BD,IAAA,EAAA,QAAA,aAGA,EAAA,QAAA,WAE
A,EAAA,QAAA,aACA,EAAA,QAAA,WaEM,SAAU,EACZ,EAAoB,EAakB,WACpC,GAAU,cAAV,EAAuB,CA
CnB,MAAA,EAAO,EAak,EAAO,WACnB,GAAO,EAAM,EAAA,OAAA,EAAO,WACnB,OAAA,EAAQ,EAAA,
SAAA,EAAM,GAEjB,MAAA,GAAS,EAAMB,EAAA,qBAAA,EAac,EAAA,eAAA,GAAQ,GACjD,OAAA,EAA
O,OAAA,WAAW,EAAQ,EAAO;;ACDnC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAA
A,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAA
S,EA4B,GAC7B,MAEA,EAyB,CAAC,GAfrB,EAagB,EAAA,iBAAA,EAAG,IAAK,aAG5B,OAAA,EAAO,O
AAA,UAAU,EAjB,SAA2B,GAG7B,MAAM,GAAW,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;
;ACSA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EArcP,IAAA,EAAA,QAAA,s
BAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,aACA,EAAA,QAAA,eACA,EAAA,QAAA,aA+BO,SAAA,IA
AA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,E
AAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EA
AA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA
,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA
,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,
eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EA
AA,GAAA,EAfP,SAAS,EAcl,EAyB,GACrB,MAAA,GAAM,EAagB,EAAA,iBAAA,EAai,KAAM,gBACHC,
GAAM,EAagB,EAAA,iBAAA,EAai,KAAM,gBAEtC,EAak,OACy,IAAb,EAai,MAA2B,IAAb,EAai,KACtB,I
AAM,kEACC,EAai,YAAY,EAai,SAEzB,MAAA,GAAO,EAAQ,EAAA,SAAA,EAak,EAae,EAAG,IACzB,GA
AO,EAAQ,EAAA,SAAA,EAak,CAAC,GAai,IACxB,OAAA,EAAO,EAAA,QAAA,EAAM,GAGf,MAAM,GAA
e,EAAG,EAAA,IAAA,CAAC,cAAA,IAAzB,QAAA,aAAA;;ACYA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,SAAA,EAjDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EA
AA,QAAA,eA2BA,SAAS,EAcl,EAaiB,EAAMc,EAagB,GACHe,MAAA,GAak,EAagB,EAAA,iBAAA,EA
G,IAAK,OAC/B,GAAY,IAAZ,EAAG,KACC,MAAA,IAAI,MAAM,sDAGZ,MAAA,EAAoB,CAAC,SAAA,EA
U,cAAA,GAC/B,EAAsB,CAAC,EAAG,GACzB,OAAA,EAAO,OAAA,UACV,EADG,MACI,EACP,GAGC,MAA
M,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;AChCA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,WAAA,EAhBP,IAAA,EAAA,QAAA,WACA,EAAA,QAAA,eACA,EAAA,QAA
A,SAKA,SAAS,EAcl,EAawB,EACxB,EAagB,GAIX,OAFH,EAAA,EAAA,QAAoB,IAApB,EAAS,OACT,IAA
M,qDACH,EAai,EAAA,KAAA,EAAG,CAAC,GAAW,GAGrB,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OA
AA,IAAIb,QAAA,MAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAj
BP,IAAA,EAAA,QAAA,WACA,EAAA,QAAA,eACA,EAAA,QAAA,SAKA,SAAS,EAcl,EAawB,EACxB,EA
gB,GAKX,OAHH,EAAA,EAAA,QAAoB,IAApB,EAAS,QAAuC,IAAvB,EAAS,GAAG,QACV,IAAvB,EAAS,GA
AG,OACb,IAAM,ODACH,EAai,EAAA,KAAA,EAAG,EAU,GAGnB,MAAM,GAAQ,EAAG,EAAA,IAAA,C
AAC,OAAA,IAAIb,QAAA,MAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,W
AAA,EAIBP,IAAA,EAAA,QAAA,WACA,EAAA,QAAA,eACA,EAAA,QAAA,SAKA,SAAS,EAcl,EACA,EAC
A,EAagB,GAKX,OAHH,EAAA,EAAA,QAAoB,IAApB,EAAS,QAAuC,IAAvB,EAAS,GAAG,QACV,IAAvB,EA
AS,GAAG,QAAuC,IAAvB,EAAS,GAAG,OAC5C,IAAM,ODACH,EAai,EAAA,KAAA,EAAG,EAU,GAGnB,M
AAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAAIb,QAAA,MAAA;;ACIA,aAAA,OAAA,eAAA,QAAA,aA
AA,CAAA,OAAA,IAAA,QAAA,WAAA,EAtBP,IAAA,EAAA,QAAA,WACA,EAAA,QAAA,eACA,EAAA,QAA
A,SAKA,SAAS,EAcl,EACA,EAIA,EAagB,GAMX,OAJH,EAAA,EAAA,QAAoB,IAApB,EAAS,QAAuC,IAAv
B,EAAS,GAAG,QACV,IAAvB,EAAS,GAAG,QAAuC,IAAvB,EAAS,GAAG,QACjB,IAAvB,EAAS,GAAG,OAC
hB,IAAM,ODACH,EAai,EAAA,KAAA,EAAG,EAU,GAGnB,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OA
AA,IAAIb,QAAA,MAAA;;AC0EA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EA
jGP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EA
AA,QAAA,eAwFO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EA
AA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EA
AA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA
,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,

eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,K
AAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EA
AA,GAAA,EAAA,IAAA,EAAA,GAAA,EAtCP,SAAS,EACL,EAAiB,EAAsB,GACnB,MAAA,GAAK,EAAGB,E
AAA,iBAAA,EAAG,IAAK,kBAEnC,EAAG,OACD,EAAG,MAAQ,EAAL,EAAW,OAC1B,kBAAoB,EAAG,sCA
CnB,EAAW,UAEnB,EAAG,OACD,EAAS,SAAW,EAAW,OAC/B,yBACI,EAAS,wCAAwC,EAAW,UAEPe,EA
K,OACD,EAAG,MAAM,OACL,CAAC,EAAG,EAAG,IACD,EAAL,GAAG,GAAG,EAAG,OACpB,IACD,EAAL,
EAAS,EAAL,GAAG,GAAG,EAAS,EAAL,GAAG,IACtC,EAAW,EAAL,IACnB,EAEA,GAET,GACJ,gCAAKC,EA
AG,MAAM,MAAM,oBAC7C,EAAS,+CACT,EAAW,cAEb,MAAA,EAA+B,CAAC,EAAG,GACnB,EAA6B,CAA
C,WAAA,EAAY,SAAA,GAZc,OAAA,EAAO,OAAA,UACV,EADG,eACa,EACHB,GAGC,MAAM,GAAL,EA
AG,EAAA,IAAA,CAAC,gBAAA,IAA3B,QAAA,eAAA;;AC8CA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAAA,QAAA,UAAA,EA9IP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,cAC
A,EAAA,QAAA,uBACA,EAAA,EAAA,QAAA,gBACA,EAAA,QAAA,cACA,EAAA,QAAA,eACA,EAAA,QAA
A,aACA,EAAA,QAAA,uBAoIO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAA
A,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EA
A,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,G
AAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,O
AAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IA
AA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EA
A,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAxGP,SAAS,EACL,EAAqB,EACrB,EAA0B,EAC1B,EA
AqC,GACtB,MAAb,IACF,EAAY,CAAC,EAAG,IAEH,MAAX,IACF,EAAU,GAEA,IAAR,IACF,EAAM,SAGF,M
AAA,GAAG,EAAGB,EAAA,iBAAA,EAAO,IAAK,WACnB,IAAA,EAAM,EACN,GAAe,EAEH,IAAZ,EAAG,OA
CL,GAAe,EACf,GAAM,EAAG,QAAA,SAAA,EAAL,CAAC,EAAG,EAAG,MAAM,GAAL,EAAG,MAAM,GAAL,
EAAG,MAAM,MAG3D,EAAG,OACD,EAAG,+BAA+B,EAAS,GACID,IAAM,wEACa,oBAA0B,MAE3C,MAA
A,EAAG,EAAG,kBACvB,EAAL,MAAO,EAAa,EAAS,EAAG,GAC1C,EACF,CAAC,EAAS,eAAgB,EAAS,eAO
nB,IAAA,EAAG,EADU,SAAR,EACY,EACV,CAAC,EAAS,aAAc,EAAS,aAAc,GAErC,CAAC,CAAC,EAAG,GA
AL,CAAC,EAAG,IAGvB,MAAA,EAAGC,IAAhB,EAAS,IAA4B,IAAhB,EAAS,IAC7C,EAAiB,GAAiB,EACrC,C
AAC,EAAS,SAAU,EAAS,SAAU,EAAG,GAC/C,EAAe,EAAGB,EAAM,QACrC,EACF,EAAGB,GAAM,EAAG,E
AAA,gBAAA,EAAG,EAAG,GAKID,GAH4B,QAAGB,EACd,KAAM,EAAG,QAAA,SAAA,EAAY,EAAa,EAAS,
GACHD,KAAM,EAAG,EAAA,SAAA,EAAY,EAAa,EAAS,MAG9C,EAAM,EAAGB,GAAL,EAAG,EAAA,gBAA
A,EAAG,EAAG,GAExD,OAAA,GACK,EAAG,QAAA,SAAA,EAAG,CAAC,EAAL,MAAM,GAAL,EAAL,MAAM
,GAAL,EAAL,MAAM,KAGtD,EAMT,SAAS,EACL,EAA8B,EAC9B,GACI,MAAA,EAAG,EAAY,IAAL,GAAG,E
AAE,IACIC,EAAa,EAAY,IAAL,GAAG,EAAG,IACpC,EAAiB,EAAG,OAAO,EAAG,GAC7C,EAAG,EAAG,IA
L,CAAC,EAAG,KAAO,EAAL,EAAG,GAAG,GAAG,GACrE,EAAS,EAAG,IAAL,CAAC,EAAG,IAAM,EAAL,EA
AY,IAGjD,MAAA,CAFU,EAAG,IAAL,CAAC,EAAG,IAAM,CAAC,EAAS,GAAL,EAAG,KACjD,EAAG,IAAL,
CAAC,EAAG,IAAM,CAAC,EAAG,EAAY,MAOzD,SAAS,EACL,EAA+B,GAG3B,MAGA,EAHqB,EAAY,IAAL,
CAAC,EAAG,IACtC,GAAG,EAAL,IAAM,EAAS,GAAG,IAEG,IAAL,GAAG,EAAL,GAlhD,EAAGB,EAAG,IAAL,
GAAG,KAAG,MAAM,EAAL,IACtD,EAAG,EAAG,IAAL,CAAC,EAAG,IAAM,EAAL,EAAG,IAC3D,OAAA,EAAG,
IAAL,CAAC,EAAG,IACpB,CAAC,EAAG,GAAL,EAAY,KAlnC,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,MA
AA,IAAjB,QAAA,KAAA;;AC/FA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAjD
P,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,sBAGA,EAAA,QA
AA,eA8BA,SAAS,EACL,EAAYB,GACvB,IAAA,GAAG,EAAGB,EAAA,iBAAA,EAAM,OAAQ,OACtC,GAAG,
EAAGB,EAAA,iBAAA,EAAG,MAAO,QACtC,EAAO,IAAQ,EAAe,EAAA,gBAAA,EAAO,GAHc,MAAA,EA
oB,CAAC,EAAG,EAAO,EAAG,GAEGC,OAAA,EAAO,OAAA,UAAU,EAAGB,IAAsB,GAGxB,MAAM,GAAM,E
AAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;ACfA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
A,IAAA,QAAA,WAAA,EAjCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EA
A,QAAA,eAkBA,SAAS,EAAYB,EAAiB,GAC3C,MAGA,EAAsB,CAAC,GAHIB,EAAGB,EAAA,iBAAA,EAAG,I
AAK,SAGC,OAFrB,EAAGB,EAAA,iBAAA,EAAO,QAAS,UAGxC,OAAA,EAAO,OAAA,UAAU,EAAGB,MAAw
B,GAG1B,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,OAAA,IAAL,QAAA,MAAA;;ACwBA,aAAA,OAAA,eA

AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAzDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAI
A,EAAA,QAAA,sBAGA,EAAA,QAAA,UACA,EAAA,QAAA,eAgCA,SAAS,EACL,EAAaB,EAAwB,KAAM,GA
AW,GAC7D,IAAA,GAAK,EAAGb,EAAA,iBAAA,EAAG,IAAK,QAeHb,SAAb,EAAG,QAEL,GAAK,EA
AA,MAAA,EAAl,UAGV,MAAA,EAaqB,CAAC,EAAG,GACzB,EAaMb,CAAC,KAAA,EAAM,SAAA,GA
EzB,
OAAA,EAAO,OAAA,UACV,EADG,KACG,EAAGc,GAGrC,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAA
A,IAAjB,QAAA,KAAA;;ACrBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA
pC
P,IAAA,EAAA,QAAA,aAGA,EAAA,QAAA,WAEA,EAAA,QAAA,eAWA,SAAS,EACL,EAAoB,EACpB,GACI,
MAAA,GAAO,EAAC,EAAA,eAAA,GACvB,IAAA,EAAS,KACT,GAAS,MAAT,GAA2B,YAAV,EACnB,EAAS,I
AAI,aAAa,QACrB,GAAC,UAAV,EACT,EAAS,IAAI,WAAW,OACnB,CAAA,GAAC,SAAV,EAGH,MAAA,IAAI,
2BAA2B,KAFrC,EAAS,IAAI,WAAW,GAIrB,IAAA,IAAI,EAAl,EAAG,EAAl,EAAM,IACxB,EAAO,GA
AK,IAE
P,OAAA,EAAO,OAAA,WAAW,EAQ,EAAO,GAGnC,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,IA
AjB,QAAA,KAAA;;AC6DP,IAAA,GAvFA,SAAA,EAAA,EAAA,GAEA,SAAA,EAAA,GACA,IAgDA,EA
hDA,
EAAA,KAAA,GAgDA,EAAA,WAEA,SAAA,GACA,EAAA,EAAA,WACA,IAAA,IAAA,EAAA,EAAA,EAAA,E
AAA,OAAA,IAAA,CAEA,IAAA,EAAA,oBADA,GAAA,EAAA,WAAA,IAGA,GADA,EAAA,IAAA,EAGA,GA
DA,GAAA,KACA,EAEA,GAAA,YADA,GAAA,GAGA,OAAA,wBAAA,IAAA,KA5DA,EAAA,KAAA,WACA,I
AAA,EAAA,QAAA,EAAA,GAAA,uBAAA,EAAA,EAGA,OFA,EAAA,GAAA,EAAA,GACA,EAAA,GAAA,E
AAA,GACA,EAAA,GAAA,GAAA,EAAA,EAAA,EAAA,IAIA,EAAA,EAAA,EACA,EAAA,GAAA,EAAA,KAC
A,EAAA,GAAA,EAAA,KACA,EAAA,GAAA,EAAA,KACA,EAAA,IAAA,EAAA,GACA,EAAA,GAAA,IAAA,
EAAA,IAAA,GACA,EAAA,IAAA,EAAA,GACA,EAAA,GAAA,IAAA,EAAA,IAAA,GACA,EAAA,IAAA,EA
A
A,GACA,EAAA,GAAA,IAAA,EAAA,IAAA,GACA,EAAA,KAGA,SAAA,EAAA,EAAA,GAKA,OAJA,EAAA,E
AAA,EAAA,EACA,EAAA,GAAA,EAAA,GACA,EAAA,GAAA,EAAA,GACA,EAAA,GAAA,EAAA,GACA,EA
GA,SAAA,EAAA,EAAA,GACA,IAAA,EAAA,IAAA,EAAA,GACA,EAAA,GAAA,EAAA,MACA,EAAA,EAAA
,KAUA,OATA,EAAA,MAAA,WAAA,OAAA,WAAA,EAAA,OAAA,GACA,EAAA,OAAA,WACA,OAAA,IAA
A,wBAAA,QAAA,IAAA,IAEA,EAAA,MAAA,EACA,IACA,iBAAA,GAAA,EAAA,EAAA,GACA,EAAA,MAA
A,WAAA,OAAA,EAAA,EAAA,MAEA,EAyBA,GAAA,EAAA,QACA,EAAA,QAAA,EACA,GAAA,EAAA,IAC
A,EAAA,WAAA,OAAA,IAEA,KAAA,KAAA,EA7EA,CaIFa,EACA,iBAAA,QAAA,OACA,mBAAA,GAAA;;
AC7BA,IAAA,GA9EA,SAAA,EAAA,EAAA,GAEA,SAAA,EAAA,GACA,IAAA,EAAA,KAAA,EAAA,GAEA,E
AAA,EAAA,EACA,EAAA,EAAA,EACA,EAAA,EAAA,EACA,EAAA,EAAA,EAGA,EAAA,KAAA,WACA,IAA
A,EAAA,EAAA,EAAA,EAAA,GAAA,GAIA,OAHA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,
EAAA,EAAA,EAAA,EACA,EAAA,GAAA,EAAA,IAAA,GAAA,EAAA,IAAA,GAGA,KAAA,EAAA,GAEA,EA
AA,EAAA,EAGA,GAAA,EAIA,IAAA,IAAA,EAAA,EAAA,EAAA,EAAA,OAAA,GAAA,IACA,EAAA,GAAA,
EAAA,EAAA,WAAA,GACA,EAAA,OAIA,SAAA,EAAA,EAAA,GAKA,OAJA,EAAA,EAAA,EAAA,EACA,EA
AA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAGA,SAAA,EAAA,EAAA
,GACA,IAAA,EAAA,IAAA,EAAA,GACA,EAAA,GAAA,EAAA,MACA,EAAA,WAAA,OAAA,EAAA,SAAA,G
AAA,YAeA,OAa,EAAA,OAAA,WACA,GACA,IAEA,IAFA,EAAA,SAAA,KACA,EAAA,SAAA,GAAA,aACA
,GAAA,UACA,IAAA,GACA,OAAA,GAEA,EAAA,MAAA,EAAA,KACA,EAAA,MAAA,EACA,IACA,iBAAA,
GAAA,EAAA,EAAA,GACA,EAAA,MAAA,WAAA,OAAA,EAAA,EAAA,MAEA,EAGA,GAAA,EAAA,QACA,
EAAA,QAAA,EACA,GAAA,EAAA,IACA,EAAA,WAAA,OAAA,IAEA,KAAA,OAAA,EAPEA,CawEA,EACA,i
BAAA,QAAA,OACA,mBAAA,GAAA;;ACSA,IAAA,GAnFA,SAAA,EAAA,EAAA,GAEA,SAAA,EAAA,GAC
A,IAAA,EAAA,KAAA,EAAA,GAGA,EAAA,KAAA,WACA,IAAA,EAAA,EAAA,EAAA,EAAA,IAAA,EA
EA,O
ADA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EA
AA,GACA,EAAA,EAAA,EAAA,EAAA,OAAA,IACA,EAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EAAA,EAAA
,GAAA,GAAA,GAGA,EAAA,EAAA,EACA,EAAA,EAAA,EACA,EAAA,EAAA,EACA,EAAA,EAAA,EACA,E
AAA,EAAA,EAEA,KAAA,EAAA,GAEA,EAAA,EAAA,EAGA,GAAA,EAIA,IAAA,IAAA,EAAA,EAAA,EAAA
,EAAA,OAAA,GAAA,IACA,EAAA,GAAA,EAAA,EAAA,WAAA,GACA,GAAA,EAAA,SACA,EAAA,EAAA,E
AAA,GAAA,GAAA,EAAA,IAAA,GAEA,EAAA,OAIA,SAAA,EAAA,EAAA,GAOA,ONa,EAAA,EAAA,EA
A,EACA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,E
AAA,EACA,EAAA,EAAA,EAAA,EACA,EAGA,SAAA,EAAA,EAAA,GACA,IAAA,EAAA,IAAA,EAAA,GAC

A,EAAA,GAAA,EAAA,MACA,EAAA,WAAA,OAAA,EAAA,SAAA,GAAA,YAeA,OAdA,EAAA,OAAA,WAC
A,GACA,IAEA,IAFA,EAAA,SAAA,KACA,EAAA,SAAA,GAAA,aACA,GAAA,UACA,IAAA,GACA,OAAA,G
AEA,EAAA,MAAA,EAAA,KACA,EAAA,MAAA,EACA,IACA,iBAAA,GAAA,EAAA,EAAA,GACA,EAAA,M
AAA,WAAA,OAAA,EAAA,EAAA,MAEA,EAGA,GAAA,EAAA,QACA,EAAA,QAAA,EACA,GAAA,EAAA,IA
CA,EAAA,WAAA,OAAA,IAEA,KAAA,OAAA,EazEA,CA6EA,EACA,iBAAA,QAAA,OACA,mBAAA,GAAA;;
;ACeA,IAAA,GA5FA,SAAA,EAAA,EAAA,GAEA,SAAA,EAAA,GACA,IAAA,EAAA,KAGA,EAAA,KAAA,W
AEA,IAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAQA,OAPA,EAAA,EAAA,GAAA,GAAA,GAA
A,IAAA,GAAA,GAAA,GACA,IAAA,EAAA,EAAA,EAAA,EAAA,IAAA,IAAA,GACA,IAAA,EAAA,EAAA,EA
AA,EAAA,IAAA,IAAA,EACA,IAAA,EAAA,EAAA,EAAA,EAAA,IAAA,GAAA,EACA,EAAA,EAAA,EAAA,E
AAA,GAAA,IAAA,GAAA,GAAA,IAAA,GAAA,EACA,EAAA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,EAC
A,GAGA,SAAA,EAAA,GACA,IAAA,EAAA,EAAA,GAEA,GAAA,KAAA,EAAA,GAEA,EAAA,GAAA,OAlA,I
ADA,EAAA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,SAAA,EACA,EAAA,EAAA,GAAA,EAAA,EAAA,IAA
A,GACA,EAAA,WAAA,GAAA,EAAA,EAAA,EAAA,IAAA,GAIA,KAAA,EAAA,OAAA,GAAA,EAAA,KAAA,
GACA,IAAA,EAAA,EAAA,EAAA,GAAA,IAAA,EAAA,KAAA,GAOA,IANA,GAAA,EAAA,EAAA,IAAA,EA
AA,EAAA,GAEA,EAAA,EAAA,EACA,EAAA,EAAA,EAGA,EAAA,IAAA,EAAA,IAAA,EACA,EAAA,OAlA,
CAAA,EAAA,GAGA,SAAA,EAAA,EAAA,GAGA,OAlA,EAAA,EAAA,EAAA,EAAA,QACA,EAAA,EAAA,E
AAA,EACA,EAGA,SAAA,EAAA,EAAA,GACA,MAAA,IAAA,GAAA,IAAA,MACA,IAAA,EAAA,IAAA,EAA
A,GACA,EAAA,GAAA,EAAA,MACA,EAAA,WAAA,OAAA,EAAA,SAAA,GAAA,YAeA,OAdA,EAAA,OAA
A,WACA,GACA,IAEA,IAFA,EAAA,SAAA,KACA,EAAA,SAAA,GAAA,aACA,GAAA,UACA,IAAA,GACA,O
AAA,GAEA,EAAA,MAAA,EAAA,KACA,EAAA,MAAA,EACA,IACA,EAAA,GAAA,EAAA,EAAA,GACA,EA
AA,MAAA,WAAA,OAAA,EAAA,EAAA,MAEA,EAGA,GAAA,EAAA,QACA,EAAA,QAAA,EACA,GAAA,EA
AA,IACA,EAAA,WAAA,OAAA,IAEA,KAAA,UAAA,EAnFA,CAuFA,EACA,iBAAA,QAAA,OACA,mBAAA,G
AAA;;;ACoDA,IAAA,GAzHA,SAAA,EAAA,EAAA,GAEA,SAAA,EAAA,GACA,IAAA,EAAA,KAGA,EAAA,K
AAA,WACA,IACA,EAAA,EADA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,EAAA,EAcA,OAZA,EAA
A,EAAA,EAAA,EAAA,WAAA,EAEA,EAAA,EAAA,EAAA,GAAA,KACA,EAAA,EAAA,EAAA,EAAA,EAAA,
KACA,GAAA,GAAA,GACA,GAAA,GAAA,GACA,GAAA,IAAA,GACA,GAAA,IAAA,GAEA,EAAA,EAAA,G
AAA,EAAA,EACA,EAAA,EAAA,EAEA,GAAA,EAAA,IAAA,IAAA,GAGA,SAAA,EAAA,GACA,IAAA,EAAA
,EAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EAAA,IAYA,IAXA,KAAA,EAAA,IAEA,EAAA,EACA,EAAA,OA
GA,GAAA,KACA,EAAA,EACA,EAAA,KAAA,IAAA,EAAA,EAAA,SAGA,EAAA,EAAA,GAAA,GAAA,EAA
A,IAAA,EAEA,IAAA,GAAA,EAAA,YAAA,EAAA,IAAA,EAAA,SAEA,IAAA,IAAA,EAAA,GACA,GAAA,GA
AA,GACA,GAAA,IAAA,GACA,GAAA,GAAA,EACA,GAAA,IAAA,GACA,GAAA,IACA,EAAA,EAAA,WAA
A,EAEA,EAAA,IADA,EAAA,EAAA,IAAA,IAAA,EAAA,GACA,EAAA,EAAA,GAWA,IAPA,GAAA,MACA,E
AAA,KAAA,GAAA,EAAA,QAAA,KAAA,GAKA,EAAA,IACA,EAAA,IAAA,EAAA,IAAA,EACA,EAAA,EAA
A,EAAA,GAAA,KACA,EAAA,EAAA,EAAA,EAAA,EAAA,KACA,GAAA,GAAA,GACA,GAAA,GAAA,GAC
A,GAAA,IAAA,GACA,GAAA,IAAA,GACA,EAAA,GAAA,EAAA,EAGA,EAAA,EAAA,EACA,EAAA,EAAA,
EACA,EAAA,EAAA,EAGA,CAAA,EAAA,GAGA,SAAA,EAAA,EAAA,GAIA,OAlA,EAAA,EAAA,EAAA,EA
CA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,QACA,EAGA,SAAA,EAAA,EAAA,GACA,MAA
A,IAAA,GAAA,IAAA,MACA,IAAA,EAAA,IAAA,EAAA,GACA,EAAA,GAAA,EAAA,MACA,EAAA,WAAA,
OAAA,EAAA,SAAA,GAAA,YAeA,OAdA,EAAA,OAAA,WACA,GACA,IAEA,IAFA,EAAA,SAAA,KACA,EA
AA,SAAA,GAAA,aACA,GAAA,UACA,IAAA,GACA,OAAA,GAEA,EAAA,MAAA,EAAA,KACA,EAAA,MAA
A,EACA,IACA,EAAA,GAAA,EAAA,EAAA,GACA,EAAA,MAAA,WAAA,OAAA,EAAA,EAAA,MAEA,EAGA
,GAAA,EAAA,QACA,EAAA,QAAA,EACA,GAAA,EAAA,IACA,EAAA,WAAA,OAAA,IAEA,KAAA,QAAA,E
AjHA,CAqHA,EACA,iBAAA,QAAA,OACA,mBAAA,GAAA;;;ACzCA,IAAA,GAnGA,SAAA,EAAA,EAAA,GA
EA,SAAA,EAAA,GACA,IAAA,EAAA,KAAA,EAAA,GAGA,EAAA,KAAA,WACA,IAAA,EAAA,EAAA,EAAA
,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAQA,OAPA,EAAA,GAAA,GAAA,IAAA,EAAA,E
ACA,EAAA,EAAA,EAAA,EACA,EAAA,GAAA,GAAA,IAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAA
A,EAAA,EAAA,GAAA,GAAA,IAAA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,
GAAA,GAAA,IAAA,GAAA,EACA,EAAA,EAAA,EAAA,EAAA,GAmBA,EAAA,EAAA,EACA,EAAA,EAAA,E

ACA,EAAA,GAAA,WACA,EAAA,EAAA,WAEA,IAAA,KAAA,MAAA,IAEA,EAAA,EAAA,EAAA,WAAA,EA
CA,EAAA,EAAA,EAAA,GAGA,GAAA,EAIA,IAAA,IAAA,EAAA,EAAA,EAAA,EAAA,OAAA,GAAA,IACA,
EAAA,GAAA,EAAA,EAAA,WAAA,GACA,EAAA,OAIA,SAAA,EAAA,EAAA,GAKA,OAJA,EAAA,EAAA,EA
AA,EACA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EACA,EAGA,SAAA
,EAAA,EAAA,GACA,IAAA,EAAA,IAAA,EAAA,GACA,EAAA,GAAA,EAAA,MACA,EAAA,WAAA,OAAA,E
AAA,SAAA,GAAA,YAcA,OAdA,EAAA,OAAA,WACA,GACA,IAEA,IAFA,EAAA,SAAA,KACA,EAAA,SAA
A,GAAA,aACA,GAAA,UACA,IAAA,GACA,OAAA,GAEA,EAAA,MAAA,EAAA,KACA,EAAA,MAAA,EACA
,IACA,iBAAA,GAAA,EAAA,EAAA,GACA,EAAA,MAAA,WAAA,OAAA,EAAA,EAAA,MAEA,EAGA,GAAA
,EAAA,QACA,EAAA,QAAA,EACA,GAAA,EAAA,IACA,EAAA,WAAA,OAAA,IAEA,KAAA,OAAA,EAzFA,C
A6FA,EACA,iBAAA,QAAA,OACA,mBAAA,GAAA;;;ACoJA,IAAA,EAAA,EAAA,UAAA,IA/NA,SAAA,EAA
A,GAIA,IASA,EATA,EAAA,KACA,EAAA,IACA,EAAA,EAEA,EAAA,SACA,EAAA,EAAA,IAAA,EAAA,GA
CA,EAAA,EAAA,IAAA,EAHA,IAIA,EAAA,EAAA,EACA,EAAA,EAAA,EAOA,SAAA,EAAA,EAAA,EAAA,G
ACA,IAAA,EAAA,GAIA,EAAA,EAoHA,SAAA,EAAA,EAAA,GACA,IAAA,EAAA,EAAA,GAAA,SAAA,EAC
A,GAAA,GAAA,UAAA,EACA,IAAA,KAAA,EACA,IAAA,EAAA,KAAA,EAAA,EAAA,GAAA,EAAA,IAAA,
MAAA,IAGA,OAAA,EAAA,OAAA,EAAA,UAAA,EAAA,EAAA,EAAA,KA3HA,EAHA,EAAA,GAAA,EAAA,
CAAA,SAAA,GAAA,GAAA,IAIA,QAAA,CAAA,EAAA,EAAA,IACA,MAAA,EA+IA,WACA,IACA,IAAA,EA
QA,OAPA,IAAA,EAAA,EAAA,aAEA,EAAA,EAAA,IAEA,EAAA,IAAA,WAAA,IACA,EAAA,QAAA,EAAA,U
AAA,gBAAA,IAEA,EAAA,GACA,MAAA,GACA,IAAA,EAAA,EAAA,UACA,EAAA,GAAA,EAAA,QACA,M
AAA,EAAA,IAAA,KAAA,EAAA,EAAA,EAAA,OAAA,EAAA,KA7JA,GAAA,EAAA,GAAA,GAGA,EAAA,IA
AA,EAAA,GAIA,EAAA,WAIA,IAHA,IAAA,EAAA,EAAA,EAAA,GACA,EAAA,EACA,EAAA,EACA,EAAA,
GACA,GAAA,EAAA,GAAA,EACA,GAAA,EACA,EAAA,EAAA,EAAA,GAEA,KAAA,GAAA,GACA,GAAA,E
ACA,GAAA,EACA,KAAA,EAEA,OAAA,EAAA,GAAA,GAWA,OARA,EAAA,MAAA,WAAA,OAAA,EAAA,E
AAA,EAAA,IACA,EAAA,MAAA,WAAA,OAAA,EAAA,EAAA,GAAA,YACA,EAAA,OAAA,EAGA,EAAA,EA
AA,EAAA,GAAA,IAGA,EAAA,MAAA,GACA,SAAA,EAAA,EAAA,EAAA,GAUA,OATA,IAEA,EAAA,GAAA
,EAAA,EAAA,GAEA,EAAA,MAAA,WAAA,OAAA,EAAA,EAAA,MAKA,GAAA,EAAA,GAAA,EAAA,GAIA,
IAEA,EACA,EACA,WAAA,EAAA,EAAA,OAAA,MAAA,EACA,EAAA,OAcA,SAAA,EAAA,GACA,IAAA,EA
AA,EAAA,EAAA,OACA,EAAA,KAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAA
A,EAAA,GAMA,IAHA,IAAA,EAAA,CAAA,MAGA,EAAA,GACA,EAAA,GAAA,IAEA,IAAA,EAAA,EAAA,E
AAA,EAAA,IACA,EAAA,GAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,IAAA,EAAA,EAAA,KACA,EAA
A,GAAA,GAIA,EAAA,EAAA,SAAA,GAIA,IAFA,IAAA,EAAA,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,EA
AA,EAAA,EAAA,EAAA,EACA,KACA,EAAA,EAAA,EAAA,EAAA,EAAA,GACA,EAAA,EAAA,EAAA,EAA
A,GAAA,EAAA,GAAA,EAAA,EAAA,EAAA,EAAA,KAAA,EAAA,GAAA,IAGA,ODA,EAAA,EAAA,EAAA,
EAAA,EAAA,EACA,IAIA,GAOA,SAAA,EAAA,EAAA,GAIA,OAHA,EAAA,EAAA,EAAA,EACA,EAAA,EA
A,EAAA,EACA,EAAA,EAAA,EAAA,EAAA,QACA,EAsBA,SAAA,EAAA,EAAA,GAEA,IADA,IAAA,EAAA,E
AAA,EAAA,GAAA,EAAA,EACA,EAAA,EAAA,QACA,EAAA,EAAA,GACA,GAAA,GAAA,GAAA,EAAA,EA
AA,IAAA,EAAA,WAAA,KAEA,OAAA,EAAA,GA8BA,SAAA,EAAA,GACA,OAAA,OAAA,aAAA,MAAA,EA
AA,GAgBA,GAhIA,EAAA,OAAA,GAAA,EA0HA,EAAA,EAAA,SAAA,GAMA,iBAAA,QAAA,OAAA,QAAA,
CACA,OAAA,QAAA,EAEA,IACA,EAAA,QAAA,UACA,MAAA,SACA,mBAAA,GAAA,EAAA,KACA,EAAA,
WAAA,OAAA,IAvNA,CA4NA,GACA;;ACzOA,IAAA,EAAA,QAAA,cAKA,EAAA,QAAA,gBAKA,EAAA,QA
AA,gBAQA,EAAA,QAAA,mBASA,EAAA,QAAA,iBAOA,EAAA,QAAA,gBAIA,EAAA,QAAA,gBAEA,EAAA,
KAAA,EACA,EAAA,OAAA,EACA,EAAA,OAAA,EACA,EAAA,UAAA,EACA,EAAA,QAAA,EACA,EAAA,O
AAA,EAEA,OAAA,QAAA;;ACoOC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,wBAAA,
EAAA,QAAA,0BAAA,EAAA,QAAA,cAAA,QAAA,UAAA,QAAA,iBAAA,EA9QD,IAAA,EAAA,EAAA,QAAA
,eAEA,EAAA,QAAA,gBA4QC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA
,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA
,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GA
AA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OA
AA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAA

A,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,
QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAtPK,MAAO,EAUX,YACI,EAAC,EAAsB,EACpC,EAaQb,
GACIB,KAAA,KAAO,EACP,KAAA,OAAS,EACT,KAAA,MAAQ,EACR,KAAA,QAAU,IACV,KAAA,UAAy,E
ACb,KAAK,YACF,KAAA,MAAQ,KAAK,KAAqB,EAAd,KAAK,OACzB,KAAA,MAAQ,KAAK,KAAqB,EAAd,
KAAK,QAEIB,MAAA,EAAY,GAAC,KAAK,SACHC,KAAA,OAAS,EAAW,KAAK,EAAU,YAIInC,YACD,IAAC,
MAAM,KAAK,SAAU,CACIB,MAAA,EAQK,KAAK,QAEZ,OADF,KAAA,QAAU,IACR,EAGL,IAAA,EAaIB,E
ACjB,GAAU,EACP,MAAC,GAAS,CACX,IAAA,EAAY,EAAY,EACzB,GAGD,GAFA,EAAK,EAaI,KAAK,SA
AW,GAehB,GADT,EAAK,EAaI,KAAK,SAAW,GACN,QACZ,GAAK,GAAW,IAAN,GAEB,MAAA,EAAM,KA
AK,MAAM,EAAM,KAAK,IAaI,GAAK,GAC3C,EAAU,KAAK,KAAO,KAAK,OAAS,EAAK,EACzC,EAAU,KA
AK,KAAO,KAAK,OAAS,EAAK,EAEPc,KAAK,YAAa,KAAK,iBAaIB,KAC3C,GAAU,GAOP,OAHF,KAAK,Y
AAa,KAAK,iBAaIB,KACtC,KAAA,QAAU,KAAK,aAAa,IAE5B,KAAK,aAAa,GAInB,aAAa,GACf,OAAC,MAA
d,KAAK,OAAGc,YAAf,KAAK,MACtB,EAef,KAAK,MAAM,GAIZ,iBAaIB,GACHB,OAAA,GAAS,KAAK,OA
AS,GAAS,KAAK,OAiL/C,QAAA,YAAA,EA3KK,MAAO,EASX,YACI,EAae,EAAC,EAC7B,GACG,KAAA,MA
AQ,EACR,KAAA,KAAO,EAaI,EACX,KAAA,MAAQ,EAEP,MAAA,EAAY,GAAC,KAAK,SACHC,KAAA,MA
AQ,EAAW,KAAK,EAAU,YACIC,KAAA,MAAQ,IAaI,EAAY,EAAG,EAAG,GAAO,EAAO,KAAK,SAG/C,KA
AA,EAADH,EAQK,EACD,EAAS,EAaI,EAEB,EAAS,EAaI,EAEnB,KAAA,EAaI,EAaI,KAAK,KAAK,EAaI,KA
AK,GAIB,YACD,IAAA,EAAY,EAAY,EAAY,EAAW,EAAW,EACvD,OAAM,CACR,GACD,EAaI,KAAK,MA
AM,YACf,EAaI,EAAK,KAAK,EAaI,QACX,GAAK,GAMV,GALJ,GAAK,EAaI,EAET,EAAK,EAAK,MADV,E
AAK,EAaI,GACc,EACvB,EAAM,GAAM,EAAO,KAAK,GAAK,EAaI,EAaI,KAAK,IAaI,KAC9C,EAaI,KAA
K,SACD,GAAM,KAAK,IAaI,GAAK,EACIB,MAOG,OAJP,EAAK,EAaI,KAAK,KAAQ,KAAK,EAaI,EAC3B,
KAAK,MAAQ,IACf,GAAK,KAAK,IAaI,KAAK,QAAS,EAaI,KAAK,QAEhC,KAAK,aAAa,GAGnB,aAAa,GAC
f,MAAE,YAAf,KAAK,MACA,EAef,KAAK,MAAM,IAmHrB,QAAA,UAAA,EA/GK,MAAO,EAMX,YACI,EA
M,EAAG,EAAM,EAAG,EACIB,GAWE,GAQE,KAAA,eAAiB,KACN,MAAd,KAAK,OAAGc,YAAf,KAAK,OA
BzB,KAAA,IAAM,EACN,KAAA,MAAQ,EAAM,EACd,KAAA,MAAQ,EACD,MAAR,IACF,EAAO,KAAK,UA
EM,iBAAT,IACT,EAAO,EAAK,aAGT,KAAK,kBAaOB,KAAK,OAAS,EACpC,MAAA,IAaI,gCACoB,OAAS,iC
AEpC,KAAA,OAAS,EAAW,KAAK,GAOXb,aAAa,GACf,OAAA,KAAK,iBACA,EAef,KAAK,MAAM,GAGpB,
YACS,OAAA,KAAK,aAAa,KAAK,IAAM,KAAK,MAAQ,KAAK,WAIpD,SAAU,EAawB,GAehC,MAAA,EAaI
,EAAO,OACX,EAaI,EAAS,GACb,EAaI,EAAS,GACb,EAAK,EAaI,GAAK,KAAK,IAaI,EAAG,GAAK,IAAO,
KAAK,IAaI,EAaI,EAAG,IAIxD,GAAA,EADoB,MAehB,MAAA,IAaI,iCAaIC,KAIzC,SAAU,EACZ,EAA6B,E
AAsB,EACnD,GACa,MAAX,IACF,GAAU,EAaV,EAAA,gBAEI,MAAA,EAaA,EAAK,IACL,EAAA,EAAA,oBA
AA,EAAY,EAAC,IAEzC,EAAA,EAAA,oBAAA,EAakB,EAQK,GAAa,EAAGB,GAG7D,SAAS,EAAK,GACR,IA
AA,EAAM,EACL,IAAA,IAaI,EAaI,EAAG,EAaI,EAAO,OAAQ,IACjC,GAAO,EAAO,GAET,OAAA,EAAM,E
AAO,OAGtB,SAAS,EAakB,EAA6B,GACID,IAAA,EAAGB,EACf,IAAA,IAaI,EAaI,EAAG,EAaI,EAAO,OAA
Q,IAAK,CACHC,MAAA,EAAO,EAAO,GAAK,EACzB,GAAiB,EAAO,EAEnB,OAAA,KAAK,KAAK,EAAGB,E
AAO,QAG1C,SAAS,EAAS,GAEV,MAAA,EAaA,EAAK,GACIB,EAaI,EAAO,OACb,IAAA,EAAO,EACP,EA
O,EACN,IAAA,IAaI,EAaI,EAAG,EAaI,EAAG,IAAK,CACpB,MAAA,EAaI,EAAO,GAAK,EACtB,GAAQ,KA
AK,IAaI,EAAG,GACpB,GAAQ,KAAK,IAaI,EAAG,GAEd,OAAA,EAaI,EAAK,EAAO,KAAK,IAAK,EAaI,EA
AK,EAAM,GAGnD,SAAS,EAAS,GAEV,MAAA,EAaA,EAAK,GACIB,EAaI,EAAO,OACb,IAAA,EAAO,EACP,
EAAO,EACN,IAAA,IAaI,EAaI,EAAG,EAaI,EAAG,IAAK,CACpB,MAAA,EAaI,EAAO,GAAK,EACtB,GAA
Q,KAAK,IAaI,EAAG,GACpB,GAAQ,KAAK,IAaI,EAAG,GAEd,OAAA,EAaI,EAAK,EAAO,KAAK,IAAK,GA
AK,EAaI,GAAM,EAAM,KACxD,QAAA,cAAA;:ACnOM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,iBAAA,EAxCP,IAAA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,EAAA,QAAA,eAkBA,SAAS,EAC
L,EAaOB,EAae,EAAO,EAC1C,EAA2B,UAAW,GAOpC,GANQ,MAAR,IACF,EAAO,GAEI,MAAT,IACF,EA
Q,WAEI,YAAV,GAAiC,UAAV,EACnB,MAAA,IAaI,+BAA+B,KAerC,MAAA,EAAS,IAaI,EAaJ,UAAc,EA
O,EAAM,EAAO,GAC3C,GAAM,EAAO,EAAA,QAAA,EAAO,GACrB,IAAA,IAaI,EAaI,EAAG,EAaI,EAaI,O
AAO,OAAQ,IACrC,EAaI,OAAO,GAAK,EAAO,YAEIB,OAAA,EAaI,WAGN,MAAM,GAAC,EAAG,EAAA,IA
AA,CAAC,aAAA,IAAxB,QAAA,YAAA;:ACNA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,kBAAA,EAICP,IAAA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,EAAA,QAAA,eAiBA,SAAS,EACL,EAaOB

,EAAO,EAAG,EAAS,EAAG,EAC1C,GACE,GAAS,MAAT,GAAyC,SAAvB,EACd,MAAA,IAAI,+BAA+B,KAEr
C,MAAA,EACF,IAAI,EA AJ,YAAgB,EAAM,EA AQ,GA AO,EA AuB,GAC1D,GAAM,EA AO,EAAA,QAAA,EA
O,GACrB,IAAA,IAAI,EA AI,EA AG,EA AI,EA AI,OAAO,OAAQ,IACrC,EA AI,OAAO,GA AK,EA AU,YAErB,OA
AA,EA AI,WAGN,MAAM,GA Ae,EA AG,EAAA,IAAA,CAAC,cAAA,IAAzB,QAAA,aAAA;;ACCA,aAAA,OAA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAnCP,IAAA,EAAA,QAAA,YACA,EAAA,QAA
A,eACA,EAAA,QAAA,eAsBA,SAAS,EACL,EA AoB,EA AS,EA AG,EA AS,EA AG,EA AkB,UAC9D,GACI,MAA
A,GAAM,EA AO,EAAA,QAAA,EA AO,GACpB,EA AS,IAAI,EA AJ,cAAkB,EA AQ,EA AQ,KAAM,GACID,IAAA,
IAAI,EA AI,EA AG,EA AI,EA AI,OAAO,OAAQ,IACrC,EA AI,OAAO,GA AK,EA AO,YAEIB,OAAA,EA AI,WAGN
,MAAM,GA AgB,EA AG,EAAA,IAAA,CAAC,eAAA,IAA1B,QAAA,cAAA;;ACJN,aAAA,OAAA,eAAA,QAAA,a
AAA,CAAA,OAAA,IAAA,QAAA,MAAA,EAICD,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAuBM,SAAU,
EACZ,EA Ae,EA Ac,EA AO,EACpC,EA A2B,WACzB,GA AS,IAAT,EACI,MAAA,IAAI,MAAM,8BAGZ,MAAA,E
AAoB,CAAC,MAAA,EA AO,KAAA,EAAM,KAAA,EAAM,MAAA,GA EvC,OAAA,EA AO,OAAA,UAAU,EA Aj
B,MAAwB,GA AiB;;ACH3C,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA9BP,IA
AA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,eAiBA,SAAS,EA AwB,G
ACzB,MAEA,EA AqB,CAAC,OAFb,EA AgB,EAAA,iBAAA,EA AO,QAAS,SAGxC,OAAA,EA AO,OAAA,UAAU
,EA AjB,KAAuB,GAGzB,MAAM,GA AO,EA AG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACHA,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EA3BP,IAAA,EAAA,QAAA,aACA,EA
A,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EA A8B,GAC/B,MAEA,EA A2B,CAAC,G
AFvB,EA AgB,EAAA,iBAAA,EA AG,IAAK,eAG5B,OAAA,EA AO,OAAA,UAAU,EA AjB,WAA6B,GA E/B,MAA
M,GA Aa,EA AG,EAAA,IAAA,CAAC,YAAA,IAAvB,QAAA,WAAA;;ACGA,aAAA,OAAA,eAAA,QAAA,aAAA
,CAAA,OAAA,IAAA,QAAA,UAAA,EA9BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,
sBAGA,EAAA,QAAA,eAeA,SAAS,EA AwB,GACzB,MAEA,EA AqB,CAAC,GA FjB,EA AgB,EAAA,iBAAA,EA
AG,IAAK,SAI5B,OAAA,EA AO,OAAA,UAAU,EA AjB,KAAuB,GAGzB,MAAM,GA AO,EA AG,EAAA,IAAA,C
AAC,MAAA,IAAjB,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,W
AAA,EA9BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAeA,S
AAS,EA AyB,GAC1B,MAEA,EA AsB,CAAC,GA FIB,EA AgB,EAAA,iBAAA,EA AG,IAAK,UAI5B,OAAA,EA AO
,OAAA,UAAU,EA AjB,MAAwB,GAG1B,MAAM,GA AQ,EA AG,EAAA,IAAA,CAAC,OAAA,IAAIB,QAAA,MA
AA;;ACsBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EA pDP,IAAA,EAAA,QAA
A,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAiCA,SAAS,EACL,EA AiB,GACb,MAE
A,EA AwB,CAAC,GA FpB,EA AgB,EAAA,iBAAA,EA AG,IAAK,YAG7B,EA AsB,CAAC,KAAM,GA E5B,OAAA,
EA AO,OAAA,UACV,EADG,QACM,EA AgC,GAGxC,MAAM,GA AU,EA AG,EAAA,IAAA,CAAC,SAAA,IAAp
B,QAAA,QAAA;;AChCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAnBP,IAAA
,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,EAAA,QAAA,aAeO,SAAA,IAAA,G
AAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,S
AAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IA
AA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAA
A,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAA
A,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA
,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,G
AAA,EARP,SAAS,EA AW,GACZ,MAAA,GA AK,EA AgB,EAAA,iBAAA,EA AG,IAAK,WAI5B,OAHP,EA AK,O
ACW,IAAZ,EA AG,KACH,yDAA2D,EA AG,UAC3D,EA AQ,EAAA,SAAA,EA AI,GAGd,MAAM,GA AY,EA AG,
EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACEA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,eAAA,EA rBP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,EA
AA,QAAA,aAiBO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EA
AA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EA
AA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA
,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,
eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,K

AAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EA
AA,GAAA,EAAA,IAAA,EAAA,GAAA,EARP,SAAS,EAaW,EAaWB,GACpC,MAAA,GAaK,EAaGB,EAAA,iB
AAA,EAAG,IAAK,WAI5B,OAHP,EAaK,OACW,IAAZ,EAAG,KACH,yDAA2D,EAAG,UAC3D,EAaQ,EAAA,
SAAA,EAaI,GAGd,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAaTB,QAAA,UAAA;;ACAA,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAaBP,IAAA,EAAA,QAAA,sBAEA,EAAA,EA
A,QAAA,YACA,EAAA,QAAA,eACA,EAAA,QAAA,aAiBO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAA
A,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA
,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,G
AAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,I
AAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yB
AAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GA
AA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EARP,SAAS,EAaW,EAaW
B,GACpC,MAAA,GAaK,EAaGB,EAAA,iBAAA,EAAG,IAAK,WAI5B,OAHP,EAaK,OACW,IAAZ,EAAG,KA
CH,yDAA2D,EAAG,UAC3D,EAaQ,EAAA,SAAA,EAaI,GAGd,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,W
AAA,IAaTB,QAAA,UAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA
BP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,EAAA,QAAA,aAiBO,SAA
A,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAA
A,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,
EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EA
AA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GA
AA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OA
AA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA
,EAAA,GAAA,EARP,SAAS,EAaW,EAaWB,GACpC,MAAA,GAaK,EAaGB,EAAA,iBAAA,EAAG,IAAK,WAI
5B,OAHP,EAaK,OACW,IAAZ,EAAG,KACH,yDAA2D,EAAG,UAC3D,EAaQ,EAAA,SAAA,EAaI,GAGd,MA
AM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAaTB,QAAA,UAAA;;ACOA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,WAAA,EA7BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAA
A,sBAGA,EAAA,QAAA,eAeA,SAAS,EAaYB,GAC1B,MACA,EAaSB,CAAC,GADIB,EAaGB,EAAA,iBAAA,E
AAG,IAAK,UAG5B,OAAA,EAaO,OAAA,UAAU,EAaJB,MAaWB,GAG1B,MAAM,GAaQ,EAAG,EAAA,IAA
A,CAAC,OAAA,IAaIB,QAAA,MAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA
,WAAA,EA7BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAeA
,SAAS,EAaYB,GAC1B,MAEA,EAaSB,CAAC,GAFIB,EAaGB,EAAA,iBAAA,EAAG,IAAK,WAI5B,OAAA,EA
AO,OAAA,UAAU,EAaJB,MAaWB,GAE1B,MAAM,GAaQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAaIB,QAAA,
MAAA;;ACQN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAaCD,IAAA,EAAA,Q
AAA,WACA,EAAA,QAAA,qBAiBM,SAAU,EACZ,EAaYC,GACvC,KAAE,EAaA,EAAA,cAAA,IAaOB,WAAV
,GAaUB,MAAM,QAAQ,KACpD,cAAV,EACI,MAAA,IAAI,MACN,kFAGF,GAaU,WAAV,IAaSB,EAaA,EAAA
,cAAA,MACjC,aAAiB,YACf,MAAA,IAAI,MACN,6EAKC,OAAA,EAaW,EAAA,YAAA,EAaFM,GACQ,GACe;;
ACL1C,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA/BP,IAAA,EAAA,QAAA,aA
CA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAgBA,SAAS,EAaWB,GACzB,MAEA,EAaQ
B,CAAC,GAFjB,EAaGB,EAAA,iBAAA,EAAG,IAAK,WAI5B,OAAA,EAaO,OAAA,UAAU,EAaJB,KAaUB,GA
GzB,MAAM,GAaO,EAAG,EAAA,IAAA,CAAC,MAAA,IAaJB,QAAA,KAAA;;AC0FA,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAzHP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,Y
AEA,EAAA,QAAA,YACA,EAAA,QAAA,sBACA,EAAA,QAAA,eACA,EAAA,QAAA,aAkHO,SAAA,IAAA,GA
AA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SA
AA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAA
A,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,
gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,
IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,E
AAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GA

AA,EAnEP,SAAS,EACL,EAAiB,EACjB,EAAsC,EACtC,EAAqB,EAAoC,CAAC,EAAG,GAC7D,EAA4B,QACx
B,MAAA,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,mBAC7B,GACF,EAAGB,EAAA,iBAAA,EAAiB,kBAAM
B,mBACID,GACF,EAAGB,EAAA,iBAAA,EAAiB,kBAAMB,mBAEPD,IAAA,EAAM,EACN,GAAe,EAMf,GAL
Y,IAAZ,EAAG,OACL,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAAI,CAAC,EAAG,EAAG,MAAM,GAAL,EA
AG,MAAM,GAAL,EAAG,MAAM,MAGxC,SAAf,EACI,MAAA,IAAI,MACN,sFAIN,EAAK,OACY,IAAb,EAAI,
KACJ,IAAM,mEACM,EAAI,SACpB,EAAK,OACyB,IAA1B,EAAiB,KACjB,IAAM,8EACU,EAAiB,SACrC,EAA
K,OACyB,IAA1B,EAAiB,KACjB,IAAM,8EACU,EAAiB,SACrC,EAAK,OAC6B,IAA9B,EAAiB,MAAM,GACv
B,IACI,4FACuB,EAAiB,MAAM,OACtD,EAAK,OAC6B,IAA9B,EAAiB,MAAM,GACvB,IAAM,4FAC2B,EAAi
B,MAAM,OAETD,MAAA,EAAa,EAAiB,MAAM,GACpC,EAAoB,EAAiB,MAAM,GACjD,EAAK,OACD,EAAiB
,MAAM,KAAO,EAAa,EAC3C,IACI,gFACW,EAAa,iBACb,EAAiB,MAAM,OAEPc,MAAA,GAAY,EACd,EAA
A,iBAAA,EAAK,EAakB,EAAS,EAAK,EAAY,GAE/C,GACF,EAAO,EAAA,QAAA,EAaw,EAfE,EAeIC,QAA
S,GAe9D,OAAA,GACK,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAI,MAAM,GAAL,EAAI,MAAM,GAAL,EAAI,
MAAM,KAETD,EAGF,MAAM,GAakB,EAAG,EAAA,IAAA,CAAC,iBAAA,IAA5B,QAAA,gBAAA;;ACIDA,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EaxEP,IAAA,EAAA,QAAA,aACA,EAA
A,QAAA,sBAEA,EAAA,EAAA,QAAA,YAQEO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EA
AA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WA
AA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,
EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,
EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,
GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IA
AA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAAtCP,eAAe,EACX,EAAsB,GACIB,MAA
A,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAC7B,GAAK,EAAGB,EAAA,iBAAA,EAAG,IAAK,aAEnC,EA
AK,OACD,EAAG,QAAU,EAAG,MACHb,sDACI,EAAG,iBAAiB,EAAG,WAE/B,EAAK,OACW,IAAZ,EAAG,K
AAY,yCAA2C,EAAG,WAEjE,EAAK,OACW,IAAZ,EAAG,KAAy,yCAA2C,EAAG,WAE3D,MAAA,QAAc,EA
AG,OACjB,QAAc,EAAG,OACjB,EAAO,IAAI,IAAI,GAejB,IAAA,EAAa,EACZ,IAAA,IAAI,EAAI,EAAG,EAAL
,EAAM,OAAQ,IAC3B,EAAK,IAAI,EAAM,KACIB,IAIE,MAAA,EAAS,IAAI,EAAJ,aAAiB,CAAC,GAAa,EAA
G,OAC3C,EAAU,IAAI,EAAJ,aAAiB,CAAC,GAAa,SAC1C,IAAA,IAAI,EAAI,EAAG,EAAI,EAAG,EAAI,EA
M,OAAQ,IACIC,EAAK,IAAI,EAAM,MACIB,EAAO,OAAO,GAAK,EAAM,GACzB,EAAQ,OAAO,GAAK,EAC
pB,KAGG,MAAA,CAAC,EAAO,WAAy,EAQY,YAE9B,MAAM,EAAiB,EAAvB,QAAA,eAAA;;AC7CA,aAAA,
OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA1BP,IAAA,EAAA,QAAA,aACA,EAAA,QA
AA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAawB,GACzB,MACA,EAAqB,CAAC,GADjB
,EAAGB,EAAA,iBAAA,EAAG,IAAK,SAE5B,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAezB,MAAM,GA
AO,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACEA,aAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,OAAA,IAAA,QAAA,SAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAG
A,EAAA,QAAA,eAcA,SAAS,EAauB,GACxB,MAEA,EAAoB,CAAC,GAfHb,EAAGB,EAAA,iBAAA,EAAG,IA
AK,QAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,IAAsB,GAExB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,K
AAA,IAAhB,QAAA,IAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA
3BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EA
AwB,GACzB,MACA,EAAqB,CAAC,GADjB,EAAGB,EAAA,iBAAA,EAAG,IAAK,SAG5B,OAAA,EAAO,OAA
A,UAAU,EAajB,KAAuB,GAezB,MAAM,GAao,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;A
CNA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EApBP,IAAA,EAAA,QAAA,sBAE
A,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,WAEo,SAAA,IAAA,GAAA,mBAAA,QAA
A,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA
,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,E
AAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yB
AAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EA
A,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAA
A,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EATP,SAAS,E

ACL,EAawB,EAae,GACnC,MAAA,GAACK,EAagB,EAAA,iBAAA,EAAG,IAAK,WAK5B,OAJP,EAACK,OACW,IAAZ,EAAG,KACH,uDACuD,EAAG,gBACvD,EAAM,EAAA,OAAA,EAAl,CAAC,GAAQ,CAAC,IAEtB,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAaBP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,WagBO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAVP,SAAS,EAcl,EAawB,EACxB,GACl,MAAA,GAACK,EAagB,EAAA,iBAAA,EAAG,IAAK,WAK5B,OAJP,EAACK,OACW,IAAZ,EAAG,KACH,uDACuD,EAAG,gBACvD,EAAM,EAAA,OAAA,EAAl,EAAO,GAEnB,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAaBP,IAAA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,eACA,EAAA,QAAA,WagBO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OA AA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAVP,SAAS,EAcl,EAawB,EACxB,GACl,MAAA,GAACK,EAagB,EAAA,iBAAA,EAAG,IAAK,WAK5B,OAJP,EAACK,OACW,IAAZ,EAAG,KACH,uDACuD,EAAG,gBACvD,EAAM,EAAA,OAAA,EAAl,EAAO,GAEnB,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;AC4BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAIDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAuBA,SAAS,EAa2B,EAAsB,GAAM,GACxD,MAAA,GAAU,EAagB,EAAA,iBAAA,EAaQ,SAAU,UAAW,WAKzD,IAHS,IAAT,IACF,EAAM,EAaQ,KAAO,GAEnB,IAaQ,EAaQ,KAAO,EACnB,MAAA,MACF,+EACmB,EAaQ,oBAaOB,KAG/C,MAAA,EAawB,CAAC,OAaQ,GACjC,EAAsB,CAAC,IAAA,GAEtB,OAAA,EAAO,OAAA,UACV,EA DG,QACM,EAagC,GAGxC,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACfA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAnCP,IAAA,EAAA,QAAA,gBACA,EA AA,QAAA,sBAGA,EAAA,QAAA,cACA,EAAA,QAAA,gBAmbA,SAAS,EAACK,IAER,EAAA,EAAA,QAagB,cAAhB,EAAM,MACN,IAAM,gEACS,EAAM,UAEnB,MAAA,EAaOB,CAAC,MAAA,GAEPB,OAAA,EAAO,OA AA,UAAU,EAajB,IAAsB,GAGxB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAAA,IAAhB,QAAA,IAAA;;A CAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAnCP,IAAA,EAAA,QAAA,gBA CA,EAAA,QAAA,sBAGA,EAAA,QAAA,cACA,EAAA,QAAA,gBAmbA,SAAS,EAAM,IAET,EAAA,EAAA,QA AgB,cAAhB,EAAM,MACN,IAAM,iEACS,EAAM,UAEnB,MAAA,EAaQB,CAAC,MAAA,GAERB,OAAA,EA AO,OAAA,UAAU,EAajB,KAAuB,GAGzB,MAAM,GAao,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,K

AAA;;ACiCa,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAnEP,IAAA,EAAA,Q
AAA,cACA,EAAA,QAAA,aACA,EAAA,QAAA,WACA,EAAA,QAAA,UACA,EAAA,QAAA,gBACA,EAAA,Q
AAA,WACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,aACA,EAAA,QAAA,YAEA,EAAA,QA
AA,UAmBA,SAAS,EAAO,GACR,MAAA,EAaqB,EAAM,MAAM,EAAM,MAAM,OAAS,GACtD,EAAQ,EAA
M,KAAO,EACvB,IAAA,EACA,GAAA,GAAsB,EAAG,CACrB,MAAA,GAAe,EAAQ,EAAA,SAAA,EAAO,CAA
C,EAAO,IAC5C,GAAM,EAak,EAAA,MAAA,OACN,CAGC,MAAA,EAac,CAAC,EAAO,GAak,EAaqB,IACh
D,GAAY,EAAQ,EAAA,UAAA,EAak,EAAA,MAAA,GAAQ,CAAC,EAAO,IACzC,GAAY,EAAQ,EAAA,UAA
A,EAak,EAAA,MAAA,GAAQ,CAAC,EAAO,IAEzC,GACF,EAAQ,EAAA,UAAA,EAAM,EAAA,OAAA,EAA
W,CAAC,EAAG,GAai,CAAC,EAAO,EAaqB,IAAK,GACjE,GAA0B,EAC5B,EAAA,MAAA,EAAQ,EAAA,UA
AA,EAAM,EAAA,OAAA,EAaw,CAAC,EAAG,GAai,CAAC,EAAO,EAaqB,IAAK,IACnE,EAAO,EAAA,SAA
C,IAEN,GAai,EAAO,EAAA,QAAA,CAAC,EAaw,GAAgB,GACvC,GAai,EAAO,EAAA,QAAA,CAAC,EAA
W,GAAgB,GACvC,GACF,EAAQ,EAAA,UAAA,EAAQ,EAAA,SAAA,EAAG,GAai,CAAC,EAAY,GAai,EAAY
,KACxD,GAAM,EAak,EAAA,MAAA,GAIT,GAFJ,GAAM,EAak,EAAA,MAAA,GAEQ,IAaf,EAAM,MAaiC,
IAAnB,EAAM,MAAM,GAAU,CACtC,MAAA,EAAO,EACP,EAAQ,EAAM,MAAM,GAC1B,GAAM,EAAQ,EA
AA,SAAA,EAak,CAAC,EAAO,EAai,MAAM,GAak,EAAO,EAai,MAAM,KAC3D,EAak,UAEA,OAAA,EA
GF,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAiB,QAAA,MAAA;;ACZA,aAAA,OAAA,eAAA,QA
AA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAzDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAA
A,QAAA,sBAGA,EAAA,QAAA,eAqCA,SAAS,EACL,EAAsB,EAakC,EAAO,GAC3D,MAEA,EAauB,CAAC,G
AFnB,EAagB,EAAA,iBAAA,EAAG,IAAK,UAG7B,EAAoB,CAAC,gBAAA,EAaiB,KAAA,GAErC,OAAA,EA
AO,OAAA,UACH,EADJ,OACY,EACR,GAGN,MAAM,GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAiB,QAA
A,MAAA;;ACyBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EahFP,IAAA,EAA
A,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,aACA,EAAA,QAAA,WACA,EAAA,QAAA,gBACA,EAAA
,QAAA,WACA,EAAA,QAAA,cACA,EAAA,QAAA,YACA,EAAA,QAAA,YACA,EAAA,QAAA,YACA,EAAA,
QAAA,iBAEA,EAAA,QAAA,SAiBA,SAAS,EAAM,EAae,IAExB,EAAA,EAAA,QAagB,YAAhB,EAAM,MAC
N,uDAayD,EAAM,SAE/D,IAAA,EAaqB,EAAM,MAAM,EAAM,MAAM,OAAS,GACpD,MAAA,EAAQ,EAA
M,KAAO,EAevB,IAAA,EACA,GAAa,MAAb,GAAqB,EAAY,EAAoB,CAEjD,MAAA,EAAQ,EAAM,MAAM,IA
AI,GAak,GAC7B,EAAO,EAAM,MAAM,IAAI,GAak,GACiC,EAak,EAAM,MAAM,OAAS,GAak,EAC/B,G
AAgB,EAAM,EAAA,OAAA,EAAO,EAAO,GACpC,EAaqB,OACb,GAaiB,MAAb,GAAqB,EAAY,EAAoB,CA
ExD,MAAA,EAAa,EAAM,MAAM,IAAI,GAak,GACxC,EAaw,EAAM,MAAM,OAAS,GAak,EAAY,EACjD,
GAAgB,EAAO,EAAA,QAAA,CAAC,GAAO,EAAM,EAAA,OAAA,IAAc,EAAM,MAAM,OAAS,GACxE,EAaq
B,OAerB,EAagB,EAIZ,MAAA,GAAa,EAau,EAAA,WAAA,GACvB,GACF,EAAQ,EAAA,UAAA,EAAQ,EAA
A,SAAA,EAae,GAAa,CAAC,EAAO,IAEID,GAAM,EAai,EAAA,KAAA,GAGV,EAAO,KAAK,MAAM,EAaqB
,GAak,EAC5C,GAAa,EAak,EAAA,MAAA,GACiB,GAAa,EAak,EAAA,MAAA,GACiB,GAauB,EACzB,EA
AA,OAAA,EAAY,CAAC,EAAM,EAaqB,GACxC,EAaw,MAAM,OAAS,GACxB,GAauB,EACzB,EAAA,OAA
A,EAAY,CAAC,EAAM,EAaqB,GACxC,EAaw,MAAM,OAAS,GAExB,EAac,EAac,MAAM,QAGjC,OAFP,E
AAY,EAac,MAAM,OAAS,GAak,GAevC,EACH,EAAA,UAAA,EAAQ,EAAA,SAAA,EAaqB,GAai,EAaqB,I
AAK,GAGID,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACrDA,aAAA,OAAA,
eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mB
AGA,EAAA,QAAA,sBAGA,EAAA,QAAA,eAcA,SAAS,EAawB,GACzB,MAEA,EAaqB,CAAC,GAfjB,EAag
B,EAAA,iBAAA,EAAG,IAAK,SAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,KAAuB,GAezB,MAAM,GAAO,EA
AG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACsBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAAA,QAAA,uBAAA,EAIDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,kBACA,E
AAA,QAAA,sBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,eA0BA,SAAS,EACL,EAAsB,GACpB,IAAA,GAak,
EAagB,EAAA,iBAAA,EAAG,IAAK,qBAC7B,GAak,EAagB,EAAA,iBAAA,EAAG,IAAK,sBAChC,EAai,IAA
M,EAae,EAAA,gBAAA,EAai,IAEH,EAAA,EAAA,4BAAA,EAAG,MAAO,EAAG,OAeIC,MAAA,EAakC,CA
AC,EAAG,EAai,EAAG,GAG5C,OAAA,EAAO,OAAA,UACV,EADG,kBACgB,EAHT,IAMT,MAAM,GAAoB,E
AAG,EAAA,IAAA,CAAC,mBAAA,IAA9B,QAAA,kBAAA;;ActBa,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,aAAA,EA3BP,IAAA,EAAA,QAAA,sBAEA,EAAA,QAAA,WAEA,EAAA,QAAA,eACA,E

AAA,QAAA,aAiBA,SAAS,EAA2B,EAAsB,GACID,MAAA,GAAG,EAAGB,EAAA,iBAAA,EAAG,IAAK,WAC5
B,OAAA,EAAQ,EAAA,SAAA,GAAI,EAAa,EAAA,cAAA,EAAG,MAAO,GAAM,UAG3C,MAAM,GAUU,EAA
G,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACkBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA
A,IAAA,QAAA,WAAA,EA9CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAA
A,EAAA,QAAA,YAEA,EAAA,QAAA,eAqCO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAA
A,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAA
A,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,E
AAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,E
AAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,G
AAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAA
A,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EApBP,SAAS,EACL,EA8B,EAAO,GACj
C,MAAA,GACF,EAqB,EAAA,sBAAA,EAAS,UAAW,QAAS,qBAEtD,EAAG,OACD,EAAS,QAAU,EAAG,IA
AM,wCAE5B,EAAS,OAAS,GACpB,EAAG,OACD,GAAQ,EAAS,GAAG,KAAM,IAAM,sCAGhC,MAAA,EAq
B,EACrB,EAAMB,CAAC,KAAA,GAEnB,OAAA,EAAO,OAAA,UACV,EADG,KACG,EAAGC,GAGrC,MAAM,
GAAQ,EAAG,EAAA,IAAA,CAAC,OAAA,IAIB,QAAA,MAAA;;ACdA,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,UAAA,EAhCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sB
AGA,EAAA,QAAA,eAeA,SAAS,EAawB,EAaiB,EAAQ,GACID,MAEA,EAaqB,CAAC,GAfjB,EAAGB,EAAA,
iBAAA,EAAG,IAAK,SAG7B,EAAMB,CAAC,MAAA,GAEnB,OAAA,EAAO,OAAA,UACV,EADG,KACG,EA
gC,GAErC,MAAM,GAAG,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACkCA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EAIEP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAI
A,EAAA,QAAA,sBAGA,EAAA,QAAA,eAmCA,SAAS,EACL,EAAsB,EAaiB,EAAe,EACtD,EAAY,EAAG,EA
U,EAAG,EAAG,EAAG,EAAG,EAC5D,EAaiB,GACb,MAEA,EA6B,CAAC,GAfzB,EAAGB,EAAA,iBAAA,EA
AG,IAAK,iBAG7B,EA2B,CAC/B,MAAA,EACA,IAAA,EACA,QAAA,EACA,UAAA,EACA,QAAA,EACA,aA
AA,EACA,YAAA,EACA,eAAA,GAGK,OAAA,EAAO,OAAA,UACV,EADG,aACW,EACd,GAGC,MAAM,GAA
e,EAAG,EAAA,IAAA,CAAC,cAAA,IAAzB,QAAA,aAAA;;ACtCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,SAAA,EA5BP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAGA,E
AAA,QAAA,eAcA,SAAS,EAauB,GACxB,MAEA,EAoB,CAAC,GAfHb,EAAGB,EAAA,iBAAA,EAAG,IAAK,
QAI5B,OAAA,EAAO,OAAA,UAAU,EAajB,IAAsB,GAExB,MAAM,GAAM,EAAG,EAAA,IAAA,CAAC,KAA
A,IAAhB,QAAA,IAAA;;ACGN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA9BD
,IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,WACA,EAAA,QAAA,qBakBM,SAAU,EAAS,EAAsB,IAC/B,EA
A,EAAA,eAAA,GACR,MAAA,GAAGB,EAaw,EAAA,YAAA,EAAQ,GACrC,GAayB,IAAzB,EAAG,OACV,MA
AA,IAAI,MAAM,sDAGX,OAAA,EAaw,EAAA,YAAA,EADM,KACS,EAAG;;ACkBJD,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA/CD,IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,WACA,EA
AA,QAAA,qBAyBM,SAAU,EACZ,EAAsB,EACtB,GAEE,IADU,EAAA,EAAA,eAAA,GACD,MAAT,GAAGC,I
AAjB,EAAM,OACnB,MAAA,IAAI,MAAM,iDAEZ,MAAA,GAAGB,EAaw,EAAA,YAAA,EAAQ,GACrC,GA
ayB,IAAzB,EAAG,QAAYC,IAAzB,EAAG,OACxC,MAAA,IAAI,MACN,kEAEF,GAAYB,IAAzB,EAAG,QAAYB,M
AAT,EAC1B,MAAA,IAAI,MACN,gFAGC,OAAA,EAaw,EAAA,YAAA,EAAQ,EAAO,EAAG;;ACCjD,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA/CD,IAAA,EAAA,QAAA,sBAGA,EAAA,QA
AA,WACA,EAAA,QAAA,qBAyBM,SAAU,EACZ,EAAsB,EACtB,GAEE,IADU,EAAA,EAAA,eAAA,GACD,M
AAT,GAAGC,IAAjB,EAAM,OACnB,MAAA,IAAI,MAAM,kDAEZ,MAAA,GAAGB,EAaw,EAAA,YAAA,EA
AQ,GACrC,GAAYB,IAAzB,EAAG,QAAYC,IAAzB,EAAG,OACxC,MAAA,IAAI,MACN,sEAEF,GAAYB,IAAzB,E
AAG,QAAYB,MAAT,EAC1B,MAAA,IAAI,MACN,2EAGC,OAAA,EAaw,EAAA,YAAA,EAAQ,EAAO,EAAG;;
ACEjD,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAhDD,IAAA,EAAA,QAAA,sB
AGA,EAAA,QAAA,WACA,EAAA,QAAA,qBAyBM,SAAU,EACZ,EAAsB,EACtB,GAEE,IADU,EAAA,EAAA,e
AAA,GACD,MAAT,GAAGC,IAAjB,EAAM,OACnB,MAAA,IAAI,MAAM,kDAEZ,MAAA,GAAGB,EAaw,EA
A,YAAA,EAAQ,GACrC,GAAYB,IAAzB,EAAG,QAAYC,IAAzB,EAAG,OACxC,MAAA,IAAI,MACN,wEAGF,G
AAYB,IAAzB,EAAG,QAAYB,MAAT,EAC1B,MAAA,IAAI,MACN,2EAGC,OAAA,EAaw,EAAA,YAAA,EAAQ
,EAAO,EAAG;;ACIjD,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAnDD,IAAA,E

AAA,QAAA,sBAGA,EAAA,QAAA,WACA,EAAA,QAAA,qBAyBM,SAAU,EACZ,EACA,EACA,GAEE,IADU,
EAAA,EAAA,eAAA,GACD,MAAT,GAaKc,IAAjB,EAAM,OACnB,MAAA,IAAI,MAAM,iDAEZ,MAAA,GAAg
B,EAaW,EAAA,YAAA,EAaQ,GACrC,GAaYb,IAAzB,EAaC,QAAyC,IAAzB,EAaC,OACxC,MAAA,IAAI,MA
CN,0EAGF,GAaYb,IAAzB,EAaC,QAAyB,MAAT,EAC1B,MAAA,IAAI,MACN,2EAKC,OAFP,EAaQ,GACJ,G
ACG,EAaW,EAAA,YAAA,EAaQ,EAaO,EAae;;ACK3C,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,UAAA,EAxDp,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QA
AA,eA0BA,SAAS,EAcl,EAaiB,EAai,EAAG,GAAS,GAC7B,MAAA,GAaK,EAagB,EAAA,iBAAA,EAAG,IA
AK,QAC/B,GAAY,IAAZ,EAAG,KACC,MAAA,IAAI,MAAM,sDAEZ,MAAA,EAAU,EAAG,MAAM,EAAG,MA
AM,OAAS,GACvC,GAAA,EAai,EACA,MAAA,IAAI,6DACiD,iBAC5C,KAGX,MAAA,EAaqB,CAAC,EAAG,
GACzB,EAaMB,CAAC,EAAA,EAAG,OAAA,IAEtB,EAaQ,GAaW,EAaO,OAAA,UAC7B,EADsB,KAChB,EA
AgC,GAEnC,MAAA,CAAC,OAAA,EAaQ,QAAA,GAGX,MAAM,GAaO,EAAG,EAAA,IAAA,CAAC,MAAA,I
AAjB,QAAA,KAAA;;ACdA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAvCP,I
AAA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,EAAA,QAAA,eAsBA,SAAS,EAcl,EAaOB,EAaO,EAAG,EA
AS,EAAG,EAC1C,GACE,GAAS,MAAT,GAaYc,SAaVb,EACd,MAAA,IAAI,MAAM,qCAEZ,MAAA,EACF,IA
AI,EAaJ,YAagB,EAAM,EAaQ,GAaO,EAAsB,GACzD,GAAM,EAaO,EAAA,QAAA,EAaO,GACrB,IAAA,IA
AI,EAai,EAAG,EAai,EAai,OAaO,OAaQ,IACrC,EAai,OAaO,GAaK,EAaU,YAErB,OAAA,EAai,WAGN,M
AAM,GAaKb,EAAG,EAAA,IAAA,CAAC,iBAAA,IAA5B,QAAA,gBAAA;;AC+BA,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAzEP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,
QAAA,sBAEA,EAAA,QAAA,WAEA,EAAA,QAAA,eAmDA,SAAS,EAcl,EAaiB,EAaO,GACpB,MAAA,GAa
K,EAagB,EAAA,iBAAA,EAAG,IAAK,SAAU,sBACtC,EAAA,EAAA,QAAA,EAAG,KAAO,EAAG,IAAM,wCA
EpB,MAAA,EAaUB,CAAC,EAAG,GAC3B,EAaqB,CAAC,KAAA,IACrB,EAaQ,GAaW,EAaO,OAAA,UACH,
EADJ,OACY,EACR,GACvB,MAAA,CAAC,OAAA,EAaQ,QAAA,GAGX,MAAM,GAAS,EAAG,EAAA,IAAA,
CAAC,QAAA,IAAnB,QAAA,OAAA;;AC7BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
wBAAA,EA5CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,QAAA,WAE
A,EAAA,QAAA,eAoBA,SAAS,EAcl,EAaiB,EAaiC,GAC9C,MAAA,GAaK,EAagB,EAAA,iBAAA,EAAG,IA
AK,sBAC7B,GACF,EAagB,EAAA,iBAAA,EAAY,aAaC,qBAAsB,UAC7D,EAAA,EAAA,SAaA,EAAM,EAAA,
OAAA,GAaC,IAAM,oCAE3B,MAAA,EAaM,C,CAAC,EAAG,EAai,WAAY,GACvD,EAaiC,CAAC,YAAA,GA
EjC,OAAA,EAaO,OAAA,UACV,EADG,mBACiB,EACpB,GAGC,MAAM,GAaqB,EAAG,EAAA,IAAA,CAAC,
oBAAA,IAA/B,QAAA,mBAAA;;ACLA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,
EAvCP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,
EAAA,QAAA,eA8BO,SAaA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,
EAAA,WAAA,OAAA,GAAA,EAAA,SAaA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,
EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MA
AA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UA
AA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EA
A,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,
EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EADp,SAAS,EAAS,EAAsB,EAaO,GACvC,MAAA,GAaK,EAagB,
EAAA,iBAAA,EAAG,IAAK,UAAW,qBAC9C,EAaK,OACD,IAAS,EAAG,MAAM,QAAU,EAaO,EAAG,MAA
M,OAC5C,cACc,iBAaOB,EAAG,MAAM,WAAW,EAAG,MAAM,WAE7D,MAAA,EAaUB,CAAC,MAaO,GAC
/B,EAaqB,CAAC,KAAA,GAErB,OAAA,EAaO,OAAA,UACV,EADG,OACK,EAagC,GAGvC,MAAM,GAaU,
EAAG,EAAA,IAAA,CAAC,SAaA,IAApB,QAAA,QAAA;;ACdN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,SAaA,EAzBD,IAAA,EAAA,QAAA,aAoBM,SAAU,EACZ,EAaYb,GAAY,EAAM,EAC3C,
GACK,OAAA,EAaO,OAAA,aAAa,EAaC,EAaW,EAAM;;ACA3D,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,UAAA,EArBD,IAAA,EAAA,QAAA,iBAIM,SAAU,EAaU,EAaqB,GACvC,MAAA,EAaU,
GACX,IAAA,IAAI,EAai,EAAG,EAai,EAAS,OAaQ,IAC/B,EAAS,IACX,EAaQ,KAAK,GAIX,MAAA,GAaW,
EAaO,EAAA,QAAA,EAaW,SAE7B,GAAM,EAaO,EAAA,QAAA,CAAC,EAaQ,OAaQ,EAaU,QAAS,SACID,
IAAA,IAAI,EAai,EAAG,EAai,EAaQ,OAaQ,IAAK,CACjC,MAAA,EAAM,EAAS,WAAW,EAaQ,IACIC,EA
S,EAai,EAaU,OAC7B,EAai,OAaO,IAAI,EAaK,GAEf,OAAA,EAai;;ACaN,aAAA,OAAA,eAAA,QAAA,aAA

A,CAAA,OAAA,IAAA,QAAA,gBAAA,EApCP,IAAA,EAAA,QAAA,0BAEA,EAAA,QAAA,sBAuBA,eAAe,EA
AY,GACnB,MAAA,GACF,EAAGB,EAAA,iBAAA,EAAW,YAAa,aAAc,QACpD,QAAa,EAAW,OACxB,GAAM,
EAAU,EAAA,WAAA,EAAW,MAAO,GAIjC,OAHH,IAAc,GACHB,EAAW,UAEN,EAGF,MAAM,EAAa,EAAnB
,QAAA,WAAA;;ACqCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAvEP,IAAA
,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,YACA,EAAA,QAAA,aACA,EAAA,QAAA,
aACA,EAAA,QAAA,iBAGEO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,
OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,
IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GA
AA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OA
AA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAA
A,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,
QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5CP,eAAe,EACX,EA2B,EAC3B,GACI,MAAA,GAAU,E
AAgB,EAAA,iBAAA,EAQ,SAAU,YAC5C,GAAQ,EAAGB,EAAA,iBAAA,EAAM,OAQ,WAAY,QAeID,EA
AmB,MAAR,EAAe,EAAl,EAC9B,EAAU,EAAM,KACHB,EAAc,EAQ,MAE5B,EAak,OOAO,EAAU,EAAG,I
AAM,yBAC/B,EAak,kBACD,EAAY,MAAM,EAAU,EAAW,GAAU,EAAM,MACvD,qEAEA,IAAA,EAac,EAC
b,IAAA,IAAI,EAAl,EAAU,EAAl,EAAW,EAAS,IAC7C,GAAe,EAAY,GAEvB,MAAA,EACF,EAAY,MAAM,EA
AG,GACHB,OOAO,CAAC,GAac,EAAY,MAAM,EAAW,IACtD,GAAiB,EAQ,EAAA,SAAA,EAAS,GACIC,G
AAe,EAQ,EAAA,SAAA,EAao,EAae,IAChC,QAA0B,EAAW,EAAA,YAAA,GACrC,GAAU,EAQ,EAAA,S
AAA,EAAMB,CAAC,IAEtC,GAAM,EAao,EAAA,QAAA,EAAGB,EAAS,GACrC,OAXH,IAAW,GACb,EAQ,U
AEN,IAAS,GACX,EAAM,UAER,EAQ,UACR,EAae,UACf,EAaa,UACb,EAakB,UAEX,EAGF,MAAM,EA
mB,EAazB,QAAA,iBAAA;;ACkDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,E
AzHP,IAAA,EAAA,QAAA,sBAEA,EAAA,QAAA,WAEA,EAAA,QAAA,SACA,EAAA,EAAA,QAAA,gBACA,E
AAA,QAAA,SACA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA,SACA,EAAA,QAAA,aACA,EA
A,QAAA,YACA,EAAA,QAAA,UACA,EAAA,QAAA,YACA,EAAA,QAAA,SA2GO,SAAA,IAAA,GAAA,mBA
AA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EA
A,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,
OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,O
AAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EA
AA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EA
AA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA
nE
P,SAAS,EAcl,EAAsB,EAagC,YACtD,EAawB,KAAM,GAAW,GAGrC,MAAA,EAao,EAfB,GAAl,EAAGB,E
AAA,iBAAA,EAAG,IAAK,QAeH,EAak,GAC1B,IAAA,EAAGB,EAak,MACrB,GAAA,EAAU,CACN,MAAA,
GAAO,EAae,EAAA,gBAAA,EAAM,EAae,OACpC,EAAGB,EAAU,qBAAqB,EAak,MAAO,GAEtD,OAAA,EA
AQ,EAAA,SAAA,EAAM,GAGvB,SAAS,EAcl,EAAW,EAakB,EAawB,MACnD,GAAW,IAAX,EAae,KACG,
OAAA,EAAl,EAAA,KAAA,GAIT,GAAW,IAAX,EAae,MAAuB,OAAT,EACX,OAAA,GAAS,EAQ,EAAA,SA
AA,EAAG,EAae,IAAK,EAAG,GAInC,GAAW,IAAX,EAae,MAA8B,iBAAT,GACvB,MAAM,QAAQ,IAAyB,I
AAhB,EAak,OAac,CACxC,GAAM,IAAN,EACK,OAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GAAl,GA
EjB,GAAA,IAAM,EAAA,EACD,OAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GAAl,GAejB,GAAA,KA
AO,EAAA,EACF,OAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GAAl,GAejB,GAAM,cAAN,GAA2B,IAAN,E
AEhB,OAAA,EAak,EAAA,OAAA,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,IAAI,EA
O,EAAA,QAAA,EAAG,UAAW,IAG7C,MAAA,IAAI,2CAA2C,KAInD,GAAA,MAAM,QAAQ,IAAyB,IAAhB,E
AAK,OAac,CACxC,GAAM,IAAN,EACK,OAAA,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAA
A,GAAl,EAak,IAAK,EAak,GAak,GAeZC,GAAA,IAAM,EAAA,EACD,OAAA,EAAl,EAAA,MAAA,EAAl,E
AAA,MAAA,EAAl,EAAA,KAAA,GAAl,EAak,IAAK,EAak,IAEpC,GAAA,KAAO,EAAA,EACF,OAAA,EAAl
,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GAAl,EAak,IAAK,EAak,IAEpC,GAAM,QAAN,G
AAqB,cAAN,EAeV,OAAA,EAak,EAAA,OAAA,EAAl,EAAA,MAAA,EAao,EAAA,QAAA,GAAl,IAGvB,MA
AA,IAAI,2CAA2C,KAGjD,MAAA,IAAI,sCAAsC,KAG3C,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,I
AAjB,QAAA,KAAA;;ACxDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAjEP,

I AAA,EAAA,QAAA,kBACA,EAAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,SACA,EAAA,
QAAA,SACA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA,SACA,EAAA,QAAA,YACA,EAAA,Q
AAA,SAsDO,SAAA,I AAA,GAAA,mBAAA,QAAA,OAAA,KAAA,I AAA,EAAA,I AAA,QAAA,OAAA,EAAA,W
AAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,I AAA,EAAA,IA
AA,GAAA,GAAA,EAAA,I AAA,GAAA,OAAA,EAAA,I AAA,GAAA,I AAA,EAAA,GAAA,GAAA,MAAA,EAA
A,CAAA,I AAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,I AAA,I AAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAA
A,KAAA,EAAA,GAAA,CAAA,I AAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,I AAA,EAAA,KAA
A,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,I AAA,OAAA,EAAA,QAAA,EAAA,
GAAA,EAAA,I AAA,EAAA,GAAA,EAxBP,SAAS,EA CL,EA AiB,EA AiB,EACIC,EAAsB,GAAa,GAC/B,MAAA,
GAAK,EA AgB,EAAA,iBAAA,EAAG,IAAK,iBAC7B,GAAK,EA AgB,EAAA,iBAAA,EAAG,IAAK,iBAC7B,GA
AS,EA AgB,EAAA,iBAAA,EA AO,QAAS,kBAE9B,EAAA,EAAA,kBAAA,EA AI,GACrB,EA AK,OACD,EA AK,Y
AA Y,EA AG,MAAO,EA AG,OAAQ,IAAM,6BAE1C,MAAA,GAAM,EA AO,EAAA,QAAA,GACb,GA AgB,EA AI,
EAAA,KAAA,EA AK,GA E3B,I AAA,GAAS,EA AI,EAAA,MAAA,EA AI,EAAA,KAAA,EA AI,GA AK,GAC1B,G
AAA,EAAY,CACd,EA AK,OACO,MAAR,EA Ac,IAAM,kDACIB,MAAA,GAAQ,EA AgB,EAAA,iBAAA,EAAM,
OAAQ,iBAC5C,GAAS,EA AI,EAAA,KAAA,GAAQ,EA AI,EAAA,KAAA,GA AK,EA AI,EAAA,KAAA,EA AQ,K
AErC,OAAA,EA AI,EAAA,KAAA,EA AI,GAGV,MAAM,GA AgB,EA AG,EAAA,I AAA,CAAC,eAAA,IAA1B,QA
AA,cAAA;;ACpBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I AAA,QAAA,eAAA,EA9CP,I AAA,EAA
A,QAAA,aACA,EAAA,QAAA,mBAIA,EAAA,QAAA,sBAGA,EAAA,QAAA,eACA,EAAA,EAAA,QAAA,sBAq
CO,SAAA,I AAA,GAAA,mBAAA,QAAA,OAAA,KAAA,I AAA,EAAA,I AAA,QAAA,OAAA,EAAA,WAAA,OA
AA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,I AAA,EAAA,I AAA,GAA
A,GAAA,EAAA,I AAA,GAAA,OAAA,EAAA,I AAA,GAAA,I AAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,
I AAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,I AAA,I AAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,
EAAA,GAAA,CAAA,I AAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,I AAA,EAAA,KAAA,EAAA,K
AAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,I AAA,OAAA,EAAA,QAAA,EAAA,GAAA,EA
AA,I AAA,EAAA,GAAA,EAhBP,SAAS,EA CL,EA A4B,EAC5B,GACI,MAAA,GA AW,EA AgB,EAAA,iBAAA,E
AAS,UAAW,YAAa,SAC5D,GA AW,EA AgB,EAAA,iBAAA,EAAS,UAAW,aACrD,EA AgB,cAAc,EA AU,EA AU,
GA E5C,MAAA,EA A0B,CAAC,QAAS,EA AU,QAAS,GACvD,EA AwB,CAAC,MAAA,GAGxB,OAAA,EA AO,O
AAA,UACH,EADJ,UACe,EACX,GAGN,MAAM,GA AY,EA AG,EAAA,I AAA,CAAC,WAAA,IAAtB,QAAA,UA
AA;;ACEN,aAICK,SA AU,EACZ,EA AuB,EAAsB,EAC7C,GACE,GA AwB,UAAxB,EA Ac,MACV,MAAA,IAAI,
MACN,iFACsB,EA Ac,UAEtC,GAAA,EA Ac,KAAO,EACjB,MAAA,IAAI,MACN,yEACKB,EA Ac,UAGhC,MAA
A,EA AW,EA Ac,KAAO,EA AI,EA Ac,MAAM,GA AK,EAC7D,EA AU,EA Ac,KAAO,EA AI,EA Ac,MAAM,GA AK,
EA E9D,GAAA,EA AY,SA AW,EACnB,MAAA,IAAI,MACN,qDACI,EA AY,sBAAsB,MAGtC,MAAA,EA AY,EA
Aa,KAC3B,GA AwB,IAAtB,EA Aa,OACS,IAAtB,EA Aa,MAAc,IAAc,GACvC,MAAA,IAAI,MACN,uCACG,EA A
a,2BAA2B,MAG7C,GAAA,EA Aa,QAAU,EA Ac,MACjC,MAAA,IAAI,MAAM,qDAEnB,OAAA,eAAA,QAAA,a
AAA,CAAA,OAAA,I AAA,QAAA,cAAA;;AC2BM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I AAA,QA
AA,mBAAA,EA3EP,I AAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAEA,EAAA,EAAA,QAAA,gCAGA,EAAA,
QAAA,sBAGA,EAAA,QAAA,eAkEO,SAAA,I AAA,GAAA,mBAAA,QAAA,OAAA,KAAA,I AAA,EAAA,I AAA,
QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA
,EAAA,I AAA,EAAA,I AAA,GAAA,GAAA,EAAA,I AAA,GAAA,OAAA,EAAA,I AAA,GAAA,I AAA,EAAA,GA
AA,GAAA,MAAA,EAAA,CAAA,I AAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,I AAA,I AAA,KAAA,EAAA,GA
AA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,I AAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KA
AA,I AAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,I AAA,OAAA
,EAAA,QAAA,EAAA,GAAA,EAAA,I AAA,EAAA,GAAA,EA1BP,SAAS,EA CL,EA AkC,EACIC,EA A0B,EA Ak
C,GACxD,MAAA,GACF,EA AgB,EAAA,iBAAA,EA Ae,gBA AiB,gBA AiB,SAC/D,GACF,EA AgB,EAAA,iBAAA
,EA Ac,eAAgB,iBAC5C,GA AgB,EACIB,EAAA,iBAAA,EA Ac,eAAgB,gBA AiB,EA Ac,OAEjE,EA AgB,cACZ,EA
AgB,EA Ae,EA Aa,GA E1C,MAAA,EA A8B,CACIC,cAAe,EACf,aAAc,EACd,aAAc,GAGV,EA A4B,CAAC,YAAA
,GA E5B,OAAA,EA AO,OAAA,UACV,EADG,cACY,EACf,GAGC,MAAM,GA AgB,EA AG,EAAA,I AAA,CAAC,
eAAA,IAA1B,QAAA,cAAA;;ACrBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I AAA,QAAA,cAAA,E

AvDP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,eAwCA,SAAS,
EAAU,EAAsB,GACjC,MAAA,GAAW,EAAGb,EAAA,iBAAA,EAAS,UAAW,WAAy,SAG3D,EAyB,CAAC,Q
AFrB,EAAGb,EAAA,iBAAA,EAAG,IAAK,YAES,QAAS,GAe9C,OAAA,EAAO,OAAA,UAAU,EAajB,SAa2B,
GAG7B,MAAM,GAAW,EAAG,EAAA,IAAA,CAAC,UAAA,IAArB,QAAA,SAAA;;ACvBN,aAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EA9BD,IAAA,EAAA,EAAA,QAAA,YA8BC,SAAA,IAAA,
GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA
,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,I
AAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OA
AA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CA
AA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAA
A,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,
GAAA,EApBK,SAAU,EAAC,EAAW,GACnC,GAAC,MAAd,EACK,OAAA,EAAE,MAAM,QAEB,GAAA,EAAK,
YAAy,EAAE,MAAO,GACrB,OAAA,EAEL,GAAA,EAAE,MAAM,SAAW,EAAW,OAAQ,CACIC,MAAA,EAA
yB,GACiB,IAAA,IAAI,EAAl,EAAG,EAAl,EAAE,MAAM,OAAQ,IACb,MAAjB,EAAW,IAA4B,MAAd,EAAE,
MAAM,GACnC,EAAa,KAAK,EAAE,MAAM,IAE1B,EAAa,KAAK,EAAW,IAG1B,OAAA,EAGF,OAAA;;AC+B
F,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EA7DP,IAAA,EAAA,QAAA,aACA,E
AAA,QAAA,sBAEA,EAAA,EAAA,QAAA,YAEA,EAAA,QAAA,SACA,EAAA,QAAA,SACA,EAAA,QAAA,kB
ACA,EAAA,QAAA,WACA,EAAA,QAAA,SACA,EAAA,QAAA,eACA,EAAA,QAAA,oBakDO,SAAA,IAAA,G
AAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,S
AAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IA
AA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAA
A,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAA
A,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA
,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,G
AAA,EA1BP,SAAS,EAcl,EAAsB,EAAC,EACpC,GACI,MAAA,GAAK,EAAGb,EAAA,iBAAA,EAAG,IAAK,W
AU/B,GARJ,EAAK,OACY,YAAb,EAAG,MACH,IAAM,mFACmB,EAAG,yBACHc,EAAK,OACD,GAAQ,GAA
K,EAAO,EACpB,yDAA2D,MAEID,IAAT,EACK,OAAA,aAAa,EAAb,OAAsB,EAAG,QAAU,EAGtC,MAAA,GA
Ac,EAAC,EAAA,eAAA,EAAl,GACHc,EAAW,EAAl,EACf,GAAa,EACf,EAAA,MAAA,EAAM,EAAA,QAAA,E
AAl,EAAA,MAAA,EAAC,EAAA,eAAA,EAAa,EAAG,EAAG,UAAW,GAAO,IAC7D,GAEG,OAAA,EAAl,EA
A,KAAA,EAAl,GAGV,MAAM,GAAU,EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;AC5CN,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAAA,QAAA,aAAA,EhBD,IAAA,EAAA
,QAAA,cAEM,SAAU,EAaOB,GAe3B,OAAA,KAAK,MAAM,KAAK,IAAI,EAAG,KAAK,KAAK,KAAK,IAAI,
GAAS,KAAK,IAAI,MAG/D,SAAU,EACZ,EAAsB,EAAW,GAC7B,MAAA,EAAO,EAAl,EAae,EAC1B,EAAY,I
AAl,aAAa,GAC9B,IAAA,IAAI,EAAl,EAAG,EAAl,IAAGb,EAAG,CAC/B,MAAA,EA AU,EAAM,KAAK,GAAK
,GAAM,EAae,EAAO,GAC5D,EA AU,GAAK,EAAl,EAAl,KAAK,IAAI,GAe3B,OAAA,EAAS,EAAA,UAAA,E
AAW;;ACqEtB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EApFP,IAAA,EAAA,Q
AAA,sBAEA,EAAA,QAAA,WACA,EAAA,QAAA,YAmBA,eAAe,EACX,EAA2B,EA AU,EAAl,GACID,MAA
A,GAae,EAAGb,EAAA,iBAAA,EAAa,cAAe,UAC3D,GAAW,EAAGb,EAAA,iBAAA,EAAS,UAAW,WAGjD,E
AAA,EAAA,QAAA,EAAa,KAAO,EACpB,IAAM,0EACS,EAAa,SAE5B,EAAA,EAAA,QAAA,EAAa,KAAO,IA
AM,EAAS,KACnC,IAAM,sFAEC,EAAa,yBAyB,EAAS,SAEtD,EAAA,EAAA,mBAAA,EAAa,MAAM,MAAM,
EAAG,EAAa,MAAM,OAAS,GACxD,EAAS,MACT,2FAEE,MAAA,EA AU,EAAa,MAAM,EAAa,MAAM,OAAS,
IAE3D,EAAA,EAAA,QAAA,EAAl,GAAK,GAAK,EACd,IAAM,+EACY,eAAqB,KAErC,MAAA,QAAwB,EAAa
,OACrC,QAAOB,EAAS,QAI5B,EAAO,GAAQ,CAAC,EAAGb,OAAS,EAAS,GACnD,GAAY,EA AU,EAAl,wB
AAA,OAAQ,GAe5C,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,IAAK,CACxB,MAAA,EAAS,EAAl,EACb,EAAO,
EAAGb,SAAS,EAAQ,EAAS,GACjD,EAAM,D,GACpD,IAAA,IAAI,EAAl,EAAG,EAAl,EAAK,OAAQ,IAC/B,EA
AU,KAAK,CAAC,MAAO,EAAK,GAAl,MAAO,IAEzC,EA AU,KAAK,CAAC,EAAG,IAAM,EAAE,MAAQ,EA
E,OAErC,EA AU,GAAK,EACV,IAAA,IAAI,EAAl,EAAG,EAAl,EAAG,IACjB,GAAA,EA AU,GAAG,QAAU,EA
AY,GAAl,CACzC,EA AU,GAAK,EACf,OAaC,OARH,IAAGb,GACiB,EAAa,UAEX,IAAY,GACd,EAAS,WAIJ,E

AAO,EAAA,QAAA,EA AW,EAAS,MAAO,QAGpC,MAAM,EAAC,EAAPB,QAAA,YAAA;;ACFA,aAAA,OAAA,
eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,0BAAA,EAPFP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,m
BAIA,EAAA,EAAA,QAAA,YAGA,EAAA,QAAA,eACA,EAAA,QAAA,aA2EO,SAAA,IAAA,GAAA,mBAAA,
QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,G
AAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OA
AA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAA
A,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,
EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,
GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA rDP,S
AAS,EACL,EAAM,EA AO,EACb,EACA,EACA,EAA4B,OAC5B,GACE,IAAA,EAAM,EACK,IAAX,EAAE,OAC
J,GAAM,EAAQ,EAAA,SAAA,EAAG,CAAC,EAAG,EA AE,MAAM,GA AI,EA AE,MAAM,GA AI,EA AE,MAAM,
MAEnD,IAAA,EA AO,EACO,IAAd,EA AK,OACP,GA AO,EAAQ,EAAA,SAAA,EA AI,CAAC,EAAG,EAAG,MA
AM,GA AI,EAAG,MAAM,GA AI,EAAG,MAAM,MAE5D,EA AK,OACY,IAAb,EA AI,KACJ,IAAM,oEACC,EA AI
,UACf,EA AK,OACa,IAAd,EA AK,KACL,IAAM,iEACC,EA AK,UACb,EA AK,OACsB,IAAvB,EAAY,OACZ,IA
AM,sEACC,MA CL,MAAA,EA AyB,SA Af,EA AwB,EA AI,MAAM,GA AK,EA AI,MAAM,GAC3D,EAA0B,SA Af,
EA AwB,EA AK,MAAM,GA AK,EA AK,MAAM,GACpE,EA AK,OACD,IAAY,EAAY,GACxB,gDAakD,2CACd,E
AAY,OACpD,EA AK,OACD,IAAa,EAAY,GACzB,8CAA gD,6CACV,EAAY,QAC/B,MAAnB,GACF,EA AK,OA
CD,EA AK,MAAM,GACX,IAAM,mFACiB,iBAA+B,MAGtD,MAAA,EAAqC,CAAC,EAAG,EA AK,GA AI,GACI
D,EACF,CAAC,QAAA,EAAS,IAAA,EA AK,WAAA,EAAY,gBAAA,EA AiB,YAAA,GAGzC,OAAA,EA AO,OAA
A,UACH,EADJ,qBAC0B,EACtB,GAGN,MAAM,GA AuB,EAAG,EAAA,IAAA,CAAC,sBAAA,IAAjC,QAAA,qB
AAA;;ACxBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAAA,QAAA,qBAAA,
EAAA,QAAA,gBAAA,EAAA,QAAA,gBAAA,EAZDP,IAAA,EAAA,EAAA,QAAA,qBACA,EAAA,QAAA,SAE
A,EAAA,QAAA,gBACA,EAAA,QAAA,SACA,EAAA,QAAA,WACA,EAAA,QAAA,UACA,EAAA,QAAA,WA
CA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,QAAA,SA+CO,SAAA,IAAA,GAAA,mBAAA,QAAA,O
AAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GA
AA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAA
A,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAA
A,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,
OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,
EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5CD,SAAU,E
ACZ,EAAY,EA AW,GACrB,GA Ac,MAAd,GA AqC,WAAf,EACjB,OAAA,EA EL,GA Ae,SA Af,EACK,OAAA,EA
AI,EAAA,KAAA,GA AI,EA AK,EAAA,MAAA,IA EhB,MAAA,IA AI,sDAC0C,MAIhD,SAAU,EACZ,EA Ac,GAC
Z,IAAA,EAAM,EACJ,MAAA,EACF,EA Ae,iBAAiB,EA AK,MAAO,EA Aa,OAI tD,OA HH,EA AW,OA AS,IACtB,
GAAM,EA AI,EAAA,KAAA,EA AK,KA EV,EAAQ,EAAA,SAAA,EA AK,EA AK,OAGrB,SAAU,EACZ,EA AW,E
AAwB,EACnC,GACE,GA Ae,WAAf,EACK,OAAA,EACF,GA AmB,SA Af,EACF,OAAA,EA AK,EAAA,MAAA,G
ACP,GA AmB,QA Af,EACF,OAAA,EA AI,EAAA,KAAA,GACN,GA AmB,UAAf,EACF,OAAA,EAAM,EAAA,O
AAA,GACR,GA AmB,UAAf,EACF,OAAA,EAAM,EAAA,OAAA,EAAG,GACX,GA AmB,cAAf,EACF,OAAA,E
AAU,EAAA,WAAA,EAAG,GA EhB,MAAA,IA AI,kCAAkC,MAIvC,MAAM,EA Aa,CAAC,EA AuB,KA EzC,QAD
c,EA AgB,IACE,WAAf,GA FnB,QAAA,WAAA;;ACqMA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA
A,QAAA,YAAA,EAhQP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,mBACA,EAAA,QAAA,sBAIA,EAAA,QA
AA,qBACA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,eACA,EAAA,QAAA,UACA,EAAA,EAAA,QAAA,sB
ACA,EAAA,QAAA,aACA,EAAA,QAAA,6BACA,EAAA,QAAA,4BACA,EAAA,EAAA,QAAA,iBAEA,EAAA,
QAAA,iBACA,EAAA,QAAA,gBACA,EAAA,QAAA,cA6OO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KA
AA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAA
A,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,
GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,
IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yB
AAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GA

AA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAILP,SAAS,GAA0C,EACj
D,EADiD,OAeJD,EAFiD,QAGjD,EAHiD,IAIjD,EAJiD,WAKjD,EAAa,OALoC,UAMjD,EAAY,CAAC,EAAG,G
ANiC,gBAOjD,EAPiD,KAQjD,EARiD,WASjD,EAAa,SAToC,uBAUjD,EAViD,eAWjD,IAgBI,GAFJ,EAAa,GAA
c,UAEgC,KAAvD,EAAW,EAAA,YAAA,EAAO,OAAA,MAAM,cAAe,GAAuB,CAC5D,IAAA,GAAS,EACT,EA
AA,QAAA,EAAG,EAAQ,EAAS,EAAK,EAAY,EAAW,GAK7C,OAJK,MAAR,IACF,GAAS,EAAl,EAAA,KAAA
,EAAQ,KAGhB,EACI,EAAA,iBAAA,EAAQ,EAAY,EAawB,GAGnD,MAAA,GAAK,EAAGb,EAAA,iBAAA,E
AAG,IAAK,UAC7B,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,UAE9C,IAAA,EAAM,EACN,GAAe,EAeh,I
AAZ,EAAG,OACL,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG
,MAAM,GAAl,EAAG,MAAM,MAE3D,EAAK,OACY,IAAb,EAAl,KACJ,IAAM,gEACC,EAAl,SACf,EAAK,OA
CgB,IAAjB,EAAQ,KACR,IAAM,iEACC,EAAQ,SACI,MAAnB,GACF,EAAK,OACD,EAAK,MAAM,GACX,IA
AM,gFACiB,iBAA+B,MAG5D,EAAK,OACD,EAAl,MAAM,KAAO,EAAQ,MAAM,GAC/B,wCAA0C,EAAl,M
AAM,4CACtB,EAAQ,MAAM,OACHD,EAAK,OACD,EAAU,+BAA+B,EAAS,GACID,IAAM,0EACa,oBAA0B,
MACjD,EAAK,OACc,SAAf,EACA,0CACI,2CAEF,MAAA,EAAW,EAU,kBACvB,EAAl,MAAO,EAAQ,MAA
O,EAAS,EAAW,EAAK,GAEnD,IAAA,EAQA,EAPQ,MAAR,IACF,GAAQ,EAAGb,EAAA,iBAAA,EAAM,OAA
Q,iBACrC,IAAS,EAAe,EAAA,gBAAA,EAAO,GAehC,EAAe,2BAA2B,EAAS,SAAU,EAAM,QAIvC,MAA1B,I
ACF,GAA0B,EACtB,EAAA,iBAAA,EAawB,gBAAiB,iBAGzC,MAAA,EAAO,CAAC,EAAC,KACpB,MAAC,E
AAS,EAAK,EAAG,GACpB,EAEE,GAAe,EAaqB,EAAA,sBAAA,EAAl,EAAG,GAejD,EAAK,OACD,EAAU,kB
AAkB,GAC5B,IAAM,0HAEoD,MAExD,MAIA,EAAGb,EAHIB,EAAoB,EAAA,qBAAA,EAAl,MAAO,EAAC,EA
AS,EAAS,IAE/D,EAaqB,EAAA,sBAAA,EAAK,EAAC,EAAQ,MAAO,EAAS,IAGhE,GAAS,MAAT,EAAe,CAC
X,MAAA,GAAU,EAaqB,EAAA,sBAAA,EAAO,GAC5C,EAAl,KAAK,GAej,OAAA,GAGH,EAA4B,CACHC,E
AAG,EACH,OAAQ,EACR,KAAM,EACN,uBAAwB,GAGpB,EAA0B,CAC9B,QAAA,EACA,IAAA,EACA,WAA
A,EACA,UAAA,EACA,gBAAA,EACA,WAAA,EACA,eAAA,GAKE,GAAQ,MAAR,EAAC,CAMbT,OAjBH,EA
AW,EAAA,YAAA,CAAC,EAAe,EAakB,KACvC,IAAA,EAEO,EAAA,OAAA,UACH,EADJ,YACiB,EACb,GAU
D,OARP,EAAK,CAAC,EAAQ,EAAK,IAEf,IAEF,GAAM,EAAQ,EAAA,SAAA,EAAK,CAAC,EAAl,MAAM,GA
Al,EAAl,MAAM,GAAl,EAAl,MAAM,MAIrD,CAAC,MAAO,EAAK,SAAU,IAE7B,CAAS,EAAK,GAmBd,OAj
BkB,EACrB,EAAA,YAAA,CAAC,EAAe,EAakB,EAAC,KAC1C,IAAA,EAAYB,EAAO,OAAA,UACH,EADyB,
YACZ,EACb,GAUG,OARP,EAAK,CAAC,EAAQ,EAAK,EAAK,IAEpB,IAEF,GAAM,EAAQ,EAAA,SAAA,EA
AK,CAAC,EAAl,MAAM,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM,MAIrD,CAAC,MAAO,EAAK,SAAU,IAG7
B,CAAiB,EAAK,EAAS,GAGnC,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,aAAA,IAAnB,QAAA,OAAA;;AC/
NA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yCAAA,EAICP,IAAA,EAAA,QAAA,aACA
,EAAA,QAAA,mBAKA,EAAA,QAAA,eACA,EAAA,QAAA,aAEA,SAAS,EACL,EAAM,EAAO,EACb,EAakC,
EACIC,EAAqC,CAAC,EAAG,GACzC,GACE,IAAA,EAAM,EACK,IAAX,EAEE,OACJ,GAAM,EAAQ,EAAA,S
AAA,EAAG,CAAC,EAAG,EAEE,MAAM,GAAl,EAEE,MAAM,GAAl,EAEE,MAAM,MAEnD,IAAA,EAAO,E
ACO,IAAd,EAAK,OACP,GAAO,EAAQ,EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAA
M,GAAl,EAAG,MAAM,MAGtD,MAAA,EAAoD,CAAC,EAAG,EAAK,GAAl,GACjE,EACF,CAAC,QAAA,EA
AS,IAAA,EAAK,gBAAA,EAaiB,UAAA,EAAW,YAAA,GAGxC,OAAA,EAAO,OAAA,UACH,EADJ,oCAEI,EA
AgC,GAlC,MAAM,GACT,EAAG,EAAA,IAAA,CAAC,qCAAA,IADD,QAAA,oCAAA;;ACGA,aAAA,OAAA,e
AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,wCAAA,EArcP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,mB
AKA,EAAA,QAAA,eACA,EAAA,QAAA,aAEA,SAAS,EACL,EAA0C,EAAO,EACjD,EAakC,EACIC,EAAqC,C
AAC,EAAG,GACzC,GACE,IAAA,EAAO,EACP,GAAe,EACH,IAAZ,EAAG,OACL,GAAe,EACf,GAAO,EAAQ,
EAAA,SAAA,EAAl,CAAC,EAAG,EAAG,MAAM,GAAl,EAAG,MAAM,GAAl,EAAG,MAAM,MAEnD,MAAA,
EAAmD,CAAC,GAAl,EAAM,OAAA,GAC9D,EACF,CAAC,QAAA,EAAS,IAAA,EAAK,gBAAA,EAaiB,UAA
A,EAAW,WAAY,GAErD,EAek,EAAA,OAAA,UACH,EADJ,mCACwC,EACpC,GAej,OAAA,GACK,EAAQ,E
AAA,SAAA,EAAK,CAAC,EAAl,MAAM,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM,KAETD,EAGF,MAAM,GA
CT,EAAG,EAAA,IAAA,CAAC,oCAAA,IADD,QAAA,mCAAA;;ACoNA,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,qBAAA,EAxPP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,mBACA,EAAA,QAAA,
sBAIA,EAAA,QAAA,qBACA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,eAEA,EAAA,QAAA,UACA,EAAA,
EAAA,QAAA,sBACA,EAAA,EAAA,QAAA,iBACA,EAAA,QAAA,uBACA,EAAA,QAAA,8CACA,EAAA,QAA

A,6CAEA,EAAA,QAAA,iBACA,EAAA,QAAA,gBACA,EAAA,QAAA,cAoOO,SAAA,IAAA,GAAA,mBAAA,Q
AAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GA
AA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAA
A,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA
,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,E
AAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,G
AAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA/KP,SA
AS,GAAMd,EAC1D,EAD0D,OAE1D,EAf0D,QAG1D,EAH0D,IAI1D,EAJ0D,WAK1D,EAaA,OAL6C,UAM1D,
EAAY,CAAC,EAAG,GAN0C,gBAO1D,EAP0D,KAQ1D,EAR0D,WAS1D,EAaA,SAT6C,uBAU1D,EAV0D,eAW
1D,IAcI,IAAuD,KAAvD,EAaW,EAAA,YAAA,EAaO,OAAA,MAAM,cAAe,GAAuB,CAC5D,IAAA,GAAS,EA
CT,EAAA,iBAAA,EAAG,EAAQ,EAAS,EAaK,EAAY,EAaW,GAK7C,OAJK,MAAR,IACF,GAAS,EAaI,EAAA
,KAAA,EAAQ,KAGhB,EACI,EAAA,iBAAA,EAAQ,EAAY,EAaWb,GAGnD,MAAA,GAaK,EAAGb,EAAA,iB
AAA,EAAG,IAaK,mBAC7B,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,mBAE9C,IAAA,EAAM,EACN,GAA
e,EACH,IAAZ,EAAG,OACL,GAAe,EACf,GAAM,EAAQ,EAAA,SAAA,EAaI,CAAC,EAAG,EAAG,MAAM,GA
AI,EAAG,MAAM,GAaI,EAAG,MAAM,MAE3D,EAaK,OACY,IAAb,EAaI,KACJ,IAAM,yEACM,EAaI,SACp
B,EAaK,OACgB,IAAjB,EAAQ,KACR,IAAM,0EACc,EAAQ,SACb,EAaK,OACD,EAaI,MAAM,KAAO,EAa
Q,MAAM,GAC/B,IAAM,gEACE,EAaI,MAAM,wDACJ,EAAQ,MAAM,OACf,MAAb,IACF,EAAY,CAAC,EAa
G,IAEIB,EAaK,OACD,EAAU,+BAA+B,EAAS,GACID,IACI,yFACqB,oBAA0B,MAEhC,MAAnB,GACF,EAaK
,OACD,EAaK,MAAM,GACX,IAAM,wFACuB,iBAA+B,MAG5D,MAAA,EAaW,EAaU,kBACvB,EAaI,MAA
O,EAaQ,MAAO,EAAS,EAaW,EAaK,GACnD,GAEa,IAAA,EAQA,EAPQ,MAAR,IACF,GAAQ,EAAGb,EAa
A,iBAAA,EAAM,OAAQ,iBACrC,IAAS,EAaE,EAAA,gBAAA,EAaO,GAehC,EAaE,2BAA2B,EAAS,SAAU,EA
AM,QAIvC,MAA1B,IACF,GAA0B,EACtB,EAAA,iBAAA,EAaWb,gBAAiB,0BAGzC,MAAA,EAaO,CAAC,EA
Ac,KAC1B,EAaK,OACD,EAAU,kBAaKB,GAC5B,IAAM,sHAEE,MACN,MAAC,EAAS,EAaK,EAAG,GAAQ,
EAE1B,GAAe,EAAqB,EAAA,sBAAA,EAaI,EAAG,GAE3C,GAAO,EACR,EAAA,oCAAA,EAaiB,MAAO,EAa
c,EAAqB,EAC5D,EAaK,EAaW,GACd,GAAY,EACd,EAAA,qCAAA,EAaiB,EAaE,EAAqB,MAAO,EAC5D,E
AAK,EAaW,GAehB,GAAQ,MAAR,EAaC,CAET,MAAA,CAAC,EAAM,GADE,EAAqB,EAAA,sBAAA,EAaO,
IAGvC,MAAA,CAAC,EAAM,IAGV,EAaQ,CACzC,EAAG,EACH,OAAQ,EACR,KAAM,EACN,uBAAwB,GA
EpB,EAAMC,CACvC,QAAA,EACA,IAAA,EACA,WAAA,EACA,UAAA,EACA,gBAAA,EACA,WAAA,EACA,
eAAA,GAKE,GAAQ,MAAR,EAaC,CaKBT,OAhBH,EAaW,EAAA,YAAA,CAAC,EAaE,EAaKB,KAevC,IAAA
,EAAYB,EAaO,OAAA,UChC,EADyB,qBACH,EACtB,GAUG,OARP,EAaK,CAAC,EAAQ,EAaK,IAEf,IAEF,
GAAM,EAAQ,EAAA,SAAA,EAaK,CAAC,EAaI,MAAM,GAaI,EAaI,MAAM,GAaI,EAaI,MAAM,MAIrD,C
AAC,MAAO,EAaK,SAAU,IAE7B,CAAS,EAaK,GAoBd,OAIbKB,EACrB,EAAA,YAAA,CAAC,EAaE,EAaKB,
EAaC,KAe1C,IAAA,EAAYB,EAaO,OAAA,UChC,EADyB,qBACH,EACtB,GAUG,OARP,EAaK,CAAC,EAa
Q,EAaK,EAaK,IAEpB,IAEF,GAAM,EAAQ,EAAA,SAAA,EAaK,CAAC,EAaI,MAAM,GAaI,EAaI,MAAM,G
AAI,EAaI,MAAM,MAIrD,CAAC,MAAO,EAaK,SAAU,IAG7B,CAaiB,EAaK,EAAS,GAGnC,MAAM,GAaKB,
EAAG,EAAA,IAAA,CAAC,sBAAA,IAA5B,QAAA,gBAAA;;AC3CE,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA
,OAAA,IAAA,QAAA,YAAA,EA7MT,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,mBACA,EAAA,QAAA,sBAI
A,EAAA,QAAA,qBACA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,eAEA,EAAA,QAAA,UACA,EAAA,EAa
A,QAAA,sBAEA,EAAA,QAAA,iBACA,EAAA,QAAA,cACA,EAAA,QAAA,gBACA,EAAA,QAAA,cA4LS,SA
AA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GA
AA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAA
A,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,E
AAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,G
AAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,O
AAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAA
A,EAAA,GAAA,EArKT,SAAS,GAA+B,EACtC,EADsC,EAEtC,EAfS,C,WAGtC,GAAa,EAHyB,WAItC,GAAa,E
AJyB,KAKtC,EALsC,WAMtC,EAaA,SANyB,uBAOtC,EAPsC,eAQtC,IAWM,IAAuD,KAAvD,EAaW,EAAA,Y
AAA,EAaO,OAAA,MAAM,cAAe,GAAuB,CAC5D,IAAA,GAAS,EAaC,EAAA,QAAA,EAAG,EAAG,EAAY,G

AKtC,OAJK,MAAR,IACF,GAAS,EAAI,EAAA,KAAA,EAAQ,KAGhB,EACI,EAAA,iBAAA,EAAQ,EAAY,EAA
wB,GAiRd,IAAA,GAAG,EAAGb,EAAA,iBAAA,EAAG,IAAK,gBAC7B,GAAG,EAAGb,EAAA,iBAAA,EAAG,I
AAK,iBACbC,EAAI,IAAM,EAAe,EAAA,gBAAA,EAAI,GAExB,MAAA,EACF,EAAa,EAAG,MAAM,EAAG,K
AAO,GAAG,EAAG,MAAM,EAAG,KAAO,GACtD,EACF,EAAa,EAAG,MAAM,EAAG,KAAO,GAAG,EAAG,
MAAM,EAAG,KAAO,GAEtD,EACF,EAAa,EAAG,MAAM,EAAG,KAAO,GAAG,EAAG,MAAM,EAAG,KAAO
,GACtD,EACF,EAAa,EAAG,MAAM,EAAG,KAAO,GAAG,EAAG,MAAM,EAAG,KAAO,GAEtD,EAAa,EAAG,
MAAM,MAAM,GAAI,GACbC,EAAa,EAAG,MAAM,MAAM,GAAI,GACbC,EAAY,EAAG,cAAc,GAC/B,EA
Y,EAAG,cAAc,GAERc,EAAG,OACD,EAAG,MAAQ,GAAG,EAAG,MAAQ,GAAG,EAAG,OAAc,EAAG,KAC/
C,IAAM,qFACoB,EAAG,YAAY,EAAG,SAEHd,EAAG,OACD,EAAG,YAAY,EAAY,GAC7B,gDAAkD,cAC3C,
6BAAsC,EAAG,gBACzC,EAAG,qBAEd,EAAG,OACD,IAAGb,EACbB,4CAA8C,cACvC,6BAAuC,EAAG,gBAC
lC,EAAG,wBAAwB,uBACX,iBAERb,MAAA,EAAG,EAAG,MAAM,MAAM,GAAI,GAAG,OAAO,CAAC,EA
a,IAEtD,EAAGb,GACIB,EAAQ,EAAA,SAAA,EAAI,CAAC,EAAG,EAAG,KACrC,EAAQ,EAAA,SAAA,EAAI,C
AAC,EAAG,EAAG,IACnC,EAAGb,GACIB,EAAQ,EAAA,SAAA,EAAI,CAAC,EAAG,EAAG,KACrC,EAAQ,EA
AA,SAAA,EAAI,CAAC,EAAG,EAAG,IAERc,IAAA,EAQA,EAPQ,MAAR,IACF,GAAQ,EAAGb,EAAA,iBAAA,
EAAM,OAAQ,iBACrC,IAAS,EAAe,EAAA,gBAAA,EAAO,GAEHc,EAAe,2BAA2B,EAAG,EAAM,QAI9B,MA
AIB,IACF,GAA0B,EACtB,EAAA,iBAAA,EAAGb,gBAaIB,iBAGzC,MAAA,EAAO,CAAC,EAAGc,KACpB,MA
AC,EAAG,EAAG,EAAG,GAAS,EAIVB,GACF,EAAGqB,EAAA,uBAAA,EAAQ,EAAA,SAAA,EAAI,EAAG,OAA
Q,EAAG,GAC9C,IAAA,EACA,EAGbA,GAdC,GAAe,GAGR,GAAGc,GACxG,GAAO,EAAGc,EAAA,QAAA,EAAGc,
GAAG,GAAG,GAC/C,GAAG,EAAGc,EAAA,QAAA,EAAGc,GAAG,GAAM,IACrC,IAAGc,GACxG,GAAO,EAAGc,E
AAA,QAAA,EAAGc,GAAG,GAAG,GAC/C,GAAG,EAAGc,EAAA,QAAA,EAAGc,GAAG,GAAG,KAE/C,GAAG,EA
AGc,EAAA,QAAA,EAAGc,GAAG,GAAM,GAC9C,GAAG,EAAGc,EAAA,QAAA,EAAGc,GAAG,GAAM,KAV9C,GA
AO,EAAGc,EAAA,QAAA,EAAGc,GAAG,GAAG,GAC/C,GAAG,EAAGc,EAAA,QAAA,EAAGc,GAAG,GAAM,IAyP
C,MAAR,EAAGc,CAET,MAAA,CAAC,EAAM,GADE,EAAGqB,EAAA,sBAAA,EAAO,IAGrC,MAAA,CAAC,EA
M,IAIZ,EAAG6B,CACjC,EAAG,EACH,EAAG,EACH,KAAM,EACN,uBAAwB,GAEPb,EACF,CAAC,WAAA,EA
AY,WAAA,EAAY,WAAA,EAAY,eAAA,GAiRc,GAAQ,MAAR,EAAGc,CAAT,OAXH,EAAG,EAAG,YAAA,CA
AC,EAAGc,EAAGc,KACIC,MAAA,EAAGc,EAAA,OAAA,UACH,EADJ,aACKb,EACd,GAID,OAFP,EAAGc,CAAC,
EAAGc,EAAGc,IAET,CAAC,OAAO,EAAGc,EAAA,SAAA,EAAGc,GAAG,SAAU,IAEHd,CAAS,EAAGc,GAAG,OAb
kB,EACrB,EAAA,YAAA,CAAC,EAAGc,EAAGc,EAAGc,KACtC,MAAA,EAAGc,EAAA,OAAA,UACH,EADJ,aACKb
,EACd,GAID,OAFP,EAAGc,CAAC,EAAGc,EAAGc,EAAGc,IAEd,CAAC,OAAO,EAAGc,EAAA,SAAA,EAAGc,GA
W,SAAU,IAGhD,CAAIb,EAAGc,EAAGc,GAIB,MAAM,GAAS,EAAG,EAAA,IAAA,CAAC,aAAA,IAAnB,QAA
A,OAAA;;AC3MT,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,OAAA,eAAA,QAAA,SAAA,CAA
A,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IA
A,WAAA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EA
AA,UAFa,IAAA,EAAA,QAAA,kBACA,EAAA,QAAA,4BACA,EAAA,QAAA;;ACiBo,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAIBP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sBacA,S
AAS,EAAe,GACf,OAAA,EAAa,EAAA,cAAA,EAAGc,IAAM,KAENc,MAAM,GAAGb,EAAG,EAAA,IAAA,CAA
C,eAAA,IAAIB,QAAA,cAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA
,EAAnBP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sBacA,SAAS,EAAY,GACZ,OAAA,EAAa,EAAA,cAAA,E
AAGc,GAAG,IAGIC,MAAM,GAAGc,EAAG,EAAA,IAAA,CAAC,YAAA,IAAvB,QAAA,WAAA;;AC+BA,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAIDP,IAAA,EAAA,QAAA,aACA,EAAA,QAA
A,WACA,EAAA,QAAA,gBACA,EAAA,QAAA,cACA,EAAA,QAAA,YACA,EAAA,QAAA,eAkBA,SAAS,EAC
L,EAAGb,EAAGqB,EAAGmB,GAAS,EACnE,EAAG,GACT,IAAA,EAAGc,EACN,MAAA,EAAGmB,GACIB,KAAA,
EAAGc,GAAGc,EAAO,MACnC,EAAO,MAAG,EAAM,EAAA,OAAA,EAAGc,EAAO,IACjC,GAAS,EAGP,GAAG,
EACK,KAAA,EAAGc,EAAO,MAAM,CACpB,MAAA,EAAGc,EAAGc,EAAGc,EAAO,KACxG,GAAM,EAAO,EA
A,QAAA,EACjB,EAAM,EAAA,OAAA,EAAGc,EAAO,EAAGc,IAAS,EAAGc,EAAA,MAAA,CAAC,GAAS,KA7D
,EAAGc,KAAK,GACZ,GAAS,EAIT,OAAkB,IAAIB,EAAO,QACF,EAAS,EAAA,UAAA,GAAI,CAAC,EAAG,KA
GnB,EAAGc,EAAA,UAAA,EAAO,EAAA,QAAA,GAAS,CAAC,EAAO,OAAQ,IAE1C,MAAM,GAAGc,EAAG,EA
AA,IAAA,CAAC,OAAA,IAAIB,QAAA,MAAA;;ACRA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA

A,QAAA,UAAA,EA1CP,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,QAAA,gBACA,EAAA,QAA
A,sBACA,EAAA,QAAA,YACA,EAAA,QAAA,oBAEA,EAAA,QAAA,WACA,EAAA,QAAA,iBAkBA,SAAS,E
ACL,EAakB,EAaqB,EACvC,EACA,EAAYC,EAH7C,YAIImB,MAAb,IACF,GAAY,EAoB,EAAA,qBAAA,IAE
5B,MAAA,GAAe,EAAM,EAAA,OAAA,EAAQ,EAAa,GAC1C,GAAiB,EAAl,EAAA,KAAA,EAAC,EAAS,IAC5
C,EAAMb,GACpB,IAAA,IAAI,EAAl,EAAG,EAAl,EAAa,MAAM,GAAl,IACzC,EAAO,MACH,EAak,EAAA,O
AAA,EAAM,EAAA,OAAA,EAagB,CAAC,EAAG,GAAl,CAAC,EAAG,IAAe,IAErD,OAAA,EAAO,EAAA,QA
AA,GAET,MAAM,GAAO,EAAG,EAAA,IAAA,CAAC,MAAA,IAAjB,QAAA,KAAA;;ACqCA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAhFP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sB
AIA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,eAEA,EAAA,QAAA,gBAuEO,SAAA,IAAA,GAAA,mBAAA,
QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,G
AAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OA
AA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAA
A,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,
EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,
GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA9CP,S
AAS,EACL,EACA,EACA,EACA,EACA,EAA+B,WAC/B,EAaqB,GAejB,MAAA,GAAS,EAagB,EAAA,iBAAA
,EAAO,QAAS,iBACzC,GAAS,EAagB,EAAA,iBAAA,EAAO,QAAS,gBAaiB,WAC1D,GAU,EAagB,EAAA,i
BAAA,EAQ,SAAU,gBAaiB,SAE7D,EAaw,EAAO,MAAM,GAe9B,EAak,OACe,IAAhB,EAAO,KACP,IAA
M,gEACc,EAAO,SAC/B,EAak,OACe,IAAhB,EAAO,MAAkC,IAApB,EAAO,MAAM,GAC1C,wDAA0D,yBACr
C,EAAO,UAChC,EAak,OACgB,IAAjB,EAQ,MAAc,EAQ,MAAM,KAAO,EAC3C,yDAA2D,uBACtC,EAAO
,UAChC,EAak,OACmB,IAApB,EAAS,OACT,IAAM,2EACQ,EAAS,WAC3B,EAak,OACD,EAAS,IAAM,GAA
K,EAAS,IAAM,EACnC,+CAAiD,KACrD,EAak,OACU,aAAX,GAAoC,YAAX,EACzB,mDAAqD,KAEnD,MA
AA,EACoB,CAAC,MAAO,EAQ,MAAO,EAQ,OAAQ,GAC3D,EAA4B,CAAC,OAAA,EAQ,mBAAA,EAo
B,SAAA,GAIxD,OAHK,EAAO,OAAA,UACf,EADQ,cACO,EACf,GAIC,MAAM,GAagB,EAAG,EAAA,IAAA,C
AAC,eAAA,IAA1B,QAAA,cAAA;;ACIDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mB
AAA,EA9BP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sBAGA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,
eACA,EAAA,QAAA,gBAuBO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,
OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,
IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GA
AA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OA
AA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAA
A,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,
QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAdP,SAAS,EAae,GACHB,MAAA,GAAS,EAagB,EAAA,iB
AAA,EAAO,QAAS,gBAaiB,WAEhE,EAak,OACe,IAAhB,EAAO,KACP,IAAM,gEACc,EAAO,SAEzB,MAAA,
EAA8B,CAAC,MAAO,GAGrC,OADH,EAAO,OAAA,UAAU,EAajB,cAAgC,EAagC,IAI/D,MAAM,GAagB,EA
AG,EAAA,IAAA,CAAC,eAAA,IAA1B,QAAA,cAAA;;ACgBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
A,IAAA,QAAA,sBAAA,EA9CP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sBAIA,EAAA,QAAA,yBAEA,EA
AA,EAAA,QAAA,eAEA,EAAA,QAAA,gBAqCO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,E
AAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,W
AAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAA
A,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAA
A,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAA
A,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,
IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAnBP,SAAS,EACL,EAA4B,EAC5B,E
AA6C,EAC7C,EAakC,IAC9B,MAAA,GAAS,EAagB,EAAA,iBAAA,EAAO,QAAS,mBAAoB,WAEhE,EAak,O
ACe,IAAhB,EAAO,KACP,IAAM,mEACc,EAAO,SAEzB,MAAA,EAaiC,CAAC,MAAO,GACzC,EAA+B,CAAC
,QAAA,EAAS,UAAA,EAaw,OAAA,GAIInD,OAHK,EAAO,OAAA,UACf,EADQ,iBACU,EACIB,GAIC,MAAM,
GAAMb,EAAG,EAAA,IAAA,CAAC,kBAAA,IAA7B,QAAA,iBAAA;;ACHN,aAAA,OAAA,eAAA,QAAA,aAA

A,CAAA,OAAA,IAAA,QAAA,sBAAA,EA1CD,IAAA,EAAA,EAAA,QAAA,YA0CC,SAAA,IAAA,GAAA,mBA
AA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAA
A,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,
OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,O
AAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EA
AA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EA
AA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAxC
D,SAAS,EAcl,EAaiB,EAakB,EACnB,EAAsB,EAawB,GAM5B,MAAhB,IACF,EAae,IAEK,MAAiB,IACF,EA
AiB,OOAO,mBAEN,MAAhB,IACF,EAae,GAGX,MAAA,EAaw,EAAM,MAAM,GAqBtB,OAqBP,EAagB,KA
AK,IAAI,EAae,GAExC,EAak,OACD,GAak,GAagB,GAagB,EACrC,gDAakD,MACtD,EAak,OACc,IAAf,E
AAM,KACN,mDAAqD,EAAM,SAC/D,EAak,OACkB,IAAnB,EAAM,MAAM,GACZ,wDACwD,EAAM,MAA
M,MACxE,EAak,OAauB,IAAhB,EAAO,KAAY,IAAM,8BACrC,EAak,OACD,EAAO,MAAM,KAAO,EACpB,
ODAA4D,iBAC7C,EAAO,MAAM,MAChC,EAak,OACD,GAak,GAagB,GAagB,EACrC,gDAakD,MAC/C,CA
AC,cAAA,EAae,aAAA,EAac,eAAA,EAagB,aAAA;;ACGHd,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA
,IAAA,QAAA,uBAAA,EA7CP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sBAEA,EAAA,QAAA,yBAGA,EAA
A,QAAA,kBACA,EAAA,QAAA,gBAoBA,SAAS,EAcl,EAa4B,EAC5B,EAauB,EAae,GACtC,EAaiB,OOAO,
mBACpB,MAAA,GAAS,EAagB,EAAA,iBAAA,EAAO,QAAS,qBACzC,GAAU,EAagB,EAAA,iBAAA,EAaq,
SAAU,qBAE5C,GAAS,EACX,EAAA,uBAAA,EAaq,EAAS,EAae,EAac,GAK5C,EAaq,CAAC,cAJf,EAagB,E
AAO,cAIO,aAH9B,EAae,EAAO,aAGsB,eAF5C,EAaiB,EAAO,gBAGjB,OAAA,EAAO,OAAA,UACV,EADG,o
BACkB,CAAC,MAAO,EAaq,OAAQ,GAAU,GAGtD,MAAM,GAAoB,EAAG,EAAA,IAAA,CAAC,mBAAA,IA
A9B,QAAA,kBAAA;;AC0BN,aA1DK,SAAU,EACZ,EAAU,EAAY,GACIB,MAAA,EAaq,EAaA,EAak,EAAS,
GACnB,EAaiB,EAaq,IAAM,EAaq,GAak,EACID,EAai,OOAO,EAagB,EAAG,GAkBiB,SAAU,EACZ,EA
AU,EAaw,GACHb,OAAA,EAac,EAak,EAaq,GAac,GAUID,SAAS,EAaqB,EAAM,GAC3B,OAAA,EAai,EA
AI,EAai,EAai,GAak,EAai,EAGIC,SAAS,EAcl,EAau,EAaw,GACnB,IAAA,EAAO,EACP,EAaq,EAai,OAC
Z,EAAS,EACT,GAAQ,EAcl,KAAA,EAAO,GAAO,CAEb,MAAA,EAagB,EAaw,EAaq,EADzC,EAAS,GAAS
,EAaq,IAAU,KAehC,EAagB,EACIB,EAAO,EAAS,GAehB,EAaq,EAGR,GAAS,GAIN,OAAA,EAaq,GAAQ,
EAAO,EAC/B,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,QAAA,aAAA;;ACoHA,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,wBAAA,EAAA,QAAA,wBAAA,EAAA,QAAA,
wBAAA,EA1LD,IAAA,EAAA,QAAA,8BAiBM,SAAU,EACZ,EAAMB,EAaoB,EACvC,EAAsB,GACjB,OAAA,
EACH,EAAO,EAaq,EAae,EAac,EAC5C,GAGA,SAAU,EACZ,EAAMB,EAaoB,EACvC,EAAsB,EACtB,GAC
K,OAAA,EACH,EAAO,EAaq,EAae,EAac,EAC5C,GAAsB,EACtB,GAA6C,GAI7C,SAAU,EACZ,EAAMB,EA
AoB,EACvC,EAAsB,EACtB,GACK,OAAA,EACH,EAAO,EAaq,EAae,EAac,EAagB,GAC5D,GAGN,SAAS,E
ACL,EAAMB,EAaoB,EACvC,EAAsB,EAawB,EAC9C,GAAqB,EAAO,GAAqB,EACjD,GAAqB,GAGjB,MAA
A,EAaA,GAEd,IAAA,IAAI,EAai,EAAG,EAai,EAAO,OAAQ,IAC7B,EAAO,GAak,GACd,EAaw,KAak,CAA
C,MAAO,EAAO,GAai,SAAU,EAAG,mBAAoB,IAIxE,EAaw,KAak,GAIV,MAAA,EAaq,EAae,GAAM,GAA
M,EAagB,EAEnD,EAa4B,GAC5B,EAa2B,GAe1B,KAAA,EAagB,OAAS,GAaiB,EAaw,OAAS,GAAG,CAC
hE,MAAA,EAAY,EAaw,OACtB,MAAO,EAAR,SAAuB,EAavB,mBAAiC,GAAsB,EAezD,GAAA,EAagB,EA
CIB,MASE,IAAA,GAakB,EACjB,IAAA,IAAI,EAai,EAagB,OAAS,EAAG,GAak,IAAsB,EAAG,CAC/D,MAA
A,EAAM,EAAsB,EAAO,EAau,EAagB,IAE/D,GAAA,GAAO,EAac,CACvB,GAakB,EACIB,MAME,GAHJ,EA
AU,MACN,EAau,MAAQ,EAae,EAac,EAAO,GAEtD,EAau,OAAS,EACrB,MAWJ,EAau,mBAAqB,EAagB,
OAE1C,IAGC,EAau,QAAU,GACtB,EAagB,KAak,GACrB,EAae,KAak,EAau,QACrB,EAau,MAAQ,IAGd,
EAAA,EAAA,cAAA,EAAY,EAaw,IAMpC,MAAA,EAae,EAagB,OAC/B,EAaA,EAagB,EAe/B,GAAsB,EAaA
,IACrC,EAagB,QAAQ,IAAI,MAAM,GAAY,KAak,IACnD,EAae,QAAQ,IAAI,MAAM,GAAY,KAak,KAG9C,
MAAA,EAakC,CAAC,gBAAA,GAUIC,OARH,IACF,EAAM,eAAqB,GAGzB,IACF,EAAM,aAAmB,GAGpB,EA
GT,SAAS,EAAsB,EAAMB,EAaw,GACrD,MAAA,EAAS,EAAM,SAAa,EAaj,EAaw,EAaj,EAaq,GACvC,EA
AS,EAAM,SAAa,EAaj,EAaw,EAaj,EAaq,GACvC,EAaq,KAak,IAAI,EAAO,GAai,EAAO,IACnB,EAaq,
KAak,IAAI,EAAO,GAai,EAAO,IACnB,EAaq,KAak,IAAI,EAAO,GAai,EAAO,IACnB,EAaq,KAak,IAAI,
EAAO,GAai,EAAO,IACnB,EAaq,KAak,IAAI,EAAO,GAai,EAAO,IACnB,EAaq,KAak,IAAI,EAAO,GAai,

EAAO,IACnC,EAAQ,KAAK,IAAI,EAAO,GAAl,EAAO,IACnC,EAAQ,KAAK,IAAI,EAAO,GAAl,EAAO,IACn
C,GAAS,EAAQ,IAAU,EAAQ,GACnC,GAAS,EAAQ,IAAU,EAAQ,GACrC,GAAA,GAAS,GAAK,GAAS,EACIB,
OAAA,EAEH,MAAA,EAAMb,KAAK,IAAI,EAAO,GACnC,EAAMb,KAAK,IAAI,EAAO,GACnC,EAAMb,KA
AK,IAAI,EAAO,GACnC,EAAMb,KAAK,IAAI,EAAO,GACnC,EAAMb,KAAK,IAAI,EAAO,GACnE,
KAAK,IAAI,EAAMb,EAakB,GAC3C,OAAA,GAAoB,EAAQ,EAAQ,GAO7C,SAAS,EAAe,EAAS,EAAe,GACr
D,MAAA,EAAS,KAAK,IAAI,EAAQ,EAAM,GAC/B,OAAA,GAAO,EAAe,EAAS,EAGxC,SAAS,EAAoB,EAAe,
GAKIC,OAAA,EAAG,MAAQ,EAAG,OACb,EAAG,QAAU,EAAG,OAAW,EAAG,SAAW,EAAG;;AC/H7C,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,4BAAA,EA3DP,IAAA,EAAA,QAAA,2CAEA,EA
AA,QAAA,yBAEA,EAAA,QAAA,kBACA,EAAA,QAAA,eAsBA,eAAe,EACX,EAA4B,EAC5B,EAAuB,EAAe,G
ACtC,EAAiB,OAAO,mBACpB,MAAA,GAAS,EAAGb,EAAA,iBAAA,EAAO,QAAS,0BACzC,GAAU,EAAGb,E
AAA,iBAAA,EAAQ,SAAU,0BAE5C,GAAS,EACX,EAAA,uBAAA,EAAQ,EAAS,EAAe,EAAC,GACID,EAAGb,
EAAO,cACvB,EAAe,EAAO,aACtB,EAAiB,EAAO,eAEIb,MAAA,QAAuB,QAAQ,IAAI,CAAC,EAAO,OAAQ,E
AAQ,SAC3D,EAAY,EAAe,GAC3B,EAAa,EAAe,IAK5B,gBAAC,IAAMb,EACtB,EAAA,yBAAA,EAAW,EAAY
,EAAe,EAAC,GAQjD,OAPH,IAAW,GACb,EAAO,UAEI,IAAY,GACd,EAAQ,WAGH,EAAS,EAAA,UAAA,EA
AiB,SAG5B,MAAM,EAAYb,EAA/B,QAAA,uBAAA;;ACSA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,
IAAA,QAAA,gCAAA,EAPEP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,sBAIA,EAAA,QAAA,yBAGA,EA
A,QAAA,kBACA,EAAA,QAAA,gBA+BA,SAAS,EACL,EAA4B,EAC5B,EAAuB,EAAe,GACtC,EAAiB,OAAO,
kBACxB,EAAe,GACX,MAAA,GAAS,EAAGb,EAAA,iBAAA,EAAO,QAAS,qBACzC,GAAU,EAAGb,EAAA,iB
AAA,EAAQ,SAAU,qBAE5C,GAAS,EACX,EAAA,uBAAA,EAAQ,EAAS,EAAe,EAAC,EAC9C,GAME,EAAoC,
CAAC,MAAO,EAAQ,OAAQ,GAC5D,EACF,CAAC,cAPL,EAAGb,EAAO,cAOH,aANpB,EAAe,EAAO,aAMY,e
ALIC,EAAiB,EAAO,eAK0B,aAJID,EAAe,EAAO,cAOHb,EAAS,EAAO,OAAA,UACH,EADJ,oBACyB,EACrB,G
AEZ,MAAA,CAAC,gBAAiB,EAAO,GAAl,eAAgB,EAAO,IAGtD,MAAM,GAA6B,EAAG,EAAA,IAAA,CAAC,
4BAAA,IAAvC,QAAA,2BAAA;;ACQA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qCAA
A,EA7EP,IAAA,EAAA,QAAA,2CAGA,EAAA,QAAA,yBAEA,EAAA,QAAA,kBACA,EAAA,QAAA,eA+BA,eA
Ae,EACX,EAA4B,EAC5B,EAAuB,EAAe,GACtC,EAAiB,OAAO,kBACxB,EAAe,GACX,MAAA,GAAS,EAAGb,
EAAA,iBAAA,EAAO,QAAS,0BACzC,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,0BAE5C,GAAS,EACX,EA
AA,uBAAA,EAAQ,EAAS,EAAe,EAAC,EAC9C,GACJ,EAAGb,EAAO,cACvB,EAAe,EAAO,aACtB,EAAiB,EA
O,eACxB,EAAe,EAAO,aAEhB,MAAA,QAAuB,QAAQ,IAAI,CAAC,EAAO,OAAQ,EAAQ,SAC3D,EAAY,EAAe
,GAC3B,EAAa,EAAe,IAK5B,gBAAC,EAAD,eAAkB,IAAkB,EACtC,EAAA,yBAAA,EAAW,EAAY,EAAe,EA
c,EACpD,GASG,OAPH,IAAW,GACb,EAAO,UAEI,IAAY,GACd,EAAQ,UAGH,CACL,iBAAiB,EAAS,EAAA,U
AAA,EAAiB,SAC3C,gBAAGb,EAAS,EAAA,UAAA,IAItB,MAAM,EAakC,EAAXC,QAAA,gCAAA;;ACXA,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,6BAAA,EAjEP,IAAA,EAAA,QAAA,gBACA,EA
AA,QAAA,sBAIA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,gBAyBA,SAAS,EACL,EAA4B,
EAC5B,EAAuB,EAAe,GACtC,EAAiB,OAAO,kBACxB,GAAqB,GACjB,MAAA,GAAS,EAAGb,EAAA,iBAAA,
EAAO,QAAS,qBACzC,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,qBAE5C,GAAS,EACX,EAAA,uBAAA,EA
AQ,EAAS,EAAe,EAAC,EAC9C,MAKE,EAAoC,CAAC,MAAO,EAAQ,OAAQ,GAC5D,EAakC,CACtC,cANqB,
EAAO,cAO5B,aANoB,EAAO,aAO3B,eANsB,EAAO,eAO7B,mBAAA,GAIL,EAAS,EAAO,OAAA,UACH,EADJ,
oBACyB,EACrB,GAEZ,MAAA,CAAC,gBAAiB,EAAO,GAAl,aAAc,EAAO,IAGpD,MAAM,GAA0B,EAAG,EA
AA,IAAA,CAAC,yBAAA,IAApC,QAAA,wBAAA;;ACIA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,kCAAA,EAtEP,IAAA,EAAA,QAAA,2CAGA,EAAA,QAAA,yBAEA,EAAA,QAAA,kBACA,EAAA,
QAAA,aACA,EAAA,QAAA,eAyBA,eAAe,EACX,EAA4B,EAC5B,EAAuB,EAAe,GACtC,EAAiB,OAAO,kBAC
xB,GAAqB,GACjB,MAAA,GAAS,EAAGb,EAAA,iBAAA,EAAO,QAAS,0BACzC,GAAU,EAAGb,EAAA,iBAA
A,EAAQ,SAAU,0BAE5C,GAAS,EACX,EAAA,uBAAA,EAAQ,EAAS,EAAe,EAAC,EAC9C,MACE,EAAiB,EA
O,cACxB,EAAGb,EAAO,aACvB,EAakB,EAAO,gBAExB,EAAW,SACR,QAAQ,IAAI,CAAC,EAAO,OAAQ,EA
AQ,UAKxC,gBAAC,EAAD,aAAkB,IAAGb,EACpC,EAAA,yBAAA,EAAW,EAAY,EAAGb,EAAe,EACtD,GAS
G,OAPH,IAAW,GACb,EAAO,UAEI,IAAY,GACd,EAAQ,UAGH,CACL,iBAAiB,EAAS,EAAA,UAAA,EAAiB,
SAC3C,cAAc,EAAO,EAAA,QAAA,EAAC,UAIhC,MAAM,EAAB,EAArC,QAAA,6BAAA;;ACEA,aAAA,OAA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAvEP,IAAA,EAAA,QAAA,gBACA,EAAA,QAA

A,sBAIA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,eAEA,EAAA,QAAA,gBACA,EAAA,QAAA,cA6DO,SA
AA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GA
AA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAA
A,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,E
AAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,G
AAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,O
AAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IA
A,EAAA,GAAA,EA1CP,SAAS,EAEL,EAAsB,EAawB,GAae,EAC7D,GAaMB,GACf,MAAA,GAAU,EAagB,E
AAA,iBAAA,EAAQ,SAAU,kBAEID,EAak,OACgB,IAAjB,EAAQ,MAA+B,IAAjB,EAAQ,KAC9B,IAAM,mEA
CM,EAAQ,SACxB,EAak,OACe,IAAhB,EAak,OACL,IAAM,gEACC,MACX,EAak,QACoB,IAArB,IAA+C,IA
AjB,EAC9B,IAAM,qFAGN,IAAA,EAac,EACd,GAae,EACE,IAAjB,EAAQ,OACV,GAae,EACf,GAac,EACV,E
AAA,SAAA,EAAS,CAAC,EAAG,EAAQ,MAAM,GAAl,EAAQ,MAAM,GAAl,EAAQ,MAAM,MAG/D,QAak,E
AEL,EAa+B,CAAC,OAQ,GACxC,EAa6B,CAAC,aAAA,EAac,iBAAA,EAakB,KAAA,GAG9D,EAAM,EA
O,OAAA,UACH,EADJ,eACoB,EACbB,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAak,CAAC,EAAl,MAAM
,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM,KAetD,EAGF,MAAM,GAaiB,EAAG,EAAA,IAAA,CAAC,gBAAA,I
AA3B,QAAA,eAAA;;ACIA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,2BAAA,EA3EP,IA
AA,EAAA,QAAA,gBACA,EAAA,QAAA,sBAIA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,eAEA,EAAA,QA
AA,gBACA,EAAA,QAAA,cAiEO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QA
AA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EA
AA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,
GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,
OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,I
AAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EA
AA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA7CP,SAAS,EAEL,EAAsB,EAawB,GAae,EAC7D,GA
AmB,GACf,MAAA,GAAU,EAagB,EAAA,iBAAA,EAAQ,SAAU,yBAEID,EAak,OACgB,IAAjB,EAAQ,MAA+
B,IAAjB,EAAQ,KAC9B,IAAM,0EACM,EAAQ,SACxB,EAak,OACe,IAAhB,EAak,OACL,IACI,uEACG,MAC
X,EAak,OACiB,YAAIB,EAAQ,OAAYC,UAAIB,EAAQ,MACvC,IAAM,oDACV,EAak,QACoB,IAArB,IAA+C,
IAAjB,EAC9B,IAAM,4FAEN,IAAA,EAac,EACd,GAae,EACE,IAAjB,EAAQ,OACV,GAae,EACf,GAac,EACV
,EAAA,SAAA,EAAS,CAAC,EAAG,EAAQ,MAAM,GAAl,EAAQ,MAAM,GAAl,EAAQ,MAAM,MAE/D,QAak,
EAEL,EAAsC,CAAC,OAQ,GAC/C,EAC2B,CAAC,aAAA,EAac,iBAAA,EAakB,KAAA,GAG5D,EAAM,EA
O,OAAA,UACH,EADJ,sBAC2B,EACvB,GAEZ,OAAA,GACK,EAAQ,EAAA,SAAA,EAak,CAAC,EAAl,MAA
M,GAAl,EAAl,MAAM,GAAl,EAAl,MAAM,KAetD,EAGF,MAAM,GAawB,EAAG,EAAA,IAAA,CAAC,uBAA
A,IAAIC,QAAA,sBAAA;;ACiCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EA3G
P,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,cAEA,EAAA,QAAA,oBACA,EAAA,QAAA,iBACA,EAAA,QAA
A,kBACA,EAAA,QAAA,gBACA,EAAA,QAAA,YACA,EAAA,QAAA,cACA,EAAA,QAAA,aACA,EAAA,QAA
A,YACA,EAAA,QAAA,UACA,EAAA,QAAA,cACA,EAAA,QAAA,YACA,EAAA,QAAA,YAwCA,SAAS,EAC
L,EAaiB,EAakB,IAEjC,EAAA,EAAA,QAAA,EAaw,GAAM,EACjB,oDAAsD,OAetD,EAAA,EAAA,QAAA,E
AAW,GAAM,EACjB,oDAAsD,MAEpD,MAAA,GAak,EAagB,EAAA,iBAAA,EAAG,IAAK,aAG/B,EAAA,EA
AA,QAAA,EAAG,MAAQ,EACX,gDAakD,EAAG,SAEnD,MAAA,EAAQ,EAAG,OACV,EAAG,GAak,EAAG,
MAAM,OAao,GAe3B,KAAE,GAAY,GACV,MAAA,IAAI,+BACmB,sDACwB,OAEnD,KAAE,GAAY,GACV,
MAAA,IAAI,+BACmB,yDAC2B,OAGtD,EAaw,IACb,EAaw,GAET,EAaw,IACb,EAaw,GAGP,MAAA,GAA
I,EAAQ,EAAA,UAAA,EAAM,EAAA,OAAA,EAAG,EAAG,EAAG,SAAU,EAAG,EAAG,IAC1C,GAAl,EAAM,
EAAA,OAAA,EAAG,EAAG,EAAG,SACnB,GAak,EAAl,EAAA,KAAA,EAAG,GAEZ,GAAS,EACX,EAAA,aA
AA,EAU,EAAA,WAAA,GAAl,EAao,EAAA,SAAC,EAU,WACHc,EAaa,EAAA,cAAA,GAAl,EAao,EAAA
,SAAC,EAU,WAEjC,GAao,EAAM,EAAA,OAAA,CAAC,EAAG,GAAl,EAAG,OAevB,OAAA,EACI,EAAA,
UAAA,EAAM,EAAA,QAAA,EAAQ,EAAA,UAAA,EAAQ,EAAA,SAAA,EAAl,EAAG,EAAG,EAAG,KACvB,I
AAI,IAAO,EAAM,EAAA,OAAA,EAAQ,EAak,KACzC,GAGN,MAAM,GAaw,EAAG,EAAA,IAAA,CAAC,U
AAA,IAArB,QAAA,SAAA;;ACjBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,E

A3FP,IAAA,EAAA,QAAA,gBAEA,EAAA,QAAA,cAEA,EAAA,QAAA,UACA,EAAA,QAAA,UACA,EAAA,Q
AAA,WACA,EAAA,QAAA,gBACA,EAAA,QAAA,YACA,EAAA,QAAA,cACA,EAAA,QAAA,YACA,EAAA,Q
AAA,UACA,EAAA,QAAA,UA8BA,SAAS,EAAa,GACHb,IAAA,EACA,GAAA,MAAM,QAAQ,GAakB,CACrB,
GAakB,GAEd,EAAA,EAAA,QAAM,MAAN,GAAC,EAAG,OAAS,EAC1B,IAAM,qEAEJ,MAAA,EAAM,EAAG
,GAAG,MAAM,GACnB,IAAA,IAAI,EAAl,EAAG,EAAl,EAAG,SAAU,GAE3B,EAAA,EAAA,QAAA,EAAG,G
AAG,MAAM,KAAO,EACnB,IACI,oEACK,EAakB,GAAG,MAAM,UAAU,WAGpD,GAakB,EACIB,GAak,EA
AM,EAAA,OAAA,EAAl,EAAG,MAAM,GAAl,GAAG,IAAI,IAAK,EAAQ,EAAA,SAAA,EAAG,CAAC,MAIID,
EAAA,EAAA,QAAA,EAAG,QAAU,EAAG,GAAG,MAAM,GACzB,wCACW,EAakB,4CACC,EAakB,GAAG,
MAAM,QAeVD,MAAA,EAaiB,GACjB,EAAO,EACR,IAAA,IAAI,EAAl,EAAG,EAAl,EAAG,SAAU,EAC/B,EA
AG,KAAK,EAAO,OAAA,KAAK,KACd,IAAA,EAAl,EAak,GACT,GAAA,EAAl,EACD,IAAA,IAAI,EAAl,EA
AG,EAAl,IAAK,EAAG,CACpB,MAAA,GAAO,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,
EAAG,GAAl,IAAK,EAAG,IACxC,GAAl,EAAl,EAAA,KAAA,EAAG,GAGR,OAAA,EAAl,EAAA,KAAA,GAA
G,EAak,EAAA,MAAA,EAAG,iBAItB,OAAA,GACK,EAAM,EAAA,OAAA,EAAl,GAeV,EAlJ,MAAM,GAac,
EAAG,EAAA,IAAA,CAAC,aAAA,IAAxB,QAAA,YAAA;;AC4FA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,QAAA,EAxLP,IAAA,EAAA,QAAA,gBACA,EAAA,QAAA,iBAEA,EAAA,QAAA,cAEA,EA
AA,QAAA,YACA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,QAAA,UACA,EAAA,QAAA,cACA,EA
A,QAAA,cACA,EAAA,QAAA,UACA,EAAA,QAAA,WACA,EAAA,QAAA,gBACA,EA
A,QAAA,cACA,EAAA,QAAA,YACA,EAAA,QAAA,YACA,EAAA,QAAA,UACA,EAAA,QAAA,eACA,EAAA,
QAAA,gBACA,EAAA,QAAA,cACA,EAAA,QAAA,YA6CA,SAAS,EAAl,EAaW,GAae,GAMjC,IAJA,EAAA,E
AAA,QAAA,EAae,MAAQ,EACV,oEACI,EAae,QAeK,IAAX,EAae,KACG,OAAA,EAak,EAae,GACTb,CA
KC,MAAA,EAagB,EAae,MAAM,MAAM,EAAG,EAae,MAAM,OAAS,GAC7B,OAAO,CAAC,EAAO,IAAS,E
AAQ,GACrD,GAAO,EACT,EAAA,UAAA,EACI,EAAA,SAAA,EACA,CACE,EAae,EAae,MAAM,EAae,MA
AM,OAAS,GACxC,EAae,MAAM,EAae,MAAM,OAAS,KAe/B,GACE,EAaMB,GACnB,EAaMB,GAQIB,OAP
P,EAak,QAAQ,IACL,MAAC,EAak,GAAO,EAak,EAaiB,GACzC,EAak,KAAK,GACV,EAak,KAAK,KAIL,
EAFG,EAAQ,EAAA,UAAA,EAAM,EAAA,OAAA,EAAM,GAAl,EAae,QAC1B,EAAQ,EAAA,UAAA,EAAM,E
AAA,OAAA,EAAM,GAAl,EAae,SAKxC,SAAS,EAak,EAaa,GAae,GACjC,OAAA,EAAO,OAAA,KAAK,MA
Eb,EAAA,EAAA,QAaMB,IAAnB,EAae,MAAM,OACR,8CACI,EAae,MAAM,mBAEV,MAAA,EAAl,EAae,
MAAM,GACZ,EAAl,EAae,MAAM,GAEd,IAAA,GAAl,EAAl,EAAA,KAAA,GACR,GAAl,EAAM,EAAA,OA
A,GAER,MAAA,GAAQ,EAAS,EAAA,UAAA,CAAC,CAAC,IAAK,CAAC,EAAG,IAC9B,IAAA,GAac,EAAM,
EAAA,OAAA,GAeIB,MAAA,EAaQ,GAak,EAAl,EAAl,EACtB,IAAA,IAAI,EAAl,EAAG,EAAl,IAAS,EAAG,
CAGxB,MAAA,EAaQ,EACR,EAaQ,EACR,EAaQ,GACb,EAAG,EAAG,GAak,EAaO,OAAA,KAAK,KAehB,
MAAA,GAAS,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CAAC,EAAl,EAAG,IACIC,GAAQ,EAak,EA
AA,MAAA,GACb,GAAM,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CAAC,EAAG,IAG3B,GAAl,EA
M,EAAA,QAAA,EAaQ,EAAA,SAAA,EAak,IAAI,EAAS,EAAA,UAAA,CAAC,EAae,MAAM,EAAS,EAAA,U
AAA,CAAC,CAAC,MAExD,GAak,EAAl,EAAA,KAAA,GAak,EAAl,EAAA,KAAA,EAAG,IACrB,GAAO,EA
Al,EAAA,KAAA,EAaQ,GAeVB,EADoB,IAaIB,EAak,MAAM,IACT,EAAM,EAAA,OAAA,IAEN,EACA,EA
A,QAAA,CACE,GACA,EAAM,EAAA,OAAA,EAAM,CAAC,EAAG,GAAl,CAAC,EAak,MAAM,GAak,EA
G,EAak,MAAM,MAGrD,GAeA,MAAA,GAAM,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAaO,EAAA,QA
AA,EAAG,GAak,IAG7B,GAaW,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CAAC,EAAl,EAAG,IACp
C,GAAsB,EAAl,EAAA,KAAA,EAak,GAC/B,GAae,EAaU,EAAA,WAAA,GAC3B,GAAM,IAAN,EACF,GAAl
,EAAl,EAAA,KAAA,GAAU,EAaO,EAAA,QAAA,GAaW,EAaO,EAAA,QAAA,EAAl,SAC1C,CACC,MAAA,
GACF,EAAl,EAAA,KAAA,GAAU,EAaO,EAAA,QAAA,GAaW,EAaO,EAAA,QAAA,EAAl,KAC/C,GAAl,EA
AO,EAAA,QAAA,EAAC,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CAAC,EAAG,IAAK,GAAY,GAe9
C,MAAA,GAAuB,EAaU,EAAA,WAAA,GACjC,GAaW,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CA
AC,EAAG,EAae,MAAM,GAak,IAC/C,GAAM,IAAN,EACF,GAAl,EAAl,EAAA,KAAA,GAAU,EAaO,EAAA,
SAAA,EAaO,EAAA,QAAA,EAaU,GAAl,QACzC,CACC,MAAA,GACF,EAAl,EAAA,KAAA,GAAU,EAaO,E
AAA,SAAA,EAaO,EAAA,QAAA,EAaU,GAAl,IAC9C,GAAl,EAaO,EAAA,QAAA,EAAC,EAAM,EAAA,OA
A,EAAG,CAAC,EAAG,GAAl,CAAC,EAAG,IAAK,GAAY,GAe7C,MAAA,CAAC,EAAG,EAAG,MAER,EAAA,

EAAA,SAAA,CAAC,EAAO,EAAO,IAQIB,OALF,GAAGb,EAAl,IACvB,GAAl,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CAAC,EAAG,IACzB,GAAl,EAAM,EAAA,OAAA,EAAG,CAAC,EAAG,GAAl,CAAC,EAAG,KAGpB,CAAC,EAAG,KAIR,MAAM,GAAK,EAAG,EAAA,IAAA,CAAC,IAAA,IAAf,QAAA,GAAA;;ACvLP,aAAA,IAAY,EA AZ,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,UAAA,EA A,SAAY,GACV,EAAA,EAAA,KAAA,GAAA,OACA,EAAA,EAAA,KAAA,GAAA,OACA,EAAA,EAAA,IAAA,GAAA,MACA,EAAA,EAAA,uBAAA,GAAA,yBAJF,CAAY,IAAA,QAAA,UAAA,EAAS;;ACkEd,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAIEP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,WACA,EAAA,QAAA,UACA,EAAA,QAAA,qBACA,EAAA,QAAA,WACA,EAAA,QAAA,UACA,EAAA,QAA A,gBACA,EAAA,QAAA,WACA,EAAA,QAAA,gBACA,EAAA,QAAA,aACA,EAAA,QAAA,UAAa,SAAS,EAC L,EAAsB,EACtB,EAAY,EA AU,UAAA,wBACIB,MAAA,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,uBAC9C ,IAAA,EAAmB,KACR,MAAX,IACF,GA AW,EAAGb,EAAA,iBAAA,EAAS,UAAW,wBAG3C,MAAA,EA A4B,MAAZ,EA AoB,GAAU,EAAl,EAAA,KAAA,EAAS,GA E7D,GAAA,IAAc,EA AU,UAAA,KACnB,OAAA,EAEL,GAAA,IAAc,EA AU,UAAA,IACnB,OAAA,EAAl,EAAA,KAAA,GAET,GAAA,IAAc,EA AU,UAAA,KAAM,CA C5B,GAAY,MAAZ,EACK,OAAA,EA AK,EAAA,MAAA,GACP,CACC,MAAA,EA AkB,EAAQ,KAAO,EAAS,K AC1C,GAAS,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,IA Ae,EAAl,EAAA,KAAA,IACnC,OAAA,EA AkB,GA A I,EAAl,EAAA,KAAA,GAAQ,EA AO,EAAA,QAAA,IACnB,GAG7B,GAAA,IAAc,EA AU,UAAA,uBA AwB,CAC 9C,GAAY,MAAZ,EACK,OAAA,EA Al,EAAA,MAAA,EA Al,EAAA,KAAA,IA Ae,EA AO,EAAA,QAAA,EAAQ,OACxC,CACC,MAAA,GAAqB,EA Al,EAAA,KAAA,GAAU,EA AK,EAAA,MAAA,EAAQ,QA EhD,GACF,EA A K,EAAA,OAAA,EA Al,EAAA,MAAA,EA AS,EAAA,UAAA,GAA oB,EA AO,EAAA,QAAA,KAAM,WACHD,OA AA,EA Al,EAAA,MAAA,EA Al,EAAA,KAAA,GAA e,IAI5B,MAAA,4BAA4B,KA E7B,MAAM,GA AsB,EAAG,E AAA,IAAA,CAAC,qBAAA,IA AhC,QAAA,oBAAA;;ACtBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I AAA,QAAA,wBAAA,EA3CP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,cACA,EAAA,QAAA,UACA,EAAA,QAAA,qBACA,EAAA,QAAA,gBACA,EAAA,QAAA,UAEA,EAAA,QAAA,2BAiBA,SAAS,EACL,EAAsB,EAC tB,EACA,EAAY,EA AU,UAAA,wBACIB,MAAA,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,sBAC5C,GACF, EAAGb,EAAA,iBAAA,EA Aa,cAAe,sBAC5C,IAAA,EA AmB,KACR,MAAX,IACF,GA AW,EAAGb,EAAA,iBAA A,EAAS,UAAW,wBAG7C,EAAA,EAAA,mBAAA,EAAQ,MAAO,EA Aa,MAAO,iCAEjC,MAAA,GAAS,EA Al,E AAA,MAAA,EA Al,EAAA,KAAA,EA AS,IACzB,OAAA,EA AoB,EAAA,qBAAA,EAAQ,EA AU,GAGxC,MAAM,GAAqB,EAAG,EAAA,IAAA,CAAC,oBAAA,IAA/B,QAAA,mBAAA;;ACEA,aAAA,OAAA,eAAA,QAAA,aAA A,CAAA,OAAA,IAAA,QAAA,oBAAA,EA9CP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,cACA,EAAA,QAA A,qBACA,EAAA,QAAA,UACA,EAAA,QAAA,gBACA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,QA AA,UAEA,EAAA,QAAA,2BAkBA,SAAS,EACL,EAAsB,EA A2B,EACjD,EACA,EAAY,EA AU,UAAA,wBACIB ,MAAA,GAAU,EAAGb,EAAA,iBAAA,EAAQ,SAAU,kBAC5C,GACF,EAAGb,EAAA,iBAAA,EA Aa,cAAe,kBA C5C,IAAA,EA AmB,KACR,MAAX,IACF,GA AW,EAAGb,EAAA,iBAAA,EAAS,UAAW,oBAG7C,EAAA,EAAA ,mBAAA,EAAQ,MAAO,EA Aa,MAAO,6BAEjC,MAAA,GAAM,EA AO,EAAA,QAAA,GACb,GAAS,EA Al,EA A A,KAAA,GA AK,EA Al,EAAA,MAAA,EA Al,EAAA,MAAA,EA AO,EAAA,QAAA,GA Al,GAAU,GACjC,MA AA,GAAS,EA AK,EAAA,OAAA,EA Al,EAAA,KAAA,GA AK,EA Al,EAAA,KAAA,EA AS,KACnC,OAAA,EA Ao B,EAAA,qBAAA,EAAQ,EA AU,GA ExC,MAAM,GAAY,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UA AA;;ACQA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EA pDP,IAAA,EAAA,QAA A,yBAEA,EAAA,QAAA,cACA,EAAA,QAAA,UACA,EAAA,QAAA,UACA,EAAA,QAAA,qBACA,EAAA,QAA A,cACA,EAAA,QAAA,UACA,EAAA,QAAA,gBACA,EAAA,QAAA,aACA,EAAA,QAAA,aACA,EAAA,QAAA

,UAEA,EAAA,QAAA,2BAkBA,SAAS,EACL,EAAsB,EACtB,EAA6B,EAAQ,EACrC,EAAY,EAAU,UAAA,wBA
CIB,MAAA,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,aAC5C,GAAe,EAAGB,EAAA,iBAAA,EAAa,cAAe,aA
C7D,IAAA,EAAMB,KACR,MAAX,IACF,GAAW,EAAGB,EAAA,iBAAA,EAAS,UAAW,eAE/B,EAAA,EAAA,m
BAAA,EAAQ,MAAO,EAAa,MAAO,wBAE/C,MAAA,GAAc,EAAO,EAAA,QAAA,GACrB,GAAQ,EAAl,EAAA
,MAAA,EAAl,EAAA,KAAA,EAAC,IAC9B,GAAy,EAAQ,EAAA,SAAA,EAAO,GAC3B,GAAS,EAAl,EAAA,K
AAA,EAAO,GAEPB,GACF,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAO,EAAA,QAAA,KAAM,EAAO,EA
AA,QAAA,KAAa,EAAl,EAAA,KAAA,EAAa,IACvD,OAAA,EAAoB,EAAA,qBAAA,EAAQ,EAAU,GAExC,MA
AM,GAAy,EAAG,EAAA,IAAA,CAAC,WAAA,IAAtB,QAAA,UAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,aAAA,EAnDP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,cACA,EAAA,QAAA
,UACA,EAAA,QAAA,UACA,EAAA,QAAA,qBACA,EAAA,QAAA,UACA,EAAA,QAAA,UACA,EAAA,QAAA
,gBACA,EAAA,QAAA,aACA,EAAA,QAAA,UAEA,EAAA,QAAA,2BAkBA,SAAS,EACL,EAAsB,EACtB,EAA
6B,EAAU,KACvC,EAAY,EAAU,UAAA,wBACIB,MAAA,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,WAC5
C,GAAe,EAAGB,EAAA,iBAAA,EAAa,cAAe,WAC7D,IAAA,EAAMB,KACR,MAAX,IACF,GAAW,EAAGB,EA
AA,iBAAA,EAAS,UAAW,aAE/B,EAAA,EAAA,mBAAA,EAAQ,MAAO,EAAa,MAAO,sBAE/C,MAAA,GAAM,
EAAO,EAAA,QAAA,GACb,GAAGB,EAAO,EAAA,QAAA,GAEvB,GAAK,EAAl,EAAA,MAAA,EAAl,EAAA,K
AAA,GAAS,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAAC,MAC5C,GACF,EAAl,EAAA,MAAA,EAAl,EA
A,KAAA,EAk,IAAU,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAk,GAAe,KACrD,G
AAS,EAAl,EAAA,KAAA,EAAl,GAChB,OAAA,EAAoB,EAAA,qBAAA,EAAQ,EAAU,GAExC,MAAM,GAAU,
EAAG,EAAA,IAAA,CAAC,SAAA,IAApB,QAAA,QAAA;;ACVA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,sBAAA,EazCP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,cACA,EAAA,QAAA,qBACA,E
AAA,QAAA,gBACA,EAAA,QAAA,yBAEA,EAAA,QAAA,2BAiBA,SAAS,EACL,EAAsB,EACtB,EACA,EAAY
,EAAU,UAAA,wBACIB,MAAA,GAAU,EAAGB,EAAA,iBAAA,EAAQ,SAAU,oBAC5C,GACF,EAAGB,EAAA,i
BAAA,EAAa,cAAe,oBAC5C,IAAA,EAAMB,KACR,MAAX,IACF,GAAW,EAAGB,EAAA,iBAAA,EAAS,UA
W,sBAG7C,EAAA,EAAA,mBAAA,EAAQ,MAAO,EAAa,MAAO,+BAEjC,MAAA,GAAS,EAakB,EAAA,mBA
AA,EAAS,GACnC,OAAA,EAAoB,EAAA,qBAAA,EAAQ,EAAU,GAExC,MAAM,GAAMB,EAAG,EAAA,IAAA
,CAAC,kBAAA,IAA7B,QAAA,iBAAA;;AC6DA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,yBAAA,EAAtGP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,cACA,EAAA,QAAA,UACA,EAAA,QAAA,UAC
A,EAAA,QAAA,UACA,EAAA,QAAA,YACA,EAAA,QAAA,qBACA,EAAA,QAAA,UACA,EAAA,QAAA,UAC
A,EAAA,QAAA,gBACA,EAAA,QAAA,WACA,EAAA,QAAA,aACA,EAAA,QAAA,UAEA,EAAA,QAAA,2BA
EA,SAAS,EACL,EAAsB,GACIB,MAAA,GACF,EAAGB,EAAA,iBAAA,EAAQ,SAAU,iCChC,GACF,EAAGB,E
AAA,iBAAA,EAAQ,SAAU,kCAEiC,EAAA,EAAA,mBAAA,EAAQ,MAAO,EAAQ,MAAO,4CA5B5B,MAAA,G
AAy,EAk,EAAA,MAAA,GACjB,GAAGB,EAAl,EAAA,KAAA,EAAS,GAC7B,GAAGB,EAAM,EAAA,QAAA,
EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,MAEjC,OAAA,EAAl,EAAA,MAAA,EAAl,EA
AA,KAAA,EAaw,GAAGB,GAwB5C,SAAS,EACL,EAAGC,EACChC,EAA6B,EAaiB,EAC9C,EAAY,EAAU,UA
AA,wBACpB,IAAA,GAAoB,EACpB,EAAA,iBAAA,EAakB,mBAAoB,uBACpC,MAAA,GAAU,EAAGB,EAAA,
iBAAA,EAAQ,SAAU,uBAC9C,IAAA,EAAMB,KAOnB,GANW,MAAX,IACF,GAAW,EAAGB,EAAA,iBAAA,E
AAS,UAAW,yBAG7C,EAAA,EAAA,mBAAA,EAakB,MAAO,EAAQ,MAAO,kCAExC,EAaiB,EAAG,CACChB,
MAAA,GAAuB,EAAO,EAAA,QAAA,GAC9B,GAAM,EAAO,EAAA,QAAA,GACb,GAao,EAAO,EAAA,QAA
A,IAEPB,GACI,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GAAMB,EAAl,EAAA,KAAA,EAk,KACChC,EAAl,
EAAA,KAAA,EAAM,IAEd,MAAA,EAAS,EAA+B,EAAMB,GAElD,OAAA,EAAoB,EAAA,qBAAA,EAAQ,EA
AU,GAGxC,MAAM,GAAsB,EAAG,EAAA,IAAA,CAAC,qBAAA,IAAhC,QAAA,oBAAA;;ACmCA,aAAA,OA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EA3IP,IAAA,EAAA,QAAA,mBAGA,EAAA,QAA
A,yBAEA,EAAA,QAAA,cACA,EAAA,QAAA,UACA,EAAA,QAAA,gBACA,EAAA,QAAA,WACA,EAAA,QA
AA,UACA,EAAA,QAAA,UACA,EAAA,QAAA,kBACA,EAAA,QAAA,qBACA,EAAA,QAAA,UACA,EAAA,Q
AAA,UACA,EAAA,QAAA,gBACA,EAAA,QAAA,cACA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,Q
AAA,UAEA,EAAA,QAAA,2BA0BA,SAAS,EACL,EAaw,EAaw,GAAM,GAK1B,IAJS,IAAT,IACF,EAAM,EA
AO,KAAO,GAGiB,IAAQ,EAAO,KAAO,EACiB,MAAA,MACF,sGACuC,EAAO,uBAC/B,KA6Bd,OAzBH,EA
W,EAAA,YAAA,CAAC,EAAGB,EAAGB,KAiPc,MACA,GAAM,EAAU,EAAA,WAAA,EAAQ,CAAC,IADd,GA

EX,GAAY,EAAl,EAAA,MAAA,EAaK,EAAA,MAAA,EAAQ,WAAY,GAC/C,EAaK,CAAC,EAAQ,IAER,MAA
A,GAAa,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAAW,IAa/B,MAAA,CAAC,OAaZS,EAAl,EAAA,KAAA,E
AAy,CAAC,IAyNB,SAVE,CAAC,EAAO,KACjB,MAAC,EAAQ,GAAa,EACtB,GAAU,EAAqB,EAAA,sBAAA,
EAAG,MAAO,CAAC,IACzC,MAAA,EAcl,EAAl,EAAA,MAAA,EAAQ,EAAA,SAAA,EAAl,IACZ,EAAl,EAA
A,MAAA,EAaK,EAAA,MAAA,EAAQ,YAAy,EAAl,EAAA,KAAA,MACrC,EAAl,EAAA,MAAA,EAAQ,EAA
A,SAAA,EAAl,IACZ,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,IAAY,EAaK,EAAA,MAAA,EAAQ,iBAMxC,C
AAS,EAAQ,GAsB1B,SAAS,EAcl,EAa4B,EAC5B,EAa6B,EAaiB,EAC9C,EAAY,EAAU,UAAA,wBACpB,IA
AA,GACA,EAaGB,EAAA,iBAAA,EAaC,eAaGB,uBAC5C,MAAA,GAAU,EAaGB,EAAA,iBAAA,EAAQ,SAAU
,uBAC9C,IAAA,EAaMB,KASnB,GAPW,MAAX,IACF,GAaW,EAaGB,EAAA,iBAAA,EAAS,UAAW,yBAI7C,
EAAA,EAAA,mBAAA,EAaC,MAAO,EAAQ,MAAO,kCAEpC,EAaiB,EAAG,CAChB,MAAA,GAAuB,EAAO,E
AAA,QAAA,GAC9B,GAAM,EAAO,EAAA,QAAA,GACb,GAAa,EAAO,EAAA,QAAA,EAaC,MAAM,IAE9C,G
ACI,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GAAe,EAAl,EAAA,KAAA,EAaK,KAC5B,EAAl,EAAA,KAAA,
EAAsB,IAG9B,MAAA,EAAS,EAa+B,EAae,GAEtD,OAAA,EAaOB,EAAA,qBAAA,EAAQ,EAAU,GAGxC,MA
AM,GAAsB,EAAG,EAAA,IAAA,CAAC,qBAAA,IAAhC,QAAA,oBAAA;;AC2IP,aAAA,OAAA,eAAA,QAAA,a
AAA,CAAA,OAAA,IAAA,IAAA,EAAA,CAAA,OAAA,EAAA,QAAA,EAAA,QAAA,EAAA,UAAA,EAAA,QA
AA,EAAA,KAAA,EAAA,MAAA,EAAA,OAAA,EAAA,KAAA,EAAA,MAAA,EAAA,KAAA,EAAA,KAAA,EA
AA,QAAA,EAAA,QAAA,EAAA,MAAA,EAAA,OAAA,EAAA,MAAA,EAAA,OAAA,EAAA,OAAA,EAAA,SA
AA,EAAA,WAAA,EAAA,eAAA,EAAA,gBAAA,EAAA,WAAA,EAAA,aAAA,EAAA,aAAA,EAAA,aAAA,EA
A,UAAA,EAAA,aAAA,EAAA,QAAA,EAAA,MAAA,EAAA,MAAA,EAAA,aAAA,EAAA,OAAA,EAAA,SAAA
,EAAA,QAAA,EAAA,UAAA,EAAA,UAAA,EAAA,UAAA,EAAA,UAAA,EAAA,QAAA,EAAA,QAAA,EAAA,i
BAAA,EAAA,QAAA,EAAA,iBAAA,EAAA,KAAA,EAAA,MAAA,EAAA,QAAA,EAAA,eAAA,EAAA,cAAA,E
AAA,iBAAA,EAAA,MAAA,EAAA,YAAA,EAAA,KAAA,EAAA,UAAA,EAAA,KAAA,EAAA,KAAA,EAAA,O
AAA,EAAA,KAAA,EAAA,KAAA,EAAA,YAAA,EAAA,OAAA,EAAA,KAAA,EAAA,MAAA,EAAA,OAAA,E
AAA,UAAA,EAAA,QAAA,EAAA,SAAA,EAAA,cAAA,EAAA,MAAA,EAAA,UAAA,EAAA,OAAA,EAAA,OA
AA,EAAA,WAAA,EAAA,MAAA,EAAA,WAAA,EAAA,UAAA,EAAA,4BAAA,EAAA,KAAA,EAAA,OAAA,E
AAA,YAAA,EAAA,YAAA,EAAA,WAAA,EAAA,YAAA,EAAA,YAAA,EAAA,WAAA,EAAA,YAAA,EAAA,Q
AAA,EAAA,KAAA,EAAA,SAAA,EAAA,WAAA,EAAA,mBAAA,EAAA,SAAA,EAAA,MAAA,EAAA,KAAA,
EAAA,SAAA,EAAA,WAAA,EAAA,KAAA,EAAA,SAAA,EAAA,KAAA,EAAA,cAAA,EAAA,aAAA,EAAA,K
AAA,EAAA,UAAA,EAAA,QAAA,EAAA,MAAA,EAAA,UAAA,EAAA,cAAA,EAAA,KAAA,EAAA,OAAA,EA
AA,OAAA,EAAA,OAAA,EAAA,OAAA,EAAA,MAAA,EAAA,KAAA,EAAA,OAAA,EAAA,OAAA,EAAA,MA
AA,EAAA,MAAA,EAAA,aAAA,EAAA,cAAA,EAAA,eAAA,EAAA,OAAA,EAAA,MAAA,EAAA,YAAA,EA
A,MAAA,EAAA,OAAA,EAAA,SAAA,EAAA,SAAA,EAAA,WAAA,EAAA,WAAA,EAAA,WAAA,EAAA,WA
AA,EAAA,OAAA,EAAA,OAAA,EAAA,QAAA,EAAA,MAAA,EAAA,iBAAA,EAAA,gBAAA,EAAA,SAAA,E
AAA,MAAA,EAAA,KAAA,EAAA,MAAA,EAAA,OAAA,EAAA,SAAA,EAAA,SAAA,EAAA,SAAA,EAAA,SA
AA,EAAA,SAAA,EAAA,UAAA,EAAA,gBAAA,EAAA,KAAA,EAAA,MAAA,EAAA,OAAA,EAAA,MAAA,EA
AA,OAAA,EAAA,MAAA,EAAA,QAAA,EAAA,mBAAA,EAAA,SAAA,EAAA,OAAA,EAAA,MAAA,EAAA,c
AAA,EAAA,KAAA,EAAA,KAAA,EAAA,KAAA,EAAA,MAAA,EAAA,QAAA,EAAA,UAAA,EAAA,UAAA,E
AAA,UAAA,EAAA,UAAA,EAAA,UAAA,EAAA,UAAA,EAAA,MAAA,EAAA,MAAA,EAAA,iBAAA,EAAA,
QAAA,EAAA,oBAAA,EAAA,SAAA,EAAA,UAAA,EAAA,OAAA,EAAA,YAAA,EAAA,OAAA,EAAA,WAAA,
EAAA,IAAA,EAAA,iBAAA,EAAA,OAAA,GAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,
WAAA,OAAA,EAAA,OAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,
QAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAAA,OAAA,eAAA,Q
AAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,OAAA,OAAA,eAAA,QAAA,OAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,EAAA,OAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,O
AAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QA
AA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAA

A,OAAA,EAAA,SAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA
,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAAA,OAAA,eAAA,QAAA,
QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,E
AAA,IAAA,WAAA,OAAA,EAAA,WAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,O
AAA,EAAA,aAAA,OAAA,eAAA,QAAA,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,O
AAA,eAAA,QAAA,iBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,kBAAA,OAAA,eAAA,QAAA,Y
AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EA
AA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAA
A,EAAA,eAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,
eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,cAAA,C
AAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IA
AA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EA
AA,QAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAA
A,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,QAAA,CAAA,
YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,EAAA,WAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,U
AAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,Q
AAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,WAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,UA
AA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAA
A,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,O
AAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAAA,QA
AA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAAA,gBAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,EAAA,gBAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,mB
AAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAAA,QA
AA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,EAAA,OAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,OAA
A,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,OAAA,OAAA,eAAA,QAA
A,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,cAAA
,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,
MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,
EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,
OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,
OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,UAAA,OAAA,eAAA,QAAA,U
AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,E
AAA,IAAA,WAAA,OAAA,GAAA,gBAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,O
AAA,GAAA,QAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,O
AAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,QA
AA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EA
AA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAA
A,GAAA,QAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAA

A,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,6BA
AA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,8BAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,E
AAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,O
AAA,GAAA,SAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,cAAA,OA
AA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,cAAA,OAAA,eAAA,QAAA,YAA
A,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,
IAAA,WAAA,OAAA,GAAA,cAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,G
AAA,cAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,cAAA,OAAA,eAAA,QAAA,SAAA,CAA
A,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,UAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAA
A,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAA
A,WAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAA
A,QAAA,oBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,qBAAA,OAAA,eAAA,QAAA,UAAA,CA
AA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IA
AA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,G
AAA,OAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,e
AAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAAA,QAAA,MAAA,C
AAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IA
AA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,G
AAA,OAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,gBAAA,OAAA,e
AAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,eAAA,OAAA,eAAA,QAAA,MAAA,CA
AA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IA
AA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GA
AA,UAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eA
AA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,eAAA,CA
AA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,gBAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IA
AA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GA
AA,SAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAA
A,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,QAAA,CAA
A,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,
WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA
,OAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,
QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,OAAA,CAAA,
YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,
WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,
eAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,gBAAA,OAAA,eAAA,Q
AAA,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,iBAAA,OAAA,eAAA,QAAA,QAAA,CAAA,
YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,cA
AA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QA
AA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aA
AA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAAA,QAA
A,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,GAAA,aAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA
,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,
OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,UAAA,OAAA,eAAA,QAAA,O

AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,E
AAA,IAAA,WAAA,OAAA,GAAA,mBAAA,OAAA,eAAA,QAAA,iBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,
OAAA,GAAA,kBAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAA
A,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAA
A,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAA
A,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAA
A,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,GAAA,WAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YA
AA,OAAA,eAAA,QAAA,iBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,kBAAA,OAAA,eAAA,Q
AAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,OAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,Q
AAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QA
AA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,GAAA,UAAA,OAAA,eAAA,QAAA,oBAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,GAAA,qBAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,W
AAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QA
AA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,GAAA,gBAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,GAAA,OAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OA
AA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,OAAA,OAAA,eAAA,QA
AA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,GAAA,UAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YA
AA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA,QA
AA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,WAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,GAAA,YAAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,Q
AAA,OAAA,eAAA,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,QAAA,OAAA,eAAA,Q
AAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,mBAAA,OAAA,eAAA,QAAA,SAAA,CAAA,
YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,UAAA,OAAA,eAAA,QAAA,qBAAA,CAAA,YAAA,EAAA,IAAA,
WAAA,OAAA,GAAA,sBAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA
,WAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,YAAA,OAAA,eAAA
,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,cAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,GAAA,SAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,aA
AA,OAAA,eAAA,QAAA,KAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,MAAA,OAAA,eAAA,QA
AA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,mBAAA,QAAA,MAAA,QAAA,OAAA,QAAA,
SAAA,QAAA,OAAA,QAAA,OAAA,QAAA,WAAA,EApRA,IAAA,EAAA,QAAA,SACA,EAAA,QAAA,UACA,
EAAA,QAAA,WACA,EAAA,QAAA,SACA,EAAA,QAAA,WACA,EAAA,QAAA,SACA,EAAA,QAAA,SACA,E
AAA,QAAA,aACA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,QAAA,WACA,EAAA,QAAA,UACA,EA
AA,QAAA,WACA,EAAA,QAAA,WACA,EAAA,QAAA,cACA,EAAA,QAAA,iBACA,EAAA,QAAA,qBACA,E
AAA,QAAA,uBACA,EAAA,QAAA,eACA,EAAA,QAAA,iBACA,EAAA,QAAA,iBACA,EAAA,QAAA,iBACA,
EAAA,QAAA,cACA,EAAA,QAAA,kBACA,EAAA,QAAA,YACA,EAAA,QAAA,UACA,EAAA,QAAA,UACA,
EAAA,QAAA,mBACA,EAAA,QAAA,WACA,EAAA,QAAA,aACA,EAAA,QAAA,YACA,EAAA,QAAA,eACA,

EAAA,QAAA,eACA,EAAA,QAAA,eACA,EAAA,QAAA,eACA,EAAA,QAAA,YACA,EAAA,QAAA,YACA,EA
AA,QAAA,sBACA,EAAA,QAAA,YACA,EAAA,QAAA,sBACA,EAAA,QAAA,SACA,EAAA,QAAA,UACA,EA
AA,QAAA,YACA,EAAA,QAAA,oBACA,EAAA,QAAA,oBACA,EAAA,QAAA,sBACA,EAAA,QAAA,UACA,E
AAA,QAAA,gBACA,EAAA,QAAA,SACA,EAAA,QAAA,gBACA,EAAA,QAAA,SACA,EAAA,QAAA,SACA,E
AAA,QAAA,WACA,GAAA,QAAA,SACA,GAAA,QAAA,SACA,GAAA,QAAA,iBACA,GAAA,QAAA,WACA,
GAAA,QAAA,SACA,GAAA,QAAA,UACA,GAAA,QAAA,WACA,GAAA,QAAA,cACA,GAAA,QAAA,YACA,
GAAA,QAAA,aACA,GAAA,QAAA,mBACA,GAAA,QAAA,UACA,GAAA,QAAA,eACA,GAAA,QAAA,YACA
,GAAA,QAAA,YACA,GAAA,QAAA,gBACA,GAAA,QAAA,UACA,GAAA,QAAA,gBACA,GAAA,QAAA,cAC
A,GAAA,QAAA,kCACA,GAAA,QAAA,SACA,GAAA,QAAA,WACA,GAAA,QAAA,iBACA,GAAA,QAAA,iB
ACA,GAAA,QAAA,iBACA,GAAA,QAAA,iBACA,GAAA,QAAA,iBACA,GAAA,QAAA,gBACA,GAAA,QAA
A,iBACA,GAAA,QAAA,aACA,GAAA,QAAA,SACA,GAAA,QAAA,cACA,GAAA,QAAA,iBACA,GAAA,QAA
A,0BACA,GAAA,QAAA,aACA,GAAA,QAAA,UACA,GAAA,QAAA,SACA,GAAA,QAAA,aACA,GAAA,QAA
A,gBACA,GAAA,QAAA,SACA,GAAA,QAAA,aACA,GAAA,QAAA,SACA,GAAA,QAAA,oBACA,GAAA,QA
AA,iBACA,GAAA,QAAA,SACA,GAAA,QAAA,eACA,GAAA,QAAA,aACA,GAAA,QAAA,UACA,GAAA,QA
AA,eACA,GAAA,QAAA,mBACA,GAAA,QAAA,SACA,GAAA,QAAA,WACA,GAAA,QAAA,WACA,GAAA,Q
AAA,WACA,GAAA,QAAA,WACA,GAAA,QAAA,UACA,GAAA,QAAA,SACA,GAAA,QAAA,WACA,GAAA,
QAAA,WACA,GAAA,QAAA,UACA,GAAA,QAAA,UACA,GAAA,QAAA,kBACA,GAAA,QAAA,mBACA,GA
AA,QAAA,oBACA,GAAA,QAAA,WACA,GAAA,QAAA,UACA,GAAA,QAAA,gBACA,GAAA,QAAA,UACA,
GAAA,QAAA,WACA,GAAA,QAAA,aACA,GAAA,QAAA,aACA,GAAA,QAAA,gBACA,GAAA,QAAA,gBAC
A,GAAA,QAAA,gBACA,GAAA,QAAA,gBACA,GAAA,QAAA,WACA,GAAA,QAAA,WACA,GAAA,QAAA,Y
ACA,GAAA,QAAA,UACA,GAAA,QAAA,sBACA,GAAA,QAAA,qBACA,GAAA,QAAA,aACA,GAAA,QAAA,
UACA,GAAA,QAAA,SACA,GAAA,QAAA,UACA,GAAA,QAAA,WACA,GAAA,QAAA,aACA,GAAA,QAAA,
aACA,GAAA,QAAA,aACA,GAAA,QAAA,aACA,GAAA,QAAA,aACA,GAAA,QAAA,cACA,GAAA,QAAA,uB
ACA,GAAA,QAAA,kBACA,GAAA,QAAA,mBACA,GAAA,QAAA,oBACA,GAAA,QAAA,mBACA,GAAA,QA
AA,WACA,GAAA,QAAA,UACA,GAAA,QAAA,YACA,GAAA,QAAA,wBACA,GAAA,QAAA,aACA,GAAA,Q
AAA,WACA,GAAA,QAAA,UACA,GAAA,QAAA,mBACA,GAAA,QAAA,SACA,GAAA,QAAA,SACA,GAAA,
QAAA,SACA,GAAA,QAAA,UACA,GAAA,QAAA,YACA,GAAA,QAAA,cACA,GAAA,QAAA,cACA,GAAA,Q
AAA,cACA,GAAA,QAAA,cACA,GAAA,QAAA,cACA,GAAA,QAAA,cACA,GAAA,QAAA,UACA,GAAA,QA
AA,UACA,GAAA,QAAA,sBACA,GAAA,QAAA,YACA,GAAA,QAAA,0BACA,GAAA,QAAA,aACA,GAAA,Q
AAA,cACA,GAAA,QAAA,WACA,GAAA,QAAA,iBACA,GAAA,QAAA,WACA,GAAA,QAAA,gBAEA,GAAA
,QAAA,kBAAA,OAAA,KAAA,IAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,
KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SACA,IA
AA,GAAA,QAAA,eAAA,OAAA,KAAA,IAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAA
A,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,
SACA,IAAA,GAAA,QAAA,UAAA,OAAA,KAAA,IAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OA
AA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAA
A,GAAA,SACA,IAAA,GAAA,QAAA,oBAAA,OAAA,KAAA,IAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA
,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,GAAA,SACA,IAAA,GAAA,QAAA,gBAAA,OAAA,KAAA,IAAA,QAAA,SAAA,GAAA,YAAA,G
AAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EA
A,IAAA,WAAA,OAAA,GAAA,SACA,IAAA,GAAA,QAAA,qBAAA,OAAA,KAAA,IAAA,QAAA,SAAA,GAA
A,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,
YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SACA,IAAA,GAAA,QAAA,eAAA,OAAA,KAAA,IAAA,QAAA,SA
AA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA
,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SACA,IAAA,GAAA,QAAA,aAAA,OAAA,KAAA,IAAA,Q
AAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAA
A,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SACA,IAAA,GAAA,QAAA,qBAAA,OAAA,KAA
A,IAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,e

AAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SACA,IAAA,GAAA,QAAA,cAAA,OA
AA,KAAA,IAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,
OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,GAAA,SAEA,IAAA,GAAA,QAAA,e
AaA,GAAA,GAAA,QAAA,gBAuEA,QAAA,MAAA,GArEA,IAAA,GAAA,QAAA,2BACA,GAAA,QAAA,wBA
CA,GAAA,QAAA,kBACA,GAAA,QAAA,iBASA,GAAA,QAAA,2BACA,GAAA,QAAA,2BACA,GAAA,QAAA,
8BACA,GAAA,QAAA,+BACA,GAAA,QAAA,qCACA,GAAA,QAAA,0CACA,GAAA,QAAA,gDACA,GAAA,Q
AAA,sCACA,GAAA,QAAA,4CACA,GAAA,QAAA,2BACA,GAAA,QAAA,mCAgBA,GAAA,QAAA,sBACA,G
AAA,QAAA,yBACA,GAAA,QAAA,eAQA,GAAA,QAAA,gCACA,GAAA,QAAA,kCACA,GAAA,QAAA,4BAC
A,GAAA,QAAA,uBACA,GAAA,QAAA,uBACA,GAAA,QAAA,qBACA,GAAA,QAAA,+BACA,GAAA,QAAA,
kCACA,GAAA,QAAA,kCAaA,SAAA,KAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAA
A,OAAA,GAAA,WAAA,OAAA,GAAA,EAAA,SAAA,GAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EA
AA,IAAA,EAAA,KAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,
GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,
OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,I
AAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EA
AA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA9EA,MAAM,GAAW,CACf,IAAA,GADe,IAEf,KAAA
,GAFe,KAGf,KAAA,GAHe,KAIf,MAAA,GAAA,OA0EF,QAAA,SAAA,GAjEA,MAAM,GAAS,CACb,cAAA,G
ADa,cAEb,WAAA,GAFa,WAGb,MAAA,GAHa,MAIb,KAAA,GAAA,MA6DF,QAAA,OAAA,GA9CA,MAAM,G
AAQ,CACZ,cAAA,GADY,cAEZ,sBAAA,GAfY,sBAGZ,eAAA,GAHY,eAIZ,iBAAA,GAJY,iBAKZ,cAAA,GAL
Y,cAMZ,kBAAA,GANY,kBAOZ,uBAAA,GAPY,uBAQZ,2BAAA,GARY,2BASZ,gCAAA,GATY,gCAUZ,wBA
AA,GAVY,wBAWZ,6BAAA,GAAA,8BAmCF,QAAA,MAAA,GA5BA,MAAM,GAAS,CACb,SAAA,GADa,SAE
b,YAAA,GAFa,YAGb,GAAA,GAAA,IAyBF,QAAA,OAAA,GAZA,MAAM,GAAS,CACb,mBAAA,GADa,mBA
Eb,oBAAA,GAFa,oBAGb,eAAA,GAHa,eAIb,UAAA,GAJa,UAKb,UAAA,GALa,UAMb,QAAA,GANa,QAOb,iB
AAA,GAPa,iBAQb,oBAAA,GARa,oBASb,oBAAA,GAAA,qBAGF,QAAA,OAAA;;AC/HA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAtJA,IAAA,EAAA,QAAA,cACA,EAAA,QAAA,gBACA,EA
AA,QAAA,cACA,EAAA,QAAA,oBAqBM,MAAgB,UAAkB,EAAIC,aAiBJ,SAAS,EAAiB,GAAa,EAAO,GAETC,
MAAA,MAAC,EAAD,MAAQ,GAAS,KAAK,iBAAiB,EAAG,GAE5C,GAAW,MAAX,EAaiB,CACb,MAAA,EA
CF,EAAQ,IAAI,IAAM,CAAC,KAAM,EAAE,KAAM,OAAQ,EAAM,EAAE,SACbD,KAAA,eAAe,QAef,KAAA,
eAAe,GAMIB,OAFI,EAAA,EAAA,SAAA,GA EJ,EACK,GAEP,EAAM,UACC,MAOP,iBAIK,OAHiB,MAApB,K
AAK,cACF,KAAA,YAAc,GAEd,KAAK,YAGJ,sBACH,KAAA,YAAc,KAAK,WAAa,EA gBvC,iBAAiB,EAAiB,
GAEZB,OAAA,EAAC,EAAA,eAAA,EAAG,GAGB1B,UAC0B,MAApB,KAAK,cACC,EAAA,EAAA,SAAA,KAA
K,aAIX,uBAIG,OAHiB,MAApB,KAAK,cACF,KAAA,YAAc,GAEd,CACL,KAAM,OAEN,QAAQ,EAAO,EAAA,
QAAA,KAAK,YAAa,UAI/B,mBACE,MAAA,IAAI,MAAM,2DAGZ,iBAAW,GACT,MAAA,IAAI,MACN,+DAC
G,KAAK,kBAUE,wBAakB,GAGzB,OADF,KAAA,mBAAqB,EAAa,GAAG,OOAO,QAAQ,GACID,EAAa,MAA
M,IAI9B,QAAA,UAAA,EAAA,OOAO,eAAe,EA AW,OOAO,YAAa,CACnD,MAAQ,GACsB,MAArB,EAAS,UA
AiD,MAA7B,EAAS,kBACd,MAA3B,EAAS;;ACrBjB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,
QAAA,uBAAA,EApIA,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,c
ACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,iBACA,EAAA,QAAA,qBACA,EAAA,QAAA,oB
AGA,EAAA,QAAA,eAGM,MAAO,UAA0B,EAAjC,UAMJ,YACc,EAAGc,EACbC,EAakB,MAC9B,QAFY,KAA
A,aAAA,EAAGc,KAAA,IAAA,EACbC,KAAA,QAAA,EALN,KAAA,iBAAwC,GACxK,KAAA,mBAA0C,GAOj
C,MAAX,IACG,KAAA,QAAU,EAAO,OAAA,QAAQ,WAIIC,eAAe,IACS,MAAM,QAAQ,GACbC,EAakB,IAAI,
GAAQ,EAakB,MACnC,OOAO,KAAK,IAEF,QAAQ,CAAC,EAAM,KACrB,MAAA,EAAQ,EAAO,OAAA,oBAA
oB,GAET,MAA5B,KAAK,iBAAiB,KACnB,KAAA,iBAAiB,GAak,CACzB,gBAAiB,eACjB,UAAU,EAak,EA
A,MAAA,KAAM,EAAU,EAAA,WAAA,GAAO,UAJxB,MAOGb,MAA9B,KAAK,mBAAmB,KACrB,KAAA,mB
AAmB,GAak,CAC3B,gBAAiB,cACjB,UAAU,EAak,EAAA,MAAA,KAAM,EAAU,EAAA,WAAA,GAAO,UA
VxB,MAcZ,MAAA,EA AW,MAAM,QAAQ,GAC3B,EAakB,GAAG,OACrB,EAakB,GACIB,GAAY,MAAZ,EA
CF,OAGI,MAAA,EAakB,KAAK,iBAAiB,GAAG,SAC3C,EAAoB,KAAK,mBAAmB,GAAG,UAehD,EAAA,EA
AA,MAAA,KACG,MAAA,GACF,EAAI,EAAA,MAAA,EAAI,EAAA,KAAA,EAAiB,KAAK,MAC1B,EAAI,EA

AA,MAAA,EAAO,EAAA,QAAA,GAAW,EAAI,KAAK,MAEjC,GACF,EAAI,EAAA,MAAA,EAAI,EAAA,MAA
A,EAak,EAAA,OAAA,EAAI,EAAA,KAAA,EAAMB,KAAK,WACjC,EAak,EAAA,OAAA,EAAI,EAAA,KAA
A,EAAiB,KAAK,WACnC,GAEF,GACF,EAAI,EAAA,MAAA,EAAI,EAAA,KAAA,EAAMB,KAAK,MAC5B,EA
AI,EAAA,MAAA,EAAO,EAAA,QAAA,GAAU,EAAI,KAAK,MAEtC,EAAGB,OAAO,GACvB,EAakB,OAAO,G
AEnB,MAAA,GAAW,EAAI,EAAA,MAAA,EAAI,EAAA,KAAA,GAAU,KAAK,cAAe,GACvD,EAAM,OAAO,O
AGZ,KAAA,sBAGP,UACiC,MAA3B,KAAK,sBACC,EAAA,EAAA,SAAA,KAAK,iBAAiB,IAAI,GAak,EAAE,
YACjC,EAAA,EAAA,SAAA,KAAK,mBAAmB,IAAI,GAak,EAAE,YAIzC,mBAEE,MAAA,EACF,IAAI,KAAK
,oBAAqB,KAAK,oBACHc,MAAA,OAAO,KAAK,kBAakB,OACjC,EAAU,IAAI,IAAM,CAAC,KAAM,EAAE,a
AAc,OAAQ,EAAE,aAGrD,iBAAW,GAET,MAAA,GADN,QAAqB,KAAK,kBAakB,IACt,OAAS,EAEvC,KAA
A,iBACD,EAAa,MAAM,EAAG,GAae,IAAI,IAAM,CACJ,aAAc,EAAE,KACHB,SAAU,EAAE,OAAO,UAJhD,M
AOB,KAAA,mBACD,EAAa,MAAM,EAA+B,EAAhB,GAC7B,IAAI,IAAM,CACJ,aAAc,EAAE,KACHB,SAAU,E
AAE,OAAO,UAXhB,MAepB,YACS,MAAA,CACW,aAAA,KAAK,aACd,IAAA,KAAK,IACD,QAAA,KAAK,SA
Kb,kBACH,EAAiC,GAC5B,OAAA,IAAI,EAAI,EAAM,aAAkB,EAAM,IAAS,EAAM,UAGhE,QAAA,kBAAA,E
ApHS,EAAA,UAYY,YAoHrB,EAAc,EAAA,eAAA;;AClCd,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,sBAAA,EAIGA,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QA
AA,cACA,EAAA,QAAA,eACA,EAAA,QAAA,cACA,EAAA,QAAA,eACA,EAAA,QAAA,iBACA,EAAA,QAAA
,oBAGA,EAAA,QAAA,eAGM,MAAO,UAAyB,EAAhC,UAMJ,YACc,EAA8B,EAA0B,IACpE,QADY,KAAA,aA
AA,EAA8B,KAAA,wBAAA,EAHpC,KAAA,iBAawC,GAOhD,eAAe,IACS,MAAM,QAAQ,GACHC,EAakB,IA
AI,GAAQ,EAak,MACnC,OAAO,KAAK,IAEF,QAAQ,CAAC,EAAM,KACrB,MAAA,EAAQ,EAAO,OAAA,oB
AAoB,GACrC,GAA4B,MAA5B,KAAK,iBAAiB,GAAY,CAC9B,MAAA,GAAY,EACb,KAAA,iBAAiB,GAak,C
ACzB,gBAAiB,gBACjB,UAAU,EACN,EAAA,MAAA,KAAM,EAak,EAAA,MAAA,EAAM,MAAO,KAAK,yB
ACIB,SAAS,KAItB,MAAA,EAaw,MAAM,QAAQ,GAC3B,EAakB,GAAG,OACrB,EAakB,GACIB,GAAY,MA
AZ,EACF,OAGI,MAAA,EAakB,KAAK,iBAAiB,GAAG,UAE5C,EAAA,EAAA,MAAA,KACG,MAAA,GAAqB,
EAAI,EAAA,KAAA,GAaiB,EAAO,EAAA,QAAA,IACvD,EAAGB,OAAO,GAejB,MAAA,GAAW,EACb,EAAA
,MAAA,EAAI,EAAA,MAAA,EAAI,EAAA,KAAA,GACA,EAak,EAAA,OAAA,EAAI,EAAA,KAAA,EAAoB,E
AAO,OAAA,QAAQ,cAC/C,KAAK,cACV,GACJ,EAAM,OAAO,OAGZ,KAAA,sBAGP,UAC+B,MAAZB,KAAK,
mBACC,EAAA,EAAA,SAAA,KAAK,iBAAiB,IAAI,GAak,EAAE,WAIvC,mBAEG,MAAA,OAAO,KAAK,kBA
AkB,OAAO,KAAK,iBAAiB,IAC9D,IAAM,CAAC,KAAM,EAAE,aAAc,OAAQ,EAAE,aAGvC,iBAAW,GACf,Q
AAqB,KAAK,kBAakB,GAEvC,KAAA,iBAAMB,EAAa,IACjC,IAAM,CAAC,aAAc,EAAE,KAAM,SAAU,EAAE
,OAAO,UAFIC,MAKpB,YACS,MAAA,CACW,aAAA,KAAK,aACM,wBAAA,KAAK,yBAK7B,kBACH,EAAiC,
GAC5B,OAAA,IAAI,EAAI,EAAM,aAAkB,EAAM,0BAGjD,QAAA,iBAAA,EAI FS,EAAA,UAYY,WakFrB,EA
Ac,EAAA,eAAA;;ACgEd,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAIKA,IAA
A,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,E
AAA,QAAA,cACA,EAAA,QAAA,iBACA,EAAA,QAAA,eACA,EAAA,QAAA,iBACA,EAAA,QAAA,cACA,EA
AA,QAAA,qBACA,EAAA,QAAA,oBAIA,EAAA,QAAA,eAEM,MAAO,UAA5B,EAA7B,UASJ,YACc,EAAGC,E
ACHC,EAAyB,EAakB,MACvD,QAFY,KAAA,aAAA,EAAGC,KAAA,MAAA,EACHC,KAAA,MAAA,EAAyB,K
AAA,QAAA,EAL/B,KAAA,uBAA8C,GAC9C,KAAA,wBAA+C,IAMhD,EAAA,EAAA,MAAA,KAEE,KAAA,U
AAW,EAAO,EAAA,QAAA,GAao,WACzB,KAAA,UAAW,EAAO,EAAA,QAAA,GAao,aAGjB,MAAX,IACG,
KAAA,QAAU,EAAO,OAAA,QAAQ,WAIIC,eAAe,GACP,MAAA,EAaw,MAAM,QAAQ,GAC3B,EAakB,IAAI,
GAak,EAAE,MAC7B,OAAO,KAAK,IACX,EAAA,EAAA,MAAA,KACG,MAAA,GAAMB,EAAI,EAAA,KAA
A,EAAG,KAAK,UAC/B,GAAMB,EAAI,EAAA,KAAA,EAAG,KAAK,UAErC,EAAS,QAAQ,CAAC,EAAM,KA
ChB,MAAA,EAAQ,EAAO,OAAA,oBAAoB,GAEH,MAAIC,KAAK,uBAAuB,KACzB,KAAA,uBAAuB,GAak,C
AC/B,gBAAiB,MACjB,UAAU,EAak,EAAA,MAAA,KAAM,EAAU,EAAA,WAAA,GAao,UAJxB,MAOqB,M
AAnC,KAAK,wBAAwB,KAC1B,KAAA,wBAAwB,GAak,CACHc,gBAAiB,MACjB,UAAU,EAak,EAAA,MA
AA,KAAM,EAAU,EAAA,WAAA,GAao,UAVxB,MAcZ,MAAA,EAaw,MAAM,QAAQ,GAC3B,EAakB,GA
G,OACrB,EAakB,GACIB,GAAY,MAAZ,EACF,OAGI,MAAA,EAac,KAAK,uBAAuB,GAAG,SAC7C,EAAe,K
AAK,wBAAwB,GAAG,SAE/C,GACF,EAAI,EAAA,MAAA,EAAI,EAAA,KAAA,EAAa,KAAK,QAAQ,EAAI,EA
AA,KAAA,EAAU,EAAI,KAAK,QACvD,GACF,EAAI,EAAA,MAAA,EAAI,EAAA,KAAA,EAAc,KAAK,QACv

B,EAAl,EAAA,MAAA,EAAO,EAAA,QAAA,GAAW,EAAl,KAAK,QAEjC,GAA2B,EAAl,EAAA,KAAA,EAAG
B,GAC/C,GACF,EAAl,EAAA,KAAA,EAAlB,GAeZB,EAAY,OAAO,GACnB,EAAa,OAAO,GAEd,MAAA,GAC
F,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,GACA,EAAl,EAAA,MAAA,EAAG,EAAA,M
AAA,GAA4B,KAAK,WAC7C,KAAK,cACV,GACR,EAAM,OAAO,KAGV,KAAA,SAAS,QAAO,EAAl,EAAA,K
AAA,KAAK,SAAU,KAAK,QACxC,KAAA,SAAS,QAAO,EAAl,EAAA,KAAA,KAAK,SAAU,KAAK,UAE1C,K
AAA,sBAGP,UACO,KAAA,SAAS,UACT,KAAA,SAAS,UAEqB,MAA/B,KAAK,yBACC,EAAA,EAAA,SAAA,
KAAK,uBAAuB,IAAl,GAAG,EAAG,WAEb,MAAhC,KAAK,0BACC,EAAA,EAAA,SAAA,KAAK,wBAAwB,IA
Al,GAAG,EAAG,WAI9C,mBAEE,MAAA,EACF,IAAl,KAAK,0BAA2B,KAAK,yBACtC,MAAA,OAAO,KAAK,
kBAaKB,OACjC,EAAU,IAAl,IAAM,CAAC,KAAM,EAAG,aAAc,OAAQ,EAAG,aAGrD,iBAAW,GACf,QAAqB,
KAAK,kBAaKB,IACvC,EAAA,EAAA,MAAA,KACE,KAAA,SAAS,QAAO,EAAl,EAAA,KAAA,KAAK,MAAO
,KAAK,YAAc,IACnD,KAAA,SAAS,QAAO,EAAl,EAAA,KAAA,KAAK,MAAO,KAAK,YAAc,MAGpD,MAAA
,EAAGB,EAAa,OAAS,EAEvC,KAAA,uBACD,EAAa,MAAM,EAAG,GAAG,IAAl,IAAM,CACJ,aAAc,EAAG,KA
ChB,SAAU,EAAG,OAAO,UAJhD,MAOb,KAAA,wBACD,EAAa,MAAM,EAA+B,EAAGhB,GAC7B,IAAl,IAAM,
CACJ,aAAc,EAAG,KACHB,SAAU,EAAG,OAAO,UAXhB,MAepB,YACS,MAAA,CACW,aAAA,KAAK,aACZ,
MAAA,KAAK,MACL,MAAA,KAAK,MACH,QAAA,KAAK,SAKb,kBACH,EAAGiC,GAC5B,OAAA,IAAl,EACP
,EAAM,aAAKB,EAAM,MAAW,EAAM,MAC/C,EAAM,UAGd,QAAA,cAAA,EA/IS,EAAA,UAAy,QA+IrB,EA
Ac,EAAA,eAAA;;ACtBd,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EA5IA,IAA
A,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,E
AAA,QAAA,kBACA,EAAA,QAAA,cACA,EAAA,QAAA,iBACA,EAAA,QAAA,cACA,EAAA,QAAA,qBACA,E
AAA,QAAA,oBAIA,EAAA,QAAA,eAEM,MAAO,UAAwB,EAA/B,UASJ,YACc,EAAGC,EACHC,EAAYB,EAAG
B,KAC3C,EAAG,QACpB,QAHY,KAAA,aAAA,EAAGC,KAAA,MAAA,EACHC,KAAA,MAAA,EAAYB,KAAA,
QAAA,EACzB,KAAA,MAAA,EANN,KAAA,uBAA8C,GAC9C,KAAA,2BAaKB,IAQnD,EAAA,EAAA,MAAA,
KACE,KAAA,WAAy,EAAO,EAAA,QAAA,GAAG,WACtB,KAAA,UAAW,EAAO,EAAA,QAAA,GAAG,aAGj
B,MAAX,IACG,KAAA,QAAU,EAAO,OAAA,QAAQ,WAIIC,eAAe,GACP,MAAA,EAAGB,MAAM,QAAQ,GAC
hC,EAAGB,IAAl,GAAG,EAAG,MACnC,OAAO,KAAK,IAEX,EAAA,EAAA,MAAA,KACG,MAAA,GAAMB,EA
Al,EAAA,KAAA,EAAG,KAAK,UAC/B,GACF,EAAl,EAAA,MAAC,KAAK,cAAc,EAAl,EAAA,MAAA,EAAl
,EAAA,KAAA,KAAK,UAAW,KAAK,OAAQ,IAEjE,EAAGc,QAAQ,CAAC,EAAM,KACrB,MAAA,EAAG,EAAG
,OAAA,oBAAoB,GAEH,MAAIC,KAAK,uBAAuB,KACzB,KAAA,uBAAuB,GAAG,CAC/B,gBAAiB,MACjB,U
AAU,EAAU,EAAA,WAAA,GAAG,UAJb,KAOWB,MAAtC,KAAK,2BAA2B,KAC7B,KAAA,2BAA2B,GAAG,C
ACnC,gBAAiB,MACjB,UAAU,EAAU,EAAA,WAAA,GAAG,UAVb,KAcZ,MAAA,EAAG,MAAM,QAAQ,GAC
3B,EAAGB,GAAG,OACrB,EAAGB,GACIB,GAAY,MAAZ,EACF,OAGI,MAAA,EAAGc,KAAK,uBAAuB,GAAG,
SAC7C,EAAGB,KAAK,2BAA2B,GAAG,SAErD,GACF,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAAGa,KAAK
,QAAQ,EAAl,EAAA,KAAA,EAAG,EAAl,KAAK,QAEvD,GAAM,EAAl,EAAA,KAAA,EAAGiB,KAAK,OACHC,
GAAM,EAAl,EAAA,KAAA,GAAG,GAAGqB,EAAG,EAAA,SAAA,EAAG,GAAGc,EAAY,OAAO,GACnB,EAAG
B,OAAO,GAAGjB,MAAA,GACF,EAAl,EAAA,MAAA,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAAl,IACR,EA
Al,EAAA,KAAA,GAAGB,EAAl,EAAA,KAAA,EAAGoB,KAAK,WACrD,GAER,EAAM,OAAO,KAGV,KAAA,
UAAU,QAAO,EAAl,EAAA,KAAA,KAAK,UAAW,IACrC,KAAA,SAAS,QAAO,EAAl,EAAA,KAAA,KAAK,SA
AAU,KAAK,UAE1C,KAAA,sBAGP,UACO,KAAA,SAAS,UACT,KAAA,UAAU,UAEoB,MAA/B,KAAK,yBAC
C,EAAA,EAAA,SAAA,KAAK,uBAAuB,IAAl,GAAG,EAAG,WAEV,MAAnC,KAAK,6BACC,EAAA,EAAA,SA
AA,KAAK,2BAA2B,IAAl,GAAG,EAAG,WAIjD,mBACE,MAAA,IAAl,MAAM,mDAGZ,iBAAW,GACT,MAAA
,IAAl,MAAM,mDAGIB,YACS,MAAA,CACW,aAAA,KAAK,aACZ,MAAA,KAAK,MACL,MAAA,KAAK,MAC
H,QAAA,KAAK,QACP,MAAA,KAAK,OAKX,kBACH,EAAGiC,GAC5B,OAAA,IAAl,EACP,EAAM,aAAKB,EA
AM,MAAW,EAAM,MAC/C,EAAM,QAAa,EAAM,QAGjC,QAAA,gBAAA,EA1HS,EAAA,UAAy,UA0HrB,EA
Ac,EAAA,eAAA;;AC9Dd,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EA9EA,IAA
A,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,iBACA,
EAAA,QAAA,oBAIA,EAAA,QAAA,eAGM,MAAO,UAAqB,EAAG5B,UAKJ,YAASB,GACpB,QADoB,KAAA,aA
AA,EAAGf,KAAA,gBAAGB,GAGvB,eAAe,IACI,MAAM,QAAQ,GAC3B,EAAGB,IAAl,GAAG,EAAG,MAC7B,O
AAO,KAAK,IACP,QAAQ,CAAC,EAAM,KACHB,MAAA,EAAG,MAAM,QAAQ,GAC3B,EAAGB,GAAG,OACr

B,EAakB,GACIB,GAAY,MAAZ,EACF,OAEI,MAAA,EAAQ,EAAO,OAAA,oBAAoB,IACpC,EAAA,EAAA,M
AAA,KACG,MAAA,GAAW,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,KAak,EAAG,GAAW,GAC5C,EAAM,
OAAO,OAGZ,KAAA,sBAMP,gBAAgB,GACT,KAAA,aAAe,EACN,MAAV,KAak,GACF,KAAA,EAAE,UAEJ,
KAAA,GAAl,EAak,EAAA,OAAA,EAAO,EAAA,SAAC,IAGxB,UACO,KAAA,EAAE,UAGH,mBACG,MAAA,
OAAO,KAak,kBAGf,iBAAW,GAEX,GAawB,KAD5B,QAAqB,KAak,kBAakB,IAC3B,OACT,MAAA,IAAl,
MAAM,iDAIpB,YACS,MAAA,CAAIb,aAAA,KAak,cAIxB,kBACH,EAAiC,GAC5B,OAAA,IAAl,EAAl,EAAM
,eAGzB,QAAA,aAAA,EAhES,EAAA,UAAy,OAgerB,EAac,EAAA,eAAA;;ACgCd,aAAA,OAAA,eAAA,QAAA
,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EA9GA,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,Q
AAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,iBACA,EAAA,QAAA,qBACA,EAAA,QAAA,oBAKA,EAAA,
QAAA,mBAGM,MAAO,UAA0B,EAajC,aAMJ,YACc,EAa8B,EACChC,GAac,GACIB,MAAA,GAfm,KAAA,aA
AA,EAa8B,KAAA,SAAA,EACChC,KAAA,YAAA,EAJJ,KAAA,cAAqC,GAMtC,KAAA,GAAl,EAAO,EAAA,QA
AA,KAak,UAGvB,eAAe,IACS,MAAM,QAAQ,GACChC,EAakB,IAAl,GAAQ,EAak,MACnC,OAAO,KAak,IA
EF,QAAQ,CAAC,EAAM,KACrB,MAAA,EAAQ,EAAO,OAAA,oBAAoB,GACrC,GAayB,MAAzB,KAak,cAAc
,GAAY,CAC3B,MAAA,GAAY,EACb,KAAA,cAAc,GAak,CACtB,gBAaiB,aACjB,UAAU,EAak,EAAA,MAA
A,KAAM,EAau,EAAA,WAAA,GAao,SAAS,KAI7C,MAAA,EAae,KAak,cAAc,GAAG,SACrC,EAaw,MAA
M,QAAQ,GAC3B,EAakB,GAAG,OACrB,EAakB,GACN,MAAZ,IAIC,EAAA,EAAA,MAAA,KACC,IAAA,EA
CE,MAAA,GAakB,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,KAak,EAAG,GAae,GAERd,EADE,KAak,aACI
,EACP,EAAA,MAAA,EAAl,EAAA,KAAA,KAak,GAAG,EAAl,EAAA,KAAA,GAau,EAAl,EAAA,KAAA,EA
AiB,KAak,KAAM,IAEnD,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,KAak,EAAG,GAakB,GAe/C,EAaa,OA
AO,GACpB,EAAM,OAAO,OAGZ,KAAA,sBAGP,UACO,KAAA,EAAE,UACmB,MAAtB,KAak,gBACC,EA
A,EAAA,SAAA,KAak,cAAc,IAAl,GAak,EAAE,WAS1C,YAAy,GACL,KAAA,SAAW,EAGZ,mBAEG,MAA
A,OAAO,KAak,kBAakB,OAAO,KAak,cAAc,IAC3D,IAAM,CAAC,KAAM,EAAE,aAAc,OAAQ,EAAE,aAGv
C,iBAAW,GACf,QAAqB,KAak,kBAakB,GAEvC,KAAA,cAAgB,EAaa,IAC9B,IAAM,CAAC,aAAc,EAAE,KA
AM,SAAU,EAAE,OAAO,UAFIC,MAKpB,YACS,MAAA,CACW,aAAA,KAak,aACT,SAAA,KAak,SACF,YA
AA,KAak,aAKjB,kBACH,EAAiC,GAC5B,OAAA,IAAl,EACP,EAAM,aAAkB,EAAM,SAac,EAAM,cAG1D,Q
AAA,kBAAA,EA9FS,EAAA,UAAy,YA8FrB,EAac,EAAA,eAAA;;ACkFd,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,sBAAA,EAhMA,IAAA,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cA
CA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,eACA,EAAA,QAAA,iBACA,EAAA,QAAA,cACA
,EAAA,QAAA,qBACA,EAAA,QAAA,oBAGA,EAAA,QAAA,eAGM,MAAO,UAAyB,EAahC,UASJ,YACc,EA
gC,EAaQ,GACxC,EAaw,EAae,EAakB,KACtD,GAaw,GAQT,GAPJ,QAHy,KAAA,aAAA,EAagC,KAAA,M
AAA,EACChC,KAAA,SAAA,EAa0B,KAAA,QAAA,EANhC,KAAA,uBAA8C,GAC9C,KAAA,mBAA0C,GAC1C
,KAAA,qBAA4C,GAQ7C,KAAA,SAAW,EAED,MAAX,IACG,KAAA,QAAU,EAAO,OAAA,QAAQ,WAEZ,MA
AhB,EACI,MAAA,IAAl,MAAM,sDAIpB,eAAe,IACS,MAAM,QAAQ,GACChC,EAakB,IAAl,GAAQ,EAak,MA
CnC,OAAO,KAak,IAEF,QAAQ,CAAC,EAAM,KACrB,MAAA,EAAQ,EAAO,OAAA,oBAAoB,GAEH,MAAIC,
KAak,uBAAuB,KACzB,KAAA,uBAAuB,GAak,CAC/B,gBAaiB,QACjB,UAAU,EAak,EAAA,MAAA,KAA
M,EAau,EAAA,WAAA,GAao,UAJxB,MAOgB,MAA9B,KAak,mBAAmB,KACrB,KAAA,mBAAmB,GAak,
CAC3B,gBAaiB,aACjB,UAAU,EAak,EAAA,MAAA,KAAM,EAau,EAAA,WAAA,GAao,UAVxB,MAakB,M
AAhC,KAak,qBAAqB,IAAc,KAak,WAC1C,KAAA,qBAAqB,GAak,CAC7B,gBAaiB,OACjB,UAAU,EAak,
EAAA,MAAA,KAAM,EAau,EAAA,WAAA,GAao,UAhxB,MAoBZ,MAAA,EAaw,MAAM,QAAQ,GAC3B,
EAakB,GAAG,OACrB,EAakB,GACIB,GAAY,MAAZ,EACF,OAGI,MAAA,EAawB,KAak,uBAAuB,GAAG,S
ACvD,EAaqB,KAak,mBAAmB,GAAG,UACjD,EAAA,EAAA,MAAA,KACG,MAAA,GACF,EAAl,EAAA,MA
AA,EAAl,EAAA,KAAA,EAauB,KAak,QACChC,EAAl,EAAA,MAAA,EAAO,EAAA,QAAA,GAaw,EAAl,KA
AK,QAEnC,GAAA,KAak,SAAU,CACX,MAAA,EAAsB,KAak,qBAAqB,GAAG,SAEnD,GACF,EAAl,EAAA,
MAAA,EAAl,EAAA,KAAA,EAaqB,KAak,QAC9B,EAAl,EAAA,KAAA,EAau,EAAl,KAak,QAezB,GACF,E
AAI,EAAA,MAAA,EAAl,EAAA,KAAA,EAau,KAak,eACnB,EACI,EAAA,OAAA,EAAl,EAAA,KAAA,GAC
A,EAAl,EAAA,MAAA,EAAO,EAAA,QAAA,GAayB,KAak,YACnD,GACF,EAAl,EAAA,MAAA,EAAl,EAAA
,KAAA,EAaoB,KAak,UAAW,GAehD,EAAsB,OAAO,GAC7B,EAaoB,OAAO,GAC3B,EAAMB,OAAO,GAep
B,MAAA,GAaw,EAAl,EAAA,KAAA,EAAO,GAC5B,EAAM,OAAO,OACR,CAEC,MAAA,GACF,EAAl,EA

A,MAAA,EAAl,EAAA,KAAA,EAaUB,KAAK,QAChC,EAAl,EAAA,MAAA,EAaO,EAAA,QAAA,GAaW,EAAl,KAAK,QAeJc,GACf,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAaOB,KAAK,WAC7B,EAAl,EAAA,MAAA,EAAl,EAAA,KAAA,EAaU,KAAK,eACnB,EAaK,EAAA,OAAA,EAAl,EAAA,KAAA,EAaOB,KAAK,YAEpD,EAAsB,OAAO,GAC7B,EAaMB,OAAO,GAEPB,MAAA,GAaW,EAAl,EAAA,KAAA,EAaO,GAC5B,EAAM,OAAO,QAlD,KAAA,sBAGP,UACqC,MAA/B,KAAK,yBACC,EAAA,EAAA,SAAA,KAAK,uBAaUB,IAAl,GAaK,EAaE,WAehB,MAA7B,KAAK,sBAaGc,KAAK,WACpC,EAAA,EAAA,SAAA,KAAK,qBAaQB,IAAl,GAaK,EAaE,WAehB,MAA3B,KAAK,qBACC,EAAA,EAAA,SAAA,KAAK,mBAaMB,IAAl,GAaK,EAaE,WAlzC,mBAEe,MAAA,EACf,IAAl,KAAK,OBAA2B,KAAK,oBAItC,OAHH,KAAK,UACP,EAaU,QAAQ,KAAK,sBAEIB,OAAO,KAAK,kBAaKB,OACjC,EAaU,IAAl,IAAM,CAAC,KAAM,EAaE,aAAc,OAAQ,EAaE,aAGrD,iBAaW,GACf,QAAqB,KAAK,kBAaKB,GACtC,MAAA,EACf,KAAK,SAaW,EAaA,OAAS,EAAl,EAaA,OAAS,EAe/D,KAAA,uBACD,EAaA,MAAM,EAAG,GAaE,IAAl,IAAM,CACJ,aAAc,EAaE,KAChB,SAaU,EAaE,OAAO,UAlhD,MAOb,KAAA,mBACD,EAaA,MAAM,EAa+B,EAaHb,GAC7B,IAAl,IAAM,CACJ,aAAc,EAaE,KAChB,SAaU,EAaE,OAAO,UAXhB,MAad,KAAK,WACf,KAAA,qBACD,EAaA,MAAsB,EAaHb,EAaMB,EAaHb,GACjC,IAAl,IAAM,CACJ,aAAc,EAaE,KAChB,SAaU,EAaE,OAAO,UAlBIB,OAuBpB,YACS,MAAA,CACW,aAAA,KAAK,aACZ,MAAA,KAAK,MACf,SAAA,KAAK,SACN,QAAA,KAAK,QACJ,SAAA,KAAK,UAKd,kBACH,EAaiC,GAC5B,OAAA,IAAl,EACP,EAAM,aAAKB,EAAM,MAaW,EAAM,SAC/C,EAAM,QAAa,EAAM,WAGjC,QAAA,iBAAA,EA/KS,EAAA,UAAy,WA+KrB,EAaC,EAAA,eAAA;;ACxLoB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,2BAAA,EARIC,IAAA,EAAA,QAAA,wBACA,EAAA,QAAA,uBACA,EAAA,QAAA,oBACA,EAAA,QAAA,sBACA,EAAA,QAAA,wBACA,EAAA,QAAA,uBACA,EAAA,QAAA,mBAEM,MAAO,EAaSJ,WAAI,GACf,OAAA,IAAl,EAaJ,aAAiB,GAkBnB,gBAAS,EAAsB,EAaKB,GAaC,GAe7D,OAAa,IAAl,EAaJ,kBAAsB,EAaC,EAaU,GAuBhD,eACH,EAAsB,EAaQ,GAaI,EAaW,EAaK,EAaKB,KACpE,GAaW,GACN,OAAA,IAAl,EAaJ,iBACH,EAaC,EAaO,EAaU,EAAS,GAevC,YACH,EAaE,KAAO,EAaQ,GAaK,EAaQ,KAC3C,EAaKB,MACb,OAAA,IAAl,EAaJ,cAAKB,EAaC,EAaO,EAaO,GAehD,gBAAS,EAaE,KAAM,EAAM,IAAK,EAaKB,MAEzD,OAAA,IAAl,EAaJ,kBAAsB,EAaC,EAaK,GAgB3C,cACH,EAaE,KAAO,EAaQ,GAaK,EAaQ,KAAO,EAaKB,KACpE,EAaQ,GACH,OAAA,IAAl,EAaJ,gBAaOB,EAaC,EAaO,EAaO,EAAS,GAmB3D,eAAQ,EAAsB,EAaOB,IAEtD,OAAA,IAAl,EAaJ,iBAaQB,EAaC,IAjKZ,QAAA,sBAAA;;ACM3B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAaP,IAAA,EAAA,QAAA,mCACA,EAAA,QAAA,kCACA,EAAA,QAAA,+BACA,EAAA,QAAA,iCACA,EAAA,QAAA,mCACA,EAAA,QAAA,uCACA,EAAA,QAAA,kCACA,EAAA,QAAA,8BAGC,EAAD,kBAaOB,EAaPb,aAAkC,EAaIC,kBAaQD,EAaRd,iBACC,EADD,iBACmB,EAaDnB,gBACoC,EAaDpC,cAGO,MAAM,EAaQ,CACnB,IAAK,EAAsB,sBAAA,IAC3B,SAaU,EAAsB,sBAAA,SACHc,SAaU,EAAsB,sBAAA,SACHc,QAAS,EAAsB,sBAAA,QAC/B,QAAS,EAAsB,sBAAA,QAC/B,OAAQ,EAAsB,sBAAA,OAC9B,KAAM,EAAsB,sBAAA,MAPvB,QAAA,MAAA;;ACON,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAaBD,MAAM,EAaOB,KACO,oBAaIB,sBACf,sBACOB,oBAajB,aACT,aAED,GAaGB,IANM,GAmBhC,SAAS,IACA,OAAA,IAAl,QAaC,GAaW,EAaC,IAAM;;ACczD,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EAAA,QAAA,gBAAA,EAICD,IAAA,EAAA,EAAA,QAAA,YakCC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QA AA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EA AA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EA AA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAhCK,SAaU,EAaUB,EAaOB,GACnD,MAAA,EAaO,EAaO,GAAG,OACvB,EAaO,QAAQ,CAAC,EAaO,KACrB,EAaK,OACD,EAAM,SAaW,EACjB,sBACsB,uBA AOB,mDACHb,QAGtC,EAaK,OACD,GAaQ,GAaK,EAaO,EACpB,sBAaWB,kCAaQC,EAaO,MAEIE,MAAA,EAaA,EAaO,GAC1B,EAaO,QAAQ,CAAC,EAaO,KAChB,IAAA,IAAl,EAAl,EAAG,EAAl,EAAM,IACxB,EA AK,OACA,IAAM,GAaU,EAAM,KAAO,EAaW,GACzC,sBAaWB,wBAA2B,OAAO,+CACb,yCACN,QAK3C,SAaU,EAaGB,EAaOB,GAC5C,MAAA,EAaC,EAaO,GAAG,QACzB,IAAA,IAAl,EAAl,EAAG,EAAl,EAaO,OA AQ,IACjC,EAAY,IAAS,EAaO,GAAG,GAe1B,OAAA;;ACbR,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA

A,IAAA,QAAA,yBAAA,EAAA,QAAA,2BAAA,EAhBD,IAAA,EAAA,QAAA,WAE0,MAAM,EAawB,GAS/B,S
AAU,EAAYB,GACnC,OAAA,GAAU,EACL,GAEF,EAae,EAAA,gBAAA,EAQ,KAak,MAAM,KAak,KAak,
KACpD,QAAA,sBAAA;;ACXA,aARK,SAAU,EACZ,EAaiC,EACjC,GAKK,MAAA,CAHH,GAAGC,iBAAX,EA
AsB,EAAS,EAAO,IAE3D,GAAiC,iBAAX,EAAsB,EAAS,EAAO,KAeJE,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAAA,QAAA,eAAA;;AC8HA,aA/HK,SAAU,EACZ,EAAsB,EAAsB,EAC5C,GAAe,GACb,IAAA,EAaqB,G
ACrB,GAAA,GACF,EAaw,EAAS,OAAO,EAaw,MAAM,KACnC,KAak,EAaw,GAak,GAC9B,EAaw,EA
S,OAAO,EAaw,MAAM,QACvC,CACL,EAaw,EAAS,OAAO,EAaw,IAChC,MAAA,EAagB,EAaw,OAC5B,I
AAA,IAAI,EAai,EAAG,EAai,IAAiB,EACnC,EACI,EAAS,OAAO,CAAC,EAaw,EAai,GAak,EAaw,GAai,E
AAW,KAerE,EAaw,EAAS,OAAO,EAaw,MAAM,EAagB,IAEvD,OAAA,EAYH,SAAU,EACZ,EAAsB,EACtB
,GAAe,GACX,MAAA,EAaw,GACb,GAAA,EAac,CACHB,EAAS,KAak,GACT,IAAA,IAAI,EAai,EAaiB,EA
AG,EAai,IAagB,EAC/C,GAak,EAai,GACX,EAAS,KAak,GACd,EAAS,KAak,GAak,EAaiB,KAepC,EA
S,KAak,OAGb,CACC,MAAA,EAAsB,GACtB,EAaqB,GACTB,IAAA,IAAI,EAai,EAAG,EAai,IAagB,EAC9B,
GAAsB,EAajB,EAaqB,GAak,EAai,GAAM,EAC3C,EAamB,KAak,GAExB,EAaoB,KAak,GAG7B,EAAS,
QAAQ,GACjB,EAAS,KAak,GACd,EAAS,QAAQ,GAEZ,OAAA,EAYH,SAAU,EACZ,EAAsB,EAAsB,EAC5C,
GAAe,GACX,MAAA,EAamB,GAerB,EACF,EAaiB,KAak,EAaw,GAak,GAetC,EAaiB,KAak,EAaw,GA
AK,GAGnC,IAAA,IAAI,EAai,EAAG,EAai,EAaw,SAAU,EACnC,GAak,EAaw,OACd,EACF,EAaiB,KAak,
EAaw,EAai,GAak,EAaw,IAerD,EAaiB,KAak,EAaw,GAak,EAaw,EAai,IAGvD,EAaiB,KAak,EAaw,
IAI9B,OAAA,EAOH,SAAU,EACZ,EAamB,GACf,MAAA,EAamB,CAAC,GACrB,IAAA,IAAI,EAai,EAAG,EA
AI,IAAc,EAChC,EAaiB,KAak,EAAM,GAAG,IAE1B,OAAA,EACh,SAAU,EACZ,EAa0B,EAamB,GACzC,M
AAA,EAAY,EAae,MAAM,EAAG,GACrC,IAAA,IAAI,EAai,EAAG,EAai,IAAc,EAChC,EAau,KAak,EAae,
EAai,GAak,EAAM,GAAG,GAak,EAAM,GAAG,IAGzD,OAAA,EACR,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,YAAA,EAAA,QAAA,YAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,
aAAA;;ACtIM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,qBAAA,EADA,
MAAM,EAakB,mBACxB,QAAA,gBAAA,EAAA,MAAM,EAaA,mBAAnB,QAAA,WAAA;;ACIA,aAAA,OAAA
,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,QAAA,OAAA,QAAA,OAAA,QAAA,OAAA,QAAA,
OAAA,QAAA,WAAA,EALA,MAAM,EAQ,SAKd,QAAA,MAAA,EAJA,MAAM,EAAS,WAlf,QAAA,OAAA,E
AHA,MAAM,GAAU,WAGhB,QAAA,OAAA,EAFA,MAAM,EAAS,YAEf,QAAA,OAAA,EADA,MAAM,GAAU
,YACHB,QAAA,OAAA,EAAA,MAAM,EAAS,YAAf,QAAA,OAAA;;ACON,aAAA,OAAA,eAAA,QAAA,aAAA,
CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,IAAA,EAZD,IAAA,EAAA,QAAA,iBAEM,SAAU,KAAQ,IA
CjB,EAAM,EAAA,OAAA,QAAQ,YACjB,QAAQ,QAAQ,GAId,SAAU,KAAO,IACHB,EAAM,EAAA,OAAA,QA
AQ,YACjB,QAAQ,OAAO;;AC6HIB,aAxHK,SAAU,EACZ,EAaoB,GACIB,GAAA,EAak,SAaw,EAak,OACj
B,MAAA,IAAI,MACN,mEACG,EAak,iBAaiB,EAak,WAE9B,MAAA,EAAS,IAAI,aAA2B,EAAd,EAak,QAC
hC,IAAA,IAAI,EAai,EAAG,EAai,EAao,OAAQ,GAak,EACtC,EAao,GAak,EAak,EAai,GACrB,EAao,E
AAI,GAak,EAak,EAai,GAepB,OAAA,EAiBH,SAAU,EAauB,GAe/B,MAAA,EAao,IAAI,aAAa,EAaq,OA
AS,GACzC,EAao,IAAI,aAAa,EAaq,OAAS,GAC1C,IAAA,IAAI,EAai,EAAG,EAai,EAaq,OAAQ,GAak,EA
CvC,EAak,EAai,GAak,EAaq,GACTB,EAak,EAai,GAak,EAaq,EAai,GAerB,MAAA,CAAC,KAAA,EA
M,KAAA,GAOV,SAAU,EAaqB,GAe7B,MAAA,EAAM,KAak,KAak,EAaq,OAAS,GACjC,EAao,IAAI,aAA
a,GACxB,EAao,IAAI,aAAa,GACzB,IAAA,IAAI,EAai,EAAG,EAai,EAaq,OAAQ,GAak,EACvC,EAak,KA
AK,MAAM,EAai,IAAM,EAaq,GACIC,EAak,KAak,MAAM,EAai,IAAM,EAaq,EAai,GAejC,MAAA,CAA
C,KAAA,EAAM,KAAA,GAOV,SAAU,EAaoB,GAe5B,MAAA,EAAM,KAak,MAAM,EAaq,OAAS,GACIC,E
AAO,IAAI,aAAa,GACxB,EAao,IAAI,aAAa,GACzB,IAAA,IAAI,EAai,EAAG,EAai,EAaq,OAAQ,GAak,EA
CvC,EAak,KAak,MAAM,EAai,IAAM,EAaq,GACIC,EAak,KAak,MAAM,EAai,IAAM,EAaq,EAai,GAej
C,MAAA,CAAC,KAAA,EAAM,KAAA,GAQV,SAAU,EACZ,EAauB,GAGIB,MAAA,CAAC,KAFK,EAagB,EA
AR,GAEP,KADD,EAagB,EAAR,EAAY,IAU7B,SAAU,EACZ,EAakB,EAac,EAac,GACHd,EAaA,EAAR,GA
aA,EACIB,EAaA,EAAR,EAAY,GAak,EAMIB,SAAU,EACZ,EAaw,GACP,MAAA,EAao,IAAI,aAAa,EAai,GA
C5B,EAao,IAAI,aAAa,EAai,GAC7B,IAAA,IAAI,EAai,EAAG,EAai,KAak,KAak,EAai,GAai,IAAK,CACn
C,MAAA,GAak,EAau,GAak,GAak,KAak,IAAM,EAai,GAC9C,EAak,GAak,KAak,IAAI,GACnB,EA
K,GAak,KAak,IAAI,GAEd,MAAA,CAAC,KAAA,EAAM,KAAA,GAMV,SAAU,EACZ,EAaw,EAaw,GACI

B,MAAA,GA AK,EAAU,GA AK,GA AK,KAAK,IAAM,EA AI,GAGvC,MAAA,CAAC,KAFK,KAAK,IAAI,GAER,
KADD,KAAK,IAAI,IAEvB,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EAAA,QAAA,uB
AAA,EAAA,QAAA,qBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,mBAAA,EAAA,QA
AA,UAAA,EAAA,QAAA,SAAA;;AC7FA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBA
AA,EAzCD,IAAA,EAAA,QAAA,WAOM,SAAU,EACZ,EAAsB,EACtB,EAAO,GACL,IAAA,EAAa,GACb,GAA
6B,iBAArB,GAEN,EAAA,EAAA,QAAA,EAAE,MAAM,GAAQ,GAAoB,EACpC,IAAM,iDACV,EACI,IAAI,MA
AM,GAAiB,KAAK,EAAE,MAAM,GAAQ,OAC/C,CACC,MAAA,EAAY,EAAGB,OAAO,CAAC,EAAO,MACHC
,IAAX,IACF,GAAS,GA EJ,GACN,IAEC,EAAA,EAAA,QAAA,GAAa,EACb,IAAM,2DACJ,MAAA,EA AW,EA
gB,SAAS,GAGtC,IAAc,IAAd,EA AiB,CACb,MAAA,EA AQ,EAAGB,OAAO,CAAC,EAAG,IAAM,EA AI,EA AI,E
AAI,EA AI,GAC/D,EAAGB,GAAY,EAAE,MAAM,GAAQ,GAGIC,EAAA,EAAA,QAAA,EAAE,MAAM,KAAU,
EAAGB,OAAO,CAAC,EAAG,IAAM,EA AI,GACvD,IAAM,+DACV,EAAa,EAGR,OAAA;;AC4ER,aAAA,OAAA
,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,8BAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,yBAAA,EA
HD,IAAA,EAAA,QAAA,WAEA,EAAA,QAAA,iBASM,SAAU,EACZ,EAAGB,GACd,IACA,EADA,GAAO,EAU
J,IAPH,GAAU,EAAd,uBACE,EAAM,EACN,GAAO,GAEP,GAAM,EA Ae,EAAA,gBAAA,EA AQ,KAAK,MAAM
,KAAK,KAAK,MAG5C,GACF,EAAM,GAAe,IAAQ,EAC/B,GAAO,EAEP,GAAM,EA Ae,EAAA,gBAAA,EA AQ,
EAAM,GAGhC,OAAA,EAGH,SAAU,EACZ,EA AkB,EA Ac,GAC5B,MAAA,EA AW,GACX,EAAO,EAAO,OACf
,IAAA,IAAI,EAAM,EAAG,EAAM,EAAM,IACxB,IAAQ,EACV,EAAS,KAAK,EAAO,IAErB,EAAS,KAAK,GA
GX,OAAA,EA WH,SAAU,EACZ,EA Ae,EA AQB,EACpC,GACI,MAAA,EA Ac,EA AQ,MAAM,OAC5B,EA AQ,EA
AE,MAAM,OAEIB,GA Ac,IAAd,IACE,GAAa,GAAe,EAAY,GACpC,MAAA,IAAI,4CAA4C,MACID,eAAyB,KA
Q7B,GAJA,EAAY,IACd,GAAa,GAGX,EAAY,EACR,MAAA,IAAI,oBAAoB,uCAC5B,OAGA,GAAA,EAAO,EA
CH,MAAA,IAAI,oBACN,0CAAKD,OAGnD,IAAA,IAAI,EA AI,EAAG,EA AI,IAAa,EAC3B,GAAA,EAAE,MAA
M,KAAO,EA AQ,MAAM,GACzB,MAAA,IAAI,iBACK,OAAO,EAAE,MAAM,uCACtB,OAAO,EA AQ,MAAM,
OAG3B,MAAA,EA AU,EAAE,MAAM,GA EIB,EA AwB,GAC1B,IAAA,EAAY,EACZ,EAAY,EACZ,EAAY,EA E
X,IAAA,IAAI,EA AI,EAAG,EA AI,IAAa,EAC/B,EAAY,KAAK,EAAE,MAAM,IACzB,GAAa,EAAE,MAAM,GA
GIB,IAAA,IAAI,EA AI,EA AW,EA AI,EAAM,IAChC,EAAY,KAAK,EAAE,MAAM,IACzB,GAAa,EAAE,MAAM,
GAGIB,IAAA,IAAI,EA AI,EA AW,EA AI,EA Aa,IACvC,EAAY,KAAK,EA AQ,MAAM,IAG5B,IAAA,IAAI,EA AI,
EAAO,EAAG,EA AI,EAAO,IAChC,EAAY,KAAK,EAAE,MAAM,IACzB,GAAa,EAAE,MAAM,GAGhB,MAAA,
CAAC,UAAA,EA AW,UAAA,EA AW,UAAA,EA AW,QAAA,EAAS,YAAA;;AC1EnD,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,IAAA,EAAA,CAAA,wBAAA,EAAA,wBAAA,EAAA,YAAA,EAAA,YAAA,EA A
A,cAAA,GAAA,QAAA,uBAAA,EAAA,QAAA,uBAAA,EAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EA A
A,IAAA,WAAA,OAAA,EAAA,cAAA,QAAA,aAAA,QAAA,gBAAA,EA1CD,IAAA,EAAA,QAAA,WAGA,EA A
A,QAAA,oBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAA
A,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,
IAAA,EAAA,QAAA,yBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,
UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,E
AAA,SACA,IAAA,EAAA,QAAA,sBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IA
AA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,oBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAA
A,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,I
AAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,qBACa,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,Y
AAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,EAAA,SAZA,IAAA,EAAA,QAAA,sBAAA,OAAA,KAAA,GAAA,QAAA,SAAA
,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,C
AAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAEA,IAAA,EAAA,EAAA,QAAA,sBA+BC,QAAA,WAAA,E
A5BD,IAAA,EAAA,QAAA,YAEA,EAAA,QAAA,sBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,
GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EA
AA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,yBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GA
AA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA

,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,yBAAA,OAAA,KAAA,GAAA,QAAA,
SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EA
AA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,0BAAA,OAAA,KAAA,GA
AA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA
,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,oBAAA,OAAA,
KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,O
AAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SAEA,IAAA,EAAA,QAAA,mB
AAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EA
AA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA
,QAAA,UAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,
KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IA
AA,EAAA,QAAA,4BAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UA
AA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAA
A,SACA,IAAA,EAAA,QAAA,qBAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA
,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,O
AAA,EAAA,SAEA,IAAA,EAAA,EAAA,QAAA,wBAeC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,I
AAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,E
AAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAA
A,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAA
A,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAA
A,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,
EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAZK,SAAU,EAauB,GACjC,I
AEK,OAAA,EAkK,IAAI,IAAO,EAAa,EAAA,cAAA,IACpC,MAAO,GACD,MAAA,IAAI,kEACsD,MAI9D,SA
U,EAauB,GAC9B,OAAA,EAaQ,IAAI,IAAK,EAAa,EAAA,cAAA,IACtC,QAAA,aAAA;;ACzCD,aAAA,OAAA,
eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,OAAA,eAAA,QAAA,0BAAA,CAAA,YAAA,EAAA,IAAA,WAAA,O
AAA,EAAA,2BAAA,OAAA,eAAA,QAAA,0BAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,2BAAA
,OAAA,eAAA,QAAA,0BAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,2BAAA,OAAA,eAAA,QAA
A,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aADA,IAAA,EAAA,QAAA,8BACA,EAAA,QAA
A;;ACgFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,IAAA,EAAA,CAAA,IAAA,EAAA,MAAA,
EAAA,SAAA,EAAA,aAAA,EAAA,cAAA,EAAA,YAAA,EAAA,eAAA,EAAA,aAAA,EAAA,WAAA,EAAA,MA
AA,EAAA,cAAA,EAAA,mBAAA,EAAA,kBAAA,EAAA,eAAA,EAAA,iBAAA,EAAA,mBAAA,EAAA,WAAA,
EAAA,kBAAA,EAAA,cAAA,EAAA,QAAA,EAAA,cAAA,EAAA,UAAA,EAAA,MAAA,EAAA,YAAA,EAAA,
YAAA,EAAA,WAAA,EAAA,YAAA,EAAA,MAAA,EAAA,OAAA,EAAA,cAAA,EAAA,eAAA,EAAA,eAAA,E
AAA,aAAA,EAAA,KAAA,EAAA,KAAA,EAAA,WAAA,EAAA,cAAA,EAAA,aAAA,EAAA,cAAA,EAAA,eAA
A,EAAA,aAAA,GAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,WAAA
,OAAA,eAAA,QAAA,oBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,qBAAA,OAAA,eAAA,QAA
A,mBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,oBAAA,OAAA,eAAA,QAAA,gBAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,oBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,
qBAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,OAAA,eAAA,
QAAA,mBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,oBAAA,OAAA,eAAA,QAAA,eAAA,CAA
A,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAAA,OAAA,eAAA,QAAA,SAAA,CAAA,YAAA,EAAA,IAA
A,WAAA,OAAA,EAAA,UAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAA
A,gBAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAA
A,QAAA,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAAA,QAAA,aAAA,CAAA
,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,W
AAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAA

A,OAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,QAAA,OAAA,eAAA,QAAA,QAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,EAAA,SAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,
OAAA,EAAA,gBAAA,OAAA,eAAA,QAAA,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAA
A,OAAA,eAAA,QAAA,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAA
A,cAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA
,EAAA,IAAA,WAAA,OAAA,EAAA,OAAA,OAAA,eAAA,QAAA,MAAA,CAAA,YAAA,EAAA,IAAA,WAAA,
OAAA,EAAA,OAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,O
AAA,eAAA,QAAA,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,c
AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,QAAA,aAAA,QAAA,YAAA,QAAA,aAAA,QA
AA,KAAA,QAAA,UAAA,QAAA,YAAA,QAAA,cAAA,QAAA,WAAA,QAAA,aAAA,QAAA,YAAA,QAAA,QA
AA,QAAA,KAAA,QAAA,QAAA,EAnEA,IAAA,EAAA,EAAA,QAAA,YAmEA,QAAA,GAAA,EAIEA,IAAA,E
AAA,EAAA,QAAA,WaKEA,QAAA,KAAA,EAjEA,IAAA,EAAA,EAAA,QAAA,kBAiEA,QAAA,QAAA,EAhE
A,IAAA,EAAA,EAAA,QAAA,yBAgEA,QAAA,YAAA,EA/DA,IAAA,EAAA,EAAA,QAAA,0BA+DA,QAAA,a
AAA,EA9DA,IAAA,EAAA,EAAA,QAAA,qBA8DA,QAAA,WAAA,EA7DA,IAAA,EAAA,EAAA,QAAA,oBA6
DA,QAAA,cAAA,EA5DA,IAAA,EAAA,EAAA,QAAA,kBA4DA,QAAA,YAAA,EA3DA,IAAA,EAAA,EAAA,Q
AAA,gBA2DA,QAAA,UAAA,EA1DA,IAAA,EAAA,EAAA,QAAA,WA0DA,QAAA,KAAA,EAzDA,IAAA,EA
A,QAAA,aAIA,EAAA,QAAA,mCACA,EAAA,QAAA,kCACA,EAAA,QAAA,+BACA,EAAA,QAAA,iCACA,E
AAA,QAAA,mCACA,EAAA,QAAA,0BACA,EAAA,QAAA,kCACA,EAAA,QAAA,8BACA,EAAA,QAAA,YAE
A,EAAA,QAAA,WAEA,EAAA,QAAA,aAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAA
A,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,
WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,wBAEA,EAAA,QAAA,WAAA,OAAA,KAAA,GAAA,QAA
A,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,E
AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,aAAA,OAAA,KAAA,GA
AA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA
,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,qBAAA,OAAA,
KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,O
AAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SACA,IAAA,EAAA,QAAA,eAG
A,EAAA,QAAA,iBAMA,EAAA,QAAA,kBAGA,EAAA,EAAA,QAAA,4BAuBA,QAAA,aAAA,EAtBA,IAAA,E
AAA,EAAA,QAAA,kBAsBA,QAAA,YAAA,EANA,IAAA,EAAA,EAAA,QAAA,4BAMA,QAAA,aAAA,EAHA,
IAAA,EAAA,QAAA,sBAGA,EAAA,QAAA,kBAAA,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA
,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,
WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IA
AA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KA
AA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EA
AA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EA
A,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAAA,OAAA,KAAA,GAAA,QAAA,
SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,QAAA,EA
AA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA;;AC9EA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAFA,QAAA,uBAEA,IAAA,EAAA,QAAA,UAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GA
AA,eAAA,GAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA;;ACyEC,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,gB
AAA,EA5ED,MAAM,EAAMd,GAEnD,EA2C,CAC/C,OOAO,EACP,WAAW,EACX,oBAaOb,EACpB,uBAAu
B,EACvB,OOAO,EACP,SAAS,EACT,8BAA8B,GAG1B,SAAU,EAakB,UACzB,EAAS,GAGZ,SAAU,EACZ,EA
AsB,GACxB,EAAS,GAAGB,EAGrB,SAAU,EAAGB,GAC1B,KAAE,KAAgB,GAAW,CACzB,MAAA,EAAS,EA
AyB,GACpC,GAAW,OAAX,EAIK,OADP,QAAQ,IAAI,0CAA2C,GACHD,KAHP,EAAS,GAAGB,EAMvB,MAA
A,EAak,EAAS,GACHB,OAAA,EAAG,wBACE,EAAS,GACT,EAAGB,KAGzB,EAAG,QAAQ,EAAG,YACd,EA
AG,QAAQ,EAAG,cACd,EAAG,QAAQ,EAAG,OACd,EAAG,QAAQ,EAAG,QACd,EAAG,QAAQ,EAAG,qBACd
,EAAG,QAAQ,EAAG,iBACd,EAAG,OOAO,EAAG,cACb,EAAG,OOAO,EAAG,WACb,EAAG,SAAS,EAAG,M

AER,EAAS,IAGIB,SAAS,EAAa,GACHB,GAA2B,oBAApB,iBAAoD,IAAjB,EACrC,OAAA,IAAI,gBAAgB,IAA
K,KAC3B,GAAwB,oBAAb,SACT,OAAA,SAAS,cAAc,UAExB,MAAA,IAAI,MAAM,0CAIpB,SAAS,EAAYB,G
AC5B,GAAiB,IAAjB,GAAuC,IAAjB,EACIB,MAAA,IAAI,MAAM,0DAEZ,MAAA,EAAS,EAAa,GAMxB,OAJJ,
EAAO,iBAAiB,mBAAqB,IAC3C,EAAG,wBACI,EAAS,KACf,GACKB,IAAjB,EACM,EAAO,WAAW,QAAS,IA
C3B,EAAO,WAAW,qBAAsB,GAG3C,EAAO,WAAW,SAAU;:AC8IpC,aAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,OAAA,IAAA,QAAA,yCAAA,EAAA,QAAA,mCAAA,EAAA,QAAA,sCAAA,EAAA,QAAA,iBAAA,EAAA,Q
AAA,mCAAA,EAAA,QAAA,uCAAA,EAAA,QAAA,uCAAA,EAAA,QAAA,sCAAA,EAAA,QAAA,iBAAA,EA
AA,QAAA,oBAAA,QAAA,aAAA,QAAA,mBAAA,EAzND,IAEY,EAqCA,EAOA,EA9CZ,EAAA,QAAA,yBAKF
M,SAAU,EACZ,EAAC,GACT,MAAA,CAAC,EAAS,GAGb,SAAU,EACZ,EAAoB,GACf,OAAA,EAAa,EAGhB,S
AAU,EACZ,EAAC,GACT,MAAA,CAAW,EAAV,EAAa,GAMjB,SAAU,EAAiB,GACzB,MAAA,EAAO,EAAK,K
AAA,cAAc,GAC1B,EAAe,KAAK,KAAK,EAAO,GAC/B,OAAA,EAAK,KAAA,oBAAoB,GAG5B,SAAU,EACZ,
EAAsB,GACpB,GAAA,EAAe,GAAuB,EACIC,MAAA,IAAI,uBACW,+BACd,KAef,OAAA,EAAe,EAGIB,SAA
U,EACZ,EAA6B,EAAsB,GAC/C,MAAA,EAAe,EAAC,OAAS,EAAW,EACnD,GAAA,EAAO,OAAS,EACZ,MAA
A,IAAI,wBACY,EAAO,sBAAsB,KAejD,IAAA,EAAM,EACL,IAAA,IAAI,EAAM,EAAG,EAAM,EAAC,OAQ,
GAAO,EAC9C,IAAA,IAAI,EAAL,EAAG,EAAL,EAAU,IAC5B,EAAO,KAAS,EAAC,EAAM,GAKpC,SAAU,EAC
Z,EAAC,GACT,MAAA,CACL,KAAK,IAAI,EAAG,KAAK,KAAK,EAAU,IAAK,KAAK,IAAI,EAAG,KAAK,KA
AK,EAAO,KAIhE,SAAU,EACZ,EAAC,GACV,MAAC,EAAG,GAAK,EAAuC,EAAM,GACrD,OAAA,EAAL,EA
AL,EAoBX,SAAU,EA EZ,EAA2B,GAEvB,MAAA,EAAQ,EA EV,IAAA,EACA,EACA,EACA,EACA,EAEA,EAC
A,EAEA,EACA,EACA,EA2BG,OAzbKc,KAARc,EAAM,EAAA,OAAA,UAAU,kBACIB,EAAsB,EAAM,KAC5B
,EAA0B,EAAM,KACHc,EAAGc,EAAM,QACtC,EAA4B,EAAM,QACIC,EAAqB,EAAM,IAC3B,EAA4B,EAC5
B,EAAqB,EACrB,EAAuB,EAAM,WAC7B,EAAMB,EAAM,QA EZB,EAAsB,EAAG,KACzB,EAA0B,EAAG,KA
C7B,EAAGc,EAAG,KACnC,EAA4B,EAAM,KACIC,EAAqB,EAAG,KACxB,EAA4B,EAC5B,EAAqB,EACrB,E
AAoD,MAA7B,EACnB,EAA0B,eAC1B,KACJ,EAAMB,EAAG,OAIjB,CACL,oBAAA,EACA,wBAAA,EACA,8B
AAA,EACA,0BAAA,EACA,mBAAA,EACA,sBARF,EAwB,EAAG,KASzB,0BAAA,EACA,mBAAA,EACA,qB
AAA,EACA,iBAAA,GAEH,QAAA,cAAA,EA vND,SAAY,GAGBV,EAAA,EAAA,MAAA,GAAA,QAKBA,EAAA
,EAAA,aAAA,GAAA,eAICF,CAAY,IAAA,QAAA,cAAA,EAAa,KAuNxB,QAAA,aAAA,EALD,SAAY,GACV,E
AAA,EAAA,OAAA,GAAA,SACA,EAAA,EAAA,OAAA,GAAA,SACA,EAAA,EAAA,OAAA,GAAA,SACA,EA
AA,EAAA,SAAA,GAAA,WAJF,CAAY,IAAA,QAAA,aAAA,EAAY,KAKLvB,QAAA,oBAAA,EA3KD,SAAY,G
ACV,EAAA,EAAA,iBAAA,GAAA,mBACA,EAAA,EAAA,iBAAA,GAAA,mBACA,EAAA,EAAA,yBAAA,GA
AA,2BACA,EAAA,EAAA,mBAAA,GAAA,qBACA,EAAA,EAAA,mBAAA,GAAA,qBALF,CAAY,IAAA,QAA
A,oBAAA,EAAMB;:ACknB9B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,Q
AAA,iBAAA,EAAA,QAAA,qBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,qBAAA,EA
AA,QAAA,cAAA,EAAA,QAAA,YAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,yBAAA,EAAA,QAAA,wBAAA,
EAAA,QAAA,eAAA,EAAA,QAAA,cAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,mCAA
A,EAAA,QAAA,gBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,iCAAA,EAAA,QAAA,0BAAA,EAAA,QAAA,m
CAAA,EAAA,QAAA,wBAAA,EAAA,QAAA,8BAAA,EAAA,QAAA,kCAAA,EAAA,QAAA,oBAAA,EAAA,QA
AA,2BAAA,EAAA,QAAA,YAAA,EAAA,QAAA,YAAA,EAAA,QAAA,aAAA,EAAA,QAAA,gCAAA,EAAA,Q
AAA,cAAA,EAAA,QAAA,uBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,yBAAA,EAAA,QAAA,uBAAA,EA
A,QAAA,kCAAA,EAAA,QAAA,aAAA,EAAA,QAAA,sBAAA,EAAA,QAAA,mCAAA,EAAA,QAAA,8BAAA,E
AAA,QAAA,oBAAA,GAAA,QAAA,iBAAA,GAhqBD,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,iBACA,EA
A,QAAA,cAEM,SAAU,EAAGB,EAA2B,GACnD,MAAA,EAAC,IAIb,OAHH,EAAM,EAAA,OAAA,QAAQ,UAC
hB,EAAGB,GAEX,EAGT,SAAS,EAAGB,GACjB,MAAA,EAAQ,EAAG,WACb,GAAA,IAAU,EAAG,SACT,MA
AA,IAAI,MAAM,gBAakB,EAAqB,EAAL,IAK/D,MAAM,EAAC,QACd,EAAC,MAEd,SAAU,EAAiB,GAC3B,UA
AA,EAAM,EAAA,OAAA,QAAQ,iCAA2C,IAAR,GACHD,EAAC,KAAK,IAAI,IAAQ,KAAK,IAAI,GAAO,GAMh
D,SAAU,EACZ,EAA2B,GACrB,OAAA,GACD,KAAA,EAAG,SACC,MAAA,WACJ,KAAA,EAAG,aACC,MAA
A,eACJ,KAAA,EAAG,cACC,MAAA,gBACJ,KAAA,EAAG,kBACC,MAAA,oBACJ,KAAA,EAAG,8BACC,MA
AA,gCACJ,KAAA,EAAG,cACC,MAAA,gBACJ,KAAA,EAAG,mBACC,MAAA,qBACT,QACS,4BAAsB,KAI7B
,SAAU,EACZ,EAA2B,GACtB,OAAA,EACH,EAAL,IAAM,EAAG,aAAa,GAC1B,cAAgB,EAAGB,oCAGhC,SAA

U,EACZ,EAA2B,GACvB,MAAA,EAA4B,EAC9B,EAAl,IAAM,EAAG,aAAa,EAAG,eAC7B,wCAGA,GAFJ,EA
Aa,EAAl,IAAM,EAAG,aAAa,EAAC,IACrD,EAAa,EAAl,IAAM,EAAG,cAAc,KACuB,IAA3D,EAAG,mBAAmB,
EAAC,EAAG,gBAEnC,MADN,QAAQ,IAAl,EAAG,iBAAiB,IAC1B,IAAl,MAAM,oCAEX,OAAA,EAGH,SAAU,
EACZ,EAA2B,GACvB,MAAA,EAA8B,EACc,EAAl,IAAM,EAAG,aAAa,EAAG,iBAC7B,0CAGA,GAFJ,EAAa
,EAAl,IAAM,EAAG,aAAa,EAAGB,IACvD,EAAa,EAAl,IAAM,EAAG,cAAc,KACyB,IAA7D,EAAG,mBAAmB,
EAAGB,EAAG,gBAGrC,MAFN,EACI,EAAsB,EAAG,iBAAiB,IACxC,IAAl,MAAM,sCAEX,OAAA,EAGT,MAA
M,EAakB,2BACxB,SAAS,EACL,EAAsB,GACIB,MAAA,EAawB,EAAGB,KAAK,GAC/C,GAAyB,MAAzB,EA
GF,OAFa,QAAQ,4CAA4C,UACpD,QAAQ,IAAl,GAIR,MAAA,GAAC,EAAsB,GAEPc,EAAC,EAAa,MAAM,M
ACjC,EAAM,EAAY,OAAO,WAAW,OAAS,EAC7C,EAAuB,EAAY,IACrC,CAAC,EAAM,IACH,EAak,KAAA,
UAAU,EAAa,GAAG,WAAY,GAAG,GACtD,IAAA,EAAGB,EACf,IAAA,IAAl,EAAl,EAAG,EAAl,EAaqB,OAA
Q,IAC/C,EAAGB,KAAK,IAAl,EAaqB,GAAG,OAAQ,GAGrD,MAAA,EAAMB,EAaqB,MAAM,EAAG,EAAa,G
AC9D,EAAY,EAaqB,MAAM,EAAa,EAAG,GACvD,EAakB,EAaqB,MAAM,GAEnD,QAAQ,IAAl,EAaiB,KA
AK,OACIC,QAAQ,IAAl,EAAC,MAAM,MAAM,IACtC,QAAQ,UACE,EAak,KAAA,SAAS,EAau,GAAl,KACI
C,iEACJ,QAAQ,IAAl,EAAGB,KAAK,OAG7B,SAAU,EAAC,GACrB,OAAA,EACH,EAAl,IAAM,EAAG,gBAai
B,kCAG9B,SAAU,EAAY,EAA2B,GAejD,GADJ,EAAa,EAAl,IAAM,EAAG,YAAY,KACkB,IAApD,EAAG,oBA
AoB,EAAS,EAAG,aAE/B,MADN,QAAQ,IAAl,EAAG,kBAakB,IAC3B,IAAl,MAAM,+CAId,SAAU,EACZ,EAA
2B,GAezB,GADJ,EAAa,EAAl,IAAM,EAAG,gBAAGB,KACkB,IAAxD,EAAG,oBAAoB,EAAS,EAAG,iBAE/B,
MADN,QAAQ,IAAl,EAAG,kBAakB,IAC3B,IAAl,MAAM,qCAId,SAAU,EACZ,EAA2B,GACvB,MAAA,EAAs
B,EACxB,EAAl,IAAM,EAAG,eAAGB,gCAG1B,OAFP,EAAa,EAAl,IAAM,EAAG,WAAW,EAAG,aAAc,IACtD,
EAAa,EAAl,IAAM,EAAG,WAAW,EAAG,aAAc,EAAM,EAAG,cACxD,EAGH,SAAU,EACZ,EAA2B,GACvB,M
AAA,EAAsB,EACxB,EAAl,IAAM,EAAG,eAAGB,gCAI1B,OAHP,EAAa,EAAl,IAAM,EAAG,WAAW,EAAG,qB
AAsB,IAC9D,EACI,EAAl,IAAM,EAAG,WAAW,EAAG,qBAAsB,EAAM,EAAG,cACvD,EAGH,SAAU,IACV,O
AAqC,KAArC,EAAM,EAAA,OAAA,UAAU,iBACX,EAef,EAGH,SAAU,EAAC,GACrB,OAAA,EACH,EAAl,IA
AM,EAAG,gBAaiB,kCAG9B,SAAU,EAAoB,EAae,GAC3C,MAAA,GAaiB,EAAM,EAAA,OAAA,UAAU,0BA
CIC,GAAA,GAAS,GAAG,GAU,EAAl,CAE3B,MAAA,IAAl,MAAM,8BADM,KAAK,KACyB,gBAErD,GAAA,
EAAQ,GAAoB,EAAS,EAaiB,CAGnD,MAAA,IAAl,MACN,8BAHkB,KAAK,KAI3B,yDAHY,KAAkB,KAG+B,
MAI/D,SAAU,EAakB,GACzB,OAAA,EACH,EAAl,IAAM,EAAG,oBAAqB,sCAGIC,SAAU,EACZ,EAA2B,EA
AuB,EACID,EAaqB,EAA6B,EACID,GACI,MAAA,EAAM,EAAG,kBAakB,EAAS,GACtC,OAAS,IAAT,IAKJ,E
AAa,EAAl,IAAM,EAAG,WAAW,EAAG,aAAc,IACtD,EACI,EACA,IAAM,EAAG,oBACL,EAak,EAaqB,EA
G,OAAO,EAAO,EAC3C,IACR,EAAa,EAAl,IAAM,EAAG,wBAawB,KAC3C,GAGH,SAAU,EACZ,EAA2B,EA
AuB,GACpD,EAAoB,EAAl,GACxB,EAAa,EAAl,IAAM,EAAG,cAAc,EAAG,SAAW,IACtD,EAAa,EAAl,IAAM,
EAAG,YAAY,EAAG,WAAY,IAGjD,SAAU,EACZ,EAA2B,GAC7B,EAAoB,EAAl,GACxB,EAAa,EAAl,IAAM,
EAAG,cAAc,EAAG,SAAW,IACtD,EAAa,EAAl,IAAM,EAAG,YAAY,EAAG,WAAY,OAGjD,SAAU,EACZ,EA
A2B,EAC3B,GACK,OAAA,EACH,EAAl,IAAM,EAAG,mBAAmB,EAAS,GACzC,YAAc,EAAC,6BAG5B,SAAU
,EACZ,EAA2B,EAC3B,GACK,OAAA,EAAG,mBAAmB,EAAS,GAGIC,SAAU,EACZ,EAA2B,EAC3B,EAA8C,
GACHD,EAAa,EAAl,IAAM,EAAGB,EAAl,EAAS,IACpD,EAAa,EAAl,IAAM,EAAG,UAAU,EAawB,IAGxD,SA
AU,EAawB,GACtC,EAAa,EAAl,IAAM,EAAG,gBAAGB,EAAG,YAAa,OAC1D,EAAa,EAAl,IAAM,EAAG,SA
AS,EAAG,EAAG,EAAG,OAAO,MAAO,EAAG,OAAO,SACpE,EAAa,EAAl,IAAM,EAAG,QAAQ,EAAG,EAAG
,EAAG,OAAO,MAAO,EAAG,OAAO,SAG/D,SAAU,EACZ,EAA2B,EAC3B,GACF,EAAa,EAAl,IAAM,EAAG,g
BAAGB,EAAG,YAAa,IAC1D,EACI,EACA,IAAM,EAAG,qBACL,EAAG,YAAa,EAAG,kBAAmB,EAAG,WAA
Y,EAAS,IAGIE,SAAU,EACZ,EAA2B,GAC7B,EAAa,EAAl,IAAM,EAAG,gBAAGB,EAAG,YAAa,IAC1D,EACI,
EACA,IAAM,EAAG,qBACL,EAAG,YAAa,EAAG,kBAAmB,EAAG,WAAY,KAAK,IAG/D,SAAU,EAAoB,GA
C5B,MAAA,EAAS,EAAG,uBAauB,EAAG,aACxC,GAAA,IAAW,EAAG,qBACV,MAAA,IAAl,MACN,8BAAG
C,EAA2B,EAAl,IAIjE,SAAU,EACZ,EAA2B,GACrB,OAAA,GACD,KAAA,EAAG,kCACC,MAAA,oCACJ,KAA
A,EAAG,0CACC,MAAA,4CACJ,KAAA,EAAG,kCACC,MAAA,oCACJ,KAAA,EAAG,wBACC,MAAA,0BACT,
QACS,uBAaiB,KAI9B,SAAS,EACL,EAA2B,EAC3B,GACI,MAAA,EAakB,EAAa,EAAl,IAAM,KAC3C,GAA
W,MAAX,EACI,MAAA,IAAl,MAAM,GAEX,OAAA,EAGT,SAAS,EAAoB,EAA2B,GACHD,MAAA,EAaiB,EA
AG,iCAAmC,EACvD,EAAGB,EAAC,EAAG,SACnC,GAAA,EAAGB,EAAG,UAYY,EAAGB,EAAGB,CAE3D,MA

AA,IAAI,2DAD0C,UAKID,SAAU,EAAY,EAaiB,EAAa,GACjD,OAAA,EAak,KAAA,cAAc,EAAM,MAAM,EAAG,EAAM,OAAS,IAGpD,SAAU,EAAY,GACtB,GAAiB,IAAjB,EAAM,OACF,MAAA,MAAM,wDAGP,MAAA,CACL,EAAM,OAAS,EAai,EAAM,EAAM,OAAS,GAak,EAAG,EAAM,EAAM,OAAS,IAInE,SAAU,EAAa,GACvB,IAAA,EAAsC,CAAC,EAAG,EAAG,GAM1C,OAL2B,IAAjB,EAAM,QAakC,IAAjB,EAAM,QAA6B,IAAb,EAAM,KAEIE,EACI,CAAC,EAAY,MAAW,EAAY,KAEnC,EAGH,SAAU,EACZ,EAAoB,GAAW,GAC7B,IAAA,GAAa,EAAM,EAAA,OAAA,UAAU,0BAsB7B,GArBA,IACF,GAA0B,EAcF,KAPxB,EAAW,EAAS,IACHb,CAAC,EAAG,IAAM,GAak,EAAS,OAAS,EAC7B,EAak,KAAA,kBAakB,EAAS,IACHc,EAAS,KAIJ,SACX,EAAW,CAAC,EAAG,EAAS,MAKJ,IAApB,EAAS,OAAc,CACnB,MAAA,EAAGb,EAak,KAAA,aAAa,GACxC,EAAW,EAAc,SAGvB,IAAA,EAAO,EAak,KAAA,cAAc,GAC1B,GAAA,EAAS,QAAU,GAak,GAAQ,EAC3B,MAAA,CAAC,EAAG,GACN,GACiB,IAApB,EAAS,QAAGb,EAAS,IAAM,GACxC,EAAS,IAAM,EACV,OAAA,EACF,GACiB,IAApB,EAAS,QAAGb,EAAS,GAak,EAAS,IAAM,GACtD,EAAS,IAAM,EACV,MAAA,CAAC,EAAS,GAak,EAAS,GAai,EAAS,IACvC,GACiB,IAApB,EAAS,QAAGb,EAAS,IAAM,GACxC,EAAS,GAak,EAAS,IAAM,EACxB,MAAA,CAAC,EAAS,GAai,EAAS,GAak,EAAS,IACvC,GACiB,IAApB,EAAS,QACT,EAAS,GAak,EAAS,GAak,EAAS,IAAM,GAC3C,EAAS,IAAM,EACV,MAAA,CAAC,EAAS,GAak,EAAS,GAak,EAAS,GAai,EAAS,IACrD,GACiB,IAApB,EAAS,QAAGb,EAAS,IAAM,GACxC,EAAS,GAak,EAAS,GAak,EAAS,IAAM,EACtC,MAAA,CAAC,EAAS,GAai,EAAS,GAak,EAAS,GAak,EAAS,IAEtD,GAAA,EAAU,CAON,MAAA,EAAW,EAAY,GACzB,IAAA,EAAO,EAAG,EAAO,EAKd,OAJH,EAAS,UACV,EAAM,GAAQ,EAAY,IAE7B,EAAO,GAAY,EAAO,IAAM,EAAO,GACHc,EAak,KAAA,oBAAoB,GAAM,IAAI,GAAS,EAaj,GAe1C,OAAA,EAak,KAAA,oBAAoB,GAIPc,SAAS,EAAO,GACP,OAAA,EAai,GAAM,EAOb,SAAU,EAAc,EAakB,GAIC,GAHJ,EAAS,EAAO,OAAO,GACvB,EAAS,EAAO,OAAO,GAEnB,EAak,KAAA,YAAY,EAaq,GACpB,OAAA,EAGL,IAAC,EAAO,SAAW,EAAO,OACrB,OAAA,EAGL,GAac,IAAd,EAAO,IAA0B,IAAd,EAAO,IAA0B,IAAd,EAAO,IAC/B,IAAd,EAAO,GACF,OAAA,EAGL,GAAA,EAAO,SAAW,EAAO,OAAQ,CAC7B,MAAA,EAAa,EAAO,OAAO,GAAG,GAC9B,EAAa,EAAO,OAAO,GAAG,GACHc,GAAA,IAAe,EACV,OAAA,EAGL,GAAA,EAAO,IAAe,EAAO,KACd,IAAd,EAAO,IAA0B,IAAd,EAAO,IACtB,OAAA,EAGJ,OAAA,EAAO,KAAO,EAAO,IAAM,EAAO,EAAO,KAAO,EAAO,EAAO,IAMvE,IAAI,EACA,EAEE,SAAU,EAAuB,GACjC,GAAoB,MAApB,EAA0B,CACtB,MAAA,GAak,EAAGb,EAAA,iBAAA,GAC3B,EAAMb,EAAG,aAAa,EAAG,kBAEjC,OAAA,EAGH,SAAU,IACd,EAAMb,KAef,SAAU,IACd,EAAYb,KAGrB,SAAU,EAAuB,GACjC,GAA0B,MAA1B,EAAGC,CAC5B,MAAA,GAak,EAAGb,EAAA,iBAAA,GAC3B,EAAYb,EAAG,aAAa,EAAG,yBAGvC,OAAA,KAAK,IAAI,GAai,GAGhB,SAAU,EAakC,GAe5C,GAAiB,IAAjB,EACK,OAAA,EAGL,IAAA,EACE,MAAA,GAak,EAAGb,EAAA,iBAAA,GAUpB,OANL,EAFE,EAAa,EAai,oCACA,IAAjB,EACKB,EACX,EAAa,EAai,4BACN,EAEE,EAkIB,SAAU,EAAa,EAa2B,GAE/C,OAAO,MADF,EAAG,aAAa,GAixB,SAAU,EAASb,GACHc,IAEE,GAAM,OADC,EAAGb,EAAA,iBAAA,GAeIB,OAAA,EAET,MAAO,GAEA,OADP,QAAQ,IAAI,qCAAsC,IAC3C,EAef,OAAA,EAGH,SAAU,EAAMc,GAe7C,GAAiB,IAAjB,EACK,OAAA,EAGH,MAAA,GAak,EAAGb,EAaA,iBAAA,GAEvB,GAAiB,IAAjB,GACE,IAAC,EAAa,EAai,qBACb,OAAA,OAGL,IAAC,EAAa,EAai,0BACb,OAAA,EAkIJ,OADuB,EAAuC,GAajE,SAAU,EAa8B,GACxC,GAAiB,IAAjB,EACK,OAAA,EAGH,MAAA,GAak,EAAGb,EAAA,iBAAA,GAEvB,GAAiB,IAAjB,EAOG,CACD,GAAA,EAAa,EAai,0BACZ,OAAA,EAAuC,GAG1C,MAAA,EAA0B,8BAC5B,GAAA,EAAa,EAai,GAA0B,CACvC,MAAA,EACF,EAAG,aAAa,GACb,OAAA,GACH,EAai,GAGH,OAAA,EAanBH,QAAC,EAAa,EAai,yBAGjB,EAAa,EAai,6BAmBM,EAAuC,IAIvE,SAAS,EAAuC,GAExC,MAAA,GAAY,EAaiB,EAAA,kBAAA,GAe7B,EAAU,EAAG,gBACnB,EAAG,YAAY,EAAG,WAAY,GAI9B,EAAG,WACC,EAAG,WAAY,EAAG,EAAU,oBAHIB,EACC,EAeqD,EACHe,EAAU,mBAAoB,EAAU,iBAakB,MAExD,MAAA,EAAc,EAAG,oBACvB,EAAG,gBAAGb,EAAG,YAAa,GACnC,EAAG,qBACC,EAAG,YAAa,EAAG,kBAAMb,EAAG,WAAY,EAAS,GAe5D,MAAA,EACF,EAAG,uBAAuB,EAAG,eAAiB,EAAG,qBAO9C,OALP,EAAG,YAAY,EAAG,WAAY,MAC9B,EAAG,gBAAGb,EAAG,YAAa,MACnC,EAAG,cAAc,GACjB,EAAG,kBAakB,GAEd,EAGT,SAAS,GAEL,EAa2B,GACvB,MAAA,GAAY,EAaiB,EAAA,kBAAA,EAai,GACjC,EAAU,EAAG,gBACnB,EAAG,YAAY,EAAG,WAAY,GAI9B,EAAG,WACC,EAAG,WAAY,EAAG,EAAU,wBAHIB,EACC,EAeyD,EACpE,EAAU,mBAAoB,EAAU,qBAASb,MAE5D,MAAA,EAAc,EAAG,oBACvB,EAAG,gBAAGb,EAAG,YAAa,GACnC,EAAG,qBACC,EAAG,YAAa,EAAG,kBAAMb,EAAG,WAAY,EAAS,GAe5D,MAAA,EACF,EAAG,uBAAuB,EAAG,eAAiB,EAAG,qBAO9C,OALP,EAAG,YAAY,EAAG,WAAY,M

AC9B,EAAG,gBAAGB,EAAG,YAAa,MACnC,EAAG,cAAc,GACjB,EAAG,kBAakB,GAEd,EAGH,SAAU,GAA
oB,GAC9B,GAAiB,IAAjB,EACK,OAAA,EAMF,OADoC,OAHhC,EAAGB,EAAA,iBAAA,GAGG,UAIIB,SAAU,
GACZ,EAaiC,GAC9B,MAAM,QAAQ,KACjB,EAAS,CAAC,IAEZ,EAAO,QAAQ,IACJ,MAAL,GACG,EAAA,K
AAA,OACW,cAAZ,EAAE,MACF,OAAS,wCACL;;AC7fd,aAhKA,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,g
BAEA,MAAM,GAAM,EAaz,EAAA,OASA,EAAI,aAAa,YAAa,IAAM,EAAI,UAAU,iBAAmB,GAGrE,EAAI,aA
Aa,gBAaiB,KAC5B,EAAsB,EAAA,uBAAA,GACjB,GACE,EAAsB,EAAA,uBAAA,GACxB,EAef,GAIT,EAAI,
aAAa,iCAakC,KAAM,GAezD,EAAI,aACA,yBAA0B,IAAmC,IAA7B,EAAI,IAAI,kBAG5C,EAAI,aAAa,oBAAq
B,KAAM,GAG5C,EAAI,aAAa,2BAA4B,KAAM,GAGnD,EAAI,aAAa,aAAc,IAAM,EAAI,QAAQ,cAGjD,EAAI,a
AAa,2BAA4B,IAAM,EAAI,QAAQ,eAG/D,EAAI,aAAa,kBAAmB,IAAM,EAAI,QAAQ,eAltD,EAAI,aAAa,2BAA
4B,KAAM,GAGnD,EAAI,aACA,+BAAGC,IAAM,EAAI,QAAQ,eAGtD,EAAI,aACA,8BAA+B,IAAM,EAAI,QA
AQ,eAGrD,EAAI,aACA,8BAA+B,IAAM,EAAI,QAAQ,eAGrD,EAAI,aACA,8BAA+B,IAAM,EAAI,QAAQ,eAGr
D,EAAI,aAAa,oBAAqB,IAAM,EAAI,QAAQ,eAGxD,EAAI,aAAa,sBAAuB,IAAM,EAAI,QAAQ,eAG1D,EAAI,a
AAa,oBAAqB,IAAM,EAAI,QAAQ,eAGxD,EAAI,aACA,yBACA,KAAM,EAAuB,EAAA,wBAAA,EAAI,UAAU,
mBAG/C,EAAI,aACA,+BACA,KAAM,EAAuB,EAAA,wBAAA,EAAI,UAAU,mBAU/C,EAAI,aAAa,+CAAGD,K
ACzD,MAAA,EAae,EAAI,UAAU,iBAE/B,OAAiB,IAAjB,EACK,GAef,EAakC,EAAA,mCAAA,KAO3C,EAAI
,aACA,gDACA,IAAM,EAAI,UAAU,gDAakD,IACjE,EAAY,YAAA,YAKrB,EAAI,aACA,+BACA,KAAM,EAA
mC,EAAA,oCAAA,EAAI,UAAU,mBAM3D,EAAI,aAAa,+BAAGC,KACxC,EAAI,QAAQ,6BAef,EAAI,QAAQ,i
CAOIB,EAAI,aACA,+BACA,KAAM,EAA8B,EAAA,+BAAA,EAAI,UAAU,mBAGtD,EAAI,aACA,0BACA,KA
AM,EAAoB,EAAA,qBAAA,EAAI,UAAU,mBAK5C,EAAI,aAAa,4BAA6B,KAMrC,OADa,EAAI,QAAQ,gCACX
,EAAI,IAU3B,EAAI,aACA,iCACA,KACU,EAev,IACM,GAAA,EAAY,IAAoB,IAAf,EACb,MAAA,IAAI,MAC
N,iGACkC;;ACtD7C,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EApHD,IAAA,E
AAA,QAAA,yBAeM,SAAU,IACV,IAAA,EACA,EACA,EACA,EACA,EACA,EACA,EACA,EACA,EA+E
G,OA7EkC,KAArC,EAAM,EAAA,OAAA,UAAU,kBACiB,EAAU,kBACV,EAAY,KACZ,EAAY,MACZ,EAAY,
KACZ,EAAY,UACZ,EAAS,cACT,EAae,wBAMf,EAAmB,gVAcnB,EAAmB,GACnB,EAac,4OAWd,EAAU,GA
CV,EAAY,YACZ,EAAY,UACZ,EAAY,UACZ,EAAY,YACZ,EAAS,eACT,EAae,GAef,EAAmB,0SASnB,EAA
mB,iNAUnB,EAac,yLAWT,CACL,QAAA,EACA,UAAA,EACA,UAAA,EACA,UAAA,EACA,UAAA,EACA,O
AAA,EACA,aAAA,EACA,iBAAA,EACA,iBAAA,EACA,YAAA;;ACtCG,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,mCAAA,EAAA,QAAA,OAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,0BAAA,EA3
EP,IAAA,EAAA,QAAA,yBAOM,SAAU,EACZ,EAakB,EAaiB,EAAQ,SACvC,MAAA,EAAU,EAak,KAAA,eA
Ae,GAC7B,OAAA,EACF,IAAI,CAAC,EAAQ,KAKL,gBAJc,EAAO,QAAQ,OAaw,QACjC,IAAM,EAAQ,OAAS
,SAC1B,EAAO,EAAI,QAAQ,OAaw,EAAO,QAAQ,gBACxC,EAAO,QAAQ,SAGhC,KAAK,IAGZ,SAAS,EAAS
,GACZ,OAaa,IAAb,EAAE,UACM,EAAE,WAED,EAAE,UAAU,EAAE,KAAK,QA05B,SAAU,EAAO,EAAa,G
AC9B,GAAA,EAAE,SAaw,EAAE,OACX,MAAA,IAAI,MACN,2DACO,EAAE,cAAc,EAAE,UAGzB,MAAA,E
AAmB,GACnB,EAac,KAAK,MAAM,EAAE,OAAS,GACpC,EAAuB,EAAE,OAAS,EAEnC,IAAA,IAAI,EAAI,E
AAG,EAAI,EAAa,IAAK,CAC9B,MAAA,EAAS,EAAE,MAAU,EAaj,EAaw,EAaj,EAAQ,GAChC,EAAS,EAA
E,MAAU,EAaj,EAaw,EAaj,EAAQ,GACtC,EAAO,QAAQ,EAAS,OAAY,EAAS,MAG3C,GAAyB,IAAzB,EA
4B,CAC1B,IAAA,EAAS,EAAE,MAAoB,EAAd,GACjB,EAAS,EAAE,MAAoB,EAAd,GACC,IAAiB,EAAO,SAC
T,EAAS,EAAO,IAAI,YAAc,MACiC,EAAS,EAAO,IAAI,YAAc,OAEPc,EAAO,QAAQ,EAAS,OAAY,EAAS,MA
GxC,OAAA,EAAO,IAAI,CAAC,EAAG,WAAa,MAAM,KAAK,KAM1C,SAAU,EAAmB,GAC3B,MAAA,EAAU,
EAak,KAAA,eAAe,GAAO,IAAI,GAak,EAAE,YAE/C,qEAEE,EAAQ,mBAAmB,EAAQ,wBAKpD,MAAM,EA
AuB,07BAA7B,QAAA,qBAAA;;ACtEyB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBA
AA,EALhC,IAAA,EAAA,QAAA,kBAEA,EAAA,EAAA,QAAA,2BACA,EAAA,QAAA,caEGC,SAaa,IAAA,GA
AA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SA
AA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAA
A,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,
gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,
IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,E
AAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GA

AA,EAA1B,MAAO,EAQX,YAAY,GAPZ,KAAA,cAAgB,CAAC,KAGjB,KAAA,cAAe,EACf,KAAA,cAAe,EACf
,KAAA,iBAAmB,EAAC,cAAA,MAGzB,MAAA,GAAW,EAaiB,EAAA,kBAAA,GAC5B,GAAO,EAAb,EAAA,s
BACK,KAAA,YAAc,EAEd,KAAA,uEAGD,EAAY,mCACR,CAAC,IAAK,IAAK,KAAM,oIAMZ,EAAS,OAAO,
EAAS,gDACF,EAAS,iQAUvC,EAAK,mCAiCiB,QAAA,oBAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,+BAAA,EALiC,IAAA,EAAA,QAAA,kBAEA,EAAA,EAAA,QAAA,2BACA,EAAA,
QAAA,cAEsC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,
WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,I
AAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EA
AA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eA
AA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KA
AA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAA
A,GAAA,EAAA,IAAA,EAAA,GAAA,EAhC,MAAO,EAQX,YAAY,GAPZ,KAAA,cAAgB,CAAC,KAejB,KAA
A,cAAe,EACf,KAAA,cAAe,EAef,KAAA,iBAAmB,EAAC,cAAA,MAGzB,MAAA,GAAW,EAaiB,EAAA,kBAA
A,GAC5B,GAAO,EAAb,EAAA,sBACK,KAAA,YAAc,EAEd,KAAA,uEAGD,EAAY,mCACR,CAAC,IAAK,IAA
K,KAAM,oIAMZ,EAAS,OAAO,EAAS,gDACF,EAAS,+RAUvC,EAAK,mCAiCuB,QAAA,0BAAA;;ACAP,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,wBAAA,EAL/B,IAAA,EAAA,QAAA,kBAEA,EAA
A,QAAA,0BACA,EAAA,QAAA,cAEM,MAAO,EAMX,YAAY,GALZ,KAAA,cAAgB,CAAC,KAGjB,KAAA,YA
Ac,EAAa,aAAA,SAGnB,MAAA,GAAO,EAAb,EAAA,sBACK,KAAA,YAAc,EACd,KAAA,oBACD,EAAoB,8FA
IIB,EAAK,4CAdgB,QAAA,mBAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,8
BAAA,EALrC,IAAA,EAAA,QAAA,kBAEA,EAAA,QAAA,0BACA,EAAA,QAAA,cAEM,MAAO,EAQX,YAAY
,GAPZ,KAAA,cAAgB,CAAC,KAGjB,KAAA,cAAe,EACf,KAAA,cAAe,EACf,KAAA,YAAc,EAAa,aAAA,SAGn
B,MAAA,GAAO,EAAb,EAAA,sBACK,KAAA,YAAc,EACd,KAAA,oBACD,EAAoB,+KAKIB,EAAK,4CAjBsB,
QAAA,yBAAA;;ACDL,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAJhC,IAAA,
EAAA,QAAA,kBAEA,EAAA,EAAA,QAAA,2BAEgC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAA
A,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAA
A,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,I
AAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,K
AAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,E
AAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EA
AA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAA1B,MAAO,EAKX,YACI,EAA
uC,EACvC,GAAsB,GAN1B,KAAA,cAAgB,CAAC,KAOT,MAAA,GAAO,EAAb,EAAA,uBACO,EAAQ,GAAS,E
ACnB,KAAA,YAAc,EAef,IAAA,EAAS,SACT,IACF,EAAS,8BAGN,KAAA,oBACD,EAAY,mBAAmB,iPAUT,u
CACI,uDACE,QAAY,gCACrC,EAAK,mTAcnB,EAAK,iBAaiB,kCA7CA,QAAA,oBAAA;;ACgBM,aAAA,OAA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,+BAAA,EApBtC,IAAA,EAAA,QAAA,kBAEA,EAAA,EA
A,QAAA,2BAkBsC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EA
AA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EA
AA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA
,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,
eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,K
AAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EA
AA,GAAA,EAAA,IAAA,EAAA,GAAA,EAhC,MAAO,EAOX,YACI,EAAuC,EACvC,GAAsB,GAR1B,KAAA,c
AAgB,CAAC,KAGjB,KAAA,cAAe,EACf,KAAA,cAAe,EAKP,MAAA,GAAO,EAAb,EAAA,uBACO,EAAQ,GA
AS,EACnB,KAAA,YAAc,EAef,IAAA,EAAW,GACX,EAAS,SACT,IACF,EAAS,8BAGN,IAAA,IAAI,EAAM,E
AAG,GAAO,EAAG,IACrB,IAAA,IAAI,EAAM,EAAG,GAAO,EAAG,IAAO,CAC3B,MAAA,EAAGB,EAAN,EA
AU,EA1B,uEAewB,OAAS,EAAY,wCACrB,uCACE,OAAS,EAAY,0CACrB,gMAOF,yCACI,wDACc,QAAY,iC
ACrC,EAAK,gFAGL,mFAEA,mFAEA,mEAEA,yEAQhB,KAAA,oBACD,EAAY,mBAAmB,gOAW7B,gBAEA,E
AAK,YAAY,qBAteW,QAAA,0BAAA;;ACoRrC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,mBAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,yCAAA,EAAA,QAAA,2BAAA,EAA

A,QAAA,yCAAA,EAAA,QAAA,2BAAA,EAAA,QAAA,+CAAA,EAAA,QAAA,iCAAA,EAAA,QAAA,wCAAA,
EAAA,QAAA,0BAAA,EAAA,QAAA,+CAAA,EAAA,QAAA,iCAAA,EAAA,QAAA,kCAAA,EAAA,QAAA,2B
AAA,EAAA,QAAA,yBAAA,EAAA,QAAA,8BAAA,EAAA,QAAA,gCAAA,EAAA,QAAA,gDAAA,EAAA,QAA
A,+BAAA,EAAA,QAAA,sCAAA,EAtSD,IAAA,EAAA,QAAA,kBACA,EAAA,EAAA,QAAA,eAEA,EAAA,EA
AA,QAAA,iBAmSC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,E
AAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,E
AAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAA
A,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAA
A,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA
,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,E
AAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAjSK,SAAU,EAAMb,GAC3B,MAAA,GAO,EAAb,EAAA,sBACM,
KAAwB,EAAK,4CAE/B,EAAK,qCACL,EAAK,2BACL,EAAK,yHAMF,OAAA,EAAW,mBAAMb,EAAl,GAGr
C,SAAU,EAAMb,GAe3B,MAAA,EAAC,IAAI,aACpB,EAAE,EAAG,EAAG,EAAG,EAAG,GAAl,GAAl,EAAG,
EAAG,EAAG,EAAG,EAAG,EAAG,EAAG,EAAG,EAAG,GAAl,EAAG,EAAG,EAAG,IAC3D,OAAA,EAAW,yB
AAyB,EAAl,GAG3C,SAAU,EAakB,GAe1B,MAAA,EAawB,IAAI,YAAy,CAAC,EAAG,EAAG,EAAG,EAAG,
EAAG,IACvD,OAAA,EAAW,wBAAwB,EAAl,GAGhD,SAAS,EAcl,EAa2B,EAae,EAC1C,EAawB,EACxB,G
ACF,EAAW,oBAAoB,EAao,GAChC,MAAA,EAau,EAAW,cAAc,GAEnC,EAaQ,EAAG,WAgBV,OAfP,EA
W,aAAa,EAAl,IAAM,EAAG,YAAy,EAao,IACxD,EAAW,aACP,EAAl,IAAM,EAAG,cAAc,EAao,EAAG,eAA
gB,EAAG,gBAC5D,EAAW,aACP,EAAl,IAAM,EAAG,cAAc,EAao,EAAG,eAAgB,EAAG,gBAC5D,EAAW,aA
CP,EAAl,IAAM,EAAG,cAAc,EAao,EAAG,mBAAoB,EAAG,UACHE,EAAW,aACP,EAAl,IAAM,EAAG,cAAc,
EAao,EAAG,mBAAoB,EAAG,UACHE,EAAW,aACP,EACA,IAAM,EAAG,WACL,EAao,EAAG,EAAGB,EA
O,EAaQ,EAAG,EAC5C,EAaa,OACrB,EAAW,aAAa,EAAl,IAAM,EAAG,YAAy,EAAG,WAAY,OACzD,EAGH
,SAAU,EACZ,GACK,OAAA,EAAC,oBAGjB,SAAU,EACZ,EAa2B,EAAC,EACzC,GACI,MAAC,EAao,GACV,
EAAS,yCAAyC,EAAM,GACrD,OAAA,EACH,EAAl,EAao,EACX,EAAYC,GACzC,EAAC,mBAAoB,EAAG,OA
GrC,SAAU,EACZ,GACK,OAAA,EAAC,wBAGjB,SAAU,EACZ,EAa2B,EAAC,EACzC,GACI,MAAC,EAao,GA
CV,EAAS,yCAAyC,EAAM,GACrD,OAAA,EACH,EAAl,EAao,EACX,EAAYC,GACzC,EAAC,mBAAoB,EAAC,
sBAGhD,SAAU,EACZ,GACK,OAAA,EAAC,sBAGjB,SAAU,EACZ,EAa2B,EAAC,EACzC,GACI,MAAC,EAao
,GACV,EAAS,yCAAyC,EAAM,GACrD,OAAA,EACH,EAAl,EAao,EACX,EAa+C,GAAGB,EAAG,KACIE,EA
AG,eAGH,SAAU,EACZ,GACK,OAAA,EAAC,0BAGjB,SAAU,EACZ,EAa2B,EAAC,EACzC,GACI,MAAC,EA
O,GACV,EAAS,uCAAuC,EAAM,GACnD,OAAA,EACH,EAAl,EAao,EAaQ,EAawC,GAC3D,EAAG,KAAM,E
AAG,OAGZ,SAAU,EACZ,GACK,OAAA,EAAC,8BAGjB,SAAU,EACZ,EAa2B,EAAC,EACzC,GACI,MAAC,EA
AO,GACV,EAAS,uCAAuC,EAAM,GACnD,OAAA,EACH,EAAl,EAao,EACX,EAa+C,GAAGB,EAAG,KACIE,
EAAC,sBAGd,SAAU,EACZ,EAa2B,EAC3B,GAQK,OAJP,EAAW,aACP,EAAl,IAAM,EAAG,WAaw,EAAG,aA
Ac,IAC7B,EAAW,mCACvB,EAAl,EAAS,eAAgB,EAAC,EAJ/B,GAfE,IAQd,EAAW,mCACP,EAAl,EAAS,KAA
M,EAAC,EAPzB,GADC,IAWb,SAAU,EACZ,EAa2B,EAauB,EACID,EAAGB,EAakB,GAGhC,IAAA,EAa2B,E
AAuB,EAfTd,EAAW,aAAa,EAAl,IAAM,EAAG,YAAy,EAAG,WAAY,IAG5D,aAAgB,YACIB,EAAGB,IAAI,W
AAW,EAaQ,EAAS,GAChD,EAAGB,EAAG,cACnB,EAaiB,EAAG,OAEPb,EAAGB,IAAI,aAAa,EAaQ,EAAS,G
ACID,EAAGB,EAAG,MACnB,EAaiB,EAAC,2BAGjC,EAAC,IAAI,GAElB,EAAW,aACP,EACA,IAAM,EAAG,W
ACL,EAAG,WAAY,EAAG,EAAGB,EAao,EAaQ,EAAG,EAAG,KACvD,EAae,IAEvB,EAAW,aAAa,EAAl,IA
AM,EAAG,YAAy,EAAG,WAAY,OAG5D,SAAU,EACZ,EAa2B,EAC3B,GAfE,EAAW,aAAa,EAAl,IAAM,EA
AG,YAAy,EAAG,WAAY,IAC3D,EAaqB,gBAAGB,WACxC,EAAW,aACP,EACA,IAAM,EAAG,WACL,EAAG,
WAAY,EAAG,EAAG,KAAM,EAao,MAAO,EAao,OAaQ,EAAG,EAAG,KAC9D,EAAG,cAAgB,EAaqB,OA
EhD,EAAW,aACP,EACA,IAAM,EAAG,WACL,EAAG,WAAY,EAAG,EAAG,KAAM,EAAG,KAAM,EAAG,cAC
vC,IAIV,EAAW,aAAa,EAAl,IAAM,EAAG,YAAy,EAAG,WAAY,OAG5D,SAAU,EACZ,EAa6B,EAAC,EAC3C
,GAEl,MAAA,EAAS,EAAl,eACnB,EAAW,aACP,EAak,IAAM,EAAl,WAaw,EAAl,kBAAMb,IAG/C,MAEA,E
AAkB,GAaiC,EAao,EAezD,OAEP,EAAW,aACP,EACA,IAAM,EAAl,WACN,EAAl,kBAAMb,EAaiB,EAAl,c
AlpD,EAAW,aACP,EAak,IAAM,EAAl,WAaw,EAAG,EAAG,EAAS,EAAM,EAAl,KAAM,EAAl,MAAO,IAEx
E,EAAW,aACP,EAak,IAAM,EAAl,WAaw,EAAl,kBAAMb,OAEP9C,EAGH,SAAU,EACZ,EAa2B,EAC3B,GA

CI,MAAA,EAAM,EAEN,EAaiB,IAAI,aAAa,GAMjC,OAJp,EAai,WAAW,EAai,kBAAmB,GACtC,EAai,iBAaiB,EAai,kBAAmB,EAAG,GAC/C,EAai,WAAW,EAai,kBAAmB,MAE/B,EAGH,SAAU,EACZ,EAA2B,EAAC,EACzC,GACI,MAAC,EAAG,GACN,EAAS,yCAAyC,EAAM,GAGtD,EAaiB,IAAI,WACvB,EAAS,mCAAmC,EA AO,EAfnC,IAyB,OARP,EAaW,aACP,EACA,IAAM,EAAG,WACL,EAAG,EAAG,EAAG,EAAG,EAAC,sBAAU B,EAAG,cACpD,IAID,IAAI,aAAa,EAae,QAGnC,SAAU,EACZ,EAA2B,EAAqB,EAae,EAC/D,EAAC,EAASB,E ACpC,GACI,MAAA,EAAM,EAEN,EACF,IAAI,aAAa,EAAS,sCACtB,EAAC,IAMf,OAJp,EAai,WAAW,EAai,k BAAMB,GACtC,EAai,iBAaiB,EAai,kBAAMB,EAAG,GAC/C,EAai,WAAW,EAai,kBAAMB,MAE/B,EAGH,S AAU,EACZ,EAA2B,EAC3B,GACI,MAAA,EAaa,IAAI,aAAa,EAae,EAae,GAM3D,OALP,EAaW,aACP,EACA ,IAAM,EAAG,WACL,EAAG,EAAG,EAAC,EAAC,EAAG,KAAM,EAAG,MAAO,IAEtD;;AC+TR,aAAA,OAAA,e AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAAA,QAAA,kBAAA,EAtdBD,IAAA,EAAA,QAAA, yBAEA,EAAA,QAAA,iBACA,EAAA,EAAA,QAAA,iBACA,EAAA,EAAA,QAAA,eAGA,EAAA,EAAA,QAAA, iBA+IBC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAA A,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA, GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,C AAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,K AAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EA AA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAA A,EAAA,IAAA,EAAA,GAAA,EAxIBK,MAAO,EAiBX,YAAY,GANZ,KAAA,cAAmC,KACnC,KAAA,QAA6B, KACrB,KAAA,UAAW,EAqOX,KAAA,qBAAsB,EAsPtB,KAAA,YAA0B,GAtD1B,MAAA,GAAY,EAAM,EAAA ,OAAA,UAAU,iBACxB,MAAN,GACG,KAAA,GAAK,GACM,EAAA,EAAA,iBAAA,EAaW,IAEtB,KAAA,IAA K,EAAGB,EAAA,iBAAA,GAGxB,IAAA,EAAqB,2BAErB,GAAqC,KAArC,EAAM,EAAA,OAAA,UAAU,iBAA wB,CACpC,MAAA,EAAGB,oBACbB,EAAqB,yBAIvB,GAFC,KAAA,sBACD,EAaW,oBAAoB,KAAK,GAai,G ACxC,EAaW,aAAa,KAAK,GAai,GAC9B,KAAA,0BACD,EAaW,oBAAoB,KAAK,GAai,QACvC,IAAI,EAAM ,EAAA,OAAA,IAAI,4BACb,MAAA,IAAI,MACN,sHAKF,GADC,KAAA,0BAA4B,KAAK,GAAG,aAAa,GACID ,EAaW,aAAa,KAAK,GAjBH,+BAkVb,KAAA,8BACD,EAaW,oBAAoB,KAAK,GAnBZ,oCAoVb,IAAI,EA M,EAAA,OAAA,IAAI,4BACb,MAAA,IAAI,MACN,oIAKF,GADJ,EAAqB,yBACjB,EAaW,aAAa,KAAK,GAai, GAC9B,KAAA,0BACD,KAAK,GAAG,aAAa,OACpB,CAAA,IAAI,EAaW,aAAa,KAAK,GA9BV,+BAkCtB,MA AA,IAAI,MAAM,uDAHx,KAAA,8BACD,KAAK,GAAG,aAhCgB,+BAc3B,KAAA,aAae,EAaW,mBAAMB,K AAK,IACID,KAAA,YAAc,EAaW,kBAakB,KAAK,IAChD,KAAA,YAAc,EAaW,kBAakB,KAAK,IAEHd,KAA A,cACD,EAAS,iBAaiB,KAAK,GAai,KAAK,2BAGIC,YACH,OAAA,EAAM,EAAA,OAAA,QAAQ,SAGhB,UA CD,GAAA,KAAK,SACP,OAEkB,MAAhB,KAAK,SACP,QAAQ,KACJ,wKAIoB,MAAtB,KAAK,eACP,QAAQ,K ACJ,sMAKA,MAAA,EAAK,KAAK,GACHB,EAaW,aAAa,EAai,IAAM,EAAG,UACrC,EAaW,aAAa,EAai,IAA M,EAAG,gBAAGB,EAAG,YAAa,OACrE,EAaW,aAAa,EAai,IAAM,EAAG,kBAakB,KAAK,cAC5D,EAaW,aA Aa,EAai,IAAM,EAAG,WAAW,EAAG,aAAc,OACjE,EAaW,aACP,EAai,IAAM,EAAG,WAAW,EAAG,qBAAs B,OACrD,EAaW,aAAa,EAai,IAAM,EAAG,aAAa,KAAK,cACID,KAAA,UAAW,EAGX,2BAA2B,EAAC,GAGv C,OADF,KAAA,kBACE,EAaW,2BACd,KAAK,GAai,EAAM,EAAS,KAAK,eAG5B,2BAA2B,EAAC,GAGvC,O ADF,KAAA,kBACE,EAaW,2BACd,KAAK,GAai,EAAM,EAAS,KAAK,eAG5B,iCAAiC,EAAC,GAG7C,OADF, KAAA,kBACE,EAaW,iCACd,KAAK,GAai,EAAM,EAAS,KAAK,eAG5B,yBACH,EACA,GACG,KAAA,kBAC L,EAaW,yBAayB,KAAK,GAai,EAAS,GAGjD,2BACH,EAauB,EAae,EAAGB,GACnD,KAAA,kBACL,EAaW ,2BACP,KAAK,GAai,EAAS,EAAO,EAAQ,EAAM,KAAK,eAG3C,iCAAiC,EAAC,GAG7C,OADF,KAAA,kBAC E,EAaW,iCACd,KAAK,GAai,EAAM,EAAS,KAAK,eAG5B,0BAA0B,EAAC,GAGtC,OADF,KAAA,kBACE,EA AAW,0BACd,KAAK,GAai,EAAM,EAAS,KAAK,eAG5B,oBAAoB,GACpB,KAAA,kBACD,KAAK,gBAakB,IAC zB,EAaW,kCAaC,KAAK,GAai,KAAK,aActD,KAAA,cAAgB,MAEvB,EAaW,aAAa,KAAK,GAai,IAAM,K AAK,GAAG,cAAc,IAGxD,gDACH,EAauB,EAAC,GACHC,OAAA,KAAK,qBACR,EACA,IAAM,EAaW,gDACb ,KAAK,GAai,EAAM,EAAS,KAAK,gBAGhC,+BACH,EAaqB,EAae,EAAC,EACID,EAASB,GACjB,OAAA,EA AW,+BACd,KAAK,GAai,EAAQ,EAAO,EAAM,EAAS,EAAC,EACrD,KAAK,eAGJ,gCAAgC,EAaqB,GAEnD,O AAA,EAaW,gCAAgC,KAAK,GAai,EAAQ,GAG9D,wBACH,EAauB,EAAC,GACIC,KAAA,yBAayB,GACxB, MAAA,EAAS,EAaW,8BACtB,KAAK,GAA8B,EAAM,EAAS,KAAK,eAEpD,OADF,KAAA,6BACE,EAGF,wB

ACC,MAAA,EA Ae, KAAK, YAA Y, KAAK, IACpC, OAAA, KAAK, UAAU, GAGhB, YAA Y, GACd, IAAA, EACA, E
AEA, IAAA, EAAM, EAAA, OAAA, QAAQ, 2BAA4B, CACtC, MAAA, EAAM, EAEN, EAAO, EAAI, UAAU, EAAI, 2
BAA4B, GAC3D, EAAG, QAEH, EAAGb, MACR, MAAA, EAAS, EAAI, eAAe, EAAM, EAAG, GACpC, OAAA, IAA
W, EAAI, kBACIB, IAAW, EAAI, sBAGrB, EAAQ, OAEN, EAAM, EAAA, OAAA, UAAU, gDAaKd, GACpE, EAAQ,
KAAK, aACR, KAAA, WACL, EAAGb, KAAM, KAAK, iBACvB, GACA, EAAM, EAAA, OAAA, UAAU, mDAMPb, E
AAgB, MAAM, GAGjB, MAAA, CAAC, MAAA, EAAO, cAAA, GAGV, gCACH, EAAuB, EACvB, GACK, OAAA, KA
AK, qBACR, EACA, IAAM, EAAW, sCACb, KAAK, GAAI, EAAC, IAK1B, cAAc, GACd, KAAA, kBACC, MAAA, EAA
K, KAAK, GACV, EACF, EAAW, qBAAqB, EAAI, GACIC, EAA4B, EAAW, mBAAMb, GAC1D, EAAwB, EAAW, cA
Ac, GAYhD, OAXP, EAAW, aAAa, EAAI, IAAM, EAAG, aAAa, EAAS, IAC3D, EAAW, aAAa, EAAI, IAAM, EAAG, aA
Aa, EAAS, IAC3D, EAAW, YAA Y, EAAI, GACvB, KAAK, OACP, EAAW, gBAAGb, EAAI, GAE5B, KAAK, sBACH, K
AAA, WAAW, GACX, KAAA, oBAAsB, EAAW, kCACIC, EAAI, KAAK, QAAS, KAAK, eAEtB, EAGF, cAAc, GACd,
KAAA, kBACD, IAA Y, KAAK, UACd, KAAA, QAAU, MAEF, MAAX, GACF, EAAW, aAAa, KAAK, GAAI, IAAM, K
AAK, GAAG, cAAc, IAI1D, WAAW, GACX, KAAA, kBACA, KAAA, QAAU, EACM, MAAhB, KAAK, SAAoB, KAA
K, OACjC, EAAW, gBAAGb, KAAK, GAAI, KAAK, SAE3C, EAAW, aAAa, KAAK, GAAI, IAAM, KAAK, GAAG, WA
AW, IAGrD, mBACH, EAAuB, EACvB, GAAC, GAEZ, OADC, KAAA, kBACD, EACK, EAAW, iCACd, KAAK, GAAI,
EAAS, GAEf, EAAW, 0BACd, KAAK, GAAI, EAAS, GAIInB, qBAAqB, EAAuB, GAG1C, OADF, KAAA, kBACE, EAA
W, aACd, KAAK, GAAI, IAAM, KAAK, GAAG, kBAAkB, EAAS, IAGjD, 0BAA0B, EAAuB, GAG/C, OADF, KAAA, k
BACE, KAAK, GAAG, mBAAMb, EAAS, GAGtC, sBACH, EAaKc, EACIC, GACG, KAAA, kBACA, KAAA, mBACL,
EAAW, mCACP, KAAK, GAAI, EAAoB, EAAiB, GAG7C, uBACH, EAAMc, EAAC, GAC9C, KAAA, 6BAA6B, EAAq
B, EAAS, GAG3D, 6BACH, EAAyC, EAAC, GACpD, KAAA, kBACC, MAAC, EAAO, GACV, EAAS, uCAAuC, EAAM
, GACrD, KAAA, 6BAA6B, EAA2B, EAAO, GAG/D, 2BACH, EAaKb, EAAiB, EACnC, GACG, KAAA, iCACD, EAAa,
EAAU, EAAY, GAGIC, iCACH, EAaKb, EAAiB, EACnC, GACI, MAAA, IAAI, MAAM, qDAGX, gBACe, MAAhB, KA
AK, SACP, EAAW, gBAAGb, KAAK, GAAI, KAAK, SAE3C, EAAW, oBAAoB, KAAK, IAG/B, iBACA, KAAA, kBAC
A, KAAA, mBACC, MAAA, EAAK, KAAK, GACZ, KAAK, OACF, KAAA, gBAEP, EAAW, aACP, EAAI, IAAM, EAA
G, aAAa, EAAG, UAAW, EAAG, EAAG, eAAgB, IAG7D, iCACA, KAAA, kBACL, EAAW, aAAa, KAAK, GAAI, IAAM
, KAAK, GAAG, UAGzC, yBAaC, OAXiC, MAAPc, KAAK, 8BACF, KAAA, 4BACD, EAAW, oBACP, KAAK, GAEm
D, KADxD, EAAM, EAAA, OAAA, UACF, gDACA, kCACA, 6BAIP, KAAK, 4BAGN, +BACC, OAAA, KAAK, yBAG
N, +BACC, OAAA, KAAK, yBAGd, aACM, GAAoE, KAApE, EAAM, EAAA, OAAA, UAAU, gDAAuD, CACnE, MAA
A, EAAM, KAAK, GACX, EAAM, KAAK, +BAEX, EAAQ, EAAI, cAEX, OADP, EAAI, WAAW, EAAI, iBAaKb, GAC
9B, EAEH, MAAA, EAAM, KAAK, +BACX, EAAQ, EAAI, iBAEX, OADP, EAAI, cAAc, EAAI, iBAaKb, GACjC, EAG
T, WACM, GAAoE, KAApE, EAAM, EAAA, OAAA, UAAU, gDAAuD, CACnE, MAAA, EAAM, KAAK, GACX, EAA
M, KAAK, +BAEjB, YADA, EAAI, SAAS, EAAI, kBAGb, MAAA, EAAM, KAAK, +BACjB, EAAI, YAA Y, EAAI, kBA
GT, 6BAAuB, GAS3B, aARD, EAAK, KAAA, YACP, IAAM, KAAK, UAGF, KAAA, iBACD, GACA, EAAM, EAAA, O
AAA, UACF, kDACT, KAAK, aACR, GAAO, EAAM, EAAA, OAAA, UAAU, iDAGrB, aAAa, EAAMb, GACIC, GAAs
B, IAAtB, EACK, OAAA, KAGL, GAAsB, IAAtB, EAAyB, CACrB, MAAA, EAAM, KAAK, GAIv, OAFkB, EAAI, kBA
AkB, EAAO, EAAI, cAEhC, IACrB, CACC, MAAA, EAAM, KAAK, +BAKV, OAFH, EAAI, kBAaKb, EAAO, EAAI, kBA
AEX, KAItB, iBAAiB, EAAMb, GAEtC, GAAsB, IAAtB, EACK, OAAA, EAGL, GAAsB, IAAtB, EAAyB, CACrB, MA
AA, EAAM, KAAK, GACX, EAAM, KAAK, +BAEX, EACF, EAAI, kBAaKb, EAAO, EAAI, wBAK9B, OAJc, MAAjB,
KAAK, WACF, KAAA, SAAW, KAAK, GAAG, aAAa, EAAI, mBAGpC, IAAC, KAAK, SACrB, CACC, MAAA, EAAM,
KAAK, +BAEX, EACF, EAAI, kBAaKb, EAAO, EAAI, 4BAK9B, OAJc, MAAjB, KAAK, WACF, KAAA, SAAW, KAA
K, GAAG, aAAa, EAAI, mBAGpC, IAAC, KAAK, UAI9B, UAAU, GACD, OAAA, IAAI, QAAc, IACIB, KAAA, cAAc, IA
AM, EAAa, gBAAiB, IAAM, OAMjE, YAEQ, MAAA, EAAQ, EAAqB, KAAK, YAA Y, IAAI, GAAK, EAAE, WAC1D, I
AAA, IAAI, EAAI, EAAG, GAAK, IAAS, EAAG, CACzB, MAAA, UAAC, GAAa, KAAK, YAA Y, GACrC, IAEG, KAA
A, YAAc, KAAK, YAA Y, MAAM, EAAQ, GAG5C, cAAc, EAAyB, GACxC, KAAA, YAA Y, KAAK, CAAC, SAAA, EA
AU, UAAA, IAC7B, KAAK, YAA Y, OAAS, GAKzB, EAAA, KAAA, YAA Y, KACV, KAAA, YAE8B, IAA5B, KAAK, Y
AA Y, SAIpB, yBAAYb, GAC1B, KAAA, kBACL, EAAW, 8BACP, KAAK, GAAI, EAAS, KAAK, aACvB, KAAK, OAC
P, EAAW, oBAAoB, KAAK, IAIlhC, 6BACoB, MAAtB, KAAK, eACP, EAAW, 8BACP, KAAK, GAAI, KAAK, cAAe, K
AAK, aACIC, KAAK, OACP, EAAW, oBAAoB, KAAK, KAGtC, EAAW, kCAAKc, KAAK, GAAI, KAAK, aAIvD, qBA

CJ,EACA,GACG,KAAA,yBAAYB,GACxB,MAAA,EAAS,IAGR,OAFF,KAAA,6BAEE,EAGD,6BACJ,EAA8C,E
AC9C,GACG,KAAA,kBACC,MAAA,EAAC,KAAC,GACbB,EAAW,8BACP,EAAl,EAAGc,KAAC,aACzC,KAA
K,OACP,EAAW,oBAAoB,GAESB,KAAA,cAAgB,EACrB,EAAW,aAAa,EAAl,IAAM,EAAG,SAAS,EAAG,EA
G,EAAO,IAC3D,EAAW,aAAa,EAAl,IAAM,EAAG,QAAQ,EAAG,EAAG,EAAO,IAGpD,iCACJ,EAAW,EAAW,
EAAe,GACIC,KAAA,kBACL,EAAW,aACP,KAAC,GAAl,IAAM,KAAC,GAAG,QAAQ,EAAG,EAAG,EAAO,I
AG1C,kBACF,GAAA,KAAC,SACD,MAAA,IAAl,MAAM,2CAIZ,mBACF,GAAGB,MAAhB,KAAC,QACD,MA
AA,IAAl,MAAM,qCAgBhB,SAAU,EAAGb,GAC/B,IAAA,EAAl,EACD,KAAA,EAAl,EAAl,SAAU,EAAG,CAEt
B,IADW,EAAl,KAejB,MAGG,OAAA,EAAl,EACZ,QAAA,aAAA;;ACgvBA,aAAA,OAAA,eAAA,QAAA,aAAA
,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,kBAAA,EA1CD,IAAA,EAAA,QAAA,yBAEA,EAAA,QAA
A,kBACA,EAAA,EAAA,QAAA,2BAm1CC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,I
AAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,
OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EA
A,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EA
A,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAA
A,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,
OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA1CD,MAAM,iBAAC,GAoB,EA3B,aAi
BM,SAAU,EACZ,EAAYB,EAawB,EACjD,GACI,MAAA,EA2B,GACjC,EAAW,QAAQ,IACX,MAAA,EAAO,
EAAK,KAAA,cAAc,EAAE,UAAU,cAGxC,EAAE,UAAU,UACd,EAae,sBACM,EAAE,OAAO,EAAO,MAAQ,K
AAU,QAeVd,EAae,0BAA0B,EAae,SAC3C,EAae,0BAA0B,EAae,YAGzC,MAAA,EAAGb,EAae,KAAC,MA
EzC,EACF,EACK,IAAl,GAAC,EAawB,EAAG,EAaa,IACjD,KAAC,MACR,EAac,EAAY,SAC1B,GAO,EA
b,EAAA,sBACM,EA4B,EA6B,GAC3D,IAAA,EACA,EACA,EAae,EAAGb,GAoB5B,OAlBH,EAAY,UACd,E
ACI,EA+B,EAAY,aAAc,GAC7D,EA+B,EA8B,KAe7D,EACI,EAAYB,EAAY,aAAc,GACvD,EA+B,EA2
B,IAGxD,IACF,GAAGb,GAGH,CACb,EAac,EA2B,EACzC,EAoB,EAuB,EAAsB,GACjE,KAAC,MAIT,SA
AS,EAAGb,GACtB,MAAA,EAAG,EAAG,UAAU,aACvB,OAAA,EAAM,QACP,KAAA,EACI,OAAA,EAaIB,G
ACrB,KAAA,EACI,OAAA,EAaa,GACjB,KAAA,EACI,OAAA,EAaa,GACjB,KAAA,EACI,OAAA,EAaa,GACj
B,KAAA,EACI,OAAA,EAaa,GACjB,KAAA,EACI,OAAA,EAaa,GACjB,KAAA,EACI,OAAA,EAaa,GACtB,Q
ACQ,MAAA,IAAl,SACH,EAAM,0BACT,0BAIV,SAAS,EA2B,GAe1B,OADM,EAAO,UAAU,aACjB,QACP,K
AAA,EACI,OAAA,EAuB,GAC3B,KAAA,EACI,OAAA,EAAMb,GACvB,KAAA,EACI,OAAA,EAAMb,GACv
B,KAAA,EACI,OAAA,EAAMb,GAC5B,QACS,OAAA,EAAMb,IAIhC,SAAS,EACL,EAAMb,EACnB,GAAGb,
GACnB,IAAA,EAAM,GAER,GADE,EACK,EA2B,GAe3B,EAAGb,GAGxB,MAAA,EAuB,EAAG,UAAU,aAC
3B,EAAW,EAaa,aAQvB,OAPH,EAAG,QAAU,EAAS,SAE3B,GADE,EACK,EA+B,EAAG,GAeVc,EAAYB,E
AAQ,IAGrC,EAGT,SAAS,EACL,EAoB,GACd,OAAA,EAAS,QACV,KAAA,EACI,OAAA,IACJ,KAAA,EACI,
OAAA,EAawB,EAAsB,GACID,KAAA,EACI,OAAA,EAawB,EA8B,GAC1D,KAAA,EACI,OAAA,EACH,EA
AsC,GAC5C,QACS,OAAA,EAawB,EAuB,IAI/C,SAAS,EACL,EAoB,GACd,OAAA,EAAS,QACV,KAAA,EA
CI,OAAA,IACJ,KAAA,EACI,OAAA,EAakB,EAAsB,GAC5C,KAAA,EACI,OAAA,EAakB,EA8B,GACpD,KA
AA,EACI,OAAA,EACH,EAAsC,GACvC,KAAA,EACI,OAAA,EACH,EA8C,GAC/C,KAAA,EACI,OAAA,EAC
H,EAAsD,GACvD,KAAA,EACI,OAAA,EACH,EACA,GACN,QACQ,MAAA,IAAl,SACH,EAAS,kDAItB,SAAS,
EA6B,GAC7B,sFAEM,EAAC,8CAKpB,SAAS,EA2B,GAC3B,kDAED,EAAC,0CAKb,SAAS,EA8B,GAC9B
,iDAED,EAAC,2BAKb,SAAS,EAAGb,GA6DhB,SA5DkB,EAAC,sGAI1B,EAAC,iCACL,EAAC,wTAuBL,EA
K,yBACL,EAAC,yBACL,EAAC,2IBAYBL,UACA,UACA,QAMN,MAAM,EAoB,kBAcpB,EAoB,qTAUpB,E
AAoB,2VAWpB,EAuB,sWAa7B,SAAS,IACA,MAAA,4DAOT,SAAS,EACL,EAaIB,GACb,MAAA,EACF,CA
AC,KAAC,KAAC,EAAS,GAAC,GAAl,KAAC,KAAC,EAAS,GAAC,IACrD,OAAsB,IAAtB,EAae,2EAGiB,EA
Ae,wBAKzB,IAAtB,EAae,2EAGiB,EAae,wIAQjB,EAae,OAAO,EAae,yCACxC,EAae,+BAKhD,SAAS,EACL,
EAaIB,GACf,OAAgB,IAAhB,EAAS,uEAGmB,EAAS,wBAIrB,IAAhB,EAAS,uEAGmB,EAAS,wIAOP,EAAS,O
AAO,EAAS,oCACjC,EAAS,8BAKrC,SAAS,EACL,EAaiC,GAC7B,MAAA,EACF,CAAC,KAAC,KAAC,EAAS,
GAAC,GAAl,KAAC,KAAC,EAAS,GAAC,IACnD,EAAGb,KAAC,KAAC,EAAM,GAAC,GAC1C,EAAGb,EA
AGb,KAAC,KAAC,EAAM,GAAC,GAeZD,wHAG2B,EAae,OAAO,EAae,yCACxC,EAae,6CAExB,0BACH,oCA
EQ,kCACD,qDAO5B,SAAS,EACL,EAaiC,GAC7B,MAAA,EACF,EAAY,mCAAmC,CAAC,IAAC,IAAC,KAA

M,GAE7D,wHAG2B,EAAS,OAAO,EAAS,yCAC5B,EAAS,2BACIC,6CAMR,SAAS,EACL,EAAiB,GACb,MAA
A,EACF,CAAC,KAACK,KAACK,EAAS,GAACK,GAAI,KAACK,KAACK,EAAS,GAACK,IAEnD,EAAqB,KAACK,KAACK
,EAAM,EAAM,OAAS,GAACK,GACzD,EACF,EAAqB,KAACK,KAACK,EAAM,EAAM,OAAS,GAACK,GACzD,IAA
A,EAAiB,EACjB,EAAU,GACV,EAAS,UAER,IAAA,IAAI,EAAI,EAAG,EAAI,EAAM,OAAS,EAAG,IAEpC,kB
ACS,eAFT,GAaKB,EAAM,EAAM,OAAS,EAAI,wBAG7B,OAAO,WACjB,EACJ,MAAa,MAAQ,EAGhB,mBAC
C,EAAM,6GAEoB,EA Ae,OAAO,EA Ae,yCACxC,EA Ae,6BAExC,8BAEgB,0BACH,oCAEQ,kCACD,+BAET,EA
AM,UAAU,iBAKnC,SAAS,EACL,EACA,GACI,MAAA,EA AyB,EAAY,mCACvC,CAAC,IAAK,IAAK,IAAK,M
AAO,GAEPB,mGAGM,EAAS,OAAO,EAAS,yCACP,EAAS,2BACIC,iDAMR,SAAS,EACL,EACA,GACI,MAAA
,EA AyB,EAAY,mCACvC,CAAC,IAAK,IAAK,IAAK,KAAM,MAAO,GAE1B,0FAEyC,EAAS,qCAC5B,EAAS,2
CAEP,EAAS,6BAEIC,yFAQR,SAAS,EACL,EACA,GACI,MAAA,EA AyB,EAAY,mCACvC,CAAC,IAAK,IAAK,
IAAK,KAAM,KAAM,MAAO,GA EhC,mGAGM,EAAS,OAAO,EAAS,yCACP,EAAS,6BAEIC,yFAQR,SAAS,EA
CL,EA AyB,GACrB,MAAA,EACF,CAAC,KAACK,KAACK,EAAS,GAACK,GAAI,KAACK,KAACK,EAAS,GAACK,IAC
rD,GAAA,EAACK,KAAA,YAAY,EAAO,GACnB,wFAEmC,EA Ae,OACrD,EA Ae,uBAMf,MAAA,EA AqB,KAACK,
KAACK,EAAM,GAACK,GAWzC,wHAG2B,EA Ae,OAAO,EA Ae,2CAExC,EA Ae,gDACnB,kCACD,kDAO5B,SAA
S,EACL,EA AyB,GACvB,OAAA,EAACK,KAAA,YAAY,EAAO,iFAGY,EAAS,OAAO,EAAS,uBAIhD,IAAb,EAAM,
2HAI0B,EAAS,OAAO,EAAS,2CAC5B,EAAS,mEAKzB,IAAb,EAAM,2HAI0B,EAAS,OAAO,EAAS,2CAC5B
,EAAS,qLAQR,EAAS,OAAO,EAAS,yCAC5B,EAAS,2CACIB,EAAM,kCACF,EAAM,4CAMIC,SAAS,EA AyB,G
ACzB,eAAS,IAGIB,SAAS,EA AuB,GACxB,MAAA,EAAU,EAAU,KAGnB,oBAFU,MAAQ,EAAQ,OAAO,GAA
G,cAAgB,EAAQ,MAAM,yBAC5D,EAAb,EAAA,sBAGkB,aAAa,yBAKjC,SAAS,EAAiB,GACIB,MAAA,EAAU,
EAAU,KACpB,EA AW,MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAAM,GACrE,GAAA,EAAU,UAAU,UA
Cf,eAAS,eAAsB,MAEIC,MAAC,EAAS,GA AW,EAAU,UAAU,SAC3C,GAAY,IAAZ,GAA6B,IAAZ,EACZ,uBA
CG,uCACiB,6BAKvB,MAAC,EAAO,GAAS,EAAU,UAAU,SAEPc,qBACG,qCACiB,MAAU,MAHtB,EA AyB,o
CAIb,qBAK7B,SAAS,EA AmB,GACpB,MAAA,EAAU,EAAU,KACpB,EA AW,MAAQ,EAAQ,OAAO,GAAG,cA
AgB,EAAQ,MAAM,GACnE,EA AW,EAAU,UAAU,SAC/B,EACF,CAAC,KAACK,KAACK,EAAS,GAACK,GAAI,K
AAK,KAACK,EAAS,GAACK,IACnD,GAAO,EAAb,EAAA,sBAEO,oBACE,4DAED,EA Ae,OAAO,EA Ae,6BACHC,
EAAK,aAAa,qBAKjC,SAAS,EAAa,GACd,MAAA,EAAU,EAAU,KACpB,EA AW,MAAQ,EAAQ,OAAO,GAAG,
cAAgB,EAAQ,MAAM,GA ErE,GAAA,EAAU,UAAU,UA Ef,uBACG,2BACJ,EAAKB,oBAKpB,MAAA,EA AW,E
AAU,UAAU,SAC/B,EAAQ,EAAS,GACjB,EAAQ,EAAS,GA EnB,GAAU,IAAV,GAAyB,IAAV,EACV,uBACG,g
DACiB,6BAIvB,MAAA,EAAS,EA AyB,GACpC,OAAU,IAAV,mBAEQ,8DAC+B,eAAoB,uCACIC,yBAIf,IAAV,
mBAEQ,yDAC0B,eAAoB,4CAC7B,wCAKnB,8CACiB,MAAU,cAAKB,mCAC5B,qBAK7B,SAAS,EA AmB,GAC
pB,MAAA,EAAQ,EAAU,UAAU,aAC5B,EAAU,EAAU,KACpB,EA AW,MAAQ,EAAQ,OAAO,GAAG,cAAgB,E
AAQ,MAAM,GACnE,EA AW,EAAU,UAAU,SAE/B,EAAU,EAAS,GACnB,EAAU,EAAS,GACnB,GAAO,EAAb,
EAAA,sBACI,GAAY,MAAZ,GAAoB,EAAK,KAAA,YAAY,EAAO,GACvC,sBACE,6EACwC,QAAC,2BAEID,E
AAK,aAAa,yBAK3B,MAAA,EACF,CAAC,KAACK,KAACK,EAAS,GAACK,GAAI,KAACK,KAACK,EAAS,GAACK,IA
GID,oBACE,yDAH Y,KAACK,KAACK,EAAM,GAACK,OAIM,EA Ae,OAC3D,EA Ae,gCACN,EAAK,aAAa,qBAKjC,
SAAS,EAAa,GACd,MAAA,EAAQ,EAAU,UAAU,aAC5B,EAAU,EAAU,KACpB,EA AW,MAAQ,EAAQ,OAAO,
GAAG,cAAgB,EAAQ,MAAM,GACnE,EA AW,EAAU,UAAU,SAEjC,GAAY,MAAZ,GAAoB,EAAK,KAAA,YA
AY,EAAO,GA AW,CACnD,MAAA,EAAU,EAAS,GA EIB,qBACC,2EAFQ,EAAS,SAGoC,qCACpC,qBAK7B,MA
AA,SAAC,EAAD,SA AW,GAAY,EAAK,KAAA,aAAa,GACzC,EA AgB,EACIB,GAAA,EA Ac,OAAS,EAAM,OA
AQ,CACjC,MACA,EAAS,CAAC,MAAO,OACHb,iBACH,EAHiB,EAAiB,EA AW,oBAIvC,yCACG,KAAY,EA
KB,EAAQ,sBAKjD,GAAA,EAAU,UAAU,UA Ef,uBACG,6EACuC,EAAM,sBACjD,EAAKB,oBAKpB,MAAA,EA
AU,EAAS,GACnB,EAAU,EAAS,GACnB,EAAS,EA AyB,GACpC,OAA Y,IAAZ,iBAGM,iEAC6B,YAAiB,EAAM,
qDACzB,0CACV,kCAMnB,yHA Ec,EAAM,cA
Ac,gCACjB,MAAY,wCACZ,iBAK3B,SAAS,EA AmB,GACpB,MAAA,EAAQ,EAAU,UAAU,aAC5B,EAAU,EA
AU,KACpB,EA AW,MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAAM,GACnE,EA AW,EAAU,UAAU,SAC/B
,EACF,CAAC,KAACK,KAACK,EAAS,GAACK,GAAI,KAACK,KAACK,EAAS,GAACK,IAErD,GAAA,IAAb,EAAM,GA
AU,CACZ,MACA,EA AW,CAAC,EAAG,GA Ef,EAAS,CAAC,IAAK,MAAO,OACrB,mBACD,EA He,EA AiB,EA
FhB,EAAM,MAAM,sBAMvB,kDACI,KAAY,EAAKB,EAAQ,0BAKjD,MAAA,EAAU,EA Ae,GACzB,EAAU,EA

Ae,GAEzB,EAAe,KAAK,KAAK,EAAM,GAAG,GAInC,oBACE,0EAED,MAAY,MANE,EAAe,KAAK,KAAK,E
AAM,GAAG,OAMR,mCALrC,EAAb,EAAA,sBAMkB,aAAa,qBAKjC,SAAS,EAAa,GACd,MAAA,EAAQ,EAA
U,UAAU,aAC5B,EAAU,EAAU,KACpB,EAAW,MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAAM,GACnE,E
AAU,EAAM,GAAG,EAAM,GAC3B,EAAU,EAAM,IAEhB,SAAC,EAAD,SAAW,GAAY,EAAK,KAAA,aAAa,G
ACzC,EAAgB,EACIB,GAAA,EAAC,OAAS,EAAM,OAAQ,CACjC,MACA,EAAS,CAAC,MAAO,MAAO,SACvB
,mBACD,EAHe,EAAiB,EAAW,sBAIrC,sDACG,KAAy,EAakB,EAAQ,0BAKnD,GAAA,EAAU,UAAU,UAEf,u
BACG,0HAEmB,MAAY,qBACnC,EAakB,oBAKpB,MAAA,EAAW,EAAU,UAAU,SAC/B,EAAU,EAAS,GACn
B,EAAU,EAAS,GACnB,EAAa,EAAU,UAAU,WACnC,OAAA,IAAY,GAAYB,MAAd,qBAGb,2HAEoC,yFAExB,
QAAc,yCACT,6BAK3B,IAAY,GAAYB,MAAd,iBAGjB,iFACKc,EAAM,kGAEC,QAAc,qCACtC,sCAOf,4IAEc,a
AAmB,eAJ9B,EAAYB,qCAKX,MAAY,4CACZ,uBAK/B,SAAS,EAAMB,GACpB,MAAA,EAAQ,EAAU,UAAU,a
AC5B,EAAO,EAAM,OACb,EAAU,EAAU,KACpB,EAAW,MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAA
M,GACnE,EAAW,EAAU,UAAU,SAC/B,EACF,CAAC,KAAK,KAAK,EAAS,GAAG,GAAL,KAAK,KAAK,EAA
S,GAAG,IACnD,EAAU,EAAe,GACzB,EAAU,EAAe,GAEzB,EAAe,KAAK,KAAK,EAAM,EAAO,GAAG,GAC7
C,IAAA,EAAGB,EAAe,KAAK,KAAK,EAAM,EAAO,GAAG,GAC3D,EAAS,0BACT,SA Ae,mBAA+B,gBAC7C,I
AAA,IAAI,EAAL,EAAG,EAAL,EAAO,EAAG,IAC5B,UAAiB,MAAQ,EAEzB,MAAY,OADZ,GAAiB,EAAM,EA
AO,EAAL,QACM,EAGnC,oBACE,KAAy,2BACH,gCACO,uCACO,0DACmB,MAAY,sBANID,EAAb,EAAA,sB
AOkB,aAAa,qBAKjC,SAAS,EAAa,GACd,MAAA,EAAQ,EAAU,UAAU,aAC5B,EAAU,EAAU,KACpB,EAAW,
MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAAM,GACnE,EAAU,EAAM,GACHB,EAAU,EAAM,GAAG,EA
CrB,EAAU,EAAM,GAAG,GAERB,SAAC,EAAD,SAAW,GAAY,EAAK,KAAA,aAAa,GAC3C,GAAA,EAAS,OA
AS,EAAM,OAAQ,CAC5B,MACA,EAAS,CAAC,MAAO,MAAO,QAAS,UACHC,iBACH,EAHiB,EAAiB,EAAW,
oBAIvC,gEACG,KAAy,EAakB,EAAQ,sBAKjD,GAAA,EAAU,UAAU,UAEf,uBACG,8IAEmB,MAAY,MAAY,
qBAC/C,EAakB,oBAKpB,MAAA,EAAa,EAAU,UAAU,WACjC,EAAW,EAAU,UAAU,SAC/B,EAAU,EAAS,G
ACnB,EAAU,EAAS,GAERB,OAAA,IAAY,GAAYB,MAAd,mBAGf,yKAIS,MAAY,qFAET,QAAc,uCACT,yBAIz
B,IAAY,GAAYB,MAAd,mBAGf,gIAEkB,EAAM,GAAG,EAAM,OAAO,EAAM,0HAGrC,QAAc,uCACR,wCAO
nB,oJAEc,aAAmB,0BACzB,2CACs,MAAY,cANxB,EAAYB,oCAOb,qBAK7B,SAAS,EAAa,GACd,MAAA,EAA
Q,EAAU,UAAU,aAC5B,EAAU,EAAU,KACpB,EAAW,MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAAM,G
ACnE,EAAU,EAAM,GACHB,EAAU,EAAM,GAAG,EACrB,EAAU,EAAM,GAAG,EACrB,EAAU,EAAM,GAAG
K,GAERB,SAAC,EAAD,SAAW,GAAY,EAAK,KAAA,aAAa,GAC3C,GAAA,EAAS,OAAS,EAAM,OAAQ,CAC5
B,MACA,EAAS,CAAC,MAAO,MAAO,QAAS,SAAU,UAC1C,iBACH,EAHiB,EAAiB,EAAW,oBAIvC,4EACG,
KAAy,EAakB,EAAQ,sBAKjD,GAAA,EAAU,UAAU,UAEf,uBACG,kJAGG,MAAY,MAAY,MAAY,qCAE3C,E
AAkB,oBAKpB,MAAA,EAAa,EAAU,UAAU,WACjC,EAAW,EAAU,UAAU,SAC/B,EAAU,EAAS,GACnB,EAA
U,EAAS,GAERB,OAAA,IAAY,GAAYB,MAAd,mBAGf,gLAGkB,MAAY,MAAY,qFAE9B,QAAc,uCACT,yBAK
zB,IAAY,GAAYB,MAAd,mBAGf,iJAGG,EAAM,GAAG,EAAM,GAAG,EAAM,uBAC5B,EAAM,GAAG,EAAM,
OAAO,EAAM,iHAGtB,QAAc,uCACR,wCAOnB,gKAEc,aAAmB,eAAqB,2BAC7C,gBALJ,EAAYB,mCAMb,MA
AY,0CACZ,qBAK7B,SAAS,EAAa,GACd,MAAA,EAAQ,EAAU,UAAU,aAC5B,EAAU,EAAU,KACpB,EAAW,
MAAQ,EAAQ,OAAO,GAAG,cAAgB,EAAQ,MAAM,IAEnE,SAAC,EAAD,SAAW,GAAY,EAAK,KAAA,aAAa,
GAC3C,GAAA,EAAS,OAAS,EAAM,OAAQ,CAC5B,MACA,EAAS,CAAC,MAAO,MAAO,QAAS,SAAU,SAAU
,UACpD,iBACH,EAHiB,EAAiB,EAAW,oBAIvC,6GAEG,KAAy,EAakB,EAAQ,sBAK/C,MAAA,EAAU,EAAM
,GACHB,EAAU,EAAM,GAAG,EACrB,EAAU,EAAM,GAAG,EACrB,EAAU,EAAM,GAAG,EACrB,EAAU,EA
M,GAAG,EAEvB,GAAA,EAAU,UAAU,UAEf,uBACG,qLAIG,MAAY,MAAY,MAAY,8EAGIC,qBACT,EAakB,
oBAKpB,MAAA,EAAa,EAAU,UAAU,WACjC,EAAW,EAAU,UAAU,SAC/B,EAAU,EAAS,GACnB,EAAU,EA
AS,GACrB,OAAA,IAAY,GAAYB,MAAd,mBAGf,kMAIG,MAAY,MAAY,MAAY,kHAG3B,QAAc,uCACT,yBA
IzB,IAAY,GAAYB,MAAd,mBAGf,sKAGG,EAAM,GAAG,EAAM,GAAG,EAAM,GAAG,EAAM,uBACvC,EAA
M,GAAG,EAAM,GAAG,EAAM,uBAC5B,EAAM,GAAG,EAAM,uBACjB,EAAM,8HAGE,QAAc,uCACR,wCA
MnB,+LAGc,aAAmB,eAAqB,2BAC7C,gBAAsB,gBAN1B,EAAYB,mCAOb,MAAY,0CACZ,qBAK7B,SAAS,EA
AkB,GACnB,MAAA,EAAU,EAAU,KACpB,EAAS,EAAK,KAAA,cAAc,EAAU,UAAU,cAEID,OAAA,EAAS,YA
CM,kCAGK,sDAET,4BAMjB,SAAS,EACL,EAAsB,GACIB,MAAA,EAAU,EAAU,KACpB,EAAiB,EAAQ,OAA
O,GAAG,cAAgB,EAAQ,MAAM,GACjE,EAAW,MAAQ,EAAiB,cACpC,EAAS,EAAU,UAAU,aAAa,OAC1C,EA

AU,EAAa,aAAa,OAEPc,EAAgB,EACIB,EAAU,UAAU,aAAc,EAAa,cAE7C,EAAO,EAAkB,GACzB,EAAW,EA
AU,EACvB,IAAA,EACE,MAAA,EAAS,CAAC,IAAK,IAAK,IAAK,IAAK,IAAK,KAGvC,EADa,IAAX,EACc,G
ACP,EAAU,GAAG,EAAC,QAAU,EACHc,cAGZ,EAAC,IAAI,aAAe,EAAO,EAAI,WACvC,KAAK,MAEZ,IAAA,
EAAwB,GAElB,EADE,EAAU,GAAG,EAAS,EACF,SAEA,EAAU,UAAU,aACf,IAAI,CAAC,EAAG,cAAgB,EA
AO,EAAI,MACnC,KAAK,MAGhC,IAAA,EAAS,sBACP,MACA,EAA2B,IADIB,EAAK,KAAA,cAAc,EAAU,UA
AU,cAGhD,EAA6B,IADnB,EAAK,KAAA,cAAc,EAAa,cAG5C,GAAW,IAAX,GAaIB,GAaKB,GAhC,GAaI,IA
AkB,EAzB,EADE,IAAZ,EACO,uEAIA,qDAIN,GAaI,EAAC,OAAQ,CACzB,MAAA,EAAO,EAAS,EACHB,EA
AO,EAAS,EAElB,EAAC,QAAQ,IAAS,GAAG,EAAC,QAAQ,IAAS,EACrE,EAAS,8BACA,EAAC,QAAQ,IAAS,E
ACxC,EAAS,2EAEA,EAAC,QAAQ,IAAS,IACxC,EAAS,sDAvBX,EAAS,6DA2BJ,oBACE,gBACH,wCACA,kCA
CsB,KAAkB,cACxC,eAKR,SAAS,EACL,EAASB,GACIB,MAAA,EAAU,EAAU,KACpB,EAAiB,EAAQ,OAAO,
GAAG,cAAgB,EAAQ,MAAM,GACjE,EAAW,MAAQ,EAAiB,cACpC,EAAC,EAAa,SAC3B,EAAa,EAAU,UAAU
,SACjC,EAAS,EAAU,UAAU,aAAa,OAC1C,EAAU,EAAa,aAAa,OAETC,IAAC,EAAU,UAAU,WAAa,IAAW,GA
CX,MAAIC,EAAU,UAAU,YACpB,EAAK,KAAA,YAAY,EAAY,GACxB,uBACG,uCACiB,+BAKvB,MAAA,EA
AO,EAAkB,GACzB,EAAGB,EACIB,EAAU,UAAU,aAAc,EAAa,cAC7C,EAAW,EAAU,EACvB,IAAA,EACE,M
AAA,EAAS,CAAC,IAAK,IAAK,IAAK,IAAK,IAAK,KAWrC,IAAA,EAAwB,GASrB,qBACG,gBACJ,wCAnBJ,E
ADa,IAAX,EACc,GACP,EAAU,GAAG,EAAC,QAAU,EACHc,cAGZ,EAAC,IAAI,aAAe,EAAO,EAAI,WACvC,K
AAK,0BAeA,KAXd,EADE,EAAU,GAAG,EAAS,EACF,SAEA,EAAU,UAAU,aACf,IAAI,CAAC,EAAG,cAAgB,
EAAO,EAAI,MACnC,KAAK,qBAyhC,SAAU,EAAkB,GAC5B,GAAA,GAAQ,EACH,MAAA,MACF,GAAa,IAA
T,EACF,MAAA,QACF,GAAa,IAAT,EACF,MAAA,QACF,GAAa,IAAT,EACF,MAAA,QACF,GAAa,IAAT,EAC
F,MAAA,QACF,GAAa,IAAT,EACF,MAAA,QAED,MAAA,sBAASB,0BAKhC,SAAS,EACL,EAAMB,GAef,MA
AA,EAA0B,KAAK,MAAM,KAAK,UAAU,IAEnD,OADP,EAAa,UAAU,aAAe,EAC/B,EAGT,SAAS,EAAkB,EA
AkB,GACpC,OAAA,EAAS,IAAI,GAAG,EAAO,IAAI,KAAK;;ACznC1C,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,WAAA,EAAA,QAAA,cAAA,EA5ND,IAAA,EAAA,QAAA,yBA
GA,EAAA,EAAA,QAAA,sBAyNC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,Q
AAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,E
AAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAA
A,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAA
A,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAA
A,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,
EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA9KK,SAAU,EACZ,EAAqB,EAAuB,EAC5C,GACI,
MAAA,EAAW,EAAQ,SACnB,EAA0B,EAAO,IAAI,CAAC,EAAO,KAC3C,MAAA,EAAuB,CAC3B,aAAc,EAA
M,MACpB,SAAU,EAAM,UAAAY,KAAO,EAAM,QAAQ,SACjD,UAAW,EAAM,UACjB,UAAU,EAAM,WAAoB
,EAAM,QAAQ,SACID,WAAAY,MAMP,OAJc,MAAjB,EAAM,SAAO,MAAvB,EAAM,QAAQ,OACvC,EAAM,Q
AAQ,MAAM,WAAa,IACnC,EAAU,WAAa,EAAM,QAAQ,MAAM,YAEtC,CAAC,KAAm,EAAQ,cAAc,GAaI,U
AAA,KAEPc,EAAe,EAAW,IAAI,GAAG,EAEE,WACrC,EAA0B,CAC9B,aAAc,EAAO,MACrB,SAAU,EAAO,Q
AAQ,SACzB,WAAW,EACX,SAAU,EAAO,QAAQ,SACzB,WAAAY,MAER,EAAS,EAAGB,WAC3B,EAAY,EA
c,EAAU,EAAQ,cAE1C,EAAe,EAAM,cAAc,GAGrC,IAAA,EAA+B,KAC7B,MAAA,EAAS,EAAM,mBAAMB,E
AAc,OAAO,GACpB,KAArC,EAAM,EAAA,OAAA,UAAU,mBACIB,EAAS,EAAM,mBAAMB,EAAC,YAAY,IAI
xD,MAAA,EAA2D,GAC5D,IAAA,IAAI,EAAL,EAAG,EAAL,EAAQ,cAAc,OAAQ,IAAK,CAC/C,MAAA,EAAU,
EAAQ,cAAc,GACHc,GAAC,EACpB,EAAiB,GACb,EAAM,mBAAMB,EAAC,EAAS,GACpD,WAA0B,KACtB,E
AAM,mBAAMB,WAAuB,IAAW,GAG1D,MAAA,CACL,QAAA,EACA,OAAA,EACA,aAAA,EACA,iBAAA,EA
CA,aAAA,EACA,aAAA,EACA,OAAA,EACA,OAAA,GAIJ,SAAS,EACL,EAAYB,GACvB,GAAA,EAAW,SA
W,EAAO,OACzB,MAAA,kCAC0B,EAAW,2CACIB,EAAO,iBAG1C,EAAW,QAAQ,CAAC,EAAG,KACf,MAAA
,EAAS,EAEE,aACX,EAAQ,EAAO,GACf,EAAS,EAAM,MAEjB,IAAC,EAAK,KAAA,YAAY,EAAQ,GACtB,M
AAA,MACF,8EAC4B,SAAC,gBAG5C,GAAA,EAEE,WAAa,EAAM,UACvB,OAGI,MAAA,EAAY,EAEE,SACd,
EAAY,EAAM,UAAAY,KAAO,EAAM,QAAQ,SACrD,IAAC,EAAK,KAAA,YAAY,EAAW,GACzB,MAAA,MAC
F,qFACwB,SAAiB,kBAK7C,SAAU,EACZ,EAAqB,EAAqB,EAC1C,EACA,GAef,EAAYB,EAAO,aAAc,GAC9C,
EAAYB,CAAC,EAAO,cAAe,CAAC,IAE3C,MAAA,EAAS,EAAO,QAAQ,QACxB,EAAC,EAAO,QAAQ,SAC/B,E

AAO,QAAQ,SACjB,EAAM,6BAA6B,EAAQ,EAA Y,GA AI,EAAY,IAEvE,EAAM,uBAAuB,EAAQ,EAA Y,GA AI,EAAY,IAEnE,EAAM,WAAW,EAAO,cAGiB,KAArC,EAAM,EAAA,OAAA,UAAU,kBACI,OAAIB,EAAO,QAC T,EAAM,GAAG,UAAU,EAAO,OAAQ,EAAA,GAGhB,OAAIB,EAAO,QACT,EAAM,GAAG,UAAU,EAAO,OA AQ,KAIpC,EAAO,QAAQ,CAAC,EAAO,KACf,MAAA,EAAU,EAAO,QAAQ,cAAc,GACvC,EAAS,EAAO,iBAA iB,GACjC,EAAe,EAAO,0BAA0B,KA EID,GAAU,MAAV,EAKA,GAAA,EAAM,UAEJ,GAAA,EAAK,KAAA,cA Ac,EAAM,OAAS,EACpC,EAAM,GAAG,UAAU,EAAQ,EAAM,cAAc,QAC1C,CACD,IAAA,EAAO,EAAM,cAC X,aAAgB,eACpB,EAAO,IAAI,aAAa,IAE1B,EAAM,GAAG,WAAW,EAAQ,QAML,MAAvB,EAAM,QAAQ,OA AiC,MAAhB,GACjC,EAAM,GAAG,UAAU,EAAC,EAAM,QAAQ,MAAM,YAGvD,EAAM,sBAAsB,EAAM,QA AQ,QAAS,EAAQ,KAG1C,MAAf,GACF,EAA Y,EAAO,EAAO,cAE5B,EAAM,iBAGF,SAAU,EACZ,EAAuB,EA AsB,GAC3C,IAAA,EAAY,GACHB,EAAO,OAAO,GAAQ,QAAQ,IACtB,MAAA,EAAYB,MAAb,EAAE,SAAsC, MAAnB,EAAE,QAAQ,OAC7C,EAAE,QAAQ,MAAM,WAAa,EAC3B,EA AW,EAAE,UAA Y,UAA Y,EAAE,QA AQ,SACrD,MAAgB,EAAE,SAAS,KAAY,MAEnC,MAAA,EAAC,EAAQ,SACxB,IAAA,EAAM,EAAQ,YAA Y,K AGvB,OADP,GAAO,IAAM,EAAY,IAAM;;AC3MhC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA, QAAA,iBAAA,EafD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAAiC,GAC9B,MAAM,QAAQ,KACjB,EAA S,CAAC,IAEZ,EAAO,QAAQ,IACJ,MAAL,GACG,EAAA,KAAA,OACW,cAAZ,EAAE,MACF,OACI;;ACcP,aA AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAA,QAAA,UAAA,QAAA,SAAA,EA1B P,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eAEM,SAAU,EAAC,GACtB,MAAA,EAAC,IAAI,aAAa,EAAK,Q ACtC,IAAA,IAAI,EAAL,EAAG,EAAL,EAAK,SAAU,EACjC,EAAa,GA AK,KA AK,IAAI,EAAK,IAE3B,OAAA,E AGF,MAAM,EAAO,IACZ,MAAA,EAAC,GA AK,EAAK,OACX,EAAa,EAAK,SAEP,EAAA,EAAA,kBAAA,EA AG,OA EhB,IAAA,EAAC,IAAI,aAAa,EAAK,KAAA,cAAc,EAAE,QAIID,OAFP,EAAe,EADA,EA AW,KA AK,IA AI,EAAE,QAAQ,QAGtC,EA AW,WAAW,EAAC,EAAE,MAAO,YAG/C,QAAA,IAAA,EAAA,MAAM,EAA0B,C ACrC,WAA Y,EADyB,IAErC,YAAa,MACb,WAA Y,GAHP,QAAA,UAAA;;ACyBN,aAAA,OAAA,eAAA,QAAA, aAAA,CAAA,OAAA,IAAA,QAAA,6BAAA,EAnDD,IAAA,EAAA,QAAA,yBAOM,SAAU,EAA6B,GAEPc,MA AA,CAAC,EAAkB,EAAkB,EACpC,EAAMb,KACnB,MAAA,EA AW,EAAa,aAAA,2BAA2B,EAAQ,GA E3D,EA Aa,EAAS,OACtB,EAAgB,EAAK,KAAA,eAAe,GACpC,EAAa,EAAK,KAAA,cAAc,GA EhC,EACF,EAAK,KAA A,uBAAuB,EAA0B,GAEPd,EAAQ,EAAO,OACf,EAAQ,EAAO,OAef,EA AW,EAAK,KAAA,eAAe,GAC/B,EA AW,EAAK,KAAA,eAAe,GA E/B,EA AiB,EAAa,aAAA,iBAAiB,EAAQ,GACvD,EA AiB,EAAa,aAAA,iBAAiB,EA AQ,GA EzD,GAAA,EAAe,OAAS,EAAe,SAAW,EAC/C,IAAA,IAAI,EAAL,EAAG,EAAL,EAAO,SAAU,EACnC,EA AO,GA AK,EAAG,EAAM,EAAL,EAAM,QAAS,EAAM,EAAL,EAAM,cAGrD,IAAA,IAAI,EAAL,EAAG,EAAL,E AAO,SAAU,EAAG,CACHC,MAAA,EAAM,EAAK,KAAA,WAAW,EAAG,EAAY,GA ErC,EAAO,EAAL,OAAO, GACxB,EAAe,QAAQ,GA AK,EAAK,GA AK,GACHC,MAAA,EAAS,EAAK,KAAA,WAAW,EAAM,EAAO,GA Et C,EAAO,EAAL,OAAO,GACxB,EAAe,QAAQ,GA AK,EAAK,GA AK,GACHC,MAAA,EAAS,EAAK,KAAA,WAA W,EAAM,EAAO,GA E5C,EAAO,GA AK,EAAG,EAAM,GAAS,EAAM,IAIjC,MAAA,CAAC,EAAQ;;ACtBb,aAA A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,QAAA,mBAAA,EA3BP,IAAA,EAA A,QAAA,yBAIM,SAAU,EAAQ,GA EhB,MAAA,OAAC,EAAD,QAAS,GA AW,GACpB,KAAC,EAAD,KAAO,G AAQ,EA Ef,EA AW,EAAQ,KA AK,IAAI,EAAK,QAAQ,OACzC,EA AW,EAAQ,KA AK,IAAI,EAAK,QAAQ,OA Ez C,EAAc,EAAQ,eAAe,EAAK,MAAO,aAYhD,OAVS,EAAQ,KA AK,IAAI,EAAY,QA KrC,mBAAqB,CAC3B,KA AM,EAAQ,eAAe,EAAK,MAAO,UAAW,GACpD,KAAM,EAAQ,eAAe,EAAK,MAAO,UAAW,IAG/C,EAGF,MA AM,EAA8B,CACzC,WAA Y,EAD6B,QA EzC,YAAa,MACb,WAA Y,GAHP,QAAA,cAAA;;ACJN,aAAA,OAAA,e AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,MAAA,EA vBD,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,s BAQM,SAAU,EACZ,EAAYB,EACzB,EAAkB,WACHB,GAAU,cAAV,EA AuB,CACnB,MAAA,EAAO,EAAM,E AAS,EAAO,WAC7B,EAAO,EAAM,EAAS,EAAO,WAE5B,OAAA,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC, KAAA,EAAM,KAAA,GAAO,QAAA,IAGIC,MAAA,EAAS,EAAK,KAAA,oBAAoB,EAAK,KAAA,cAAc,GAAQ ,GA E5D,OAAA,EAAQ,eAAe,EAAO,EAAO;;ACRvC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA, QAAA,SAAA,EAAA,QAAA,oBAAA,EADp,IAAA,EAAA,QAAA,yBAIM,SAAU,EACZ,GACI,MAAA,OAAC,E AAD,QAAS,GA AW,GACpB,EAAC,GA AK,EAIL,OAFP,EAAQ,OAAO,EAAE,QA EV,CAAC,OAAQ,EAAE,OA AQ,MAAO,EAAE,MAAO,MAAO,EAAE,OAG9C,MAAM,EAA+B,CAC1C,WAA Y,EAD8B,SAE1C,YAAa,MAC b,WAA Y,GAHP,QAAA,eAAA;;ACIA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,E

AAA,QAAA,gBAAA,EAIBP,IAAA,EAAA,QAAA,yBAIM,SAAU,EEAK,GAEB,MAAA,OAAC,EAAD,QAAS,G
AAW,GACpB,MAAC,GAAS,EAEV,EAAO,EAAQ,KAAK,IAAI,EAAM,QAAQ,mBAAmB,KACzD,EAAU,EAA
Q,KAAK,IAAI,EEAK,QAAQ,OAKvC,OAAA,EAAQ,eAAe,EEAK,MAAO,EEAK,MAAO,GAGjD,MAAM,EAA
2B,CACtC,WAAy,EAD0B,KAETC,YAAa,MACb,WAAy,GAHP,QAAA,WAAA;;ACuDA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,EAIEP,IAAA,EAAA,QAAA,yBAGA,
EAAA,QAAA,wBACA,EAAA,QAAA,uBAEA,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,UaEM
,SAAU,EACZ,GAEL,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,GAak,GACN,MAAC,
GAAS,EAGZ,GAAU,cAAV,EAauB,CACrB,GAAY,cAAZ,EAAE,MACG,OAAA,EAAS,EAAA,UAAA,CAAC,O
AAQ,CAAC,EAAA,GAAI,QAAA,IAG1B,MAAA,GAakB,EAAM,EAAA,OAAA,EAAS,EAAE,MAAO,EAAE,O
AC5C,EAAS,EEAK,CAAC,OAAQ,CAAC,EAAA,GAAI,QAAA,EAAS,MAAO,CAAC,MAAO,aAEpD,GACF,E
AAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,KAAM,EAAQ,KAAM,GAakB,QAAA,IAKrD,OAHP,EAAQ,8BAA8
B,GACtC,EAAQ,8BAA8B,GAEB/EAIL,GAAY,cAAZ,EAAE,MAAuB,CACrB,MAAA,GAAW,EEAK,EAAA,M
AAA,CAAC,OAAQ,CAAC,MAAO,GAAI,QAAA,IACrC,EAAS,EEAK,CAAC,OAAQ,CAAC,EAAG,GAAW,QA
AA,EAAS,MAAO,CAAC,MAAA,KAItd,OAfP,EAAQ,8BAA8B,GAEB/EAGL,IAAC,EEAK,KAAA,gBAAGB,E
AAE,MAAO,GAAQ,CAGnC,MAAA,GAAS,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAA,GAAI,QAAA,IA
C/B,MAAA,CAAC,OAAQ,EAAO,OAAQ,MAAO,EAAO,MAAO,MAAA,GAGID,GAAU,UAAV,EAAMB,CACf,
MAAA,EAAS,EAAQ,KAAK,IAAI,EAAE,QAAQ,OACpC,EAAe,WAAW,KAAK,GAC9B,OAAA,EAAQ,eAAe,E
AAE,MAAO,QAAS,GAG9C,GAAU,SAAV,EAakB,CAId,MAAA,EAAQ,EAAQ,KAAK,IAAI,EAAE,QAAQ,OA
CnC,EAAO,EEAK,KAAA,aAAa,CAAC,GAAI,EAAE,QAEB/EAAy,IAAe,EAC9B,EAAA,8BAAA,CAAC,EA
G,IAAO,IAAM,EEAK,EAAl,EADI,CACD,EAAE,MAAO,GAAI,EAAO,EAAM,QAEPD,OAAA,EAAQ,eAAe,EA
Aa,OAAQ,GAG/C,MAAA,IAAI,uCAAuC,EAAE,YAAy,KAG1D,MAAM,EAA2B,CACtC,WAAy,EAD0B,KAET
C,YAAa,MACb,WAAy,GAHP,QAAA,WAAA;;AC+FN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA
A,QAAA,iBAAA,EAAA,QAAA,8BAAA,EAxKD,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eACA,EAAA,QA
AA,mBACA,EAAA,QAAA,sBAeM,SAAU,EACZ,EAAC,EACd,EAauC,GACrC,OAAe,MAAf,EACK,EAAE,OA
AA,EAAQ,QAAA,MACT,MAAA,EAAC,EAAD,EAAl,GAak,EACT,EAAa,GAEF,EAAA,EAAA,kBAAA,CAA
C,EAAG,GAAI,GAEnB,MAAA,EAAQ,EAAW,KAAK,IAAI,EAAE,QAAQ,OACtC,EAAQ,EAAW,KAAK,IAAI,
EAAE,QAAQ,OAETC,EAAS,GAAS,EAAE,OAEnB,EAAY,GACf,EAAW,EAAE,MAAO,EAAE,MAAO,EAAO,E
AAO,GAExC,OAAA,EAAW,eAAe,EAAa,EAAQ,IAInD,EAAE,OAAA,EAAQ,QAAA,MACT,MAAA,EAAC,EA
AD,EAAl,GAak,EACT,EAAa,EAef,GAAY,cAAZ,EAAE,OAAqC,cAAZ,EAAE,MAAuB,CACHD,MAAA,GA
Y,EACd,EAAA,MAAA,CAAC,OAAQ,CAAC,EAAG,GAAI,QAAS,EAAY,MAAO,CAAC,MAAO,eAEnD,EAAG
B,EAAW,KAAK,IAAI,EAU,QAE9C,EAAQ,EAAC,mBAAmB,KACzC,EAAQ,EAAC,mBAAmB,KAezC,EACF,
EAAW,KAAK,IAAI,EAAM,QAAQ,OACHC,EACF,EAAW,KAAK,IAAI,EAAM,QAAQ,OAehC,GAAY,EACd,E
AAA,MAAA,CAAC,OAAQ,CAAC,EAAG,GAAI,QAAS,EAAY,MAAO,CAAC,MAAO,eAEnD,EAAGB,EA
AW,KAAK,IAAI,EAU,QAE9C,EAAQ,EAAC,mBAAmB,KACzC,EAAQ,EAAC,mBAAmB,KAezC,EACF,EA
AW,KAAK,IAAI,EAAM,QAAQ,OACHC,EACF,EAAW,KAAK,IAAI,EAAM,QAAQ,QAEB/EAAgB,EAAGB,GA
Ae,EACID,EAAE,MAAO,EAAE,MAAO,EAAW,EAAW,EAAW,GAejD,EACF,EAAW,eAAe,EAAa,UAAW,GA
hD,EACF,EAAW,eAAe,EAAa,UAAW,GAehD,GAAS,EACX,EAAA,SAAA,CAAC,OAAQ,CAAC,KAAM,EAAY,K
AAM,GAaA,QAAS,IAOrD,OALP,EAAW,8BAA8B,GACzC,EAAW,8BAA8B,GACzC,EAAW,8BAA8B,GACzC,
EAAW,8BAA8B,GAEIC,EACF,CACC,MAAA,EAAQ,EAAW,KAAK,IAAI,EAAE,QAAQ,OACtC,EAAQ,EA
AW,KAAK,IAAI,EAAE,QAAQ,OAETC,EAAS,GAAS,EAAE,OAEnB,EAAY,GACf,EAAW,EAAE,MAAO,EAAE,M
AAO,EAAO,EAAO,GAExC,OAAA,EAAW,eAAe,EAAa,EAAQ,KAStd,SAAU,EA8B,GAErC,MAAA,CAAC,E
AAkB,EAkB,EACpC,EAyB,EACzB,KACA,MAAA,EAAC,EAAa,aAAA,2BAA2B,EAAQ,GAC9D,EAAa,EA
K,KAAA,cAAc,GACHC,EAAa,EAAY,OACzB,EAAGB,EAak,KAAA,eAAe,GAEPc,EAiB,EAak,KAAA,uBA
AuB,UAAW,GACxD,EAiB,EAak,KAAA,uBAuB,UAAW,GAExD,EAiB,EAAa,aAAA,iBAiB,EAAQ,GA
CvD,EAiB,EAAa,aAAA,iBAiB,EAAQ,GAEvD,EAAQ,EAAa,aAAA,uBAuB,EAAW,GACvD,EAAQ,EAAa,
aAAA,uBAuB,EAAW,GAEvD,EAAQ,EAAO,OACf,EAAW,EAak,KAAA,eAAe,GAEB/EAAQ,EAAO,OACf,
EAAW,EAak,KAAA,eAAe,GAejC,GAAA,EAAe,OAAS,EAAe,SAAW,EAC/C,IAAA,IAAI,EAAl,EAAG,EAAl,
EAAe,OAAQ,IAAK,CACxC,MAAA,EAAO,EAAl,EAAM,OACjB,EAAO,EAAl,EAAM,OAEB/EACF,EAAG,E

AAa,EAAP,GAAW,EAAa,EAAP,EAAW,GAAl,EAAa,EAAP,GAC5C,EAAa,EAAP,EAAW,IAExB,EAAe,GAak,
,EAAO,KAC3B,EAAe,GAak,EAAO,UAGxB,IAAA,IAAI,EAAl,EAAG,EAAl,EAAe,OAAQ,IAAK,CACxC,MA
AA,EAAM,EAak,KAAA,WAAW,EAAG,EAAY,GAErC,EAAO,EAAl,OAAO,GACxB,EAAe,QAAQ,GAak,EA
AK,GAak,GAChC,MAAA,EAAS,EAak,KAAA,WAAW,EAAM,EAAO,GAEtC,EAAO,EAAl,OAAO,GACxB,E
AAe,QAAQ,GAak,EAak,GAak,GAChC,MAAA,EAAS,EAak,KAAA,WAAW,EAAM,EAAO,GAEtC,EACF,
EAAG,EAAe,EAAT,GAAa,EAAe,EAAT,EAAa,GAAl,EAAe,EAAT,GAChD,EAAe,EAAT,EAAa,IAE1B,EAAe,
GAak,EAAS,KAC7B,EAAe,GAak,EAAS,KAG1B,MAAA,CAAC,EAAGB,EAAGB;;ACzJrC,aAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,IAAA,QAAA,eAAA,QAAA,aAAA,EAbP,IAAA,E
AAA,QAAA,yBAEA,EAAA,QAAA,wBACA,EAAA,QAAA,yBAEO,MAAM,GAAU,EAA8B,EAAA,8BAAA,CA
AC,EAAG,IAAM,EAAl,GAQ5D,QAAA,QAAA,EAPA,MAAM,GACT,EAA+B,EAAA,+BAAA,CAAC,EAAO,E
AAO,EAAO,KAC5C,CAAC,KAAM,EAaQ,EAAO,KAAM,EAaQ,KAK1C,QAAA,eAAA,EAFA,MAAM,GAAM
,EAAiB,EAAA,kBAAA,EAajB,IAAsB,EAAS,GAE3C,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAy,EA
DyB,IAErC,YAAa,MACb,WAAy,GAHP,QAAA,UAAA;;AC+CN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,aAAA,EAAA,QAAA,mBAAA,EA5DD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAAMb
,EAAYB,EAC5C,EAawB,GACpB,MAAA,EAac,EAak,KAAA,cAAc,GACjC,EAAU,EAak,KAAA,oBAAoB,E
AAM,GAElC,IAAA,IAAI,EAAl,EAAG,EAAl,EAAM,OAAQ,IAAK,CAC/B,MAAA,EAaQ,EAAM,GACbB,GA
AA,EAaQ,EACJ,MAAA,IAAI,MAAM,iCAGd,GAAS,IAKX,EAaQ,IADN,EAac,EACE,EAAY,GAEZ,GAIf,OA
AA,EAGH,SAAU,EACZ,EAauB,EAA6B,EACpD,GAAe,GACX,MAAA,EAAU,EAak,MAAM,GACrB,EAAU,E
AAK,MAAM,GAErB,GAAS,EAAO,EAAA,QAAA,CAAC,EAAS,GA AO,EA AW,OAE7C,IAAA,IAAI,EAAl,EA
AG,EAAl,EAAS,IACTb,IAAA,IAAI,EAAl,EAAG,EAAl,EAAS,IAAK,CAC1B,MAAA,EAaQ,EAak,IAAI,EA
G,GACTb,GAAA,EAaQ,EACJ,MAAA,IAAI,MAAM,iCAGd,GAAS,IAIT,EACF,EAAO,IAAI,EAAG,EAAG,GA
Eb,EAAW,KAAO,EACpB,EAAO,IAAI,EAAO,IAAI,EAAG,GAAS,EAAW,IAAI,EAAG,GAAl,EAAG,GAE3D,E
AAO,IAAI,EAAO,IAAI,EAAG,GAAS,EAAG,EAAG,IAMzC,OAAA;;AC1CR,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,sBAAA,EAjBD,IAAA,EAAA,QAAA,yBAOM,SAAU,EAAsB,GAE7B,MAAA,C
AAC,EAaQ,EAAO,KACf,MAAA,EACF,EAak,KAAA,uBAAuB,EAA0B,EAAO,QAC5D,IAAA,IAAI,EAAl,EA
AG,EAAl,EAAO,SAAU,EACnC,EAAU,GAak,EAAG,EAAO,GAAl,GAExB,OAAA;;AC6CV,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAAA,QAAA,wBAAA,EA5DD,IAAA,EAAA,QAAA,y
BAGA,EAAA,QAAA,eAYM,SAAU,EACZ,EAac,EAA0B,GACnC,MAAA,EAAE,OAAA,EAaQ,MAAA,EAAO,
QAAA,MACHB,MAAA,EAAC,GAak,EAER,IADa,EAAA,EAAA,kBAAA,EAAG,GACJ,WAAZ,EAAE,OAAgC,
WAAV,EACpB,MAAA,IAAI,MAAM,wDAGZ,MAAA,EAAa,EACb,EAAS,EAAW,KAAK,IAAI,EAAE,QAAQ,
OACvC,EAaQ,EAak,KAAA,cAAc,EAAE,OAC7B,EAAS,GAAS,EAAE,MACpB,EAAY,EAak,KAAA,kBAak
B,EAaQ,GAC5C,IAAA,IAAI,EAAl,EAAG,EAAl,IAAS,EAC3B,EAAU,GAak,EAAG,EAAO,GAAl,GAExB,OA
AA,EA AW,eAAe,EAAE,MAAO,EAaQ,IAahD,SAAU,EACZ,EAac,EAA4B,GACrC,MAAA,EAAE,OAAA,EA
Q,MAAA,EAAO,QAAA,MACHB,MAAA,EAAC,GAak,EAER,IADa,EAAA,EAAA,kBAAA,EAAG,GACJ,WAA
Z,EAAE,OAAgC,WAAV,EACpB,MAAA,IAAI,MAAM,wDAGZ,MAAA,EAAa,EACb,EAAS,EAAW,KAAK,IA
Al,EAAE,QAAQ,OACvC,EAAS,GAAS,EAAE,MACpB,EAAY,EAAU,EAaQ,EAaQ,GACrC,OAAA,EAAW,eA
Ae,EAAE,MAAO,EAaQ;;ACID/C,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QA
AA,KAAA,QAAA,cAAA,EARP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,uBACA,EAAA,QAAA,wBAEO,M
AAM,GAAW,EAauB,EAAA,uBAAA,GA AO,KAAK,KAAK,IAGzD,QAAA,SAAA,EAFA,MAAM,GA AO,EA
wB,EAAA,yBAAA,EAaxB,KAA8B,GA E3C,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAy,EAD0B,KA
EtC,YAAa,MACb,WAAy,GAHP,QAAA,WAAA;;AC8BN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,WAAA,EAtCD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAauD,EACvD,EAAiB,GACb,MAAA,
EAAU,EAak,KAAA,kBAakB,EAAO,EAak,KAAA,cAAc,IAE7D,GAAA,GAA0B,WAAV,EAAoB,CAElC,IA
A,EAAS,EACb,EAAO,QAAQ,IACP,MAAA,EAAO,EAak,KAAA,cAAc,EAAM,OAErC,EAauB,IAAI,EAAM,K
AAoB,GACtD,GAAU,QAEP,CACD,IAAA,EAAY,EAehB,EAAO,QAAQ,IACP,MAAA,EAawB,WAAV,EACbB
,EAAa,aAAA,uBAAuB,EAAM,MAC1C,EAAM,KAEN,IAAA,EAAO,EAEN,IAAA,IAAI,EAAM,EAAG,EAAM,
EAAM,MAAM,KAAM,EAak,CACvC,MAAA,EAAS,EAAM,EAAS,GAak,EAC9B,IAAA,IAAI,EAAM,EAAG,
EAAM,EAAM,MAAM,KAAM,EACxC,EAaQ,EAAS,GA AO,EAAY,KAIxC,GAAa,EAAM,MAAM,KAItB,OAA

A;;AC7BF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,IAAA,QAAA,aAAA,EARP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,uBACA,EAAA,QAAA,wBAEO,MAAM,GAAU,EAAuB,EA AA,uBAAA,GAAO,KAAK,IAAI,IAGvD,QAAA,QAAA,EAFA,MAAM,GAAM,EAAwB,EAAA,yBAAA,EAAXB ,IAA6B,GAEzC,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAy,EADyB,IAErC,YAAa,MACb,WAAy,GA HP,QAAA,UAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,MAA A,QAAA,eAAA,EARP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,uBACA,EAAA,QAAA,wBAEO,MAAM,GA AY,EAAuB,EAAA,uBAAA,GAAO,KAAK,MAAM,IAG3D,QAAA,UAAA,EAFA,MAAM,GAAQ,EAAwB,EAA A,yBAAA,EAAXB,MAA+B,GAE7C,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAy,EAD2B,MAEvC,Y AAa,MACb,WAAy,GAHP,QAAA,YAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QA AA,YAAA,QAAA,MAAA,QAAA,eAAA,EARP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,uBACA,EAAA,QA AA,wBAEO,MAAM,GAAY,EAAuB,EAAA,uBAAA,GAAO,KAAK,MAAM,IAG3D,QAAA,UAAA,EAFA,MAA M,GAAQ,EAAwB,EAAA,yBAAA,EAAXB,MAA+B,GAE7C,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,W AAy,EAD2B,MAEvC,YAAa,MACb,WAAy,GAHP,QAAA,YAAA;;ACYN,aAAA,OAAA,eAAA,QAAA,aAAA, CAAA,OAAA,IAAA,QAAA,aAAA,EApBD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAA0B,EAC1B,GACI, MAAA,GAAS,EAAO,EAAA,QAAA,EAAoB,EAAK,OAC1C,IAAA,IAAI,EAAL,EAAG,EAAL,EAAO,OAAQ,EA AG,CAC9B,MAEA,EAFA,EAAO,WAAW,GAEI,QAC/B,EAAW,EAAY,GACvB,EAAa,EAAY,GACzB,EAAe,EA AW,WAAW,CAAC,EAAU,IACtD,EAAY,GAAK,EAAW,OAAO,GAE7B,MAAA,EAAGB,EAAL,WAAW,GACt C,EAAO,OAAO,GAAL,EAAL,OAAO,GAG1B,OAAA;;ACTF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA A,IAAA,QAAA,cAAA,QAAA,QAAA,QAAA,iBAAA,EAVP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,wBAC A,EAAA,QAAA,yBAEO,MAAM,GACT,EAA6B,EAAA,8BAAA,CAAC,EAAW,IAAe,EAAL,EAAL,EAAL,GAII E,QAAA,YAAA,EAHA,MAAM,GACT,EAAiB,EAAA,kBAAA,EAajB,QAA0B,EAAa,KAAwB,QAe5D,QAAA, QAAA,EAAA,MAAM,EAA8B,CACzC,WAAy,EAD6B,QAeZC,YAAa,MACb,WAAy,GAHP,QAAA,cAAA;;AC AA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,KAAA,QAAA,cAAA,EAV P,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,wBACA,EAAA,QAAA,yBAEO,MAAM,GACT,EAA6B,EAAA,8 BAAA,CAAC,EAAW,IAAe,EAAL,EAAL,EAAL,GAIII,QAAA,SAAA,EAHA,MAAM,GACT,EAAiB,EAAA,kBA AA,EAajB,KAAuB,EAAU,KAAwB,QAeTD,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAy,EAD0B,KA EtC,YAAa,MACb,WAAy,GAHP,QAAA,WAAA;;ACGN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA A,QAAA,aAAA,EAbD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAAe,EAAC,GACzB,MAAA,GAAQ,EAAO, IAAU,EAAM,GAE/B,EAAS,EAAL,KAAA,oBAAoB,EAAL,WAC7C,EAAO,GAAL,EACP,IAAA,IAAI,EAAL,E AAG,EAAL,EAAO,OAAQ,IACjC,EAAO,GAAL,EAAO,EAAL,GAAL,EAGvB,OAAA;;ACJF,aAAA,OAAA,eAA A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,IAAA,QAAA,aAAA,EARP,IAAA,EAAA,QAAA,y BAEA,EAAA,QAAA,uBACA,EAAA,QAAA,wBAEO,MAAM,GAAU,EAAuB,EAAA,uBAAA,GAAO,KAAK,IA AI,IAGvD,QAAA,QAAA,EAFA,MAAM,GAAM,EAAwB,EAAA,yBAAA,EAAXB,IAA6B,GAEzC,QAAA,IAAA, EAAA,MAAM,EAA0B,CACrC,WAAy,EADyB,IAErC,YAAa,MACb,WAAy,GAHP,QAAA,UAAA;;ACYN,aAA A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EApBD,IAAA,EAAA,QAAA,yBAEM,SA AU,EACZ,EAAmB,EAAoB,EACvC,GACI,MAAA,EAAO,EAAL,KAAA,uBACd,EAA0B,EAAL,KAAA,cAAc,IA E5C,IAAA,IAAI,EAAL,EAAG,EAAL,EAAL,SAAU,EAAG,CAC9B,MAAA,EAAS,EAAL,EACf,IAAA,EAAM,EA AM,GACX,IAAA,IAAI,EAAL,EAAG,EAAL,IAAc,EAAG,CAC7B,MAAA,EAAL,EAAM,EAAS,GACzB,EAAL,I ACV,EAAM,GAGV,EAAL,GAAL,EAEL,OAAA;;ACVF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA AA,QAAA,cAAA,QAAA,QAAA,QAAA,iBAAA,EATP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,wBACA,E AAA,QAAA,yBAEO,MAAM,GAAC,EACtB,EAAA,8BAAA,CAAC,EAAQ,IAAW,KAAK,IAAI,EAAQ,IAGnC,Q AAA,YAAA,EAFA,MAAM,GAAU,EAAiB,EAAA,kBAAA,EAajB,QAA0B,GAE1C,QAAA,QAAA,EAAA,MA AM,EAA8B,CACzC,WAAy,EAD6B,QAeZC,YAAa,MACb,WAAy,GAHP,QAAA,cAAA;;ACAA,aAAA,OAAA, eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,QAAA,QAAA,iBAAA,EATP,IAAA,EAAA,QA AA,yBAEA,EAAA,QAAA,wBACA,EAAA,QAAA,yBAEO,MAAM,GAAC,EACtB,EAAA,8BAAA,CAAC,EAAQ ,IAAW,KAAK,IAAI,EAAQ,IAGnC,QAAA,YAAA,EAFA,MAAM,GAAU,EAAiB,EAAA,kBAAA,EAajB,QAA0 B,GAE1C,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,WAAy,EAD6B,QAeZC,YAAa,MACb,WAAy,GAHP, QAAA,cAAA;;ACQA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,QAAA,SAAA,QA

AA,oBAAA,QAAA,kBAAA,EAjBP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,wBACA,EAAA,QAAA,yBAE
O,MAAM,GACT,EAA8B,EAAA,8BAAA,CAAC,EAAQ,IAAW,EAAS,GAYxD,QAAA,aAAA,EAXA,MAAM,G
ACT,EAA+B,EAAA,+BAAA,CAAC,EAAO,EAAO,EAAO,KAC5C,CACL,KAAM,EAAQ,EAAQ,EAAQ,EAC9B
,KAAM,EAAQ,EAAQ,EAAQ,KA0/B,QAAA,oBAAA,EAHA,MAAM,GACT,EAAiB,EAAA,kBAAA,EAajB,SA
A2B,EAAc,GAeIC,QAAA,SAAA,EAAA,MAAM,EAA+B,CAC1C,WAAY,EAD8B,SAE1C,YAAa,MACb,WAA
Y,GAHP,QAAA,eAAA;;ACSA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,
QAAA,IAAA,EAAA,QAAA,eAAA,EA1BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eACA,EAAA,QAAA,c
AEM,SAAU,EAAQ,EAAMB,EAakB,GAErD,MAAA,EACF,EAAK,KAAA,mBAAMB,EAAaB,GAC3C,OAAA,E
AAa,EAAA,cAAA,GAAl,EAAQ,EAAU,EAAO,GAG7C,SAAU,EAAI,GAEZ,MAAA,OAAC,EAAD,QAAS,GAA
W,GACpB,EAAC,GAAK,GAEK,EAAA,EAAA,kBAAA,EAAG,OAEd,MAAA,EAAQ,EAAQ,KAAK,IAAI,EAA
E,QAAQ,QACIC,EAAK,GAAY,EAAQ,EAAO,EAAE,MAAO,EAAE,OAe3C,OAAA,EAAQ,eAAe,EAAU,EAAE
,MAAO,GAG5C,MAAM,EAA0B,CACrC,WAAY,EADyB,IAErC,YAAa,MACb,WAAY,GAHP,QAAA,UAAA;;A
ChBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,QAAA,SAAA,QAAA,kBAAA,EA
VP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,wBACA,EAAA,QAAA,yBAEO,MAAM,GACT,EAA8B,EAAA,
8BAAA,CAAC,EAAG,IAAO,IAAM,EAAK,EAAI,GAIrD,QAAA,aAAA,EAHA,MAAM,GACT,EAAiB,EAAA,k
BAAA,EAajB,SAA2B,EAAc,KAAaB,QAe5D,QAAA,SAAA,EAAA,MAAM,EAA+B,CAC1C,WAAY,EAD8B,S
AE1C,YAAa,MACb,WAAY,GAHP,QAAA,eAAA;;ACiBN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,cAAA,EA1BD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAAMB,EAakB,EAaiB,EACtD,GACI,
MAAA,EAAQ,EAAO,OACf,EAAQ,EAAK,KAAA,cAAc,GAC3B,EAaw,EAAK,KAAA,eAAe,GAC/B,EAAa,EA
AK,KAAA,eAAe,GAejC,EAAS,EAAK,KAAA,uBACHb,EAA0B,EAAK,KAAA,cAAc,IAE5C,IAAA,IAAI,EA
AI,EAAG,EAAI,IAAS,EAAG,CACxB,MAAA,EAAM,EAAK,KAAA,WAaw,EAAG,EAAO,GAGhC,EAAMB,IAAI,
MAAM,EAAI,QACIC,IAAA,IAAI,EAAI,EAAG,EAAI,EAAO,OAAQ,IACjC,EAAO,GAAK,EAAI,EAAK,IAIvB,
EADiB,EAAK,KAAA,WAaw,EAAQ,EAAO,IAC7B,EAAM,GAepB,OAAA;;ACMF,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,QAAA,qBAAA,EAhCP,IAAA,EAAA,QAAA,yBAGA,EA
AA,QAAA,eAEA,EAAA,QAAA,oBAEM,SAAU,EAAU,GAKIB,MAAA,OAAC,EAAD,MAAS,EAAT,QAAGB,GA
AW,GAC3B,EAAC,GAAK,GACN,KAAC,GAAQ,GAEE,EAAA,EAAA,kBAAA,EAAG,aAEd,MAAA,EAAQ,EA
AE,MAAM,OAehB,EAaqB,IAAI,MAAM,GACHc,IAAA,IAAI,EAAI,EAAG,EAAI,EAAS,OAAQ,IACnC,EAAS,
GAAK,EAAE,MAAM,EAAK,IAGvB,MAAA,EAAS,EAAQ,KAAK,IAAI,EAEE,QAAQ,OACpC,GAAS,EAAc,E
AAA,eAAA,EAAQ,EAAE,MAAO,EAAE,MAAO,EAAM,GAGtD,MAAA,CAAC,OADO,EAAQ,MAAM,EAAQ,
EAAU,EAAE,OACjC,MAAO,EAAU,MAAO,EAAE,OAGrC,MAAM,EAAGC,CAC3C,WAAY,EAD+B,UAE3C,Y
AAa,MACb,WAAY,GAHP,QAAA,gBAAA;;ACkCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,Q
AAA,SAAA,EAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,EAIEP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,e
ACA,EAAA,QAAA,eAEM,SAAU,EACZ,EAakB,EAakB,EACpC,GAEl,MAAC,EAAU,GACb,EAAa,aAAA,0B
AA0B,EAAQ,GAC7C,GAaw,EAaw,EAAA,YAAA,EAAQ,SAC9B,EAAU,EAAK,KAAA,oBACD,EAAK,KAA
A,cAAc,GAaw,GAC5C,EAAa,EAAK,KAAA,cAAc,GAejC,IAAA,IAAI,EAAI,EAAG,EAAI,EAAQ,SAAU,EA
G,CACjC,MAAA,EAAS,EAAl,EACf,IAAA,EAAO,EACN,IAAA,IAAI,EAAl,EAAG,EAAl,IAAc,EACHc,GAAQ,
EAAM,EAAS,GAezB,EAAQ,GAAK,EAGR,MAAA,CAAC,QAAA,EAAS,SAAA,EAAU,SAAA,GAGvB,SAAU,
EACZ,GAEl,MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,EAAC,GAAK,GACN,KAAC,EAAD,
SAAO,GAAY,GAER,EAAA,EAAA,kBAAA,EAAG,QAEd,MAAA,EAAQ,EAAE,MAAM,OACHb,EAAO,EAAK
,KAAA,eAAe,EAAM,EAAE,OAEnC,EAAc,EAAa,aAAA,mBAAMB,EAAM,GACtD,IAAA,EAAGB,EACHb,EA
AY,EACV,MAAA,EAA0B,GACb,MAAf,IACF,GAAY,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,
QAAA,EAAS,MAAO,CAAC,KAAM,KAC3D,EAawB,KAAK,GAC7B,EAAGB,EAAa,aAAA,iBAaiB,EAac,OA
AQ,IAGhE,MAAA,EAAQ,EAAQ,KAAK,IAAI,EAAU,QAAQ,QAC3C,QAAC,EAAD,SAAU,EAAV,SAAoB,GA
CtB,EAAS,EAAU,MAAO,EAAU,MAAO,EAAO,GAeID,IAAA,EAAc,EAQX,OAPH,IACF,EAAc,EAAa,aAAA,q
BAAqB,EAAU,IAG5D,EAawB,QACpB,GAAK,EAAQ,8BAA8B,IAExC,EAAQ,eAAe,EAAa,EAAU,GAGhD,M
AAM,EAA2B,CACtC,WAAY,EAD0B,KAeIC,YAAa,MACb,WAAY,GAHP,QAAA,WAAA;;ACTCN,aAAA,OA
A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA5BD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ
,EAAe,EAAC,EAC7B,GAKE,GAJkB,IAAU,GACI,EAAQ,GAAQ,EAAO,GACvB,EAAO,GAAS,EAAO,EAID,O

AAA,EAAK,KAAA,oBAAoB,EAAG,GAG/B,MAAA,EAAC,KAACK,IAAI,KAACK,MAAM,EAAO,GAAS,IACID,E
AAS,EAAK,KAAA,oBAAoB,EAAa,GAeJD,EAAO,GAakB,IAAT,IAGIB,GAAQ,GAGV,EAAO,GAACK,EACP,I
AAA,IAAI,EAAl,EAAG,EAAl,EAAO,OAQ,IAcJc,EAAO,GAACK,EAAO,EAAl,GAACK,EAeVb,OAAA;;ACnB
F,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,MAAA,QAAA,eAAA,EARP,I
AAA,EAAA,QAAA,yBAEA,EAAA,QAAA,uBACA,EAAA,QAAA,wBAEO,MAAM,GAAY,EAaUB,EAAA,uBA
AA,GAao,EAAl,KAACK,KAAK,IAG9D,QAAA,UAAA,EAFA,MAAM,GAQ,EAaWB,EAAA,yBAAA,EAxB,
MAA+B,GAe7C,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAy,EAD2B,MAEvC,YAAa,MACb,WAAy
,GAHP,QAAA,YAAA;;ACiDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,
QAAA,MAAA,EAAA,QAAA,iBAAA,EAzDP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eAEM,SAAU,EACZ,
EAaQB,EAaiB,EAAGb,EACtD,GACI,MAAA,EAAC,EAaW,WAAA,iBAaiB,EAAO,EAAO,GACxD,EAAS,EA
AK,KAAA,cAAc,GAC5B,EAaW,EAAK,KAAA,eAAe,GAeJc,GAAA,EAaA,CACT,MAAA,EAaA,EAaW,WAA
A,kBAaKB,EAAO,GAEnD,MAAU,WAAV,EACM,EAASB,MAAM,EAAY,EAaA,GAGvD,EAaOB,SAAS,EAAY
,EAaA,GAG1D,MAAA,EAaWB,WAAV,EACb,EAaA,aAAA,uBAaUB,GACpC,EAEE,GAQ,EAAO,EAAA,Q
AAA,EAAO,EAAO,GAC7B,GAAS,EAAO,EAAA,QAAA,EAAM,GACvB,IAAA,IAAI,EAAl,EAAG,EAAl,EA
O,OAQ,EAAG,CAC9B,MAAA,EAAS,EAAO,WAAW,GAC3B,EAQ,EAAO,IAAI,CAAC,EAaA,IAAM,EA
M,EAAM,IACzD,EAAO,IAAI,EAAM,OAQ,MAAW,GAGjC,MAAU,WAAV,EACK,EAaA,aAAA,uBAaUB,EA
AO,QAe7C,EAAO,OAGV,SAAU,EACZ,GAEL,MAAA,OAAC,EAAD,QAAS,EAAT,MAaKB,GAAS,GAC3B,EA
AC,GAACK,GACN,MAAC,EAAD,KAAQ,GAQ,GAEL,EAAA,EAAA,kBAAA,EAAG,SAEd,MAAC,EAQ,GA
AS,EAaW,WAAA,iBAaiB,EAAG,EAAO,GACnD,EAAA,WAAA,kBAaKB,EAAG,EAQ,GAELc,MACA,EA
U,EADH,EAQ,KAAK,IAAI,EAEE,QAQ,OACR,EAQ,EAAO,EAEE,MAAO,EAEE,OACnD,OAAA,EAQ,
eAAe,EAAO,EAEE,MAAO,GAGzC,MAAM,EAA4B,CACvC,WAAy,EAD2B,MAEvC,YAAa,MACb,WAAy,G
AHP,QAAA,YAAA;;AC7CA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,wBAAA,QAAA,k
BAAA,QAAA,2BAAA,EAZP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,wBACA,EAAA,QAAA,yBAEO,MA
AM,GAaWB,EAa8B,EAAA,8BAAA,CAAC,EAAG,KAC/D,MAAA,EAAO,EAAl,EACV,OAAA,EAAO,IAKT,Q
AAA,sBAAA,EAHA,MAAM,GACT,EAaiB,EAAA,kBAAA,EAajB,kBAAoC,GAeJc,QAAA,kBAAA,EAAA,M
AAM,EAaWC,CACnD,WAAy,EADuC,kBAEnD,YAAa,MACb,WAAy,GAHP,QAAA,wBAAA;;ACMN,aAAA,
OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAIBD,IAAA,EAAA,QAAA,yBAEM,SAAU,
EACZ,EAaOB,EAaUB,EAC3C,GACI,MAAA,GAAS,EAAO,EAAA,QAAA,EAaU,EAACK,OAeHc,IAAA,IAAI,E
AAI,EAAG,EAAl,EAAO,KAAM,IAAK,CAC9B,MAAA,EAAM,EAAO,WAAW,GAExB,EAaMB,IAAI,MAAM,
EAAl,QACIC,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,OAQ,IAcJc,EAAO,GAACK,EAAl,GAACK,EAQ,GAACK,
EAAM,GAELc,EAAO,IAAI,EAACK,OAQ,MAAY,GAG9B,OAAA;;ACJF,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,UAAA,QAAA,IAAA,QAAA,eAAA,QAAA,aAAA,EAbP,IAAA,EAAA,QAAA,yBAE
A,EAAA,QAAA,wBACA,EAAA,QAAA,yBAEO,MAAM,GACT,EAa8B,EAAA,8BAAA,CAAC,EAQ,IAAW,E
AAS,GAoxD,QAAA,QAAA,EANA,MAAM,GACT,EAa+B,EAAA,+BAAA,CAAC,EAAO,EAAO,EAAO,KAC5
C,CAAC,KAAM,EAQ,EAAO,KAAM,EAQ,KAI1C,QAAA,eAAA,EAFA,MAAM,GAAM,EAaiB,EAAA,kBA
AA,EAajB,IAASB,EAAS,GAe3C,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAy,EADyB,IAErC,YAAa,
MACb,WAAy,GAHP,QAAA,UAAA;;ACeN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,S
AAA,EA5BD,IAAA,EAAA,QAAA,yBAOM,SAAU,EACZ,EACA,GACI,MAAA,EAaQB,IAAI,MAAM,EAACK,M
ACrC,IAAA,IAAI,EAAl,EAAG,EAAl,EAAS,OAQ,IAcNc,EAAS,GAACK,EAACK,MAAM,GAACK,EAACK,GAEL/
B,MAAA,GAAS,EAAO,EAAA,QAAA,EAaU,EAACK,OACb,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,OAQ,S
AAU,EAAG,CACvC,MAAA,EAAS,EAAO,WAAW,GAe3B,EAaWB,IAAI,MAAM,EAACK,MACxC,IAAA,IAAI,
EAAl,EAAG,EAAl,EAAY,OAQ,IAcTc,EAAY,GAACK,EAAO,GAACK,EAACK,MAAM,GAGpC,MAAA,EAAGb,
EAACK,WAAW,GAELc,EAAO,OAQ,GAACK,EAACK,OAQ,GAELB,OAAA;;ACaR,aAAA,OAAA,eAAA,QAAA
,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAtCD,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EAae,EAaKB,E
AAyB,EAC1D,GAGI,MAAA,EAaU,EAAO,EAAO,OAAS,IACb,EAAO,GAQ,CAAC,EAEE,OAAS,EAAS,G
ACrC,EAAC,EAACK,KAAA,uBAaUB,EAQ,EAQ,GAC1D,EAaiB,EAACK,KAAA,uBAaUB,QAAS,EAQ,GAEL
/D,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,IAAK,CACxB,MAAA,EAAS,EAAl,EACb,EAAO,EAEE,SAAS,EA
Q,EAAS,GACnC,EAaMD,GACpD,IAAA,IAAI,EAAl,EAAG,EAAl,EAACK,OAQ,IAcB,EAaU,KAAK,CAAC,

MAAO,EA AK,GA AI,MAAO,IAEzC,EAAU,KAAK,CAAC,EAAG,IAAM,EAAE,MAAQ,EAAE,OAE/B,MAAA,
EAA Y,EA AI,EACHb,EA AW,EAA Y,SAAS,EA AW,EAA Y,GACvD,EA Ac,EAA e,SAAS,EA AW,EAA Y,GAC9D,I
AAA,IA AI,EA AI,EA AG,EA AI,EA AG,IACrB,EA AS,GA AK,EAAU,GA AG,MAC3B,EAA Y,GA AK,EAAU,GAA
G,MAK5B,MAAA,EA Ac,EAAO,QAGpB,OAFP,EAA Y,EAA Y,OA AS,GA AK,EAE/B,EACL,EAAO,EAAA,QAA
A,EA A4B,EA AQ,IAC3C,EAAO,EAAA,QAAA,EA A4B,QAA S;;ACoG/C,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,WAAA,EA IID,IAAA,EAAA,QAAA,yBAEM,SAAU,EACZ,EA AuB,EA Ac,EA AiB,GA
MID,MAAA,EA AQ,EA AK,KAAA,eAA e,EA AM,GAAO,GA yDzC,EA AW,CAAC,EA AG,EA AM,GA AI,GAC1B,I
AAA,IA AI,EA AI,EA AG,EA AI,EAAO,IACzB,EA AS,IA AM,EA AM,GA EvB,EA AS,GA AK,EA AM,GACf,IAAA,I
AAI,EA AI,EA AQ,EA AG,EA AI,EA AM,OA AQ,IACxC,EA AS,IA AM,EA AM,GAKjB,MAAA,EA A0C,GAG1C,E
AAU,IA AI,WAAW,EA AM,IAE/B,EA Ac,IA AI,EA AJ,aAA iB,EAAU,EAAO,GAGhD,EA A0B,GAC1B,EA A6B,IA
AhB,EA AS,IA A4B,IA AhB,EA AS,GAC5C,IAAA,IA AI,EA AI,EA AG,EA AI,EA AM,GAAQ,IA AK,CAEjC,IAAA,
EACA,GAAA,EA EF,EAAU,EAAO,GA AG,eACf,CACC,MAAA,EA Aa,GACd,IAAA,IA AI,EA AI,EA AG,EA AI,E
AAS,GA AI,IAC1B,IAAA,IA AI,EA AI,EA AG,EA AI,EA AS,GA AI,IAC/B,EA AW,KAAK,EAA Y,IA AI,EA AG,EA
AG,IAG1C,EAAU,EA AW,KAAK,KAIxB,QAA4B,IA A5B,EA Ae,GACjB,EA AQ,GA AK,EA Ae,OACvB,CACC,M
AAA,EA Ac,OAAO,KAAK,GA AgB,OACHd,EA Ae,GA AW,EAC1B,EA AQ,GA AK,EACb,EA Ac,KAAK,IAOjB,M
AAA,EA AiB,EA AS,QACHC,EA Ae,GA AK,OAAO,KAAK,GA AgB,OAC1C,MAAA,EA Ae,IA AI,EA AJ,aAA iB,E
A AgB,GACtD,EA Ac,QAAQ,CAAC,EA AoB,KACpC,IAAA,IA AI,EA AI,EA AG,EA AI,EA AS,GA AI,IAC1B,IAAA
,IA AI,EA AI,EA AG,EA AI,EA AS,GA AI,IAC/B,EA Aa,IA AI,EAA Y,IA AI,EA AG,EA AoB,GA AI,EA AG,EA AG,KA
OIE,MAAA,EA Ac,EA AM,QAGnB,OAFP,EAA Y,GA AS,EA Ae,GA E7B,CACL,aAAc,EA Aa,OAC3B,YAAA,EAC
A,QAAA;;AC1GJ,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,OAAA,eAAA,QAAA,gBAAA,CAA
A,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA
,WAAA,OAAA,EAAA,WAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,
gBAAA,OAAA,eAAA,QAAA,qBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,sBAAA,OAAA,eAA
A,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,
WAAA,OAAA,EAAA,WAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,
aAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,OAAA,eAAA,Q
AAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAAA,OAAA,eAAA,QAAA,cAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBA
AA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,WAAA,OAAA,eAAA,QA
AA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,WAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YA
AA,EAAA,IAAA,WAAA,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,cAAA,CAAA,YAAA,EAAA,IAAA,WAA
A,OAAA,EAAA,eAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAA
A,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,WAAA,OAAA,eAAA,QA
AA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAA
A,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA
,OAAA,EAAA,aAAA,OAAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,O
AAA,eAAA,QAAA,YAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,aAAA,OAAA,eAAA,QAAA,wB
AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,yBAAA,OAAA,eAAA,QAAA,mBAAA,CAAA,YAAA,
EAAA,IAAA,WAAA,OAAA,EAAA,oBAAA,OAAA,eAAA,QAAA,UAAA,CAAA,YAAA,EAAA,IAAA,WAAA,
OAAA,EAAA,WAAA,OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,
OAAA,eAAA,QAAA,WAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,YAAA,OAAA,eAAA,QAAA,g
BAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,iBAAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,E
AAA,IAAA,WAAA,OAAA,EAAA,cA7BA,IAAA,EAAA,QAAA,iBACA,EAAA,QAAA,iBACA,EAAA,QAAA,2
BACA,EAAA,QAAA,kBACA,EAAA,QAAA,yBACA,EAAA,QAAA,iBACA,EAAA,QAAA,mBACA,EAAA,QA
AA,mBACA,EAAA,QAAA,2BACA,EAAA,QAAA,qBACA,EAAA,QAAA,kBACA,EAAA,QAAA,2BACA,EA
A,QAAA,iBACA,EAAA,QAAA,sBACA,EAAA,QAAA,qBACA,EAAA,QAAA,qBACA,EAAA,QAAA,sBACA,E

AAA,QAAA,iBACA,EAAA,QAAA,sBACA,EAAA,QAAA,kBACA,EAAA,QAAA,wBACA,EAAA,QAAA,mBACA,EAAA,QAAA,mBACA,EAAA,QAAA,+BACA,EAAA,QAAA,+BACA,EAAA,QAAA,iBACA,EAAA,QAAA,uBACA,EAAA,QAAA,uBACA,EAAA,QAAA,4BACA,EAAA,QAAA;;ACiBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,iBAAA,QAAA,YAAA,QAAA,YAAA,QAAA,aAAA,QAAA,aAAA,QAAA,WAAA,QAAA,oBAAA,QAAA,aAAA,QAAA,iBAAA,QAAA,YAAA,QAAA,WAAA,QAAA,gBAAA,QAAA,eAAA,QAAA,eAAA,QAAA,WAAA,QAAA,WAAA,QAAA,gBAAA,QAAA,YAAA,QAAA,eAAA,QAAA,gBAAA,QAAA,aAAA,QAAA,aAAA,QAAA,WAAA,QAAA,cAAA,QAAA,YAAA,QAAA,sBAAA,QAAA,gBAAA,QAAA,gBAAA,EAAA,IAAA,EAAA,EAAA,QAAA,6CAQA,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAAA,MAACE,QAAS,EACT,aAAc,EACd,mBAAoB,EACpB,SAAU,EACV,WAAY,EACZ,QAAS,EACT,UAAW,EACX,UAAW,EACX,aAAc,EACd,YAAa,EACb,SAAU,EACV,aAAc,EACd,QAAS,EACT,QAAS,EACT,YAAa,EACb,YAAa,EACb,aAAc,EA Cd,QAAS,EACT,SAAU,EACV,UAAW,EACX,UAAW,EACX,cAAe,EACf,UAAW,EACX,iBAaKb,EACiB,QAAS,EACT,SAAU,EACV,SAAU,EACV,cAAe,EACf,WAAY,GACV,EA9BJ,QAAA,cAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,YAAA,EAAA,QAAA,YAAA,EAAA,QAAA,WAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,aAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,aAAA,EAAA,QAAA,aAAA,EAAA,QAAA,YAAA,EAAA,QAAA,WAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,eAAA,EAAA,QAAA,WAAA,EAAA,QAAA,WAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,YAAA,EAAA,QAAA,eAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,aAAA,EAAA,QAAA,aAAA,EAAA,QAAA,WAAA,EAAA,QAAA,cAAA,EAAA,QAAA,YAAA,EAAA,QAAA,sBAAA,EAAA,QAAA,gBAAA,EAAA,QAAA,WAAA;;ACyC,aAxBK,SAAU,EAae,EAac,GACpC,MAAA,CAAC,IAAK,IAAK,IAAK,IAAK,IAAK,KAAK,MAAM,EAAG,GAAM,IAAI,MAAQ,KAAQ,KAGrE,SAAU,EAAY,EAac,GACpC,OAAS,IAAT,EACK,CAAC,GAEH,EAae,EAAM,GAGxB,SAAU,EAagB,EAac,GACxC,GAAS,IAAT,EACK,MAAA,KAGL,IAAA,EAAS,GACR,IAAA,IAAI,EAAI,EAAG,EAAI,EAAM,IACxB,GAAU,EAak,GACX,EAAI,EAao,IACb,GAAU,KAGP,OAAA,EACR,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,YAAA,EAAA,QAAA,gBAAA;;AC6FA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EApHD,IAAA,EAAA,QAAA,kBACA,EAAA,QAAA,qBAEM,MAAO,EAox,YACl,GAPJ,KAAA,cAAgB,CAAC,KAGjB,KAAA,cAAe,EACf,KAAA,cAAe,EAMR,KAAA,YAAc,EACb,MAAA,EAao,EAAY,OAerB,GAAS,IAAT,EACG,KAAA,SAAW,iGAKX,CACC,MAAA,GAAW,EAAY,EAAA,aAAA,KAAM,GAC7B,GAAQ,EAakB,EAAA,mBAAA,GACiB,EACF,EAawB,EAAM,EAaA,GACzC,EAaQ,EACV,EAAM,EAAY,EAAY,OAAS,GACvC,EAAY,EAAY,OAAS,GAai,GACnC,EAAS,EAau,EAaA,GAejc,KAAA,+CAEC,6CAEG,0EAGD,mCAEe,yCAQ7B,SAAS,EAamB,EAac,GACiC,MAAA,EAAS,GAeV,IAAA,IAAI,EAAM,EAAG,GAao,EAAG,IACrB,IAAA,IAAI,EAAM,EAAG,GAao,EAAG,IAAO,CAC7B,IAAA,KAaMB,IAAR,EAAY,IAAM,UAAkB,IAAR,EAAY,IAAM,QAExD,IAAA,IAAI,EAAI,EAAG,EAAI,EAAM,IACxB,KAAW,EAak,EAak,OAAS,EAai,MAAQ,EAG5C,EAao,KAAK,GAGT,OAAA,EAGT,SAAS,EACL,EAac,EAaiB,GAC7B,GAAS,IAAT,EACK,cAAQ,EAAM,KAGnB,IAAA,EAao,GACN,IAAA,IAAI,EAAI,EAao,EAAG,EAAI,EAAM,IAC/B,MAAW,EAak,SAAS,EAAM,KAC3B,EAAI,EAao,IACb,GAAQ,MAIL,OAAA,EAGT,SAAS,EACL,EAac,EAac,EAac,GACxC,GAAS,IAAT,EACK,MAAA,GAGH,MAAA,EAAY,EAak,OAao,GAeVb,uBACK,EAau,oBACV,EAau,8EAIE,+BACA,SAI1B,SAAS,EAau,EAaiB,GAC5B,MAAA,EAao,EAAM,OAcB,EAae,EAamB,EAAM,GACiC,OAAS,IAAT,sCAEkB,EAAM,oDAIb,EAaA,qCACA,EAaA,qCACb,EAaA,8CACJ,EAaA,MACnD,QAAA,YAAA;;AC/CA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,0BAAA,EAred,IAAA,EAAA,EAAA,QAAA,2BAqEC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UA

AA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAA
A,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,
EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAnEK,MAAO,EAOX,YAAY,EAuC,GANnD,KAAA,cAAgB,CAA
C,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,EAOR,KAAA,YAAc,EAef,IAAA,EAaw,GACV,IAAA,IAAI,EAAL,
EAAG,EAAL,EAAG,IAAK,CACtB,IAAA,EAAS,eACT,EAAL,GAAM,IACZ,GAAU,kBAER,EAAL,IACN,GAAU,
kBAGZ,gBACl,cACA,EAAL,EAAL,0CAA4C,iOAM3C,mGAET,EAAL,EAAL,IAAM,aAlf,KAAA,oBACD,EAuB
,aCvB,EAAY,mBAAmB,oJAQIB,EAAY,2BACZ,EAAY,kBAEvB,kDAQV,SAAS,EAuB,GAlvB,0EAFH,EA
Y,mCAAmC,CAAC,IAAK,IAAK,KAAM,8CAQrE,QAAA,qBAAA;;ACkMA,aAAA,OAAA,eAAA,QAAA,aAAA
,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,QAAA,oBAAA,EAxQD,IAAA,EAAA,QAAA,yBAGA,EAAA,QAA
A,gBACA,EAAA,QAAA,cAEM,MAAO,EAUX,YAAoB,GAAA,KAAA,MAAA,EATZ,KAAA,gBAAkB,EACIB,
KAAA,gBAAkB,EACIB,KAAA,mBAAqB,EACrB,KAAA,cAAgB,EAehB,KAAA,aAaKd,GACID,KAAA,YAAa,
EACb,KAAA,aAaKd,GAlID,eACI,EAA2B,EAC3B,GACI,MAAA,EAaKB,EAaKC,EAAO,GAE3D,EAaw,EA
uB,EAAS,EAALiB,GAC5D,KAAy,KAAK,eAchB,KAAA,aAAa,GAAY,IAE1B,KAAy,KAAK,eAchB,KAAA,aA
Aa,GAAY,IAG1B,MAAA,EAaw,EACb,EAAS,EAALiB,KAAK,MAAM,GAAL,KAAK,MAAM,cACpD,GAEA,G
AAA,KAAK,aAAa,GAAU,OAAS,EAAG,CACrC,KAAA,kBACA,KAAA,kBACA,KAAA,eAAiB,EACjB,KAAA,
MACC,MAAA,EAaA,KAAK,aAAa,GAAU,QAExC,OADF,KAAA,aAAa,GAAU,KAAK,GAC1B,EAGL,IAAA,E
AuBG,OAtBH,IAAoB,EAoB,oBAAA,mBAC1C,EAaA,KAAK,MAAM,0BAA0B,EAaQ,GAAL,EAaQ,IAC7D,I
AAoB,EAoB,oBAAA,mBACjD,EACI,KAAK,MAAM,iCAAiC,EAaQ,GAAL,EAaQ,IAC3D,IAAoB,EAoB,oB
AAA,iBACjD,EACI,KAAK,MAAM,2BAA2B,EAaQ,GAAL,EAaQ,IACrD,IAAoB,EAoB,oBAAA,iBACjD,EA
CI,KAAK,MAAM,2BAA2B,EAaQ,GAAL,EAaQ,IAE5D,IAAoB,EAoB,oBAAA,2BAC1C,EACI,KAAK,MAA
M,iCAAiC,EAaQ,GAAL,EAaQ,KAejE,KAAA,aAAa,GAAU,KAAK,GAE5B,KAAA,kBACA,KAAA,oBAAsB,E
ACtB,KAAA,MAEE,EAGT,eACI,EAuB,EACvB,EAa8B,GAC5B,GAAqB,MAArB,KAAK,aAEP,OAEI,MAAA
,EACF,EAaKc,EAagB,GACHd,EAaw,EAuB,EAAO,EAALiB,GACID,KAAy,KAAK,eAchB,KAAA,aAAa,G
AAY,IAG1B,MAAA,EAaw,EACb,EAAO,EAALiB,KAAK,MAAM,GAAL,KAAK,MAAM,cACID,GACE,GAAqB,
EAAM,EAAA,OAAA,IAAI,mCACT,IAAxB,GACA,KAAK,mBAAqB,GACvB,KAAA,MAAM,oBAAoB,GAC1B
,KAAA,oBAAsB,IAEtB,KAAA,aAAa,GAAU,KAAK,GAC5B,KAAA,kBACA,KAAA,eAAiB,GAGnB,KAAA,kB
AEC,MAAA,EAU,KAAK,aAAa,GAC5B,EAaw,EAaQ,QAAQ,GAC7B,GAAA,EAaw,EACP,MAAA,IAAI,M
ACN,4EAGN,EAaQ,OAaO,EAU,GACpB,KAAA,MAGC,MACF,IAAC,KAAK,WACR,OAEI,MAAA,EAaQ,
KAAK,gBAAkB,KAAK,gBAC1C,QAAQ,IACJ,eAAgB,KAAK,qBAAqB,KAAK,sBAC3C,MACF,MAAA,EAAY,
KAAK,cAAgB,KAAK,mBAC5C,QAAQ,wBAAwB,KAAK,sBACrC,QAAQ,qBAAqB,KAAK,kBAC9B,KAAK,M
AAM,IAAM,QAGnB,wBACK,OAAA,KAAK,mBAGV,mBACK,OAAA,KAAK,cAGd,qBACS,OAAA,KAAK,gB
AGd,qBACS,OAAA,KAAK,gBAGd,UACM,GAAqB,MAArB,KAAK,aAAL,CAIC,IAAA,MAAM,KAAy,KAAK,
aACrB,KAAA,aAAa,GAAU,QAAQ,IAC7B,KAAA,MAAM,oBAAoB,KAG9B,IAAA,MAAM,KAAy,KAAK,aAC
rB,KAAA,aAAa,GAAU,QAAQ,IAC7B,KAAA,MAAM,oBAAoB,KAG9B,KAAA,aAAe,KACf,KAAA,aAAe,KA
Cf,KAAA,gBAAkB,EACIB,KAAA,gBAAkB,EACIB,KAAA,mBAAqB,EACrB,KAAA,cAAgB,IAIzB,SAAS,EAC
L,EAa2B,GAEvB,MAAA,EAaQ,EACV,GAAA,IAAmB,EAAM,KACpB,OAAA,EACF,GAAL,IAAmB,EAAM,K
AC3B,OAAA,EACF,GAAL,IAAmB,EAAM,QAC3B,OAAA,GACF,GAAL,IAAmB,EAAG,KACxB,OAAA,GACF,
GAAL,IAAmB,EAAM,QAC3B,OAAA,EAeh,MAAA,IAAI,iCAAiC,KAGvC,SAAU,EACZ,EAAYB,EACzB,EA
2B,EAC3B,GAMI,MAAA,EACF,EAALiC,EAALiB,GAEID,IAAA,EACA,GAAA,EAU,CACN,MAAC,EAaA,IAC
hB,EAuC,EAAA,wCAAA,EAAM,GAAL,EAAM,IAC3D,EAac,EAac,MAEvB,CACC,MAAC,EAAO,IACV,EA
AyC,EAAA,0CAA,EAAM,GAAL,EAAM,IAC7D,EAac,EAaQ,EAljB,OAAA,EADiB,EAa0B,EAAL,GAlxD,SA
AS,EACL,EACA,GACM,OAAA,GACD,KAAA,EAoB,oBAAA,mBACHB,OAAA,EAawC,EAAA,yCAAA,GA
C5C,KAAA,EAoB,oBAAA,mBACHB,OAAA,EAa+C,EAAA,gDAAA,GACnD,KAAA,EAoB,oBAAA,iBACH
B,OAAA,EAAYC,EAAA,0CAA,GAC7C,KAAA,EAoB,oBAAA,iBACHB,OAAA,EAAYC,EAAA,0CAA,GA
C7C,KAAA,EAoB,oBAAA,yBACHB,OAAA,EAa+C,EAAA,gDAAA,GACxD,QACQ,MAAA,IAAI,uCAAuC,
MAIvD,SAAS,EAa+B,GAEIC,OAAA,EAAM,EAAA,OAAA,QAAQ,gCACZ,EACK,EAoB,oBAAA,mBAEtB,E
AAoB,oBAAA,iBAGzB,EACK,EAoB,oBAAA,mBAEtB,EAoB,oBAAA,iBAG7B,SAAS,EACL,EAa8B,GAC
5B,GAAA,IAAmB,EAaA,aAAA,OAC3B,OAAA,EAoB,oBAAA,mBACTB,GAAL,IAAmB,EAaA,aAAA,QAA4B,

MAAIB,EAC5C,OAAA,EAA+B,GACjC,GACH,IAAmB,EAAa,aAAA,UChC,IAAmB,EAAa,aAAA,OAC3B,OA
AA,EAAoB,oBAAA,yBAEvB,MAAA,IAAI,sCAAsC,KAGID,SAAS,EACL,EAAgC,EACHC,GACK,SAAG,EAAA
,MAAM,EAAa,MAAM,KAAmB,IACpE,QAAA,eAAA;;AC1NM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAAA,QAAA,KAAA,EAAA,QAAA,MAAA,QAAA,MAAA,QAAA,KAAA,QAAA,IAAA,QAAA,IAAA,QA
AA,OAAA,QAAA,kBAAA,QAAA,oBAAA,EA5CD,MAAO,EAKX,YAAY,EAakB,GAJ9B,KAAA,cAAgB,CAA
C,KAKV,KAAA,YAAc,EACd,KAAA,6DAEC,yJAmCH,QAAA,eAAA,EAtBA,MAAM,EAAoB,0BAsB1B,QAA
A,kBAAA,EApBA,MAAM,EAAS,YAoBf,QAAA,OAAA,EAIBA,MAAM,EAAM,iBAEb,SAAU,EAAK,EAAQ,G
ACpB,OAAA,wCAC0B,UAc5B,QAAA,IAAA,EAVa,MAAM,EAAM,0CAUZ,QAAA,IAAA,EARA,MAAM,EA
AO,EAAoB,oCAQjC,QAAA,KAAA,EAJA,MAAM,EAAQ,EAAoB,8CAIIC,QAAA,MAAA,EAAA,MAAM,EAA
Q,YAAAd,QAAA,MAAA;;ACP0B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,QAA
A,MAAA,QAAA,KAAA,QAAA,IAAA,QAAA,YAAA,EArc1B,MAAM,EAAS,YAqCW,QAAA,OAAA,EAnc1B,
MAAM,EAAM,+PAmCc,QAAA,IAAA,EAxB1B,MAAM,EAAO,iRAwBa,QAAA,KAAA,EAZ1B,MAAM,EAAQ
,gSAYY,QAAA,MAAA,EAA3B,MAAO,EAOX,YAAY,EAakB,GAN9B,KAAA,cAAgB,CAAC,KAGjB,KAAA,c
AAe,EACf,KAAA,cAAe,EAGR,KAAA,YAAc,EACd,KAAA,2DAEC,uJAXuB,QAAA,qBAAA;;ACnCP,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAH1B,IAAA,EAAA,QAAA,kBACA,EAAA,
QAAA,qBAEM,MAAO,EAOX,YAAY,GANZ,KAAA,cAAgB,CAAC,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,E
AKR,KAAA,YAAc,EACb,MAAA,EAAO,EAAY,OAEnB,GAAW,EAAY,EAAA,aAAA,KAAM,GAC7B,GAAQ,E
AAkB,EAAA,mBAAA,GAC1B,GAAe,EAAGB,EAAA,iBAAA,EAAM,GACrC,EAAY,EAAS,OAAO,GAC5B,EA
AS,GAAQ,EAAl,aAAe,EAAU,KAAK,QAEPd,KAAA,2CAEC,8DACwB,oDAEU,uBAAtBIB,QAAA,cAAA;;AC8j
CzB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,iBAAA,QAAA,gBA
AA,QAAA,qBAAA,EAjkCD,QAAA,iBAGA,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,iBACA,EAAA,QAAA,
uBACA,EAAA,QAAA,8BACA,EAAA,QAAA,sBACA,EAAA,QAAA,6BACA,EAAA,QAAA,uBACA,EAAA,QA
AA,8BACA,EAAA,QAAA,mBACA,EAAA,EAAA,QAAA,iBAEA,EAAA,QAAA,yBACA,EAAA,QAAA,cACA,
EAAA,QAAA,wBACA,EAAA,EAAA,QAAA,eAEA,EAAA,QAAA,qBACA,EAAA,EAAA,QAAA,kBAEA,EAA
A,QAAA,wBACA,EAAA,QAAA,gBACA,EAAA,EAAA,QAAA,iBAwiCC,SAAA,IAAA,GAAA,mBAAA,QAAA
,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,
GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,E
AAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yB
AAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAA
A,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAA
A,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAtiCD,MAA
M,EAAY,EAAa,aAAA,UAEiB,EAakB,KAOiC9B,QAAA,gBAAA,EAniCM,MAAM,EAakB,KAmiC9B,QAAA,g
BAAA,EAvgCD,MAAM,EAAuE,GAEvE,SAAU,EAae,GACzB,OAAA,KAAgB,EACX,EAAa,IAEtB,EAAa,GAA
gB,GACtB,EAAa,IAKiB,MAAM,EAA6B,IAK7B,EAAYB,IAC/B,SAAS,IACH,OAAuB,OAAvB,EAAM,EAAA,O
AAA,OAAO,OACR,MAED,EAAM,EAAA,OAAA,OAAO,OAAO,QAAS,EAAM,EAAA,OAAA,OAAO,OAAO,
MACjD,OAAO,iBACX,EAAYB,KAAO,KAGhC,MAAO,UAYB,EAhC,cAuCJ,YAAY,GAEN,GAf0B,QA9Bx
B,KAAA,YAAc,IAAI,QAGiB,KAAA,gBAakB,IAAI,QAI9B,KAAA,aAAe,IAAI,QACX,KAAA,cAAgB,EAOhB,
KAAA,aAAe,EAef,KAAA,eAAiB,EAUjB,KAAA,mBAAoB,EACpB,KAAA,uBAAwB,EAyYxB,KAAA,eAAiB,E
A2YjB,KAAA,UAAW,IAhxBZ,EAAM,EAAA,OAAA,QAAQ,aACX,MAAA,IAAI,MAAM,yCAGd,GAAS,MAA
T,EAae,CACX,MAAA,GAak,EAAGB,EAAA,kBAAA,EAAM,EAAA,OAAA,UAAU,kBACtC,KAAA,YAAc,G
AAe,EAAM,EAAA,OAAA,UAAU,kBAC7C,KAAA,MAAQ,IAAI,EAaj,aAAiB,GACzB,KAAA,OAAS,EAAG,O
ACZ,KAAA,qBAAsB,OAETB,KAAA,MAAQ,EACR,KAAA,YAAc,GACd,KAAA,qBAAsB,EActB,KAAA,OAA
S,EAAM,GAAG,OAEPB,KAAA,eAAiB,IAAI,EAaj,eAAmB,KAAK,OACzC,KAAA,mBAAqB,IAErB,KAAA,Q
AAU,IAAI,EAaj,YAAgB,MAAM,EAAtB,EAAA,WAvDT,aACC,OAAA,EAaiB,aAyD1B,aACS,OAAA,KAAK,
QAAQ,cACf,KAAK,WAAa,KAAK,WAAW,aAAe,GACID,KAAK,eAGX,MAAM,EAuB,EAaiB,GAKxC,KAJA
,EAAM,EAAA,OAAA,QAAQ,oCACd,EAAM,EAAA,OAAA,QAAQ,WACX,KAAA,uBAAuB,GAehB,cAAV,GA
AmC,MAAV,EACrB,MAAA,IAAI,MACN,yEAGA,MAAA,EAAS,CAAC,GAAL,KAAK,cAIIB,OAHF,KAAA,QA
AQ,IACT,EACA,CAAC,MAAA,EAAO,MAAA,EAAO,OAAA,EAAQ,MAAO,EAAa,aAAA,OAAQ,SAAU,IAC1

D,EAIT,SAAS,GACH,GAAA,KAAK,QAAQ,IAAI,GAAS,CAErB,OADY,KAAK,QAAQ,IAAI,GACIB,SAEb,OA
AA,EAIT,OAAO,GACW,KAAK,QAAQ,IAAI,GACzB,WAIv,OAAO,GACD,GAAA,KAAK,QAAQ,IAAI,GAAS,
CACZ,KAAK,QAAQ,IAAI,GACzB,YAIz,KACI,EAAGB,EAauB,EAaiB,EACxD,GAIE,IAHA,EAAM,EAAA,O
AAA,QAAQ,UACX,KAAA,uBAauB,GAehB,cAAV,EACI,MAAA,IAAI,MACN,yEAGD,KAAA,QAAQ,IACt,E
AAQ,CAAC,MAAA,EAAO,MAAA,EAAO,OAAA,EAAQ,MAAO,EAAa,aAAA,OAAQ,SAAA,IAGjE,8BAA8B,
GACvB,KAAA,YAAY,EAaw,QAG9B,SAAS,GACD,MAAA,EAAU,KAAK,QAAQ,IAAI,IAC3B,OAAC,EAAD,
MAAS,EAAT,mBAAGB,EAahB,MAAoC,EAAPC,MAA2C,EAA3C,SAakD,GAAY,EAKhE,GAAS,MAAT,EAA
e,CACb,IAAA,EAEF,EADE,EACQ,IAAI,EAaj,qBAayB,EAAO,EAAS,OAEzC,IAAI,EAaj,eAAmB,EAAO,EA
AS,OAEzC,MAAA,EACF,KAAK,gBAAGB,EAAS,CAAC,CAAC,OAAA,EAAQ,MAAA,EAAO,MAAA,IAAS,G
ACtD,EAAO,KAAK,SAAS,EAai,QAExB,OADF,KAAA,8BAA8B,GAC5B,EAEL,GAAU,MAAV,EACK,OAAA,
KAAK,qBAaqB,GAEB,GAAU,WAAV,EACK,OAAA,EAeh,MAAA,EAAYC,MAArB,KAAK,aAC3B,IAAA,EA
KA,EACA,GALA,IACF,EAAQ,EAak,KAAA,OAID,cAAV,EAauB,CACnB,MAAA,EACF,KAAK,SAAS,EAA
mB,KAAK,QACpC,EACF,KAAK,SAAS,EAAmB,KAAK,QAC1C,EAAS,EAAa,aAAA,uBAauB,EAAY,QAezD,
EAAS,KAAK,qBAaqB,GAM9B,OAHH,IACG,KAAA,gBAakB,EAak,KAAA,MAAQ,GAEB,KAAK,qBAaqB,
EAAQ,GAGrC,WAAK,GACL,GAAA,KAAK,YAAY,IAAI,GAAS,CAC1B,MAAA,EAac,KAAK,YAAY,IAAI,G
ACIC,OAAA,IAAI,QAAoB,GAaw,EAAY,KAAK,IAEvD,MAAA,EAAU,KAAK,QAAQ,IAAI,IAC3B,OAAC,E
AAD,MAAS,EAAT,MAAGB,EAahB,MAAuB,EAavB,mBAA8B,EAA9B,SAakD,GAAY,EAKhE,GAAS,MAAT
,EAAe,CACb,IAAA,EAEF,EADE,EACQ,IAAI,EAaj,qBAayB,EAAO,EAAS,OAEzC,IAAI,EAaj,eAAmB,EAA
O,EAAS,OAEzC,MAAA,EACF,KAAK,gBAAGB,EAAS,CAAC,CAAC,OAAA,EAAQ,MAAA,EAAO,MAAA,IA
AS,GACtD,EAAO,KAAK,KAAK,EAai,QAEPB,OADF,KAAA,8BAA8B,GAC5B,EAGL,GAAU,MAAV,EACK,
OAAA,KAAK,qBAaqB,GAG/B,KAAC,EAAM,EAAA,OAAA,QAAQ,iCACsB,KAARc,EAAM,EAAA,OAAA,U
AAU,iBACZ,MAAA,IAAI,MACN,gGAIF,IACA,EAmBA,EAPBA,EAAS,KAGT,GAAU,cAAV,IAAYB,EAAM,E
AAA,OAAA,IAAI,OBAA2B,CAehE,EAaoB,KAAK,OAAO,GAC1B,MAAA,EAAU,KAAK,QAAQ,IAAI,EAakB
,QAEhD,EAAS,KAAK,MAAM,wBACHb,EAAQ,WAAy,EAAS,iBAaiB,IAYhD,GATC,KAAA,YAAY,IAAI,EA
AQ,IAEf,cAAV,SAEI,KAAK,MAAM,wBAKL,cAAV,EAauB,CACnB,MAAA,QAaw,QAAQ,IAAI,CAC3B,KA
AK,KAAK,EAAmB,KAAK,QACIC,KAAK,KAAK,EAAmB,KAAK,UAG9B,EAAa,EAAG,GACHb,EAAa,EAAG
,GACtB,EAAO,EAAa,aAAA,uBACHb,EAA4B,QAC3B,GAac,MAAV,EACT,EAAO,KAAK,qBAaqB,OAC5B,C
ACC,MAAA,EAAO,EAak,KAAA,cAAc,GACHc,EAAO,KAAK,MAAM,gCAAGC,EAAQ,GAEnC,MAArB,GAC
G,KAAA,8BAA8B,GAEB,MAAA,EAAY,KAAK,qBAaqB,EAAQ,GAe9C,EAac,KAAK,YAAY,IAAI,GAYIC,
OAXF,KAAA,YAAY,OAAO,GAGxB,EAAY,QAAQ,GAaw,EAAQ,IACnC,KAAK,gBAAGB,IAAI,KACtB,KAA
A,gBAAGB,OAAO,GACxB,KAAK,YAAY,KACV,EAAA,EAAA,UAAA,aAAa,EAAQ,MAE3B,KAAA,kBAEA,E
AGT,WAA2B,GACnB,MAAA,EAAO,KAAK,SAAS,EAAE,QACzB,IAAA,EAac,EACd,GAAY,WAAZ,EAAE,M
ACA,IAEF,EAAe,EAAsB,IAAI,GAak,EAak,KAAA,aAAa,IACHe,MAAA,GACM,MAAA,IAAI,MAAM,oDAG
b,OAAA,EAAO,EAAA,QAAA,EAAE,MAAsB,EAAE,MAAO,GAIZc,uBAauB,GACzB,GAAU,MAAV,EAGC,I
AAA,IAAI,EAai,EAAG,EAai,EAAO,OAAQ,IAAK,CACHc,MAAA,EAAM,EAAO,GACf,IAAC,EAaw,iBAai
B,GAAM,CACjC,IAAA,EAAM,EAAA,OAAA,QAAQ,gCACV,MAAA,mBACW,qCACb,gHAGA,MAAA,mBAA
mB,6CAKvB,qBAaqB,GACrB,MAAA,MAAC,EAAD,MAAQ,EAAR,SAae,GAAY,KAAK,QAAQ,IAAI,GAC5C
,EAAO,EAak,KAAA,cAAc,GAC5B,IAAA,EAAM,EAAA,OAAA,QAAQ,gCAaiC,CAC3C,MAAA,EAAY,KAA
K,OAAO,GACxB,EAAU,KAAK,QAAQ,IAAI,EAAU,QACrC,EAAO,KAAK,MACA,gCACG,EAAQ,WAAy,EA
AS,iBAaiB,IACjD,SAAS,EAAG,GAIVB,OAFF,KAAA,8BAA8B,GAe5B,EAGH,MAAA,GACF,EAAM,EAAA,O
AAA,QAAQ,gBAA8B,IAAb,EAC7B,EACF,EAAYB,EAaw,aAAa,GAAS,EACxD,EAAU,EACZ,IAAI,EAaj,yB
AA6B,GAC7B,IAAI,EAaj,mBAauB,GACrB,EAAS,KAAK,gBACHb,EAAS,CAAC,CAAC,MAAO,EAAa,MAA
A,EAAO,OAAA,IAAU,WAC9C,EAAU,KAAK,QAAQ,IAAI,EAAO,QACIC,EACF,KAAK,MACA,gDACG,EAA
Q,QAAS,EAAQ,SAAS,GAAL,EAAQ,SAAS,IAC1D,SAAS,EAAG,GAGd,OAFF,KAAA,8BAA8B,GAe5B,EAGT,
iBACS,OAAA,EAAM,EAAA,OAAA,UAAU,iDAAmD,EAGtE,WAAK,GACH,MAAA,EAakB,KAAK,aACvB,E
AA+B,GAejC,IAAA,GAAGB,EACW,MAA3B,KAAK,oBACF,KAAA,mBAaqB,EAC1B,GAAGB,GAEX,KAAA,
aAAa,KAAK,GAEPB,KAAA,aAAe,EAEPB,IAGM,MAAA,EACF,EAak,KAAA,QAAQ,KAAK,aAAa,IAAK,GA
AkB,EAAE,QACnD,OAAO,GAAU,MAAL,GACf,EACF,EAak,KAAA,QAAQ,KAAK,aAAa,IAAK,GAakB,EA

AE,OACnD,OAAO,GAAU,MAAL,GAehB,KAAA,aAAe,EAehB,IACG,KAAA,mBAAqB,MAGtB,MAAA,EA Au
B,CAC3B,aAAc,KAAK,aACnB,eAAgB,KAAK,eACrB,SAAU,KACV,OAAQ,MAGN,IAAA,EAAM,EAAA,OAA
A,UAAU,iDAAmD,EAAG,CACIE,MAAA,QAAiB,QAAQ,IAAI,GAEnC,EAAG,SAAe,EA AK,KAAA,IAAI,GAC
3B,EAAG,oBAA0B,KACzB,EAAS,IAAI,CAAC,EAAG,KAAO,CAAC,KAAM,EAA0B,GA AI,GA AI,KAC5D,IA
AI,MAAQ,EAAE,SAAS,EAAE,MACzB,KAAK,YAE d,EAAG,SAAe,CAC hB,MAAO,6DAMJ,OAFF,KAAA,aAA
e,EACf,KAAA,eAAiB,EACf,EAET,SACS,MAAA,CACL,YAAY,EACZ,cAAe,KAAK,cACpB,uBA AwB,KAAK,e
AAe,kBAC5C,kBAAmB,KAAK,eAAe,cAI nC,aACF,OAAA,EAAM,EAAA,OAAA,UAAU,iDAAmD,EAC9D,KA
AK,MAAM,aAEb,CAAC,QAAS,EA AK,KAAA,MAAO,MAAO,MAG9B,SAAS,GACX,OAAA,EAAM,EAAA,O
AAA,UAAU,iDAAmD,GAC hE,KAAA,MAAM,WACJ,IAER,EA AwB,MAAQ,EA AK,KAAA,MAC/B,GAGK,mB
AAa,GACrB,IAAA,EAAM,EAAA,OAAA,UAAU,iDAAmD,EAC9D,OAAA,KAAK,MAAM,uBA AuB,GA ErC,M
AAA,EAAa,EACZ,OAAA,EA AW,MAAQ,EA AW,QAevC,YAAY,EA AgB,GAAQ,GAC9B,GAAA,KAAK,gBAA
gB,IAAI,GACpB,OAAA,EAIL,IAAC,KAAK,QAAQ,IAAI,GACb,OAAA,EA YL,GANA,EACG,KAAA,QAAQ,IA
AI,GAAQ,SAAW,EAE/B,KAAA,QAAQ,IAAI,GAAQ,YAGtB,GAAS,KAAK,QAAQ,IAAI,GAAQ,SAAW,EACz
C,OAAA,EAGL,GAAA,KAAK,YAAY,IAAI,GAGhB,OAFF,KAAA,gBA AgB,IAAI,GACpB,KAAA,kBACE,EAG
J,KAAA,eAAe,GACd,MAAA,mBAAC,GAASB,KAAK,QAAQ,IAAI,GAQvC,OAPmB,MAAtB,IACG,KAAA,YA
AY,EA AmB,KAAK,OAAQ,GAC5C,KAAA,YAAY,EA AmB,KAAK,OAAQ,IAG9C,KAAA,QAAQ,OAAO,IAEb,
EAGD,eAAe,GACf,MAAA,QAAC,EAAD,MAAU,EA AV,SAAiB,EA AjB,MAA2B,EAA3B,SAAkC,EAAIC,MAA
4C,GAC9C,KAAK,QAAQ,IAAI,GACf,EAAM,GAAS,EAAM,YA Ac,EACnC,EA AW,KAAK,aAAa,IAAI,GAEnC,
EA AW,EACR,KAAA,aAAa,IAAI,EA AK,EA AW,IAEjC,KAAA,aAAa,OAAO,GACV,MAAX,IACG,KAAA,eAAi
B,KAAK,aAAa,EAAU,GAC7C,KAAA,eAAe,eAAe,EAAS,EAAU,EAAO,KAI3D,MAAA,EAAU,KAAK,QAAQ,I
AAI,GACjC,EAAQ,QAAU,KACIB,EAAQ,SAAW,KACnB,EAAQ,UAAW,EACnB,EAAQ,MAAQ,KAGIB,WAA
W,GA EF,OADF,KAAA,YAAY,GACV,KAAK,QAAQ,IAAI,GAAQ,QA OIC,YAAY,GACH,OAAA,KAAK,QAA
Q,IAAI,GAGIB,gBACF,OAAC,EAAM,EAAA,OAAA,QAAQ,sBAII,MAAnB,KAAK,aACF,KAAA,YAAa,EAAS,
EAAA,UAAA,YAAY,QAGIC,KAAK,YAPH,KAI BX,mBACI,EACA,EA AgB,GACZ,MAAA,EAAa,KAAK,gBAY
jB,OAXF,EAAM,EAAA,OAAA,QAAQ,YAAe,KAAK,uBACrB,MAAd,IACF,QAAQ,KACJ,6NAKC,KAAA,uBA
AwB,GAGV,MAAd,GACH,EAAO,MACH,GA AmD,MAA1C,KAAK,QAAQ,IAAI,EAAM,QAAQ,SACpC,EA AK
,KAAA,cAAc,EAAM,OAAS,GAGhD,kBACS,OAAA,KAAK,MAGd,MAAM,GACS,EAAA,aAAA,KACT,yEAEE
,MAAA,EA AW,EAAU,WACpB,OAAA,EAAU,EAAU,MAAO,GAG5B,cAAc,EAAe,EAAY,GACzC,MAAA,EA
AU,IAAI,EA AJ,qBA AyB,EAAE,MAAO,GAC5C,EAAU,KAAK,cAAc,EAAS,CAAC,GA AI,GAC1C,OAAA,EA
S,EAAA,UAAA,qBACZ,EAAQ,OAAQ,EAAQ,MAAO,EAAQ,OAM7C,IAAsB,GAehB,GAAA,KAAK,mBA Am
B,CAAC,KA AmB,cAAZ,EAAE,MA AuB,CACrD,MAAA,GACF,EA AiB,EAAA,kBAAA,KAAK,QAAQ,IAAI,EA
AE,QAAQ,QACzC,OAAA,KAAK,WAAW,EAAE,MAAO,EAAE,MAAO,GAGvC,IAAA,EAAM,EAAA,OAAA,
QAAQ,+BACT,OAAA,KAAK,cAAc,EAAG,EAAS,IAAK,EAAE,OAGzC,MAAA,EAAU,IAAI,EA AJ,eAAmB,E
AAE,MAAO,EAAS,KAC/C,EAAU,KAAK,cAAc,EAAS,CAAC,IACtC,OAAA,EAAS,EAAA,UAAA,qBACL,EA
AQ,OAAQ,EAAQ,MAAO,EAAQ,OAGpD,eACI,EA AiB,EACjB,GACE,IAAA,EACA,GAAU,WAAV,GAAgC,M
AAV,GA AkB,EAAO,OAAS,GACxD,EA AK,KAAA,SAAS,EAAO,IAAK,CACtB,MAAA,EACD,EAA0B,IAAI,G
AAK,EA AK,KAAA,aAAa,IAE1D,EAAS,KAAK,MAAM,EAAe,EAAO,QA E1C,EAAS,KAAK,MAAM,EAAsB,E
AAO,GAI5C,OADF,KAAA,QAAQ,IAAI,GAAQ,MAAQ,KAC1B,CAAC,OAAA,EAAQ,MAAA,EAAO,MAAA,G
AGjB,WACJ,EA AiB,EA AiB,GAC9B,MAAA,OAAC,GAAU,KAAK,eAAe,EAAO,EAAO,GAC5C,OAAA,EAAS,
EAAA,UAAA,qBAAqB,EAAQ,EAAO,EAAO,MAGrD,aAAa,GACb,MAAA,EAAU,IAAI,EA AJ,cAAkB,EAAM,
OACjC,OAAA,KAAK,gBA AgB,EAAS,CAAC,GAAQ,EAAM,OAG9C,WAAW,GACX,MAAA,EAAU,IAAI,EA
AJ,YAAgB,EAAM,OA E/B,OAAA,KAAK,gBACR,EAAS,CAAC,GAAQ,EAAM,MAAO,MAFC,GAM9B,cAAc,E
AAmB,GACjC,MAAA,EAAe,CACnB,EA AW,YAAY,EAAM,UAC1B,EA AW,YAAY,EAAM,QA E5B,EAAsB,C
AC1B,MAAO,EAAM,MACb,MAAO,EACP,OAAQ,EAAM,QA EV,EA AiB,CACrB,EA AW,YAAY,MA AgB,EA
W,YAAY,IAG1D,EAAU,IAAI,EA AJ,qBA AyB,EA AgB,GAEnD,EAAS,KAAK,gBACHB,EAAS,CAAC,GAAU,E
AAM,MAAO,MAFC,GAI/B,MAAA,CAAC,OAAQ,EAAO,OAAQ,MAAO,EAAY,MAAO,EAAO,OAG1D,OAAO
,GACP,MAAA,EAAU,KAAK,QAAQ,IAAI,IAC3B,SAAC,EAAD,MAAW,EAAX,MAAkB,GAAS,EAC3B,EACF,
EA AW,aAAa,GACxB,IAAA,EA EF,EADE,EACQ,IAAI,EA AJ,0BAA8B,GA E9B,IAAI,EA AJ,oBAAwB,GAM7B,

MAAA,CAAC,MAAA,EAAO,MAAA,EAAO,OAHV,KAAK,gBACb,EAAS,CAAC,CAAC,MAAO,EAAW,MAA
A,EAAO,OAAA,IAAU,EAC9C,MAHkC,GAIJ,QAGpC,gBACI,EAauB,EAAsB,EAC7C,EACA,GAAgC,GAC5B,
MAAA,EAAS,KAAK,eAAe,EAAQ,YAAa,GACID,EAAU,KAAK,QAAQ,IAAI,EAAO,QAIpC,GAHA,EAAQ,eA
CV,EAAQ,UAAW,GAejB,EAAQ,mBAAqB,EAAS,cAAc,MAAO,CACvD,MAAA,EAAa,EAAS,iBAAiB,EAAQ,
aAKrD,EAAQ,SAAW,EAAW,IAAI,GAAS,EAAJ,GAKrC,GAHuB,MAAvB,EAAQ,cACV,EAAQ,MAAQ,EAAQ,
aAEe,IAArC,EAAK,KAAA,cAAc,EAAO,OAkrB,OAfP,EAAQ,OACJ,EAAK,KAAA,uBAAuB,EAAO,MAAoB,
GACpD,EAGH,MAAA,EAA8B,GAC9B,EAA2B,EAAO,IAAI,IACtC,GAAgB,cAAhB,EAAM,MACF,MAAA,IA
AI,MACN,mIAKF,IAAA,EAAU,KAAK,QAAQ,IAAI,EAAM,QAEjC,GAAMb,MAAnB,EAAQ,QAAiB,CACvB,I
AAC,EAAQ,cACT,EAAK,KAAA,cAAc,EAAM,SACrB,EAAM,EAAA,OAAA,UAAU,6BAMf,MAAA,CACL,M
AAO,EAAM,MACb,QAAS,KACT,WAAW,EACX,cAAe,EAAQ,QAMvB,EAAQ,eACV,EAAQ,UAAW,EACnB,E
AAQ,MAAQ,EAAM,YAEhB,KAAM,EAAQ,YAAe,EAAQ,aAC1C,EAAQ,EAAQ,SAAW,KAAK,aAAa,GACiB,
KAAK,WAAW,GAC3C,EAAC,KAAK,GACnB,EAAU,KAAK,QAAQ,IAAI,EAAM,aAC5B,GACH,EAAQ,WACP
,EAAW,cAAc,EAAQ,MAAO,EAAM,OAAQ,CAQnD,MAAA,EAAa,EACb,EAAC,EAAM,MAE1B,EAAM,MAA
Q,EAAQ,MACtB,EAAQ,KAAK,cAAc,EAaiB,GAC5C,EAAC,KAAK,GACnB,EAAU,KAAK,QAAQ,IAAI,EA
M,QAEjC,EAAW,MAAQ,EAId,OADF,KAAA,YAAy,EAAM,QACHb,CAAC,MAAO,EAAM,MAAO,QAAA,EA
AS,WAAW,KAG7C,KAAA,YAAy,EAAO,QACiB,MAAA,EACW,CAAC,MAAO,EAAO,MAAO,QAAS,EAAS,
WAAW,GAC9D,EAAM,EAAW,cAAc,EAAS,EAAY,GACpD,EAAS,KAAK,iBAAiB,EAAK,IACjC,EAAW,eACd
,KAAK,MAAO,EAAS,EAAY,IAEjC,EAAYc,MAArB,KAAK,aAC3B,IAAA,EAgaB,GAfA,IACF,EAAQ,KAAK,
cAGf,EAAW,WACP,KAAK,MAAO,EAAQ,EAAY,EAAY,GAehD,EAAC,QAAQ,GAAQ,KAAK,8BAA8B,IAE7
D,IACF,EAAQ,KAAK,SAAS,GACjB,KAAA,aAAa,KACd,CAAC,KAAM,EAAQ,YAAy,KAAM,MAAO,KAAK,
aAAa,QAG3D,EAAM,EAAA,OAAA,QAAQ,wBAA0B,EAAQ,WACf,IAAIC,EAAYc,CACrC,MAAA,EAAW,KA
AK,aAAa,GAe5B,OADF,KAAA,8BAA8B,GAC5B,EAef,OAAA,EAGT,cACI,EAauB,EAAsB,EAC7C,EACA,G
AAgC,GAK3B,OAJP,EAAC,GAae,EAAO,GAAG,MACvB,KAAK,gBACjB,EAAS,EAAQ,EAAa,EAC9B,GAIE,i
BAAiB,EAAa,GAK7B,OAHD,KAAO,KAAK,cACX,KAAA,YAAy,GAao,KAehB,KAAK,YAAy,GAG1B,oBA
CS,OAAA,KAAK,eAKd,UACM,IAAA,KAAK,SAAL,CAKA,KAAC,EAAM,EAAA,OAAA,QAAQ,WAAy,CAC
b,OAAO,KAAK,KAAK,aACzB,QAAQ,IACt,KAAA,MAAM,cAAc,KAAK,YAAy,GAak,qBACxC,KAAK,YA
AY,KAGvB,KAAA,eAAe,UACD,MAAf,KAAK,QAC2B,oBAAvB,mBACR,KAAK,kBAaKB,kBACrB,KAAA,O
AAO,SAEP,KAAA,OAAS,KAeZ,KAAK,sBACF,KAAA,MAAM,QAAU,KACHb,KAAA,MAAM,WAER,KAAA,
UAAW,GAGiB,iBAkBS,OAjByB,MAA5B,KAAK,sBACF,KAAA,qBAAsB,EAAK,EAAA,MAAA,KAC1B,KAA
C,EAAM,EAAA,OAAA,IAAI,gCAaiC,CAGxC,MAAA,GAAY,EAAM,EAAA,OAAA,QAAQ,UAC1B,EAAA,EA
AA,OAAA,IAAI,SAAS,GACb,MAAA,EAAsB,KAAK,KAAI,EAAO,EAAA,QAAA,OAAO,WAAW,GAG1D,IAF
E,EAAA,EAAA,OAAA,IAAI,QAAS,GAef,EAAsB,EACjB,OAAA,GAGJ,OAAA,MAGJ,KAAK,oBAId,UACS,O
AA0B,KAA1B,KAAK,iBAA0B,EAaKB,EAG1D,YAAy,GACJ,MAAA,EAAU,KAAK,QAAQ,IAAI,IAC3B,MAA
C,EAAD,MAAQ,EAAR,OAae,EAaf,QAAuB,EAAvB,MAAgC,EAAhC,SAAuC,GAAY,EAerD,GAAW,MAAX,
EAef,OAei,MAAA,EAAYc,MAArB,KAAK,aAC3B,IAAA,EACA,IACF,EAAQ,EAAK,KAAA,OAGX,IAAA,EA
AW,EAAQ,SAMnB,GALY,MAAZ,IACF,EAAW,EAAW,gCAAgC,EAAO,GAC7D,EAAQ,SAAW,GAGP,MAAV
,EAAgB,CACZ,MAAA,EAAY,EAAW,aAAa,GAetC,IAAA,EACA,EAAQ,EAAS,GAai,EAAS,EAAS,GACrC,M
AAA,EAAC,aAAKB,WAEIC,IACD,EAAO,GAau,EAAS,uCACvB,EAAS,GAai,EAAS,IAC1B,EAAU,IAAI,EA
AJ,0BACN,EAAW,CAAC,EAAQ,GAAQ,IAehC,EACI,IAAI,EAaj,oBAawB,EAAW,CAAC,EAAQ,GAAQ,GAGp
D,MAAA,EAauB,KAAK,eAAe,CAAC,EAAQ,GAAQ,GAe3D,KAAA,QAAQ,IAAI,EAaqB,QAAQ,MAD5C,EA
EE,EAAa,aAAA,OAGb,EAAa,aAAA,OAEd,KAAA,MAAM,2BACP,KAAK,WAAW,EAAqB,QAAS,EAAO,EAC
rD,GAIE,MAAA,GAawB,EACxB,EAAsB,KAAK,gBAC7B,EAAS,CAAC,GAauB,EAAO,KAAM,GAG5C,EA
gB,KAAK,QAAQ,IAAI,EAAoB,QAC3D,EAAQ,QAAU,EAAC,QACHc,EAAQ,SAAW,EAAC,SACjC,EAAQ,SA
W,EAAC,SACjC,EAAQ,MAAQ,EAAC,MAEZB,KAAA,8BAA8B,GAC9B,KAAA,QAAQ,OAAO,EAAoB,QAGxC
,EAAQ,OAAS,KACb,IACG,KAAA,cAAgB,EAAK,KAAA,MAAQ,OAe/B,CACC,MAAA,EAAa,KAAK,eAAe,E
AAU,EAAO,EAAO,GAC/D,EAAQ,QAAU,GAId,qBAAqB,EAAGB,GAerC,MAAA,EAAU,KAAK,QAAQ,IAAI,I
AC3B,MAAC,GAAS,EAOT,OALF,KAAA,eAAe,GAEC,MAAjB,IACF,EAAQ,OAAS,EAAoB,EAae,IAE/C,EA
Q,OAGT,eACJ,EAA4B,EAauB,EACnD,GAEE,GADC,KAAA,eAAiB,KAAK,aAAa,EAAU,IAC7C,KAAK,mBA

CN,KAAK,cAA0C,KAA1B,KAAK,mBAA4B,KAAM,CACxD,MAAA,GAAM,KAAK,cAAgB,KAAO,MAAM,QAAQ,GACjD,KAAA,mBAAoB,EACzB,QAAQ,kCACyB,SAC7B,oCAEC,OAAA,KAAK,eAAe,eAAe,EAAU,EAAS,GAGvD,aAAa,EAAyB,GACrC,OAAA,EAAM,GAAK,EAAM,GAAK,EAAM,KAAA,gBAAgB,IAItD,SAAS,EACL,EAaiB,GACf,GAAU,YAAV,GAAiC,cAAV,EACIB,OAAA,EACF,GAAC,UAAV,GAA+B,SAAV,EAakB,CAC1C,MAAA,EAoB,UAAV,EAqB,IAAI,WAAW,EAAE,QACjB,IAAI,WAAW,EAAE,QACjD,IAAA,IAAI,EAAl,EAAG,EAAl,EAoB,SAAU,EACnC,EAoB,GAAK,KAAK,MAAM,EAAE,IAEpB,OAAA,EAED,MAAA,IAAI,uBAAuB,KAEPc,QAAA,iBAAA,EAx+BgB,EAAA,WAAa;;ACvE7B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,OAAA,eAAA,QAAA,mBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OA AA,EAAA,oBAAA,OAAA,eAAA,QAAA,kBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,mBAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gBAAA,QAAA,WAAA,QAAA,gBAAA,EAnBD,IAAA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,iBAiBC,QAAA,WAAA,EAhBD,IAAA,EA AA,EAAA,QAAA,iBAgBC,QAAA,WAAA,EADd,IAAA,EAAA,QAAA,mBACA,EAAA,QAAA,iBACA,EAAA,QAAA,mBAYC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EA AA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eA AA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KA AA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EA A,GAAA,EAAA,IAAA,EAAA,GAAA,EAfK,SAAU,KACR,EAAA,EAAA,OAAA,IAAI,4BAA4B;;ArEHjC,aAA A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,IAAA,EAAA,CAAA,OAAA,EAAA,eAAA,GAAA,OAAA,e AAA,QAAA,gBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,WAAA,QAAA,WAAA,EA bP,IAAA,E AAA,QAAA,yBACA,EAAA,QAAA,mBACA,EAAA,QAAA,aAOA,EAAA,QAAA,WAAA,OAAA,KAAA,GAAA ,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,IAAA,OAAA,UAAA,eAAA,KAAA,EAAA,IAAA,OAAA,eAAA,Q AAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,SALI,EAAY,YAAA,cACE,EAAA,EAAA,iBAA A,QAAS,IAAM,IAAI,EAAl,iBAawB,GAQID,MAAM,EAAQ,CAAC,eAAA,EAAA,gBAAf,QAAA,MAAA;;AsE LqB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,QAAA,mBAAA,QAAA,uBAAA, EAV5B,IAAA,EAAA,QAAA,yBAIO,MAAM,EAoB,2DAML,QAAA,kBAAA,EADrB,MAAM,EAqB,4BACN, QAAA,mBAAA,EAAtB,MAAO,EAKX,YAAY,EAAY,EAakB,GAJ1C,KAAA,cAAgB,CAAC,IAAK,KAKf,KAA A,YAAc,EAAa,aAAA,2BAA2B,EAAQ,GAC9D,KAAA,uEAEC,2KATkB,QAAA,gBAAA;;ACYM,aAAA,OAAA ,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,QAAA,UAAA,QAAA,QAAA,QAAA,uBAAA,EA tBl C,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,qBAEO,MAAM,EAoB,yLAgBC,QAAA, kBAAA,EAT3B,MAAM,EAAU,0IASW,QAAA,QAAA,EAJ3B,MAAM,EAAY,qCAIS,QAAA,UAAA,EA5B,M AAO,EAQX,YACI,EAAY,EAakB,EAC9B,GAAMB,GATvB,KAAA,cAAgB,CAAC,IAAK,KAGtB,KAAA,sBAA uB,EACvB,KAAA,cAAe,EACf,KAAA,cAAe,EAKR,KAAA,YAAc,EAAa,aAAA,2BAA2B,EAAQ,GAC7D,MAA A,EAoB,KAAK,YAAY,OAC1B,IAAA,EAyB,GACzB,GAAA,EACE,GAAS,IAAT,GAAuD,IAAzC,EAak,KA AA,cAAc,KAAK,aACxC,EAyB,+FAKpB,CAKD,GAHJ,kBADc,EAakB,EAAA,mBAAA,2CAInB,IAAT,EACF, +CAC+B,KAAK,YAAY,8FAI3C,CACC,MAAA,GAAW,EAAY,EAAA,aAAA,SAAU,GACvC,8DAEO,EAAS,EA AO,cAAc,KAAK,YAAY,EAoB,8DAEtD,EAAS,EAoB,cAAc,KAAK,YAAY,EAoB,6NAS9D,KAAA,oEAEC,w KAQA,kDazDwB,QAAA,sBAAA;;AhDR3B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,S AAA,EAAA,QAAA,oBAAA,EADp,IAAA,EAAA,QAAA,yBAIM,SAAU,EACZ,GACI,MAAA,OAAC,EAAD,QA AS,GAAW,GACpB,EAAC,GAAK,EAIL,OAFP,EAAQ,OAAO,EAAE,QAeV,CAAC,OAAQ,EAAE,OAAQ,MAA O,EAAE,MAAO,MAAO,EAAE,OAG9C,MAAM,EA+B,CAC1C,WAAy,EAD8B,SAE1C,YAAa,QAcB,WAAy, GAHP,QAAA,eAAA;;AFiBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,Q AAA,mBAAA,EA/BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,cAWM,SAAU,EACZ,GACI,MAAA,OAAC,E AAD,QAAS,GAAW,GACpB,KAAC,EAAD,KAAO,GAAQ,EAef,EAac,EAAQ,eAAe,EAak,MAAO,aACjD,EA AU,EAAQ,QAAQ,IAAI,EAAY,QAe1C,GAAiB,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAG,GAAO,QAA A,IAE9C,GAAiB,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAG,GAAO,QAAA,IAI7C,OAFP,EAAQ,mBAA qB,CAAC,KAAM,EAagB,KAAM,GAEnD,EAGF,MAAM,EA8B,CACzC,WAAy,EAD6B,QAeZC,YAAa,QAC

b,WAAY,GAHP,QAAA,cAAA;;AmDGA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UA
A,EAAA,QAAA,gBAAA,QAAA,iBAAA,QAAA,eAAA,EAICP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,mB
ACA,EAAA,QAAA,0BAEO,MAAM,EAAY,+BA6BIB,QAAA,UAAA,EA5BA,MAAM,EAAM,mIAK1B,SAAU,
EAAU,GAKIB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,GAAC,GACN,MAAC,GAA
S,EAEV,EAAS,EAAQ,eACnB,GAAl,UACJ,EAAC,KAAA,kBAaKB,EAA0B,YAE/C,GAAU,EAAM,EAAA,OAA
A,QAAQ,gCAC1B,IAAI,EAJ,sBAA0B,EAaKB,EAAE,MAAO,EAAO,OAC5D,IAAI,EAJ,gBAAoB,EAAW,E
AAE,MAAO,EAAO,OAC7C,EAAS,EAAQ,gBAAGB,EAAS,CAAC,EAAG,GAAS,EAAE,OAIxD,OAFP,EAAQ,8
BAA8B,GAE/B,EAGF,QAAA,iBAAA,EAAA,MAAM,EAAGC,CAC3C,WAAY,EAD+B,UAE3C,YAAa,QACb,W
AAY,GAHP,QAAA,gBAAA;;ACXA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,MAAA,E
AAA,QAAA,YAAA,QAAA,aAAA,QAAA,WAAA,EAvBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,mBACA
,EAAA,QAAA,0BAEO,MAAM,EAAQ,+BAiBd,QAAA,MAAA,EAhBA,MAAM,EAAe,mIAKtB,SAAU,EAAM,
GAEd,MAAA,OAAC,EAAD,QAAS,GAAW,GACpB,EAAC,EAAD,MAAI,GAAS,EAEB,GAAU,EAAM,EAAA,O
AAA,QAAQ,gCAC1B,IAAI,EAJ,sBAA0B,EAaC,EAAE,MAAO,EAAM,OACvD,IAAI,EAJ,gBAAoB,EAAO,
EAAE,MAAO,EAAM,OACvC,OAAA,EAAQ,gBAAGB,EAAS,CAAC,EAAG,GAAQ,EAAE,OAGjD,QAAA,aAA
A,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA;;ACoLN
,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,
6BAAA,EAAA,QAAA,gCAAA,QAAA,yBAAA,QAAA,6BAAA,EA3MD,IAAA,EAAA,QAAA,yBAGA,EAAA,Q
AAA,mBACA,EAAA,QAAA,0BACA,EAAA,QAAA,sBACA,EAAA,QAAA,wBACA,EAAA,QAAA,oBACA,EA
AA,EAAA,QAAA,mBAEA,EAAA,EAAA,QAAA,0BAiMC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA
,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,E
AAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAA
A,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAA
A,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAA
A,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,
EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5LM,MAAM,EAA0B,0BA4L
tC,QAAA,wBAAA,EA1LM,MAAM,EAA2B,2DA0LvC,QAAA,yBAAA,EArlM,MAAM,EAaKc,yLAsBzC,SA
U,GACZ,UAAC,EAAD,gBAAY,EAZ,cAA6B,EAA7B,MAA4C,IAEvC,MAAA,EAAE,OAAA,EAAQ,QAAA,M
ACT,MAAA,EAAC,GAAC,EAAC,EAAe,EAef,EAAS,GAAS,EAAE,MAcTB,GAAA,EAAa,mBAAMb,CAAC,K
AAwB,MAAjB,EAuB,CAC3D,MAAA,EAAQ,EAAa,QAAQ,IAAI,EAAE,QACnC,EAAY,EAAC,EAAM,OAA
B,GACrD,OAAA,EAAa,eAAe,EAAE,MAAO,EAAQ,GAKID,IAAA,EAOG,OALL,GAHE,EAAM,EAAA,OAAA,
QAAQ,gCAAqD,MAAnB,EAGxC,IAAI,EAJ,qBAAYB,EAAE,MAAO,GAEIC,IAAI,EAJ,eAAmB,EAAE,MA
AO,GAGjC,EAAa,gBAAGB,EAAS,CAAC,GAAl,IAuBhD,SAAU,GAAiB,UAC/B,EAD+B,gBAE/B,EAf+B,iBAG
/B,GAAmB,EAHY,gBAI/B,GAaKB,EAJa,cAK/B,EAL+B,MAM/B,IAEO,MAAA,EAAE,OAAA,EAAQ,QAAA,M
ACT,MAAA,EAAC,EAAD,EAAl,GAAC,EAAC,EAAe,EAEjB,GAAA,GAA+B,cAAZ,EAAE,MAAuB,CACxC,M
AAA,EAAQ,EAAa,QAAQ,IAAI,EAAE,QACnC,EAAQ,EAAa,QAAQ,IAAI,EAAE,SAEIC,EAAM,GAAQ,CACn
B,CAAC,EAAM,mBAAMb,KAAM,EAAM,mBAAMb,MACzD,CAAC,EAAM,mBAAMb,KAAM,EAAM,mBAA
mB,OACzD,IAAI,IACE,MAAC,EAAO,GAAS,EAEjB,EAAU,CACd,OAAQ,EAAM,OACd,MAAO,EAAM,MAC
b,MAAO,EAAE,OAEI,EAAU,CACd,OAAQ,EAAM,OACd,MAAO,EAAM,MACb,MAAO,EAAE,OAGL,EAAU,
IAAI,EAJ,gBAAoB,EAAW,EAAE,MAAO,EAAE,OACnD,OAAA,EAAa,gBACHB,EAAS,CAAC,EAAS,IAAU,
EAAW,EAAA,YAAA,EAAM,MAAO,EAAM,UAG3D,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,KAAA
,EAAM,KAAA,GAAO,QAAS,IAOrC,OALP,EAAa,8BAA8B,GAC3C,EAAa,8BAA8B,GAIpC,EAGH,MAAA,EA
AS,IAAS,EAAW,EAAA,YAAA,EAAE,MAAO,EAAE,OAC1C,GAAA,EAAa,mBAAMb,CAAC,EAAG,KAAwB,
MAAjB,EAuB,CAC9D,MAAA,EAAQ,EAAa,QAAQ,IAAI,EAAE,QACnC,EAAQ,EAAa,QAAQ,IAAI,EAAE,S
ACIC,EAAW,GAAY,EAC1B,EAAE,MAAO,EAAE,MAAO,EAAM,OACxB,EAAM,OAAb,GAE1B,EAAM,EA
Aa,eAAe,EAAU,GAG3C,OAFS,EAAa,QAAQ,IAAI,EAAl,QACrC,OAAS,EACV,EAML,IAAA,EAQG,OANL,G
AJE,EAAM,EAAA,OAAA,QAAQ,iCACK,MAAnB,EAGQ,IAAI,EAJ,sBACN,EAiB,EAAE,MAAO,EAAE,M
AAO,GAE7B,IAAI,EAJ,gBAAoB,EAAW,EAAE,MAAO,EAAE,OAG/C,EAAa,gBAAGB,EAAS,CAAC,EAAG,
GAAl,IAInD,SAAU,EACZ,EAAqC,GAAS,GAC5C,GAAe,WAAf,EACE,OAAA,EACK,EAAgB,OAEIB,EAAS,O

ACX,GAAMb,SAAf,EACL,OAAA,EACK,EAAGb,KAElB,EAAS,KACX,GAAMb,QAaf,EACL,OAAA,EACK,E
AAgB,IAElB,EAAS,IACX,GAAMb,UAaf,EACL,OAAA,EACK,EAAGb,MAElB,EAAS,MACX,GAAMb,UAaf,
EACL,OAAA,EACK,EAAP,aAEK,EAAP,MACK,GAAMb,cAAf,EACL,OAAA,EACK,EAAP,iBAEK,EAAP,UA
El,MAAA,IAAI,oBACN,qDACL,QAAA,gCAA;ACzM+B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,yBAAA,EAA1B,MAAO,EAox,YACI,EAakC,EACIC,EAAuC,GAAa,EACpD,GAAa,EAAO,GAA
U,EAAO,EAAqB,KAC1D,GAAqB,EAAO,GAAyB,GAVzD,KAAA,cAAgB,CAAC,UAAW,WAC5B,KAAA,cAA
e,EACf,KAAA,cAAe,EASR,KAAA,YAAc,EAeb,MAAA,EAAY,EAAa,EAAO,GAAK,EAAO,GAC5C,EAAwB,K
AAK,KAAK,EAAY,GAe9C,EAAU,EAAa,cAAgB,cACvC,EAAU,EAAa,cAAgB,cACvC,EAAW,EAAa,CAAC,S
AAU,UAAY,CAAC,SAAU,UAC1D,EAAW,EAAa,CAAC,SAAU,UAAY,CAAC,SAAU,UAe5D,IAAA,EAAoB,G
AAI,EAAYB,GACjD,IAEA,EADE,sGAGE,eAEK,8FAGL,uDAIA,eAIN,EAAYB,gCAGrB,MAAA,EAaiB,EAAU,
kCAAoC,GACjE,GACG,KAAA,cAAc,KAAK,QAGtB,GACG,KAAA,cAAc,KAAK,0BAGtB,GACG,KAAA,cAA
c,KAAK,kBAGtB,IAAA,EAAgB,OAcHb,EAAgB,OAcHb,EAAO,GAAK,EAAO,GACrB,0BAAwC,EAAO,GAA
K,OAC3C,EAAO,GAAK,EAAO,KAC5B,0BAAwC,EAAO,GAAK,QAGjD,KAAA,oBACD,4CAE8B,8GAIR,qCA
CL,8BACA,6CACE,8CACA,oKAIjB,EAAS,QAAQ,EAAS,8BAC1B,EAAS,QAAQ,EAAS,wKASvC,gBAEA,kDA
3FsB,QAAA,oBAAA;ACUG,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,QAAA,s
BAAA,EAznC,IAAA,EAAA,QAAA,yBAOO,MAAM,EAAmB,CAC9B,KAAM,wCACN,KAAM,yCAG2B,QAA
A,iBAAA,EAA7B,MAAO,EAKX,YAAY,EAAY,EAakB,GAJ1C,KAAA,cAAgB,CAAC,QAAS,QAAS,QAAS,SA
KrC,KAAA,YAAc,EAAa,aAAA,2BAA2B,EAAQ,GAe9D,KAAA,qHAGC,6SAXyB,QAAA,uBAAA;AhC2E5B,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,QAAA,oBAAA,EAvFP,IAAA,EA
AA,QAAA,yBAGA,EAAA,EAAA,QAAA,4BAEA,EAAA,QAAA,mBACA,EAAA,QAAA,0BACA,EAAA,QAAA
,0BAEA,EAAA,QAAA,a8EO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA
,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA
,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GA
AA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OA
AA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAA
A,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,
QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5EP,MAAM,EAAM,gBAEN,SAAU,EACZ,GACI,MAAA,
OAAc,EAAD,QAAS,GAAW,GACpB,EAAC,EAAD,EAAl,GAAK,EACT,EAAQ,EAAa,aAAA,WAAW,EAAE,M
AAO,EAAE,OAE7C,GAAY,cAAZ,EAAE,MAAuB,CACrB,MAAA,EAAQ,EAAQ,QAAQ,IAAI,EAAE,QAC9B,E
AAQ,EAAQ,QAAQ,IAAI,EAAE,QAE9B,EAAC,IAAI,EAAl,uBACHb,EAAqB,iBAaiB,KAAM,EAAE,MAAO,E
AAE,OACrD,EAAC,IAAI,EAAl,uBACHb,EAAqB,iBAaiB,KAAM,EAAE,MAAO,EAAE,OAErD,EAAS,CACb,C
ACE,OAAQ,EAAM,mBAAmB,KAAK,OACtC,MAAO,EAAM,mBAAmB,KAAK,MACrC,MAAO,EAAE,OAEX,
CACE,OAAQ,EAAM,mBAAmB,KAAK,OACtC,MAAO,EAAM,mBAAmB,KAAK,MACrC,MAAO,EAAE,OAEX,
CACE,OAAQ,EAAM,mBAAmB,KAAK,OACtC,MAAO,EAAM,mBAAmB,KAAK,MACrC,MAAO,EAAE,OAEX,
CACE,OAAQ,EAAM,mBAAmB,KAAK,OACtC,MAAO,EAAM,mBAAmB,KAAK,MACrC,MAAO,EAAE,QA
AIP,EAAW,EAAQ,gBAAGb,EAAa,EAAQ,WACxD,EAAW,EAAQ,gBAAGb,EAAa,EAAQ,WAExD,GACF,EAA
Q,EAAA,SAAA,CAAC,OAAQ,CAAC,KAAM,EAAU,KAAM,GAAW,QAAA,IAMhD,OAJP,EAAQ,8BAA8B,G
ACtC,EAAQ,8BAA8B,GAG/B,EAGL,GAAA,EAAQ,mBAAmB,CAAC,EAAG,IAAK,CACHc,MAAA,EAAQ,EA
AQ,QAAQ,IAAI,EAAE,QAC9B,EAAQ,EAAQ,QAAQ,IAAI,EAAE,SAC7B,EAAW,IAAY,EAC1B,EAAA,iBAA
A,EAAE,MAAO,EAAE,MAAO,EAAM,OACxB,EAAM,OAASB,GAElB,EAAM,EAAQ,eAAe,EAAU,GAGtC,O
AFS,EAAQ,QAAQ,IAAI,EAAl,QACHc,OAAS,EACV,EAGL,IAAA,EAOG,OALL,GADE,EAAM,EAAA,OAAA,
QAAQ,gCACN,IAAI,EAAl,sBAA0B,EAAK,EAAE,MAAO,EAAE,OAE1C,IAAI,EAAl,gBAAoB,EAAK,EAAE,
MAAO,EAAE,OAGzC,EAAQ,gBAAGb,EAAS,CAAC,EAAG,GAAl,GAG3C,MAAM,EAA+B,CAC1C,WAAy,E
AD8B,SAE1C,YAAa,QAcB,WAAy,GAHP,QAAA,eAAA;AiC5DN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,cAAA,EAxBD,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,iBAEM,SAAU,EACZ,EAAmB
,EACnB,GACI,MAAA,EACF,EAAC,EAAY,EAAA,aAAA,EAAM,WACf,EAAY,EAAA,aAAA,EAAM,QACpB,E
AASB,CAC1B,MAAO,EAAM,MACb,MAAO,EACP,OAAQ,EAAM,QAeV,EACF,EAAC,EAAY,EAAA,aAAA,O
ACT,EAAY,EAAA,aAAA,IAEd,EAAU,IAAI,EAAl,qBAAYB,EAAgB,GAEnD,EAAS,EAAQ,gBACnB,EAAS,CA

AC,GAAU,EAAM,MAAO,MAFC,GAI/B,MAAA,CAAC,OAAQ,EAAO,OAAQ,MAAO,EAAY,MAAO,EAAO;;A
CW3D,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,QAAA,mBAAA,EArcP,I
AAA,EAAA,QAAA,yBAGA,EAAA,QAAA,2BACA,EAAA,QAAA,iBAEM,SAAU,EAAQ,GAKhB,MAAA,OAA
C,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,GAAK,GACN,MAAC,GAAS,EACV,EAAe,EAef,EAAQ,
EAAK,KAAA,cAAc,EAAE,OAC7B,EAAS,EAAK,KAAA,uBAAuB,EAAO,GAC5C,EAAS,EAAK,KAAA,cAAc,
GAE7B,EAAA,KAAA,OACD,IAAU,EACV,sBAAwB,UAAe,oCACzB,EAAE,cAAc,qCAC1B,gDAEF,MAAA,E
AAW,EAAa,QAAQ,IAAI,EAAE,QACxC,OAAA,EAAS,WAAa,EAAC,EAAA,eAAA,EAAE,MAAO,IACtB,OAAr
B,EAAS,UAAoB,EAAC,EAAA,eAAA,EAAS,MAAO,IAIjE,EAAa,OAAO,EAAE,QAef,CAAC,OAAQ,EAAE,OA
AQ,MAAO,EAAQ,MAAO,EAAE,SALzC,EAAC,EAAA,eAAA,EAAG,EAAQ,GAQ7B,MAAM,EAA8B,CACzC,
WAAY,EAD6B,QAeZc,YAAa,QACb,WAAY,GAHP,QAAA,cAAA;;ACiCiB,aAAA,OAAA,eAAA,QAAA,aAAA
,CAAA,OAAA,IAAA,QAAA,iBAAA,EAHxB,IAAA,EAAA,QAAA,yBAGM,MAAO,EAKX,YAAY,EAAqC,GAJ
jD,KAAA,cAAgB,CAAC,KAKT,MAAA,WAAC,EAAD,UAAa,EAAb,OAAwB,EAAXB,QAAgC,GAAW,EAC5C,
KAAA,YAAc,CAAC,EAAW,GAeZB,MAAA,EAAqD,EAA7B,KAAK,MAAM,EAAa,GACHD,EAA0B,EAAa,EA
EzC,IAAA,EAAGB,iCACHB,GAAW,MAAX,EAAiB,CACb,MAAA,EAAC,EAAl,EACxB,8BACI,EAAK,KAAA,
MAAM,GAAe,EAAY,YAAY,GACxB,YAG5B,IAAA,EAAMB,GACnB,EAAS,EAAa,IACxB,yCAC8B,kDAM3B,
KAAA,yHAIC,sNAQwB,sEAIJ,8QASIB,kDAGqB,mBACS,IAA5B,2FAGF,yBACqC,IAA5B,6IAKT,yBACqC,IA
A5B,iLAMT,6DA1EY,QAAA,YAAA;;ACAe,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
mBAAA,EAAPB,MAAO,EAKX,YACI,EACA,GANJ,KAAA,cAAgB,CAAC,KAOT,MAAA,WAAC,EAAD,UAA
a,EAAb,OAAwB,EAAXB,QAAgC,GAAW,EAC5C,KAAA,YAAc,CAAC,EAAW,GAe3B,IAAA,EAASB,MACtB,
EAAY,GAEG,SAAf,EACF,EAASB,MACE,QAaf,GAET,EAASB,cACtB,EAAY,OACY,QAaf,IAET,EAASB,eAC
tB,EAAY,OAGV,IAAA,KAAiB,KAAc,KAAc,KAC7C,oEAeE,QAaf,EACF,EAAC,WACU,SAAf,EACT,EAAC,Y
ACU,QAaf,EACT,EAAC,WACU,QAaf,IACT,EAAC,YAGV,MAAA,EAAqD,EAA7B,KAAK,MAAM,EAAa,GA
ChD,EAA0B,EAAa,EAeZc,IAAA,iBACmB,QAaf,kEAESB,SAAf,mKAiK,yCAIhB,EAAU,OAeK,QAaf,GACF,
EAASB,MACtB,EAAGB,qMAKhB,EAAU,SACc,QAaf,IACT,EAASB,MACtB,EAAGB,qMAKhB,EAAU,SAGR,I
AAA,EAAMB,GACnB,EAAS,EAAa,IACxB,yCAC8B,kEAK3B,KAAA,sDACiC,kHAiHC,sNAQwB,yCAEA,mK
AMJ,gEAElB,cAAoB,gMAOpB,kDAGqB,mBACS,IAA5B,mBACF,cAAoB,2KAOpB,yBACqC,IAA5B,mBACT,c
AAoB,kLAOpB,yBACqC,IAA5B,mBACT,cAAoB,yLAOpB,mCAEQ,sBA/IM,QAAA,cAAA;;ACuDzB,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EA1DD,IAAA,EAAA,QAAA,yBAGA,EAAA,Q
AAA,eACA,EAAA,QAAA,iBAMA,SAAS,EAAMB,GAEPB,MAAA,EAAS,GAER,KAAkB,IAAIB,EAAO,QAAS
D,IAAtC,EAAO,EAAO,OAAS,GAAG,SAAc,CAC/D,MAAA,EACF,EAAO,OAAS,EAAO,EAAO,OAAS,GAAG,
QAAU,EAAQ,GAC1D,EAAa,EAAa,aAAA,yBAAYB,GACzD,EAAO,KAAK,CACV,OAAQ,EACR,WAAA,EAC
A,QAAS,KAAK,KAAK,EAAU,KAI1B,OAAA,EAGH,SAAU,EACZ,EAAe,EAAiB,EACHC,GACI,MAAA,EAAK
B,EAAMB,EAAE,OAeZc,IAAA,EAAS,EACR,IAAA,IAAI,EAAl,EAAG,EAAl,EAAGB,OAAQ,IAAK,CACzC,M
AAA,OAAC,EAAD,WAAS,EAAT,QAAqB,GAAW,EAAGB,GAeID,IAAA,EACA,EAef,EADoB,SAAlB,EACc,I
AAN,EACN,IAAI,EAAl,YACI,CAAC,WAAA,EAAY,OAAA,EAAQ,UAAW,EAAE,MAAM,GAAl,QAAA,GAA
U,GAC1D,IAAI,EAAl,YAAgB,CAAC,WAAA,EAAY,OAAA,EAAQ,UAAW,EAAE,MAAM,GAAl,QAAA,IAEt
D,IAAI,EAAl,cACN,CAAC,WAAA,EAAY,OAAA,EAAQ,UAAW,EAAE,MAAM,GAAl,QAAA,GAAU,GAG5D
,EAAiB,EACjB,EAAS,EAAQ,gBAAGB,EAAS,CAAC,GAAS,GAehD,EAAe,SAAW,EAAE,QAC9B,EAAQ,8BA
A8B,GAlnC,OAAA;;ACjBR,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAvcD,I
AAA,EAAA,QAAA,qBAEM,MAAO,EAMX,YAAY,EAakB,GAL9B,KAAA,cAAgB,CAAC,KAMT,MAAA,EA
AwB,IAAI,MAAM,EAAO,QAC1C,IAAA,IAAI,EAAl,EAAG,EAAl,EAAY,OAAQ,IACtC,EAAY,GAAK,EAAO,
EAAO,IAE5B,KAAA,YAAc,EACd,KAAA,KAAO,EAAY,OACIB,MAAA,GAAQ,EAakB,EAAA,mBAAA,KAA
K,MAC/B,EAAW,EAakB,GAe9B,KAAA,uCAED,sDACE,qBAMvB,SAAS,EAakB,GACnB,MAAA,EAAO,EA
AO,OACHB,GAAA,EAAO,EACH,MAAA,4BAA4B,0BAE9B,MAAA,EACF,CAAC,UAAW,UAAW,UAAW,UA
AW,UAAW,WACtD,EAAiB,IAAI,MAAM,GAC5B,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,OAAQ,IACjC,EAe,
EAAO,IAAM,EAAC,GAERc,OAAA,EAAe,OACvB,QAAA,iBAAA;;ACpCkC,aAAA,OAAA,eAAA,QAAA,aAAA
,CAAA,OAAA,IAAA,QAAA,4BAAA,EAHnC,IAAA,EAAA,QAAA,kBACA,EAAA,QAAA,qBAEM,MAAO,EA
QX,YAAY,EAakB,GAP9B,KAAA,cAAgB,CAAC,KAIjB,KAAA,cAAe,EACf,KAAA,cAAe,EAGP,MAAA,EA

wB,IAAI,MAAM,EAAO,QAC1C,IAAA,IAAI,EAAI,EAAG,EAAI,EAAY,OAAQ,IACtC,EAAY,GA AK,EAAO,EAAO,IAI7B,GAFC,KAAA,YAAc,EACd,KAAA,KAAO,EAAY,OACpB,KAAK,KAAO,EACR,MAAA,mCAC2B,KAAK,8BAEIC,MAAA,GAAQ,EAakB,EAAA,mBAAA,KAAK,MAE/B,GAAC,EAAe,EAAA,gBAAA,KAAM,KAAK,MACxC,EAAGB,IAAI,MAAM,KAAK,MACHc,IAAA,IAAI,EAAI,EAAG,EAAI,EAAO,OAAQ,IACjC,EAAc,EAAO,IAAM,EAAY,GAEnC,MAAA,UAAoB,EAAc,OAAO,GAAG,UAC5C,OACG,EAAY,KAAK,KAAO,QA AQ,EAAY,KAAK,KAAO,KAC3D,qBAA0B,EAAc,YAAY,KAERd,KAAA,uCAED,+EA EY,gBACT,6BACW,wB AEZ,EAAY,KAAK,KAAO,mBACrB,EAAY,KAAK,KAAO,QAAQ,EAAY,KAAK,KAAO,8BAC/C,kBACT,+BA CW,iEA3CW,QAAA,uBAAA;;ApCSIC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAA,OAAA,eAAA,QAAA,mBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,oBAbD,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,oBACA,EAAA,QAAA,2BAEM,SAAU,EACZ,EAAe,EAA gB,GAC3B,MAAA,GAAU,EAAM,EAAA,OAAA,QAAQ,+BAC1B,IAAI,EA AJ,uBAA2B,EAAE,MAAO,GACpC,IAAI,EA AJ,iBAAqB,EAAE,MAAO,GAC3B,OAAA,EAAQ,gBAAGB,EAAS,CAAC,GA AI,EAAE;;AqC4ChD,aA AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAxDD,IAAA,EAAA,QAAA,yBAGA,EA AA,QAAA,0BACA,EAAA,QAAA,aAEA,EAAA,QAAA,oBAEM,SAAU,EACZ,EAAe,EAAuB,EACtC,GACI,MA AA,EAAMB,EAEnB,EAAQ,EAAE,MAAM,OA Ehb,EA AW,EA AK,KAAA,eAAe,EAakB,EAAE,OACrD,IAAA,EAAO,EACL,MAAA,EAAe,EAAa,aAAA,mBAAMB,EAAM,GACrD,EAAuC,MAAhB,EA Ezb,IAAA,EA AW,EA CX,IACF,GA AW,EA AC,EAAA,eAAA,EAAG,EA AC,GA E1C,EAAO,EAAa,aAAA,iBAAiB,EA AK,OAAQ,IAGvC ,EAAA,aAAA,2BAA2B,MAAO,EAAM,GAC/C,MAAC,EAAa,GACHb,EAAa,aAAA,0BAA0B,EAAS,MAAO,GA EvD,IAAA,EA AW,EACX,IAEF,EA AW,EAAa,aAAA,qBAAqB,EAAa,IAGtD,MAAA,EAAS,EA AK,KAAA,cAA c,GA E5B,EADQ,EA AK,KAAA,cAAc,EAAE,OACT,EACpB,GAAGB,EACIB,EAAA,SAAA,CAAC,OAAQ,CAA C,EAAG,GA AW,MAAO,CAAC,MAAO,CAAC,EA AW,IAAU,QAAA,IAE3D,GA AU,EA AW,EAAA,YAAA,EA AE,OA EvB,GA AU,EAAO,EAAA,QAAA,EAAe,EAAS,MAAO,GACHD,GACF,EAAQ,EAAA,SAAA,CAAC,OA AQ,CAAC,EAAG,GA AU,MAAO,CAAC,MAAO,GA AW,QAAA,IAQtD,OANP,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GACIC,GACF,EAAQ,8BAA8B,GAGjC;;ACvCF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA AA,QAAA,IAAA,EAAA,QAAA,eAAA,EAhBP,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,cAEM,SAAU,EACZ ,GACI,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GA E3B,EAAC,GA AK,GACN,KAAC,EAAD,SAAO, GAAY,EA EIB,OAAA,EAAQ,EAAA,SAAA,EAAG,EAAM,EA AU,GAG7B,MAAM,EAA0B,CACrC,WAAY,EA DyB,IAERc,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;ArCuBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O AAA,IAAA,QAAA,UAAA,EAAA,QAAA,qBAAA,EA vCP,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,oBAGM, SAAU,EA AU,GAKIB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,GA AK,GACN,KAA C,GAAQ,EACT,EAAe,EA Ef,EAAQ,EAAE,MAAM,OA Ehb,EA AQB,IAAI,MAAM,GACHc,IAAA,IAAI,EAAI,EA AG,EAAI,EAAS,OAAQ,IACnC,EAAS,GA AK,EAAE,MAAM,EA AK,IAGzB,IAAA,EACA,GAAA,EAAa,mBA AmB,CAAC,IAAK,CACIC,MACA,EADW,EAAa,QAAQ,IAAI,EAAE,QACpB,OACIB,GAAY,EAAa,EAAA,kBA AA,EAAQ,EAAE,MAAO,EAAE,MAAO,EAAM,GA E/D,EAAM,EAAa,eAAe,EA AU,EA AE,OAC9B,EAAa,QAA Q,IAAI,EAAI,QACrC,OAAS,OA EJB,GAAM,EA AC,EAAA,eAAA,EAAG,EAAM,GA ExB,OAAA,EAGF,MAAM, EAAGC,CAC3C,WAAY,EAD+B,UAE3C,YAAa,QACb,WAAY,GAHP,QAAA,gBAAA;;AsC2IN,aAAA,OAAA,e AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAAA,QAAA,iCAAA,EAILD,IAAA,EAAA,QAAA,y BAGA,EAAA,QAAA,sCACA,EAAA,QAAA,wBAEA,EAAA,QAAA,cACA,EAAA,QAAA,aACA,EAAA,QAAA, SACA,EAAA,QAAA,eAKO,MAAM,EAA8B,IACrC,SAAU,GAAGB,EAC9B,EAD8B,EA E9B,EA F8B,WAG9B,EA H8B,WAI9B,EA J8B,QAK9B,EAL8B,KAM9B,EAAO,KANuB,uBAO9B,EAAYB,KAPK,eAQ9B,EA AiB,EARa, WAS9B,EAAa,OAEP,MAAA,EAAQ,EAAE,MAAM,OACHb,EAAQ,EAAE,MAAM,OA Ehb,EA AC,EAAa,EAAE, MAAM,EAAQ,GA AK,EAAE,MAAM,EAAQ,GACHe,EA AC,EAAa,EAAE,MAAM,EAAQ,GA AK,EAAE,MAAM, EA AQ,GA EH e,EA AC,EAAa,EAAE,MAAM,EAAQ,GA AK,EAAE,MAAM,EAAQ,GACHe,EA AC,EAAa,EAAE, MAAM,EAAQ,GA AK,EAAE,MAAM,EAAQ,GA EH e,EAAa,EAAE,MAAM,MAAM,GA AI,GAC/B,EAAa,EAAE, MAAM,MAAM,GA AI,GA E/B,EAAY,EA AK,KAAA,cAAc,GAC/B,EAAY,EA AK,KAAA,cAAc,GA E/B,EACF,IA Ac,GAA2B,IAAd,GA AiC,IAAd,EA E7C,EAAA,KAAA,OACD,GAAS,GA AK,GAAS,GA AK,EAC5B,IAAM,0J AEsB,WAAoB,OA E9C,MAEA,GADF,EAAY,EAAY,EAAE,MAAM,MAAM,GA AI,GA AK,EAAE,MAAM,MAA M,GA AI,IACIC,OAAO,CAAC,EAAa,IAEnD,EAAA,KAAA,OACD,IAAGB,EACHb,sCAAwC,cACjC,6BA AuC,E

AAE,gBACzC,EAAE,wBAAwB,uBACV,iBAErB,MAAA,EAAqC,EACvC,CAAC,EAAW,EAAa,GACzB,CAAC,EA
AW,EAAa,GACvB,EAAqC,EACvC,CAAC,EAAW,EAAa,GACzB,CAAC,EAAW,EAAa,GAGvB,GAAM,EA
AQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAL,QAAA,EAAS,MAAO,CAAC,MAAO,KACvD,GAAM,EA
AQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAL,QAAA,EAAS,MAAO,CAAC,MAAO,KAEvD,EAA8B,CA
AC,EAAK,GAEPc,EAAW,KAAK,IAAI,EAAW,GAC/B,EAAY,EAAa,EAAL,MAAM,GAAK,EAAL,MAAM,GA
EID,EAAkB,MAAR,EACV,EAASD,MAA1B,EAC5B,EAAMc,cAAf,EACpB,EAAGc,MAAd,GACpB,EAA6B,EA
A,8BAAA,GAAY,GACzC,KAGA,IAAA,EAIA,IAAiB,IAAhB,GAAqC,IAAhB,IACtB,EAAY,IAAoD,KAP3C,GA
AW,GACHc,GAAwC,MAAnB,GAMkD,CACrE,IAAA,EAAO,EACP,EAAO,EACP,IACF,GAAO,EAAU,EAAA,
WAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,EAAS,MAAO,CAAC,KAAM,CAAC,EAAG,EAAG,MACIE
,EAAc,KAAK,IAEjB,IACF,GAAO,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,EAAS,M
AAO,CAAC,KAAM,CAAC,EAAG,EAAG,MACIE,EAAc,KAAK,IAGf,MACA,EAaIC,IAAhB,EAEnB,IAAA,EA
AS,EAH0B,IAAhB,IAKrB,GAAS,EAAQ,EAAA,SAAA,CACf,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MAA
O,CAAC,MAAO,CAAC,EAAU,EAAW,MAGvC,EAAc,KAAK,IAGf,MAAA,EAaUB,IAAhB,EAaOB,EAAL,EA
EjC,IAAA,EAAS,EACT,IACF,GAAS,EAAQ,EAAA,SAAA,CACf,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MA
AO,CAAC,MAAO,CAAC,EAAU,EAAG,MAG/B,EAAc,KAAK,IAGf,MAAA,GAAU,EAAS,EAAA,UAAA,CAA
C,OAAQ,CAAC,EAAG,EAAQ,EAAG,GAAS,QAAA,IAC1D,GAAM,EAAL,EAAA,KAAA,CAAC,OAAQ,CAAC,
EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,KAAA,EAAM,UAAU,KACIE,EAAc,KAAK,OACd,CACC,MAAA,
GAAQ,EAAW,EAAA,YAAA,EAAE,MAAO,EAAE,OAE9B,EAAU,IAAI,EAAL,oBACZ,EAAU,EAAU,CAAC,E
AAU,EAAa,GAAC,EAC1D,EAAY,EAAS,EAaIB,EACtC,GAEE,EAaUB,CAAC,EAAK,GAO/B,GANQ,MAAR,G
ACF,EAAO,KAAK,GAEV,GACF,EAAO,KAAK,GAEV,EAAMb,CACf,MAAA,EAAkB,EAAQ,eAC5B,GAAL,U
ACJ,EAAK,KAAA,kBAaKB,EAAMc,YAC9D,EAAO,KAAK,GACZ,EAAc,KAAK,GAGrB,EAAM,EAAQ,gBA
AgB,EAAS,EAAQ,GAG3C,MAAA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,E
AAS,MAAO,CAAC,MAAO,KACvD,EAAc,KAAK,GACd,IAAA,MAAM,KAAK,EACd,EAAQ,8BAA8B,GAEjC,
OAAA,EACR,QAAA,4BAAA;;ACvJM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,
EAAA,QAAA,wBAAA,EA3BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,sBAEM,SAAU,EAAa,GAKrB,MA
AA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,EAAD,EAAL,EAAL,KAAO,EAAP,uBAAa,GAA
0B,GACvC,WAAC,EAAD,WAAa,EAAb,WAAyB,EAazB,eAAqC,GAaKB,EAeTD,OAAA,EAAGB,EAAA,iBAA
A,CACrB,EAAA,EACA,EAAA,EACA,WAAA,EACA,WAAA,EACA,QAAA,EACA,KAAA,EACA,uBAAA,EAC
A,eAAA,EACA,WAAA,IAIG,MAAM,EAAMc,CAC9C,WAAY,EADkC,aAE9C,YAAa,QACb,WAAY,GAHP,QA
AA,mBAAA;;ApEIA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,IAAA,EAAA,QAAA,eAA
A,EA/BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,kBACA,EAAA,QAAA,yBAEA,M
AAM,EAAM,iBAEN,SAAU,EAAL,GAEZ,MAAA,OAAC,EAAD,QAAS,GAAW,GACpB,EAAC,GAAL,EAIR,G
AAA,EAAQ,mBAAMb,CAAC,KAAmB,cAAZ,EAAE,MAAuB,CACxD,MAAA,EAAQ,EAAQ,QAAQ,IAAL,EA
E,QAC9B,GAAY,EAaIB,EAAA,kBAAA,EAAM,QACIC,OAAA,EAAQ,eAAe,EAAE,MAAO,EAAE,MAAO,GA
G9C,IAAA,EAMG,OAJL,GADE,EAAM,EAAA,OAAA,QAAQ,+BACN,IAAL,EAAL,qBAAYb,EAAE,MAAO,GA
EIC,IAAL,EAAL,eAAmB,EAAE,MAAO,GAEjC,EAAQ,gBAAGB,EAAS,CAAC,GAAL,EAAE,OAG1C,MAAM,E
AA0B,CACrC,WAAY,EADyB,IAErC,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;AqEjBA,aAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EADP,IAAA,EAAA,QAAA,yBAEA,EAAA,
QAAA,sCACA,EAAA,QAAA,kBAEA,MAAM,EAAO,EAaOB,kBAAA,oEAOpB,GAAO,EAAGB,EAAA,iBAAA,
CAAC,UAAW,IAEzC,QAAA,KAAA,EAAA,MAAM,EA2B,CACtC,WAAY,EAD0B,KAETc,YAAa,QACb,WA
AY,GAHP,QAAA,WAAA;;ACFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAA
A,WAAA,EAXP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA,QAAA,kBAEA,MAAM,EAAQ,EA
AoB,kBAAA,mEAIRB,GAAQ,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE1C,QAAA,MAAA,EAAA,MAAM,EA
A4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA;;A9DEA,aAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,mBAAA,EADP,IAAA,EAAA,QAAA,yBAEA,EA
A,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAM,gBAEC,GAAGB,EAaIB,EAAA,kBAAA,CAC5C,UAA
W,EACX,gBAaIB,EACjB,iBAaIB,EACjB,cAAe,EAAA,aAGV,QAAA,cAAA,EAAA,MAAM,EA0B,CACrC,W
AAY,EADyB,IAErC,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;A+DZiB,aAAA,OAAA,eAAA,QAAA,aAAA,C

AAA,OAAA,IAAA,QAAA,iBAAA,EAaIB,MAAO,EAKX,YAAy,EAaUB,GAHnC,KAAA,YAAwB,GAiJB,KAA
A,YAAc,EACd,KAAA,cAAgB,EAAO,IAAI,CAAC,EAAG,QAAU,KAExC,MAAA,EAaQB,GAEtB,KAAA,cAAc
,QAAQ,IACzB,EAAS,eAAe,UAAiB,qBAiRc,MAAA,EAAY,KAAK,cACA,IAAI,OACQ,KAeZ,KAAK,OAeVB,K
AAA,2CAEC,EAAS,KAAK,2CAEC,iDA1BD,QAAA,YAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA
,OAAA,IAAA,QAAA,uBAAA,EAaxB,MAAO,EAox,YAAy,EAaUB,GALnC,KAAA,YAAwB,GAExB,KAAA,c
AAe,EACf,KAAA,cAAe,EAGR,KAAA,YAAc,EACd,KAAA,cAAgB,EAAO,IAAI,CAAC,EAAG,QAAU,KAExC,
MAAA,EAaQB,GAEtB,KAAA,cAAc,QAAQ,IACzB,EAAS,cAAc,UAAiB,qBAiPc,MAAA,EAAY,KAAK,cACA,
IAAI,OACQ,KAeZ,KAAK,OAeVB,KAAA,2CAEC,EAAS,KAAK,0CAEA,iDA5BM,QAAA,kBAAA;;ACiCvB,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,EAnCP,IAAA,EA
AA,QAAA,yBAEA,EAAA,QAAA,eACA,EAAA,QAAA,sBAEA,EAAA,QAAA,cAEM,SAAU,EAaK,GAEB,MA
AA,OAAC,EAAD,QAAS,GAaw,EAEPb,EAaU,EACZ,GAaMB,IAAnB,EAaQ,OACH,OAAA,EAAS,EAAA,U
AAA,CAAC,OAaQ,CAAC,EAAG,EAaQ,IAaK,QAAA,IAIxC,GAAA,EAaQ,QAAS,EAAM,EAAA,OAAA,IAA
I,gCAAiC,CACxD,MAAA,EAaW,KAAK,MAAM,EAaQ,OAAS,GACvC,EAaW,EAaK,CAAC,OAaQ,EAaQ,
MAAM,EAAG,GAaw,QAAA,IACrD,EAAY,EAaK,CAAC,OAaQ,EAaQ,MAAM,GAaw,QAAA,IACID,OAa
A,EAaK,CAAC,OAaQ,CAAC,EAaU,GAAY,QAAA,IAGxC,MAAA,EACF,EAaQ,IAAI,GAaK,EAAE,OAaO,
OAaO,CAAC,EAaI,KAAO,EAaW,EAAA,YAAA,EAaI,IAC1D,EAAS,EAaQ,IAAI,GAaK,EAAE,OAG5B,GA
Dc,EAAM,EAAA,OAAA,QAAQ,cAE9B,IAAI,EAaJ,kBAAsB,EAaQ,GAAG,MAAO,GACxC,IAAI,EAaJ,YAAg
B,EAaQ,GAAG,MAAO,GAC/B,OAAA,EAaQ,gBAAGB,EAAS,EAAS,GAG5C,MAAM,EAa2B,CACtC,WAAy,
EAD0B,KAEtC,YAAa,QACb,WAAy,GAHP,QAAA,WAAA;;ACkBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA
,OAAA,IAAA,QAAA,IAAA,EAAA,QAAA,eAAA,EArdP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BAEA,
EAAA,QAAA,aACA,EAAA,QAAA,eAEM,SAAU,EACZ,GAeI,MAAA,OAAC,EAAD,QAAS,EAAT,MAaKB,G
AAS,GAC3B,EAAC,GAaK,GACN,KAAC,EAAD,SAAO,GAAY,EAEnB,EAaQ,EAAE,MAAM,OAeHB,EAaW,
EAaK,KAAA,eAAe,EAAM,EAAE,OACzC,IAAA,EAaO,EAcl,MAAA,EAaE,EAaA,aAAA,mBAaMB,EAAM,
GACvD,IAAA,EAAY,EACI,MAAhB,IACF,GAAY,EAaU,EAAA,WAAA,CAAC,OAaQ,CAAC,EAAA,GAaI,Q
AAA,EAAS,MAAO,CAAC,KAAM,KAC3D,EAaO,EAaA,aAAA,iBAaiB,EAaK,OAaQ,IAGvC,EAAA,aAAA,2
BAA2B,MAAO,EAAM,GAC/C,MAAC,EAaU,GACb,EAaA,aAAA,0BAA0B,EAaU,MAAO,GACtD,EAAS,EA
K,KAAA,cAAc,GAe5B,GACF,EAaQ,EAAA,SAAA,CAAC,OAaQ,CAAC,EAAG,GAAY,QAAA,EAAS,MAAO,
CAAC,MAAO,EAAE,EAAG,MAC5D,GAaU,EAaO,EAAA,QAAA,EAaK,EAaI,MAAO,MAAO,GAe1C,IAAA
,EACA,GAAA,EAaU,CACN,MAAA,EAaW,EAaA,aAAA,qBAaqB,EAaU,GAC7D,GAAM,EAaQ,EAAA,SAA
A,CAAC,OAaQ,CAAC,EAAG,GAaU,QAAA,EAAS,MAAO,CAAC,MAAO,UAE7D,GAAM,EAaQ,EAAA,SA
AA,CAAC,OAaQ,CAAC,EAAG,GAaU,QAAA,EAAS,MAAO,CAAC,MAAO,KAUxD,OAPP,EAaQ,8BAA8B,
GACiC,EAaQ,8BAA8B,GAeIB,MAAhB,GACF,EAaQ,8BAA8B,GAGjC,EAGF,MAAM,EAa0B,CACrC,WAA
Y,EADyB,IAErC,YAAa,QACb,WAAy,GAHP,QAAA,UAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA
,OAAA,IAAA,QAAA,IAAA,EAAA,QAAA,eAAA,EArdP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,
EAAA,QAAA,aACA,EAAA,QAAA,eAEM,SAAU,EACZ,GAeI,MAAA,OAAC,EAAD,QAAS,EAAT,MAaKB,G
AAS,GAC3B,EAAC,GAaK,GACN,KAAC,EAAD,SAAO,GAAY,EAEnB,EAaQ,EAAE,MAAM,OAeHB,EAaW,
EAaK,KAAA,eAAe,EAAM,EAAE,OACzC,IAAA,EAaO,EAcl,MAAA,EAaE,EAaA,aAAA,mBAaMB,EAAM,
GACvD,IAAA,EAAY,EACI,MAAhB,IACF,GAAY,EAaU,EAAA,WAAA,CAAC,OAaQ,CAAC,EAAA,GAaI,Q
AAA,EAAS,MAAO,CAAC,KAAM,KAC3D,EAaO,EAaA,aAAA,iBAaiB,EAaK,OAaQ,IAGvC,EAAA,aAAA,2
BAA2B,MAAO,EAAM,GAC/C,MAAC,EAaU,GACb,EAaA,aAAA,0BAA0B,EAaU,MAAO,GACtD,EAAS,EA
K,KAAA,cAAc,GAe5B,GACF,EAaQ,EAAA,SAAA,CAAC,OAaQ,CAAC,EAAG,GAAY,QAAA,EAAS,MAAO,
CAAC,MAAO,EAAE,EAAG,MAC5D,GAaU,EAaO,EAAA,QAAA,EAaK,EAaI,MAAO,MAAO,GAe1C,IAAA
,EACA,GAAA,EAaU,CACN,MAAA,EAaW,EAaA,aAAA,qBAaqB,EAaU,GAC7D,GAAM,EAaQ,EAAA,SAA
A,CAAC,OAaQ,CAAC,EAAG,GAaU,QAAA,EAAS,MAAO,CAAC,MAAO,UAE7D,GAAM,EAaQ,EAAA,SA
AA,CAAC,OAaQ,CAAC,EAAG,GAaU,QAAA,EAAS,MAAO,CAAC,MAAO,KAUxD,OAPP,EAaQ,8BAA8B,
GACiC,EAaQ,8BAA8B,GAeIB,MAAhB,GACF,EAaQ,8BAA8B,GAGjC,EAGF,MAAM,EAa0B,CACrC,WAA
Y,EADyB,IAErC,YAAa,QACb,WAAy,GAHP,QAAA,UAAA;;ACjDsB,aAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,OAAA,IAAA,QAAA,sBAAA,EAavB,MAAO,EAKX,YACI,EAaQc,EACrC,GANJ,KAAA,cAAgB,CAAC,KA

OT,MAAA,WAAC,EAAD,UAAa,EAAb,QAAwB,GAAW,EACpC,GACE,KAAA,cAAc,KAAK,gBAErB,KAAA,
YAAc,CAAC,EAAW,GACzB,MAAA,EAAiB,QAAP,EAAGB,IAAM,IACHc,EAAe,EACjB,gBACA,+CAEC,KAA
A,+KAKyB,6HAKJ,oCACN,gFAEE,mKA/BG,QAAA,iBAAA;;ACGM,aAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,OAAA,IAAA,QAAA,4BAAA,EANnC,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,qB
AEM,MAAO,EAOX,YACI,EAAiB,EAAoB,EACrC,GARJ,KAAA,cAAgB,CAAC,KAGjB,KAAA,cAAe,EACf,KA
AA,cAAe,EAKR,EAAA,KAAA,OACD,EAAM,OAAS,EACf,iBACI,EAAG,OAAO,GAAG,cACb,EAAG,MAAM,
8CACX,MAAA,EAAS,EAAM,EAAM,OAAS,GAC9B,EAAU,KAAK,KAAK,EAAS,GAC9B,KAAA,YAAc,EAA
M,MAAM,GAAl,GAC/B,EAAU,GACP,KAAA,YAAY,KAAK,GAEnB,GACE,KAAA,cAAc,KAAK,gBAEpB,M
AAA,EAAW,KAAK,YAchB,EAAO,EAAS,OACHb,GAAQ,EAakB,EAAA,mBAAA,GAC1B,GAAS,EAAY,EA
AA,aAAA,SAAU,GAejC,IAAA,EACA,EACA,GAAY,IAAZ,EAAe,CACjB,EAAa,EAAO,EACd,MAAA,GAAiB,
EAakB,EAAA,mBAAA,GACzC,eACI,kBAA+B,KAAkB,EAAO,0BACtD,EAAO,EAAO,gBACHb,kBAA+B,KA
AkB,EAAO,0BACtD,EAAO,EAAO,gBACHb,kBAA+B,KAAkB,EAAO,0BACtD,EAAO,EAAO,gBACHb,kBAA+
B,KAAkB,EAAO,0BACtD,EAAO,EAAO,WAEpB,EAAa,EACb,eACI,qCACE,EAAO,EAAO,gBACHb,qCACE,E
AAO,EAAO,gBACHb,qCACE,EAAO,EAAO,gBACHb,qCACE,EAAO,EAAO,MAEHb,MAAA,EAAW,CAAC,IA
AK,IAAK,IAAK,IAAK,IAAK,KAAK,MAAM,EAAG,GACnD,EAAY,IAAM,EAAS,EAAa,GACxC,EAAC,EAAS,
IAAI,GAak,OAAS,GACzC,GACF,EAAY,EAAA,aAAA,aAAc,EAAa,GAAG,OAAO,WAC/C,GACF,EAAY,EA
AA,aAAA,aAAc,EAAa,GAAG,OAAO,WAC/C,GACF,EAAY,EAAA,aAAA,aAAc,EAAa,GAAG,OAAO,WAC/C,
GACF,EAAY,EAAA,aAAA,aAAc,EAAa,GAAG,OAAO,WAE/C,EAAiB,QAAP,EAAGB,cAAgB,WAC1C,EAAo
B,EAAY,4DACy,EAAW,iEACX,EAAW,iEACX,EAAW,iEACX,EAAW,aAEvD,oCACgB,EAAW,kDACE,EAA
W,uDACX,EAAW,qEACG,EAAW,gBAEtD,EAAGc,EAAY,2CACjB,EAAY,wDACL,EAAS,4DACJ,EAAS,OAA
O,GAAG,qBAG3D,KAAA,sCACiB,EAAY,6CACL,EAAS,iDACJ,EAAS,OAAO,GAAG,6BAEjD,mCAEE,4DAC
kB,EAAO,EAAO,QAAQ,EAAS,EAAO,GAAK,iCAC3C,EAAO,EAAO,QAAQ,EAAS,EAAO,GAAK,eAC7D,6CA
C+B,gBAAwB,2BAC3C,gBAAwB,QAAGB,sGAGnC,qCAEG,mDAEiB,iCACiB,mGAGV,4dA7GgB,QAAA,uBA
AA;;ACwEiC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EA9ED,IAAA,EAAA,Q
AAA,yBAEA,EAAA,QAAA,oBACA,EAAA,QAAA,2BAEA,EAAA,QAAA,sBAEA,SAAS,EACL,EAA2B,EAAe,
EAC1C,EAA2B,MACzB,IAAA,EAAY,EAAE,MAAM,GACpB,EAAS,EAAE,MAAM,GACD,MAAhB,IACF,EA
AY,EAAa,MAAM,GAC/B,EAAS,EAAa,MAAM,IAExB,MAAA,EAAa,EAAa,aAAA,yBAAYB,GACnD,EACF,C
AAC,WAAA,EAAY,OAAA,EAAQ,UAAA,EAAW,QAAS,KAAK,KAAK,EAAS,IAC1D,EACF,IAAI,EAJ,iBA
AqB,EAAY,EAA4B,MAAhB,GAC3C,EAAS,CAAC,GACI,MAAhB,GACF,EAAO,KAAK,GAER,MAAA,EAAS,
EAAQ,gBAAGB,EAAS,EAAQ,SAEPD,GAAoB,IAApB,EAAO,MAAM,GACR,OAAA,EAEH,MAAA,EAAS,EA
AU,EAAS,EAAG,EAAY,GAElC,OADP,EAAQ,8BAA8B,GAC/B,EAGT,SAAS,EACL,EAA2B,EAAe,EAC1C,E
AA2B,MACvB,MAAA,EAA0B,MAAhB,EAAuB,EAAa,MAAQ,EAAE,MACxD,EAAS,EAAQ,EAAQ,OAAS,GA
C1C,EAAa,EAAa,aAAA,yBAAYB,GACnD,EAAU,IAAI,EAJ,uBACZ,EAAS,EAAY,EAA4B,MAAhB,GAC/B,E
AAyB,MAAhB,EAAuB,CAAC,GAAK,CAAC,EAAG,GAC1C,EAAS,EAAQ,gBAAGB,EAAS,EAAQ,SACpD,GA
AA,EAAO,MAAM,SAAW,EAAE,MAAM,OAAQ,CACpC,MAAA,EAAS,EAAGB,EAAS,EAAG,EAAY,GAEHd,
OADP,EAAQ,8BAA8B,GAC/B,EAEF,OAAA,EAGH,SAAU,EACZ,EAA2B,EAAe,EAC1C,GACI,MAAA,EAAO,
CAAC,GAIV,GAHS,EAAA,aAAA,2BACT,MAAQ,EAAW,OAAO,GAAG,cAAgB,EAAW,MAAM,GAAl,EACIE,
EAAE,MAAM,UACP,EAAM,EAAA,OAAA,QAAQ,sBAAwB,EAAE,MAAM,QAAU,EAAG,CACxD,MAAA,EA
A0B,IACzB,EAAU,GACb,EAAa,aAAA,0BAA0B,EAAE,MAAO,GAC9C,EAAS,EAak,KAAA,cAAc,GAC5B,G
AAM,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,EAAS,MAAO,CAAC,MAAO,EAAE,EA
AG,MAC/D,EAAwB,KAAK,GAEvB,MAAA,EAAU,EAAU,EAAS,EAak,GACxC,EAAwB,KAAK,GACvB,MA
AA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,KAI
pD,OAFP,EAAwB,QACpB,GAAK,EAAQ,8BAA8B,IACxC,EAEF,OAAA,EAAGB,EAAS,EAAG;;AC5C9B,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EAjCP,IAAA,EAAA
,QAAA,yBAGA,EAAA,QAAA,+BAEA,EAAA,QAAA,eAEM,SAAU,EACZ,GAGI,MAAA,OAAC,EAAD,QAAS,
EAAT,MAAkB,GAAS,GAC3B,EAAC,GAAK,GACN,KAAK,GAAQ,EAEX,IAAA,EAAO,EAak,KAAA,eAAe,E
AAM,EAAE,OACjC,MAAA,EAAe,EAAa,aAAA,mBAAmB,EAAM,EAAE,MAAM,QAC/D,IAAA,EAak,EACH,
MAAA,EAA0B,GACZ,MAAhB,IACF,GAAK,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,

EAAS,MAAO,CAAC,KAAM,KACpD,EAawB,KAAK,GAC7B,EAAO,EAAa,aAAA,iBAaiB,EAAK,OAAQ,EAAG,MAAM,SAGhD,EAAA,aAAA,2BAA2B,SAAU,CAAC,EAAK,IAAK,EAAG,MAAM,QAChE,MAAA,GAAM,EAAGB,EAAA,iBAAA,EAAS,EAAI,EAAK,GAAI,OAI3C,OAFP,EAawB,QACpB,GAAK,EAAQ,8BAA8B,IACx C,EAGF,MAAM,EAA6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EAjCP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,+BACA,EAAA,QAAA,eAEM,SAAU,EACZ,GAGI,MAAA,OAAc,EAAD,QAA S,EAAT,MAAkB,GAAS,GAC3B,EAAC,GAAK,GACN,KAAC,GAAQ,EAEX,IAAA,EAAO,EAAK,KAAA,eAAe,EAAM,EAAE,OACjC,MAAA,EAAe,EAAa,aAAA,mBAAmB,EAAM,EAAE,MAAM,QAC/D,IAAA,EAAK,EACH,MAAA,EAA0B,GACZ,MAAhB,IACF,GAAK,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAA,GAAI,QAAA,EAAS,MAAO,CAAC,KAAM,KACpD,EAawB,KAAK,GAC7B,EAAO,EAAa,aAAA,iBAaiB,EAAK,OA AQ,EAAG,MAAM,SAGhD,EAAA,aAAA,2BAA2B,SAAU,CAAC,EAAK,IAAK,EAAG,MAAM,QAEhE,MAAA,GAAM,EAAGB,EAAA,iBAAA,EAAS,EAAI,EAAK,GAAI,OAI3C,OAFP,EAawB,QACpB,GAAK,EAAQ,8BAA 8B,IACxC,EAGF,MAAM,EAA6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;; ACnBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EAdP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA,QAAA,kBAEA,MAAM,EAAO,EAAoB,kBAAA,oEAOpB,GAAO,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAEzC,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAY,EAD 0B,KAETC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACLA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA A,IAAA,QAAA,YAAA,QAAA,WAAA,EATP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA,QAA A,kBAEA,MAAM,EAAQ,EAAoB,kBAAA,qCAErB,GAAQ,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE1C,QAA A,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA; ;ACEA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EAXP,IAAA,EA AA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA,QAAA,kBAEA,MAAM,EAAO,EAAoB,kBAAA,wBAIpB,GA AO,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAEzC,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAY,EAD0 B,KAETC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACSA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA ,IAAA,QAAA,YAAA,QAAA,WAAA,EApBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,sCAEA,MAAM,EAA Q,EAA2B,yBAAA,2BAInC,EAAe,qGAIjB,EAJiB,gCAIiB,uBAIzB,GACT,EAAiB,EAAA,kBAAA,CAAC,UAAW ,EAAO,gBAaiB,IAEID,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb, WAAY,GAHP,QAAA,YAAA;;ACTA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,Q AAA,WAAA,EAXP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA,QAAA,kBAEA,MAAM,EAAQ, EAAoB,kBAAA,4FAIrB,GAAQ,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE1C,QAAA,MAAA,EAAA,MAAM,E AA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA;;ACqMmB,aAAA,OAAA,e AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,mBAAA,EA7MpB,MAAO,EAKX,YACI,EAAM C,EACnC,EAA2B,GAAMB,EAC9C,GAASB,GACpB,GARN,KAAA,cAAGB,CAAC,KAQE,QAAb,GAASB,EACI B,MAAA,IAAI,MAAM,8CAGZ,MAAA,EAAC,EAAS,YACvB,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,EA AiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAawB,EAAS,sBACjC,EAauB,EAAS,qBAEhC,EAAS,EAAS,QAAQ,I AC1B,EAAU,EAAS,QAAQ,KAC5B,KAAA,YAAc,EAAS,SAETB,MAAA,EAAYB,QAAb,EACZ,gBAawC,EAAS ,oBACnD,EAAS,mBAAmB,EAAS,iBACnC,WACO,EAAS,mBAAmB,EAAS,iBAE9C,IAAA,EAASB,MAMtB,G ALC,IAEH,EAASB,gBAGpB,EAakB,CACd,MAAA,EAAY,KAYDIB,YAvDK,KAAA,kDAC2B,MAAiB,yCACp B,MAAW,qiBAkBZ,2BACZ,gFAGY,EAAS,4FAIP,6BACZ,oFAGY,EAAS,0WAUnB,yIAIhB,EAAoB,EAASB,E ACA,UACf,0HAY7B,IAAA,KAAiB,KAAy,KAAy,KACzC,oEACa,QAAb,IACF,EAAC,oBAGV,MAAA,EAAuD, EAA9B,KAAK,MAAM,EAAC,GACID,EAA2B,EAAC,EAEC,IBACE,+HAOH,KAAA,gDAC2B,MAAiB,uCACp B,MAAW,gDACF,8KAMZ,EAAS,igBAkBL,6FAIF,yBACZ,4EAGY,EAAS,sFAIP,uDACK,4HAIE,sDACI,sDAC A,wCAG/B,mDAGkB,qBACa,IAA7B,8NAQF,2BACsC,IAA7B,4HAGkB,gHAK3B,2BACsC,IAA7B,4HAGkB,sD ACI,4EAI/B,gDAGM,sBAMM,QAAA,cAAA,EAAPB,MAAO,EAKX,YACI,EAAMC,EACnC,EAA2B,GAAMB,E AC9C,GAASB,GACpB,GARN,KAAA,cAAGB,CAAC,KAQE,QAAb,GAASB,EACIB,MAAA,IAAI,MAAM,8CAG Z,MAAA,EAAC,EAAS,YACvB,EAAC,EAAS,YACvB,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,EAAGB,EAAS, cACzB,EAAiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAauB,EAAS,qBACHC,EAawB,EAAS,sBACjC,EAauB,E AAS,qBAEhC,EAaw,EAAS,QAAQ,MAC5B,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC5B,KAAA

,YAAc,EAAS,SAEtB,MAAA,EAAYB,QAAb,EAEd,IAAA,EAASB,MAMtB,GALC,IAEH,EAASB,gBAGpB,EAAkB,CACd,MAAA,EAAY,KAYeIB,YAvEK,KAAA,+DAES,MAAgB,MAAiB,yCACIB,MAAa,MAAW,qkBAkBzB,2BACZ,gFAGY,EAAS,2FAIP,6BACZ,oFAGY,EAAS,kGAIP,+BACZ,wFAGY,EAAS,+XAUbB,+IAIIB,EACK,gBACkB,EAAS,mBACnB,EAAS,oBAAoB,EAAS,mBACtC,EAAS,4BACH,EAAS,oBACf,EAAS,mBAAmB,EAA S,0BACtC,OAA2B,mCACpB,6IAarB,IAAA,KAAiB,KAAy,KAAy,KACzC,oEACa,QAAb,IACF,EAAC,oBAGV,MAAA,EAAd,EA9B,KAAK,MAAM,EAAC,GACID,EAA2B,EAAC,EAzC,iBACE,+HAOH,KAAA,yDAEO,MAAgB,MAAiB,uCACHB,MAAa,MAAW,gDACf,uLAMZ,EAAS,okBAmbL,6FAIF,yBACZ,4EAGY,EAAS,qFAIP,yBACd,gFAGc,EAAS,4FAIP,yDACK,2IAIM,6DACI,6DACA,6CAGnC,uDAGkB,uBACa,IAA7B,iPAQF,6BACsC,IAA7B,2IAGsB,yHAK/B,6BACsC,IAA7B,2IAGsB,6DACI,mFAInC,sDAGM,iCAjOI,QAAA,cAAA;;AC/KnB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,QAAA,mBAAA,EAICP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eACA,EAAA,QAAA,iBACA,EAAA,QAAA,cAEM,SAAU,EAAQ,GAKhB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,GAAK,GACK,EAAA,EAAA,kBAAA,EAAG,WACd,MAAA,WAAC,EAAD,QAAa,EAAb,IAASB,EAAtB,gBAA2B,GAAMB,EAG/C,EAAA,KAAA,OACD,EAAa,aAAA,+BAA+B,EAH9B,GAId,IAAM,2EACa,uBAEjB,MAAA,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAA2C,EAAY,EAR3C,EASH,EAAK,GACHB,GAAYB,IAAZB,EAAS,aAA+C,IAA1B,EAAS,cACvC,EAAK,KAAA,YAAY,EAAS,QAAS,EAAS,UACvC,OAAA,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAA,GAAI,QAAA,IAE1B,MAAA,EAaiB,IAAI,EAaj,cAAkB,EAAU,OAAO,GACnD,OAAA,EAAQ,gBAAGB,EAAGB,CAAC,GAAI,WAG/C,MAAM,EAAG8B,CACzC,WAAy,EAD6B,QAezC,YAAa,QACb,WAAy,GAHP,QAAA,cAAA;;ACZA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,QAAA,qBAAA,EAAtBP,IAAA,EAAs,QAAA,yBAGA,EAAA,QAAA,eAEM,SAAU,EAAU,GAKIB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,GAAK,GACN,WAAC,EAAD,QAAa,EAAb,IAASB,EAAtB,gBAA2B,EAA3B,WAA4C,GAAC,EAG1D,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAAMd,EAAY,EAHzB,CAAC,EAAG,EAAG,GAIPc,EAAK,EAaiB,GAC/B,EAaiB,IAAI,EAaj,cAAkB,EAAU,OAAO,GACnD,OAAA,EAAQ,gBAAGB,EAAGB,CAAC,GAAI,WAG/C,MAAM,EAAGc,CAC3C,WAAy,EAD+B,UAE3C,YAAa,QACb,WAAy,GAHP,QAAA,gBAAA;;ACiD8B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,QAAA,8BAAA,EAne/B,MAAO,EAkX,YAAY,GAJZ,KAAA,cAAGB,CAAC,MAKV,KAAA,YAAc,EAAS,QACtB,MAAA,EAae,EAAS,aACxB,EAAc,EAAS,YACvB,EAae,EAAS,aACxB,EAAC,EAAS,YACvB,EAaiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAawB,EAAS,sBACjC,EAAuB,EAAS,qBAehC,EAAS,EAawB,EAAL,EAAS,QAAQ,IACtD,EAAU,EAAuB,EAAL,EAAS,QAAQ,KAetD,EAAGB,GAAK,EAae,GAerC,KAAA,6CACwB,MAAW,gDACf,kdAcV,yBACZ,uDAC4B,6CAEZ,EAAS,6IAKX,wBACf,yDAC+B,+CAEZ,EAAS,+SAiBV,QAAA,yBAAA,EAAB,MAAO,EAkX,YAAY,GAJZ,KAAA,cAAGB,CAAC,MAKV,KAAA,YAAc,EAAS,QACtB,MAAA,EAAC,EAAS,YACvB,EAae,EAAS,aACxB,EAAC,EAAS,YACvB,EAAC,EAAS,YACvB,EAae,EAAS,aACxB,EAAC,EAAS,YACvB,EAAGB,EAAS,cACzB,EAaiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAAuB,EAAS,qBACHc,EAawB,EAAS,sBACjC,EAAuB,EAAS,qBAehC,EAAW,EAAuB,EAAL,EAAS,QAAQ,MACvD,EAAS,EAawB,EAAL,EAAS,QAAQ,IACtD,EAAU,EAAuB,EAAL,EAAS,QAAQ,KAetD,EAAGB,GAAK,EAAC,EAae,GAEnD,KAAA,6CACwB,MAAa,MAAW,gDACf,wiBAiBV,yBACZ,uDAC4B,6CAEZ,EAAS,4IAKX,2BACZ,yDAC4B,+CAEZ,EAAS,sKAMX,6BACZ,2DAC4B,iDAEZ,EAAS,qVApEZ,QAAA,yBAAA;;AChD9B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAA,QAAA,yBAAA,EAvBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,4BAGM,SAAU,EAAC,GAKtB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,GAAC,EAAD,MAAK,GAAS,EACd,EAAL,GACJ,WAAC,EAAD,QAAa,EAAb,IAASB,EAAtB,gBAA2B,GAAMB,EAG9C,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAAMd,EAAY,EAHzB,CAAC,EAAG,EAAG,GAIPc,EAAK,GACd,EAAYB,IAAI,EAaj,yBAA6B,GACrD,OAAA,EAAQ,gBAAGB,EAawB,CAAC,GAAK,EAAE,OAG1D,MAAM,EAaoC,CAC/C,WAAy,EADmC,cAE/C,YAAa,QACb,WAAy,GAHP,QAAA,oBAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAAA,QAAA,uBAAA,EAxBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,4BAEA,EAAA,QAAA,iBAEM,SAAU,EAAY,GAKpB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,GAAC,EAAD,MAAK,GAAS,EACd,EAAL,GACO,EAAA,EAAA,kBAAA,CAAC,EAAL,GAAG,eACxB,MAAA,WAAC,EAAD,QAAa,EAAb,IAASB,GAAO,EA7B,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAA2C,EAAY,EACzD,EAAMB,GACjB,EAAYB,IAAI,EAaj,yBAA6B,GACrD,OAAA,EAAQ,gBAAGB,EAawB,CAAC,GAAK,EAAE,OAG1D,MAAM,EAakC

,CAC7C,WAAY,EADiC,YAE7C,YAAa,QACb,WAAY,GAHP,QAAA,kBAAA;;ACNA,aAAA,OAAA,eAAA,QA
AA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAAA,QAAA,uBAAA,EAjBP,IAAA,EAAA,QAAA,yBAGA,EA
AA,QAAA,sBAEM,SAAU,EAAY,GAKpB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,
EAAD,EAAl,GAkK,GACT,WAAC,EAAD,WAAa,GAAc,EAElB,OAAA,EAAGb,EAAA,iBAAA,CAAC,EAAA,
EAAG,EAAA,EAAG,WAAA,EAAY,WAAA,EAAY,QAAA,IAGjD,MAAM,EAakC,CAC7C,WAAY,EADiC,YA
E7C,YAAa,QACb,WAAY,GAHP,QAAA,kBAAA;;ACdsB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,sBAAA,EAH7B,IAAA,EAAA,QAAA,yBAGM,MAAO,EAKX,YACI,EAakB,EAAqB,EACvC,EAA4
B,EAC5B,GANJ,KAAA,YAAwB,GAOjB,KAAA,cAAgB,CAAC,IAAK,OAAQ,YACtB,EAAA,aAAA,2BAA2B,E
AAQ,GACnC,EAAA,aAAA,2BAA2B,EAAQ,GAe5C,IAAA,EAAGb,MACD,MAAf,IACW,EAAA,aAAA,2BAA2
B,EAAQ,GAC3C,KAAA,cAAc,KAAK,UACxB,EAAGb,0BAGd,IAAA,EAae,MACD,MAAd,IACW,EAAA,aAA
A,2BAA2B,EAAQ,GAC3C,KAAA,cAAc,KAAK,SACxB,EAae,yBAGZ,KAAA,YAAc,EACd,KAAA,gMAKgB,6
BACD,gEACmC,2FAnC9B,QAAA,iBAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,Q
AAA,4BAAA,EAHnC,IAAA,EAAA,QAAA,yBAGM,MAAO,EAox,YACI,EAakB,EAAqB,EACvC,EAA4B,EA
C5B,GANJ,KAAA,cAAe,EACf,KAAA,cAAe,EAMR,KAAA,cAAgB,CAAC,IAAK,OAAQ,YACtB,EAAA,aAAA,
2BAA2B,EAAQ,GACnC,EAAA,aAAA,2BAA2B,EAAQ,GAe5C,IAAA,EAAGb,YACD,MAAf,IACW,EAAA,aA
AA,2BAA2B,EAAQ,GAC3C,KAAA,cAAc,KAAK,UACxB,EAAGb,0BAGd,IAAA,EAae,YACD,MAAd,IACW,E
AAA,aAAA,2BAA2B,EAAQ,GAC3C,KAAA,cAAc,KAAK,SACxB,EAae,yBAGZ,KAAA,YAAc,EACd,KAAA,y
DAEe,4BACD,qMAMkC,wEAvtB,QAAA,uBAAA;;ACwD5B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA
A,IAAA,QAAA,gBAAA,QAAA,eAAA,EA1DP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,oBACA,EAAA,QA
AA,2BAEO,MAAM,EAIm,EAae,OAAA,EAAQ,QAAA,EAAS,MAAA,MAC9B,MAAA,EAAC,EAAD,KAAl,E
AAJ,SAAU,EAav,OAAoB,EAAPb,MAA4B,GAAS,EAetC,EAAA,KAAA,OACD,EAkK,MAAM,SAAW,EAAS
,MAAM,OACrC,IAAM,gFAEL,EAAA,KAAA,OACS,MAAV,GAakB,EAkK,MAAM,SAAW,EAAO,MAAM,O
ACrD,IAAM,8EAEL,EAAA,KAAA,OACQ,MAAT,GAaiB,EAkK,MAAM,SAAW,EAAM,MAAM,OACnD,IAA
M,6EAGN,IAAA,gBAAC,GAAMb,EACD,MAAnB,IACF,EAakB,MAGd,MAAA,EAac,CAAC,EAAG,EAAM,G
AE1B,IAAA,EAac,KACJ,MAAV,IACF,EAac,EAAO,MACrB,EAAY,KAAK,IAGf,IAAA,EAaa,KACJ,MAAT,I
ACF,EAaa,EAAM,MACnB,EAAY,KAAK,IAGb,MAAA,GAAU,EAAM,EAAA,OAAA,QAAQ,4BAC1B,IAAI,E
AAJ,uBACI,EAae,MAAO,EAkK,MAAO,EAAS,MAAO,EAaa,EACID,GACJ,IAAI,EAaj,iBACI,EAae,MAAO
,EAkK,MAAO,EAAS,MAAO,EAaa,EACID,GAID,OAFH,EAAGb,EAAS,EAaa,EAAY,GAAG,QAK5D
,QAAA,UAAA,EAAA,MAAM,EAAGc,CAC3C,WAAY,EAD+B,eAE3C,YAAa,QACb,WAAY,GAHP,QAAA,gB
AAA;;ACUN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kBAAA,EAneD,IAAA,EAAA,Q
AAA,qBAEM,MAAO,EASX,YAAy,GARZ,KAAA,cAAgB,CAAC,UASV,KAAA,YAAc,EACd,KAAA,KAAO,E
AAS,OAEf,MAAA,GAAQ,EAakB,EAAA,mBAAA,KAAK,MAC/B,uBAAmC,KAAK,SACxC,EAae,EAAU,KA
AK,MAEHc,IAAA,EAII,eACM,yBACA,0CALW,EAAS,IAAI,CAAC,EAAG,iBACZ,EAAO,cAAc,eAAe,EAAO,
OAKID,KAAK,gBAEf,KAAA,oBACD,mCAEE,kCACoB,sBAK5B,mBAAmB,GACb,GAAA,EAAM,SAAW,KA
AK,KACIB,MAAA,mBACW,KAAK,2DACE,EAAM,WAEzB,MAAA,CAAC,EAAGb,KACN,MAAjB,KAAK,W
ACF,KAAA,SAAW,EAAM,0BAA0B,EAac,SACzC,MAAjB,KAAK,WAMX,EAAM,GAAG,WAaw,KAAK,SA
AU,KAexC,QAAA,aAAA,EAVD,MAAM,EAAS,CAAC,IAAK,IAAK,IAAK,IAAK,IAAK,KAezC,SAAS,EAAU,
GACb,GAAS,IAAT,EACK,MAAA,YACF,GAai,GAAQ,EACV,OAAA,EAAO,MAAM,EAAG,GAAM,IAAI,GA
AK,aAAe,GAAG,KAAK,KAevD,MAAA,0BAA0B;;AC9DL,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,wBAAA,EAH/B,IAAA,EAAA,QAAA,kBACA,EAAA,QAAA,qBAEM,MAAO,EAwx,YAAy,GAV
Z,KAAA,cAAgB,CAAC,UACjB,KAAA,cAAe,EACf,KAAA,cAAe,EASR,KAAA,YAAc,EACd,KAAA,KAAO,E
AAS,OAEf,MAAA,GAAQ,EAakB,EAAA,mBAAA,KAAK,MAC/B,GAAS,EAAY,EAAA,aAAA,SAAU,KAAK,
MACpC,GAAY,EAAY,EAAA,aAAA,YAAa,KAAK,MAE1C,EACY,IAAd,KAAK,KAAa,oBAAsB,EAAU,OAAO
,GAAG,UAC1D,0BACsB,EAAU,YAAy,KAC5C,wBACS,mBACL,EAAO,KAAK,KAAO,QAAQ,EAAS,KAAK,
KAAO,oBACID,EAAU,KAAK,KAAO,2BACb,iBACT,EAAU,KAAK,KAAO,qBAGxB,EAAYB,IAAd,KAAK,KA
Aa,gBAC7B,EAAO,KAAK,KAAO,oBACf,EAAO,KAAK,KAAO,QAAQ,EAAS,KAAK,KAAO,oBACID,EAAU,
KAAK,KAAO,2BACb,qBACL,EAAO,KAAK,KAAO,QAAQ,EAAS,KAAK,KAAO,sBACID,EAAU,KAAK,KAA
O,6BACb,+BAKb,EAaiB,KAAK,MAAQ,uCAE1B,KAAS,EAAS,IAAI,CAAC,EAAG,aAAe,MAAM,WACrD,EA

AS,IAAI,CAAC,EAAG,OAAS,EAAU,QAAQ,EAAO,cAAc,OAC5D,KAAK,MACT,KAAA,sCACiB,KAAK,wCA
ErB,0CACA,yBACA,+CAEA,cACA,+CAMR,mBAAmB,GACb,GAAA,EAAM,SAAW,KAAK,KACiB,MAAA,m
BACW,KAAK,2DACE,EAAM,WAEzB,MAAA,CAAC,EAAqB,KACN,MAAjB,KAAK,WACF,KAAA,SAAW,E
AAM,0BAA0B,EAAC,SACzC,MAAjB,KAAK,WAMX,EAAM,GAAG,WAAW,KAAK,SAAU,KA7EV,QAAA,m
BAAA;;AhEuExB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,MAAA,EAAA,QAAA,iBAA
A,EA5EP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,gBACA,EAAA,QAAA,uBAEA,S
AAS,EACL,EAAe,EAAiB,EAAgB,GAC5C,MAAA,EAAW,EAAQ,QAAQ,IAAI,EAAE,QACjC,EAAI,EAAQ,eA
Ae,EAAM,EAAE,OACnC,EAAa,EAAQ,QAAQ,IAAI,EAAE,QAeZC,OAAO,OAAO,EAAY,GACiB,EAAW,SA
W,EACtB,EAAW,MAAQ,EACnB,EAAW,MAAQ,EAAE,MACjB,IAAA,EACA,EAAW,WAAA,kBAakB,EAAO,
EAAK,KAAA,eAAe,EAAE,QACiD,EAAS,QAGX,GAAC,EAAS,MAAM,YAE/B,EAAW,MAAQ,CACjB,WAAA
,EAEA,WAA,YEAAS,OAAS,EAAS,MAAM,YAAc,EAAE,QAIzD,MAAA,EAAW,EAAQ,aAAa,IAAI,EA
AW,MAAM,aAAe,EAEnE,OADP,EAAQ,aAAa,IAAI,EAAW,MAAM,WAA,YEAAW,GACiD,EAGH,SAAU,
EACZ,GAEL,MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,EAAC,GAAK,GACN,MAAC,
EAAD,KAAQ,GAAQ,GAef,EAAQ,GAAS,EAAW,WAAA,iBAaiB,EAAG,EAAO,GAGiD,GAFO,EAAA,
WAAA,kBAakB,EAAG,EAAQ,GAEN,IAA9B,EAAK,KAAA,cAAc,GACd,OAAA,EAAQ,eAAe,EAAO,
EAAE,MAAO,IAS5C,GAAA,EA AQ,mBAAmB,CAAC,KAAmB,WAAZ,EAAE,MAAoB,CACrD,MAAA,
EAAW,EAAQ,QAAQ,IAAI,EAAE,QACjC,GAAY,EACd,EAAA,cAAA,EAAS,OAAsB,EAAQ,
EAAO,EAAE,MAAO,EAAE,OACiD,OAAA,EAAQ,eAAe,EAAO,EAAE,MAAO,GAGiC,MAAA,
SAAC,GAAY,EAAQ,QAAQ,IAAI,EAAE,QACnC,EAAc,EAAW,WAAA,iBAAiB,EAAE,
MAAO,EAAQ,GAC7D,GAAA,IAAa,EAAa,CACtB,MAAA,GAAU,EAAM,EAAA,OAAA,QAAQ,
+BACiB,IAAI,EAAJ,mBAAuB,GACvB,IAAI,EAAJ,aAAiB,GACf,EAAc,EAAQ,mBAAmB,
GACxC,OAAA,EA AQ,gBAAgB,EAAS,CAAC,GAAl,EAAE,MAAO,GAGjD,OADP,EAAQ,
YAA,YEAAE,QACf,EAAa,EAAG,EAAQ,EAAO,GAGjC,MAAM,EAA4B,CACvC,WAA,Y
EAD2B,MAEvC,YAAa,QACb,WAA,YGAHP,QAAA,YAAA;;AiEiBA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,QAAA,oBAAA,EAiDP,IAA A,EAAA,
QAAA,yBAIA,EAAA,QAAA,aACA,EAAA,QAAA,WACA,EAAA,QAAA,eAEO,MAAM,
EAakB,IAK vB,MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,EAAC,
GAAK,GACN,WAAC,EAAD,MAAa,GAAS,EAEvB,EAAA,KAAA,OACD,EAAE,
MAAM,QAAU,EACiB,IAAM,wEAEJ,MAAA,EAAO,EAAW,OAAO,CAAC,EAAG,
IAAM,EAAI,GAEvC,EAAW,EAAa,aAAA,YAA,YEAAE,MAAO,EAAY,GACzD,
EAAW,EAAa,aAAA,YAA,YEAAS,OAAQ,EAAW,QACHe,EACF,EAAa,aAAA,
oBAAoB,EAAE,MAAO,EAAY,GACpD,EACF,EAAa,aAAA,oBAAoB,EAAO,
EAAW,QACjD,EACF,EAAa,aAAA,aAAa,EAakB,EAAO,EAAW,QAe5D,
EAAY,GAEZ,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,
QAAA,EAAS,MAAO,CAAC,MAAO,KAC5C,GAAYB,EAC3B,EAAA,
WAAA,CAAC,OAAQ,CAAC,EAAG,GAauB,QAAA,EAAS,MAAO,CAAC,
KAA M,KACzD,GAawB,EAAQ,EAAA,SAAA,CACpC,OAAQ,CAAC,EAAG,
GACZ,QAAA,EACA,MAAO,CAAC,MAAO,KAEX,GAAS,EAAM,
EAAA,OAAA,CACnB,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,
MAAO,CAAC,MAAO,EAakB,KAAM,KASIC,OANP,EAAU,KAAK,
GACf,EAAU,KAAK,GACf,EAAU,KAAK,GAef,EAAU,QA AQ,GAAK,
EAAQ,8BAA8B,IAEtD,GAGF,QAAA,eAAA,EAAA,MAAM,
EAAqC,CAChD,WAA,YEADoC,eAEhD,YAAa,QACb,
WAA,YGAHP,QAAA,qBAAA;;ACnCA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAA A,QAAA,SAAA,EAAA,
QAAA,oBAAA,EAvBP,IAAA,EAAA,QAAA,yBAGA,
EAAA,QAAA,0BAEM,SAAU,EAAS,GAKjB,
MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,
GAC3B,EAAC,EAAD,QAAl,GAAW,GACf,KA AC,
GAAQ,EAET,EAAQ,EAAQ,SAAS,EAAE,QAC3B,
EAAc,EAAQ,SAAS,EAAQ,QAeVc,GACF,
EAAgB,EAA A,iBAAA,EAAO,EAAa,
EAAQ,MAAO,EAAQ,MAAO,GAe/D,OAAA,
EAAQ,eAAe,CAAC,GA AO,EAAQ,MAAO,
GAGhD,MAAM,EAA+B,CACiC,WAA,YEAD8B,
SAEiC,YAAa,QACb,WAA,YGAHP,QAAA,
eAAA;;AxEFA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
eAAA,QAAA,cAAA,EARP,IAAA,EAAA,
QAAA,yBAEA,EAAA,QAAA,sCAEA,
MAAM,EAAY,wBAEL,GA AW,EAaiB,
EAAA,kBAAA,CAAC,UAAW,EA AW,
MAAO,SAEhE,QAAA,SAAA,EAAA,
MAAM,EAA+B,CACiC,WAA,YEAD8B,
SAEiC,YAAa,QACb,WAA,YGAHP,
QAAA,eAAA;;AtBMA,aAAA,OAAA,
eAAA,QAAA,aAAA,CAAA,OAAA,
IAAA,QAAA,KAAA,EAAA,QA AA,
gBAAA,EADp,IAAA,EAAA,QAAA,
yBAGA,EAAA,QAAA,cAEM,SAAU,
EAAK,GAEB,MAAA,OAAC,EAAD,
QAAS,GA AW,GACpB,MAAC,GAAS,
EACV,EAAY,EAAQ,QAAQ,IAAI,
EAAM,QAeRc,OAAA,EAAS,EAA A,
UAAA,CAAC,OAAQ,CAAC,EAAG,
EAAU,mBAAmB,MAAO,QAAA,
IAG5D,MAAM,EAA2B,CACtC,WAA

Y,EAD0B,KAeTc,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;A+FHn,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,IAAA,EARD,IAAA,EAAA,QAAA,kBAEA,MAAM,EAAS,wBAET,SAAU,EAAI,EAA
mB,GAC/B,MAAA,EAAU,IAAI,EAAJ,eAAmB,EAAM,MAAO,GAC1C,EAAS,EAAQ,gBAAgB,EAAS,CAAC,G
AAQ,SACID,MAAA,CAAC,OAAQ,EAAO,OAAQ,MAAO,EAAO,MAAO,MAAO,EAAO;;A9F4D7D,aAAA,OA
AA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,EAvEP,IAAA,EAAA,EAA
A,QAAA,0BAKA,EAAA,QAAA,aACA,EAAA,QAAA,cACA,EAAA,QAAA,cACA,EAAA,QAAA,UAEA,EAAA
,QAAA,uBA6DO,SAAs,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAA
A,WAAA,OAAA,GAAA,EAAA,SAAs,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAA
A,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,
EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,
eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,K
AAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EA
AA,GAAA,EAAA,IAAA,EAAA,GAAA,EA3DD,SAAU,EACZ,GAEl,MAAA,OAAC,EAAD,QAAS,EAAT,MAA
kB,GAAS,GAC3B,EAAC,GAAK,GACN,MAAC,GAAS,EAGZ,GAAU,cAAV,EAauB,CACrB,GAAY,cAAZ,EA
AE,MACG,OAAA,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,IAI1B,MAAA,EAAC,EAAG
,MAAM,EAAE,OACzB,EAAS,EAAK,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,EAAS,MAAO,CAAC,MAAO,
aAEpD,GACF,EAAQ,EAAA,SAAs,CAAC,OAAQ,CAAC,KAAM,EAAQ,KAAM,GAAC,QAAA,IAKjD,OAHP,E
AAY,UACZ,EAAQ,8BAA8B,GAEB,EAIL,GAAY,cAAZ,EAAE,MAAuB,CACrB,MAAA,GAAW,EAAK,EAAA,
MAAA,CAAC,OAAQ,CAAC,MAAO,GAAl,QAAA,IACrC,EAAS,EAAK,CAAC,OAAQ,CAAC,EAAG,GAAW,
QAAA,EAAS,MAAO,CAAC,MAAA,KAeTc,OADP,EAAQ,8BAA8B,GAC/B,EAGL,IAAC,EAAK,KAAA,gBAA
gB,EAAE,MAAO,GAAQ,CAGnC,MAAA,GAAS,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAA
A,IAC/B,MAAA,CAAC,OAAQ,EAAO,OAAQ,MAAO,EAAO,MAAO,MAAA,GAGID,GAAU,UAAV,EACK,OA
AA,EAAl,EAAA,KAAA,EAAG,GAGZ,GAAU,SAAV,EAakB,CACd,MAAA,EAakB,EAAQ,eAC5B,GAAl,OA
AQ,EAAK,KAAA,uBAauB,OAAQ,IAE9C,EAA6B,CAAC,EAAG,EAAG,EAAG,GAEvC,GAAS,EAAS,EAAA,U
AAA,CAAC,OAAQ,EAAC,QAAA,IAExC,OADP,EAAQ,8BAA8B,GAC/B,EAGH,MAAA,IAAI,uCAAuC,EA
EAE,YAAY,KAGID,MAAM,EAA2B,CACtC,WAAY,EAD0B,KAeTc,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;A
M7DA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EATP,IAAA,EA
AA,QAAA,yBACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAO,kBAEA,GAAO,EACHB,EA
A,iBAAA,CAAC,UAAW,EAAM,gBAAiB,EAAM,cAAe,EAAA,cAErD,QAAA,KAAA,EAAA,MAAM,EAA2B,C
ACtC,WAAY,EAD0B,KAeTc,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;AyFNiB,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAAlB,MAAO,EASX,YAAY,GARZ,KAAA,cAAgB,CAAC,KAS
V,KAAA,YAAc,EACd,KAAA,SAAW,yRAgBiB,mBAAmB,EAAa,GACvB,MAAA,CAAC,EAAqB,KACR,MAAf
,KAAK,SACF,KAAA,OAAS,EAAM,0BAA0B,EAAC,UACvD,KAAA,OAAS,EAAM,0BAA0B,EAAC,WAE9D,E
AAM,GAAG,UAAU,KAAK,OAAQ,GACHc,EAAM,GAAG,UAAU,KAAK,OAAQ,KAlCd,QAAA,YAAA;;ACA
M,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EAAXB,MAAO,EAWX,YAAY,GA
VZ,KAAA,cAAgB,CAAC,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,EASR,KAAA,YAAc,EACd,KAAA,SAAW,2
SAiBiB,mBAAmB,EAAa,GACvB,MAAA,CAAC,EAAqB,KACR,MAAf,KAAK,SACF,KAAA,OAAS,EAAM,0B
AA0B,EAAC,UACvD,KAAA,OAAS,EAAM,0BAA0B,EAAC,WAE9D,EAAM,GAAG,UAAU,KAAK,OAAQ,GA
ChC,EAAM,GAAG,UAAU,KAAK,OAAQ,KArCR,QAAA,kBAAA;;ACsBvB,aAAA,OAAA,eAAA,QAAA,aAAA
,CAAA,OAAA,IAAA,QAAA,YAAA,EAAA,QAAA,uBAAA,EAZBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAA
A,eACA,EAAA,QAAA,sBAEM,SAAU,EAAY,GAKpB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GA
C3B,EAAC,GAAK,GACN,aAAC,EAAD,aAAe,GAAGB,EAejC,IAAA,EAME,MAAA,GAJJ,GADE,EAAM,EAA
A,OAAA,QAAQ,mBACN,IAAI,EAAJ,kBAAsB,EAAE,OAExB,IAAI,EAAJ,YAAGB,EAAE,QAef,mBAAmB,EA
Ac,GACtD,OAAA,EAAQ,gBAAgB,EAAS,CAAC,GAAl,EAAE,MAAO,GAGjD,MAAM,EAAKc,CAC7C,WAAY
,EADiC,YAE7C,YAAa,QACb,WAAY,GAHP,QAAA,kBAAA;;ACvBuB,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,uBAAA,EAAXB,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAgB,CAAC,OAAQ,QAKIB,K
AAA,YAAc,EACd,KAAA,SAAW,scAPU,QAAA,kBAAA;;ACgCvB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,sBAAA,EAICP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,sBAK

A,SAAS,EA CL,EAA2B,GACtB,MAAA,CACL,OAAQ,EAAY,OACpB,MAAO,EAAY,MACnB,MAAO,EAAC,O
AlnB,SAAU,EACZ,GACI,MAAA,OAAC,EAAD,QAAS,GAAW,GACpB,EAAC,GA AK,EAEN,EAAQ,EAAQ,QA
AQ,IAAI,EAAE,QA E9B,EAAU,IAAI,EAAJ,kBAAsB,EAAE,OACIC,EAAGB,CACpB,EAA+B,EAAG,EAAM,m
BAAmB,MAC3D,EAA+B,EAAG,EAAM,mBAAmB,OAGtD,OAAA,EAAQ,gBACX,EAAS,EAAe,EAAC,GAAG,
OAGxC,MAAM,EAAiC,CAC5C,WAAY,EADgC,WAE5C,YAAa,QACb,WAAY,GAHP,QAAA,iBAAA,;AC/Bm
B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAH1B,IAAA,EAAA,QAAA,yBAG
M,MAAO,EAMX,YAAY,GAJZ,KAAA,YAAwB,GAKjB,KAAA,YAAc,EAAa,aAAA,gBAAGB,EAAQ,GACnD,K
AAA,cAAGB,EAAO,IAAI,CAAC,EAAG,QAAU,KAExC,MAAA,EAAoB,IAAI,MAAM,EAAO,OAAS,GACpD,E
AAQ,GA AK,EAAO,GAAG,GACIB,IAAA,IAAI,EAAI,EAAG,EAAI,EAAQ,OAAQ,IACIC,EAAQ,GA AK,EAAQ,
EAAI,GA AK,EAAO,GAAG,GAGpC,MAAA,EAAW,aAAa,EAAQ,iCACjC,IAAA,IAAI,EAAI,EAAG,EAAI,EA
Q,OAAQ,IAAK,CACjC,MAAA,EAAQ,EAAQ,EAAI,GAC1B,EAAS,sBACY,EAAQ,wBACR,YAAY,QA E7B,M
AAA,EAAY,EAAQ,OACpB,EAAY,EAAQ,EAAQ,OAAS,GAC3C,EAAS,2BAA2B,YAAoB,QAEnD,KAAA,gJA
MC,EAAS,KAAK,gCAjCE,QAAA,cAAA,;ACwGzB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,Q
AAA,yBAAA,EA3GD,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,qBAEM,MAAO,EA
OX,YAAY,EAAoB,GALhC,KAAA,cAAe,EACf,KAAA,cAAe,EACf,KAAA,YAAwB,GAJjB,KAAA,YAAc,EAAa
,aAAA,gBAAGB,EAAQ,GACID,MAAA,EAAQ,KAAK,YACb,EAAO,EAAM,OACb,GA AQ,EAakB,EAAA,mBA
AA,GAC1B,GAAS,EAAY,EAAA,aAAA,SAAU,GAC/B,EA AW,CAAC,IAAK,IAAK,IAAK,IAAK,IAAK,KAAK,
MAAM,EAAG,GACpD,KAAA,cAAGB,EAAO,IAAI,CAAC,EAAG,QAAU,KAExC,MAAA,EAAoB,IAAI,MAA
M,EAAO,OAAS,GACpD,EAAQ,GA AK,EAAO,GAAG,GACIB,IAAA,IAAI,EAAI,EAAG,EAAI,EAAQ,OAAQ,I
ACIC,EAAQ,GA AK,EAAQ,EAAI,GA AK,EAAO,GAAG,GAGpC,MAAA,EAAU,EAAS,GACnB,EA Ae,EAAS,O
AAO,GAC/B,EAAC,EAAS,OA Ezb,IAAA,SAAYB,OA Aa,EAAQ,wDAEiC,YAAsB,EAAa,uBAE9C,IAAA,IAAI,E
AAI,EAAG,EAAI,EAAQ,OAAQ,IAAK,CACjC,MAAA,EAAQ,EAAQ,EAAI,GAK1B,oBACQ,OA Aa,EAAQ,UA
AU,QAAC,EAAQ,EAAI,wDAErD,KAAK,EAAGB,EAAU,EAAS,0BACvC,EAAGB,EAAC,EAAS,mBAGhD,MAA
A,EAAY,EAAQ,OACpB,EAAQ,EAAQ,EAAQ,OAAS,GACvC,kDAEY,KAAa,EAAGB,EAAU,EAAS,wBAC/C,E
AAGB,EAAC,EAAS,QA E/C,KAAA,mCACc,EAAS,IAAI,GA AK,OAAS,kBACxC,8CAIA,sEAC4B,+BAE5B,EA
O,EAAO,QAAQ,EAAO,EAAO,wBACHC,EAAO,EAAO,QAAQ,EAAM,EAAO,wCACjB,6BAGtB,EAAO,EAAO,
QAAQ,EAAO,EAAO,wBACHC,EAAO,EAAO,QAAQ,EAAM,EAAO,wCACjB,6BAGtB,EAAO,EAAO,QAAQ,E
AAO,EAAO,wBACHC,EAAO,EAAO,QAAQ,EAAM,EAAO,sBACnC,EAAO,EAAO,QAAQ,EAAM,EAAO,wCA
CjB,6DAmBhC,SAAS,EAAGB,EAAoB,EAAiB,GACtD,MAAA,EAAa,EAAS,QAAQ,GAQ7B,OAPK,EAAS,IAAI
,CAAC,EAAG,IACvB,IAAQ,KACA,OA AO,IAEV,GAGA,OACZ,QAAA,oBAAA,;AC7FM,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,EAdP,IAAA,EAAA,QAAA,yBAGA,E
AAA,QAAA,cAEM,SAAU,EA AK,GA Eb,MAAA,OAAC,EAAD,QAAS,GA AW,GACpB,MAAC,GAAS,EACV,E
AAY,EAAQ,QAAQ,IAAI,EAAM,QA ErC,OAAA,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAG,EAAU,mB
AAmB,MAAO,QAAA,IAG5D,MAAM,EAA2B,CACtC,WAAY,EAD0B,KA EtC,YAAa,QACb,WAAY,GAHP,QA
AA,WAAA,;A/F8FN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EA5GD,IAAA,E
AAA,QAAA,yBAGA,EAAA,QAAA,iBACA,EAAA,QAAA,wBACA,EAAA,QAAA,0BAEA,EAAA,QAAA,aAC
A,EAAA,QAAA,UACA,EAAA,QAAA,UACA,EAAA,QAAA,aAEM,SAAU,EACZ,EAAsB,EAAC,GACHC,MAA
A,EAAQ,EAAO,GAAG,MACpB,GAAU,cAAV,EA AU,B,CACnB,MAAA,EAAQ,EAAO,IAAK,IAAM,EA AK,EA
AA,MAAA,CAAC,OAAQ,CAAC,MAAO,GA AI,QAAA,KACpD,EAAQ,EAAO,IAAK,IAAM,EA AK,EAAA,MA
AA,CAAC,OAAQ,CAAC,MAAO,GA AI,QAAA,KA EpD,EAAe,EA AW,EAAO,EAAM,GACvC,EA Ae,EA AW,EA
AO,EAAM,GA EvC,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,KAAM,EAAC,KAAM,GA Ae,QAAA,IAO
xD,OALP,EAAM,QAAQ,GA AK,EAAQ,8BAA8B,IACzD,EAAM,QAAQ,GA AK,EAAQ,8BAA8B,IACzD,EAAQ,
8BAA8B,GACtC,EAAQ,8BAA8B,GA E/B,EASL,GAAU,WA AV,EAAoB,CACHB,MAAA,UAAC,EAAD,SAAY,
GAAY,EAAiB,EAAQ,EAAM,GACvD,EAakB,EAAU,IAAI,IAC7B,CAAC,KAAM,EAAQ,SAAS,EAAE,QAAS,
MAAO,EAAE,SAE/C,EAAYC,IAA1B,EAAU,GAAG,MAAM,GACIC,GACF,EAAC,EAAA,eAAA,EAAiB,EAAU,
EAAO,GA E9C,EACF,EAAa,aAAA,gBAAGB,EAAO,IAAI,GA AK,EAAE,OAAQ,GA ErD,EAAU,EAAQ,eAAe,E
AAe,EAAO,GA ItD,OAFP,EAAU,QAAQ,GA AK,EAAQ,8BAA8B,IA EtD,EAGL,GAAA,EAAO,QAAS,EAAM,E
AAA,OAAA,UAAU,gCAAiC,CAC7D,MAAA,EA AW,KAAK,MAAM,EAAO,OAAS,GACtC,EA AW,EA AW,EA

AO,MAAM,EAAG,GAAW,EAAM,GACvD,EAAy,EAAW,EAAO,MAAM,GAAW,EAAM,GAERd,EAAS,EAAW,CAAC,EAAU,GAAY,EAAM,GAKhD,OAHP,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GAEB/EAGL,IAAA,EAAM,EAAA,OAAA,QAAQ,gCACd,EAAO,GAAG,MAAM,OAAS,EAAG,CACxB,MAAA,EAAU,IAAI,EAJ,OBAAwB,EAAO,IAAI,GAAK,EAAE,OAAQ,GAC3D,OAAA,EAAQ,gBAAgB,EAAS,EAAQ,GAG5C,MAAA,UAC,EAAD,SAAY,GAAY,EAaiB,EAAQ,EAAM,GACvD,EACF,IAAI,EAJ,cAAkB,EAAU,IAAI,GAAK,EAAE,QACrC,EAAS,EAAQ,gBAAgB,EAAS,EAAW,GAe3D,EAAU,QAAQ,GAAK,EAAQ,8BAA8B,IACvD,MAAA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,MAAO,CAAC,MAAO,GAAW,QAAA,IAGrD,OAFP,EAAQ,8BAA8B,GAEB/EAGT,SAAS,EACL,EAASB,EAAC,GAQHc,MAAA,EAAW,EAAa,aAAA,gBAAgB,EAAO,IAAI,GAAK,EAAE,OAAQ,GAQjE,MAAA,CAAC,UAPU,EAAO,IACrB,IAAK,EAAQ,EAAA,SAAA,CACX,OAAQ,CAAC,EAAA,GACT,MAAO,CAAC,MAAO,EAAE,EAAG,EAAK,KAAA,cAAc,EAAE,MAAM,MAAM,MACrD,QAAA,KAGa,SAAA;;AgG1Ed,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EAjCP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,iBACA,EAAA,QAAA,cAEM,SAAU,EACZ,GAGI,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,KAAC,GAAQ,EAET,EAAQ,EAAC,KAAA,eAAe,EAAM,EAAO,GAAG,OAAO,GACnD,EACF,EAAa,aAAA,gBAAgB,EAAO,IAAI,GAAK,EA AE,OAAQ,GAEvD,GAaiC,IAAjC,EAAC,KAAA,cAAc,GACd,OAAA,EAAQ,eAAe,EAAU,EAAO,GAAG,MAAO,IAIrD,MAAA,EAAU,EAAO,OAAO,GAAK,EAAC,KAAA,cAAc,EAAE,OAAS,GAC7D,GAAMb,IAAnB,EAAQ,OACH,OAAA,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAG,EAAQ,IAAK,QAAA,IAGtC,MAAA,EAAS,EAAQ,IAAI,GAAK,EAAE,OAG3B,OAFM,EAAA,aAAA,uBAAuB,EAAQ,IAErC,EAAW,EAAA,YAAA,EAAS,EAAO,GAG7B,MAAM,EAA6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;ACiKmB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,mBAAA,EA/LpB,MAAO,EAKX,YACI,EAAMc,GAAU,EAC7C,EAAqB,KAAM,GAA4B,EACvD,GAAoB,GAPxB,KAAA,cAAgB,CAC,IAAK,KAQf,KAAA,YAAc,EAAS,SACtB,MAAA,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC3B,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,EAaiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAAe,EAAS,aACxB,EAAC,EAAS,YAEvB,EAA8D,EAAtC,KAAK,MAAM,EAAS,WAAa,GACzD,EAA0B,EAAS,WAAa,EACHD,EAAYC,iBAAXB,EAAS,WAE1B,EAAS,EAaiB,EAAl,EAC9B,EAAS,EAaiB,EAAl,EAC9B,EAAa,EAaiB,EAAl,EAEPc,IAAA,EAAoB,GAAl,EAAYB,GACjD,IAEA,EADE,yGAGE,eAEK,iGAGL,uEAKE,2BAKR,EAAYB,gCAGRb,MAAA,EAaiB,EAAU,kCAAoC,GACjE,GACG,KAAA,cAAc,KAAK,QAGtB,GACG,KAAA,cAAc,KAAK,0BAGtB,GACG,KAAA,cAAc,KAAK,kBAGRb,KAAA,oBACD,0CAE4B,MAAiB,uCACpB,MAAW,kiAKIB,8DAGC,cAAmB,oTAOd,kDACK,uCAEL,EAAS,sFAIP,oDACK,yCAEL,EAAS,2FAIP,mQAQhB,mqBAmb0B,IAA5B,6BAEE,6EAESB,0CACp,gGAGD,kDACC,sDAGkB,IAA5B,0EAEM,yCACA,qDAGX,qFAEoB,8CACA,8KAKR,8CACA,oIAKqB,IAA5B,0EAEM,yCACA,6CACA,qDAGX,qFAEoB,8CACA,kDACA,8KAKR,8CACA,kDACA,+LAUtB,cACA,gDAOGb,QAAA,cAAA,EAAPB,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAgB,CAAC,IAAK,KAKf,KAAA,YAAc,EAAS,SACtB,MAAA,EAAW,EAAS,QAAQ,MAC5B,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC3B,EAAC,EAAS,YACvB,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,EAAGB,EAAS,cACzB,EAaiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAAC,EAAS,YACvB,EAAe,EAAS,aACxB,EAAC,EAAS,YAEvB,EAA8D,EAAtC,KAAK,MAAM,EAAS,WAAa,GACzD,EAA0B,EAAS,WAAa,EAejD,KAAA,gDAC2B,MAAGB,MAC5C,uCACyB,MAAA,MAAW,ijBAgBzB,kDACK,uCAEL,EAAS,qFAIP,oDACK,yCAEL,EAAS,4FAIP,sDACK,2CAEL,EAAS,iGAIP,0mBAiBU,IAA5B,+EAewB,4CACp,qCACkB,IAA5B,yFAEiB,kDACA,wGAGP,+CACA,+GAGkB,IAA5B,yFAEiB,kDACA,sDACA,wGAGP,+CACA,mDACA,yLAvGX,QAAA,cAAA;;AC9LM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAHhC,IAAA,EAAA,QAAA,kBAGM,MAAO,EAox,YACI,EAauB,EACvB,GARJ,KAAA,cAAgB,CAAC,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,EAOR,KAAA,YAAc,EAEB,MAAA,YACJ,EADI,WAEJ,EAFI,YAGJ,EAHI,aAIJ,EAJI,QAKJ,EALI,SAMJ,EANI,CAOJ,EAPI,eAQJ,EARi,WASJ,GACE,GACE,KAAC,EAAD,IAAO,GAAO,EACd,EAAMb,EAAa,EACHc,GAAO,EAAb,EAAA,sBACm,EAAGc,iBAAf,EACjB,EAAS,EAaiB,EAAl,EAC9B,EAAS,EAaiB,EAAl,EAehC,IAAA,EAAW,GAEV,IAAA,IAAI,EAAM,EAAG,GAAO,EAAG,IACrB,IAAA,IAAI,EAAM,EAAG,GAAO,EAAG,IAC1B,sCACwB,8BACP,mCAEG,EAAY,eAAe,EAAY,kDACzB,SAAGB,OAC9C,kCACiB,cAA2B,8BAEiC,EAAW,0EAEOB,SACzC,QAAkB,sCACC,4BACnB,SAAwB,kCAEZ,EAAW,gEAeq,gCAErB,+EAew,EAAN,EAAU,yNAKJ,EAAN,EAAU,iMAW5B,KAAA,6MASC,gBAEA,EAAC,mCANFiB,QAAA,oBAAA;;ACiQ/B,aAAA,OAAA,eAAA,QAAA,aAAA,

CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,iBAAA,EA rQD,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,
wBACA,EAAA,QAAA,sCACA,EAAA,QAAA,wBACA,EAAA,EAAA,QAAA,kBAEA,EAAA,QAAA,sBACA,E
AAA,QAAA,cACA,EAAA,QAAA,aA2PC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IA
AA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,O
AAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA
,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA
,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,
KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OA
AA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA3OK,SAAU,GAAe,EAC7B,EAD6B,OAE7B,E
AF6B,SAG7B,EAH6B,QAI7B,EAJ6B,KAK7B,EAAO,KALsB,uBAM7B,EAAYB,KANI,eAO7B,EAAiB,EAPY,W
AQ7B,EAAa,OAIP,MAAA,EAAS,EAAE,MACX,EA AW,EA AQ,QAAQ,IAAI,EAAE,QACjC,EA AkB,EAAS,WA
C3B,EA Ac,EAAO,GA AK,EAAO,GA AK,EAAO,GAC7C,EA AmB,EAAS,YAC5B,EA AyC,iBA AxB,EAAS,WAI5
B,IAAA,EACE,MAAA,EAA8B,GAI9B,GACe,IAAhB,GAA0C,IAArB,IACtB,EA AkB,EA FtB,4BAGM,EA AyB,E
AAO,GA AK,GA AM,KAAO,EAAS,SAE7D,IAAA,IAA8B,EAAM,EAAA,OAAA,QAAQ,yBAC3C,EAAM,EAAA
,OAAA,QAAQ,iCACd,EA+BE,CASC,MAAA,EA Ac,EACHB,EAAO,GA AK,EAAO,IAAM,EAAO,GA AK,GACrC
,EAAO,GA AK,EAAO,IAAM,EAAO,GA AK,GACnC,EA AwB,CAC5B,OAAQ,EAAE,OACV,MAAO,CAAC,EA A
G,EA Aa,EAAS,YACjC,MAAO,EAAE,OAUL,EA AwB,EAAS,MACvC,EAAS,MAAQ,EAAS,MAAM,QAChC,EA
AS,MAAM,EAAS,MAAM,OAAS,KACIC,EAAA,KAAA,OACD,EA AW,cAAc,EAAS,MAAO,EA AU,OACnD,sB
AAwB,EAAS,YAC7B,EA AU,oBACZ,MAAA,GAAiB,EA AQ,EAAA,SAAA,CAC7B,OAAQ,CAAC,EAAG,GAC
Z,QAAA,EACA,MAAO,CAAC,MAAO,CAAC,EAAG,EAAS,WAAY,EAAS,gBAEnD,EA Ac,KAAK,GACb,MAA
A,GAAgB,EA AgB,EAAA,iBAAA,CACpC,EAAG,EACH,EAAG,EACH,QAAA,EACA,YAxFe,EAyFf,YAxFe,EA
yFf,KAAA,EACA,WAAA,EACA,uBAAA,EACA,eAAA,IAGI,EA AU,B,EA AQ,QAAQ,IAAI,EA Ac,QACID,EA A
A,KAAA,OACD,EA AqB,SACrB,IAAM,+CAEV,EAAS,MAAQ,EAGjB,EA AqB,MAAQ,EAAS,UA EtC,GAAM,E
AAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAG,GAAgB,QAAA,KACxC,MAAQ,EAAS,SAErB,EA Ac,KAAK,O
A9FQ,CACrB,MAAA,EA Ac,EA AiB,EAAO,GA AK,EAAO,GA AK,EAAO,GAC/B,EAAO,GA AK,EAAO,GA AK,
EAAO,GAC9D,GAAY,EA AQ,EAAA,SAAA,CACxB,OAAQ,CAAC,EAAA,GACT,QAAA,EACA,MAAO,CAAC
,MAAO,CAAC,EAAG,EA Aa,EAAS,eAErC,GAAiB,EA AQ,EAAA,SAAA,CAC7B,OAAQ,CAAC,EAAG,GACZ,
QAAA,EACA,MAAO,CAAC,MAAO,CAAC,EAAG,EAAS,WAAY,EAAS,gBAE7C,GAAS,EA AgB,EAAA,iBAA
A,CAC7B,EAAG,EACH,EAAG,EACH,YA/Be,EA GcF,YA/Be,EA GcF,QAAA,EACA,KAAA,EACA,WAAA,EAC
A,uBAAA,EACA,eAAA,IAGF,GAAM,EACF,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,QAAA,EAAS,
MAAO,CAAC,MAAO,EAAS,YAE3D,EA Ac,KAAK,GACnB,EA Ac,KAAK,GACnB,EA Ac,KAAK,GAmEhB,IAA
A,MAAM,KAAK,EACd,EA AQ,8BAA8B,GAGjC,OAAA,EAKH,SAAU,GAAiB,EAC/B,EAD+B,OAE/B,EA F+B,
SAG/B,EAH+B,QAI/B,EAJ+B,KAK/B,EAAO,KALwB,uBAM/B,EA AyB,KANM,eAO/B,EA AiB,EAPc,WAQ/B,
EA Aa,OAQP,MAAA,YACJ,EADI,aAEJ,EAFI,WAGJ,EAHI,SAIJ,EAJI,UAKJ,EALI,WAMJ,GACE,EAAE,EA Ag
C,iBA Af,EA EjB,EA AY,EA Ac,EA Ae,EACzC,EA AU,EA AY,EACtB,EA Aa,CAAC,EA AW,GAIzB,EA A8B,GAE9
B,GACF,EA AQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAA,GA AI,QAAA,EAAS,MAAO,CAAC,MAAO,EAAE,
MAAM,MAAM,MACID,GAAQ,EA AQ,EAAA,SAAA,CACpB,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MA
AO,CAAC,MAAO,CAAC,EAAG,EA AW,EA AK,KAAA,cAAc,EAAO,OAAS,MAGnE,EA Ac,KAAK,GACnB,EA
Ac,KAAK,GA Eb,MAAA,EACF,IAAI,EA AJ,oBA AwB,EA AY,EA AU,MAAO,GACnD,EAAS,EA AQ,gBA AgB,E
AAe,CAAC,GAAY,WAC7D,GAAiB,EA AQ,EAAA,SAAA,CAC7B,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,
MAAO,CAAC,MAAO,CAAC,EAAG,EA AW,GA AI,EA AW,OAG/C,EA Ac,KAAK,GACnB,EA Ac,KAAK,GA Eb,
MAAA,EA AkB,MAAR,EACV,EA AsD,MAA1B,EAC5B,EA AmC,cAAf,EACpB,EACF,GAAa,EA A6B,EAAA,8B
AAA,GAAY,GAAQ,KAC5D,EA AgB,IAAI,EA AJ,oBACIB,EA Ae,MACf,EAAM,MACN,CAAC,EAAG,EAAS,E
AAS,cApCP,GACA,EA mC6C,EAC5D,EA AiB,EA A2B,GAC1C,EA AU,B,CAAC,EA AgB,GA O1C,GANA,GACF,E
AAO,KAAK,GA EV,GACF,EAAO,KAAK,GA EV,EA AmB,CACf,MAAA,EA AkB,EA AQ,eAC5B,GA AI,UACJ,E
AAK,KAAA,kBA AkB,EA AmC,YAC9D,EAAO,KAAK,GACZ,EA Ac,KAAK,GA Ef,MAAA,EA AU,EA AQ,gBA A
gB,EA Ae,EA AQ,WAEzD,EA AW,EACb,CAAC,EAAG,EA AW,EA AU,EAAS,aACIC,CAAC,EAAG,EAAS,YAAa
,EA AW,GACnC,GACF,EA AQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,

MAAO,KAE3D,EAAC,KAAC,GACd,IAAA,MAAM,KAAC,EACd,EAAQ,8BAA8B,GAGjC,OAAA;;AC5NF,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EAxCP,IAAA,EAA
A,QAAA,yBAGA,EAAA,QAAA,eACA,EAAA,QAAA,iBACA,EAAA,QAAA,aAEM,SAAU,EACZ,GAEI,MAAA
,OAAc,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,OAAI,GAAU,GACd,QAAC,EAAD,IAAU,E
AAV,WAAe,EAaf,UAA2B,EAA3B,gBAAsC,GAAMB,EAEdZ,EAAC,EAAa,aAAA,wBAAwB,GACnD,EAAW,E
AAa,aAAA,kBAC1B,EAAE,MACF,EAAO,MAA2C,EAAS,EAAW,EACtE,GAAiB,EAAuB,GACxC,IAAA,EAEA
,GAA0B,IAA1B,EAAS,cAA+C,IAAzB,EAAS,aACZ,IAA5B,EAAS,gBAAMd,IAA3B,EAAS,eAChB,IAA1B,EA
AS,cAA+C,IAAzB,EAAS,aACb,SAA1B,EAAS,QAAQ,MAA6C,UAA1B,EAAS,QAAQ,KAEnD,IAAI,EAAM,EA
AA,OAAA,QAAQ,sBAAuC,IAAf,EAAE,MAAM,GACvD,GAAM,EAAiB,EAAA,kBAAA,CAAC,EAAA,EAAG,
OAAA,EAAQ,SAAA,EAU,QAAA,QACxC,CACC,MAAA,EAAU,IAAI,EAJ,cAAkB,GACIC,EAAM,EAAQ,g
BAAgB,EAAS,CAAC,EAAG,GAAS,gBALpD,GAAM,EAAe,EAAA,gBAAA,CAAC,EAAA,EAAG,OAAA,EAA
Q,SAAA,EAAU,QAAA,IAQvC,MAAA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAA
A,EAAS,MAAO,CAAC,MAAO,EAAS,YAGzD,OAFP,EAAQ,8BAA8B,GAE/B,EAGF,MAAM,EAA6B,CACxC,
WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;ACKK2B,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,sBAAA,QAAA,uBAAA,QAAA,sBAAA,QAAA,4BAAA,EAvm5B,MAAO,EAK
X,YAAY,GAJZ,KAAA,cAAgB,CAAC,IAAK,MAKf,KAAA,YAAc,EAAS,YAEtB,MAAA,EAAe,EAAS,aACxB,
EAAC,EAAS,YACvB,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC3B,EAAYC,iBAAxB,EAAS,WAE3
B,KAAA,gZAYqB,EAAS,sDAcL,EAAS,sDACV,OAAkB,yCAEjB,EAAS,4FAIP,EAAS,uDACV,OAAiB,2CAEh
B,EAAS,+EAIZB,8bA8Jc,QAAA,uBAAA,EA3I5B,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAgB,CAAC,KAAM,K
AKhB,KAAA,YAAc,EAAS,QAETB,MAAA,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,EAAe,EAAS,aACxB,EA
Ac,EAAS,YACvB,EAAYC,iBAAxB,EAAS,WAE1B,EAAS,EAAe,EAAI,EAAS,QAAQ,IAC7C,EAAU,EAAC,EA
AI,EAAS,QAAQ,KAE7C,EAAS,EAAiB,EAAI,EAC9B,EAAS,EAAiB,EAAI,EAC9B,EAAa,EAAiB,EAAI,EAEn
C,KAAA,6CACwB,MAAW,kiAKIB,gDAEc,cAAmB,gTAO3B,6DACgB,6CAEZ,EAAS,oIAKpB,kDAES,+DACg
B,+CAEZ,EAAS,4JAMPB,oDAES,EAAS,6CAEZB,wdAgFc,QAAA,sBAAA,EA7D5B,MAAO,EAKX,YAAY,GAJ
Z,KAAA,cAAgB,CAAC,IAAK,MAKf,KAAA,YAAc,EAAS,YAEtB,MAAA,EAAc,EAAS,YACvB,EAAe,EAAS,a
ACxB,EAAc,EAAS,YACvB,EAAW,EAAS,QAAQ,MAC5B,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,K
AE5B,KAAA,wRAWqB,EAAS,sDAcL,EAAS,qDACV,OAAiB,yCAEhB,EAAS,2FAIP,EAAS,wDACV,OAAkB,
2CAEjB,EAAS,kGAIP,EAAS,yDACV,OAAiB,6CAEhB,EAAS,wUAIbB,QAAA,uBAAA,EA5B,MAAO,EAKX,
YAAY,GAJZ,KAAA,cAAgB,CAAC,KAAM,KAKhB,KAAA,YAAc,EAAS,QAETB,MAAA,EAAc,EAAS,YACvB,
EAAe,EAAS,aACxB,EAAc,EAAS,YACvB,EAAc,EAAS,YACvB,EAAe,EAAS,aACxB,EAAc,EAAS,YAEvB,EA
AW,EAAc,EAAI,EAAS,QAAQ,MAC9C,EAAS,EAAe,EAAI,EAAS,QAAQ,IAC7C,EAAU,EAAC,EAAI,EAAS,Q
AAQ,KAE9C,KAAA,6CACwB,MAAA,MAAW,4XAczB,6DACgB,6CAEZ,EAAS,mIAKpB,kDAES,+DACgB,+C
AEZ,EAAS,2JAMPB,oDAES,iEACgB,iDAEZ,EAAS,sKAMPB,sDAES,EAAS,mTAIEb,QAAA,sBAAA;;ACIL3B,
aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,EAAA,QAAA,gCAAA,EAxBP,IAAA,
EAAA,QAAA,yBAGA,EAAA,QAAA,wBAEM,SAAU,EAAqB,GAK7B,MAAA,OAAc,EAAD,QAAS,EAAT,MA
AkB,GAAS,GAC3B,EAAC,EAAD,GAAI,GAAM,GACV,QAAC,EAAD,IAAU,EAUV,WAAe,EAaf,gBAA2B,EA
A3B,YAA4C,GAAe,EAE3D,EAAC,EAAa,aAAA,wBAAwB,GACnD,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAA
2C,EAAa,EAC1D,EAAmB,EAAK,GAAiB,EACzC,GAEE,EAAU,IAAI,EAJ,uBAA2B,GACpC,OAAA,EAAQ,g
BAAgB,EAAS,CAAC,EAAG,GAAC,WAG5C,MAAM,EAA2C,CACtD,WAAY,EAD0C,qBAEtD,YAAa,QACb,
WAAY,GAHP,QAAA,2BAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA
,EAAA,QAAA,+BAAA,EAvBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,wBAEM,SAAU,EAAoB,GAK5B,
MAAA,OAAc,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,GAAC,EAAD,OAAK,GAAU,GACf,WAAC,EAAD
,QAAa,EAAb,IAAsB,EAAtB,WAA2B,EAA3B,gBAAuC,GAAMB,EAEdZ,EAAC,EAAa,aAAA,wBAAwB,GACn
D,EAAW,EAAa,aAAA,kBAC1B,EAAY,EAAO,MAA2C,EAC9D,EAAmB,EAAK,GAAiB,EAAO,GAE9C,EAAU,
IAAI,EAJ,sBAA0B,GACnC,OAAA,EAAQ,gBAAgB,EAAS,CAAC,EAAI,GAAS,WAGjD,MAAM,EAA0C,CA
CrD,WAAY,EADyC,oBAErD,YAAa,QACb,WAAY,GAHP,QAAA,0BAAA;;ACFA,aAAA,OAAA,eAAA,QAAA,
aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EAxBP,IAAA,EAAA,QAAA,yBAGA,EAAA,
QAAA,eAEM,SAAU,EACZ,GAEI,MAAA,OAAc,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,O

AAI,GAAU,GACd,QAAC,EAAD,IAAU,EA AV,UAAe,GAAa,EAE5B,EA AW,EA Aa,aAAA,kBAC1B,EA AE,MA CF,EA AO,MA AmD,EAC1D,EA AW,GA ET,EA AU,IA AI,EA AJ,cAAk B,GAC3B,OAAA,EA AQ,gBA AgB,EA AS,CA AC,EA AG,GA AS,WAGhD,MA AM,EA A6B,CACx C,WA AY,EAD4B,OA ExC,YAAa,QACb,WA AY,GA HP,Q AAA,aAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,uBAAA,EAAA,QAAA,kC AAA,EA tBP,IA AA,EAAA,QAAA,yBAGA,EAAA,QAAA,wBA EM,SA AU,EA AuB,GAK/B,MA AA,OA AC,EA AD,QA AS,EA AT,MA AkB,GA AS,GAC3B,EA AC,EA AD,GA AI,GA AM,GACV,QA AC,EA AD,IA AU,EA AV,YAA e,GAA e,EAE9B,EA AW,EA Aa,aAAA,kBAC1B,EA AE,MA AmD,EA Aa,EACIE,EA AmB,GA EJB,EA AU,IA AI,EA AJ,uBAA2B,GACpC,OAAA,EA AQ,gBA AgB,EA AS,CA AC,EA AG,GA AK,WAG5C,MA AM,EA A6C,CACx D,WA AY,EAD4C,uBA ExD,YAAa,QACb,WA AY,GA HP,QAAA,6BAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,oBAAA,EAAA,QAAA,+BAAA,EA tBP,IA AA,EAAA,QAAA,yBAGA,EAAA,QAA A,wBA EM,SA AU,EA AoB,GAK5B,MA AA,OA AC,EA AD,QA AS,EA AT,MA AkB,GA AS,GAC3B,GA AC,EA AD,OAAK,GAAU,GACf,IA AC,EA AD,QA AM,EA AN,WAAe,GA Ac,EAE7B,EA AW,EA Aa,aAAA,kBAC1B,EA AY,E AAO,MA CnB,EA AS,EA AmB,GA E1B,EA AU,IA AI,EA AJ,sBAA0B,GACnC,OAAA,EA AQ,gBA AgB,EA AS,CA AC,EA AI,GA AS,WAGjD,MA AM,EA A0C,CACrD,WA AY,EADyC,sBA ErD,YAAa,QACb,WA AY,GA HP,QAAA ,0BAAA;;ACZA,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,UAAA,QAAA,SAAA,EA VP,IA AA,EAAA,QAAA,yBA EA,EAAA,QAAA,sCA EA,MA AM,EA AM,EA A0B,wBAAA,uBA IzB,GA AM,EA AgB,E AAA,iBAAA,CA AC,UAAW,IA ExC,QAAA,IA AA,EAAA,MA AM,EA A0B,CACrC,WA AY,EADyB,IA ErC,YAAa ,QACb,WA AY,GA HP,QAAA,UAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,WAAA,QAAA,UAAA,EA VP,IA AA,EAAA,QAAA,yBACA,EAAA,QAAA,sCA EA,MA AM,EA AO,gEAKA,GAA O,EA AgB,EAAA,iBAAA,CA AC,UAAW,IA EzC,QAAA,KAAA,EAAA,MA AM,EA A2B,CACtC,WA AY,EAD0B,KA EtC,YAAa,QACb,WA AY,GA HP,QAAA,WAAA;;ACR0B,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,0BAAA,EA A3B,MA AO,EA KX,YACI,EA A8C,EAC9C,EA A4B,EAC5B,GAPJ,KAAA,cAAgB,CA AC,QA AS,QA AS,UACnC,KAAA,YAAwB,GA OhB,MA AC,EA AO,EA Aa,EA AY,GA AS,GACzC,GA Ac,GACd,E AAY,GAAa,EAC3B,KAAA,YAAc,CA AC,EA AU,EA AY,EA AW,GAC/C,MA AA,EA AsB,aAA X,EA AwB,EA AI,GA EtC,EA AkB,GACrB,IA AI,EA Ac,SA AU,EA Aa,QA EtC,EA Aa,EA Aa,GAAO,EA Aa,EACjD,KACM,EA Ac,IA AM,EA Aa,KACrC,+BACM,+BA ER,CACE,MACA,yBACmB,MA EIB,EA AY,EA AY,GAAO,EA AY,EAC9C,KAC M,EA Aa,IA AM,EA AY,KACnC,8BACM,8BA ER,CACE,MACA,yBACmB,KAMpB,KAAA,qDACgC,8CACD,8c AgBP,sEAIF,mCACD,8BA EP,wCACY,oCACP,4DAGL,wCACY,oCACP,uGAKf,umCAjFoB,QAAA,qBAAA;;A CkB1B,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,oBAAA,QAAA,mBAAA,EA pBP,IA AA ,EA AA,QAAA,yBAGA,EAAA,QAAA,0BA EO,MA AM,EA AiB,IA KtB,MA AA,OA AC,EA AD,QA AS,EA AT,MA AkB,GA AS,GAC3B,MA AC,EA AD,MA AQ,EA AR,OA Ae,GAAU,GACzB,SA AC,EA AD,OA AW,EA AX,mBA Am B,GA AsB,EA EzC,EA AU,IA AI,EA AJ,qBACZ,EA AM,MACN,EA AM,MA A2B,EA AU,EA AQ,GAC hD,OAAA,EA AQ,gBA AgB,EA AS,CA AC,EA AO,EA AO,GA AS,YAG3D,QAAA,cAAA,EAAA,MA AM,EA AoC,CAC/C,WA AY ,EADmC,cAE/C,YAAa,QACb,WA AY,GA HP,QAAA,oBAAA;;AC8DN,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,mBAAA,EA jFD,IA AA,EAAA,QAAA,qBA EM,MA AO,EA QX,YA AY,EA AiB,EA AoB,G APjD,KAAA,cAAgB,CA AC,KA QV,KAAA,YAAc,EACb,MA AA,EA AO,EA AM,OACb,EA AM,EA AY,cAAgB,E AAU,EA AM,aACID,EA AS,EA AM,EA AM,OA AS,GAC hC,IA AA,EA AY,GACZ,EA AY,GA IZ,GACF,EA AY,YA AoB,EA AS,IA AM,WAC/C,EA AY,EA AU,UAA Y,YAEIC,EA AY,kBAA0B,IA AW,cACjD,EA Aa,EA AU,aAAe,cA GnC,KAAA,wEAGC,EA AkB,EAAA,mBAAA,qDACR,EA Ac,EA AM,mCACIB,6DA ER,6BACQ,iBACV,EA Ac,E AAM,2CACR,EA AU,EA AM,iEA OtC,mBA AmB,GACV,MA AA,CA AC,EA AqB,KACT,MA Ad,KAAK,QACF,K AAA,MA AQ,EA AM,mBA AmB,EA Ac,UA EtD,EA AM,GA AG,UAAU,KAAK,MA AO,KAKrC,SA AS,EA AU,EA A c,GAC3B,GA AS,IA AT,EACK,SA AG,IA CL,GAAa,IA AT,EACF,SA AG,QA AW,MA ChB,GAAa,IA AT,EACF,SA AG,QA AW,QA AW,MAC3B,GAAa,IA AT,EACF,SA AG,QA AW,QA AW,QA AW,MA ErC,MA AA,iCAAiC,0BA I3 C,SA AS,EA Ac,EA Ac,GAC/B,GA AS,IA AT,EACK,SA AG,IA CL,GAAa,IA AT,EACF,SA AG,MA CL,GAAa,IA AT,EACF,SA AG,MA CL,GAAa,IA AT,EACF,SA AG,MA EJ,MA AA,iCAAiC,0BA E1C,QAAA,cAAA;;AChBM,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IA AA,QAAA,OAAA,EAAA,QAAA,kBAAA,EA IEP,IA AA,EAAA,Q AAA,yBAGA,EAAA,QAAA,iBA EA,EAAA,QAAA,cACA,EAAA,QAAA,eAEM,SA AU,EACZ,GAGI,MA AA,OA AC,EA AD,QA AS,EA AT,MA AkB,GA AS,GAC3B,EA AC,GA AK,GACN,KAA C,EA AD,UAAO,EA AP,QA AkB,G

AAW,EAE7B,EAAQ,EAAE,MAAM,OACbB,EAAc,EAAa,aAAA,mBAAmB,CAAC,GAAO,GACxD,IAAA,EAA
Y,EACG,MAAf,IACF,GAAY,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAA,GAAI,QAAA,EAAS,MAAO,
CAAC,KAAM,MAEvD,MAAA,EA Ae,EAAa,aAAA,iBAaIB,EAAG,GAAO,GAeZD,GAAA,IAAiB,EAAQ,EACr
B,MAAA,IAAI,wDAEF,EAAE,MAAM,OAAS,qBACL,KAehB,MAAA,EAAO,EAAU,MAAM,GACzB,IAAA,G
AAS,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAG,GAAY,QAAA,IAIIC,IAAA,IAAI,EAAI,EAAG,GAAK,
KAAK,KAAK,KAAK,KAAK,IAAS,EAAG,IAAK,CACID,MAAA,EAAU,IAAI,EA AJ,cAAkB,EAAU,OAAO,EA
AO,GACpD,EAAc,EAAQ,mBAAmB,GACzC,EAAa,EACnB,EACI,EAAQ,gBAAgB,EAAS,CAAC,GAAS,EAAO
,MAAO,GAC7D,EAAQ,8BAA8B,GAIpC,GAAA,EAAW,CACP,MAAA,EAAU,IAAI,EA AJ,cAAkB,EAAU,MAA
O,EAAW,GACxD,EAAa,EACnB,EAAS,EAAQ,gBAAgB,EAAS,CAAC,GAAS,EAAO,OAC3D,EAAQ,8BAA8B,
GAGpC,GA Ae,MAAf,EAAqB,CACjB,MAAA,EAAqB,EAAa,aAAA,uBAAuB,GACzD,GAA0B,EAC5B,EAAA,
WAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,KAAM,KAK1C,OAHP,EAAQ,8BAA
8B,GACtC,EAAQ,8BAA8B,GAe/B,EAGF,OAAA,EAGF,MAAM,EAA6B,CACxC,WAA Y,EAD4B,OAExC,YAA
a,QACb,WAA Y,GAHP,QAAA,aAAA;;AC9BA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
cAAA,EAAA,QAAA,yBAAA,EApCP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BAEM,SAAU,EAAC,GAKt
B,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,EAAD,QA AI,GAAW,GACf,KAAC,EAA
D,aAAO,GAAGB,EAeZB,GAAMB,IAAnB,EAAE,MAAM,OAAC,CACIB,MAAA,EAAQ,EAAQ,SAAS,EAAE,QA
C3B,EAAc,EAAQ,SAAS,EAAQ,QAeVc,GACF,EAAGB,EAAA,iBAAA,EAAO,EAAa,EAAQ,MAAO,EAAQ,MA
AO,GAe/D,OAAA,EAAQ,eAAe,CAAC,GAAO,EAAQ,MAAO,GAChD,GA AuB,IAAnB,EAAE,MAAM,OAAC,C
ACzB,MAAA,EAAO,EAAQ,WAAW,GAC1B,EAAa,EAAQ,WAAW,GAehC,GAAS,EAASB,EAAA,uBAAA,EA
AM,EAAY,EAAM,GAeTD,OAAA,EAAQ,eAAe,EAAO,MAAO,EAAQ,MAAO,EAAO,QAG9D,MAAA,IAAI,MA
CN,wEACG,EAAE,MAAM,WAGV,MAAM,EAAoC,CAC/C,WAA Y,EADmC,cAE/C,YAAa,QACb,WAA Y,GAH
P,QAAA,oBAAA;;ACiCyB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAA1B,M
AAO,EAOX,YACI,EA AuB,EAAMB,GAP9C,KAAA,cAAgB,CAAC,KACjB,KAAA,YAAwB,GAOjB,KAAA,YA
Ac,EACd,KAAA,UAA Y,EACZ,KAAA,WAAa,EACb,KAAA,kHAI0,KAAK,0CACL,KAAK,yCACL,KAAK,kD
AEE,oCACQ,6BACR,oCACQ,yCACI,4BACzB,KAAK,iFAGQ,KAAK,iEAMIB,uBACF,MAAoB,SAApB,KAAK,
WACA,YAEA,YAIH,sBACF,MAAoB,SAApB,KAAK,WACA,KAAK,YAA Y,GAeJB,KAAK,YAA Y,GAIPB,yBAC
F,MAAoB,SAApB,KAAK,WACA,4BAEA,6BatEmB,QAAA,oBAAA;;ACiCzB,aAAA,OAAA,eAAA,QAAA,aA
AA,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,QAAA,wBAAA,EAnCP,IAAA,EAAA,QAAA,yBAGA,EAAA,Q
AAA,yBAEM,SAAU,EAAa,GAKrB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,GAAK
,GACN,UAAC,EAAD,WAA Y,GAAC,EAe3B,EAAA,KAAA,OACD,EAAY,EACZ,0DAA4D,KAe1D,MAAA,EA
AY,EAAE,MAAM,GACpB,EAA8B,SAAf,EAAYB,EAAE,MAAM,GAAK,EAAE,MAAM,GAC7D,EAA6B,SAAf,
EAAYB,EAAE,MAAM,GAAK,EAAE,MAAM,GAC5D,EAA6B,SAAf,EAAYB,EAAE,MAAM,GAAK,EAAE,MA
AM,GAe5D,EAAe,EAAc,EAC7B,EAAc,EAAa,EAC3B,EAAc,GAAC,EAAY,GAExC,EAA8B,SAAf,EACjB,CAA
C,EAAW,EAAc,EAAa,GACvC,CAAC,EAAW,EAAa,EAAc,GAErC,EAAU,IAAI,EA AJ,oBAAwB,EAAa,EAAW,
GACzD,OAAA,EAAQ,gBAAgB,EAAS,CAAC,GA AI,EAAE,OAG1C,MAAM,EAAMC,CAC9C,WAA Y,EADkC,
aAE9C,YAAa,QACb,WAA Y,GAHP,QAAA,mBAAA;;AChC4B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
A,IAAA,QAAA,4BAAA,EAA7B,MAAO,EAKX,YACI,EAAMC,GAAU,EAC7C,EAAqB,KAAM,GAaqB,EAC
hD,GAAoB,GAPxB,KAAA,cAAgB,CAAC,IAAK,KAQf,KAAA,YAAc,EAAS,SAEtB,MAAA,EAAW,EAAS,SACp
B,EAAW,EAAS,QACpB,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC3B,EAAe,EAAS,aACxB,EAAc,
EAAS,YACvB,EAAiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EAAe,EAAS,aACxB,EAAc,EAAS,YACvB,EAAa,E
AAS,YAAc,EAAS,WAE/C,IAAA,EAAoB,GA AI,EAAYB,GACjD,IAEA,EADE,yGAGE,eAEK,iGAGL,uEAKE,2
BAKR,EAAYB,gCAGrB,MAAA,EAAiB,EAAU,kCAAoC,GACjE,GACG,KAAA,cAAc,KAAK,QAGtB,GACG,K
AAA,cAAc,KAAK,0BAEtB,GACG,KAAA,cAAc,KAAK,kBAGrB,KAAA,oBACD,0CAE4B,MAAiB,uCACpB,M
AAW,kNAOpB,iCACI,kXASI,kDACK,uCAEL,+EAIE,oDACK,yCAEL,6PAWxB,cACA,gDArGyB,QAAA,uBA
AA;;ACCM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,kCAAA,EAJzC,IAAA,EAAA,QAA
A,yBAIM,MAAO,EAOX,YACI,EAAMC,GAAU,EAC7C,EAAqB,KAAM,GAaqB,EAC hD,GAAoB,GATxB,KAA
A,cAAgB,CAAC,IAAK,KACtB,KAAA,cAAe,EACf,KAAA,cAAe,EAQR,KAAA,YAAc,EAAS,SAEtB,MAAA,E

AAW,EAAS,SACpB,EAAW,EAAS,QACpB,EAAS,EAAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC3B,EA Ae,E AAS,aACxB,EAAC,EAAS,YACvB,EA AiB,EAAS,eAC1B,EAAGB,EAAS,cACzB,EA Ae,EAAS,aACxB,EAAC,EA AS,YACvB,EA Ae,EA EJB,IAAA,EA AW,gCAEV,IAAA,IAAI,EA AI,EAAG,EA AI,EA Ac,IAC3B,IAAA,IAAI,EA AI,EAAG,EA AI,EA Aa,IAC/B,8BACgB,KAAS,EA AJ,mCACV,KAAK,mCACL,KAAK,gBAYf,IAAA,IAAI,EA AI ,EAAG,EA AI,EA Ac,IAC3B,IAAA,IAAI,EAAS,EAAG,EAAS,EA Ac,IAAU,CAC9C,MAAA,EA Aa,EAAT,EAON, GALJ,kCACoB,EA AI,iCACJ,EA AI,eAGJ,IAAhB,GACE,GAAA,EA AI,IAYJ,GAVE,EAAU,GAAM,8EAYK,oCA CnB,kCACS,KAAK,8MAIO,oCACV,KAAK,6FAGP,KAAK,kHAIK,oCACnB,kPAKqB,iGAIjB,KAAK,gCAA gC, KAAK,yDAE1C,KAAK,yBAAyB,KAAK,oFAMpB,wBAA+B,kCACzC,KAAK,oFAEL,KAAK,yDAGZ,KAAK,c AA c,KAAK,qBAI5B,EA AI,EA AI,GAAa,CAOjB,MAAA,EA AkB,EAAU,GAAM,EACpC,EAAK,KAAA,kBA Ak B,GACvB,EAEC,EAAGB,GAAM,GA AK,EAU,GAAM,GAC3C,EAAGB,GAAM,GA AK,EAU,GAAM,GAC9C ,0CACoB,EAAU,OAAO,8CAEd,yDACW,oCACrB,KAAK,EA AI,4EAMIB,EAAGB,IAC1B,mFAEuB,2DACW,sC ACrB,KAAK,kGAEL,KAAK,4DAKpB,4BACM,KAAK,EA AI,yCACF,KAAK,gBAAgB,KAAK,EA AI,4BAG3C,0 CACoB,8CAEG,yDACW,oCACrB,KAAK,EA AI,kFAGhB,KAAK,EA AI,cAAc,KAAK,EA AI,6BAMxC,EA AI,IA CN,yCACuB,qBASnB,EAAU,GAAM,GACIB,4CACwB,sDACW,kCACtB,KAAK,0FAEL,KAAK,kFAGa,kCACI B,KAAK,EA AI,wFAET,KAAK,EA AI,yDAGhB,KAAK,uCACE,KAAK,gBAAgB,KAAK,EA AI,yBAGvC,EA AI,E AAI,IACV,wFAEWB,wDACW,8GAG7B,KAAK,EA AI,mBAAmB,KAAK,EA AI,wCAI7C,2CACuB,kCACV,KAA K,oFAEL,KAAK,uEAGE,sDACE,kCACtB,KAAK,EA AI,0FAET,KAAK,EA AI,yDAGhB,KAAK,uCACE,KAAK,g BAAgB,KAAK,EA AI,yBAGvC,EA AI,EA AI,IACV,4BACM,KAAK,EA AI,yCACF,KAAK,gBAAgB,KAAK,EA A I,6BAK/C,GAAY,KAIZ,EA AI,IACN,gCACgB,KAAK,YAAY,MAAM,6BACjC,KAAK,mBAAmB,KAAK,gBAA gB,KAAK,qBAGpD,EA AI,EA AI,IACV,kCACgB,KAAK,EA AI,YAAY,MAAM,EA AI,+BACzC,KAAK,EA AI,oC ACG,KAAK,EA AI,gBAAgB,KAAK,EA AI,WAMvD,IAAA,IAAI,EA AI,EAAG,EA AI,EA Ac,IAC3B,IAAA,IAAI, EA AI,EAAG,EA AI,EA Aa,IAC/B,mBAA4B,KAAK,SAAS,KAAK,KAI/C,IAAA,EA AoB,GA AI,EA AyB,GACjD,I AEA,EADE,sGAGE,eAEK,8FAGL,uDAIA,eAIN,EA AyB,gCAGrB,MAAA,EA AiB,EAAU,kCAAoC,GACjE,GAC G,KAAA,cAAc,KAAK,QAGtB,GACG,KAAA,cAAc,KAAK,0BAEtB,GACG,KAAA,cAAc,KAAK,kBAGrB,KAA A,oBACD,0CAE4B,MAAiB,uCACpB,MAAW,gWAelC,gDAGA,cACA,gDA1T+B,QAAA,6BAAA;;ACqCIC,aA AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAAA,QAAA,iCAAA,EAzCP,IAAA,EA AA,QAAA,yBAGA,EAAA,QAAA,yBACA,EAAA,QAAA,gCAEM,SAAU,EAAsB,GAK9B,MAAA,OAAC,EA AD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,OAAI,GAAU,GACd,QAAC,EAAD,IAAU,EA AV,UAAe, EA Af,gBAA0B,GAAMB,EAE/C,IAAA,EA Aa,EACC,MAAd,IACF,EA Aa,CAAC,EAAG,IAGd,EAAA,KAAA,OA CD,EA Aa,aAAA,+BAA+B,EAAS,GACrD,IAAM,mFACgB,oBAA0B,MAE9C,MAAA,EA AW,EA Aa,aAAA,kBA C1B,EA AE,MACF,EA AO,MAA2C,EAAS,EAC3D,EA AK,GAAiB,GA EtB,IAAA,EAQG,OALL,GAFE,EAAM,E AAA,OAAA,QAAQ,6BAA+B,EAAS,aAAe,GACrE,EAAS,YAAc,EAAS,YAAe,EACvC,IAAI,EA AJ,6BAAiC,GA EjC,IAAI,EA AJ,uBAA2B,GAGhC,EA AQ,gBAAgB,EAAS,CAAC,EAAG,GAAS,WAGhD,MAAM,EA A4C,CACv D,WAA Y,EAD2C,sBAEvD,YAAa,QACb,WAA Y,GAHP,QAAA,4BAAA;;ACeOC,aAAA,OAAA,eAAA,QAAA,a AAA,CAAA,OAAA,IAAA,QAAA,+BAAA,QAAA,qCAAA,EA rDrC,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAg B,CAAC,IAAK,MAKf,KAAA,YAAc,EAAS,YAEtB,MAAA,EA Ae,EAAS,aACxB,EA Ac,EAAS,YACvB,EAAS,E AAS,QAAQ,IAC1B,EAAU,EAAS,QAAQ,KAC3B,EA Aa,EAAS,YAAc,EAAS,WAE9C,KAAA,oNAOe,sHAKM, EAAS,sDACL,EAAS,sDACV,OAAkB,yCAEjB,EAAS,4FAIP,EAAS,uDACV,OAAiB,2CAEhB,EAAS,qSAGBF,Q AAA,gCAAA,EA ArC,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAgB,CAAC,KAAM,KAKhB,KAAA,YAAc,EAAS, QA EtB,MAAA,EA Ae,EAAS,aACxB,EA Ac,EAAS,YACvB,EA Ae,EAAS,aACxB,EA Ac,EAAS,YAEvB,EAAS,EA Ae,EA AI,EAAS,QAAQ,IAC7C,EAAU,EA Ac,EA AI,EAAS,QAAQ,KAC7C,EA Aa,EAAS,YAAc,EAAS,WAE9C, KAAA,6CACwB,MAAW,6TAYZ,6DACgB,6CAEZ,EAAS,oIAKpB,kDAES,+DACgB,+CAEZ,EAAS,4JAMPB,o GAGS,2CACN,iQArDa,QAAA,+BAAA;;AClCpC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QA AA,oCAAA,EAAA,QAAA,+CAAA,EA tBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kCAEM,SAAU,EA AoC ,GAK5C,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,GA AI,GAAM,GACV,QAA C,EAAD,UAAU,EA AV,IAAqB,EA ArB,gBAA0B,EA A1B,YAA2C,GAAe,EA E1D,EA AW,EA Aa,aAAA,kBAC1B, EA AE,MAA2C,EA Aa,EAC1D,EA AW,EA AK,GAAiB,GA E/B,EAAU,IAAI,EA AJ,gCAAoC,GAC7C,OAAA,EA A Q,gBAAgB,EAAS,CAAC,EAAG,GA AK,WAG5C,MAAM,EA A0D,CACrE,WAA Y,EADyD,oCAErE,YAAa,QAC

b,WAAY,GAHP,QAAA,0CAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mCA
AA,EAAA,QAAA,8CAAA,EAiBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kCAEM,SAAU,EAAMc,GAK3
C,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,GAAC,EAAD,OAAK,GAAU,GACf,QAAC,EA
D,UAAU,EA AV,IAAqB,EAARb,gBAA0B,EAA1B,WAA2C,GAAC,EAEdD,EAAW,EAAa,aAAA,kBAC1B,EAAY
,EAAO,MAA2C,EAC9D,EAAW,EA AK,GAAiB,GAE/B,EAAU,IAAI,EA AJ,+BAAMc,GAC5C,OAAA,EA AQ,gB
AAgB,EAAS,CAAC,EA AI,GAAS,WAGjD,MAAM,EA AyD,CACpE,WAAY,EADwD,mCAEpE,YAAa,QACb,W
AA Y,GAHP,QAAA,yCAAA;;ACpBiB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,
EAAiB,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAgB,CAAC,KAKV,KAAA,YAAc,CAAC,EAAM,GACrB,KAAA,
SAAW,uLAPI,QAAA,YAAA;;ACyBjB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,
EAAA,QAAA,gBAAA,EA3BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eACA,EAAA,QAAA,aAEM,SAAU,
EAAK,GAEB,MAAA,OAAC,EAAD,QAAS,GA AW,GACpB,EAAC,GA AK,EAEN,EAAW,IAAI,EA AE,SAAU,E
AAE,OAC7B,EAAQ,EA AK,KAAA,cAAc,EA AE,OAE7B,GAAO,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EA
AA,GA AI,QAAA,EAAS,MAAO,CAAC,MAAO,CAAC,MAEtD,EAAU,IAAI,EA AJ,YAAgB,GAC1B,EAAM,EA
AQ,gBAAgB,EAAS,CAAC,GAAO,EAAK,OAEpD,GAAM,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,G
AAM,QAAA,EAAS,MAAO,CAAC,MAAO,KAKxD,OAHP,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GAE/B,E
AGF,MAAM,EAA2B,CACtC,WAAY,EAD0B,KA EtC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACxBuB,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EAx B,MAAO,EAKX,YAAY,GAJZ,KA
AA,cAAgB,CAAC,IAAK,KAKf,KAAA,YAAc,EAAS,SAEtB,MAAA,SACJ,EADI,QA EJ,EA FI,QAGJ,EA HI,aAIJ,
EAJI,YAKJ,EALI,aAMJ,EANI,YAOJ,EAPI,eAQJ,EARI,cASJ,GACE,GAEG,IAAK,EAAQ,KAAM,GAAW,EA Eh
C,KAAA,gDAC2B,MAAiB,uCACpB,MAAW,+YAad,6CACG,yCAEC,yCACA,iDACG,6CAEC,yXA5CR,QAAA,
kBAAA;;AC4BvB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,sBA
AA,EA/BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,mBACA,EAAA,QAAA,aAEM,SAAU,EAAW,GAKnB,
MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,OAAI,GAAU,GACd,QAAC,EAAD,I
AAU,EA AV,UAAe,GAAa,EA E5B,EAAW,EAAa,aAAA,sBAC1B,EA AE,MACF,EAAO,MAAMc,EAAS,EACnD,
OAAyB,GACzB,IAAA,EA EE,MAAA,EAAU,IAAI,EA AJ,kBAAsB,GACtC,EAAM,EAAQ,gBAAgB,EAAS,CAA
C,EAAG,GAAS,WAE9C,MAAA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,EA
S,MAAO,CAAC,MAAO,EAAS,YAGzD,OAFP,EAAQ,8BAA8B,GAE/B,EAGF,MAAM,EA AiC,CAC5C,WAAY,
EADgC,WAE5C,YAAa,QACb,WAAY,GAHP,QAAA,iBAAA;;ACbA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA
,OAAA,IAAA,QAAA,eAAA,EA IBP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAM,0CAE
N,EAAa,+PAWb,GAAM,EAAgB,EAAA,iBAAA,CAAC,UAAW,EAAK,gBA AiB,IAEjD,EAA0B,CACrC,WAAY,
EADyB,IAErC,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;ACKA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,cAAA,QAAA,aAAA,EA vBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,mBACA,EAAA,Q
AAA,0BAEA,MAAM,EAAU,yCACV,EA AiB,0IAKV,EACR,IACO,MAAA,OAAC,EAAD,QAAS,GA AW,GACp
B,GAAC,EAAD,EAAK,GA AK,EA EV,GAAU,EAAM,EAAA,OAAA,QAAQ,gCAC1B,IAAI,EA AJ,sBAA0B,EA
gB,EAAG,MAAO,EA AE,OACtD,IAAI,EA AJ,gBAAoB,EAAS,EAAG,MAAO,EA AE,OACtC,OAAA,EAAQ,gBA
AgB,EAAS,CAAC,EA AI,GA AI,EAAG,QAGnD,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,WAAY,EAD6B,
QAEzC,YAAa,QACb,WAAY,GAHP,QAAA,cAAA;;ACXA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,YAAA,QAAA,WAAA,EA ZP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EA Ae,k
CAIf,EAAQ,wBAED,GAAQ,EACjB,EAAA,kBAAA,CAAC,UAAW,EAAO,gBA AiB,EA Ac,MAAO,SAEtD,QAA
A,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA;
;ACWA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,SAAA,EA vBP,IAAA,E
AAA,QAAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,0NAIQ,EAAa,aAAA,wBACZ,EAAa,aAAA,yBACb,EAAa,a
AAA,yBACb,EAAa,aAAA,yBACb,EAAa,aAAA,yBACb,EAAa,aAAA,uKAQf,GAAM,EA AgB,EAAA,iBAAA,C
AAC,UAAW,IAExC,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAY,EADyB,IAErC,YAAa,QACb,WAAY,
GAHP,QAAA,UAAA;;AhIdA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,I
AAA,QAAA,SAAA,EATP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEO,MAAM,
EAAM,iBAIZ,QAAA,IAAA,EA HA,MAAM,GAAM,EACf,EAAA,iBAAA,CAAC,UAAW,EAAK,gBA AiB,EAAK
,cAAe,EAAA,aAEnD,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAY,EADyB,IAErC,YAAa,QACb,WAA

Y,GAHP,QAAA,UAAA;;AiIqBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAA
A,QAAA,sBAAA,EA9BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,aAEM,SAAU,EAAW,GAKnB,MAAA,O
AAC,EAAD,MAAS,EAAT,QAAGB,GAAW,GAC3B,IAAC,GAAG,GACR,MAAC,GAAS,EAEB,EAAY,EAAM,
MAAM,OACxB,EAAW,EAAM,MAAM,QACzB,IAAA,EAAO,EAJW,OVH,EAAM,IAEH,EAAA,KAAA,SAC
C,EAAY,IAAM,EACpB,uCAA0C,EAAY,OACID,MACR,EAAO,EAAY,EAAM,GAE3B,EAAS,OAAO,EAAM,E
AAG,IAEIB,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAQ,QAAA,EAAS,MAAO,CAAC,MAAO,KA
GvD,MAAM,EAaiC,CAC5C,WAAy,EADgC,WAE5C,YAAa,QACb,WAAy,GAHP,QAAA,iBAAA;;AhIrBA,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EATP,IAAA,EAAA,QAA
A,yBACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAQ,uBAED,GAAQ,EACjB,EAAA,iBAAA,
CAAC,UAAW,EAAO,gBAAiB,EAAO,cAAe,EAAA,eAEvD,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WA
AY,EAD2B,MAEvC,YAAa,QACb,WAAy,GAHP,QAAA,YAAA;;AiIpgB,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,gBAAA,EAAjB,MAAO,EAKX,YACI,EAA0B,EAC1B,GANJ,KAAA,cAAGB,CAAC,
OAAQ,QA0jB,MAAA,EAAW,EAAW,GACvB,KAAA,YAAc,EAEB,MAAA,EACF,WAAmB,KAAK,eAAiB,KA
AK,KAC5C,EAAoB,KAAa,MAAe,MAEID,IAAA,EACA,GAAC,SAAd,EACF,EAAW,wCACN,CAAA,GAakB,S
AAAd,EAGH,MAAA,IAAI,4DACgD,MAH1D,EAAW,oCAMR,KAAA,qDACgC,+FAG/B,gHAIwC,sKAMpB,oW
AS2B,0LahDIC,QAAA,WAAA;;ACkDtB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAA
A,EApDD,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,cAEA,EAAA,QAAA,aACA,EAAA,QAAA,aAEM,SAAU
,EACZ,EAae,EAakB,GAC7B,MAAA,EAAQ,EAAQ,QAAQ,IAAI,EAAE,QAe9B,EAAY,EAak,KAAA,cAAc,E
AAE,OAEjC,EAaqB,EAAE,MAAM,EAAE,MAAM,OAAS,GAC9C,EAAQ,EAAY,EAepB,GAAU,EACZ,EAAA,
SAAA,CAAC,OAAQ,CAAC,EAAA,GAAI,QAAA,EAAS,MAAO,CAAC,MAAO,CAAC,EAAO,MAE5C,EAAS,E
AAQ,MACjB,EAac,IAAI,EAaj,WAAe,OAAQ,EAAQ,GAC7C,EAac,IAAI,EAaj,WAAe,OAAQ,EAAQ,GAe7C
,EAAS,CACb,CACE,OAAQ,EAAM,mBAAmB,KAAK,OACtC,MAAO,EAAM,mBAAmB,KAAK,MACrC,MAA
O,GAET,CACE,OAAQ,EAAM,mBAAmB,KAAK,OACtC,MAAO,EAAM,mBAAmB,KAAK,MACrC,MAAO,IAI
L,EAAW,EAAQ,gBAagB,EAAa,EAAQ,WACxD,EAAW,EAAQ,gBAagB,EAAa,EAAQ,WAExD,GACF,EAAQ,
EAAA,SAAA,CAAC,OAAQ,CAAC,KAAM,EAU,KAAM,GAAW,QAAA,IAEvD,EAAQ,8BAA8B,GACtC,EA
AQ,8BAA8B,GAehC,MAAA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAagB,QAAA,EAAS,
MAAO,CAAC,MAAO,EAAE,SAI5D,OAFP,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GAC/B;;ACrCF,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,IAAA,EAAA,QAAA,eAAA,EAdp,IAAA,EAAA,QAAA,
yBAIA,EAAA,QAAA,cAEM,SAAU,EAai,GAEZ,MAAA,OAAC,EAAD,QAAS,GAAW,GACpB,MAAC,GAAS,
EAET,OAAA,EAAQ,EAAA,SAAA,GAAG,EAaqB,GAGtC,MAAM,EAA0B,CACrC,WAAy,EADyB,IAErC,YA
Aa,QACb,WAAy,GAHP,QAAA,UAAA;;ACXiB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,iBAAA,EAiB,MAAO,EAox,YAAy,EAaiB,GAL7B,KAAA,YAAwB,GAMjB,KAAA,cAAGB,CAAC,KACjB
,KAAA,YAAc,EAEd,KAAA,SAAW,oJASiB,mBAAmB,GACV,MAAA,CAAC,EAaqB,KACN,MAAjB,KAAK,
WACF,KAAA,SAAW,EAAM,0BAA0B,EAac,UAehE,EAAM,GAAG,UAAU,KAAK,SAAU,KazBhB,QAAA,Y
AAA;;ACsBjB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,
EAzBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,eAEM,SAAU,EAak,GAEB,MAAA,QAAC,EAAD,MAAU,
GAAS,GACnB,MAAC,EAAD,MAAQ,GAAS,EACnB,IAAA,MAAC,GAAS,EAIV,GAAU,YAFd,EAAQ,GAAS,E
AAK,KAAA,WAAW,IAET,CAehB,MAAA,EAAS,EAak,KAAA,kBAakB,EAAO,EAak,KAAA,cAAc,IAEzD,
OADP,EAAO,KAAK,GACL,EAAQ,eAAe,EAAO,EAAO,GACvC,CACC,MAAA,EAU,IAAI,EAaj,YAAgB,EA
AO,GACjC,EAac,EAAQ,mBAAmB,GACxC,OAAA,EAAQ,gBAagB,EAAS,GAAI,EAAO,IAIhD,MAAM,EAA2
B,CACtC,WAAy,EAD0B,KAETC,YAAa,QACb,WAAy,GAHP,QAAA,WAAA;;ACvB0B,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,0BAAA,EAA3B,MAAO,EAKX,YAAy,GAJZ,KAAA,cAAGB,CAAC,S
ACjB,KAAA,YAAwB,GAihB,MAAA,EAAa,EAAW,GACzB,KAAA,YAAc,EAEd,KAAA,yIAKgB,8EAec,4PAh
BN,QAAA,qBAAA;;ACiIb,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EALP,IA
AA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BAEO,MAAM,EAAoC,CAC/C,WAAy,EADmC,cAE/C,YAAa,QAC
b,WAAy,EAAE,OAAA,EAAQ,QAAA,MACd,MAAA,MAAC,GAAS,EACV,EAae,EAef,EAAU,IAAI,EAaj,qB
AA0B,EAAM,OAETD,OADQ,EAAa,gBAagB,EAAS,CAAC,GAAG,EAAM,SARjE,QAAA,oBAAA;;AtIIA,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EATP,IAAA,EAAA,QAAA,

yBACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAQ,mBAED,GAAQ,EACjB,EAAA,iBAAA,C
AAC,UAAW,EAAO,gBAAiB,EAAO,cAAe,EAAA,eAEvD,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAA
Y,EAD2B,MAEvC,YAAa,QACb,WAAy,GAHP,QAAA,YAAA;;AuIoCA,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,eAAA,QAAA,cAAA,EA9CP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAMA,MA
AM,EAAU,uPAYV,EAAiB,sgBAuBV,GAAW,EACpB,EAAA,kBAAA,CAAC,UAAW,EAAS,gBAAiB,EAAGB,
MAAO,UAE1D,QAAA,SAAA,EAAA,MAAM,EAA+B,CAC1C,WAAy,EAD8B,SAE1C,YAAa,QACb,WAAy,G
AHP,QAAA,eAAA;;AC3CuB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,uBAAA,EAH9B,
IAAA,EAAA,QAAA,sBAGM,MAAO,EAKX,YAAy,GAJZ,KAAA,cAAgB,CAAC,KAKT,MAAA,GAAO,EAAb,
EAAA,uBACO,EAAQ,GAAW,EACrB,KAAA,YAAc,EACd,KAAA,iOAM8C,QAAY,kCAE3C,EAAK,4WAjBC,
QAAA,kBAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,6BAAA,EAHpC,IAAA
,EAAA,QAAA,sBAGM,MAAO,EAOX,YAAy,GANZ,KAAA,cAAgB,CAAC,KAGjB,KAAA,cAAe,EACf,KAAA
,cAAe,EAGP,MAAA,GAAO,EAAb,EAAA,uBACO,EAAQ,GAAW,EACrB,KAAA,YAAc,EACd,KAAA,mcAeqB
,QAAY,oCACd,EAAK,ybAgBvB,EAAK,mCA3CqB,QAAA,wBAAA;;AC+DnC,aAAA,OAAA,eAAA,QAAA,aA
AA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAIED,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,eAEA,EAAA,QAA
A,sCACA,EAAA,QAAA,6CAEO,MAAM,EAAiC,CAC5C,WAAy,EADgC,WAE5C,YAAa,QACb,WAAy,GAGd,
IAAI,EAEl,SAAS,EAAW,GAKZ,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,EAC7B,IAAA,OAAC,GA
AU,EACT,MAAA,YAAC,GAAe,EAehB,EAAwC,oBAAtB,kBACpB,aAakB,iBACHb,EAAwC,oBAAtB,kBACp
B,aAakB,iBACHb,EAAwC,oBAAjB,aACzB,aAakB,aACf,EAAO,GAAU,EACpB,CACG,EAA4B,WAC5B,EAA4
B,aE/B,CAAC,EAAO,MAAO,EAAO,QAEPB,EAA6B,CAAC,EAAQ,GACtC,EAAW,CAAC,EAAQ,EAAO,IAE
7B,GAAW,GAAW,KACG,MAAvB,IACF,EAASB,SAAS,cAAc,UAAU,WAAW,OAGpE,EAAoB,OAAO,MAAQ,
EACnC,EAAoB,OAAO,OAAS,EACpC,EAAoB,UACHb,EACA,EAAG,EAAG,EAAO,GACjB,EAAS,EAAoB,QA
GzB,MAAA,EAakB,EAAQ,eAAe,EAAU,SAEzD,EAAQ,QAAQ,IAAI,EAAGB,QAAQ,MAAQ,EAAa,aAAA,OA
CjE,EAAQ,MAAM,yBACV,EAAQ,WAAW,EAAGB,QAAS,GAC1C,MAAA,GAAU,EAAM,EAAA,OAAA,QAA
Q,cAC1B,IAAI,EAJ,wBAA4B,GAC5B,IAAI,EAJ,kBAASB,GACpB,EAAM,EAAQ,gBAAGB,EAAS,CAAC,G
AAkB,SAEzD,OADP,EAAQ,YAAy,EAAGB,QAC7B,EACR,QAAA,iBAAA;;AC4BM,aAAA,OAAA,eAAA,QAA
A,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAAA,QAAA,uBAAA,EA9FP,IAAA,EAAA,QAAA,yBAGA,EAA
A,QAAA,eACA,EAAA,QAAA,sCAEA,EAAA,QAAA,iBACA,EAAA,QAAA,aAEM,SAAU,EAAY,GAKpB,MA
AA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,EAAD,OAAI,EAJ,KAAY,EA AZ,uBAakB,G
AA0B,GAC5C,QACJ,EADI,IAEJ,EAFI,WAGJ,EAHI,UAIJ,EAJI,gBAKJ,EALI,WAMJ,EANI,eAOJ,GACE,EAEE
,EAAc,EAAa,aAAA,wBAawB,GACnD,EAAW,EAAa,aAAA,kBAC1B,EAAE,MACF,EAAO,MAA2C,EAAS,EA
AW,EACtE,GAAiB,EAAuB,GACxC,IAAA,EACE,MAAA,EAA8B,GAehC,GAA0B,IAA1B,EAAS,cAA+C,IAAz
B,EAAS,aACZ,IAA5B,EAAS,gBAAmD,IAA3B,EAAS,eAChB,IAA1B,EAAS,cAA+C,IAAzB,EAAS,aACb,SAA1
B,EAAS,QAAQ,MAA6C,UAA1B,EAAS,QAAQ,KAWnD,IAAI,EAAM,EAAA,OAAA,QAAQ,sBAAuC,IAAf,EA
AE,MAAM,GACvD,GAAM,EAAiB,EAAA,kBAAA,CACrB,EAAA,EACA,OAAA,EACA,SAAA,EACA,QAAA,
EACA,KAAA,EACA,WAAA,EACA,uBAAA,EACA,eAAA,QAEG,CACC,MAAA,EAakB,MAAR,EACV,EAAS
D,MAA1B,EAC5B,EAAmC,cAAf,EACpB,EACF,GAAa,EAA6B,EAAA,8BAAA,GAAY,GAAS,KAC7D,EAAU,I
AAI,EAJ,cACZ,EAAU,EAAS,EAAiB,EACpC,GACE,EAAuB,CAAC,EAAG,GAO7B,GANA,GACF,EAAO,KA
AK,GAEV,GACF,EAAO,KA AK,GAEV,EAAMB,CACf,MAAA,EAakB,EAAQ,eAC5B,GA AI,UACJ,EAAK,KA
AA,kBAakB,EAAmC,YAC9D,EAAO,KA AK,GACZ,EAAC,KA AK,GAERB,EAAM,EAAQ,gBAAGB,EAAS,EAA
Q,gBA5C/C,GAAM,EAAe,EAAA,gBAAA,CACnB,EAAA,EACA,OAAA,EACA,SAAA,EACA,QAAA,EACA,K
AAA,EACA,WAAA,EACA,uBAAA,EACA,eAAA,IAuCE,MAAA,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,C
AAC,EAAG,GAAM,QAAA,EAAS,MAAO,CAAC,MAAO,EAAS,YAKzD,OAHP,EAAc,KA AK,GACnB,EAAc,Q
AAQ,GA AK,EAAQ,8BAA8B,IAE1D,EAGF,MAAM,EAakC,CAC7C,WAAy,EADiC,YAE7C,YAAa,QACb,WA
AY,GAHP,QAAA,kBAAA;;AChBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,E
AAA,QAAA,gCAAA,EA9EP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,yBACA,EAAA,QAAA,gCACA,EAA
A,QAAA,sCAEM,SAAU,EAaqB,GAK7B,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,
EAAD,OAAI,EAJ,KAAY,EA AZ,uBAakB,GAA0B,GAC5C,QAAC,EAAD,IAAU,EA AV,UAAe,EA Af,gBAA0
B,EAA1B,WAA2C,EAA3C,eAAuD,GACzD,EAEE,EAA8B,GAehC,IAAA,EAAa,EACC,MAAd,IACF,EAAa,CA

AC,EAAG,IAGd,EAAA,KAAA,OACD,EAAa,aAAA,+BAA+B,EAAS,GACrD,IAAM,mFACgB,oBAA0B,MAE9
C,MAAA,EAAW,EAAa,aAAA,kBAC1B,EAAE,MACF,EAAO,MAA2C,EAAS,EAC3D,EAAK,GAAiB,GAEPB,G
AA0B,EAAM,EAAA,OAAA,QAAQ,6BAC1C,EAAS,aAAe,GACxB,EAAS,YAAc,EAAS,YAAe,EAC7C,EAakB,
GACpB,EAA6B,EAAA,8BAAA,EAAY,GACzC,KACE,EAA8B,CAAC,EAAG,GAElC,EAakB,MAAR,EACV,E
AA5D,MAA1B,EAC5B,EAAmC,cAAf,EAQtB,GANA,GACF,EAAC,KAAC,GAejB,GACF,EAAC,KAAC,GAejB,
EAAmB,CACf,MAAA,EAakB,EAAQ,eAC5B,GAAI,UACJ,EAAK,KAAA,kBAakB,EAAmC,YAC9D,EAAC,KA
AK,GACnB,EAAc,KAAC,GAGjB,IAAA,EAEF,EADE,EACQ,IAAI,EAJ,6BACN,EAAU,EAAS,EAAiB,EACpC
,GAEM,IAAI,EAJ,uBACN,EAAU,EAAS,EAAiB,EACpC,GAGA,MAAA,EAAS,EAAQ,gBAAgB,EAAS,EAAe,
WAIxD,OAFP,EAAC,QAAQ,GAAC,EAAQ,8BAA8B,IAE1D,EAGF,MAAM,EAA2C,CACtD,WAAY,EAD0C,qB
AEtD,YAAa,QACb,WAAY,GAHP,QAAA,2BAAA;;AC5EqB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,
IAAA,QAAA,qBAAA,EAf5B,IAAA,EAAA,QAAA,qBAEM,MAAO,EAIX,YACY,EAA0B,EAAmB,GAA7C,KA
AA,SAAA,EAA0B,KAAA,QAAA,EAJtC,KAAA,cAAgB,CAAC,IAAK,WAKf,KAAA,YAAc,EACb,MAAA,GAA
c,EAakB,EAAA,mBAAA,EAAQ,QACxC,GAAQ,EAakB,EAAA,mBAAA,EAAM,QAChC,EAAe,KAAC,SAAW
,EAAI,aAAe,UACnD,KAAA,sBACC,eAAyB,KAAe,KAAC,gDAE3C,iGAEoB,KAAC,mHAEC,2FAjBV,QAAA,g
BAAA;;ACsCrB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,QAAA,oBAAA,
EAxCP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,oBACA,EAAA,QAAA,aAEM,SAAU,EACZ,GACI,MAAA,
OAAc,EAAD,QAAS,GAAW,GACpB,OAAc,EAAD,QAAS,GAAW,EAEPB,EAAe,EAAQ,MACvB,EAAY,EAAa
,EAAa,OAAS,IAE9C,EAAa,EAAW,EAAW,GACtC,EAAa,aAAA,mBAAmB,EAAQ,GAEtC,GAAiB,EACnB,EA
AA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,CAAC,EAAW,MACzD,G
AAW,EAAQ,EAAA,SAAA,CACvB,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MAAO,CAAC,MAAO,CAAE,E
AAK,KAAA,cAAc,EAAO,OAAS,EAAY,MAG5D,EACF,IAAI,EAJ,gBAAoB,EAAW,EAAS,CAAC,EAAW,IA
CID,EAAM,EAAQ,gBACbB,EAAS,CAAC,EAAU,GAAiB,EAAS,OAE5C,GACF,EAAQ,EAAA,SAAA,CAAC,O
AAQ,CAAC,EAAG,GAAM,QAAA,EAAS,MAAO,CAAC,MAAO,KAMhD,OAJp,EAAQ,8BAA8B,GACtC,EAA
Q,8BAA8B,GACtC,EAAQ,8BAA8B,GAEB/EAGF,MAAM,EAA+B,CAC1C,WAAY,EAD8B,SAE1C,YAAa,QA
Cb,WAAY,GAHP,QAAA,eAAA;;ACHN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBA
AA,EApCD,IAAA,EAAA,QAAA,qBAEM,MAAO,EAMX,YAAY,EAakB,GAL9B,KAAA,cAAgB,CAAC,IAAK,
WAMf,KAAA,YAAc,EACd,KAAA,KAAO,EAAY,OACIB,MAAA,GAAQ,EAakB,EAAA,mBAAA,KAAC,MAC
/B,EAAe,EAAGB,EAAQ,GAExC,KAAA,2CAEC,wDACE,uBAOzB,SAAS,EAAGB,EAakB,GACnC,MAAA,EA
gB,CAAC,UAAW,UAAW,UAAW,WAEID,EAAe,GACbB,IAAA,IAAI,EAAL,EAAG,EAAL,EAAO,OAAQ,IACvB
,IAAN,EACF,EAAa,KAAC,qCAElB,EAAa,QAAQ,EAAc,MAGhC,OAAA,EAAa,OACrB,QAAA,cAAA;;ACmC
M,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,QAAA,oBAAA,EAxEP,IAAA
,EAAA,QAAA,yBAGA,EAAA,QAAA,iBACA,EAAA,QAAA,0BAEA,EAAA,QAAA,aAEM,SAAU,EAAS,GAKj
B,MAAA,OAAc,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,QAAL,GAAW,GACf,KAAC,EA
D,UAAO,GAAa,EAEPB,EAAa,EAAC,KAAA,eAAe,EAAM,EAAE,OAAO,GACd,EAAY,EAAa,aAAA,aAAa,y
BACxC,EAAG,EAAS,EAAY,GAEtB,EAAc,EAAC,KAAA,cAAc,EAAQ,OAEzC,EAAY,GAEZ,GAAW,EAAQ,E
AAA,SAAA,CACvB,OAAQ,CAAC,EAAA,GACT,QAAA,EACA,MAAO,CACL,MAAO,CACL,EAAU,UAAW,E
AAU,UAAW,EAAU,QACpD,EAAU,cAKV,GAAe,EAAQ,EAAA,SAAA,CAC3B,OAAQ,CAAC,EAAG,GACZ,Q
AAA,EACA,MAAO,CAAC,MAAO,CAAC,EAAU,UAAW,EAAC,EAAU,cAG/D,EAAU,KAAC,GACf,EAAU,KA
AK,GAET,MAAA,EAaqB,CACzB,EAAU,UAAW,EAAU,UAAW,EAAC,EAAU,UACIE,EAAU,WAGR,GAAA,E
AAQ,mBAAmB,CAAC,EAAG,KAAyB,WAAZ,EAAE,MAAoB,CAC9D,MAAA,EAAa,EAAQ,WAAW,GAChC,
EAAO,EAAQ,WAAW,GAC1B,GAAS,EAAGB,EAAA,iBAAA,EAAM,EAAY,GAI1C,OAFP,EAAU,QAAQ,GAA
K,EAAQ,8BAA8B,IAEtD,EAAQ,eACX,EAAU,YAAa,EAAO,MAAO,EAAO,QAG5C,MAAA,EAAU,IAAI,EAJ
,cAAkB,EAAS,MAAO,GAC5C,EAAM,EAAQ,gBACbB,EAAS,CAAC,EAAU,GAAe,EAAS,OACd,EAAU,KA
AK,GAET,MAAA,GAAW,EACb,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,EAAS,MAAO,CA
AC,MAAO,EAAU,eAEID,OADP,EAAU,QAAQ,GAAC,EAAQ,8BAA8B,IACtD,EAGF,MAAM,EAA+B,CAC1C,
WAAY,EAD8B,SAE1C,YAAa,QACb,WAAY,GAHP,QAAA,eAAA;;A9IvDA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,aAAA,EAjBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA
,EAAA,QAAA,0BAEA,MAAM,EAAU,uBACV,EAAiB,wCAIV,GAAU,EAAiB,EAAA,kBAAA,CACtC,UAAW,

EACX,gBAAiB,EACjB,cAAe,EAHuB,eAItC,MAAO,SAGF,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,WAAY,EAD6B,QAeZC,YAAa,QACb,WAAY,GAHP,QAAA,cAAA;;A+IHA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,QAAA,kBAAA,EAdP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAgB,wBACHb,EAuB,6CAIhB,GAAe,EAiB,EAAA,kBAAA,CAC3C,UAAW,EACX,gBAAiB,EACjB,MAAO,SAGF,QAAA,aAAA,EAAA,MAAM,EAAmC,CAC9C,WAAY,EADkC,aAE9C,YAAa,QACb,WAAY,GAHP,QAAA,mBAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QA AA,gBAAA,EAdP,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,cAEM,SAAU,EAAK,GAEB,MAAA,OAAC,EAA D,QAAS,GAAW,GACpB,MAAC,GAAS,EAET,OAAA,EAAQ,EAAA,SAAA,GAAO,EAAoB,GAGrC,MAAM,E AA2B,CACtC,WAAY,EAD0B,KAEtC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACPA,aAAA,OAAA,eAAA ,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,QAAA,cAAA,EAPP,IAAA,EAAA,QAAA,yBACA,EAAA,Q AAA,sCAEA,MAAM,EAAY,wCAEL,GAAW,EAAGB,EAAA,iBAAA,CAAC,UAAW,EAAW,MAAO,SAE/D,QA AA,SAAA,EAAA,MAAM,EAA+B,CAC1C,WAAY,EAD8B,SAE1C,YAAa,QACb,WAAY,GAHP,QAAA,eAAA;; ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EAPP,IAAA,EA AA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAS,0BAEF,GAAQ,EAAGB,EAAA,iBAAA,CAAC,UAAW ,EAAQ,MAAO,SAEzD,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb, WAAY,GAHP,QAAA,YAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA, QAAA,WAAA,EAPP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAS,0BAEF,GAAQ,EAAG B,EAAA,iBAAA,CAAC,UAAW,EAAQ,MAAO,SAEzD,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY, EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA;;AIJUA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA, OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EAjBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCACA,EAAA, QAAA,0BAEA,MAAM,EAAO,uBACP,EAAC,qCAIP,GAAO,EAiB,EAAA,kBAAA,CACnC,UAAW,EACX,gB AAiB,EACjB,cAAe,EAHoB,YAIInC,MAAO,SAGF,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAY,EAD0 B,KAEtC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;AmJLA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA A,IAAA,QAAA,gBAAA,QAAA,UAAA,QAAA,kBAAA,QAAA,gBAAA,EAZP,IAAA,EAAA,QAAA,yBAEA,EA AA,QAAA,sCAEO,MAAM,EAAa,wBAQnB,QAAA,WAAA,EAPA,MAAM,EAAoB,0CAO1B,QAAA,kBAAA,E AHA,MAAM,GAAY,EACrB,EAAA,kBAAA,CAAC,UAAW,EAAY,gBAAiB,EAAmB,MAAO,SAEhE,QAAA,U AAA,EAAA,MAAM,EAAGC,CAC3C,WAAY,EAD+B,UAE3C,YAAa,QACb,WAAY,GAHP,QAAA,gBAAA;;AC GA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,QAAA,oBAAA,EAfP,IAAA, EAAA,QAAA,yBAGA,EAAA,QAAA,0BAEM,SAAU,EACZ,GACI,MAAA,QAAC,EAAD,MAAU,GAAS,GACn B,MAAC,EAAD,KAAQ,EAAR,IAAc,GAAO,EAGrB,GAAU,EAAGB,EAAA,iBAAA,EAAO,EAAM,GACtC,OA AA,EAAQ,eAAe,CAAC,EAAQ,QAAS,UAAW,GAGtD,MAAM,EAA+B,CAC1C,WAAY,EAD8B,SAE1C,YAAa, QACb,WAAY,GAHP,QAAA,eAAA;;AIJMA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,U AAA,QAAA,SAAA,EAfBP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM, EAAM,6CAGN,EAAa,4RAWN,GAAM,EACf,EAAA,iBAAA,CAAC,UAAW,EAAK,gBAAiB,EAAY,cAAe,EAA A,aAE1D,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAY,EADyB,IAErC,YAAa,QACb,WAAY,GAHP,QA AA,UAAA;;AmJdA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EA PP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAQ,uBAED,GAAQ,EAAGB,EAAA,iBAAA, CAAC,UAAW,IAE1C,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,W AAY,GAHP,QAAA,YAAA;;ACUA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,Q AAA,gBAAA,EAjBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,EAAC,sCACd,EAAqB,6GAM d,GAAa,EAiB,EAAA,kBAAA,CACzC,UAAW,EACX,gBAAiB,EACjB,MAAO,SAGF,QAAA,WAAA,EAAA,M AAM,EAAiC,CAC5C,WAAY,EADgC,WAE5C,YAAa,QACb,WAAY,GAHP,QAAA,iBAAA;;ACVA,aAAA,OA A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,QAAA,gBAAA,EAPP,IAAA,EAAA,QAAA,yBAC A,EAAA,QAAA,sCAEA,MAAM,EAAC,6BAEP,GAAa,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE/C,QAAA,WA AA,EAAA,MAAM,EAAiC,CAC5C,WAAY,EADgC,WAE5C,YAAa,QACb,WAAY,GAHP,QAAA,iBAAA;;ACQ A,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,QAAA,eAAA,EAfP,IAAA,EAAA,Q AAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,EAAa,sCACb,EAAoB,4HAOb,GAAY,EACrB,EAAA,kBAAA,CA AC,UAAW,EAAY,gBAAiB,EAAmB,MAAO,SAEhE,QAAA,UAAA,EAAA,MAAM,EAAGC,CAC3C,WAAY,EA

D+B,UAE3C,YAAa,QACb,WAAY,GAHP,QAAA,gBAAA;;ACbgB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,gBAAA,EAjB,MAAO,EAKX,YACI,EAakB,EAAGB,EAAC,EACbD,GANJ,KAAA,cAAGB,
CAAC,KACjB,KAAA,YAAwB,GAMhB,MAAA,EAAM,EACN,EAAO,EAAO,GAAG,EAOrB,IAAA,EANC,KA
AA,YAAc,EAOb,MAAA,WAAiB,cAAiB,WAETC,EADW,KAAT,iBAC2B,KACX,IAAT,UACa,gBAEG,eAAmB,
OAGzC,KAAA,mRAsE,WAAa,4EAED,+HAKV,8CA1CH,QAAA,WAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,
aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAavB,MAAO,EAOX,YACI,EAakB,EAAGB,EAAC,EACbD,GARJ
,KAAA,cAAGB,CAAC,KACjB,KAAA,YAAwB,GAExB,KAAA,cAAe,EACf,KAAA,cAAe,EAKP,MAAA,EAAM
,EACN,EAAO,EAAO,GAAG,EAOrB,IAAA,EANC,KAAA,YAAc,EAOb,MAAA,WAAiB,cAAiB,WAETC,EADW
,KAAT,iBAC2B,KACX,IAAT,UACa,gBAEG,eAAmB,OAGzC,KAAA,0NAQuB,KAAK,YAAY,sCACjB,KAAK,
YAAY,mhBAehB,2ZAWR,WAAa,+KAGuB,wyBAqBnB,iDAvFb,QAAA,iBAAA;;ACkbtB,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,SAAA,EApBP,IAAA,EAAA,QAAA,yBAGA,EAAA,
QAAA,cACA,EAAA,QAAA,qBAEO,MAAM,EACR,IAEW,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS
,GAC3B,EAAC,GAAG,GACN,YAAC,EAAD,KAAc,EAAd,MAAoB,EAAPB,KAA2B,GAAQ,EAEnC,GAAU,EA
AM,EAAA,OAAA,QAAQ,4BAC1B,IAAI,EAJ,iBAaQB,EAAE,MAAO,EAAa,EAAM,EAAO,GACxD,IAAI,EA
AJ,WAAe,EAAE,MAAO,EAAa,EAAM,EAAO,GAC/C,OAAA,EAAQ,gBAAGB,EAAS,CAAC,GAAI,EAAE,QAI
D,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAY,EADyB,IAErC,YAAa,QACb,WAAY,GAHP,QAAA,UA
AA;;ACIBoB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAARb,MAAO,EAUX,Y
ACI,EAASB,EAaQB,EAAC,EACzD,GAXJ,KAAA,cAAGB,CAAC,aAac,cAAe,MAC9C,KAAA,YAAwB,GAWjB,
KAAA,YAAc,EACd,KAAA,MAAQ,EAAW,GACnB,KAAA,YAAc,EACd,KAAA,KAAO,EACP,KAAA,MAAQ,
EACR,KAAA,KAAO,EACP,KAAA,6NAQqB,KAAK,oEACiB,iDACX,KAAK,oCACpB,8FAGY,KAAK,4aAelB,
qBAAYB,oPAOT,+BACf,+KAIgB,gSA5Df,QAAA,eAAA;;ACiBpB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,cAAA,QAAA,aAAA,EAnBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,mBAEO,MAAM,
EAAW,IAKhB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,EAAD,EAAl,EAJ,GAAO,
GAAM,GACb,YAAC,EAAD,KAAc,EAAd,MAAoB,EAAPB,KAA2B,GAAQ,EAEnC,EAAU,IAAI,EAJ,eAAmB
,EAAE,MAAO,EAAa,EAAM,EAAO,GAC/D,OAAA,EAAQ,gBAAGB,EAAS,CAAC,EAAG,EAAG,GAAG,EAAE
,QAIjD,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,WAAY,EAD6B,QAEzC,YAAa,QACb,WAAY,GAHP,QA
AA,cAAA;;A1JIN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAvBD,IAAA,EAA
A,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,sBAEM,SAAU,EACZ,EAAe,EAAuB,EACtC,GACI,MA
AA,EAAS,EAAG,KAAA,cAac,GA5B,EADQ,EAAG,KAAA,cAac,EAAE,OACT,EACpB,GACF,EAAQ,EAAA
,SAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,MAAO,CAAC,MAAO,CAAC,EAAW,IAAU,QAAA,IAEzD,GAAU,
EAAO,EAAA,QAAA,EAAe,EAAE,MAAO,MAAO,GACbD,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,E
AAG,GAAU,MAAO,CAAC,MAAO,GAAW,QAAA,IAKtD,OAHP,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GA
E/B;;A2JyDF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,IAAA,EAAA,QAAA,eAAA,EA/E
P,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,0BAEA,EAAA,QAAA,cACA,EAAA,QAAA,oBAEM,SAAU,EAC
Z,GAEl,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,EAAC,GAAG,GACN,iBAAC,EAAD,SAA
mB,GAAY,EAE/B,EAAQ,EAAE,MAAM,OAehB,EAAW,EAAG,KAAA,eAAe,EAAGB,EAAE,OACrD,IAAA,EA
AO,EACL,MAAA,EAAe,EAAa,aAAA,mBAAmB,EAAM,GACrD,EAAuB,MAAhB,EACvB,EAaQB,EAAQ,mBA
AmB,CAAC,IAEnD,IAAA,EAAW,EACX,GAAA,EAASB,CACpB,GAAA,EAAoB,CACbB,MACA,EADW,EAA
Q,QAAQ,IAAI,EAAS,QACtB,OAElB,EAaQB,IAAI,MAAM,GACbC,IAAA,IAAI,EAAl,EAAG,EAAl,EAAS,OA
AQ,IACnC,EAAS,GAAG,EAAE,MAAM,EAAa,IAE/B,MAAA,GACF,EAAiB,EAAA,kBAAA,EAAQ,EAAE,MA
AO,EAAE,MAAO,EAAC,GA5D,EAAW,EAAQ,eAAe,EAAU,EAAE,OACzB,EAAQ,QAAQ,IAAI,EAAS,QACr
C,OAAS,OAETB,GAAW,EAAC,EAAA,eAAA,EAAG,EAAC,GAG5C,EAAO,EAAa,aAAA,iBAAiB,EAAG,OAAG
,GAGvC,EAAA,aAAA,2BAA2B,MAAO,EAAM,GAC/C,MAAC,EAAa,GACbB,EAAa,aAAA,0BAA0B,EAAS,M
AAO,GAEvD,IAMA,EANA,EAAW,EAOX,GANA,IAEF,EAAW,EAAa,aAAA,qBAAqB,EAAa,IAIxD,EAAoB,C
AChB,MACA,EADW,EAAQ,QAAQ,IAAI,EAAS,QACtB,OAElB,GACF,EAAW,EAAA,YAAA,EAAQ,EAAG,K
AAA,cAac,GAAG,EAAU,EAAE,OAEP,EAAAM,EAAQ,eAAe,EAAU,EAAE,OACzB,EAAQ,QAAQ,IAAI,EAAl,
QACbC,OAAS,OAEB,GAAM,EAAQ,EAAA,SAAA,EAAU,EAAa,EAAU,GAO1C,OAjH,GACF,EAAQ,8BAA8
B,GAGjC,EAGF,MAAM,EAA0B,CACrC,WAAY,EADyB,IAErC,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;A

1JtDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,aAAA,EAzBP,IAAA,EAA
A,QAAA,yBAEA,EAAA,QAAA,mBACA,EAAA,QAAA,0BACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,
MAAM,EAAU,EAAoB,kBAAA,0BAI9B,EAAiB,0GAIInB,EAJmB,kBAIQ,uBAIIB,GAAU,EAAiB,EAAA,kBAA
A,CACtC,UAAW,EACX,gBAAiB,EACjB,cAAe,EAAA,iBAGV,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,
WAAY,EAD6B,QAeZc,YAAa,QACb,WAAY,GAHP,QAAA,cAAA;;A2JQA,aAAA,OAAA,eAAA,QAAA,aAAA,
CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,QAAA,mBAAA,EAICP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA
,eACA,EAAA,QAAA,iBACA,EAAA,QAAA,cAEM,SAAU,EAAQ,GAKhB,MAAA,OAAC,EAAD,QAAS,EAAT,
MAAkB,GAAS,GAC3B,EAAC,GAAC,GACK,EAAA,EAAA,kBAAA,EAAG,WACd,MAAA,WAAC,EAAD,QA
Aa,EAAb,IAAsB,EAAtB,gBAA2B,GAAmB,EAG/C,EAAA,KAAA,OACD,EAAa,aAAA,+BAA+B,EAH9B,GAId,
IAAM,2EACa,uBAEjB,MAAA,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAA2C,EAAy,EAR3C,EASH,EAAC,GA
ChB,GAAyB,IAAZB,EAAS,aAA+C,IAA1B,EAAS,cACvC,EAAC,KAAA,YAAY,EAAS,QAAS,EAAS,UACvC,O
AAA,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,IAE1B,MAAA,EAAiB,IAAI,EAAJ,cAAk
B,EAAU,OAAO,GACnD,OAAA,EAAQ,gBAAgB,EAAGB,CAAC,GAAl,EAAE,OAGjD,MAAM,EAA8B,CACzC
,WAAY,EAD6B,QAeZc,YAAa,QACb,WAAY,GAHP,QAAA,cAAA;;ACZA,aAAA,OAAA,eAAA,QAAA,aAAA,
CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,QAAA,qBAAA,EAAtBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,
eAEM,SAAU,EAAU,GAKIB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,GAAC,GACN
,WAAC,EAAD,QAAa,EAAb,IAAsB,EAAtB,WAA2B,EAA3B,gBAAuC,GAAmB,EAG1D,EAAW,EAAa,aAAA,k
BAC1B,EAAE,MAAmD,EAAy,EAHzB,CAAC,EAAG,EAAG,GAIPc,EAAC,EAAiB,GAC/B,EAAiB,IAAI,EA
J,cAAkB,EAAU,OAAO,GACnD,OAAA,EAAQ,gBAAgB,EAAGB,CAAC,GAAl,EAAE,OAGjD,MAAM,EAAgC,
CAC3C,WAAY,EAD+B,UAE3C,YAAa,QACb,WAAY,GAHP,QAAA,gBAAA;;ACiD8B,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,QAAA,8BAAA,EAnE/B,MAAO,EAKX,YAAY,GAJZ,KAAA,
cAAgB,CAAC,KAAM,UAKhB,KAAA,YAAc,EAAS,QACtB,MAAA,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,
EAAiB,EAAS,eAC1B,EAawB,EAAS,sBACjC,EAAuB,EAAS,qBAEhC,EAAS,EAawB,EAAI,EAAS,QAAQ,IAC
tD,EAAU,EAAuB,EAAI,EAAS,QAAQ,KAETd,EAAy,EAawB,EAAuB,EAC5D,KAAA,6CACwB,MAAW,kdAc
Z,uBACd,uDAC8B,6CAEZ,EAAS,6IAKX,+DACgB,+CAEZ,EAAS,uNAOf,2LAIK,kMAYA,QAAA,yBAAA,EA
A/B,MAAO,EAKX,YAAY,GAJZ,KAAA,cAAgB,CAAC,KAAM,UAKhB,KAAA,YAAc,EAAS,QACtB,MAAA,E
AAc,EAAS,YACvB,EAAe,EAAS,aACxB,EAAC,EAAS,YACvB,EAAGB,EAAS,cACzB,EAAiB,EAAS,eAC1B,EA
AgB,EAAS,cACzB,EAAuB,EAAS,qBACHc,EAawB,EAAS,sBACjC,EAAuB,EAAS,qBAEhC,EAAW,EAAuB,E
AAI,EAAS,QAAQ,MACvD,EAAS,EAawB,EAAI,EAAS,QAAQ,IACtD,EAAU,EAAuB,EAAI,EAAS,QAAQ,KA
EtD,EACF,EAAuB,EAawB,EAAuB,EACrE,KAAA,6CACwB,MAAA,MAAW,wiBAiBzB,wBACb,uDAC6B,6CA
EZ,EAAS,4IAKX,2BACZ,yDAC4B,+CAEZ,EAAS,sKAMX,6BACZ,2DAC4B,iDAEZ,EAAS,8OAOOf,kPAMT,OA
A2B,+BAC3B,qNA9EY,QAAA,yBAAA;;ACvC9B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QA
AA,cAAA,EAAA,QAAA,yBAAA,EAhCP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,4BACA,EAAA,QAAA,e
AEM,SAAU,EAAC,GAKtB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,GAAC,EAAD,MAAK,
GAAS,EACd,EAAI,GACJ,WAAC,EAAD,QAAa,EAAb,IAAsB,EAAtB,gBAA2B,GAAmB,EAG9C,EAAW,EAAa,
aAAA,kBAC1B,EAAE,MAAmD,EAAy,EAHzB,CAAC,EAAG,EAAG,GAIPc,EAAC,GAEd,EACF,IAAI,EAAJ,c
AAkB,EAAU,OAAO,GACjC,EACF,EAAQ,gBAAgB,EAA2B,CAAC,GAAl,EAAE,OACxD,EAAyB,IAAI,EAAJ,
yBAA6B,GACtD,EAAS,EAAQ,gBACnB,EAawB,CAAC,EAAI,GAAqB,EAAE,OAEjD,OADP,EAAQ,8BAA8B,
GAC/B,EAGF,MAAM,EAAoC,CAC/C,WAAY,EADmC,cAE/C,YAAa,QACb,WAAY,GAHP,QAAA,oBAAA;;A
CEA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAAA,QAAA,uBAAA,EAICP,IA
AA,EAAA,QAAA,yBAGA,EAAA,QAAA,4BACA,EAAA,QAAA,eACA,EAAA,QAAA,iBAEM,SAAU,EAAy,G
AKpB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,GAAC,EAAD,MAAK,EAAL,OAAy,GAAU
,EACtB,EAAI,GACO,EAAA,EAAA,kBAAA,CAAC,EAAO,GAAS,eAC5B,MAAA,WAAC,EAAD,QAAa,EAAb,IA
AsB,EAAtB,gBAA2B,GAAmB,EAE9C,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAA2C,EAAy,EACzD,EAAmB
,EAAC,GAETB,EACF,IAAI,EAAJ,cAAkB,EAAU,OAFX,GAGf,EACF,EAAQ,gBAAgB,EAAyB,CAAC,GAAl,E
AAE,OAEtD,EAAyB,IAAI,EAAJ,yBAA6B,GACtD,EAAS,EAAQ,gBACnB,EAawB,CAAC,EAAI,GAAmB,EAA
E,OAE/C,OADP,EAAQ,8BAA8B,GAC/B,EAGF,MAAM,EAAC,CAC7C,WAAY,EADiC,YAE7C,YAAa,QACb,
WAAY,GAHP,QAAA,kBAAA;;ACIBN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAA

A,EAZD,IAAA,EAAA,QAAA,eAEM,SAAU,EACZ,EA Ae,EACf,EACA,GACE,IAAA,EAAU,IAAI,EAAJ,cAAkB
,EAAU,OAAO,GAC3C,MAAA,EAAa,EAAQ,gBAAgB,EAAS,CAAC,GAAl,WAlID,OAFP,EAAU,IAAI,EAAJ,c
AAkB,EAAU,OAAO,GAAM,EAAM,GAElD,CAAC,EADY,EAAQ,gBAAgB,EAAS,CAAC,GAAl;;ACNrD,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,6BAAA,EAPP,IAAA,EAAA,QAAA,yBAKA,EAAA
,QAAA,4BAEO,MAAM,EAAwC,CACnD,WAAy,EADuC,kBAEnD,YAAa,QACb,WAAy,EAAE,OAAA,EAAQ,
MAAA,EAAO,QAAA,MACrB,MAAA,EAAC,GAAC,GACN,WAAC,EAAD,QAAa,EAAb,IAAsB,EAAtB,oBAA
2B,GAC7B,EACE,EA Ae,EA EhB,EAAA,KAAA,OACkB,IAAnB,EAAE,MAAM,OACR,2DACI,EAAE,MAAM,W
ACV,MAAA,EAA8B,CAAC,EAAG,GACnC,EAAA,KAAA,OACD,EA Aa,aAAA,+BAA+B,EAAS,GACrD,IAAM
,2EACa,oBAA0B,MAE3C,MAAA,EAAW,EAAa,aAAA,kBAC1B,EAAE,MAA2C,EAAY,EACzD,EAAW,IAER,E
AAQ,IACX,EAAsB,EAAA,uBAAA,EAAG,EAAqB,EAAU,GACrD,MAAA,CAAC,EAAQ,KazBb,QAAA,wBAA
A;;ACgBN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EA vBD,IAAA,EAAA,QAA
A,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,sBAEM,SAAU,EACZ,EA Ae,EAAuB,EACtC,GACI,MAAA,EA
AS,EAAK,KAAA,cAAc,GA E5B,EADQ,EAAK,KAAA,cAAc,EAAE,OACT,EACpB,GACF,EAAQ,EAAA,SAAA,
CAAC,OAAQ,CAAC,EAAA,GAAl,MAAO,CAAC,MAAO,CAAC,EAAW,IAAU,QAAA,IAEzD,GAAU,EAAO,E
AAA,QAAA,EA Ae,UAAW,OAAQ,GACnD,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,M
AAO,CAAC,MAAO,GA AW,QAAA,IAKtD,OAHP,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GA E/B;;ACfF,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAPP,IAAA,EAAA,QAAA,yBAIA,EAAA,
QAAA,eACA,EAAA,QAAA,oBAEO,MAAM,EAA2B,CACtC,WAAy,EAD0B,KA EtC,YAAa,QACb,WAAy,EA
AE,OAAA,EAAQ,MAAA,EAAO,QAAA,MACrB,MAAA,EAAC,GAAC,GACN,SAAC,EAAD,KA AW,GAAQ,E
ACnB,EA Ae,EA Ef,EAAQ,EAAE,MAAM,OACbB,EAAW,EAAK,KAAA,eAAe,EAAM,EAAE,OA Ezc,IAAA,EA
AO,EACL,MAAA,EA Ae,EA Aa,aAAA,mBAAmB,EAAM,GACrD,EAAwC,MAAhB,EACxB,EAAqB,EA Aa,mBA
AmB,CAAC,IA EtD,EAA8B,GA EhC,IAAA,EAAY,EACZ,GAAA,EAAuB,CACrB,GAAA,EAAoB,CACbB,MAC
A,EADW,EA Aa,QAAQ,IAAI,EAAU,QAC5B,OA EIB,EAAqB,IAAI,MAAM,GACc,IAAA,IAAI,EA AI,EAAG,E
AAI,EAAS,OAAQ,IACnC,EAAS,GAAC,EAAE,MAAM,EAAa,IAE/B,MAAA,GACF,EAAiB,EAAA,kBAAA,EA
AQ,EAAE,MAAO,EAAE,MAAO,EA Ac,GA E7D,EAAY,EAAa,eAAe,EAAU,EAAE,OAC9B,EA Aa,QAAQ,IAAI,
EAAU,QAC3C,OAAS,OA EvB,GAAY,EA Ac,EAAA,eAAA,EAAG,EA Ac,GAG7C,EA Ac,KAAK,GACnB,EAAO,
EA Aa,aAAA,iBA AiB,EAAK,OAAQ,GAGvC,EAAA,aAAA,2BAA2B,MAAO,EAAM,GAC/C,MAAC,EA Ac,GAC
jB,EA Aa,aAAA,0BAA0B,EAAU,MAAO,GA ExD,IAAA,EAAW,EACX,IAEF,EAAW,EA Aa,aAAA,qBAAqB,EA
Ac,IA GvD,MAAA,GAAM,EAAS,EAAA,UAAA,EAAW,EAAa,EAAU,GACID,IAAA,MAAM,KAAK,EACd,EA
Aa,8BAA8B,GAGtC,OAAA,IAzDJ,QAAA,WAAA;;AC6CA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,IAAA,EAAA,QAAA,eAAA,EA pDP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BAEA,EAAA,Q
AAA,aACA,EAAA,QAAA,eAEM,SAAU,EACZ,GA EI,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GA
C3B,EAAC,GAAC,GACN,KAAC,EAAD,SAAO,GAAY,EA EnB,EAAQ,EAAE,MAAM,OA EhB,EAAW,EAAK,K
AAA,eAAe,EAAM,EAAE,OACzC,IAAA,EAAO,EACL,MAAA,EA Ae,EA Aa,aAAA,mBAAmB,EAAM,GACvD,I
AAA,EAAY,EACI,MAAhB,IACF,GAAY,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,EA
AS,MAAO,CAAC,KAAM,KAC3D,EAAO,EAAa,aAAA,iBA AiB,EAAK,OAAQ,EAAE,MAAM,SAG/C,EAAA,a
AAA,2BAA2B,MAAO,EAAM,GAC/C,MAAC,EAAU,GACb,EA Aa,aAAA,0BAA0B,EAAU,MAAO,GACtD,EA
AS,EAAK,KAAA,cAAc,GAC5B,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAY,QAAA,EAAS,
MAAO,CAAC,MAAO,EAAE,EAAG,MAC5D,GAAU,EAAO,EAAA,QAAA,EAAK,EA AI,MAAO,MAAO,GA EI
C,IAAA,EACA,GAAA,EAAU,CACN,MAAA,EAAW,EAAa,aAAA,qBAAqB,EAAU,GAC7D,GAAM,EAAQ,EA
AA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,UAE7D,GAAM,EAAQ,E
AAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,KAUxD,OAPP,EAAQ,8
BAA8B,GACtC,EAAQ,8BAA8B,GA EIB,MAAhB,GACF,EAAQ,8BAA8B,GAGjC,EAGF,MAAM,EAA0B,CACr
C,WAAy,EADyB,IA ErC,YAAa,QACb,WAAy,GAHP,QAAA,UAAA;;AnK3BA,aAAA,OAAA,eAAA,QAAA,aA
AA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,aAAA,EAzBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,mBA
CA,EAAA,QAAA,0BACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAU,EAAoB,kBAAA,0BAI
9B,EAAiB,0GAI nB,EAJmB,kBAIQ,uBAIIB,GAAU,EAAiB,EAAA,kBAAA,CACtC,UAAW,EACX,gBA AiB,EAC
jB,cAAe,EAAA,iBAGV,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,WAAy,EAD6B,QA Ezc,YAAa,QACb,W

AAy,GAHP,QAAA,cAAA;;AoKtBsB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,
EAF7B,IAAA,EAAA,QAAA,qBAEM,MAAO,EAKX,YACI,EAakB,EACIB,GANJ,KAAA,cAAgB,CAAC,KAOV
,KAAA,YAAc,EAAS,IACxB,CAAC,EAAG,IAAM,EAAE,GAAqB,EAAO,GAak,EAAE,IAC7C,MAAA,EAAO,
EAAO,OACd,GAAQ,EAakB,EAAA,mBAAA,GAE1B,EAAQ,EAAS,IAAI,GAak,EAAE,IAAI,KAAK,KACrC,E
AAM,EAAS,IAAI,CAAC,EAAG,IAAM,EAAE,GAak,EAAO,IAAI,KAAK,KACpD,EACF,CAAC,YAAa,YAAa,
YAAa,aAAa,MAAM,EAAG,GAC5D,EAakB,YAAT,EAAqB,EAAI,EAmBnC,KAAA,SAjBQ,IAAT,aAkBA,aAAi
B,KAAS,cAC1B,WAAe,KAAS,uCAGtB,4DACoB,kGAEmB,oGAEl,uCAG3C,oDACe,+CA7BH,yBACF,8IAKoB
,qFAEl,gFA7Bf,QAAA,iBAAA;;ACwCM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,4BA
AA,EA1CnC,IAAA,EAAA,QAAA,kBACA,EAAA,QAAA,qBAyCM,MAAO,EAox,YACI,EAakB,EACIB,GARJ
,KAAA,cAAgB,CAAC,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,EAOR,KAAA,YAAc,EAAS,IACxB,CAAC,EA
AG,IAAM,EAAE,GAAqB,EAAO,GAak,EAAE,IAC7C,MAAA,EAAO,EAAO,OACd,GAAQ,EAakB,EAAA,mB
AAA,GAE1B,EAAQ,EAAS,IAAI,GAak,EAAE,IAAI,KAAK,KACrC,EAAM,EAAS,IAAI,CAAC,EAAG,IAAM,
EAAE,GAak,EAAO,IAAI,KAAK,KACpD,GAAS,EAAY,EAAA,aAAA,KAAM,GAC3B,GAAS,EAAY,EAAA,a
AAA,SAAU,GAC/B,KAAy,EAAO,EAAO,QAAQ,KAAK,YAAy,EAAO,KAC1D,EACO,IAAT,EAAa,iBAAmB,
EAAO,OAAO,GAAG,UAC/C,EAakB,YAAT,EAAqB,EAAI,EAEPc,IAAA,EAaw,GACX,GAAS,IAAT,EAAY,
CACR,MAAA,eACF,0FAEGc,wFAEl,kDAIxC,eACI,8BACA,0CAC4B,EAAO,YAAy,gBAC/C,EAAO,EAAO,w
BACX,mBACD,4CAC4B,EAAO,YAAy,6BAGhD,CACC,MAAA,eACF,2BACA,UAAc,wCACd,WAAe,8CACf,0
GAEmC,yDACK,wCAI5C,eACI,8BACA,0CAC4B,EAAO,YAAy,gBAC/C,EAAO,EAAO,wBACX,mBACD,4CA
C4B,EAAO,YAAy,oDAGjD,EAAO,EAAO,wBACX,EAAO,EAAO,QAAQ,KAAK,YAAy,EAAO,oBAC/C,4CAC
4B,EAAO,YAAy,kBAC/C,EAAO,EAAO,0BACX,qBACD,8CAC4B,EAAO,YAAy,sCAMpD,KAAA,0BACK,aA
AiB,KAAS,oBAC1B,WAAe,KAAS,uCAG5B,8EAEA,gDAvFyB,QAAA,uBAAA;;ACpB5B,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,QAAA,yBAAA,EAvBP,IAAA,EAAA,QAAA,yBAGA,EAA
A,QAAA,qBACA,EAAA,QAAA,4BAEO,MAAM,EAIM,EAAE,OAAA,EAAQ,QAAA,EAAS,MAAA,MAC9B,M
AAA,EAAC,GAak,GACN,SAAC,EAAD,KAAW,GAAQ,EAEnB,GAAU,EAAM,EAAA,OAAA,QAAQ,+BAC1
B,IAAI,EAJ,uBAA2B,EAAE,MAAO,EAU,GAC9C,IAAI,EAJ,iBAAqB,EAAE,MAAO,EAU,GAIrC,0AFQ
,EAAQ,gBAAgB,EAAS,CAAC,GAAI,EAAE,QAKID,QAAA,oBAAA,EAAA,MAAM,EAAGc,CAC3C,WAAy,E
AD+B,UAE3C,YAAa,QAcB,WAAy,GAHP,QAAA,gBAAA;;ACFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,UAAA,QAAA,SAAA,EARBP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,0BACA,EAAA,
QAAA,sCAEA,MAAM,EAAM,iDAGN,EAAa,8EAI,EAJe,kBAIK,uBAIX,GAAM,EAaiB,EAAA,kBAAA,CACI
C,UAAW,EACX,gBAaiB,IAGZ,QAAA,IAAA,EAAA,MAAM,EA0B,CACrC,WAAy,EADyB,IAErC,YAAa,Q
AcB,WAAy,GAHP,QAAA,UAAA;;ACIBwB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,w
BAAA,EAazB,MAAO,EAQX,YAAy,EAAMB,EAAqB,GAPpD,KAAA,cAAgB,CAAC,SAQV,KAAA,YAAc,CA
AC,EAaw,GAE1B,KAAA,sOAUqB,EAAC,sPAUIB,EAAC,sBAKtC,mBAAMB,GACV,MAAA,CAAC,EAqB,K
ACP,MAAhB,KAAK,UACF,KAAA,QAAU,EAAM,mBAAMB,EAAC,SAExD,EAAM,GAAG,UAAU,KAAK,QA
AS,KAZCR,QAAA,mBAAA;;ACkCxB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,
QAAA,aAAA,EARCP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAIA,MAAM,EAAM,oDAQN,EAAa,uTAo
BN,GAAU,EACnB,EAAA,kBAAA,CAAC,UAAW,EAak,gBAAiB,EAAY,kBAakB,IAE7D,QAAA,QAAA,EA
A,MAAM,EA8B,CACzC,WAAy,EAD6B,QAeZC,YAAa,QAcB,WAAy,GAHP,QAAA,cAAA;;A7JvBA,aAAA,
OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,SAAA,EADp,IAAA,EAAA,QAAA,yBA
EA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAM,gBAEC,GAAM,EAaiB,EAAA,kBAAA,CACI
C,UAAW,EACX,gBAaiB,EACjB,iBAaiB,EACjB,cAAe,EAAA,aAGV,QAAA,IAAA,EAAA,MAAM,EA0B,CA
CrC,WAAy,EADyB,IAErC,YAAa,QAcB,WAAy,GAHP,QAAA,UAAA;;A8JuCA,aAAA,OAAA,eAAA,QAAA,a
AAA,CAAA,OAAA,IAAA,QAAA,QAAA,EAAA,QAAA,mBAAA,EARDP,IAAA,EAAA,QAAA,yBAIA,EAAA,Q
AAA,SACA,EAAA,QAAA,SACA,EAAA,QAAA,aACA,EAAA,QAAA,aACA,EAAA,QAAA,SACA,EAAA,QAA
A,SAEM,SAAU,EAQ,GAKhB,MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,OAAC,GAAU,G
ACX,IAAC,GAAO,EAER,EAAO,EAak,KAAA,eAAe,CAAC,GAAM,EAAO,OAeZC,GAaw,EAai,EAAA,KAA
A,CACnB,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MAAO,CAAC,iBAakB,EAAM,UAAU,KAGtC,EAAGB,E
AAa,aAAA,qBAAqB,EAAS,MAAO,GAEIE,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAaw,Q

AAA,EAAS,MAAO,CAAC,MAAO,KACtD,GACF,EAAI,EAAA,KAAA,CAAC,OAAQ,CAAC,EAAG,EAAQ,EA
AG,GAAoB,QAAA,IAC9C,GAAl,EAAI,EAAA,KAAA,CAAC,OAAQ,CAAC,EAAG,GAAl,QAAA,IACzB,GAC
F,EAAI,EAAA,KAAA,CAAC,OAAQ,CAAC,EAAG,GAAl,QAAA,EAAS,MAAO,CAAC,KAAM,EAAM,UAAU,
KAC1D,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,MAAO,
KAEPD,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,EAAG,EAAG,GAAiB,QAAA,IASzC,OAPP,E
AAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GACtC,EAAQ,8BAA8B,GACtC,EAAQ,8BAA
8B,GACtC,EAAQ,8BAA8B,GAE/B,EAGF,MAAM,EAA8B,CACzC,WAAy,EAD6B,QAEzC,YAAa,QACb,WAA
Y,GAHP,QAAA,cAAA;;ACrBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,EAAA,
QAAA,uBAAA,EhCP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,sBAEA,EAAA,QAAA,aAEM,SAAU,EA
Y,GAKpB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,OAAC,GAAU,GACX,WAAC,EAAD,K
AAa,EAAb,WAAmB,GAAC,EAEjC,EAAQ,EACV,GACA,EACI,EAAA,SAAA,CAAC,OAAQ,CAAC,OAAA,GA
AS,QAAA,EAAS,MAAO,CAAC,IAAK,EAAO,MAAM,OAAS,KACjE,EAAY,EAAM,MAAM,GACxB,EAAC,EA
AM,MAAM,GAC1B,EAAU,IAAI,EAAl,mBAAuB,EAAW,EAAa,GACzD,EAAC,EAAQ,mBAAmB,GAEC,EAA
M,EAAQ,gBAAgB,EAAS,CAAC,GAAQ,QAAS,GAixD,OAHF,GACH,EAAQ,8BAA8B,GAEC,EAGF,MAAM,E
AAkC,CAC7C,WAAy,EADiC,YAE7C,YAAa,QACb,WAAy,GAHP,QAAA,kBAAA;;AzKAA,aAAA,OAAA,eA
AA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,IAAA,EAAA,QAAA,eAAA,EhCP,IAAA,EAAA,QAAA,yBAE
A,EAAA,QAAA,0BACA,EAAA,QAAA,kBACA,EAAA,QAAA,yBAEA,MAAM,EAAM,aAIN,SAAU,EAAl,GA
Z,MAAA,OAAC,EAAD,QAAS,GAAW,GACpB,EAAC,GAAK,EAER,GAAA,EAAQ,mBAAmB,CAAC,IAAK,C
AC7B,MAAA,EAAQ,EAAQ,QAAQ,IAAI,EAAE,SAC7B,EAAW,IACd,EAAW,EAAA,YAAA,EAAM,OAAS,E
AAE,MAAO,EAAE,OAC/C,OAAA,EAAQ,eAAe,EAAU,EAAE,MAAO,GAG/C,IAAA,EAOG,OALL,GADE,EA
AM,EAAA,OAAA,QAAQ,+BACN,IAAI,EAAl,qBAAyB,EAAE,MAAO,GAEC,IAAI,EAAl,eAAmB,EAAE,MA
AO,GAGjC,EAAQ,gBAAgB,EAAS,CAAC,GAAl,EAAE,OAG1C,MAAM,EAA0B,CACrC,WAAy,EADyB,IAEr
C,YAAa,QACb,WAAy,GAHP,QAAA,UAAA;;A0KJA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,
QAAA,oBAAA,EAAA,QAAA,+BAAA,EA5BP,IAAA,EAAA,QAAA,yBAEA,MAAM,EAA0B,EAAa,aAAA,wB
AGvC,SAAU,EAOb,GAKrB,EAAA,aAAA,KACT,iGAGE,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS
,GAC3B,MAAC,EAAD,OAAQ,GAAU,GACIB,cAAC,EAAD,aAAGB,EAHb,eAA8B,GAkB,EAHd,EAAY,E
AAQ,SAAS,EAAM,QACnC,EAAa,EAAQ,SAAS,EAAO,SAErC,gBAAC,GAAmB,EACtB,EAAW,EAAY,EAAC,
EAAC,GAEC,OAAA,EAAQ,eACX,CAAC,EAAGB,QAAS,QAAS,IAAI,WAAW,IAGjD,MAAM,EAA0C,CACrD,
WAAy,EADyC,oBAErD,YAAa,QACb,WAAy,GAHP,QAAA,0BAAA;;ACKA,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,oBAAA,EAAA,QAAA,+BAAA,EAjCP,IAAA,EAAA,QAAA,yBACA,MAAM,E
AA0B,EAAa,aAAA,wBAIvC,SAAU,EAOb,GAKrB,EAAA,aAAA,KACT,iGAGE,MAAA,OAAC,EAAD,QAAS,
EAAT,MAAkB,GAAS,GAC3B,MAAC,EAAD,OAAQ,GAAU,GACIB,cAAC,EAAD,aAAGB,EAHb,eAA8B,EA
A9B,mBAA8C,GACHD,EAEE,EAAY,EAAQ,SAAS,EAAM,QACnC,EAAa,EAAQ,SAAS,EAAO,SAErC,gBAAC,
EAAD,aAAkB,GAAgB,EACpC,EAAW,EAAY,EAAC,EAAC,EACpD,GAEG,MAAA,CACL,EAAQ,eACJ,CAAC,
EAAGB,QAAS,QAAS,IAAI,WAAW,IACtD,EAAQ,eAAe,GAAl,QAAS,IAAI,WAAW,CAAC,MAIjD,MAAM,EA
A0C,CACrD,WAAy,EADyC,oBAErD,YAAa,QACb,WAAy,GAHP,QAAA,0BAAA;;ACKA,aAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAAA,QAAA,+BAAA,EAtCP,IAAA,EAAA,QAAA,yBA
EA,MAAM,EAA0B,EAAa,aAAA,wBAGvC,SAAU,EAOb,GAKrB,EAAA,aAAA,KACT,iGAGE,MAAA,OAAC,
EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,MAAC,EAAD,OAAQ,GAAU,GACIB,cAAC,EAAD,aAAGB,EAH
B,eAA8B,EAA9B,aAA8C,GAAgB,EA9D,EAAY,EAAQ,SAAS,EAAM,QACnC,EAAa,EAAQ,SAAS,EAAO,QA
ErC,EAAMB,EACnB,EAkB,EACIB,EAAoB,EACpB,EAkB,GAElB,gBAAC,EAAD,eAAkB,GAkB,EACtC,E
AAW,EAAY,EAkB,EACzC,EAAMB,GAHb,MAAA,CACL,EAAQ,eACJ,CAAC,EAAGB,QAAS,QAAS,IAAI,
WAAW,IACtD,EAAQ,eACJ,CAAC,EAAC,QAAS,UAAW,IAAI,aAAa,KAItD,MAAM,EAA0C,CACrD,WAAy,E
ADyC,oBAErD,YAAa,QACb,WAAy,GAHP,QAAA,0BAAA;;ACpCmB,aAAA,OAAA,eAAA,QAAA,aAAA,CA
AA,OAAA,IAAA,QAAA,mBAAA,EAAPB,MAAO,EAQX,YACI,EAAoB,EAAC,EAiB,GARxD,KAAA,cAAGB,
CAAC,WASV,KAAA,YAAc,CAAC,EAAY,GA3B,KAAA,4JAIqB,aAAoB,yEAHxB,QAAA,cAAA;;AC0BnB,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,QAAA,YAAA,EA5BP,IAAA,EAAA,QA
AA,yBAGA,EAAA,QAAA,iBACA,EAAA,QAAA,aAEO,MAAM,EAAU,IAKf,MAAA,OAAC,EAAD,QAAS,EA

AT,MAAkB,GAAS,GAC3B,QAAC,GAAW,GACZ,MAAC,EAAD,QAAQ,EAAR,SAAiB,GAAY,EAE7B,EAAC,E
AAK,KAAA,cAAc,EAQ,OAACzC,EAAU,IAAI,EAJ,cAAkB,EAa,EAEO,EAAS,GACzD,GACF,EAQ,EA
A,SAAA,CAAC,OAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,CAAC,MACtD,EAAS,EA
Q,gBAAgB,EAAS,CAAC,GAAW,EAQ,OAACpE,EAQ,8BAA8B,GAeHc,MAAA,EAAW,IAAI,EAQ,MAAO,
GAC9B,GAAM,EAQ,EAa,SAAA,CAAC,OAQ,CAAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,MAAO,
KAE3D,OADP,EAQ,8BAA8B,GAC/B,GAGF,QAAA,OAAA,EAa,MAAM,EAa6B,CACxC,WAAy,EAD4B,
OAExC,YAAa,QACb,WAAy,GAHP,QAAA,aAAA;;ACYA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,UAAA,EAa,QAAA,qBAAA,EAxCP,IAAA,EAa,QAAA,yBAIA,EAa,QAAA,aACA,EAa,Q
AAA,UACA,EAa,QAAA,UACA,EAa,QAAA,UAE,SAAU,EACZ,GACI,MAAA,OAAC,EAAD,QAAS,GA
AW,GACpB,EAAC,GAAK,EAER,GAAY,cAAZ,EAaE,MAAuB,CACrB,MAAA,GAAW,EAAC,EAa,MAAA,
CAAC,OAQ,CAAC,MAAO,GAAI,QAAA,IACrC,EAaI,EAU,CAAC,OAQ,CAAC,EAAG,GAAW,QAAA,IA
CtC,GAAW,EAAC,EAa,MAAA,CAAC,OAQ,CAAC,MAAO,GAAI,QAAA,IACrC,EAaI,EAU,CAAC,OA
Q,CAAC,EAAG,GAAW,QAAA,IAEtC,GAAS,EAQ,EAa,SAAA,CAAC,OAQ,CAAC,KAAM,EAAG,KAA
M,GAAI,QAAA,IAO7C,OALP,EAQ,8BAA8B,GACtC,EAQ,8BAA8B,GACtC,EAQ,8BAA8B,GACtC,EA
Q,8BAA8B,GAe/B,EAa,OAAA,EAAC,EAa,MAAA,CACV,MAAO,CACL,MAAO,EAaE,MACT,MAAO,E
AAE,MACT,MAAmB,WAAZ,EAaE,MAAQ,GAAK,GAErC,QAAA,IAKC,MAAM,EAAGC,CAC3C,WAAy,EA
D+B,UAE3C,YAAa,QACb,WAAy,GAHP,QAAA,gBAAA;;ACFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,SAAA,EAa,QAAA,oBAAA,EAiCP,IAAA,EAa,QAAA,yBAIA,EAa,QAAA,aACA,EA
AA,QAAA,UACA,EAa,QAAA,UACA,EAa,QAAA,UACA,EAa,QAAA,eAEM,SAAU,EACZ,GACI,MAA
A,OAAC,EAAD,QAAS,GAAW,GACpB,EAAC,GAAK,EAER,GAAY,WAAZ,EAaE,MAaE,MAAA,IAAI,MAA
M,gDACX,GAAGB,cAAZ,EAaE,MAAuB,CAC5B,MAAA,GAAW,EAAC,EAa,MAAA,CAAC,OAQ,CAAC,
MAAO,GAAI,QAAA,IACrC,EAaI,EAAS,CAAC,OAQ,CAAC,EAAG,GAAW,QAAA,IACrC,GAAW,EAAC,E
AAA,MAAA,CAAC,OAQ,CAAC,MAAO,GAAI,QAAA,IACrC,GAAI,EAU,EAa,WAAA,CAAC,OAQ,CA
AC,EAAG,GAAW,QAAA,IAEtC,GAAS,EAQ,EAa,SAAA,CAAC,OAQ,CAAC,KAAM,EAAG,KAAM,GA
AI,QAAA,IAO7C,OALP,EAQ,8BAA8B,GACtC,EAQ,8BAA8B,GACtC,EAQ,8BAA8B,GACtC,EAQ,8B
A8B,GAe/B,EAIA,OAAA,EAAC,EAa,MAAA,CAAC,MAAO,CAAC,MAAO,EAaE,MAAO,MAAO,EAaE,M
AAO,MAAO,GAAI,QAAA,IAI7D,MAAM,EAa+B,CAC1C,WAAy,EAD8B,SAE1C,YAAa,QACb,WAAy,GAH
P,QAAA,eAAA;;ACOA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAa,QAAA,
gBAAA,EA7CP,IAAA,EAa,QAAA,yBAGA,EAa,QAAA,YACA,EAa,QAAA,gBAEM,SAAU,EACZ,GAEI
,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,KAAC,GAQ,EAEX,GAkB,IAAIB,EAEO,OA
C,F,OAAA,EACH,EAa,YAAA,CAAC,OAQ,CAAC,MAAO,EAEO,IAAK,QAAA,EAAS,MAAO,CAAC,IAAK,
KAGnD,MAAA,EAQ,EAEO,GAAG,MACIB,EAQ,EAEO,GAAG,MAExB,EAEO,QAAQ,IACR,EAa,KAA
A,kBACD,EAEO,EAaE,MACT,yDACC,EAa,KAAA,OACD,IAAU,EAaE,MACZ,IAAM,2DAGN,MAAA,EA
AwC,GACxC,EAkB,EAEO,IAAI,IAC3B,MAAA,GACF,EAaW,EAa,YAAA,CAAC,OAQ,CAAC,MAAO,G
AAI,QAAA,EAAS,MAAO,CAAC,IAAK,KAEnD,OADP,EAawB,KAAC,GACtB,IAGH,GAAS,EAEO,EAa,Q
AAA,CAAC,OAQ,EAaIB,QAAA,EAAS,MAAO,CAAC,KAAA,KAK1D,OAHP,EAawB,QACpB,GAAC,EA
Q,8BAA8B,IAExC,EAGF,MAAM,EAa2B,CACtC,WAAy,EAD0B,KAEtC,YAAa,QACb,WAAy,GAHP,QAAA,
WAAA;;AC1CgB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,gBAAA,EAfvB,IAAA,EA
A,QAAA,qBAEM,MAAO,EAKX,YACI,EAkB,EACIB,GANJ,KAAA,cAAgB,CAAC,KAOV,KAAA,YAAc,EA
AS,IACxB,CAAC,EAAG,IAAM,EAaE,GAaqB,EAEO,GAAC,EAaE,IAC7C,MAAA,EAEO,EAEO,OAcd,GA
O,EAkB,EAa,mBAAA,GAezB,EAQ,EAAS,IAAI,GAAC,EAaE,IAAI,KAAC,KACrC,EAAM,EAAS,IAAI,
CAAC,EAAG,IAAM,EAaE,GAAC,EAEO,IAAI,KAAC,KACpD,EACF,CAAC,YAAa,YAAa,YAAa,aAAa,MAA
M,EAAG,GakB7D,KAAA,SAhBQ,IAAT,aAiBA,aAAgB,KAAQ,cACxB,WAAc,KAAQ,uCAGpB,yIAEkB,qCAE
hB,sDACE,0DaxBL,yBACF,mJAKU,wGA1BP,QAAA,WAAA;;ACCM,aAAA,OAAA,eAAA,QAAA,aAAA,CAA
A,OAAA,IAAA,QAAA,sBAAA,EAH7B,IAAA,EAa,QAAA,kBACA,EAa,QAAA,qBAEM,MAAO,EAOX,Y
ACI,EAkB,EACIB,GARJ,KAAA,cAAgB,CAAC,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,EAOR,KAAA,YAA
c,EAAS,IACxB,CAAC,EAAG,IAAM,EAaE,GAaqB,EAEO,GAAC,EAaE,IAC7C,MAAA,EAEO,EAEO,OAcd,
GAQ,EAkB,EAa,mBAAA,GAe1B,EAQ,EAAS,IAAI,GAAC,EAaE,IAAI,KAAC,KACrC,EAAM,EAAS,I

AAI,CAAC,EAAG,IAAM,EAAE,GAAK,EAAO,IAAI,KAAK,KACpD,GAAS,EAAY,EAAA,aAAA,KAAM,GAC
3B,GAAS,EAAY,EAAA,aAAA,SAAU,GAC/B,KAAy,EAAO,EAAO,QAAQ,KAAK,YAAy,EAAO,KACID,EAC
O,IAAT,EAAa,iBAAmB,EAAO,OAAO,GAAG,UAE/C,EAAiB,IACiB,uBAA4B,EAAO,EAAO,uBACvC,eAEG,I
AAT,EAAa,wCAEV,EAAO,EAAO,uBACX,EAAO,EAAO,QAAQ,KAAK,YAAy,EAAO,QAC3C,IAAT,EAAa,Q
AAU,EAAO,EAAO,yBAC7B,QAGJ,EAAuB,IAAT,EACbB,0BACA,6DACA,IAAA,EAAW,GACV,IAAA,IAAI,E
AAI,EAAG,EAAa,IAAT,EAAa,EAAI,EAAG,EAAI,EAAG,IAC7C,gBACI,EAAe,mBACX,0BACK,cAAc,oCAEr
B,4CACO,wBAAwB,EAAO,YAAy,yBAIID,GAAsB,IAAT,EAAa,KAAO,KAESB,KAAA,0BACK,aAAiB,KAAS
,oBACiB,WAAe,KAAS,uCAG5B,8EAEA,gDA3DmB,QAAA,iBAAA;;ACetB,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EAnBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,cAC
A,EAAA,QAAA,qBAEO,MAAM,EACR,IAEW,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EA
AC,GAAK,GACN,SAAC,EAAD,cAAW,GAAiB,EAESB,GAAU,EAAM,EAAA,OAAA,QAAQ,+BACiB,IAAI,E
AAJ,iBAAqB,EAAE,MAAO,EAAU,GACxC,IAAI,EAJ,WAAe,EAAE,MAAO,EAAU,GAC/B,OAAA,EAAQ,gB
AAgB,EAAS,CAAC,GAAI,EAAE,QAGID,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAy,EAD2B,MAE
vC,YAAa,QACb,WAAy,GAHP,QAAA,YAAA;;ACmBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA
A,QAAA,UAAA,QAAA,SAAA,EAtCP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,0BACA,EAAA,QAAA,sCA
EA,MAAM,EAAM,4LAWN,EAAa,uOBaef,EAfe,kBAeK,uBAIX,GACT,EAAiB,EAAA,kBAAA,CAAC,UAAW,
EAAK,gBAAiB,IAEhD,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAy,EADyB,IAErC,YAAa,QACb,WA
AY,GAHP,QAAA,UAAA;;AjLwBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EA
AA,QAAA,gBAAA,EA9DP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,0BAEA,EAAA,
QAAA,aACA,EAAA,QAAA,eAEM,SAAU,EACZ,GAEI,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,G
AC3B,EAAC,GAAK,GACN,KAAc,EAAD,SAAO,GAAY,EAEnB,EAAQ,EAAE,MAAM,OACbB,EAAY,GAEZ,
EAAW,EAAK,KAAA,eAAe,EAAM,EAAE,OACzC,IAAA,EAAO,EACL,MAAA,EAAe,EAAa,aAAA,mBAAmB,
EAAM,GACvD,IASA,EATA,EAAY,EAUZ,GATgB,MAAhB,IACF,GAAY,EAAU,EAAA,WAAA,CAAC,OAAQ,
CAAC,EAAA,GAAI,QAAA,EAAS,MAAO,CAAC,KAAM,KAC3D,EAAO,EAAa,aAAA,iBAAiB,EAAK,OAAQ,
GACID,EAAU,KAAK,IAGJ,EAAA,aAAA,2BAA2B,OAAQ,EAAM,GAGID,EAAQ,mBAAmB,CAAC,IAAa,CAC
rC,MAAA,EAAQ,EAAQ,QAAQ,IAAI,EAAU,QAAQ,QAC9C,QAAC,EAAD,SAAU,EAAV,SAAoB,IACtB,EAA
Y,EAAA,aAAA,EAAU,MAAO,EAAU,MAAO,EAAO,GACzD,EAAM,EAAQ,eAAe,EAAU,EAAU,OAC5C,CAC
C,MAAC,EAAU,GACb,EAAa,aAAA,0BAA0B,EAAU,MAAO,GACtD,EAAS,EAAK,KAAA,cAAc,GAC5B,GAA
M,EACR,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAY,QAAA,EAAS,MAAO,CAAC,MAAO,EAAE,EAAG
,MACpD,GAAC,EAAW,EAAA,YAAA,EAAE,OAC3B,GAAU,EAAO,EAAA,QAAA,EAAK,EAAa,OAAQ,GACj
D,GAAM,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAY,QAAA,EAAS,MAAO,CAAC,MAAO,KA
E7D,EAAU,KAAK,GACf,EAAU,KAAK,GAGb,GAAA,EAAU,CACZ,EAAU,KAAK,GACT,MAAA,EAAW,EAAa
,aAAA,qBAAqB,EAAI,MAAO,GAC9D,GAAM,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAA
A,EAAS,MAAO,CAAC,MAAO,KAKpD,OAFP,EAAU,QAAQ,GAAK,EAAQ,8BAA8B,IAEtD,EAGF,MAAM,E
AA2B,CACtC,WAAy,EAD0B,KAEtC,YAAa,QACb,WAAy,GAHP,QAAA,WAAA;;AkLjDA,aAAA,OAAA,eAA
A,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EAbP,IAAA,EAAA,QAAA,yBAGA,EAAA
,QAAA,0BAEO,MAAM,EACR,IACO,MAAA,QAAC,EAAD,MAAU,GAAS,GACnB,MAAC,EAAD,KAAQ,EAA
R,KAAc,EAAd,MAAoB,GAAS,EAC7B,GAAS,EAAa,EAAA,cAAA,EAAO,EAAM,EAAM,GACxC,OAAA,EAA
Q,eAAe,CAAC,EAAO,QAAS,EAAO,IAGrD,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAy,EAD2B,M
AEvC,YAAa,QACb,WAAy,GAHP,QAAA,YAAA;;ACNA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,iBAAA,QAAA,gBAAA,EAPP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAa,k
BAEN,GAAa,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE/C,QAAA,WAAA,EAAA,MAAM,EAAiC,CAC5C,WA
AY,EADgC,WAE5C,YAAa,QACb,WAAy,GAHP,QAAA,iBAAA;;ACgBA,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EAvBP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCACA,
EAAA,QAAA,kBAEA,MAAM,EAAO,EAAoB,kBAAA,oCAI3B,EAAC,iRAYP,GACT,EAAGB,EAAA,iBAAA,C
AAC,UAAW,EAAM,gBAAiB,IAEhD,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAy,EAD0B,KAEtC,Y
AAa,QACb,WAAy,GAHP,QAAA,WAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QA
AA,YAAA,QAAA,WAAA,EAvBP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCACA,EAAA,QAAA,kBAEA,

MAAM,EAAQ,EAAoB,kBAAA,8CAI5B,EAAe,gSAYR,GA CT,EAAGB,EAAA,iBAAA,CAAC,UAAW,EAAO,gB
AAiB,IAEjD,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GA
HP,QAAA,YAAA;;ACrB2B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,2BAAA,EAA5B,
MAAO,EAKX,YACI,EAA8C,EAC9C,EAakB,EAAuB,GAN7C,KAAA,cAAGB,CAAC,KACjB,KAAA,YAAwB,
GAMhB,MAAC,EAAO,EA AW,EAAU,GAAS,EACvC,KAAA,YAAc,CAAC,EAAO,EA AW,EAAU,GAE1C,MA
AA,EAAoC,CACvC,GAAgB,EAAY,EA AK,EAAY,EA AI,EACjD,GAAgB,EA AW,EA AK,EA AW,EA AI,GAG5C,
EAAqC,CACxC,GAAgB,EAAY,EA AK,EAAY,EA AI,EACjD,GAAgB,EA AW,EA AK,EA AW,EA AI,GAG9C,IAA
A,EA EF,EA DE,EA EE,wEAGgB,8CAGjB,KAAA,kFAEG,EAAGB,GAAK,EA AiB,kBACtC,EAAGB,GAAK,EA Ai
B,8CACX,QAAgB,4OASpB,8zBA3CD,QAAA,sBAAA;;ACAM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAA
A,IAAA,QAAA,iCAAA,EA AI,C,MAAO,EA OX,YACI,EAA8C,EAC9C,EAakB,EAAuB,GAR7C,KAAA,cAAGB,
CAAC,KACjB,KAAA,cAAe,EACf,KAAA,cAAe,EACf,KAAA,YAAwB,GAMhB,MAAC,EAAO,EA AW,EAAU,
GAAS,EACvC,KAAA,YAAc,CAAC,EAAO,EA AW,EAAU,GAE1C,MAAA,EAAoC,CACvC,GAAgB,EAAY,EA
AK,EAAY,EA AI,EACjD,GAAgB,EA AW,EA AK,EA AW,EA AI,GAG5C,EAAqC,CACxC,GAAgB,EAAY,EA AK,
EAAY,EA AI,EACjD,GAAgB,EA AW,EA AK,EA AW,EA AI,GAG9C,IAAA,EA EF,EA DE,EA CKb,wEAGA,8CAGj
B,KAAA,kFAEG,EAAGB,GAAK,EA AiB,kBACtC,EAAGB,GAAK,EA AiB,kBACtC,EAAGB,GAAK,EA AiB,8CA
CX,QAAgB,8CACHb,+aAcJ,oVAQH,EAAQ,4CACD,EA AW,qhEA5DV,QAAA,4BAAA;;ACyBjC,aAAA,OAAA,
eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,0BAAA,EA3BP,IAAA,EAAA,QAAA,y
BAGA,EAAA,QAAA,0BACA,EAAA,QAAA,iCAEM,SAAU,EAAe,GAKvB,MAAA,OAAC,EAAD,QAAS,EAAT
,MAAKB,GAAS,GAC3B,OAAC,GAAU,GACX,aAAC,EAAD,iBA Ae,EA Af,KAAiC,GAAQ,GAExC,EA AW,GAA
Y,EAExB,GAAU,EAAM,EAAA,OAAA,QAAQ,+BAC1B,IAAI,EA AJ,4BACI,EAAO,MAA2C,EA AW,EAC7D,E
AAc,GACIB,IAAI,EA AJ,sBACI,EAAO,MAA2C,EA AW,EAC7D,EA Ac,GACf,OAAA,EAAQ,gBAAGB,EAAS,C
AAC,GAAS,WAG7C,MAAM,EAAqC,CACHd,WAAY,EADoC,eAEhD,YAAa,QACb,WAAY,GAHP,QAAA,qBA
AA;;ACzBmC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mCAAA,EAAPC,MAAO,EAKX
,YACI,EACA,EAA8C,GANID,KAAA,cAAGB,CAAC,MACjB,KAAA,YAAwB,GAMjB,KAAA,YAAc,EACb,MA
AG,CAAA,EAAS,GAAY,GACrB,CAAA,EAAS,GAAU,EAMtB,EA AmC,CACtC,GAAgB,EAAU,EA AK,EA AU,
EA AI,EAC7C,GAAgB,EAAS,EA AK,EAAS,EA AI,GAGxC,EA AmC,CACtC,GAAgB,EAAU,EA AK,EA AU,EA AI
,EAC7C,GAAgB,EAAS,EA AK,EAAS,EA AI,GAGxC,EA Ac,EA Ae,GAAK,EA Ae,GACjD,EA Aa,EA Ae,GAAK,E
AAe,GA EhD,EA AiB,EA AI,EACrB,EAAGB,EA AI,EA IpB,EA AyC,EA A5B,KAAK,KAAK,GAAuB,EAC9C,EA Au
C,EA A3B,KAAK,KAAK,GAAsB,EA E7C,KAAA,4QAUic,+CACD,qDAEI,kDACD,4CAER,yCACD,+iBAcD,4Q
AQE,0MAMkB,EAAU,6QAMX,EAAS,i9BAXFpB,QAAA,8BAAA;;ACmBnC,aAAA,OAAA,eAAA,QAAA,aAA
A,CAAA,OAAA,IAAA,QAAA,mBAAA,EAAA,QAAA,8BAAA,EA rBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QA
AA,mCAEM,SAAU,EA AmB,GAK3B,MAAA,OAAC,EAAD,QAAS,EAAT,MAAKB,GAAS,GAC3B,OAAC,EA A
D,GAAS,GAAM,GACf,aAAC,GAAgB,EA EJB,EAAU,IAAI,EA AJ,8BACZ,EAAG,MACH,EAAO,MAA2C,GAE/
C,OAAA,EAAQ,gBAAGB,EAAS,CAAC,GAAK,EAAG,OAG5C,MAAM,EA AyC,CACpD,WAAY,EADwC,mBA
EpD,YAAa,QACb,WAAY,GAHP,QAAA,yBAAA;;ACnBkC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,kCAAA,EA AnC,MAAO,EAKX,YACI,EAA8C,EAC9C,EAakB,EAAuB,GAN7C,KAAA,cAAGB,C
AAC,KACjB,KAAA,YAAwB,GAMhB,MAAC,EAAO,EA AW,EAAU,GAAS,EACvC,KAAA,YAAc,CAAC,EA A
O,EA AW,EAAU,GAE1C,MAAA,EAAoC,CACvC,GAAgB,EAAY,EA AK,EAAY,EA AI,EACjD,GAAgB,EA AW,
EA AK,EA AW,EA AI,GAG5C,EAAqC,CACxC,GAAgB,EAAY,EA AK,EAAY,EA AI,EACjD,GAAgB,EA AW,EA
AK,EA AW,EA AI,GAI5C,EAAY,EA Ae,MAAQ,MAErC,IAAA,EA EF,EA DE,EA EE,4EAGgB,8CAEjB,KAAA,kF
AEG,EAAGB,GAAK,EA AiB,kBACtC,EAAGB,GAAK,EA AiB,8CACX,QAAgB,4OASpB,6KAI2B,oIAjDrB,QAA
A,6BAAA;;ACoBIC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAAA,QAAA,iC
AAA,EA tBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kCAEM,SAAU,EAAsB,GAK9B,MAAA,OAAC,EA A
D,QAAS,EAAT,MAAKB,GAAS,GAC3B,OAAC,GAAU,GACX,aAAC,EAAD,iBA Ae,EA Af,KAAiC,GAAQ,GA E
xC,EA AW,GAAY,EA ExB,EAAU,IAAI,EA AJ,6BACZ,EAAO,MAA2C,EA AW,EAC7D,EA Ac,GACX,OAAA,EA
AQ,gBAAGB,EAAS,CAAC,GAAS,EAAO,OAGpD,MAAM,EA A4C,CACvD,WAAY,EAD2C,sBAEvD,YAAa,QA
Cb,WAAY,GAHP,QAAA,4BAAA;;ACpByC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,y
CAAA,EA A1C,MAAO,EAKX,YACI,EACA,EAA8C,GANID,KAAA,cAAGB,CAAC,MACjB,KAAA,YAAwB,GA

MjB,KAAA,YAAc,EACb,MAAG,CAAA,EAAS,GAAY,GACrB,CAAA,EAAS,GAAU,EAMtB,EAAmC,CACtC,
GAAgB,EAAU,EAAG,EAAU,EAAG,EAC7C,GAAgB,EAAS,EAAG,EAAS,EAAG,GAGxC,EAAmC,CACtC,GAA
gB,EAAU,EAAG,EAAU,EAAG,EAC7C,GAAgB,EAAS,EAAG,EAAS,EAAG,GAGxC,EAAc,EAAe,GAAG,EAAG,
GACjD,EAAa,EAAe,GAAG,EAAG,GAehD,EAAiB,EAAG,EACrB,EAAG,EAAI,EAIPB,EAAYC,EAA5B,KAAK,
KAAK,GAAuB,EAC9C,EAAuC,EAA3B,KAAK,KAAK,GAAsB,EAE7C,KAAA,4QAUIC,+CACD,qDAEI,kDAC
D,4CAER,yCACD,6jBACd,4QAQE,0GAKd,EAAe,8CACCC,EAAe,qEAG7B,EAAe,gDACC,EAAe,mFAG3B,6BA
CV,iLAIU,6BACV,uVA/F8B,QAAA,oCAAA;;ACkzC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA
,QAAA,0BAAA,EAAA,QAAA,qCAAA,EApBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,2CAEM,SAAU,EA
A0B,GAKIC,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,OAAC,EAAD,GAAS,GAAM,GACf,a
AAC,GAAgB,EAEjB,EAAU,IAAI,EAAG,oCACZ,EAAG,MACH,EAAO,MAA2C,GAC/C,OAAA,EAAQ,gBAAG
B,EAAS,CAAC,GAAG,EAAG,OAG5C,MAAM,EAAGD,CAC3D,WAAY,EAD+C,0BAE3D,YAAa,QACb,WAAY
,GAHP,QAAA,gCAAA;;ACjBoB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EA
F3B,IAAA,EAAA,QAAA,qBAEM,MAAO,EAKX,YAAY,EAAG,GAJ9B,KAAA,cAAGB,CAAC,KAKT,MAAA,E
AAO,EAAO,OACb,GAAA,EAAO,EACH,MAAA,IAAI,wCAC4B,iCAIPc,GAFC,KAAA,YAAc,EAEN,IAAT,E
AOF,YANK,KAAA,wGAGgB,EAAO,wCAKxB,MAMA,EAAG,EAAO,IAAI,CAAC,EAAG,IANZ,CAAA,IACO,
IAArB,EAAG,QAAQ,IAA2B,IAAd,EAAO,MACzB,EAAO,eAAe,mBAEjB,KAEmB,CAAW,IAAI,KAAK,KACp
D,GAAO,EAAG,EAAA,mBAAA,GAElB,KAAA,2CAEC,yDACE,uBAICE,QAAA,eAAA;;ACCM,aAAA,OAAA
,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,0BAAA,EAHjC,IAAA,EAAA,QAAA,kBACA,EAAA,QAAA,
qBAEM,MAAO,EAAG,YAAY,EAAG,GAN9B,KAAA,cAAGB,CAAC,KAGjB,KAAA,cAAe,EACf,KAAA,cAAe
,EAGP,MAAA,EAAO,EAAO,OACb,GAAA,EAAO,EACH,MAAA,IAAI,wCAC4B,iCAEnC,KAAA,YAAc,EAC
b,MAAA,GAAG,EAAY,EAAA,aAAA,KAAM,GAC7B,KACC,EAAS,EAAO,YAAY,KAAK,YAAY,EAAO,KAC
rD,KAAa,EAAS,EAAO,YAAY,KAAK,YAAY,EAAO,KACjE,GAAO,EAAG,EAAA,mBAAA,GAuDtB,SAAG,E
AAW,GACZ,MAAA,EAAG,EAAO,IAAI,CAAC,EAAG,KAM9B,SAAG,EAAG,GACzB,OAAqB,IAArB,EA
K,QAAQ,IAA2B,IAAd,EAAO,MACzB,EAAO,QAAQ,EAAU,YAEzB,EAAU,MAVqB,CAAW,EAAG,IAGID,yB
AFU,EAAc,KAAK,eACIB,EAAc,OAAO,GAAG,KAAK,SAXD1C,KAAA,SADM,IAAT,4IAK+B,EAAO,8BACHC
,EAAO,+BACN,iDAC4B,EAAO,yCACCh,EAAO,2HAQb,sFAiBC,SAAG,GACL,OAAA,EAAW,GAhBD,CAAG,
EAAS,2BACTb,+BAkBF,SAAG,GAEL,OADP,EAAS,EAAO,GAAG,IAAM,EAAS,EAAO,GAAG,QACzC,EA
W,GAnBC,CAAG,EAAS,wCAExB,gCAoBF,SAAG,GAEL,OADP,EAAS,EAAO,GAAG,IAAM,EAAS,EAAO,G
AAG,QACzC,EAAG,GArc,CAAG,EAAS,6BACTb,kCAuBJ,SAAG,GAGL,OAFP,EAAS,EAAO,GAAG,IAAM,
EAAS,EAAO,GAAG,QACHD,EAAS,EAAO,GAAG,IAAM,EAAS,EAAO,GAAG,QACzC,EAAG,GAzBG,CAAG
,EAAS,wFA7CR,QAAA,qBAAA;;AC2B1B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,QA
AA,EAAA,QAAA,mBAAA,EA/BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,yBAEA,
EAAA,QAAA,cAEM,SAAU,EAAQ,GAKhB,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EA
C,GAAG,GACN,KAAC,GAAG,EAET,EAAQ,EAAE,MAAM,OAehB,EAAQ,EAAG,KAAA,eAAe,EAAM,EAAG
,OACtC,GAAU,IAAV,EACK,OAAA,EAAS,EAAA,UAAA,CAAC,OAAQ,CAAC,EAAA,GAAG,QAAA,IAG1B,M
AAA,GAAU,EAAM,EAAA,OAAA,QAAQ,+BAC1B,IAAI,EAAG,qBAAYB,EAAE,MAAO,GACIC,IAAI,EAAG,e
AAmB,EAAE,MAAO,GAEZB,OAAA,EAAQ,gBAAGB,EAAS,CAAC,GAAG,EAAE,OAG1C,MAAM,EAAG8B,CA
CzC,WAAY,EAD6B,QAezC,YAAa,QACb,WAAY,GAHP,QAAA,cAAA;;AC3BmB,aAAA,OAAA,eAAA,QAAA
,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAJ1B,IAAA,EAAA,QAAA,yBAIM,MAAO,EAKX,YACI,EAAG8C
,EAC9C,EACA,GAPJ,KAAA,cAAGB,CAAC,SACjB,KAAA,YAAwB,GAOhB,MAAA,EAAG,EAAG,GACzB,EA
Aa,EAAG,GACxB,EAAY,KAAK,IAAI,GAAS,QAAQ,GACtC,EAAY,KAAK,IAAI,GAAS,QAAQ,GACvC,KAA
A,YAAc,EAEB,MAAC,EAAS,GACZ,EAAa,aAAA,eAAe,EAAQ,EAAa,GAC/C,EAAGB,EAAQ,QAAQ,GACHC,E
AAGB,EAAQ,QAAQ,GAEIC,IAAA,EAAG,GAehB,EADuB,iBAAd,yBAC4B,EAAU,QAAQ,oCAGIC,EAAU,KA
AK,uDAIjC,KAAA,wLAKmC,QACpC,mBAA2B,QAAoB,iDACX,QACpC,mBAA2B,QAAoB,sDACN,wDACA,
mBACrC,2CAC2B,gCAC/B,oJA1CkB,QAAA,cAAA;;ACEnB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA
,IAAA,QAAA,4BAAA,EALP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,iBAEO,MAAM,EAAuC,CACID,WA
AY,EADsC,iBAEID,YAAa,QACb,WAAY,EAAE,OAAA,EAAQ,MAAA,EAAO,QAAA,MACrB,MAAA,MAAC,
GAAS,GACV,QAAC,EAAD,UAAU,EAAG,OAAqB,GAAU,EAC/B,EAAe,EAef,EAAU,IAAI,EAAG,cACX,EA

mB,MAAO,EAAS,EA AW,GAE5C,OADQ,EAAa,gBAAgB,EAAS,CAAC,GAAQ,EAAM,SAVjE,QAAA,uBAAA;
;ACgBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WAAA,EAtBP,IAAA,
EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAQ,iWaiBD,GAAQ,EAAGB,EAAA,iBAAA,CAAC,U
AAW,IAE1C,QAAA,MAAA,EAAA,MAAM,EAA4B,CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GA
HP,QAAA,YAAA;;AlMbA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,YAAA,QAAA,WA
AA,EATP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCACA,EAAA,QAAA,0BAEA,MAAM,EAAQ,yBAED,G
ACT,EAAGB,EAAA,iBAAA,CAAC,UAAW,EAAO,cAAe,EAAA,eAE/C,QAAA,MAAA,EAAA,MAAM,EAA4B,
CACvC,WAAY,EAD2B,MAEvC,YAAa,QACb,WAAY,GAHP,QAAA,YAAA;;AmMNoB,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAF3B,IAAA,EAAA,QAAA,qBAEM,MAAO,EAKX,YACI,E
AAoB,EAakB,EACtC,EAqB,EAaMB,EACxC,GAaMB,GAPvB,KAAA,cAAGB,CAAC,UAAW,UAAW,gBAQh
C,KAAA,YAAc,EACb,MAAA,GAAC,EAakB,EAAA,mBAAA,EAAQ,QACxC,GAAQ,EAakB,EAAA,mBAAA,
EAAM,QACIC,IAAA,EAAGB,GACA,IAAhB,EACF,EAAGB,IACS,IAAhB,IACT,EAAGB,QA EZ,MAAA,gBAA+
B,KAejC,IAAA,EAAGB,GACA,IAAhB,EACF,EAAGB,IACS,IAAhB,IACT,EAAGB,gBAEZ,MAAA,gBAA+B,K
AE/B,EAAe,EA AW,EA AI,aAAe,UAC9C,KAAA,sBACC,eAAyB,KAAe,2CAGtC,2HAGoB,mFAEE,8CACA,gD
ACQ,2FAGnB,mJA3CI,QAAA,eAAA;;AC4CpB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,UAAA,EAAA,QAAA,qBAAA,EA/CP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,aA
EM,SAAU,EA AU,GAKIB,MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,QAAC,EAAD,QA AU,G
AAW,GACrB,MAAC,GAAS,GA EV,UAAC,EAAD,WAAY,EA AZ,UAAwB,EA AxB,QA AmC,EA AnC,WAA4C,G
AC9C,EAAa,aAAA,gBAAGB,EAAS,EAAS,GAE7C,EAAe,CAAC,EAAa,EA AW,GAE1C,GAAe,IAAf,EACK,OA
AA,EA AQ,eAAe,EAAO,EA AQ,OAGzC,MAAA,GA AiB,EACnB,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GA
AU,QAAA,EAAS,MAAO,CAAC,MAAO,CAAC,EAAY,MAC1D,GAAW,EACb,EAAA,SAAA,CAAC,OAAQ,C
AAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,CAAC,EAAY,MAE1D,EAAe,EA AQ,eACzB,GA AI,U
AAW,IA AI,aAAa,CAAC,KAC/B,EA AU,IA AI,EA AJ,eACZ,EAAY,EA AW,EAAe,MAAM,OAAQ,EAAS,MAAM,
OACnE,EAAS,GACP,EAAM,EA AQ,gBACbB,EAAS,CAAC,EAAU,EAAGB,GAAe,EAAS,OAE1D,GAAW,EA
AQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,EAAS,MAAO,CAAC,MAAA,KA OtD,OALP,EA
AQ,8BAA8B,GACtC,EA AQ,8BAA8B,GACtC,EA AQ,8BAA8B,GACtC,EA AQ,8BAA8B,GAE/B,EAGF,MAAM,E
AAgC,CAC3C,WAAY,EAD+B,UAE3C,YAAa,QACb,WAAY,GAHP,QAAA,gBAAA;;AC5CmB,aAAA,OAAA,e
AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAF1B,IAAA,EAAA,QAAA,qBAEM,MAAO,EAKX,
YAA Y,EAAe,EA AiB,GAGtC,IAAA,EACA,EACA,GATN,KAAA,cAAGB,CAAC,IAAK,IAAK,KAKpB,KAAA,Y
AAc,EA If,EAAO,EACH,MAAA,wBA AwB,0BAG5B,GAAS,IAAT,EACF,EA AW,QACX,EAAU,YACL,CACC,
MAAA,EAAGB,CAAC,UAAW,UAAW,UAAW,WACID,EAAa,GACb,EAAC,GACf,IAAA,IAAI,EA AI,EAAG,EA
AI,EAAM,OAAQ,IACbC,EAAY,QAAQ,EAAC,MAC9B,EA AI,GACN,EA AW,QAAQ,EAAC,MAGrC,EAAU,EA
AW,OACrB,EA AW,EAAY,OAGnB,MAAA,GAAQ,EAakB,EAAA,mBAAA,GAE3B,KAAA,2CAEC,2DACbB,6
DAED,oDAEA,kCAxCD,QAAA,cAAA;;ACanB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,OAAA,EAAA,QAAA,kBAAA,EhBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,iBAEM,SAAU,EA AO,GA
Ef,MAAA,OAAC,EAAD,QAAS,GA AW,GACpB,UAAC,EAAD,EAAY,EA AZ,EAAe,GA AK,EA EpB,EACF,IAAI
,EA AJ,cAAkB,EAAU,MAAM,OAAQ,EAAE,MAAO,EAAE,MAAM,QACxD,OAAA,EA AQ,gBACX,EAAS,CAA
C,EA AW,EAAG,IAAI,EA AW,EAAA,YAAA,EAAE,MAAO,EAAE,QAGjD,MAAM,EAA6B,CACxC,WAAY,EA
D4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;ACFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OA
AA,IAAA,QAAA,WAAA,QAAA,UAAA,EADp,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,+I
AGiB,EAAa,aAAA,qCACIB,EAAa,aAAA,gFAIIB,GAAO,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAEzC,QAAA,
KAAA,EAAA,MAAM,EAA2B,CACtC,WAAY,EAD0B,KA EtC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;AC
PA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,QAAA,aAAA,EAPP,IAAA,EAAA,Q
AAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAU,sCAEH,GAAU,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE
5C,QAAA,QAAA,EAAA,MAAM,EAA8B,CACzC,WAAY,EAD6B,QA EzC,YAAa,QACb,WAAY,GAHP,QAAA,
cAAA;;ACKA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EA ZP,IA
AA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAGA,MAAM,EAAO,yDAKA,GAAO,EAAGB,EAAA,iBAAA,CAA
C,UAAW,IAEzC,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAAY,EAD0B,KA EtC,YAAa,QACb,WAAY,G

AHP,QAAA,WAAA;;ACFA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,QAAA,SA
AA,EAVP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,EAAM,EAA0B,wBAAA,uBAIzB,GAA
M,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAExC,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAY,EADyB,I
AErC,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,WAAA,QAAA,UAAA,EAVP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAO,+
DAKA,GAAO,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAEzC,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WA
AY,EAD0B,KAETC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACiBA,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,eAAA,QAAA,cAAA,EA3BP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,M
AAM,EAAW,0WAsBJ,GAAW,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE7C,QAAA,SAAA,EAAA,MAAM,EA
A+B,CAC1C,WAAY,EAD8B,SAE1C,YAAa,QACb,WAAY,GAHP,QAAA,eAAA;;ACyCA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,qBAAA,QAAA,oBAAA,EApEP,IAAA,EAAA,QAAA,yBAIA,EAAA,
QAAA,WACA,EAAA,QAAA,aACA,EAAA,QAAA,eAEO,MAAM,EAakB,IAKvB,MAAA,OAAC,EAAD,QAAS
,EAAT,MAakB,GAAS,GAC3B,EAAC,GAak,GACN,WAAC,EAAD,SAAa,GAAY,EAElB,EAAA,KAAA,OAC
D,EAAE,MAAM,QAAU,EACIB,IAAM,wEAGJ,MAAA,EAAO,EAAW,OAAO,CAAC,EAAG,IAAM,EAAl,GAE
vC,EAA4C,CAAC,CAAC,EAAG,IACvD,EAAiB,QAAQ,GACpB,IAAA,IAAI,EAAl,EAAl,EAAW,OAAQ,EAAl,
EAAE,MAAM,SAAU,EACxD,EAAiB,KAAK,CAAC,EAAG,IAGtB,MAAA,EAAY,GAEZ,GAAU,EAAM,EAAA
,OAAA,CACpB,OAAQ,CAAC,EAAA,GACT,QAAA,EACA,MAAO,CAAC,SAAU,EAakB,cAAe,KAG/C,EACF,
EAAa,aAAA,YAAY,EAAQ,MAAO,EAAY,GAAM,GAExD,EAAoC,EAAa,aAAA,YACnD,EAAoB,OAAQ,EAA
W,QAAQ,GAE7C,EACF,EAAa,aAAA,oBAAoB,EAAQ,MAAO,EAAY,GAAM,GAehE,GAakB,EACpB,EAAA,
SAAA,CAAC,OAAQ,CAAC,EAAG,GAAU,QAAA,EAAS,MAAO,CAAC,MAAO,KAe7C,GAAW,EAAU,EAAA
,WAAA,CACzB,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MAAO,CAAC,KAAM,KAGV,GACF,EAAQ,EAAA
,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAW,QAAA,EAAS,MAAO,CAAC,MAAO,KAqrD,OANP,EAAU,KAAK
,GACf,EAAU,KAAK,GACf,EAAU,KAAK,GAef,EAAU,QAAQ,GAak,EAAQ,8BAA8B,IAEtD,GAGF,QAAA,e
AAA,EAAA,MAAM,EAAqC,CAChD,WAAY,EADoC,eAEhD,YAAa,QACb,WAAY,GAHP,QAAA,qBAAA;;AC
nCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,cAAA,EAAA,QAAA,yBAAA,EAjCP,IAA
A,EAAA,QAAA,yBAGA,EAAA,QAAA,kBACA,EAAA,QAAA,aAEM,SAAU,EAAc,GAKtB,MAAA,OAAC,EA
AD,QAAS,EAAT,MAakB,GAAS,GAC3B,cAAC,EAAD,aAGB,EAhB,aAA8B,GAAgB,GAC9C,YAAC,GAae
,GAehB,UAAC,EAAD,WAAY,EAaz,QAAwB,EAaxB,WAAiC,GACnC,EAAa,aAAA,gBAAGB,EAAc,EAae,G
AGxD,EAAU,IAAI,EAAl,eACZ,EAAY,EAAW,EAac,MAAM,OAC3C,EAAa,MAAM,OAAQ,EAAS,CAAC,EA
AY,IAH9B,GAKjB,EAAM,EAAQ,gBACHB,EAAS,CAAC,EAac,EAae,GAae,EAAa,OAeJ,E,GACF,EAAQ,EA
A,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAM,QAAA,EAAS,MAAO,CAAC,MAAO,KAGhD,OADP,EAAQ,8BA
A8B,GAC/B,EAGF,MAAM,EAAoC,CAC/C,WAAY,EADmC,cAE/C,YAAa,QACb,WAAY,GAHP,QAAA,oBAA
A;;ACHA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EA9B
P,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,WAEM,SAAU,EACZ,GAGI,MAAA,OAAC,EAAD,QAAS,EAAT,
MAakB,GAAS,GAC3B,EAAC,GAak,GACN,gBAAC,EAAD,KAakB,GAAQ,EAElB,EAAQ,EAak,KAAA,eA
Ae,EAAM,EAAE,OAAO,GAC3C,EAAa,EAAa,aAAA,iBAAiB,EAAG,EAAiB,GAe/D,EAAQ,EAAE,MAAM,OA
ChB,EAAQ,IAAI,MAAM,GAAO,KAAK,GAC9B,EAAO,EAAE,MAAM,QAEd,OAAA,EAAW,IAAI,IACd,MAA
A,EAAY,IAAI,GACtB,EAAU,GAAS,EACb,MAAA,GACF,EAAM,EAAA,OAAA,CAAC,OAAQ,CAAC,EAAA,
GAAI,QAAA,EAAS,MAAO,CAAC,MAAA,EAAO,KAAM,KAe/C,OADP,EAAM,IAAU,EACT,IAIJ,MAAM,EA
A6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;ACvBA,aAAA,OAAA,eAAA,
QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,QAAA,UAAA,EAPP,IAAA,EAAA,QAAA,yBACA,EAAA,Q
AAA,sCAEA,MAAM,EAAO,kBAEA,GAAO,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAEzC,QAAA,KAAA,EA
A,MAAM,EAA2B,CACtC,WAAY,EAD0B,KAETC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACCA,aAAA,O
AAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,QAAA,YAAA,EARP,IAAA,EAAA,QAAA,yBAE
A,EAAA,QAAA,sCAEA,MAAM,EAAS,gBAEF,GAAS,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAE3C,QAAA,O
AAA,EAAA,MAAM,EAA6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;A/M
CA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,wBAAA,QAAA,uBAAA,EATP,IAAA,EA
A,QAAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,EAAqB,4BAEd,GAAoB,EAC7B,EAAA,kBAAA,CAAC,UAA

W,EAAoB,gBAAiB,IAE9C,QAAA,kBAAA,EAAA,MAAM,EAAwC,CACnD,WAAY,EADuC,kBAEnD,YAAa,Q ACb,WAAY,GAHP,QAAA,wBAAA;;AgNUA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA, KAAA,EAAA,QAAA,gBAAA,EAnBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBAEM,SAAU,GACZ,OAA C,EAAD,MAAS,EAAT,QAAGB,IAGZ,MAAA,EAAC,GAAK,EACN,EAAY,EAAoB,wDACL,EAAM,cAGjC,EA AU,IAAI,EAAJ,eAAmB,EAAE,MAAO,GAErC,OAAA,EAAQ,gBAAgB,EAAS,CAAC,GAAL,EAAE,OAG1C,MA AM,EAA2B,CACtC,WAAY,EAD0B,KAETc,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;AChByB,aAAA,OAA A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,yBAAA,EAfHc,IAAA,EAAA,QAAA,qBAEM,MAAO,EAK X,YAAY,EAAiB,EAAmB,GAJhD,KAAA,cAAgB,CAAC,KAKV,KAAA,YAAc,EACb,MAAA,EAAO,EAAG,OA CZ,GAAa,EAakB,EAAA,mBAAA,EAAG,QACpC,GAAQ,EAakB,EAAA,mBAAA,EAAG,QAEjC,IAAA,EAAY ,GACZ,GAAS,IAAT,EACF,EAAY,+BACP,CACD,IAAA,EAAa,EACjB,EACI,EAAG,IAAI,CAAC,EAAG,KACP, IACuB,IAAhB,EAAG,2BACY,cAAc,eACxB,EAAa,gBAAgB,cAAc,OAE1D,KAAK,KAGX,KAAA,oBACD,aAA sB,KAAc,cACpC,eAAwB,KAAc,uCAGpC,yDACE,uBAhCO,QAAA,oBAAA;;ACgEzB,aAAA,OAAA,eAAA,QA AA,aAAA,CAAA,OAAA,IAAA,QAAA,aAAA,EAAA,QAAA,wBAAA,EAnEP,IAAA,EAAA,QAAA,yBAGA,EA AA,QAAA,0BACA,EAAA,QAAA,wBAEA,EAAA,QAAA,aACA,EAAA,QAAA,WAEM,SAAU,EAAa,GAkrB,M AAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,EAAC,GAAK,GACN,MACJ,EAD1,IAEJ,EAfI,QAGJ ,EAHI,UAIJ,EAJI,QAKJ,EALI,aAMJ,EANI,YAOJ,EAPI,eAQJ,GACE,GAEe,WAAC,EAAD,OAAa,EAAb,SAaQ B,EAARb,KAA+B,EAA/B,SAaQc,EAARc,SAA+C,GACjD,EAAW,WAAA,UACP,EAAE,MAAO,EAAO,EAAG, EAAS,EAAW,EAAS,EACID,EAAa,GAef,GAAG,EAAG,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAA,GAAL,QA AA,EAAS,MAAO,CAAC,MAAO,KAErD,IAAA,EACA,GAAA,EAAY,CACR,MAAA,GACF,EAAM,EAAA,OA AA,CAAC,OAAQ,CAAC,EAAG,GAAG,QAAA,EAAS,MAAO,CAAC,MAAO,EAAG,QAAA,KAC5D,GAAS,EA AQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,MAAO,KAe/D,EAAG,8BA A8B,QACjC,GAAL,EAAS,KAAK,GAaiB,IAAT,GAC/B,EAAS,EAAG,eAAe,EAAU,EAAE,MAAO,QAC9C,CAE D,GADuB,EAAG,mBAAmB,CAAC,IAC/B,CACb,MACA,EADW,EAAG,QAAQ,IAAI,EAAG,QACb,OACIB, GAAO,EAAO,EAAA,QAAA,EAAG,MAAO,EAAG,MAAO,GACIC,GACF,EAAoB,EAAA,qBAAA,EAAU,EAA M,EAAU,GACID,EAAS,EAAG,eAAe,EAAU,EAAG,MAAO,EAAa,YAC5D,CACC,MAAA,EAAU,IAAI,EAAJ,o BAAwB,EAAG,EAAG,GAC1D,EAAS,EAAG,gBAAgB,EAAS,CAAC,GAAG,EAAG,QAIjD,MAAA,GACF,EA A Q,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,MAAO,KAKnD,OAHP,EA A Q,8BAA8B,GACtC,EAAG,8BAA8B,GAe/B,EAGF,MAAM,EAAmC,CAC9C,WAAY,EADkC,aAE9C,YAAa,QA Cb,WAAY,GAHP,QAAA,mBAAA;;AC3DA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,U AAA,QAAA,SAAA,EARP,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,sCAEA,MAAM,EAAM,iBAEC,GAAM, EAAGB,EAAA,iBAAA,CAAC,UAAW,IAExC,QAAA,IAAA,EAAA,MAAM,EAA0B,CACrC,WAAY,EADyB,IA ErC,YAAa,QACb,WAAY,GAHP,QAAA,UAAA;;ACEA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA A,QAAA,WAAA,QAAA,UAAA,EAVP,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,sCAEA,MAAM,EAAO,uF AKA,GAAO,EAAGB,EAAA,iBAAA,CAAC,UAAW,IAEzC,QAAA,KAAA,EAAA,MAAM,EAA2B,CACtC,WAA Y,EAD0B,KAETc,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACkCN,aAAA,OAAA,eAAA,QAAA,aAAA,CA AA,OAAA,IAAA,QAAA,iBAAA,EA3CD,IAAA,EAAA,QAAA,qBAEM,MAAO,EAMX,YAAY,EAakB,GAL9B, KAAA,cAAgB,CAAC,KAMT,MAAA,EAAwB,IAAI,MAAM,EAAO,QAC1C,IAAA,IAAI,EAAL,EAAG,EAAL,EA AY,OAAQ,IACtC,EAAY,GAAG,EAAG,GAAG,EAAG,GAe/B,KAAA,YAAc,EACd,KAAA,KAAO,EAAY,OACI B,MAAA,GAAQ,EAakB,EAAA,mBAAA,KAAK,MAC/B,EAAe,EAAGB,GAehC,KAAA,2CAEC,wDACE,uBA MzB,SAAS,EAAGB,GACjB,MAAA,EAAO,EAAO,OACHB,GAAA,EAAO,EACH,MAAA,uBAAuB,0BAE3B,GA AS,IAAT,EACK,qBAae,EAAO,MAGzB,MAAA,EAAGB,CAAC,UAAW,UAAW,UAAW,UAAW,WAE7D,EAAe ,GACb,IAAA,IAAI,EAAL,EAAG,EAAL,EAAO,OAAQ,IACjC,EAAa,aAAa,EAAC,OAAO,EAAO,OAEjD,OAAA ,EAAa,OACrB,QAAA,YAAA;;ACfM,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,E AAA,QAAA,gBAAA,EA7BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,eAEM,SAAU, EACZ,GAEL,MAAA,OAAC,EAAD,QAAS,EAAT,MAakB,GAAS,GAC3B,EAAC,GAAG,GACN,KAAc,GAAQ, EAEX,GAAY,WAAZ,EAAE,MAAoB,CAGIB,MACA,EADO,EAAG,SAAS,EAAE,QACP,IAAI,GAAG,EAAG,K AAA,aAAa,IAC9C,GAAM,EAAO,EAAA,QAAA,EAAE,MAAO,EAAE,MAAO,GAC/B,GAAS,EAAY,EAAA,aA AA,EAAG,GACzB,OAAA,EAAG,eAAe,EAAO,MAAO,EAAO,MAAO,EAAO,QAG7D,MAAA,EAAU,IAAI,EA

AJ,YAAgB,EAAE,MAAO,GAGIC,OAFQ,EAAQ,gBAAgB,EAAS,CAAC,GAAl,EAAE,OAKID,MAAM,EAA2B,CACtC,WAAY,EAD0B,KAEtC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACLA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,KAAA,EAAA,QAAA,gBAAA,EAxBP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BAEM,SAAU,EACZ,GAEI,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,GAAK,GACN,EAAC,EAAD,OAAI,GAAU,EAEd,EAAQ,EAAQ,SAAS,EAAE,SAC1B,EAAa,IChB,EAAY,EAAA,aAAA,EAAO,EAAE,MAAO,EAAE,MAA0B,EAAG,GAExD,MAAA,CACL,EAAQ,eACJ,EAAY,MAAO,EAAY,MAAO,EAAY,QACtD,EAAQ,eACJ,EAAe,MAAO,EAAe,MAAO,EAAe,SAI5D,MAAM,EAA2B,CACtC,WAAY,EAD0B,KAEtC,YAAa,QACb,WAAY,GAHP,QAAA,WAAA;;ACIA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EA5BP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,0BACA,EAAA,QAAA,iBAEM,SAAU,EACZ,GAGI,MAAA,OAAC,EAAD,MAAS,EAAT,QAAGB,GAAW,GAC3B,KAAAC,GAAQ,GACT,EAAC,GAAG,GACK,EAAA,EAAA,kBAAA,EAAG,UAGpB,QAAQ,KACJ,YACA,8DACE,MAAAA,EAAS,EAAQ,SAAS,EAAE,SAC5B,aAAC,EAAD,YAAe,EAaf,QAA4B,IAC9B,EAAC,EAAA,eAAA,EAAQ,EAAM,EAAE,MAAO,EAAE,OACpC,MAAA,CACL,EAAQ,eAAe,EAAa,EAAE,MAAO,GAC7C,EAAQ,eAAe,CAAC,EAAQ,QAAS,QAAS,IAI/C,MAAM,EAA6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;ACuBA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,OAAA,EAAA,QAAA,kBAAA,EAnDP,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,aACA,EAAA,QAAA,WAEM,SAAU,EACZ,GAGI,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,MAAC,GAAS,EACZ,IAAA,KAAAC,GAAQ,EAET,EAAO,IACt,GAAQ,EAAM,MAAM,QAGhB,MAAA,EAAl,EACJ,EAAQ,EAAE,MAAM,OAehB,EAAM,EAAM,MAAM,GACIB,EAAqB,IAAl,MAAM,EAAQ,GACzC,IAAA,EAaw,EACV,IAAA,IAAl,EAAl,EAAG,EAAl,EA AO,IACrB,IAAM,IACR,EAAS,KAAc,EAAE,MAAM,IAI7B,MAAA,EAAY,GAEZ,EAAQ,IAAl,MAAM,GAAO,KAAK,GAC9B,EAAO,EAAE,MAAM,QACrB,EAAG,GAAQ,EACP,MAAA,EAAoB,IAAl,MAAM,GAC/B,IAAA,IAAl,EAAl,EAAG,EAAl,EAAl,OAAQ,IAAK,CACnC,EAAM,GAAQ,EACR,MAAA,GAAS,EAAM,EAAA,OAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,EAAS,MAAO,CAAC,MAAA,EAAO,KAAA,KACrD,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,MAAO,KAC1D,EAAl,GAAK,EAET,EAAU,KAAK,GAIv,OADP,EAAU,QAAQ,GAAG,EAAQ,8BAA8B,IACtD,EAGF,MAAM,EAA6B,CACxC,WAAY,EAD4B,OAExC,YAAa,QACb,WAAY,GAHP,QAAA,aAAA;;AChDsB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAavB,MAAO,EAKX,YACI,EACA,GANJ,KAAA,cAAgB,CAC,IAAK,cAOd,MAAA,EAAa,EAAU,WACvB,EAAY,EAAU,UACtB,EAAS,EAAU,OACnB,EAAc,EAAU,YACxB,EAAU,EAAc,KAAK,KAAK,EAAS,GAC5C,KAAA,YAAc,CAAC,EAaw,GAezB,MAGA,EAAqD,EAA7B,KAAK,MAAM,EAAa,GAChD,EAA0B,EAAa,EAEvC,EAAGB,sDAIIB,IAAA,EAAwB,GACxB,EAAS,EAAa,IACxB,yCAC8B,kEAM5B,IAAA,EAA4B,GAC5B,EAAS,EAAa,IACxB,yCAC8B,mDAM3B,KAAA,oHAIC,2GAKA,2PASE,eAAyB,+DACmB,yEAI1B,2lBAGbIB,kDAGqB,mBACS,IAA5B,8aAiBF,yBACqC,IAA5B,obAeT,yBACqC,IAA5B,+eAeT,6DAvIiB,QAAA,iBAAA;;ACyFtB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAAA,QAAA,8BAAA,EA5FP,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,kBAEA,EAAA,QAAA,WACA,EAAA,QAAA,aACA,EAAA,QAAA,UACA,EAAA,QAAA,eAEM,SAAU,EAAMB,GAK3B,MAAA,OAAC,EAAD,QAAS,EAAT,MAAkB,GAAS,GAC3B,EAAC,EAAD,WAAl,GAAC,GACIB,YAAC,GAae,EAehB,EAAQ,EAAE,MAAM,OAehB,EAAY,GAEd,IAAA,EAAO,EACL,MAAA,EAAc,EAAa,aAAA,mBAAMB,CAAC,GAAO,GACxD,IAAA,EAAY,EACG,MAAf,IACF,GAAY,EAAU,EAAA,WAAA,CAAC,OAAQ,CAAC,EAAA,GAAl,QAAA,EAAS,MAAO,CAAC,KAAAM,KAC3D,EAAU,KAAK,GACf,EAAO,EAAa,aAAA,iBAAiB,EAAG,GAAO,IAG3C,MAAA,EAaw,EAAa,aAAA,aAAa,gBACvC,EAAU,MAAO,EAAM,GACrB,EAAS,EAAG,KAAA,cAAc,CAAC,EAAU,MAAM,KAC7C,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EAAG,GAAY,QAAA,EAAS,MAAO,CAAC,MAAO,EAAE,EAAG,MACIE,EAAU,KAAK,GAET,MAAA,GAAC,EAaw,EAAA,YAAA,EAAE,OA E3B,EACF,CAAC,EAAe,EAaiC,EACHD,EAaiB,KACV,MAAA,EAAY,EAAE,MAAM,GACpB,EAAS,EAAE,MAAM,GACjB,EACF,EAAa,aAAA,aAAa,8BACtB,EAAQ,GACV,EAAY,CAAC,WAAA,EAAY,OAAA,EAAQ,UAAA,EAaw,YAAA,GAC5C,EAAU,IAAl,EAAl,iBAAqB,EAaw,GAC1C,EAAS,EAAQ,cAAc,EAAS,CAAC,EAAG,GAAa,GAG3D,GAFJ,EAAU,KAAK,GAEX,EAAO,MAAM,KAAO,EACf,OAAA,EAeh,MAAA,GAAY,EAAM,EAAA,OAAA,CACtB,QAAA,EACA,MAAO,CAAC,MAAO,EAAG,KAAAM,EAAa,KAAAM,EAAG,MAAO,aAEjD,GAAW,EAAG,EAAA,MAAA,CACpB,OAAQ,CAAC,EAAG,GACZ,QAAA,EACA,MAAO,CAAC,KAAAM,

CAAC,EAAS,MAQnB,OALP,EAAU,KAAK,GACf,EAAU,KAAK,GAGX,EAAa,EAAQ,EAAW,EAAU,EAAO,IA
IrD,EAAC,EAChB,EAAK,qBAAsB,EAAY,EAAa,GAElD,GACF,EAAQ,EAAA,SAAA,CAAC,OAAQ,CAAC,EA
AG,GAAC,QAAA,EAAS,MAAO,CAAC,MAAO,KAE3D,IAAA,EAAS,EACT,GAae,MAAf,EAAqB,CACvB,EA
AU,KAAK,GACT,MAAA,EAAO,EAAa,aAAA,uBAAuB,GACjD,GAAS,EAAU,EAAA,WAAA,CAAC,OAAQ,C
AAC,EAAG,GAAS,QAAA,EAAS,MAAO,CAAC,KAAA,KAIrD,OADP,EAAU,QAAQ,GAAK,EAAQ,8BAA8B,I
ACtD,EAGF,MAAM,EAAYC,CACpD,WAAY,EADwC,mBAEpD,YAAa,QACb,WAAY,GAHP,QAAA,yBAAA;;
AC4NN,aAzTD,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,0BACA,EAAA,QAAA,iBACA,EAAA,QAAA,kBA
CA,EAAA,QAAA,mBACA,EAAA,QAAA,iBACA,EAAA,QAAA,kBACA,EAAA,QAAA,iBACA,EAAA,QAAA,i
BACA,EAAA,QAAA,oBACA,EAAA,QAAA,oBACA,EAAA,QAAA,kBACA,EAAA,QAAA,mBACA,EAAA,QA
AA,kBACA,EAAA,QAAA,mBACA,EAAA,QAAA,mBACA,EAAA,QAAA,qBACA,EAAA,QAAA,uBACA,EA
A,QAAA,2BACA,EAAA,QAAA,yBACA,EAAA,QAAA,yBACA,EAAA,QAAA,uBACA,EAAA,QAAA,4BACA,
EAAA,QAAA,sBACA,EAAA,QAAA,kBACA,EAAA,QAAA,kBACA,EAAA,QAAA,yBACA,EAAA,QAAA,qBA
CA,EAAA,QAAA,wBACA,EAAA,QAAA,oBACA,EAAA,QAAA,oBACA,EAAA,QAAA,kCACA,EAAA,QAAA,
iCACA,EAAA,QAAA,oBACA,EAAA,QAAA,oCACA,EAAA,QAAA,mCACA,EAAA,QAAA,iBACA,EAAA,QA
AA,kBACA,EAAA,QAAA,2BACA,EAAA,QAAA,oBACA,EAAA,QAAA,2BACA,EAAA,QAAA,0BACA,EAAA
,QAAA,mCACA,EAAA,QAAA,iDACA,EAAA,QAAA,gDACA,EAAA,QAAA,kBACA,EAAA,QAAA,wBACA,E
AAA,QAAA,iBACA,EAAA,QAAA,qBACA,EAAA,QAAA,mBACA,EAAA,QAAA,iBACA,EAAA,QAAA,iBAC
A,EAAA,QAAA,wBACA,EAAA,QAAA,mBACA,GAAA,QAAA,iBACA,GAAA,QAAA,kBACA,GAAA,QAAA,
2BACA,GAAA,QAAA,mBACA,GAAA,QAAA,sBACA,GAAA,QAAA,wBACA,GAAA,QAAA,yBACA,GAAA,
QAAA,kCACA,GAAA,QAAA,sBACA,GAAA,QAAA,sBACA,GAAA,QAAA,qBACA,GAAA,QAAA,0BACA,G
AAA,QAAA,sBACA,GAAA,QAAA,kBACA,GAAA,QAAA,kBACA,GAAA,QAAA,sBACA,GAAA,QAAA,mBA
CA,GAAA,QAAA,mBACA,GAAA,QAAA,uBACA,GAAA,QAAA,kBACA,GAAA,QAAA,uBACA,GAAA,QAA
A,sBACA,GAAA,QAAA,iBACA,GAAA,QAAA,mBACA,GAAA,QAAA,wBACA,GAAA,QAAA,wBACA,GAA
A,QAAA,uBACA,GAAA,QAAA,iBACA,GAAA,QAAA,qBACA,GAAA,QAAA,iBACA,GAAA,QAAA,qBACA,
GAAA,QAAA,qBACA,GAAA,QAAA,uBACA,GAAA,QAAA,2BACA,GAAA,QAAA,yBACA,GAAA,QAAA,+B
ACA,GAAA,QAAA,kBACA,GAAA,QAAA,iBACA,GAAA,QAAA,qBACA,GAAA,QAAA,uBACA,GAAA,QAA
A,iBACA,GAAA,QAAA,yBACA,GAAA,QAAA,sBACA,GAAA,QAAA,iBACA,GAAA,QAAA,iCACA,GAAA,Q
AAA,iCACA,GAAA,QAAA,iCACA,GAAA,QAAA,sBACA,GAAA,QAAA,oBACA,GAAA,QAAA,sBACA,GAA
A,QAAA,kBACA,GAAA,QAAA,mBACA,GAAA,QAAA,iBACA,GAAA,QAAA,mBACA,GAAA,QAAA,kBAC
A,GAAA,QAAA,mBACA,GAAA,QAAA,kBACA,GAAA,QAAA,qBACA,GAAA,QAAA,wBACA,GAAA,QAAA
,kBACA,GAAA,QAAA,mBACA,GAAA,QAAA,qBACA,GAAA,QAAA,4BACA,GAAA,QAAA,gCACA,GAAA,
QAAA,mCACA,GAAA,QAAA,uCACA,GAAA,QAAA,qBACA,GAAA,QAAA,8BACA,GAAA,QAAA,mBACA,
GAAA,QAAA,mBACA,GAAA,QAAA,uBACA,GAAA,QAAA,oBACA,GAAA,QAAA,kBACA,GAAA,QAAA,q
BACA,GAAA,QAAA,kBACA,GAAA,QAAA,iBACA,GAAA,QAAA,kBACA,GAAA,QAAA,mBACA,GAAA,Q
AAA,qBACA,GAAA,QAAA,sBACA,GAAA,QAAA,4BACA,GAAA,QAAA,2BACA,GAAA,QAAA,oBACA,GA
AA,QAAA,kBACA,GAAA,QAAA,oBACA,GAAA,QAAA,+BACA,GAAA,QAAA,kBACA,GAAA,QAAA,0BAC
A,GAAA,QAAA,iBACA,GAAA,QAAA,iBACA,GAAA,QAAA,iBACA,GAAA,QAAA,kBACA,GAAA,QAAA,k
BACA,GAAA,QAAA,kBACA,GAAA,QAAA,uBACA,GAAA,QAAA,oBACA,GAAA,QAAA,oBACA,GAAA,Q
AAA,gCACA,GAAA,QAAA,uBAGA,MAAM,GAAGC,CACpC,GADoC,UAEPc,GAFOc,cAGpC,EAHoC,mBAIp
C,EAJoC,UAKpC,EALoC,WAMPc,EANoC,YAOpC,EAPoC,UAQpC,EARoC,WASpC,EAToC,UAUpC,EAVoC,
UAWpC,EAXoC,aAYpC,EAZoC,aAapC,EAboc,WAcpc,EAdoc,YAepC,EAfoC,YAgBpC,EAHboc,WAIbpc,EA
jBoC,YAkBpC,EAlBoC,gBAmbpc,EANboC,cAoBpC,EApBoC,oBAqBpC,EARboC,kBAsBpC,EAtBoC,kBAuBp
C,EAvBoC,gBAwBpC,EAxBoC,qBAyBpC,EAzBoC,eA0BpC,EA1BoC,WA2BpC,EA3BoC,WA4BpC,EA5BoC,k
BA6BpC,EA7BoC,iBA8BpC,EA9BoC,cA+BpC,EA/BoC,aAgCpC,EAHCoC,2BAiCpC,EAjCoC,0BAkCpC,EAlCo
C,aAmCpC,EAnCoC,6BAoCpC,EApCoC,0BAqCpC,EARCoC,aAsCpC,EATCoC,UAuCpC,EAvCoC,WAwCpC,EA
xCoC,oBAyCpC,EAzCoC,aA0CpC,EA1CoC,oBA2CpC,EA3CoC,mBA4CpC,EA5CoC,0CA6CpC,EA7CoC,yCA8
CpC,EA9CoC,4BA+CpC,EA/CoC,WAgDpC,EAHDoC,iBAiDpC,EAjDoC,UAKDpC,EALDoC,cAmDpC,EANDoC,
YAOdpC,EAPDoC,UAQDpC,EARDoC,UASDpC,EATDoC,iBAuDpC,EAVDoC,YAWDpC,GAXDoC,UAyDpC,GAZ

DoC,WA0DpC,GA1DoC,oBA2DpC,GA3DoC,YA4DpC,GA5DoC,eA6DpC,GA7DoC,iBA8DpC,GA9DoC,kBA+D
pC,GA/DoC,2BAgEpC,GAhEoC,eAiEpC,GAjEoC,eAkEpC,GAIEoC,cAmEpC,GAnEoC,mBAoEpC,GApEoC,eAq
EpC,GArEoC,WAsEpC,GAtEoC,WAuEpC,GAvEoC,eAwEpC,GAXeOc,YAyEpC,GAzEoC,YA0EpC,GA1EoC,gB
A2EpC,GA3EoC,WA4EpC,GA5EoC,gBA6EpC,GA7EoC,eA8EpC,GA9EoC,YA+EpC,GA/EoC,UAgFpC,GAhFo
C,iBAiFpC,GAjFoC,iBAkFpC,GAIFoC,gBAmFpC,GAnFoC,UAoFpC,GApFoC,gBAqFpC,GArFoC,cAsFpC,GAtF
oC,oBAuFpC,GAvFoC,kBAwFpC,GAXFoC,wBAyFpC,GAzFoC,cA0FpC,GA1FoC,WA2FpC,GA3FoC,UA4FpC,
GA5FoC,cA6FpC,GA7FoC,gBA8FpC,GA9FoC,UA+FpC,GA/FoC,kBAgGpC,GAhGoC,eAiGpC,GAjGoC,UAkGp
C,GAIGoC,0BAmGpC,GAnGoC,0BAoGpC,GApGoC,0BAqGpC,GArGoC,eAsGpC,GAtGoC,aAuGpC,GAvGoC,e
AwGpC,GAXGoC,WAYGpC,GAzGoC,YA0GpC,GA1GoC,UA2GpC,GA3GoC,YA4GpC,GA5GoC,WA6GpC,GA7
GoC,YA8GpC,GA9GoC,WA+GpC,GA/GoC,cAgHpC,GAhHoC,iBAiHpC,GAjHoC,YAkHpC,GAlHoC,WAmHpC
,GAnHoC,cAoHpC,GApHoC,qBAqHpC,GArHoC,yBAshpC,GAtHoC,4BAuHpC,GAvHoC,gCAwHpC,GAXHoC,
cAyHpC,GAzHoC,uBA0HpC,GA1HoC,YA2HpC,GA3HoC,YA4HpC,GA5HoC,gBA6HpC,GA7HoC,aA8HpC,GA
9HoC,WA+HpC,GA/HoC,cAgIpC,GAhIoC,WaiIpC,GAjIoC,UAkIpC,GAlIoC,WAmIpC,GAnIoC,YAoIpC,GApIo
C,cAqIpC,GArIoC,eAsIpC,GAtIoC,qBAuIpC,GAvIoC,oBAwIpC,GAXIoC,aAyIpC,GAzIoC,WA0IpC,GA1IoC,aA
2IpC,GA3IoC,wBA4IpC,GA5IoC,WA6IpC,GA7IoC,mBA8IpC,GA9IoC,UA+IpC,GA/IoC,UAgJpC,GAhJoC,UAIj
pC,GAjJoC,WAKjPc,GAlJoC,WAmJpC,GAnJoC,WAOjPc,GApJoC,gBAqJpC,GArJoC,aAsJpC,GAtJoC,aAuJpC,
GAvJoC,yBAwJpC,GAXJoC,iBA2JtC,IAAK,MAAM,MAAgB,IACV,EAAA,EAAA,gBAAA;;AhRrTjB,aAAA,OA
AA,eAAA,QAAA,aAAA,CAAA,OAAA,IADA,IAAA,EAAA,QAAA,UAAA,OAAA,KAAA,GAAA,QAAA,SAA
A,GAAA,YAAA,GAAA,eAAA,GAAA,OAAA,eAAA,QAAA,EAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA
,EAAA,QACA,QAAA;;AiRoSA,aAzRA,IAAY,EAYRK,EAAjB,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAA
A,QAAA,SAAA,QAAA,cAAA,EAAA,QAAA,SAAA,EazRA,SAAY,GACV,EAAA,EAAA,WAAA,GAAA,aACA
,EAAA,EAAA,SAAA,GAAA,WACA,EAAA,EAAA,UAAA,GAAA,YACA,EAAA,EAAA,SAAA,GAAA,WACA,
EAAA,EAAA,SAAA,GAAA,WACA,EAAA,EAAA,SAAA,GAAA,WACA,EAAA,EAAA,QAAA,GAAA,UACA,
EAAA,EAAA,UAAA,GAAA,YACA,EAAA,EAAA,aAAA,GAAA,eACA,EAAA,EAAA,SAAA,GAAA,WACA,E
AAA,EAAA,QAAA,IAAA,UACA,EAAA,EAAA,SAAA,IAAA,WACA,EAAA,EAAA,UAAA,IAAA,YACA,EAA
A,EAAA,UAAA,IAAA,YACA,EAAA,EAAA,YAAA,IAAA,cACA,EAAA,EAAA,aAAA,KAAA,eACA,EAAA,E
AAA,cAAA,KAAA,gBACA,EAAA,EAAA,aAAA,KAAA,eACA,EAAA,EAAA,aAAA,KAAA,eACA,EAAA,EAA
A,aAAA,KAAA,eACA,EAAA,EAAA,YAAA,KAAA,cACA,EAAA,EAAA,cAAA,KAAA,gBACA,EAAA,EAAA,
iBAAA,KAAA,mBACA,EAAA,EAAA,aAAA,KAAA,eACA,EAAA,EAAA,YAAA,KAAA,cACA,EAAA,EAAA,a
AAA,KAAA,eACA,EAAA,EAAA,cAAA,KAAA,gBACA,EAAA,EAAA,cAAA,KAAA,gBACA,EAAA,EAAA,gB
AAA,KAAA,kBA7BF,CAAY,IAAA,QAAA,SAAA,EAAQ,KAYRpB,QAAA,SAAA,EAAA,SAAiB,GAEH,IAAA,
GAAZ,SAAY,GAAYB,EAAA,EAAA,OAAA,GAAA,SAAC,EAAA,EAAA,GAAA,GAAA,KAAU,EAAA,EAAA,
GAAA,GAAA,KAA7D,CAAY,EAAA,EAAA,0BAAA,EAAA,wBAAuB,KAFrC,CAAiB,IAAA,QAAA,SAAA,EA
AQ;;ACxOxB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,gBAAA,E
AAA,QAAA,aAAA,EA3DD,MAAM,EAawC,GA2BxC,SAAU,EAaw,EAAC,GACjC,MAAA,EAaqB,CACzB,S
AAU,EACV,SAAU,SACV,OAAQ,GACR,MAAO,GACP,eAAGB,GAGIB,EAaw,GAAQ,EAUF,SAAU,EAAGB,G
ACvB,OAAA,EAaw,GAUd,SAAU,EAa,UACpB,EAaw;;ACoFnB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,
OAAA,IAAA,QAAA,cAAA,EAAA,QAAA,UAAA,EAAA,QAAA,6BAAA,EAAA,QAAA,oBAAA,EAAA,QAAA
,cAAA,EAAA,QAAA,MAAA,EAAA,QAAA,WAAA,EAAA,QAAA,YAAA,EajJD,IAAA,EAAA,QAAA,yBAOM
,SAAU,EACZ,EAAMb,EAAY,EAC/B,EAa2B,GACvB,MAAA,EAa,EAak,YAAY,GACHc,GAAA,QAA6C,IA
A/B,EAaw,gBAA+B,CACpD,MAAA,EAaq,EAaw,gBACnB,EAAMc,IAA7B,EAaw,mBACnB,OAC8B,IAA7
B,EAaw,cAA8B,EAaq,EACR,EAaw,cACrD,GAAoB,WAAPB,EAaw,KACN,OAAA,EACH,EAak,WAAW,
EAaw,iBAakB,EAaw,EACxD,GAEF,GAAoB,YAAPB,EAaw,KAAoB,CAG1B,OAFQ,EAak,WAAW,MAA
M,EAao,GAe9B,IACV,GAAQ,EAau,EAAM,EAaw,EAAS,IAE5C,MAAA,EAAS,EACX,EAak,WAAW,MA
AM,GAAO,GAAL,EAaw,EAAS,GACnD,EAao,EAao,WACb,MAAoB,WAAPB,EAaw,KACd,EAak,GACL,
EAak,KAAA,cAAc,EAao,MAAO,GAejC,MAAA,EAAY,EAak,WAAW,GAC3B,OAAA,GAAa,EAau,MAU1
B,SAAU,EACZ,EAac,EAa6B,EAC3C,GACI,MAAC,EAau,GAAS,EAac,GAEPc,GAAMb,MAAnB,EAAYB,C
ACrB,MAAA,EAAS,EAAGb,yBAAYB,GACpD,GAAU,MAAV,EACK,OAAA,EAIL,MAAA,EAAY,EAaq,kBA

AkB,KAAK,KACtC,EA AW,EA AyB,EA AU,KAGID,YAAc,IAAd,EACH,EA AW,EA AyB,EA AU,IAAY,QACID,E
AQA,SA AU,EACZ,EA Ac,EACd,GACK,OAAA,EA AW,EA AyB,EA AM,EA AQ,mBASrD,SA AU,EACZ,EA AmB,
GACf,MAAC,EA AU,GAAS,EA Ac,GA EJC,MAAA,CACL,EA AyB,EA AU,GA AW,EA AQ,kBACtD,GAIJ,SAAS,E
AAyB,EA Ac,GACvC,OAAE,KAAe,KAAQ,IAAc,EAG1C,SA AU,EA Ac,GACtB,MAAA,EA AQ,EA AK,MAAM,K
ACrB,OAAiB,IAAjB,EA AM,OACD,CAAC,EA AM,GAIT,CADU,EA AM,GACL,OAAO,EA AM,EA AM,OAAS,K
AG1C,SA AU,EA AM,EA Ae,GAC7B,MAAA,EA AM,GACP,IAAA,IAAI,EA AI,EA AG,EA AI,EA AI,OAAQ,GA AK
,EACnC,EA AI,KAAK,EA AI,MAAM,EA AG,EA AI,IAErB,OAAA,EA EH,SA AU,EACZ,EA AY,EACZ,GACE,IAA
A,EA AM,EA Ac,MAAO,EA AM,EA AW,GAC5C,GAAQ,aAAR,EA AoB,CAEtB,EA AM,EA Ac,mBA AoB,EA AM,
EA AW,GACnD,MAAA,EA EF,CAAC,CAAC,EA AG,GA AI,CAAC,EA AG,GA AI,CAAC,EA AG,GA AI,CAAC,EA
AG,IAC5B,IAAA,IAAI,EA AI,EA AG,EA AI,EA AG,IACrB,EA AgB,GA AG,GA AM,EA AQb,EA AJ,GAC1C,EA Ag
B,GA AG,GA AM,EA AQb,EA AJ,EA AQ,GA E7C,OAAA,EA EF,OAAA,EAYH,SA AU,EA AY,GACnB,OAAA,EA A
O,KAAO,GAAS,EA AM,EAAA,OAAA;;AC9I/B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAA
A,UAAA,EAAA,MAAM,EA AmB,CAC9B,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA
AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,O
AAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CA
AU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,C
ACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OA
AA,CAAC,CAAU,MAAA,EA AU,IAAA,EA AW,KAAA,UAmB,KAAA,aAE/D,CACc,SAAA,UACA,SAAA,aA
CF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAA
A,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,cA
CF,KAAA,aACA,KAAA,SACQ,cAAA,KAI tB,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,
EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW
,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,UACA,SAAA,aACF,OAAA,CACR,C
AAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,
CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,O
AAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,W
AE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,WACA,S
AAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IA
Aa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SA
AA,WACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA
AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,K
AGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CA
AU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,Q
AAyB,cAAA,KAGtE,CACc,SAAA,UACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KA
AA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QA
AiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,UACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KA
AA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IA
Aa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MA
AA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CA
AW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,oBACA,SAAA,aACF,OAAA,CA
CR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,M
AAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aA
CF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAA
A,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,WA
CA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KA
AA,IAAa,KAAA,WAE3B,MAAA,CAAC,CACE,OAAA,IACF,KAAA,QACA,KAAA,QACQ,cAAA,MAhLf,QAA
A,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EA A
mB,CAC9B,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE

3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAA
A,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa
,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,
EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA
,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,
MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,a
ACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KA
AA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,O
ACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,O
AAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,cACA,SAAA,aACF,OAAA,CACR,CAA
U,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,M
AAA,EAAW,KAAA,eAAwB,KAAA,WAETC,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAy
B,cAAA,KAGtE,CACc,SAAA,UACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,OAAGB,KAA
A,UACrC,CAAU,MAAA,EAAW,KAAA,OAAGB,KAAA,WAE9B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,Q
AAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,aACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,K
AAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,
CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,C
ACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OA
AA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QA
AiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KA
AA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,C
ACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CA
CP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAA
A,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QA
AiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KA
AA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,C
ACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CA
CP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAA
A,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QA
AiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KA
AA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CAC
c,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,
CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,OACF,KAAA,aACA,KAAA,
QACQ,cAAA,KAItB,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KA
AA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,O
ACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,O
AAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,OACF,KAAA,aACA,KAAA,QACQ,c
AAA,KAItB,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACI
C,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,WAE/B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KA
AA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAA
a,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAA
A,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAA
W,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,
CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,
QAAyB,cAAA,KAGtE,CACc,SAAA,UACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,K
AAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,
MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,
OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,C
AAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,
QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,K
AAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,
QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,
OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,SACA,SAAA,aACF,OAAA,CACR,CA

AU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,WA CA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OA AA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAA U,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QA AyB,cAAA,KAGtE,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAA A,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,QA CA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OA AA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,MACA,SAAA,aACF,OAAA,CACR,CAA U,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QA AyB,cAAA,KAGtE,CACc,SAAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAA A,UACIC,CAAU,MAAA,EA AW,KAAA,OA AgB,KAAA,aAE9B,MAAA,CACP,CACY,OAAA,YACF,KAAA,W ACA,KAAA,OACQ,cAAA,GAEIB,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,S AAA,YACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,C ACY,OAAA,QACF,KAAA,QACA,KAAA,SACQ,aAAA,IAEIB,CACY,OAAA,IACF,KAAA,QACA,KAAA,QAC Q,cAAA,MAlcjB,QAAA,KAAA;;ACDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAA A,EAAA,MAAM,EA AmB,CAC9B,CACc,SAAA,kBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,K AAA,eAAwB,KAAA,SAC7C,CAAU,MAAA,EA AW,KAAA,iBAA0B,KAAA,WAG7C,MAAA,CAAC,CAAW,O AAA,gBAAYB,KAAA,eAAwB,KAAA,WAEnE,CACc,SAAA,WACA,SAAA,UACF,OAAA,CAAC,CAAU,MAA A,EA AW,KAAA,OA AgB,KAAA,YAEID,CACc,SAAA,SACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,OA AgB,KAAA,UACrC,CAAU,MAAA,EA AW,KAAA,OA AgB,KAAA,YAGzC,CACc,SAAA,QACA,S AAA,UACF,OAAA,CAAC,CAAU,MAAA,EA AU,IAAA,EA AW,KAAA,UAAmB,KAAA,aAE/D,CACc,SAAA,Q ACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW ,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GACIE,CAAW,OAAA,aAAsB,KAAA,YAAqB,KAAA,UAC tD,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,UAG5D,CACc,SAAA,OACA,SAAA,UACF,OAAA,CACR,CA AU,MAAA,EA AW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA, QAAyB,cAAA,KAGtE,CACc,SAAA,gBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,SAAk B,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SA AA,gBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,OA AgB,KAAA,WAE9B,MAAA,CACP, CAAW,OAAA,QAAiB,KAAA,QAAiB,KAAA,SAC7C,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,SAC5D, CAAW,OAAA,eAAwB,KAAA,cAAuB,KAAA,QAC1D,CAAW,OAAA,mBAA4B,KAAA,iBAA0B,KAAA,QACj E,CACY,OAAA,2BACF,KAAA,yBACA,KAAA,QA EV,CAAW,OAAA,oBAA6B,KAAA,OA AgB,KAAA,YAG5 D,CACc,SAAA,qBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,gBAAYB,KAAA,UAC9C,C AAU,MAAA,EA AW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EA AW,KAAA,SAAkB,KAAA,UACvC,CA AU,MAAA,EA AW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA, QAAyB,cAAA,KAGtE,CACc,SAAA,oBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,gBAA yB,KAAA,UAC9C,CAAU,MAAA,EA AW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EA AW,KAAA,SAAkB

,KAAA,WAEhC,MAAA,CAAC,CACE,OAAA,QACF,KAAA,QACA,KAAA,QACQ,cAAA,KAGpB,CACc,SAAA,sBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,gBAAYB,KAAA,UAC9C,CAAU,MAAA,EA AW,KAAA,UAAmB,KAAA,YACxC,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,WAEhC,MAAA,CACP,CA AW,OAAA,QAAiB,KAAA,QAAiB,KAAA,SAC7C,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAGhE,CACc,SAAA,uBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,gBAAYB,KAAA,UAC9C,CA AU,MAAA,EAAW,KAAA,UAAmB,KAAA,YACxC,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CA AU,MAAA,EAAW,KAAA,SAakB,KAAA,WAEhC,MAAA,CAAC,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA, WAErD,CACc,SAAA,sBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,gBAAYB,KAAA,UAC 9C,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,QAAiB,KAAA,QAAiB ,KAAA,SAAU,CAC3C,OAAA,wBACF,KAAA,sBACA,KAAA,QACQ,cAAA,KAItB,CACc,SAAA,qBACA,SAA A,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,gBAAYB,KAAA,UAC9C,CAAU,MAAA,EAAW,KAAA, SAAkB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,UAAmB,KAAA,YACxC,CAAU,MAAA,EAAW,KAAA,S AakB,KAAA,WAEhC,MAAA,CAAC,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,WAErD,CACc,SAAA,oBAC A,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,gBAAYB,KAAA,UAC9C,CAAU,MAAA,EAAW, KAAA,SAakB,KAAA,YAG3C,CACc,SAAA,qBACA,SAAA,UACF,OAAA,CAAC,CAAU,MAAA,EAAW,KAA A,gBAAYB,KAAA,YAE3D,CACc,SAAA,cACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,OA AgB,KAAA,UACrC,CAAU,MAAA,EAAU,IAAA,EAAW,KAAA,OAAgB,KAAA,YAExC,MAAA,CACP,CAAW ,OAAA,cAAuB,KAAA,aAAsB,KAAA,QACxD,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,UAG5D,CACc,SA AA,KACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,OAAgB,KAAA,UACrC,CAAU,MAAA,E AAU,IAAA,EAAW,KAAA,OAAgB,KAAA,YAExC,MAAA,CACP,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAA A,QACxD,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,UAG5D,CACc,SAAA,iBACA,SAAA,UACF,OAAA,C ACR,CAAU,MAAA,EAAU,IAAA,EAAW,KAAA,OAAgB,KAAA,YAExC,MAAA,CACP,CAAW,OAAA,OAAg B,KAAA,OAAgB,KAAA,QAC3C,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAAA,UAG/C,CACc,SAAA,QACA, SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAU,IAAA,EAAW,KAAA,OAAgB,KAAA,YAExC,MAAA,CACP ,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAAA,QAC3C,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAAA,UAG/C ,CACc,SAAA,oBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CAA U,MAAA,EAAW,KAAA,UAAmB,KAAA,YACxC,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAG3C,MAA A,CAAC,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,sBACA,SAAA,UACF,OAAA,C ACR,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,UAAmB,KAAA,YA CxC,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,SAC7C,CAAU,MAAA,EAAW,KAAA,cAAuB,KAAA,WAG 1C,MAAA,CAAC,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,mBACA,SAAA,UAC F,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,EAAW,KAAA,UAAmB, KAAA,YACxC,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAG3C,MAAA,CAAC,CAAW,OAAA,gBAAYB, KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,oBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAA A,eAAwB,KAAA,UAC7C,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACrC,CAAU,MAAA,EAAW,KAAA, eAAwB,KAAA,UAG3C,MAAA,CAAC,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,o BACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,EA A W,KAAA,QAAiB,KAAA,UACrC,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,WAGrC,MAAA,CAAC,CAAW, OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,oBACA,SAAA,UACF,OAAA,CACR,CAAU,MA AA,EAAW,KAAA,eAAwB,KAAA,SAC7C,CAAU,MAAA,EAAW,KAAA,cAAuB,KAAA,WAG1C,MAAA,CAA C,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,uBACA,SAAA,UACF,OAAA,CACR,C AAU,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAG3C,M AAA,CAAC,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,kBACA,SAAA,UACF,OAA A,CACR,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA, UAEtC,MAAA,CACP,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,SAC5D,CAAW,OAAA,eAAwB,KAAA,c AAuB,KAAA,WAG9D,CACc,SAAA,kBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,SAak B,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,SAC7C,CAAU,MAAA,EAAW,KAAA,UAAmB ,KAAA,aAGtC,MAAA,CAAC,CAAW,OAAA,gBAAYB,KAAA,eAAwB,KAAA,WAEhC,CACc,SAAA,mBACA,

SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,WAEtC,MAAA,CACP,CAAW,OAA
A,gBAAyB,KAAA,eAAwB,KAAA,SAC5D,CAAW,OAAA,gBAAyB,KAAA,eAAwB,KAAA,WAGhE,CACc,SA
AA,oBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,
EAAW,KAAA,eAAwB,KAAA,UAG3C,MAAA,CAAC,CAAW,OAAA,gBAAyB,KAAA,eAAwB,KAAA,WAEhE
,CACc,SAAA,qBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAA
U,MAAA,EAAW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,gBAAyB,KAAA,eAAwB,KAA
A,YA1V3D,QAAA,KAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EA
AA,MAAM,EAAMB,CAC9B,CACc,SAAA,UACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IA
Aa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UA
AmB,KAAA,MAAe,KAAA,UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,GAEIB,CAAW,O
AAA,QAAiB,KAAA,aAAsB,KAAA,YACID,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE
,CACc,SAAA,UACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,
CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,
UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,GAEIB,CAAW,OAAA,QAAiB,KAAA,aAAsB
,KAAA,YAAa,CACnD,OAAA,oBACF,KAAA,mBACA,KAAA,WACQ,aAAA,GACA,cAAA,GAEIB,CAAW,OA
AA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,oBACA,SAAA,cACF,OAAA,CACR,CAA
U,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,
YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAC7C,CAAW,OAAA,QAAiB,KAAA,aAAsB,KAAA,Y
AAa,CACnD,OAAA,yBACF,KAAA,sBACA,KAAA,QAeV,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB
,cAAA,KAGtE,CACc,SAAA,YACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,W
AE3B,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,
MAAe,KAAA,UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,GAEIB,CAAW,OAAA,QAAiB,
KAAA,aAAsB,KAAA,YACID,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA
,YACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,
OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAAW,CAC5C
,OAAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,GAEIB,CAAW,OAAA,QAAiB,KAAA,aAAsB,KAAA,YACID,
CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,SACA,SAAA,cACF,OAAA,C
ACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,SAAkB,KAAA,WAEhC
,MAAA,CACP,CAAW,OAAA,SAAkB,KAAA,SAAkB,KAAA,UAC/C,CAAW,OAAA,UAAmB,KAAA,MAAe,K
AAA,UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SACQ,aAAA,OAEIB,CAAW,OAAA,IAAa,KAAA,QA
AiB,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,WACF,KAAA,WACA,KAAA,SACQ,aAAA,KAItB,CACc,SA
AA,SACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA
AW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,G
ACIE,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,U
AC7C,CAAW,OAAA,gBAAyB,KAAA,gBAAyB,KAAA,QAAS,CACID,OAAA,cACF,KAAA,aACA,KAAA,SA
CQ,aAAA,QAEIB,CACY,OAAA,oBACF,KAAA,mBACA,KAAA,WACQ,aAAA,IAEIB,CAAW,OAAA,YAAqB,
KAAA,YAAqB,KAAA,cAGzD,CACc,SAAA,eACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IA
AAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,SAAkB,KAAA,UACvC,CAAU,MAAA,EAAG,IAAK,EAAW
,KAAA,OAGb,KAAA,YAEtC,MAAA,CACP,CAAW,OAAA,WAAoB,KAAA,UAAmB,KAAA,UACID,CAAW,
OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GACIE,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,Y
ACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAAW,CAC5C,OAAA,oBACF,KAAA,mBACA,KAAA,W
ACQ,aAAA,IAEIB,CACY,OAAA,mBACF,KAAA,gBACA,KAAA,OACQ,cAAA,GAEIB,CACY,OAAA,cACF,K
AAA,aACA,KAAA,SACQ,aAAA,QAEIB,CACY,OAAA,YACF,KAAA,YACA,KAAA,WACQ,aAAA,CAAC,EA
AG,EAAG,EAAG,IAE5B,CACY,OAAA,YACF,KAAA,WACA,KAAA,WACQ,aAAA,IAEIB,CACY,OAAA,UAC
F,KAAA,UACA,KAAA,SACQ,aAAA,MAEIB,CACY,OAAA,kBACF,KAAA,iBACA,KAAA,YAIId,CACc,SAAA,
sBACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,
KAAA,SAAkB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,cAAuB,KAAA,aAErC,MAAA,CACP,CAAW,OA
AA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAAW,CAC5C,O

AAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,GAEIB,CACY,OAAA,oBACF,KAAA,mBACA,KAAA,WACQ,a
AAA,IAEIB,CACY,OAAA,YACF,KAAA,YACA,KAAA,WACQ,cAAA,KAItB,CACc,SAAA,kBACA,SAAA,cA
CF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EAAW,KAAA,SAAkB,
KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAm
B,KAAA,MAAe,KAAA,UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SACQ,aAAA,QAEIB,CACY,OAA
A,oBACF,KAAA,mBACA,KAAA,WACQ,aAAA,IAEIB,CAAW,OAAA,YAAqB,KAAA,YAAqB,KAAA,cAGzD,
CACc,SAAA,wBACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,CAAU
,MAAA,EAAW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,
YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SAC
Q,aAAA,QAEIB,CACY,OAAA,oBACF,KAAA,mBACA,KAAA,WACQ,aAAA,IAEIB,CAAW,OAAA,YAAqB,K
AAA,YAAqB,KAAA,cAGzD,CACc,SAAA,6BACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,I
AAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,SAAkB,KAAA,UACvC,CAAU,MAAA,EAAG,IAAK,EAAW
,KAAA,OAAgB,KAAA,YAEtC,MAAA,CACP,CAAW,OAAA,WAAoB,KAAA,UAAmB,KAAA,UACID,CAAW,
OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GACIE,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,Y
ACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAAW,CAC5C,OAAA,cACF,KAAA,aACA,KAAA,SACQ
,aAAA,QAEIB,CACY,OAAA,YACF,KAAA,YACA,KAAA,WACQ,aAAA,CAAC,EAAG,EAAG,EAAG,IAE5B,
CACY,OAAA,YACF,KAAA,WACA,KAAA,WACQ,aAAA,IAEIB,CACY,OAAA,oBACF,KAAA,mBACA,KAA
A,WACQ,aAAA,MAItB,CACc,SAAA,SACA,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,K
AAA,UACIC,CAAU,MAAA,EAAW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,UAAmB,KA
AA,UAAmB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,UAAW,CAC5C,OAAA,cACF,KAA
A,aACA,KAAA,SACQ,aAAA,QAEIB,CAAW,OAAA,YAAqB,KAAA,YAAqB,KAAA,cAGzD,CACc,SAAA,aAC
A,SAAA,cACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAA
A,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,YACjD,CAAW,OAA
A,QAAiB,KAAA,YAAqB,KAAA,YACjD,CAAW,OAAA,UAAmB,KAAA,MAAe,KAAA,aAxV5C,QAAA,KAA
A;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EAAMB,CAC
9B,CACc,SAAA,OACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,YACtC,CA
AU,MAAA,EAAW,KAAA,QAAiB,KAAA,WAE/B,MAAA,CAAC,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,
WAErD,CACc,SAAA,WACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACt
C,CAAU,MAAA,EAAW,KAAA,OAAgB,KAAA,UACrC,CAAU,MAAA,EAAW,KAAA,MAAe,KAAA,WAE7B,
MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,SACA,SAAA,
WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,UAAmB,KAAA,UACxC,CAAU,MAAA,EAAW,KAAA,QA
AiB,KAAA,UACtC,CAAU,MAAA,EAAW,KAAA,UAAmB,KAAA,SAA0B,aAAA,GACIE,CAAU,MAAA,EA
AW,KAAA,WAAoB,KAAA,SAA0B,aAAA,IAE5D,MAAA,CACP,CACY,OAAA,OACF,KAAA,OACA,KAAA,SA
CQ,cAAA,GAEIB,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,OACA,SA
AA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,aAE/B,MAAA,CAAC,CAAW,OAAA,I
AAa,KAAA,QAAiB,KAAA,WAErD,CACc,SAAA,WACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,
KAAA,IAAa,KAAA,WAE3B,MAAA,CAAC,CAAW,OAAA,QAAiB,KAAA,QAAiB,KAAA,WAEzD,CACc,SAA
A,gBACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,aAE/B,MAAA,CACP,CA
CY,OAAA,SACF,KAAA,SACA,KAAA,SACQ,aAAA,GAEIB,CACY,OAAA,SACF,KAAA,SACA,KAAA,SACQ,
aAAA,GAEIB,CAAW,OAAA,QAAiB,KAAA,QAAiB,KAAA,SAC7C,CAAW,OAAA,OAAgB,KAAA,OAAgB,K
AAA,SAA0B,aAAA,GAAI,CAC7D,OAAA,QACF,KAAA,QACA,KAAA,SACQ,aAAA,EACA,cAAA,GAEIB,CA
AW,OAAA,IAAa,KAAA,IAAa,KAAA,SAA0B,cAAA,KAGnE,CACc,SAAA,QACA,SAAA,WACF,OAAA,CAC
R,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EAAW,KAAA,OAAgB,KAAA,UACrC,
CAAU,MAAA,EAAW,KAAA,OAAgB,KAAA,SAA0B,aAAA,IAExD,MAAA,CAAC,CAAW,OAAA,OAAgB,KA
AA,QAAiB,KAAA,WAExD,CACc,SAAA,kBACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,
QAAiB,KAAA,aAE/B,MAAA,CACP,CACY,OAAA,QACF,KAAA,OACA,KAAA,SACQ,aAAA,GAEIB,CACY,
OAAA,SACF,KAAA,SACA,KAAA,SACQ,aAAA,GAEIB,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAAA,UAA
W,CACIC,OAAA,QACF,KAAA,QACA,KAAA,SACQ,aAAA,EACA,cAAA,GAEIB,CAAW,OAAA,QAAiB,KA

AA,QAAiB,KAAA,SAC7C,CAAW,OAAA,IAAa,KAAA,IAAa,KAAA,SAA0B,cAAA,KAGnE,CACc,SAAA,QA
CA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,aAE/B,MAAA,CAAC,CAAW,O
AAA,IAAa,KAAA,QAAiB,KAAA,WAErD,CACc,SAAA,YACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,E
AAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CAAC,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,WAErD,CACc,
SAAA,cACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CAAU,MAA
A,EAAW,KAAA,aAAsB,KAAA,WAEpC,MAAA,CACP,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAAA,UAC3C
,CAAW,OAAA,QAAiB,KAAA,QAAiB,KAAA,UAC7C,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,SACzC,CA
AW,OAAA,eAAwB,KAAA,eAAwB,KAAA,YA1J1D,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,
CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EAAMb,CAC9B,CACc,SAAA,sBACA,SAAA,UACF,OAA
A,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,U
ACvC,CAAU,MAAA,EAAW,KAAA,gBAayB,KAAA,UAC9C,CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,Y
AGjD,CACc,SAAA,sBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,
CAAU,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,gBAayB,KAAA,UAC9C,
CAAU,MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,EAAW,KAAA,iBAA0B,KAAA,YAGnD,
CACc,SAAA,sBACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,CAAU
,MAAA,EAAW,KAAA,SAakB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,gBAayB,KAAA,UAC9C,CAAU,
MAAA,EAAW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,EAAW,KAAA,iBAA0B,KAAA,WAExC,MAAA,
CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,cACF,KAAA,YACA,
KAAA,QACQ,cAAA,GAEIB,CACY,OAAA,yBACF,KAAA,qBACA,KAAA,UId,CACc,SAAA,sBACA,SAAA,
UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EAAW,KAAA,SAA
kB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,gBAayB,KAAA,UAC9C,CAAU,MAAA,EAAW,KAAA,eAA
wB,KAAA,UAC7C,CAAU,MAAA,EAAW,KAAA,iBAA0B,KAAA,UAC/C,CAAU,MAAA,EAAW,KAAA,eAAw
B,KAAA,YAGjD,CACc,SAAA,QACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,YAAqB,KA
AA,WAEnC,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,W
ACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,K
AAA,IAAa,KAAA,WAE3B,MAAA,CAAC,CACE,OAAA,IACF,KAAA,QACA,KAAA,QACQ,cAAA,MA/Ef,QA
AA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EA
AmB,CAC9B,CACc,SAAA,SACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UAC
IC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CAAC,CAAW,OAAA,SAakB,KAAA,SAakB,K
AAA,UAE3D,CACc,SAAA,SACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,YA
GtC,CACc,SAAA,WACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAA
U,MAAA,EAAW,KAAA,OAAgB,KAAA,aAtBpC,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,C
AAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EAAMb,CAC9B,CACc,SAAA,yBACA,SAAA,QACF,OAAA,
CACR,CAAU,MAAA,EAAW,KAAA,UAAmB,KAAA,WAEjC,MAAA,CACP,CAAW,OAAA,QAAiB,KAAA,QA
AiB,KAAA,SAC7C,CAAW,OAAA,QAAiB,KAAA,QAAiB,KAAA,WAGjD,CACc,SAAA,cACA,SAAA,QACH,
MAAA,CACP,CAAW,OAAA,QAAiB,KAAA,QAAiB,KAAA,SAC7C,CAAW,OAAA,QAAiB,KAAA,QAAiB,KA
AA,WAGjD,CAAa,SAAA,QAAqB,SAAA,SAAU,CAC9B,SAAA,WACA,SAAA,QACF,OAAA,CAAC,CAAU,M
AAA,EAAW,KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,YACA,SAAA,QACF,OAAA,CAAC,CAAU,MAAA,EA
AU,IAAA,EAAW,KAAA,IAAa,KAAA,aAEzD,CACc,SAAA,WACA,SAAA,QACF,OAAA,CAAC,CAAU,MAA
A,EAAW,KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,OACA,SAAA,QACF,OAAA,CAAC,CAAU,MAAA,EAAW,
KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,OACA,SAAA,QACF,OAAA,CAAC,CAAU,MAAA,EAAW,KAAA,IA
Aa,KAAA,YAE/C,CACc,SAAA,QACA,SAAA,QACF,OAAA,CAAC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA
,YAE/C,CACc,SAAA,SACA,SAAA,QACF,OAAA,CAAC,CAAU,MAAA,EAU,IAAA,EAAW,KAAA,IAAa,KA
AA,aAEzD,CACc,SAAA,QACA,SAAA,QACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACI
C,CAAU,MAAA,EAAW,KAAA,OAAgB,KAAA,YAE9B,MAAA,CACP,CAAW,OAAA,UAAmB,KAAA,UAAm
B,KAAA,UAAW,CACHD,OAAA,UACF,KAAA,SACA,KAAA,SACQ,cAAA,GAEIB,CACY,OAAA,YACF,KAA
A,YACA,KAAA,SACQ,aAAA,KAItB,CAAa,SAAA,OAAoB,SAAA,QAAmB,OAAA,IAAK,CAC3C,SAAA,eAC
A,SAAA,QACF,OAAA,CAAC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,0BACA,SAAA

,QACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,MAAe ,KAAA,MAAe,KAAA,UACzC,CAAW,OAAA,MAAe,KAAA,MAAe,KAAA,aA1FxC,QAAA,KAAA;;ACDA,aA AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EAAMB,CAC9B,CACc,SA AA,YACA,SAAA,aACF,OAAA,GACD,MAAA,CACP,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,UACxD,C ACY,OAAA,wBACF,KAAA,qBACA,KAAA,QAEV,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,SACpD,C AAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,WAG5D,CACc,SAAA,cACA,SAAA,aACF,OAAA,GACD,MAAA,C ACP,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,UACxD,CACY,OAAA,wBACF,KAAA,qBACA,KAAA,QAE V,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,SACpD,CAAW,OAAA,cAAuB,KAAA,aAAsB,KAAA,WAG5 D,CACc,SAAA,oBACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,cAAuB,KAAA,UAC5C,CA AU,MAAA,EA AW,KAAA,OAAGB,KAAA,UACrC,CAAU,MAAA,EA AW,KAAA,SAakB,KAAA,WAEhC,MA AA,CACP,CAAW,OAAA,MAAe,KAAA,MAAe,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,OACF,KAAA,O ACA,KAAA,QACQ,cAAA,KAItB,CACc,SAAA,sBACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KA AA,cAAuB,KAAA,UAC5C,CAAU,MAAA,EA AW,KAAA,OAAGB,KAAA,UACrC,CAAU,MAAA,EA AW,KAA A,SAakB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,MAAe,KAAA,MAAe,KAAA,QAAyB,cAAA,GAAO,C AC7D,OAAA,OACF,KAAA,OACA,KAAA,QACQ,cAAA,KAItB,CACc,SAAA,kBACA,SAAA,aACF,OAAA,CA CR,CAAU,MAAA,EA AW,KAAA,cAAuB,KAAA,UAC5C,CAAU,MAAA,EA AW,KAAA,OAAGB,KAAA,UACr C,CAAU,MAAA,EA AW,KAAA,eAAwB,KAAA,WAEtC,MAAA,CACP,CAAW,OAAA,MAAe,KAAA,MAAe,K AAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,OACF,KAAA,OACA,KAAA,QACQ,cAAA,KAItB,CACc,SAAA,oB ACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,cAAuB,KAAA,UAC5C,CAAU,MAAA,EA AW, KAAA,OAAGB,KAAA,UACrC,CAAU,MAAA,EA AW,KAAA,eAAwB,KAAA,WAEtC,MAAA,CACP,CAAW,O AAA,MAAe,KAAA,MAAe,KAAA,QAAyB,cAAA,GAAO,CAC7D,OAAA,OACF,KAAA,OACA,KAAA,QACQ,c AAA,MA/FjB,QAAA,KAAA;;ACCA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,E AAA,MAAM,EAAMB,CAC9B,CACc,SAAA,iBACA,SAAA,QACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA ,SAakB,KAAA,UACvC,CAAU,MAAA,EA AW,KAAA,OAAGB,KAAA,aAE9B,MAAA,CACP,CAAW,OAAA,g BAAyB,KAAA,eAAwB,KAAA,QAAS,CACzD,OAAA,qBACF,KAAA,mBACA,KAAA,QAEV,CAAW,OAAA,I AAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,wBACA,SAAA,QACF,OAAA,CACR,CAAU, MAAA,EA AW,KAAA,SAakB,KAAA,UACvC,CAAU,MAAA,EA AW,KAAA,OAAGB,KAAA,aAE9B,MAAA,C ACP,CAAW,OAAA,gBAAyB,KAAA,eAAwB,KAAA,QAAS,CACzD,OAAA,qBACF,KAAA,mBACA,KAAA,Q AEV,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,gBACA,SAAA,QACF,O AAA,CACR,CAAU,MAAA,EA AW,KAAA,QAAiB,KAAA,UACtC,CAAU,MAAA,EA AW,KAAA,QAAiB,KAA A,UACtC,CAAU,MAAA,EA AW,KAAA,SAakB,KAAA,UACvC,CAAU,MAAA,EA AW,KAAA,WAAoB,KAAA ,aAEIC,MAAA,CACP,CAAW,OAAA,SAakB,KAAA,SAakB,KAAA,UAAW,CAC9C,OAAA,sBACF,KAAA,qB ACA,KAAA,aA9CT,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UA AA,EAAA,MAAM,EAAMB,CAC9B,CACc,SAAA,QACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,K AAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,I AAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,WACA,SAAA,UACF,OAAA,CACR,CAAU,M AAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,C AAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,UACA,SAAA,UACF,OAAA,C ACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B, MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,eACA,SAAA,U ACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,IAAa,KA AA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE,CACc,SAAA,O ACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,K AAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB,cAAA,KAGtE, CACc,SAAA,YACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,M AAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,KAAA,QAAyB, cAAA,KAGtE,CACc,SAAA,aACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UA CIC,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAAiB,K

AAA,QAAYB,cAAA,KAGtE,CACc,SAAA,aACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAaiB,KAAA,QAAYB,cAAA,KAGtE,CACc,SA
AA,YACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA
AW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CAAW,OAAA,IAAa,KAAA,QAaiB,KAAA,QAAYB,cAAA,K
AGtE,CACc,SAAA,SACA,SAAA,UACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,YAAqB,KAAA,UACIC,
CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAA
A,CACP,CAAW,OAAA,IAAa,KAAA,QAaiB,KAAA,QAAYB,cAAA,KAGtE,CACc,SAAA,WACA,SAAA,UACF
,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,YAAqB,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KAA
A,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CAAC,CACE,OAAA,IACF,KAAA,QAC
A,KAAA,QACQ,cAAA,MA3Hf,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA
,QAAA,UAAA,EAAA,MAAM,EAAMB,CAC9B,CACc,SAAA,eACA,SAAA,WACF,OAAA,CACR,CAAU,MAA
A,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA
G,IAAK,EAAW,KAAA,OAAGB,KAAA,YAEtC,MAAA,CACP,CAAW,OAAA,WAAoB,KAAA,UAAmB,KAAA,
UAAW,CACjD,OAAA,YACF,KAAA,WACA,KAAA,WACQ,aAAA,IAEIB,CACY,OAAA,UACF,KAAA,UACA,
KAAA,SACQ,aAAA,MAEIB,CACY,OAAA,cACF,KAAA,aACA,KAAA,OACQ,cAAA,GAEIB,CACY,OAAA,cA
CF,KAAA,aACA,KAAA,OACQ,cAAA,GAEIB,CAAW,OAAA,IAAa,KAAA,QAaiB,KAAA,QAAYB,cAAA,KA
GtE,CACc,SAAA,SACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAA
U,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CACY,OAAA,cACF,KAAA,aACA,KAAA,OAC
Q,cAAA,GAEIB,CACY,OAAA,cACF,KAAA,aACA,KAAA,OACQ,cAAA,GAEIB,CAAW,OAAA,IAAa,KAAA,
QAaiB,KAAA,QAAYB,cAAA,KAGtE,CACc,SAAA,cACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,
KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CACY,OAAA,
QACF,KAAA,aACA,KAAA,OACQ,cAAA,GAEIB,CACY,OAAA,QACF,KAAA,aACA,KAAA,OACQ,cAAA,GA
EIB,CAAW,OAAA,IAAa,KAAA,QAaiB,KAAA,QAAYB,cAAA,KAGtE,CACc,SAAA,gBACA,SAAA,WACF,O
AAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,W
AE3B,MAAA,CACP,CACY,OAAA,QACF,KAAA,aACA,KAAA,OACQ,cAAA,GAEIB,CACY,OAAA,QACF,K
AAA,aACA,KAAA,OACQ,cAAA,GAEIB,CAAW,OAAA,IAAa,KAAA,QAaiB,KAAA,QAAYB,cAAA,KAGtE,C
ACc,SAAA,YACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MA
AA,EAAW,KAAA,OAAGB,KAAA,AAE9B,MAAA,CAAC,CACE,OAAA,IACF,KAAA,QACA,KAAA,QACQ,cA
AA,MArHf,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAA
A,MAAM,EAAMB,CAC9B,CACc,SAAA,iBACA,SAAA,gBACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,I
AAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,QAaiB,KAAA,UACtC,CAAU,MAAA,EAAW,KAAA,SAAk
B,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,OAAGB,KAAA,UACrC,CAAU,MAAA,EAAW,KAAA,WAAoB
,KAAA,WAEIC,MAAA,CACP,CACY,OAAA,UACF,KAAA,UACA,KAAA,SACQ,aAAA,MAEIB,CACY,OAAA
,cACF,KAAA,aACA,KAAA,SACQ,cAAA,KAItB,CACc,SAAA,mBACA,SAAA,gBACF,OAAA,CACR,CAAU,M
AAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,QAaiB,KAAA,UACtC,CAAU,MAAA,
EAAW,KAAA,SAAkB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,OAAGB,KAAA,UACrC,CAAU,MAAA,E
AAW,KAAA,WAAoB,KAAA,WAEIC,MAAA,CACP,CACY,OAAA,UACF,KAAA,UACA,KAAA,SACQ,aAAA,
MAEIB,CACY,OAAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,KAItB,CACc,SAAA,mBACA,SAAA,gBACF,O
AAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAAW,KAAA,QAaiB,KAAA,
UACtC,CAAU,MAAA,EAAW,KAAA,SAAkB,KAAA,UACvC,CAAU,MAAA,EAAW,KAAA,OAAGB,KAAA,U
ACrC,CAAU,MAAA,EAAW,KAAA,WAAoB,KAAA,WAEIC,MAAA,CACP,CACY,OAAA,UACF,KAAA,UAC
A,KAAA,SACQ,aAAA,MAEIB,CACY,OAAA,cACF,KAAA,aACA,KAAA,SACQ,cAAA,KAItB,CACc,SAAA,M
ACA,SAAA,gBACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CACY,
OAAA,eACF,KAAA,SACA,KAAA,SACQ,aAAA,GAEIB,CAAW,OAAA,OAAGB,KAAA,OAAGB,KAAA,SAAO
B,aAAA,GACrE,CACY,OAAA,QACF,KAAA,QACA,KAAA,SACQ,aAAA,GAEIB,CACY,OAAA,OACF,KAAA,
OACA,KAAA,SACQ,aAAA,MAItB,CACc,SAAA,UACA,SAAA,gBACF,OAAA,CAAC,CAAU,MAAA,EAAW,
KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,aACA,SAAA,gBACF,OAAA,CAAC,CAAU,MAAA,EAAW,KAAA,I
AAa,KAAA,YAE/C,CACc,SAAA,gBACA,SAAA,gBACF,OAAA,CACR,CAAU,MAAA,EAAW,KAAA,gBAAYB

,KAAA,UAC9C,CAAU,MAAA,EA AW,KAAA,cAAuB,KAAA,YAC5C,CAAU,MAAA,EA AW,KAAA,eAAwB,KAAA,UAC7C,CAAU,MAAA,EA AW,KAAA,eAAwB,KAAA,WA EtC,MAAA,CAAC,CACE,OAAA,mBACF,KAAA,kBACA,KAAA,OACQ,cAAA,EACA,cAAA,MAhIf,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EA AmB,CAC9B,CACc,SAAA,WACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,UACrC,CAAU,MAAA,EA AW,KAAA,UAAmB,KAAA,YAG5C,CACc,SAAA,gBACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,UACrC,CAAU,MAAA,EA AW,KAAA,UAAmB,KAAA,WAGtC,MAAA,CAAC,CAAW,OAAA,gBAAyB,KAAA,eAAwB,KAAA,UAEhE,CACc,SAAA,MACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,OACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,MACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,MACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,MACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,MACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,MACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,SACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,SACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,aAE9B,MAAA,CAAC,CAAW,OAAA,YAAqB,KAAA,WAAoB,KAAA,UAEhE,CACc,SAAA,SACA,SAAA,YACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,WAE9B,MAAA,CACP,CAAW,OAAA,YAAqB,KAAA,YAAqB,KAAA,QACrD,CAAW,OAAA,UAAmB,KAAA,UAAmB,KAAA,WA7GhD,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAAA,MAAM,EA AmB,CAC9B,CACc,SAAA,WACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AU,KAAC,EA AW,KAAA,UAAmB,KAAA,WACnD,CAAU,OAAC,EA AW,KAAA,OAAgB,KAAA,WAGpC,MAAA,CAAC,CAAW,OAAA,IAAa,KAAA,IAAa,KAAA,SAA0B,aAAA,KA EtE,CACc,SAAA,SACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AU,IAAA,EA AW,KAAA,UAAmB,KAAA,WACID,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,WAE9B,MAAA,CAAC,CAAW,OAAA,IAAa,KAAA,IAAa,KAAA,SAA0B,aAAA,KAG3E,CACc,SAAA,WACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,UAAmB,KAAA,UACxC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,SAA0B,aAAA,IA ExD,MAAA,CAAC,CACE,OAAA,aACF,KAAA,YACA,KAAA,SACQ,aAAA,KAGpB,CACc,SAAA,SACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,UAAmB,KAAA,WAEjC,MAAA,CAAC,CACE,OAAA,mBACF,KAAA,kBACA,KAAA,OACQ,cAAA,KAGpB,CACc,SAAA,UACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,YAGzC,CACc,SAAA,YACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,cAGzC,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,QAAiB,KAAA,YACtC,CAAU,MAAA,EA AW,KAAA,OAAgB,KAAA,cAGzC,CACc,SAAA,eACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EA AW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA AW,KAAA,QAAiB,KAAA,YACtC,CAAU,MAAA,EA AW,KAAA,MAAe,KAAA,YACpC,CAAU,MAAA,EA AW,KAAA,UAAmB,KAAA,aAEjC,MAAA,CACP,CACY,OAAA,aACF,KAAA,YACA,KAAA,SACQ,aAAA,GAEIB,CACY,OAAA,WACF,KAAA,UACA,KAAA,SACQ,aAAA,GAEIB,CACY,OAAA,gBACF,KAAA,cACA,KAAA,SACQ,aAAA,GAEIB,CACY,OAAA,gBACF,KAAA,eACA,KAAA,SACQ,aAAA

A,GAEIB,CACY,OAAA,mBACF,KAAA,iBACA,KAAA,SACQ,aAAA,KAItB,CACc,SAAA,OACA,SAAA,aACF,
OAAA,CACR,CAAU,MAAA,EAU,IAAA,EAUW,KAAA,UAAmB,KAAA,YAE3C,MAAA,CACP,CAAW,OAA
A,OAAgB,KAAA,OAAgB,KAAA,SAA0B,aAAA,KAGzE,CACc,SAAA,SACA,SAAA,aACF,OAAA,CACR,CAA
U,MAAA,EAUW,KAAA,SAAkB,KAAA,WAEhC,MAAA,CACP,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAAA
,SAA0B,aAAA,GAAl,CAC7D,OAAA,MACF,KAAA,MACA,KAAA,SACQ,aAAA,EACA,cAAA,KAItB,CACc,S
AAA,OACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EA
AUW,KAAA,OAAgB,KAAA,cAGzC,CACc,SAAA,QACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAUW,KA
AA,OAAgB,KAAA,SAA0B,aAAA,GAC/D,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,WAE3B,MAAA,CAAC,
CACE,OAAA,YACF,KAAA,kBACA,KAAA,SACQ,aAAA,KAGpB,CACc,SAAA,SACA,SAAA,aACF,OAAA,C
ACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,kBAA2B,KAAA,YACH
D,CAAU,MAAA,EAUW,KAAA,OAAgB,KAAA,SAA0B,aAAA,KAGnE,CACc,SAAA,YACA,SAAA,aACF,OA
AA,CACR,CAAU,MAAA,EAUW,KAAA,UAAmB,KAAA,UACx,C,CAAU,MAAA,EAUW,KAAA,SAAkB,KAA
A,UACvC,CAAU,MAAA,EAUW,KAAA,QAAiB,KAAA,cAG1C,CACc,SAAA,WACA,SAAA,aACF,OAAA,CA
CR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,UAAmB,KAAA,YAG5C,
CACc,SAAA,gBACA,SAAA,aACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,gBAAyB,KAAA,UAC9C,CAA
U,MAAA,EAUW,KAAA,cAAuB,KAAA,YAC5C,CAAU,MAAA,EAUW,KAAA,eAAwB,KAAA,UAC7C,CAAU,
MAAA,EAUW,KAAA,eAAwB,KAAA,WAEtC,MAAA,CAAC,CACE,OAAA,mBACF,KAAA,kBACA,KAAA,O
ACQ,cAAA,EACA,cAAA,MA7Mf,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IA
AA,QAAA,UAAA,EAAA,MAAM,EAAMB,CAC9B,CACc,SAAA,MACA,SAAA,WACF,OAAA,CAAC,CAAU,
MAAA,EAUW,KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,OACA,SAAA,WACF,OAAA,CAAC,CAAU,MAAA,E
AAUW,KAAA,IAAa,KAAA,YAE/C,CACc,SAAA,OACA,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAUW,KA
AA,IAAa,KAAA,UAAW,CACIC,MAAA,EACD,KAAA,aACA,KAAA,SACQ,cAAA,KAItB,CACc,SAAA,QACA
,SAAA,WACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UAAW,CACIC,MAAA,EACD,KAAA
,aACA,KAAA,SACQ,cAAA,MA/BjB,QAAA,KAAA;;ACAA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,I
AAA,QAAA,UAAA,EAAA,MAAM,EAAMB,CAC9B,CACc,SAAA,OACA,SAAA,iBACF,OAAA,CACR,CAAU,
MAAA,EAUW,KAAA,IAAa,KAAA,WAE3B,MAAA,CACP,CACY,OAAA,OACF,KAAA,SACA,KAAA,QACQ,
cAAA,GAEIB,CAAW,OAAA,OAAgB,KAAA,QAAiB,KAAA,WAGhD,CACc,SAAA,aACA,SAAA,iBACF,OAA
A,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,OAAgB,KAAA,YA
GzC,CACc,SAAA,YACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UACIC,CA
AU,MAAA,EAUW,KAAA,UAAmB,KAAA,aAEjC,MAAA,CAAC,CAAW,OAAA,OAAgB,KAAA,OAAgB,KAA
A,YAEvD,CACc,SAAA,MACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,UACI
C,CAAU,MAAA,EAUW,KAAA,UAAmB,KAAA,aAEjC,MAAA,CAAC,CACE,OAAA,iBACF,KAAA,gBACA,K
AAA,SACQ,aAAA,KAGpB,CACc,SAAA,QACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IA
Aa,KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,UAAmB,KAAA,YAAa,CAC1C,MAAA,EACD,KAAA,gBACA
,KAAA,SACQ,aAAA,KAItB,CACc,SAAA,UACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,I
AAa,KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,QAAiB,KAAA,cAG1C,CACc,SAAA,UACA,SAAA,iBACF,
OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,WAE3B,MAAA,CAAC,CACE,OAAA,OACU,iBAAA
,eACZ,KAAA,OACA,KAAA,cAGZ,CACc,SAAA,iBACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,K
AAA,IAAa,KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,aAAsB,KAAA,YAC3C,CAAU,MAAA,EAUW,KAAA,
WAAoB,KAAA,cAG7C,CACc,SAAA,iBACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,
KAAA,UACIC,CAAU,MAAA,EAUW,KAAA,aAAsB,KAAA,YAC3C,CAAU,MAAA,EAUW,KAAA,QAAiB,KA
AA,cAG1C,CACc,SAAA,eACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,WAE
3B,MAAA,CACP,CAAW,OAAA,aAAsB,KAAA,YAAqB,KAAA,UActD,CAAW,OAAA,cAAuB,KAAA,aAAsB,
KAAA,YAG5D,CACc,SAAA,cACA,SAAA,iBACF,OAAA,CACR,CAAU,MAAA,EAUW,KAAA,IAAa,KAAA,U
ACIC,CAAU,MAAA,EAUW,KAAA,QAAiB,KAAA,aAE/B,MAAA,KAtHN,QAAA,KAAA;;;ACqjBN,IAAA,EA
AA,UAAA,GAAA,EAAA,QAAA,UAAA,OAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,aAA
A,EAAA,QAAA,iBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,aAAA,EAAA,QAAA,eAAA,EAAA,QAAA,gBAA
A,EAAA,QAAA,aAAA,EAAA,QAAA,cAAA,EAAA,QAAA,mBAAA,EAAA,QAAA,sBAAA,EAAA,QAAA,oBA

AA,EAAA,QAAA,qBAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,yBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA
,qBAAA,EAvjBD,IAAA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,wBACA,EAAA,Q
AAA,qBACA,EAAA,EAAA,QAAA,yBACA,EAAA,EAAA,QAAA,yBACA,EAAA,EAAA,QAAA,sBACA,EAAA
,EAAA,QAAA,0BACA,EAAA,EAAA,QAAA,uBACA,EAAA,EAAA,QAAA,sBACA,EAAA,EAAA,QAAA,yBA
CA,EAAA,EAAA,QAAA,oBACA,EAAA,EAAA,QAAA,yBACA,EAAA,EAAA,QAAA,oBACA,EAAA,EAAA,Q
AAA,sBACA,EAAA,EAAA,QAAA,uBACA,EAAA,EAAA,QAAA,4BACA,EAAA,EAAA,QAAA,wBACA,EAA
A,EAAA,QAAA,yBACA,EAAA,EAAA,QAAA,uBACA,EAAA,EAAA,QAAA,6BAiiBC,SAAA,IAAA,GAAA,m
BAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,E
AAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GA
AA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAA
A,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,
EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,E
AAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA9
hBK,MAAO,EAMO,sBACT,OAAA,KAAC,YAAc,KAAC,UAAy,IAAI,MAIjD,cACQ,MAKA,EAA0B,GAAG,U
ALvB,CACV,EAAY,EAAW,EAAS,EAAa,EAAU,EACvD,EAAY,EAAS,EAAO,EAAO,EAAU,EAAe,EAC5D,EA
AW,EAAU,EAAGB,GAEU,IAAI,GAAM,EAAG,OAEzD,KAAA,UAAy,EAAY,OACzB,CAAC,EAAC,KACJ,EA
AI,EAAO,UAAy,EACbB,GAET,IAKN,eACI,EACA,EAAsC,IACIC,MAAA,EAAU,EAAM,KACbB,EAAuB,GA
CvB,EAAB,GACIB,EAAoB,GACpB,EAAQ,EAAQ,OAA8B,CAAC,EAAC,KACxD,EAAI,EAAC,MAAQ,KAA
K,QAAQ,GACIB,EAAC,GAAG,WAAW,eACrB,EAAa,KAAC,EAAI,EAAC,OACN,UAAZ,EAAC,GACd,EAAQ
,KAAC,EAAI,EAAC,OACC,MAAd,EAAC,OAAuC,IAAtB,EAAC,MAAM,QACIC,EAAU,KAAC,EAAI,EAAC,
OAEbB,GACN,IAEC,IAAA,EAAbB,GACf,MAAA,EAAB,GACpB,IAAA,EAAS,C,GAC9C,EAA+C,GACIC,MA
Ab,IACF,EAAqB,KAAC,oBAAoB,EAAU,QACxD,EAASB,KAAC,oBAAoB,EAAU,UAErD,MAAA,EAAW,OA
AO,KAAC,GAC7B,EAAS,QAAQ,IACI,MAAA,EAAO,EAAM,GACnB,EAAC,WAAW,QAAQ,IACbB,MAAC,I
AAc,EAAoB,EAAA,qBAAA,GACzC,EAAC,OAAO,KAAC,EAAM,IACvB,EAAM,GAAU,SAAS,KAAC,OAMc,
IAA5C,OAAO,KAAC,GAAqB,OACnC,EAAS,QAAQ,IACI,MAAA,EAAO,EAAM,GACU,IAAZB,EAAC,SAAS,
QACbB,EAAQ,KAAC,KAIjB,OAAO,KAAC,GAAqB,QAAQ,IACjC,MAAC,IAAc,EAAoB,EAAA,qBAAA,GAC
nC,EAAO,EAAM,GACP,MAAR,IACF,EAAC,aAAe,EAAoB,GACxC,EAAQ,KAAC,MAKf,OAAO,KAAC,GAA
oB,OAAS,EAC3C,OAAO,KAAC,GAAoB,QAAQ,IACbB,MAAC,IAAc,EAAoB,EAAA,qBAAA,GACnC,EAAO,
EAAM,GACf,IACF,EAAC,aAAe,EAAMB,GACvC,EAAO,KAAC,MAIhB,EAAS,EAGP,IAAA,EAAY,GACK,M
AAjB,EAAM,SAA6C,MAA1B,EAAM,QAAQ,WACzC,EAAY,EAAM,QAAQ,SAAS,OAAO,CAAC,EAAW,KAC
pD,EAAU,EAAC,UAAU,MAAQ,KAAC,YAAy,GAC3C,GACN,KAGC,MAAA,EACF,CAAC,MAAA,EAAO,O
AAA,EAAQ,QAAA,EAAS,QAAA,EAAS,aAAA,EAAC,UAAA,EAAW,UAAA,GAMxD,OAJH,EAAU,OAAS,IA
CrB,EAAO,UAAy,GAGd,EAGD,oBAAoB,GACnB,OAAA,OAAO,KAAC,GAAW,IACzB,OAAgC,CAAC,EA
AM,KACiC,EAAC,EAAQ,GAAM,MAAQ,EACpB,GACN,IAGD,QAAQ,GAGR,MAAA,GACF,EAAGB,EAAA,iB
AAA,EAAC,KAAO,KAAC,UAAU,EAAC,KAAO,GACIC,MAAb,EAAC,OACP,EAAC,KAAO,IAGR,MAAA,E
AAGB,CACpB,KAAM,EAAC,KACX,GAAL,EAAC,GACT,SAAU,EAAO,SACjB,YACK,EAAC,OACL,IAAI,IA
AI,GAAS,EAAM,WAAW,KAAO,EAAM,OAAO,GAAC,GACbE,OAAQ,GACR,SAAU,GACV,YAAa,GACb,WA
AY,GACZ,SAAU,EAAC,MAuIV,OApIc,MAAjB,EAAO,SACT,EAAQ,YACJ,EAAO,OAAO,OACV,CAAC,EA
AK,KACJ,EAAI,EAAM,MAAQ,CACbB,KAAM,EAAM,KACZ,gBAAiB,EAAM,MACvB,cAAe,EAAM,KAeHb,G
AET,KAEU,MAAhB,EAAO,QACT,EAAQ,WACJ,EAAO,MAAM,OAAoC,CAAC,EAAC,KAC/C,MAAA,EAAO,
EAAM,KACf,IAAA,OAAQ,EACJ,OAAA,EAAM,MACP,IAAA,cAIW,KAHd,EAAQ,EACJ,EAAC,KAAM,EA
AM,OAAQ,EAAM,gBAEN,EAAM,mBACjC,EAAQ,EACJ,EAAC,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,I
AAA,gBAIW,KAHd,EAAQ,EACJ,EAAC,KAAM,EAAM,OAAQ,EAAM,gBAEN,EAAM,mBACjC,EAAQ,EACJ,
EAAC,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,cAIW,KAHd,EAAQ,EACJ,EAAC,KAAM,EAAM,O
ACbB,EAAM,cAAgB,KACE,EAAM,mBACjC,EAAQ,EACJ,EAAC,KAAM,EAAM,iBACjB,EAAM,eAEZ,MAC
G,IAAA,gBAGW,KAFd,EAAQ,EACJ,EAAC,KAAM,EAAM,OAAQ,EAAM,gBACN,EAAM,mBACjC,EAAQ,E
ACJ,EAAC,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,YAGW,KAFd,EAAQ,EACJ,EAAC,KAAM,EA
AM,OAAQ,EAAM,gBACN,EAAM,mBACjC,EAAQ,EACJ,EAAC,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,

IAAA,cAGW,KAFd,EAAQ,EACJ,EAAK,KAAM,EAAM,OAAQ,EAAM,gBACN,EAAM,mBACjC,EAAQ,EACJ,
EAAK,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,aAGW,KAFd,EAAQ,EACJ,EAAK,KAAM,EAAM,O
AAQ,EAAM,gBACN,EAAM,mBACjC,EAAQ,EACJ,EAAK,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA
,eAGW,KAFd,EAAQ,EACJ,EAAK,KAAM,EAAM,OAAQ,EAAM,gBACN,EAAM,mBACjC,EAAQ,EACJ,EAA
K,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,aAGW,KAFd,EAAQ,EACJ,EAAK,KAAM,EAAM,OAAQ
,EAAM,gBACN,EAAM,mBACjC,EAAQ,EACJ,EAAK,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,eAG
W,KAFd,EAAQ,EACJ,EAAK,KAAM,EAAM,OAAQ,EAAM,gBACN,EAAM,mBACjC,EAAQ,EACJ,EAAK,KA
AM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,YAGW,KAFd,EAAQ,EACJ,EAAK,KAAM,EAAM,OAAQ,EA
AM,gBACN,EAAM,mBACjC,EAAQ,EACJ,EAAK,KAAM,EAAM,iBACjB,EAAM,eAEZ,MACG,IAAA,SACA,I
AAA,UACH,MACF,QACQ,MAAA,IAAI,iCACqB,EAAM,gBAAgB,EAAK,MAGvD,OADP,EAAI,EAAM,MAA
Q,CAAC,MAAA,EAAO,KAAA,GACnB,GACN,KAEF,EAID,YAAY,GACZ,MAAA,EAAU,EAAY,QAETB,EAA
kB,GACpB,IAAA,EAA+B,GACpB,MAAX,IACF,EAAQ,EAAQ,OAA8B,CAAC,EAAK,KACID,EAAI,EAAK,M
AAQ,KAAK,QAAQ,GACd,UAAZ,EAAK,IACP,EAAQ,KAAK,EAAI,EAAK,OAEjB,GACN,KAEC,MAAA,EAA
iB,GACjB,EAAkB,GAExB,EAAY,UAAU,SAAS,QAAQ,IAC/B,MAAC,IAAc,EAAoB,EAAA,qBAAA,EAAI,MA
CvC,EAAa,CACjB,KAAM,EACN,GAAI,cACJ,OAAQ,GACR,WAA Y,GACZ,SAAU,QACV,YAAa,GACb,WAA
Y,CAAC,MAAO,CAAC,MAAO,EAAGB,EAAI,MAAO,KAAM,UAC7D,SAAU,IAEZ,EAAK,aAAe,EAAI,KACx
B,EAAO,KAAK,GACZ,EAAM,GAAY,IAGH,OAAO,KAAK,GACpB,QAAQ,IACT,MAAA,EAAO,EAAM,GACn
B,EAAK,WAAW,QAAQ,IACHB,MAAC,IAAc,EAAoB,EAAA,qBAAA,GACzC,EAAK,OAAO,KAAK,EAAM,IA
CvB,EAAM,GAU,SAAS,KAAK,OAI5B,MAAA,EAAGB,EAAY,IAEIC,EAAY,UAAU,UAAU,QAAQ,IACHC,M
AAC,EAAU,IAAS,EAAoB,EAAA,qBAAA,EAAC,EAAO,OAC7D,EAAO,EAAM,GACP,MAAR,IACF,EAAK,cA
AgB,EACrB,EAAQ,KAAK,MAIX,MAAA,EAAY,KAAK,mBAAmB,GACnC,MAAA,CAAC,MAAA,EAAO,OA
AA,EAAQ,QAAA,EAAS,QAAA,EAAS,aAtDZ,GAsD0B,UAAA,GAGjD,mBAAmB,GAElB,MAAA,CACL,WAA
Y,EAAY,UAAU,KACIC,OAAQ,EAAY,UAAU,SAAS,OACnC,CAAC,EAAK,KACJ,EAAI,EAAI,MAAQ,KAAK,
mBAAmB,GACjC,GAET,IACJ,QAAS,EAAY,UAAU,UAAU,OACrC,CAAC,EAAK,KACJ,EAAI,EAAI,MAAQ,
KAAK,mBAAmB,EAAK,EAAY,KACID,GAET,KAIA,mBACJ,EACA,GACE,IAAA,EAAO,EAAI,KAIR,OAHQ,
MAAX,IACF,EAAO,EAAQ,IAEV,CAAC,KAAA,EAAM,MAAO,EAAI,OAIvB,SAAU,EAAa,GACrB,MAAA,G
AAS,EAAM,EAAA,OAAA,OACjB,QAAuB,IAAhB,EAAO,KACT,OAAA,EAAO,KAAK,GACd,QAAsB,IAAX,E
ACT,OAAA,IAAI,EAAO,EAAM,UAAU,WAE5B,MAAA,IAAI,MACN,oFAKF,SAAU,EAAiB,EAAC,GACvC,M
AAA,EACF,MAAM,QAAQ,GAAC,OAAO,aAAa,MAAM,KAAM,GAAC,EAAa,GACIE,OAAA,EAAW,EAAQ,E
AAM,cAG5B,SAAU,EACZ,EAA+C,EAAC,EAC7D,GAAW,GACP,MAAA,EAAQ,EAAM,GACHB,OAAS,MAAT
,EACK,EAAiB,EAAM,EAAG,GAE5B,EAGH,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EAAM,GACb
,OAAA,EAAQ,EAAM,EAAI,EAGrB,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EAAM,IAAS,GACvB,
EACY,MAAd,EAAK,EAAGB,EAAK,EAAB,MAAd,EAAK,EAAGB,EAAK,EAAQ,EACjE,MAAiB,iBAAV,EAA
sB,EAAQ,SAAS,EAAO,IAGzD,SAAU,EAAGB,GAKtB,OAJe,iBAAX,IAEV,EAAQ,EAAW,SAAS,IAETB,GACD,
KAAA,EAAW,SAAS,SACHB,MAAA,UACJ,KAAA,EAAW,SAAS,SACpB,KAAA,EAAW,SAAS,SACpB,KAAA
,EAAW,SAAS,QACpB,KAAA,EAAW,SAAS,SACHB,MAAA,QACJ,KAAA,EAAW,SAAS,QACHB,MAAA,OAC
J,KAAA,EAAW,SAAS,UACHB,MAAA,UACJ,KAAA,EAAW,SAAS,UACHB,MAAA,SACT,QAGS,OAAA,MAI
P,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EAAM,GACHB,OAAA,GAAS,EAAM,KACV,EAAM,KA
AK,KAEB,EAGH,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EAAM,GACHB,OAAA,GAAS,EAAM,KA
CV,EAAGB,EAAM,MAExB,EAGH,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EAAM,GACHB,OAAA,
GAAS,EAAM,MAAQ,EAAM,KAAK,KAC7B,EAAM,KAAK,KAAK,IAAI,GAAC,EAAGB,IAE3C,EAGH,SAAU
,EAAsB,GAehC,IAAA,EAAM,YAGN,OAAa,MAAb,EAAM,IACD,EAAM,IAAI,IACb,GACyB,iBAAb,EAAI,KA
AqB,EAAI,KAAO,SAAS,EAAI,KAAM,KAIE,GAGH,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EA
M,GACHB,OAAA,GAAS,EAAM,MACV,EAAsB,EAAM,OAE9B,EAGH,SAAU,EACZ,EAA+C,EAC/C,GACI,M
AAA,EAAQ,EAAM,GACHB,OAAA,IACO,EAAM,KAAK,GAAC,EAAM,KAAK,EAAC,OAAS,EAAM,KAAK,E
ACX,EAAM,KAAK,IACID,IACH,IAAI,GAAMB,iBAAN,EAAB,EAAI,SAAS,EAAG,KAEnD,EAGH,SAAU,EA
CZ,EAA+C,EAAC,EAC7D,GAAW,GACP,MAAA,EAAQ,EAAM,GACHB,OAAA,GAAS,EAAM,MAAQ,EAAM,
KAAK,EAC7B,EAAM,KAAK,EAAC,IAAK,GACHB,EAAiB,EAAG,IAGxB,EAGH,SAAU,EACZ,EAA+C,EAC/

C,GACI,MAAA,EAAQ,EAAM,GAChB,OAAA,GAAS,EAAM,MAAQ,EAAM,KAAK,MAC7B,EAAM,KAAK,M
AAM,IAAK,GACpB,EAA sB,IAG1B,EAGH,SAAU,EACZ,EAA+C,EAC/C,GACI,MAAA,EAAQ,EAAM,GAChB,
OAAA,GAAS,EAAM,MAAQ,EAAM,KAAK,EAC7B,EAAM,KAAK,EAEB,EACR,QAAA,gBAAA;;AC5iByB,aA
AA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAP1B,IAAA,EAAA,QAAA,sBACA,EA
AA,QAAA,uBAMM,MAAO,EAGX,YACY,EAAoB,EACpB,GADA,KAAA,KAAA,EAAoB,KAAA,UAAA,EACp
B,KAAA,QAAA,EAJI,KAAA,OAAmB,GACnB,KAAA,MAAoC,GAI7C,KAAA,OAAS,EAAC,WAAW,IAAI,GA
AQ,KAAK,SAAS,IACnB,MAAjB,EAAC,WACF,KAAA,MAAQ,OAAO,KAAK,EAAC,UACZ,OAAO,CAAC,EA
AmC,KAC1C,EAAM,GAAO,KAAK,QAAQ,GACnB,GACN,KAQhB,SAAS,GACR,OAAA,EAAU,EAAA,WAA
A,EAAM,KAAK,UAAW,KAAK,SAOtC,QAAQ,EAAC,GACtB,MAAA,EAAQ,KAAK,KAAK,SAAS,GAC7B,GA
AgB,MAAhB,EAAM,OACD,OAAA,EAAU,EAAA,WAAA,EAAM,KAAK,UAAW,KAAK,SAE1C,GAAW,MAA
X,EAAM,GAAwB,MAAX,EAAM,EACpB,OAAA,EAAC,EAAA,gBAAA,KAAK,KAAK,SAAU,EAAM,GAE9C,
GAAW,MAAX,EAAM,EACD,OAAA,EAAC,EAAA,gBAAA,KAAK,KAAK,SAAU,EAAM,GAE9C,GAAW,MA
AX,EAAM,EACD,OAAA,EAAC,EAAA,cAAA,KAAK,KAAK,SAAU,EAAM,GAE5C,GAAE,MAAf,EAAM,MAC
D,OAAA,EACH,EAAA,qBAAA,KAAK,KAAK,SAAU,EAAM,GAE5B,GAAc,MAAd,EAAM,KACD,OAAA,EA
Ac,EAAA,eAAA,KAAK,KAAK,SAAU,EAAM,GAE7C,GAAc,MAAd,EAAM,KAAc,CACIB,GAAgB,MAAhB,E
AAM,KAAK,GAA6B,MAAhB,EAAM,KAAK,EAC9B,OAAA,EACH,EAAA,sBAAA,KAAK,KAAK,SAAU,EA
AM,GAE5B,GAAgB,MAAhB,EAAM,KAAK,EACN,OAAA,EACH,EAAA,qBAAA,KAAK,KAAK,SAAU,EAAM,
GAE5B,GAAoB,MAApB,EAAM,KAAK,MACN,OAAA,EACH,EAAA,0BAAA,KAAK,KAAK,SAAU,EAAM,G
AE5B,GAAgB,MAAhB,EAAM,KAAK,EACN,OAAA,EACH,EAAA,mBAAA,KAAK,KAAK,SAAU,EAAM,GA
E5B,GAAmB,MAAnB,EAAM,KAAK,KACN,OAAA,EACH,EAAA,oBAAA,KAAK,KAAK,SAAU,EAAM,GAI3
B,OAAA,GAXeE,QAAA,cAAA;;ACN1B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,IAAA,EAAA,
QAAA,SAAA,OAAA,KAAA,GAAA,QAAA,SAAA,GAAA,YAAA,GAAA,eAAA,GAAA,OAAA,eAAA,QAAA,E
AAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA;;AC2EO,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,O
AAA,IAAA,QAAA,SAAA,QAAA,eAAA,EA9EP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WAwEO,
SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,
GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,G
AAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IA
A,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EA
A,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAA
A,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,
IAAA,EAAA,GAAA,EAteA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,OAAA,EAAC,IACN,IAAA,UACA,IA
A,QACA,IAAA,MACI,MAAA,CAAC,EAAM,KACT,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACrC,EAAC,E
AAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,eAAA,UAA
W,EAAM,EAAW,KAe3C,IAAA,WACA,IAAA,MACI,MAAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,
EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,MACI,MAAA,CAAC,EAAM,K
ACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IA
A,UACA,IAAA,MACI,MAAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,E
AAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,WACI,MAAA,CAAC,EAAM,UACV,EAAC,EAAA,eAAA,IA
K,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,WACI,MAAA,CAAC,EAAM
,UACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IA
AA,MACI,MAAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,
IAAK,EAAM,EAAW,KAErC,IAAA,UACI,MAAA,CAAC,EAAM,SACV,EAAC,EAAA,eAAA,IAAK,EAAM,EA
AW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,UACI,MAAA,CAAC,EAAM,SACV,EAAC
,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,MACI,M
AAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EA
M,EAAW,KAErC,IAAA,oBACI,MAAA,CAAC,EAAM,mBACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IAC
pC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAe1C,QACQ,MAAA,uBAAuB,EAAC,2BAIrC,QAAA,UAAA,E
AAA,MAAM,EAAW,aAAjB,QAAA,SAAA;;ACKfA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,Q

AAA,SAAA,QAAA,eAAA,EAhKP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WA0JO,SAAA,IAAA,G
AAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,S
AAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IA
AA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAA
A,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAA
A,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA
,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,G
AAA,EAxJA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,OAAA,EAAK,IACN,IAAA,MACA,IAAA,aACI,MAA
A,CAAC,EAAM,KACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,OACI,MAAA,CAAC,EAAM,
MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EA
AA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,
EAAM,EAAW,KACrC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,K
ACrC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,QA
CI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,IAAK,
EAAM,EAAW,KACrC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,K
ACrC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,UA
CI,MAAA,CAAC,EAAM,SACV,EAAc,EAAA,eAAA,OAAQ,EAAM,EAAW,IACvC,EAAc,EAAA,eAAA,OAAQ
,EAAM,EAAW,KACxC,IAAA,MACI,MAAA,CAAC,EAAM,KACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,
KACrC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,M
ACI,MAAA,CAAC,EAAM,KACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,MACI,MAAA,CAA
C,EAAM,KACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,MACI,MAAA,CAAC,EAAM,KACV,
EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eA
AA,IAAK,EAAM,EAAW,KAErC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM
,EAAW,KACrC,IAAA,MACI,MAAA,CAAC,EAAM,KACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,I
AAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAA
A,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,MACI,MAAA,CAAC,EAAM,
KACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,aACI,MAAA,CAAC,EAAM,YACV,EAAc,EA
AA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,
EAAM,EAAW,KACrC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,K
ACrC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OAC
I,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,UACI,MAAA,CAAC,
EAAM,SACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,MACI,MAAA,CAAC,EAAM,KACV,E
AAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAA
A,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,
EAAW,KAErC,IAAA,WACI,MAAA,CAAC,EAAM,UACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,I
AAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,SACI,MAA
A,CAAC,EAAM,QACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,
MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,MACI,MAAA,CAAC,EAAM,KACV,EAAc,EA
AA,eAAA,IAAK,EAAM,EAAW,KACrC,IAAA,cACI,MAAA,CAAC,EAAM,aACV,EAAc,EAAA,eAAA,IAAK,E
AAM,EAAW,IACpC,EAAc,EAAA,eAAA,eAAgB,EAAM,EAAW,IAC/C,EAAc,EAAA,eAAA,eAAgB,EAAM,EA
AW,KAEdH,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KACrC,IAA
A,QACI,MAAA,CAAC,EAAM,OACV,EAU,EA,AAA,WAAA,EA,AAK,WAAW,GA,AAI,EA,AW,KACIC,IAAA,OAC
I,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,OAAQ,E
AAM,EAAW,KACx,IAAA,YACI,MAAA,CAAC,EAAM,WACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IA
CpC,EAAc,EAAA,eAAA,QAAS,EAAM,EAAW,KACzC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EA
A,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,QAAS,EAAM,EAAW,KAC9C,QACQ,MAAA,uBAA
uB,EA,AAK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,aAAjB,QAAA,SAAA;;ACnEn,aAAA,OAAA,eAAA,Q
AAA,aAAA,CAAA,OAAA,IAAA,QAAA,oCAAA,EAAA,QAAA,iBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,

kBAAA,EAzFD,IAAA,EAAA,QAAA,yBASM,SAAU,EACZ,EAAyB,EACzB,EAAqB,IAEnB,GAakB,iBAAX,G
AAyC,iBAAX,EAARc,CAGC,EAAA,KAAA,OACD,EAAO,SAAW,EAAO,OACzB,IAAM,aAAgC,SAAc,gBACn
D,IAAA,IAAI,EAAl,EAAG,EAAl,EAAO,OAAQ,IAAK,CACHc,MAAA,EAAO,EAAO,GACd,EAAO,EAAO,GA
Cf,EAAA,KAAA,OACD,EAAO,GAak,EAAO,GAak,IAAS,EACjC,IACI,aAAgC,SAAc,kBAIpD,SAAU,EAaiB
,GAC3B,MAAwB,iBAajB,IAA6B,EAAa,KAAK,GAAO,EAAM,GAYnE,SAAU,EACZ,EAAmC,EACnC,GACE,I
AAA,EAae,EAakB,EAakB,GACjD,MAAA,GAAuB,EAaiB,GAC1C,GAAA,GAA0C,IAAnB,EAAQ,OAC3B,M
AAA,IAAI,MACN,wFACyC,KAO3C,GALA,GACF,EAAQ,QAAQ,IACd,EAae,EAakB,EAAO,MAAO,MAG9C,
EAaiB,GACd,MAAA,IAAI,yCAAyC,KAe9C,OAAA,EAGH,SAAU,EACZ,EAAgC,GAe9B,GAAyB,iBAaIB,EA
CF,OAAA,EAEL,GAAyB,iBAaIB,EACF,OAAA,EAGL,GAAA,EAac,SAAW,EAac,OACnC,MAAA,IAAI,0CA
A0C,SACHd,KAGA,MAAA,EAAMB,GACpB,IAAA,IAAI,EAAl,EAAG,EAAl,EAac,SAAU,EAAG,CACvC,MA
AA,EAao,EAac,GACrB,EAAO,EAac,GACvB,GAAA,GAAQ,GAak,GAAQ,GAak,IAAS,EAC/B,MAAA,IAA
I,0CAA0C,SACHd,KAEN,EAAO,GAak,GAAQ,EAAl,EAAO,EAe1B,OAAA;;AChFe,aAAA,OAAA,eAAA,QA
AA,aAAA,CAAA,OAAA,IAAA,QAAA,iBAAA,EAdxB,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,kBAYM,M
AAO,EAIX,YACa,EAauB,EAyB,EACjD,EAaiC,EACHc,EAA+B,GAF/B,KAAA,KAAA,EAuB,KAAA,MAA
A,EAyB,KAAA,QAAA,EACjD,KAAA,aAAA,EAiC,KAAA,uBAAA,EACHc,KAAA,YAAA,EAA+B,KAAA,e
AAA,EAncC,KAAA,QAA6B,GAC7B,KAAA,SAAU,EAMX,KAAA,UAAW,EAAO,EAAA,QAAA,IACIB,EA
A,EAAA,MAAA,KAAK,UAGR,SACK,OAAA,KAAK,SAAS,GAGnB,aACK,OAAA,KAAK,QAMd,cAAc,GACP,
KAAA,QAAQ,QAAQ,IACJ,MAAX,GAAoB,EAAQ,IAAI,EAAO,OAAO,KACHd,EAAO,OAAO,YAGb,KAAA,Q
AAU,GACV,KAAA,SAAU,EACV,KAAA,SAAS,UAGhB,OACS,OAAA,KAAK,QAAQ,OAotB,KAAK,GACC,G
AAA,KAAK,QACD,MAAA,IAAI,qBAaqB,KAAK,iCAGIC,GAAA,EAAQ,GAak,GAAS,KAAK,OACvB,MAA
A,IAAI,kCAakC,yBACxC,KAAK,UAGL,MAAA,EAakB,KAAK,QAAQ,GACjC,GAAA,EAAGB,QACZ,MAAA,
IAAI,qBACS,KAAK,8BACHb,wDACJ,oDAQC,OALH,KAAK,iBACP,EAAGB,SAAU,GAG5B,EAAGB,MAAO,E
ACHb,EAAGB,OAMzB,SAAS,GACA,OAAA,EAAG,IAAI,GAAS,KAAK,KAAK,IAQxC,MAAM,EAae,GACf,G
AAA,KAAK,QACD,MAAA,IAAI,qBAaqB,KAAK,iCAGIC,GAAA,EAAQ,IAAM,KAAK,aAAe,GAAS,KAAK,Q
AC5C,MAAA,IAAI,iCACN,+CAAmD,KAAK,WAGxD,MAAA,EAAl,KAAK,QAAQ,IAAU,GAe7B,GAAA,EA
AO,QAAU,KAAK,MACIB,MAAA,IAAI,qBACN,KAAK,8CAA8C,4CAEnD,EAAO,mCAAmC,KAAK,UAcjD,G
AVgB,IAAhB,KAAK,QACiB,MAArB,KAAK,cAAqD,IAA7B,KAAK,aAAa,SAC7C,KAAA,aAAe,EAAO,QAIzB,
EAAA,EAAA,qCAAA,KAAK,aAAc,EAAO,qBACX,KAAK,8CACHb,MAEJ,EAAE,KACE,MAAA,IAAI,qBACS,
KAAK,8CACHb,wCAGN,GAAA,EAAE,QACE,MAAA,IAAI,qBACS,KAAK,8CACHb,2CAGV,EAAE,OAAS,G
ACN,EAAA,EAAA,MAAA,GACL,EAAE,SAAU,EAEP,KAAA,QAAQ,GAAS,EAMxB,UAAU,EAAMB,GACvB,
GAAA,EAAQ,SAAW,EAAQ,OACvB,MAAA,IAAI,qBACS,KAAK,qEAehB,EAAQ,2CACR,EAAQ,WAGiB,EA
AQ,QAAQ,CAAC,EAAG,IAAU,KAAK,MAAM,EAAG,EAAQ,KAWtD,OAAO,EAaoB,GACrB,GAAE,GAAS,I
AAU,KAAK,MACTb,MAAA,IAAI,8BACN,KAAK,oCAaoC,KAG3C,GAAC,EAMH,EAU,EAAQ,MAAM,EA
AG,KAAK,YANpB,CACZ,EAU,GACL,IAAA,IAAI,EAAl,EAAG,EAAl,KAAK,OAAQ,IAC/B,EAAQ,KAAK,
GAMb,GAAMb,IAAnB,EAAQ,OACH,OAAA,EAAO,EAAA,QAAA,GAAl,CAAC,GAAG,OAAO,KAAK,eAK9
B,MAAA,EAU,KAAK,SAAS,GAKvB,OAFH,EAAA,EAAA,qCAAA,KAAK,aAAc,EAAQ,GAAG,MAAO,iCA
EIC,EAAM,EAAA,OAAA,EAAS,GAMxB,OAAO,GACD,GAAE,GAAS,IAAU,KAAK,MACTb,MAAA,IAAI,8B
ACN,KAAK,oCAaoC,KAG3C,GAAGB,IAAhB,KAAK,OACA,OAAA,EAAO,EAAA,QAAA,GAAl,CAAC,GA
G,OAAO,KAAK,eAG9B,MAAA,EAU,GACX,IAAA,IAAI,EAAl,EAAG,EAAl,KAAK,OAAQ,IAC/B,EAAQ,K
AAK,GAGT,MAAA,EAU,KAAK,SAAS,GAOvB,OAJH,EAAA,EAAA,qCAAA,KAAK,aAAc,EAAQ,GAAG,y
DAE1B,KAAK,wCAAwC,EAAQ,GAAG,WAEzD,EAAO,EAAA,QAAA,EAAS,GASzB,QAAQ,EAAMB,GACrB,
GAAA,EAAO,QAAU,KAAK,MACIB,MAAA,IAAI,8BACN,KAAK,8BAA8B,EAAO,SAG5C,GAAA,EAAQ,SA
AW,EAAO,MAAM,GAC5B,MAAA,IAAI,4DACN,EAAQ,cAAc,EAAO,MAAM,MAGnC,MAAA,EAAW,KAAK,
OAAO,GAezB,IAAC,KAAK,aAAe,GAAY,KAAK,QACIC,MAAA,IAAI,yCAC6B,UAAiB,KAAK,YAG1D,KAA
A,UAAU,GAAS,EAAQ,EAAA,SAAA,EAAQ,IAS1C,MAAM,EAakB,GACIB,GAAA,EAAO,QAAU,KAAK,MA
CIB,MAAA,IAAI,8BACN,KAAK,8BAA8B,EAAO,SAE5C,IAAA,EAac,EACZ,MAAA,EAaoB,EAAO,IAAI,GA
CnC,GAae,GAlb,GAAA,IAAGB,EAAO,MAAM,GACzB,MAAA,IAAI,2GAEN,6BAAuC,EAAO,SAGhD,IAAC,
KAAK,aAAe,EAAO,SAAW,KAAK,QACxC,MAAA,IAAI,iEAef,KAAK,eAAe,EAAO,YAC/B,+DAGA,MAAA,

EAAgC,IAAhB,EAAoB,EAAI,EAAO,KAAO,EACtD,EAAoB,IACrB,EAAA,EAAA,MAAA,KACH,GAAS,EAAQ,EAAA,SAAA,EAAQ,CAAC,EAAG,EAAa,IACrC,IAAA,IAAI,EAAI,EAAG,EAAI,EAAO,SAAU,EAAG,CACHC,MACA,EAAU,CAAC,EDa,IAAN,EAAW,EAAI,EAakB,EAAI,GACzB,GAC9B,EAAQ,CAAC,EAAG,EAAO,GAAl,GAC7B,EAAQ,IAAK,EAAQ,EAAA,UAAA,EAAM,EAAA,OAAA,EAAQ,EAAS,GAAQ,KAAK,cAEpD,OAAA,IAEH,MAAA,EAAU,GACX,IAAA,IAAI,EAAI,EAAG,EAAI,EAAO,OAAQ,IACjC,EAAQ,GAAK,EAEV,KAAA,UAAU,EAAS,IAIRJ,QAAA,YAAA;;AC0XvB,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,WAAA,EAAA,QAAA,QAAA,EAAA,QAAA,QAAA,EAAA,QAAA,MAAA,EAAA,QAAA,gBAAA,EAxYD,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,kBAiBM,MAAO,EAgBX,YACa,EAA4B,EAC5B,EAAwB,GAAiB,GADzC,KAAA,QAAA,EAA4B,KAAA,aAAA,EAC5B,KAAA,aAAA,EACI,MAAX,GACF,EAAQ,QAAQ,IACV,GAAA,IAAiB,EAAO,MACpB,MAAA,IAAI,yCACN,wBAAmC,EAAO,UAG5C,EAAA,EAAA,qCAAA,EAAC,EAAO,MAAO,gCAE3B,EAAA,EAAA,MAAA,KAGJ,KAAA,UAAW,EAAO,EAAA,QAAA,GACIB,KAAA,eAAiB,GACjB,EAAA,EAAA,MAAA,KAAK,UA7BR,SACK,OAAA,KAAK,SAAS,GakCvB,OACS,OAAA,IAAI,EACP,IAAI,KAAK,SAAU,KAAK,aAAc,KAAK,cAMjD,cAAc,GACP,KAAA,QAAQ,QAAQ,IACJ,MAAX,GAAoB,EAAQ,IAAI,EAAO,KACzC,EAAO,YAGN,KAAA,QAAQ,OAAS,EACjB,KAAA,SAAS,UAKhB,OACS,OAAA,KAAK,QAAQ,OAuTb,MAAM,EAAwB,EAAwB,GAAC,GAe9D,GAAA,IAAiB,KAAK,aACIB,MAAA,IAAI,yCACN,wBAAmC,KAAK,gBAE1C,IAAiB,IAAjB,GAASB,KAAK,QAAQ,SAAW,EAC1C,MAAA,IAAI,wCACN,kCACa,KAAK,QAAQ,qBAGf,EAAA,EAAA,qCAAA,EAAC,KAAK,aAAc,+BAC/B,MAAA,GACF,EAakB,EAAA,mBAAA,KAAK,aAAc,KAAK,QAAS,GACHD,OAAA,EAak,EAAA,MAAA,KACJ,MAAA,EACF,KAAK,QAAQ,IAAI,IAAU,EAAQ,EAAA,SAAA,EAAQ,IACxC,OAAA,EAAM,EAAA,OAAA,EAAiB,KASIC,QAAQ,EAAwB,GACIB,GAAA,IAAiB,KAAK,aACIB,MAAA,IAAI,yCACN,wBAAmC,KAAK,gBAG1C,GAAgB,IAAhB,KAAK,OACD,MAAA,IAAI,MAAM,qCAEZ,MAAA,GACF,EAakB,EAAA,mBAAA,KAAK,aAAc,KAAK,QAAS,GACjD,EAAS,KAAK,QAAQ,MAKrB,OFH,EAAA,EAAA,qCAAA,EAAO,MAAO,EAAC,gCAEzB,EAAQ,EAAA,SAAa,EAAQ,GAozB,SAAS,GACH,GAAA,EAAO,QAau,KAAK,aACIB,MAAA,IAAI,yCACN,EAAO,4BAA4B,KAAK,gBAM1C,IAFA,EAAA,EAAA,qCAAA,EAAO,MAAO,KAAK,aAAc,+BAEjC,KAAK,iBAAmB,KAAK,OACzB,MAAA,IAAI,MAAM,6CAEb,EAAA,EAAA,MAAA,GACA,KAAA,QAAQ,KAAK,GAOpB,OAAO,GACD,GAAA,EAAO,EACH,MAAA,IAAI,gEACoD,KAG5D,IAAyB,IAAzB,KAAK,gBAAyB,EAAO,KAAK,eACtC,MAAA,IAAI,qCACN,8BAAiC,KAAK,mBAEvC,KAAA,QAAQ,OAAS,EASxB,QAAQ,EAASB,EAAwB,GAehD,GAAa,IAAiB,KAAK,aACIB,MAAA,IAAI,yCACN,wBAAmC,KAAK,gBAE1C,GAAA,EAae,GAak,EAae,KAAK,QAAQ,OAC5C,MAAA,IAAI,kCACN,oBAA+B,KAAK,QAAQ,oBAG9C,GAA8B,MAA9B,KAAK,QAAQ,GACT,MAAA,IAAI,0BAA0B,eAIIC,EAAA,EAAA,qCAAA,KAAK,QAAQ,GAAc,MAAO,EACIC,+BACE,MAAA,GACF,EAakB,EAAA,mBAAA,KAAK,aAAc,KAAK,QAAS,GACHD,OAAA,EAAQ,EAAA,SAAA,KAAK,QAAQ,GAae,GAQ7C,QAAQ,EAASB,GACxB,GAAA,EAAO,QAau,KAAK,aACIB,MAAA,IAAI,yCACN,EAAO,4BAA4B,KAAK,gBAG1C,GAAA,EAae,IACU,IAAzB,KAAK,gBAAyB,GAAgB,KAAK,eAC/C,MAAA,IAAI,+BACN,wBAAmC,KAAK,6BAI1C,EAAA,EAAA,qCAAA,KAAK,aAAc,EAAO,MAAO,gCACHC,EAAA,EAAA,MAAA,GACA,KAAA,QAAQ,GAAgB,EAU/B,OAAO,EAAMB,EAAwB,GAe5C,GAAA,IAAiB,KAAK,aACIB,MAAA,IAAI,yCACN,wBAAmC,KAAK,iBAI1C,EAAA,EAAA,qCAAA,KAAK,aAAc,EAAC,+BAIrC,EAAU,EAAQ,MAAM,EAAG,KAAK,QAC1B,MAAA,GACF,EAakB,EAAA,mBAAA,KAAK,aAAc,KAAK,QAAS,GACnD,OAAmB,IAAnB,EAAQ,QACH,EAAO,EAAA,QAAA,GAAl,CAAC,GAAG,OAAO,KAGxB,EAak,EAAA,MAAA,KACJ,MAAA,EACF,EAAQ,IAAI,IAAK,EAAQ,EAAA,SAAA,KAAK,QAAQ,GAAl,IACvC,OAAA,EAAM,EAAA,OAAA,EAAS,KAS1B,OAAO,EAAwB,GACzB,GAae,GAAGB,IAAiB,KAAK,aACpC,MAAA,IAAI,6BACN,KAAK,2CAa2C,MAIID,EAAA,EAAA,qCAAA,KAAK,aAAc,EAAC,+BAC/B,MAAA,GACF,EAakB,EAAA,mBAAA,KAAK,aAAc,KAAK,QAAS,GAEnD,OAAGB,IAAhB,KAAK,QACA,EAAO,EAAA,QAAA,GAAl,CAAC,GAAG,OAAO,KAExB,EAak,EAAA,MAAA,KACJ,MAAA,EAAU,KAAK,QAAQ,IAAI,IAAK,EAAQ,EAAA,SAAA,EAAG,IAc1C,OAAA,EAAO,EAAA,QAAA,EAAS,MAUvB,SAAU,EACZ,EAAGB,EAAwB,GACpC,MAAA,EAAQ,EAAO,MACjB,GAAA,EAAO,MAAM,OAAS,EACIB,MAAA,IAAI,0DAC8C,EAAO,SAE7D,GAAA,EAAO,QAau,EAcb,MAAA,IAAI,yCACN,EAAO,4BAA4B,KAEnC,MAAA,EAaqB,EAAO,MAAM,MAAM,IAE1C,EAAA,EAAA,qCAAA,EAAoB,EAAC,+BACHC,MAAA,GAAuB,EAAQ,EAAA,SAAA,GAC9B,OAAA,IAAI,EAaw,EAAY,EAAC,GAS5C,SAAU,EACZ,EAAwB,EAAwB,GAC3C,OAAA,IAAI,EAaw,GAAl,EAAC,EAAC,GAUID,SAAU,EA

CZ,EAAGB,EAAMB,EACnC,GACE,GAAA,EAAGQ,SAAW,EAAO,MAAM,GAC5B,MAAA,IAAI,4DACN,EAAGQ,
,cAAc,EAAO,MAAM,MAGnC,MAAA,EAAGW,KAAGK,OAAO,GAeZB,GAAGe,MAAf,IAAwC,IAAjB,GAASB,GA
AY,EACrD,MAAA,IAAI,yCAC6B,UAAiB,MAGpD,MAAA,EAAO,IAAI,EAAGW,GAAGI,EAAGc,EAAO,MAAO,G
ACtD,GAAU,EAAGQ,EAAA,SAAA,EAAGQ,GAIZB,OAHP,EAAGQ,QAAQ,CAAC,EAAO,KACtB,EAAGK,QAAQ,E
AAO,EAAGQ,MAEvB,EAUH,SAAU,EACZ,EAAGB,EAAGB,GAChC,IAAA,EAAGc,EACZ,MAAA,EAAGoB,EAAO,
IAAI,GACnC,GAAGe,GAIB,GAAA,IAAGB,EAAO,MAAM,GACzB,MAAA,IAAI,2GAeJ,6BAAuC,EAAO,SAGhD
,MAAA,EAAGuB,EAAO,MAAM,MAAM,GAC1C,GACF,EAAGB,EAAA,mBAAA,EAASB,GACtC,EAAGC,IAAh
B,EAAGoB,EAAGI,EAAO,KAAO,EACtD,GAAGoB,EAAGK,EAAA,MAAA,KACvB,MAAA,EAAGU,GAChB,GAAS,E
AAQ,EAAA,SAAA,EAAGQ,CAAC,EAAG,EAAGa,IACrC,IAAA,IAAI,EAAGI,EAAG,EAAGI,EAAO,SAAU,EAAG,C
AChC,MACA,EAAGU,CAAC,EADa,IAAN,EAAGW,EAAGI,EAAGB,EAAGI,GACzB,GAC9B,EAAGQ,CAAC,EAAG,E
AAO,GAAGI,GAC7B,EAAGQ,IAAGK,EACT,EAAA,UAAA,EAAM,EAAA,OAAA,EAAGQ,EAAS,GAAGQ,GAG9B,O
ADP,EAAO,UACA,IAGH,EAAO,IAAI,EAAGW,GAAGI,EAAGc,EAAO,MAAO,EAAGQ,QAe9D,IAAA,IAAI,EAAGI,E
AAG,EAAGI,EAAGQ,OAAQ,IAC1C,EAAGK,QAAQ,EAAG,EAAGQ,IAEnB,OAAA,EACR,QAAA,WAAA;;ACpCM,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,EApWP,IAAA,EAAA,QA
AA,yBAIA,EAAA,QAAA,+BACA,EAAA,QAAA,8BAGA,EAAA,QAAA,WAEQ,MAAM,EAAGqC,MAC9C,EA
AY,EACZ,KACM,OAAA,EAAGK,IACN,IAAA,KACA,IAAA,cAAe,CACZ,MAAA,GACF,EAAGc,EAAA,eAAA,aAA
c,EAAM,EAAGW,GAC3C,GACF,EAAGc,EAAA,eAAA,aAAc,EAAM,EAAGW,GAC3C,GAAGO,EAAGc,EAAA,eAAA,
OAAQ,EAAM,EAAGW,GAC9C,GAAGO,EAAGc,EAAA,eAAA,OAAQ,EAAM,EAAGW,GAeHd,aADoB,EAAGK,QACf
,GACL,EAAGQ,YAAGY,GAAGU,qBACjC,EAAM,EAAGQ,eAAgB,EAAGQ,eAEnC,EAAGQ,YAAGY,GAAGU,qBACjC,EA
AM,EAAGQ,eAAgB,EAAGQ,eAGzC,IAAA,QACA,IAAA,iBAAGB,CACf,MAAA,GACF,EAAGc,EAAA,eAAA,OAA
Q,EAAM,EAAGW,GACrC,GACF,EAAGc,EAAA,eAAA,OAAQ,EAAM,EAAGW,GACrC,GAAGO,EAAGc,EAAA,eAAA
,OAAQ,EAAM,EAAGW,GAG9C,QACK,EAAGQ,YAAGY,GAAGU,qBACjC,EAAM,EAAGQ,eAAgB,EAAGQ,eACxC,EA
AS,EAAGK,IAAI,GAAGU,EAAO,IACrC,IAAA,QAAGB,EAAGW,GAAG,OAEPc,EAAGW,QAAQ,IACZ,EAAO,OAA
uC,IAA/B,EAAO,QAAQ,EAAO,KACxC,EAAO,YAIP,IAAA,EAAGmB,EAeHb,KAAA,EAAGU,IAAI,CAEB,MAA
A,EAAGa,EAIB,GAFN,QAAGe,EAAGQ,YAAGY,GAAGU,qBACzC,EAAGQ,EAAGQ,eAAgB,EAAGQ,gBACnB,IAAI,GAAGU
,EAAO,IAI9C,EAAGW,QAAQ,IACZ,EAAO,OAAuC,IAA/B,EAAO,QAAQ,EAAO,MACJ,IAAIC,EAAGU,QAAQ,E
AAO,KAC3B,EAAO,YAKL,MAAA,QACK,EAAGQ,YAAGY,GAAGU,qBACjC,EAAGQ,EAAGQ,eAAgB,EAAGQ,eACh
D,QAAGB,EAAGW,GAAG,OAeHc,EAAGW,QAAQ,IACZ,EAAO,OAAuC,IAA/B,EAAO,QAAQ,EAAO,MACJ,IA
AIC,EAAGU,QAAQ,EAAO,KAC3B,EAAO,YAIN,OAAA,EAeJ,IAAA,WAAAY,CACT,MAAA,GAAGO,EAAGc,EA
A,eAAA,OAAQ,EAAM,EAAGW,GAC7C,MAAA,EAAGc,EAAY,EAAA,aAAA,IAEjB,IAAA,SAAU,CACP,MAAA
,GAAGO,EAAGc,EAAA,eAAA,OAAQ,EAAM,EAAGW,GAChD,IAAA,GAAGO,EAAGc,EAAA,eAAA,OAAQ,EAAM,E
AAGW,GAK3C,OAjF,EAAGK,OACR,GAAGO,EAAY,EAAA,aAAA,WAGP,EAAGK,QAAQ,GAAGK,MAAGC,EAAGW,G
AAQ,CAAC,OAAM,GAExD,IAAA,QAAS,CACN,MAAA,EAAY,EAAGK,WAAW,KAC9B,QAAGD,KAAxC,EA
U,EAAA,WAAA,EAAM,EAAGW,IACnC,GAAA,EAAGW,CACP,MAAA,GAAGO,EAAGU,EAAA,WAAA,EAAGW,EA
AGW,GACtC,MAAA,EAAGc,EAAY,EAAA,aAAA,IAEf,OAeJ,IAAA,QAAS,CACN,MAAA,GACF,EAAGc,EAAA,e
AAA,YAAa,EAAM,EAAGW,GAC1C,GAAGO,EAAGc,EAAA,eAAA,SAAU,EAAM,EAAGW,GAe/C,OADP,EAAGQ,W
AAW,GACZ,EAAGc,EAAY,EAAA,aAAA,IAEjB,IAAA,OAAQ,CACL,MAAA,GAAGO,EAAGc,EAAA,eAAA,SA
U,EAAM,EAAGW,GAe/C,OADP,EAAGQ,YACD,EAAGc,EAAY,EAAA,aAAA,IAEjB,IAAA,gBAAiB,CACd,MAA
A,GAAGO,EAAGc,EAAA,eAAA,SAAU,EAAM,EAAGW,GAe/C,OADP,EAAGQ,gBACD,EAAGc,EAAY,EAAA,aAAA
,IAEjB,IAAA,gBAAiB,CACd,MAAA,GAAGO,EAAGc,EAAA,eAAA,OAAQ,EAAM,EAAGW,GAC9C,GACF,EAAGc,
EAAA,eAAA,QAAS,EAAM,EAAGW,GACtC,GACF,EAAGc,EAAA,eAAA,eAAgB,EAAM,EAAGW,GAC7C,GACF,
EAAGc,EAAA,eAAA,cAAe,EAAM,EAAGW,GAC5C,GACF,EAAGc,EAAA,eAAA,iBAAGB,EAAM,EAAGW,GAC/C,
GACF,EAAGc,EAAA,eAAA,yBAA0B,EAAM,EAAGW,GAeVd,GAAGO,EAAGc,EAAA,eAAA,OAAQ,EAAM,EAAGW
,GAC9C,EAAGc,IAAI,EAAGJ,YAChB,EAAM,EAAO,EAAM,EAAGc,EAAGwB,EACzD,GAEG,OADP,EAAGQ,eAAe,G
AChB,CAAC,EAAY,UAAU,EAAO,EAAA,QAAA,IAE1C,IAAA,qBAASB,CACnB,MAAA,GACF,EAAGc,EAAA,e
AAA,gBAAiB,EAAM,EAAGW,GAC9C,GAAGQ,EAAGc,EAAA,eAAA,QAAS,EAAM,EAAGW,GAChD,GACF,EAAGc,
EAAA,eAAA,SAAU,EAAM,EAAGW,GACvC,EAAGmB,EAAGQ,eAAe,EAAG,IAE5C,OADP,EAAGiB,MAAM,EAAGO
,GACvB,CAAC,EAAGiB,UAETB,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAGc,EAAA,eAAA,gBAAiB,EAAM,EA

AW,GAC9C,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GAERc,MAAA,CADiB,EAAQ,eAAe,EAAO,IAC
9B,KAAK,IAE1B,IAAA,sBAAuB,CACpB,MAAA,GACF,EAAC,EAAA,eAAA,gBAAiB,EAAM,EAAW,GAC9C,
GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,G
AErC,MAAA,CADmB,EAAQ,eAAe,EAAS,IAChC,OAAO,EAae,IAE7C,IAAA,uBAawB,CACrB,MAAA,GACF
,EAAC,EAAA,eAAA,gBAAiB,EAAM,EAAW,GAC9C,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACx
C,GACF,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,EAAqB,EAAQ,eAAe,EAAU,IAErD,OADP,EAAM
B,QAAQ,EAAGB,GACpC,CAAC,EAAMB,UAExB,IAAA,sBAAuB,CACpB,MAAA,GACF,EAAC,EAAA,eAAA,
gBAAiB,EAAM,EAAW,GAC9C,EAAoB,EAAQ,eAAe,EAAS,IACpD,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,
EAAW,GACrC,MAAA,CAAC,EAakB,OAAO,IAE9B,IAAA,qBAAsB,CACnB,MAAA,GACF,EAAC,EAAA,eAA
A,gBAAiB,EAAM,EAAW,GAC9C,GACF,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,GACF,EAAC,EA
AA,eAAA,UAAW,EAAM,EAAW,GACxC,EAAMB,EAAQ,eAAe,EAAQ,IAEjD,OADP,EAAiB,MAAM,EAAS,G
ACzB,CAAC,EAaiB,UAEtB,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAC,EAAA,eAAA,gBAAiB,EAAM,EA
AW,GAC9C,EAakB,EAAQ,eAAe,EAAO,IAC/C,MAAA,EAAC,EAAO,EAAA,QAAA,EAAGB,OAAQ,UAEpC,IA
AA,qBAAsB,CACnB,MAAA,GACF,EAAC,EAAA,eAAA,gBAAiB,EAAM,EAAW,GAC9C,EAAMB,EAAQ,eAA
e,EAAQ,IAEjD,OADP,EAAiB,gBACV,CAAC,EAaiB,UAEtB,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAC,EA
AA,eAAA,eAGB,EAAM,EAAW,GAC7C,GAAQ,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACHD,GACF,E
AAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,EAAa,EAAQ,cAAc,EAAS,IAE3C,OADP,EAAW,QAAQ,EA
AO,GACnB,CAAC,EAAW,UAEhB,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,E
AAW,GAC7C,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,eAGB,EA
AM,EAAW,GAe7C,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAe5C,MAAA,CADY,EAAQ,cAAc,EA
AS,IAC/B,QAAQ,EAAW,EAAC,IAEjD,IAAA,sBACA,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAC,EAAA,eAA
A,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,GACF,EAAC,EA
AA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,cAAe,EAAM,EAAW,GAC5C,GACF,EA
AQ,EAAA,SAAA,EAae,EAAGB,EAAC,GAElD,OADP,EAAQ,cAAc,GACf,CAAC,EAAW,UAEhB,IAAA,oBACA,
IAAA,kBAAMB,CACHB,MAAA,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EA
A,eAAA,eAGB,EAAM,EAAW,GAC/C,IAAA,EAGF,EADc,sBAAZ,EAak,GACY,cAEA,iBAGf,MAAA,GACF,
EAAC,EAAA,eAAA,EAakB,EAAM,EAAW,GAe/C,GAAa,EAAQ,EAAA,SAAA,EAAC,EAAC,GAehD,OADP,E
AAQ,cAAc,GACf,CAAC,EAAW,UAEhB,IAAA,mBAAoB,CACjB,MAAA,GACF,EAAC,EAAA,eAAA,eAGB,E
AAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,e
AGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAe5C,MAAA,CADY,EAAQ
,cAAc,EAAS,IAC/B,OAAO,EAae,EAAC,IAEpD,IAAA,kBAAMB,CACHB,MAAA,GACF,EAAC,EAAA,eAAA,e
AGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,e
AAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,cAAe,EAAM,EAAW,GAe3C,MAAA,CADY,E
AAQ,cAAc,EAAS,IAC/B,MAAM,EAAC,EAAC,IAEID,IAAA,uBAawB,CACrB,MAAA,GACF,EAAC,EAAA,eA
AA,SAAU,EAAM,EAAW,GACvC,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EA
AA,eAAA,eAGB,EAAM,EAAW,GAC7C,GAAa,EAAW,EAAA,YAAA,EAAQ,EAAC,GAe7C,OADP,EAAQ,cA
Ac,GACf,CAAC,EAAW,UAEhB,IAAA,mBAAoB,CACjB,MAAA,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,E
AAW,GAC7C,EAAa,EAAQ,cAAc,EAAS,IAC5C,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GA
CF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC5C,MAAA,CAAC,EAAW,OAAO,EAAa,IAEpC,IAAA,qBA
AsB,CACnB,MAAA,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,SA
AU,EAAM,EAAW,GACvC,EAAa,EAAQ,cAAc,EAAS,IAE3C,OADP,EAAW,SAAS,GACb,CAAC,EAAW,UAEh
B,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EA
AA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAe5C,MAAA,C
ADY,EAAQ,cAAc,EAAS,IAC/B,QAAQ,EAAC,IAEtC,IAAA,kBAAMB,CACHB,MAAA,GACF,EAAC,EAAA,eA
AA,SAAU,EAAM,EAAW,GACvC,GACF,EAAC,EAAA,eAAA,eAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EA
AA,eAAA,UAAW,EAAM,EAAW,GAExC,GAAa,EAAM,EAAA,OAAA,EAAa,EAAS,GAExC,OADP,EAAQ,cA
Ac,GACf,CAAC,EAAW,UAErB,QACQ,MAAA,uBAAuB,EAak,2BAIjC,QAAA,UAAA,EAAA,MAAM,EAAW,
UAAjB,QAAA,SAAA,;AC3DA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,

eAAA,EA vSP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WaISO,SAAA,IAAA,GAAA,mBAAA,QAA
A,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA
,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,E
AAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yB
AAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAA
A,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAA
A,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA/RP,SAAS,
EA CL,EAAY,EA A4B,GACpC,MAAC,EAAS,IACX,EA Ac,EAAA,eAAA,WAAY,EAAM,EA AW,GA EIC,EA Aw
B,YAAZ,EACZ,EA A6B,UAA nB,EACV,EA A0B,mBAAZ,EA Ed,GACD,EA Ac,EAAA,eAAA,UAAW,EAAM,EA
AW,GAC3C,GAAA,EA AW,CACT,GAAA,GAAuB,IAAZ,EACP,MAAA,IAAI,MACN,yGAGF,IAAC,GAAuB,IA
AZ,EACR,MAAA,IAAI,MACN,oFAIJ,GAAA,EACI,MAAA,IAAI,MACN,yEA EA,MAAA,GAAS,EA Ac,EAAA,e
AAA,UAAW,EAAM,EA AW,GACnD,GAAM,EA AW,EAAA,YAAA,EAAM,EA AW,GACIC,GACD,EA Ac,EA A
A,eAAA,aA Ac,EAAM,EA AW,GACzC,cACH,GACF,EA Ac,EAAA,eAAA,YAAa,EAAM,EA AW,IACzC,EAAS,I
ACZ,EA Ac,EAAA,eAAA,OAAQ,EAAM,EA AW,GA IpC,MAAA,CACL,OAAA,EACA,IAAA,EACA,WAAA,EA
CA,UAAA,EACA,QAAA,EACA,SAAA,EACA,eAAA,EACA,gBA VE,EA Ac,EAAA,eAAA,iBA AkB,EAAM,EA A
W,IA chD,MAAM,EA CT,CAAC,EAAY,EACZ,KACS,OAAA,EA AK,IACN,IAAA,SAAU,CACP,MAAA,GACF,E
A Ac,EAAA,eAAA,SAAU,EAAM,EA AW,GACvC,GAAM,EA Ac,EAAA,eAAA,MAAO,EAAM,EA AW,GAC5C,
GACD,EA Ac,EAAA,eAAA,aA Ac,EAAM,EA AW,GACzC,cACH,GACF,EA Ac,EAAA,eAAA,WAAY,EAAM,EA
AW,GACx C,MAAA,CAAC,EAAM,QACV,EA Ac,EAAA,eAAA,IAAK,EAAM,EA AW,IACpC,EA Ac,EAAA,eAA
A,SAAU,EAAM,EA AW,GACzC,EA A Q,EA AyB,EACjC,IAED,IAAA,SAAU,CACP,MAAA,GACF,EA Ac,EAAA,
eAAA,UAAW,EAAM,EA AW,GACx C,GAAM,EA AW,EAAA,YAAA,EAAM,EA AW,GACIC,GACD,EA Ac,EA A
A,eAAA,aA Ac,EAAM,EA AW,GACzC,cACH,GACF,EA Ac,EAAA,eAAA,YAAa,EAAM,EA AW,GACzC,MAAA,
CAAC,EAAM,QACV,EA Ac,EAAA,eAAA,IAAK,EAAM,EA AW,IA EpC,EA Ac,EAAA,eAAA,SAAU,EAAM,EA
AW,GACzC,CAAC,EAAO,GA AI,EAAO,IAAK,EACxB,EA A+B,CAAC,EAAU,GA AI,EAAU,MA EzD,IAAA,eA
AgB,CACb,MAAA,OACJ,EADI,IAEJ,EAFI,WAGJ,EA HI,UA IJ,EAJI,QAKJ,EALI,SAMJ,EANI,eAOJ,EAPI,eAQ
J,GACE,EA A4B,EAAM,EA AW,GA EIC,MAAA,CAAC,EAAM,MAAM,OAAO,CACzB,GA AG,EA Ac,EAAA,eA
AA,IAAK,EAAM,EA AW,GA EvC,QAAQ,EA Ac,EAAA,eAAA,SAAU,EAAM,EA AW,GA EjD,QAAS,CAAC,EA
AO,GA AI,EAAO,IAC5B,IAAK,EA CL,WAAY,EACZ,UAAW,CAAC,EAAU,GA AI,EAAU,IACpC,KAAM,EACN
,WAAY,EACZ,uBA AwB,EACxB,eAAA,KAIC,IAAA,6BAA8B,CAC3B,MAAA,OACJ,EADI,IAEJ,EAFI,WAGJ,
EA HI,UA IJ,EAJI,QAKJ,EALI,SAMJ,EANI,eAOJ,EAPI,eAQJ,GACE,EA A4B,EAAM,EA AW,GA EIC,MAAA,CA
AC,EAAM,MAAM,gBA AgB,CACIC,GA AG,EA Ac,EAAA,eAAA,IAAK,EAAM,EA AW,GA EvC,QAAQ,EA Ac,E
AAA,eAAA,SAAU,EAAM,EA AW,GA EjD,QAAS,CAAC,EAAO,GA AI,EAAO,IAC5B,IAAK,EA CL,WAAY,EA
CZ,UAAW,CAAC,EAAU,GA AI,EAAU,IACpC,KAAM,EACN,WAAY,EACZ,uBA AwB,EACxB,eAAA,KAGC,I
AAA,sBACA,IAAA,kBA AmB,CACb,MAAA,GAAQ,EACI,EAAA,eAAA,cAAe,EAAM,EACrB,GA EZ,GACF,E
A Ac,EAAA,eAAA,UAAW,EAAM,EA AW,GACx C,GAAM,EA AW,EAAA,YAAA,EAAM,EA AW,GACjC,MAA
A,CAAC,EAAM,iBACV,EA Ac,EAAA,eAAA,IAAK,EAAM,EA AW,IA EpC,EA Ac,EAAA,eAAA,SAAU,EAAM,
EA AW,GACzC,EAAO,CAAC,EAAO,GA AI,EAAO,IAAK,IAEhC,IAAA,wBACA,IAAA,kBA AmB,CACb,MAA
A,GACF,EA Ac,EAAA,eAAA,UAAW,EAAM,EA AW,GACx C,GAAM,EA AW,EAAA,YAAA,EAAM,EA AW,GA
CIC,GACF,EA Ac,EAAA,eAAA,YAAa,EAAM,EA AW,GACIC,GACD,EA Ac,EAAA,eAAA,aA Ac,EAAM,EA AW
,GACzC,cAEF,MAAA,CAAC,EAAM,iBACV,EA Ac,EAAA,eAAA,QAAS,EAAM,EA AW,IA ExC,EA Ac,EAAA,e
AAA,SAAU,EAAM,EA AW,GACzC,CAAC,EAAO,GA AI,EAAO,IAAK,EACxB,EA A+B,CAAC,EAAU,GA AI,E
AAU,MA EzD,IAAA,SAAU,CACP,MAAA,GACF,EA Ac,EAAA,eAAA,UAAW,EAAM,EA AW,GACx C,GAAM,E
A Ac,EAAA,eAAA,MAAO,EAAM,EA AW,GAC5C,GACD,EA Ac,EAAA,eAAA,aA Ac,EAAM,EA AW,GACzC,cA
CH,GACF,EA Ac,EAAA,eAAA,YAAa,EAAM,EA AW,GACzC,MAAA,CAAC,EAAM,QACV,EA Ac,EAAA,eAA
A,IAAK,EAAM,EA AW,IA EpC,EA Ac,EAAA,eAAA,SAAU,EAAM,EA AW,GA EzC,CAAC,EAAO,GA AI,EAAO,
GA AI,EAAO,IAAK,EACnC,EACA,CAAC,EAAU,GA AI,EAAU,GA AI,EAAU,MA ExC,IAAA,UAAW,CACR,M
AAA,GACF,EA Ac,EAAA,eAAA,UAAW,EAAM,EA AW,GACx C,GAAM,EA Ac,EAAA,eAAA,MAAO,EAAM,E
AAW,GAC5C,GACF,EA Ac,EAAA,eAAA,aA Ac,EAAM,EA AW,GA EIC,MAAA,CAAC,EAAM,SACV,EA Ac,EA

AA,eAAA,IAAK,EAAM,EAAW,GAEPc,CAAC,EAAW,GAAl,EAAW,IAAK,CAAC,EAAO,GAAl,EAAO,IACn
D,IAED,IAAA,UAAW,CACR,MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GAAM,EAAC
,EAAA,eAAA,MAAO,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GAElC,MAAA,
CAAC,EAAM,SACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAEPc,CAAC,EAAW,GAAl,EAAW,IAAK,C
AAC,EAAO,GAAl,EAAO,IACnD,IAED,IAAA,oBAAqB,CACIB,MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EA
AM,EAAW,GACxC,GAAM,EAAC,EAAA,eAAA,MAAO,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,aA
Ac,EAAM,EAAW,GAC3C,GACF,EAAC,EAAA,eAAA,sBAAuB,EAAM,EAAW,IAEPd,OAAC,EAAD,QAAS,G
AAW,EAAM,mBAC5B,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACpC,CAAC,EAAW,GAAl,EAAW,IAAK,
CAAC,EAAO,GAAl,EAAO,IACnD,EAAYb,GACtB,MAAA,CAAC,EAQ,GAEB,IAAA,YAAa,CACV,MAAA,G
ACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GAAM,EAAC,EAAA,eAAA,MAAO,EAAM,EAAW,G
AC5C,GACF,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GAElC,MAAA,CAAC,EAAM,WACV,EAAC,EAAA,eA
AA,IAAK,EAAM,EAAW,GACpC,CAAC,EAAW,GAAl,EAAW,GAAl,EAAW,IAC1C,CAAC,EAAO,GAAl,EA
O,GAAl,EAAO,IAAK,IAGpC,IAAA,YAAa,CACV,MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,G
ACxC,GAAM,EAAC,EAAA,eAAA,MAAO,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,aAAc,EAAM,EA
AW,GAElC,MAAA,CAAC,EAAM,WACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACpC,CAAC,EAAW,G
AAI,EAAW,GAAl,EAAW,IAC1C,CAAC,EAAO,GAAl,EAAO,GAAl,EAAO,IAAK,IAGpC,IAAA,aAAc,CACX,
MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GAAM,EAAC,EAAA,eAAA,MAAO,EAAM,
EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,YAAa,EAAM,EAAW,GAG1C,EAAe,EAQ,GACvB,EAAC,EAQ,
GAGtB,EAAb,EAU,GAC3B,EAAGb,EAU,GAZb,MAAA,CAAC,EAAM,YACV,EAAC,EAAA,eAAA,IAA
K,EAAM,EAAW,IAEPc,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACzC,CAAC,EAAC,GAAC,EAC7B,CAA
C,EAAGb,GAAGb,SAGvC,QACQ,MAAA,uBAAuB,EAAK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,cAAj
B,QAAA,SAAA;;AC5LA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,
EA3GP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WaqGO,SAAA,IAAA,GAAA,mBAAA,QAAA,OA
AA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAA
A,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,
IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,
IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OA
AA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EA
AA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAnGA,MAAM,EA
CT,CAAC,EAAY,EACZ,KACS,OAAA,EAAK,IACN,IAAA,OAAQ,CACL,MAAA,GACF,EAAC,EAAA,eAAA,Q
AAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eA
AA,QAAS,EAAM,EAAW,GACrC,MAAA,CAAC,EAAM,KAAK,EAAO,EAAO,IAE9B,IAAA,WAAY,CACT,M
AAA,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EA
W,GACrC,GAAM,EAAC,EAAA,eAAA,MAAO,EAAM,EAAW,GAC3C,MAAA,CAAC,EAAM,SAAS,EAAO,EA
AM,IAEjC,IAAA,cAAe,CACZ,MAAA,GACF,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,GACF,EAAC,
EAAA,eAAA,aAAc,EAAM,EAAW,GAC3C,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,
CAAC,EAAM,YAAY,EAQ,EAAY,IAE3C,IAAA,SAAU,CACP,MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EA
AM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,UAA
W,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,O
AAO,EAAS,EAAO,EAAS,IAE3C,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,eAAA,QAAS,EA
M,EAAW,IACxC,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,KAEzC,IAAA,WACI,MAAA,CAAC,EAAM,UAC
V,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAERc,IAAA,gBACI,MAAA,CAAC,EAAM,eAEI,EAAA,EAAA,e
AAA,QAAS,EAAM,EAAW,IACxC,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,IACzC,EAAC,EAAA,eAAA,SA
U,EAAM,EAAW,IACzC,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,KAEzC,IAAA,QAAS,CACN,MAAA,GACF
,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,
GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,CAAC,EAAM,MACV,EAAO,EAAM,GACb,
EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,KAGzC,IAAA,kBAAmB,CChB,MAAA,GACF,EAAC,EAAA,eAAA
,QAAS,EAAM,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,e

AAA, SAAU, EAAM, EAAW, GACvC, GACF, EAAC, EAAA, eAAA, OAAQ, EAAM, EAAW, GACpC, MAAA, CAAC, EAAM, gBACV, EAAO, EAAM, GACb, EAAC, EAAA, eAAA, QAAS, EAAM, EAAW, GAExC, IAED, IAAA, QACI, MAAA, CAAC, EAAM, OACV, EAAC, EAAA, eAAA, QAAS, EAAM, EAAW, IACx, EAAC, EAAA, eAAA, QAAS, EAA M, EAAW, KAEzC, IAAA, YACI, MAAA, CAAC, EAAM, WACV, EAAC, EAAA, eAAA, IAAK, EAAM, EAAW, KAEI C, QACQ, MAAA, uBAAuB, EAAK, 2BAIrc, QAAA, UAAA, EAAA, MAAM, EAAW, WAAjB, QAAA, SAAA;; ACfA, aAAA, OAAA, eAAA, QAAA, aAAA, CAAA, OAAA, IAAA, QAAA, SAAA, QAAA, eAAA, EA5FP, IAAA, EAAA, EA AA, QAAA, qDAMA, EAAA, QAAA, WAsFO, SAAA, IAAA, GAAA, mBAAA, QAAA, OAAA, KAAA, IAAA, EAAA, I AAA, QAAA, OAAA, EAAA, WAAA, OAAA, GAAA, EAAA, SAAA, EAAA, GAAA, GAAA, GAAA, EAAA, WAAA, OAAA, EAAA, IAAA, EAAA, IAAA, GAAA, GAAA, EAAA, IAAA, GAAA, OAAA, EAAA, IAAA, GAAA, IAAA, EAA A, GAAA, GAAA, MAAA, EAAA, CAAA, IAAA, EAAA, OAAA, gBAAA, OAAA, yBAAA, IAAA, IAAA, KAAA, EAA A, GAAA, OAAA, UAAA, eAAA, KAAA, EAAA, GAAA, CAAA, IAAA, EAAA, EAAA, OAAA, yBAAA, EAAA, GAA A, KAAA, IAAA, EAAA, KAAA, EAAA, KAAA, OAAA, eAAA, EAAA, EAAA, GAAA, EAAA, GAAA, EAAA, IAAA, OAAA, EAAA, QAAA, EAAA, GAAA, EAAA, IAAA, EAAA, GAAA, EA4B, GAyNc, MAAA, CAAC, OAZY, EAAC, EAAA, eAAA, QAAS, EAAM, EAAW, GAapD, QAZa, EAAC, EAAA, eAAA, SAAU, EA AM, EAAW, GAatD, eAXE, EAAC, EAAA, eAAA, gBAaiB, EAAM, EAAW, GAYID, cAVE, EAAC, EAAA, eAAA, eAA gB, EAAM, EAAW, GAWjD, gBATE, EAAC, EAAA, eAAA, iBAakB, EAAM, EAAW, GAUnD, cARE, EAAC, EAAA, e AAA, eAAgB, EAAM, EAAW, IAY9C, MAAM, EAAqC, MAC9C, EAAY, EACZ, KACM, OAAA, EAAK, IACN, IAAA, sBAAuB, CACpB, MAAA, MACJ, EADI, OAEJ, EAFI, cAGJ, EAHI, aAIJ, EAJI, eAKJ, EALI, aAMJ, GACE, EAAU, EA AM, EAAW, GAezB, QAAe, EAAM, MAAM, gCAC7B, EAAMb, EAAoB, EAAe, EACTd, EAAGb, GAEB, MAAA, CA AC, EAAO, gBAaiB, EAAO, gBAEpC, IAAA, sBAAuB, CACpB, MAAA, MAAC, EAAD, OAAQ, EAAR, cAAgB, EAA hB, aAA+B, EAA/B, eAA6C, GAC/C, EAAU, EAAM, EAAW, GAezB, GACF, EAAC, EAAA, eAAA, qBAAsB, EAAM, EAAW, GAGnD, QAAe, EAAM, MAAM, 6BAC7B, EAAMb, EAAoB, EAAe, EACTd, EAAGb, GAEB, MAAA, CAAC, EAAO, gBAaiB, EAAO, cAEpC, IAAA, sBACA, IAAA, sBAAuB, CACpB, MAAA, MAAC, EAAD, OAAQ, EAAR, cA AgB, EAAhB, aAA+B, EAA/B, eAA6C, GAC/C, EAAU, EAAM, EAAW, GAExB, MAAA, OAAO, EAAM, MAAM, uBA CtB, EAAMb, EAAoB, EAAe, EACTd, IAED, IAAA, QAAS, CACN, MAAA, EAAY, EAAM, MACnB, EAAC, EAAA, eA AA, YAAa, EAAM, EAAW, GAC7C, QACE, EAAS, OAAO, EAAM, WAAW, IAehC, OADP, EAAU, UACH, EAej, IAA A, WACI, OAAA, EAAM, gBACT, EAAC, EAAA, eAAA, IAAK, EAAM, EAAW, IACpC, EAAC, EAAA, eAAA, IAAK, E AAM, EAAW, IAE1C, QACQ, MAAA, uBAAuB, EAAK, 2BAIjC, QAAA, UAAA, EAAA, MAAM, EAAW, UAAjB, QA AA, SAAA;; ACvDA, aAAA, OAAA, eAAA, QAAA, aAAA, CAAA, OAAA, IAAA, QAAA, SAAA, QAAA, eAAA, EA rCP, IAAA, EAAA, EAAA, QAAA, qDAMA, EAAA, QAAA, WA+BO, SAAA, IAAA, GAAA, mBAAA, QAAA, OAAA, KAAA, IAAA, EAAA, IAAA, QAAA, OAAA, EAAA, WAAA, OAAA, GAAA, EAAA, SAAA, EAAA, GAAA, GAAA, G AAA, EAAA, WAAA, OAAA, EAAA, IAAA, EAAA, IAAA, GAAA, GAAA, EAAA, IAAA, GAAA, OAAA, EAAA, IAA A, GAAA, IAAA, EAAA, GAAA, GAAA, MAAA, EAAA, CAAA, IAAA, EAAA, OAAA, gBAAA, OAAA, yBAAA, IAA A, IAAA, KAAA, EAAA, GAAA, OAAA, UAAA, eAAA, KAAA, EAAA, GAAA, CAAA, IAAA, EAAA, EAAA, OAAA, yBAAA, EAAA, GAAA, KAAA, IAAA, EAAA, KAAA, EAAA, KAAA, OAAA, eAAA, EAAA, EAAA, GAAA, EAAA, GAAA, EAAA, IAAA, OAAA, EAAA, QAAA, EAAA, GAAA, EAAA, IAAA, EAAA, GAAA, EA7BA, MAAM, EACT, C AAC, EAAY, EAA4B, KAE3B, OAAA, EAAK, IACN, IAAA, SAAU, CACP, MAAA, GAAI, EAAC, EAAA, eAAA, IAA K, EAAM, EAAW, GACxC, GAAI, EAAC, EAAA, eAAA, IAAK, EAAM, EAAW, GACxC, GACF, EAAC, EAAA, eAAA, SAAU, EAAM, EAAW, GACvC, EAAS, EAAM, KAAK, EAAG, EAAG, GACzB, MAAA, CAAC, EAAO, OAAQ, EAA O, SAE3B, IAAA, SAAU, CACP, MAAA, GAAI, EAAC, EAAA, eAAA, IAAK, EAAM, EAAW, GACxC, EAAS, EAAM, OAAO, GACrB, MAAA, CAAC, EAAO, OAAQ, EAAO, SAE3B, IAAA, WAAy, CACT, MAAA, GAAI, EAAC, EAAA, e AAA, IAAK, EAAM, EAAW, GACxC, GACF, EAAC, EAAA, eAAA, OAAQ, EAAM, EAAW, GACrC, EAAS, EAAM, O AAO, EAAG, GACxB, MAAA, CAAC, EAAO, OAAQ, EAAO, SAehC, QACQ, MAAA, uBAAuB, EAAK, 2BAIzC, QA AA, UAAA, EAAA, MAAM, EAAW, aAAjB, QAAA, SAAA;; ACqCA, aAAA, OAAA, eAAA, QAAA, aAAA, CAAA, O AAA, IAAA, QAAA, SAAA, QAAA, eAAA, EA1EP, IAAA, EAAA, EAAA, QAAA, qDAMA, EAAA, QAAA, WAoEO, S AAA, IAAA, GAAA, mBAAA, QAAA, OAAA, KAAA, IAAA, EAAA, IAAA, QAAA, OAAA, EAAA, WAAA, OAAA, G AAA, EAAA, SAAA, EAAA, GAAA, GAAA, GAAA, EAAA, WAAA, OAAA, EAAA, IAAA, EAAA, IAAA, GAAA, GA AA, EAAA, IAAA, GAAA, OAAA, EAAA, IAAA, GAAA, IAAA, EAAA, GAAA, GAAA, MAAA, EAAA, CAAA, IAAA

,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAIEA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,OAAA,EAAK,IACN,IAAA,QACI,OAAA,EAAU,EAAK,MAEnB,IAAA,yBACG,MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACvC,MAAA,EAAC,EAAU,EAAA,WAAA,EAAK,KAAM,EAAW,IAAY,GACjD,IAAA,cACI,MAAA,EAAC,EAAU,EAAA,WAAA,EAAK,KAAM,EAAW,IACrC,IAAA,WACA,IAAA,eACA,IAAA,0BAA2B,CACxB,MAAA,GAAO,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAC1C,MAAA,EAAC,EAAY,EAAA,aAAA,IAEjB,IAAA,YACK,OAAA,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACvC,IAAK,IAAc,EAAY,EAAA,aAAA,IACjC,IAAA,WACG,MAAA,GACD,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAC1C,MAAA,EAAC,EAAY,EAAA,aAAA,IACjB,IAAA,QACI,MAAA,CAAC,EAAM,UACT,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,MACzD,UACD,IAAA,SACK,OAAA,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACvC,IAAK,GAAc,EAAM,SAAS,EAAE,QACtC,IAAA,OACI,MAAA,CAAC,EAAM,QACT,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,KACzD,UACD,IAAA,OACI,MAAA,CAAC,EAAM,QACT,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,KACzD,UACD,IAAA,OACI,MAAA,CAAC,EAAM,OAAO,IACIB,IAAA,QACG,MAAA,GAAQ,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,YAAa,EAAM,EAAW,GAChD,QAAQ,KACJ,kGAEJ,QAAQ,IAAI,GACP,IAAA,IAAI,EAAI,EAAG,EAAL,EAAL,EAAL,OAAQ,IAC/B,QAAQ,IAAI,MAAM,UAAU,MAAM,KAAK,EAAG,GAAG,YAC9B,MAAM,EAAG,IAErB,MAAA,CAAC,GAEV,QACQ,MAAA,uBAAuB,EAAK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,QAAjB,QAAA,SAAiB;;ACxEF,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EALtB,IAAA,EAAA,QAAA,yBAKM,MAAO,EAqBX,YAAqB,EAA6B,GAA7B,KAAA,SAAA,EAA6B,KAAA,WAAA,EAC3C,KAAA,QAAS,EAAO,EAAA,QAAA,GAehB,KAAA,UAAy,IAAI,KAehB,EAAA,EAAA,MAAA,KAAK,QAFr,SACK,OAAA,KAAK,OAAO,GAoBrB,gBACO,KAAA,UAAU,QAAQ,GAAS,EAAM,WACjC,KAAA,UAAU,QACV,KAAA,OAAO,UAMd,OACS,OAAA,KAAK,UAAU,KAQIB,aAAO,EAAC,GACpB,KAAA,uBAAuB,EAAM,GAI5B,MAAA,QAAc,EAAK,OAMIB,OAHF,KAAA,UAAU,QAAQ,GAAS,EAAM,WACjC,KAAA,UAAU,SAER,EAAK,EAAA,MAAA,KACJ,MAAA,GAAU,EAAQ,EAAA,SAAA,GAeIB,EAaA,EAAM,OACnB,EAae,EAAQ,OAExB,EAAA,KAAA,OACD,IAAE,EACf,IAAM,qDACC,8BAAuC,KAC1C,aAEH,IAAA,IAAI,EAAL,EAAG,EAAL,EAAY,IAAK,CAC7B,MAAA,EAAM,EAAM,GACZ,EAAQ,EAAQ,IAEjB,EAAA,EAAA,MAAA,GACA,KAAA,UAAU,IAAI,EAAK,GAGnB,OAAA,KAAK,SAmBV,WAAK,EAAC,GAC1B,KAAA,uBAAuB,EAAM,GAe5B,MAAA,QAAc,EAAK,OAeIB,OAAA,EAAK,EAAA,MAAA,KACJ,MAAA,EAAM,B,GAEPb,IAAA,IAAI,EAAL,EAAG,EAAL,EAAM,OAAQ,IAAK,CAC/B,MAAA,EAAM,EAAM,GAeZ,EA AQ,KAAK,gBAAgB,EAAK,GACxC,EAAO,KAAK,GAGP,OAAA,EAAM,EAAA,OAAA,KAKT,gBAAgB,EAAU,GAC1B,MAAA,EAAS,KAAK,UAAU,IAAI,GAe3B,OAAU,MAAV,EAaiB,EAAS,EAG3B,uBAAuB,EAaA,GACtC,GAAA,EAAL,QAAU,KAAK,SACf,MAAA,IAAI,0BACc,KAAK,wBACtB,EAAL,SAGT,GAAA,EAAM,QA AU,KAAK,WACjB,MAAA,IAAI,4BACgB,KAAK,0BACxB,EAAM,UAnIG,QAAA,UAAA;;ACmDf,aAAA,OAA A,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,EAnDP,IAAA,EAAA,QAAA,6BAIA,EAAA,QAAA,WAEO,MAAM,EAAqC,MAC9C,EAAY,EAA4B,EACxC,KACM,OAAA,EAAK,IACN,IAAA,YA CA,IAAA,cAAe,CACZ,MAAA,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACzC,GACF,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GAe3C,EAAY,IAAI,EAAL,UAAc,EAAU,GAEnC,OADP,EAAGB,aAAa,EAAK,KA AM,GACjC,CAAC,EAAU,QAef,IAAA,oBACA,IAAA,sBAAuB,CACpB,MAAA,GAAS,EACI,EAAA,eAAA,cA Ae,EAAM,EAAW,EAChC,GACb,GAAO,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GAC9C,GACF,EAAC,EA A,eAAA,SAAU,EAAM,EAAW,GAEvC,EAAY,EAAGB,iBAAiB,EAAO,IAEnD,MAAA,OAAO,EAAU,OAAO,E AAM,IAEIC,IAAA,kBACA,IAAA,oBAAqB,CACIB,MAAA,GAAS,EACI,EAAA,eAAA,cAAe,EAAM,EAAW,E AChC,GACb,GAAO,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GAC9C,GACF,EAAC,EAAA,eAAA,eAAGB,EA AM,EAAW,GAe7C,EAAY,EAAGB,iBAAiB,EAAO,IACnD,MAAA,OAAO,EAAU,KAAK,EAAM,IAErC,QACQ, MAAA,uBAAuB,EAAK,2BAJc,QAAA,UAAA,EAAA,MAAM,EAAW,aAAjB,QAAA,SAAA;;ACaA,aAAA,OA AA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,EAIEP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WA4DO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAA

A,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAA
A,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,G
AAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,O
AAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IA
AA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAA
A,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA1DA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,OAAA
,EAAK,IACN,IAAA,iBAaKB,CACf,MAAA,GACf,EAAc,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,GACf,E
AAc,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACf,EAAc,EAAA,eAAA,eAAgB,EAAM,EAAW,GAE7C,G
ACf,EAAc,EAAA,eAAA,mBAAoB,EAAM,EAAW,GAehD,MAAA,CAAC,EAAM,MAAM,eAChB,EAA+B,CA
AC,EAAK,GAaI,EAAK,IAAK,EACnD,IAED,IAAA,wBAAyB,CACtB,MAAA,GACf,EAAc,EAAA,eAAA,SAA
U,EAAM,EAAW,GACvC,GACf,EAAc,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACf,EAAc,EAAA,eAAA
,eAAgB,EAAM,EAAW,GAE7C,GACf,EAAc,EAAA,eAAA,mBAAoB,EAAM,EAAW,GAehD,MAAA,CAAC,E
AAM,MAAM,sBACHB,EAA+B,CAAC,EAAK,GAaI,EAAK,IAAK,EACnD,IAED,IAAA,gBAAiB,CACd,MAAA
,GACf,EAAc,EAAA,eAAA,QAAS,EAAM,EAAW,GACtC,GACf,EAAc,EAAA,eAAA,QAAS,EAAM,EAAW,G
ACtC,GACf,EAAc,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,GACf,EAAc,EAAA,eAAA,WAAY,EAAM,EA
AW,GACzC,GACf,EAAc,EAAA,eAAA,SAAU,EAAM,EAAW,GACvC,GACf,EAAc,EAAA,eAAA,qBAAsB,EA
AM,EAAW,GAeID,MAAA,CAAC,EAAM,MAAM,cAChB,EAaMB,EAaMB,EACtC,EAa8B,EAC9B,IAEN,QA
CQ,MAAA,uBAAuB,EAAK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,QAAjB,QAAA,SAAiB;;ACEjB,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,EApEP,IAAA,EAAA,EAAA,
QAAA,qDAMA,EAAA,QAAA,Wa8DO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAA
A,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OA
AA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,
GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,
GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,
KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OA
AA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5DA,MAAM,EACT,CAAC,EAAY,EACZ,KA
CS,OAAA,EAAK,IACN,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,I
ACpC,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,WACI,MAAA,CAAC,EAAM,UACV,EAAc,EA
AA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,UACI,MAAA,
CAAC,EAAM,SACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,IAAK,EAAM,EA
AW,KAErC,IAAA,eACI,MAAA,CAAC,EAAM,cACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,E
AAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAc,EAAA,eAAA,IAA
K,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,YACI,MAAA,CAAC,EAAM,
WACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IA
AA,aACI,MAAA,CAAC,EAAM,YACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,I
AAK,EAAM,EAAW,KAErC,IAAA,aACI,MAAA,CAAC,EAAM,YACV,EAAc,EAAA,eAAA,IAAK,EAAM,EA
AW,KAErC,IAAA,YACI,MAAA,CAAC,EAAM,WACV,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,
EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,SACA,IAAA,WACI,MAAA,CAAC,EAAM,OACV,EAAc,EA
AA,eAAA,YAAa,EAAM,EAAW,IAC5C,EAAc,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAc,EAAA,eAAA,
IAAK,EAAM,EAAW,KAe1C,QACQ,MAAA,uBAAuB,EAAK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,U
AAjB,QAAA,SAAA;;ACGA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eA
AA,EAvEP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WaiEO,SAAA,IAAA,GAAA,mBAAA,QAAA,
OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,G
AAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EA
AA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBA
AA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA
,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,
EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA/DA,MAAM,E

ACT,CAAC,EAAY,EACZ,KACS,OAAA,EAAC,IACN,IAAA,cACA,IAAA,gBACA,IAAA,SACI,MAAA,CAAC,EAAM,QACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,IAC7C,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,KAG9C,IAAA,YACI,MAAA,CAAC,EAAM,WACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,OA AQ,EAAM,EAAW,KAExC,IAAA,eACG,MAAC,EAAS,IACX,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GA E 1C,EAAWB,YAAZ,EACZ,EAA6B,UAAAnB,EA EV,GACD,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACzC,G ACF,EAAC,EAAA,eAAA,iBAaKB,EAAM,EAAW,GAGjD,GAAA,EAAW,CACT,GAAA,GAAuB,IAAZ,EACP, MAAA,IAAI,MACN,sFAGF,IAAC,GAAuB,IAAZ,EACR,MAAA,IAAI,MACN,iEAGF,MAAC,EAAS,IACZ,EA A c,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,CAAC,EAAM,MAAM,OAAO,CACzB,GAAG,EAAC,EA AA,eAAA,IAAK,EAAM,EAAW,GACvC,GAAG,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACvC,YAAY,EA Ac,EAAA,eAAA,aAAc,EAAM,EAAW,GA EzD,YAAY,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GA EzD,KAA M,EACN,WAAY,EACZ,uBAAwB,EACxB,eAAA,KAGJ,QACQ,MAAA,uBAAuB,EA AK,2BAIrC,QAAA,UAAA ,EAAA,MAAM,EAAW,WAAjB,QAAA,SAAA;;ACRA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA ,QAAA,SAAA,QAAA,eAAA,EA/DP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WAYDO,SAAA,IAAA ,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAA A,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA, IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OA AA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CA AA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAA A,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA, GAAA,EA vDA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,OAAA,EAAC,IACN,IAAA,iBACA,IAAA,mBASA,I AAA,mBACI,MAAA,CAAC,EAAM,WACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eA AA,OAAQ,EAAM,EAAW,IACvC,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,IAC3C,EAAC,EAAA,eAAA,SAA U,EAAM,EAAW,IACzC,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,IACxC,EAAC,EAAA,eAAA,UAAW,EAAM ,EAAW,KA E3C,IAAA,MACI,MAAA,CAAC,EAAM,4BACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IAEpC, EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,IACzC,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,IACvC,EAAC,EA AA,eAAA,QAAS,EAAM,EAAW,IACxC,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,KAExC,IAAA,UACI,MAA A,CAAC,EAAM,SACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,aACI,MAAA,CAAC,EAAM,Y ACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,gBACI,MAAA,CAAC,EAAM,eACV,EAAC,EA A,eAAA,gBAAiB,EAAM,EAAW,IAEHd,EAAC,EAAA,eAAA,cAAe,EAAM,EAAW,IAC9C,EAAC,EAAA,eAAA, eAAgB,EAAM,EAAW,IAE/C,EAAC,EAAA,eAAA,eAAgB,EAAM,EAAW,KAGrD,QACQ,MAAA,uBAAuB,EA AK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,gBAAjB,QAAA,SAAA;;AC+DA,aAAA,OAAA,eAAA,QAA A,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,EA9HP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA ,QAAA,WAWHO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAA A,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EA A A,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA, EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA, eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,K AAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EA AA,GAAA,EAAA,IAAA,EAAA,GAAA,EAiHA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,OAAA,EAAC,IAC N,IAAA,MAAO,CACJ,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,e AAA,WAAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW, GAAoB,EACxD,IAED,IAAA,OAAQ,CACL,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC, GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,eAAA,I AAK,EAAM,EAAW,GAAoB,EACxD,IAED,IAAA,MAAO,CACJ,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EA AM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,KACV,EA AC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,EACxD,IAED,IAAA,MAAO,CACJ,MAAA,GACF,EAAC,EA A,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACxC,MAAA,CA

AC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,EACxD,IAED,IAAA,MAAO,CACJ,MAA
A,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW
,GACxC,MAAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,EACxD,IAED,IAAA,
MAAO,CACJ,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,W
AAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,
EACxD,IAED,IAAA,SAAU,CACP,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,C
AAC,EAAM,QACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,IAEzD,IAAA,SAAU,CACP,MAAA,GA
CF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,CAAC,EAAM,QACV,EAAC,EAAA,eAAA,IAA
K,EAAM,EAAW,GAAoB,IAEzD,IAAA,OAAQ,CACL,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EA
W,GACrC,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,MACV,EAAC,EA
AA,eAAA,IAAK,EAAM,EAAW,GAAoB,EACxD,IAED,IAAA,SAAU,CACP,MAAA,GACF,EAAC,EAAA,eAAA
,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,YAAa,EAAM,EAAW,GAC1C,GACF,EAAC,EAAA,e
AAA,UAAW,EAAM,EAAW,GACvC,MAAA,CAAC,EAAM,QACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,
GAAoB,EACxD,EAAW,IAEZ,IAAA,WACG,MAAA,GAAL,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACxC,
GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,G
AEpC,MAAA,CAAC,EAAM,SAAS,EAAG,EAAS,IACHC,IAAA,gBAaIB,CACd,MAAA,GAAL,EAAC,EAAA,eA
AA,IAAK,EAAM,EAAW,GAExC,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GAExC,GACF,EAAC,EA
AA,eAAA,OAAQ,EAAM,EAAW,GAERc,GACF,EAAC,EAAA,eAAA,eAAgB,EAAM,EAAW,GAG5C,MAAA,C
AAC,EAAM,cAAc,EAAG,EAAS,EAAM,IAEHd,QACQ,MAAA,uBAaUB,EAaK,2BAIrC,QAAA,UAAA,EAAA,
MAAM,EAAW,YAAjB,QAAA,SAAA;;ACgDA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA
,SAAA,QAAA,eAAA,EAhLP,IAAA,EAAA,QAAA,yBAEA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WAw
KO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OA
AA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAA
A,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,
IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,
EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,K
AAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EA
AA,IAAA,EAAA,GAAA,EAAtKA,MAAM,EAAC,CAAC,EAAY,EACZ,KACS,OAAA,EAaK,IACN,IAAA,WACA
,IAAA,SAAU,CACP,MAAA,GAAL,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eA
AA,OAAQ,EAAM,EAAW,GACvC,IAAA,GACA,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GAEvC,OADP,E
AAS,EAAO,MAAM,EAAG,GACIB,CAAC,EAAM,OAAO,EAaQ,IAE1B,IAAA,SAAU,CACP,MAAA,GAAQ,E
AAc,EAAA,eAAA,IAAK,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACvC,M
AAA,CAAC,EAAM,OAAO,EAAO,EAAM,KAaK,EAAS,SAAU,IAEvD,IAAA,WAAY,CACT,MAAA,GACF,EA
Ac,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,YAAa,EAAM,EAAW,GAC1C,GAA
Q,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACv
C,MAAA,CAAC,EAAM,OACV,EAAO,EAAM,KAaK,EAAS,SAAU,EAAM,IAE5C,IAAA,UAAW,CACR,MAA
A,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,EAAO,GACR,IAAA,IAAI,EAAL,EAAG,EAAL,EA
AK,OAAQ,IAC3B,EAaK,IACP,EAaK,KAaK,GAGR,MAAA,GAAQ,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW
,GAC3C,MAAA,CAAC,EAAM,QAAQ,EAAO,IAE1B,IAAA,YAAa,CACV,MAAA,GACF,EAAC,EAAA,eAAA,O
AAQ,EAAM,EAAW,GACrC,GAAQ,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAC3C,MAAA,CAAC,EAAM,
QAAQ,EAAO,IAE1B,IAAA,QAAS,CAEN,MAAA,GAAQ,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GAEHd,G
AAO,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GAC7C,MAAA,CAAC,EAAM,OACV,EAAC,EAAA,eAAA,IA
AK,EAAM,EAAW,GAAoB,EACxD,IAED,IAAA,eAAgB,CACb,MAAA,GACF,EAAC,EAAA,eAAA,QAAS,EA
M,EAAW,GACtC,GACF,EAAC,EAAA,eAAA,MAAO,EAAM,EAAW,GACpC,GACF,EAAC,EAAA,eAAA,UAA
W,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,YAAa,EAAM,EAAW,GAC1C,GACF,EAAC,EAAA,eAA
A,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,eAAgB,EAAM,EAAW,GAC7C,GACF,EAAC,EA
AA,eAAA,cAAe,EAAM,EAAW,GAC5C,GACF,EAAC,EAAA,eAAA,iBAaKB,EAAM,EAAW,GAE/C,GAAS,EA
Ac,EAAA,eAAA,IAAK,EAAM,EAAW,GAE5C,MAAA,CAAC,EAAM,aACV,EAAQ,EAAO,EAaK,EAAS,EA

W,EAAS,EACjD,EAAa,IAEd,IAAA,OACI,OAAA,EAAK,EAAA,MAAA,KACJ,MAAA,GACF,EAAC,EAAA,eA
AA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GAGxC,EAAQ,EAQ,G
AAG,MACnB,EAAGB,EAAM,QAAQ,EAAQ,IAAI,MAC1C,EAAS,EAAQ,IAAI,IACnB,MAAA,EAAY,EAAK,K
AAA,YAAY,EAAO,MAAO,GAC7C,IAAC,IACA,EAAK,KAAA,YACF,EAAM,QAAQ,GAAQ,MAAO,GAC7B,
MAAA,IAAI,MAAM,0CAEX,OAAA,EAAY,EAAS,EAAM,QAAQ,EAAQ,KAe7C,MAAA,CAAC,EAAM,MAA
M,EAAQ,MAG3B,IAAA,SAAU,CACP,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACrC,GAC
F,EAAC,EAAA,eAAA,SAAU,EAAM,EAAW,GACtC,OAAA,EAAM,QAAQ,EAAQ,GAe1B,IAAA,OAAQ,CACL
,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,
eAAA,IAAK,EAAM,EAAW,GAAoB,IAEzD,IAAA,QACA,IAAA,SAAU,CACP,MAAA,GACF,EAAC,EAAA,eA
AA,OAAQ,EAAM,EAAW,GACrC,GACF,EAAC,EAAA,eAAA,kBAAmB,EAAM,EAAW,GAGhD,GAAS,EAAC,
EAAA,eAAA,IAAK,EAAM,EAAW,GAe5C,OAAA,EAAM,MAAM,EAAQ,EAAiB,GAeZC,IAAA,YAAa,CACV,
MAAA,GACF,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,GACxC,GACF,EAAC,EAAA,eAAA,SAAU,EAAM,E
AAW,GACvC,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACrC,MAAA,CAAC,EAAM,UAAU,EAAS,E
AAQ,IAEtC,IAAA,WAAY,CACT,MAAA,GAAl,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACxC,GACF,EA
Ac,EAAA,eAAA,UAAW,EAAM,EAAW,GACvC,MAAA,CAAC,EAAM,SAAS,EAAG,IAEvB,IAAA,gBAAiB,CA
Cd,MAAA,GACF,EAAC,EAAA,eAAA,gBAAiB,EAAM,EAAW,GAe9C,GACF,EAAC,EAAA,eAAA,cAAe,EAA
M,EAAW,GAe5C,GACF,EAAC,EAAA,eAAA,eAAGB,EAAM,EAAW,GAC7C,GACF,EAAC,EAAA,eAAA,eAAG
B,EAAM,EAAW,GAC5C,MAAA,CAAC,EAAM,cACV,EAAS,EAAC,EACvB,EAAa,QAau,EAAa,MAChC,EAC
A,EAAM,KAAC,EAAC,EAAa,SAEhD,QACQ,MAAA,uBAauB,EAAK,2BAIrC,QAAA,UAAA,EAAA,MAAM,E
AAW,aAAjB,QAAA,SAAA;;AC7IA,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QA
AA,eAAA,EAjCP,IAAA,EAAA,EAAA,QAAA,qDAMA,EAAA,QAAA,WA2BO,SAAA,IAAA,GAAA,mBAAA,Q
AAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GA
AA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAA
A,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA
,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,E
AAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,G
AAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAzBA,MA
AM,EACT,CAAC,EAAY,EAA4B,KAe3B,OAAA,EAAK,IACN,IAAA,MACI,MAAA,CAAC,EAAM,KACV,EA
Ac,EAAA,eAAA,IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,eAAA,
IAAK,EAAM,EAAW,KAErC,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,eAAA,IAAK,EAAM,EA
AW,KAErC,IAAA,QACI,MAAA,CAAC,EAAM,OACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,KAe1C,QAC
Q,MAAA,uBAauB,EAAK,2BAIzC,QAAA,UAAA,EAAA,MAAM,EAAW,WAAjB,QAAA,SAAA;;AC2DA,aAA
A,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,eAAA,EA5FP,IAAA,EAAA,EAAA,Q
AAA,qDAMA,EAAA,QAAA,WAsFO,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,
QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA
,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GA
AA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GA
AA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KA
AA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA
,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EApFA,MAAM,EACT,CAAC,EAAY,EACZ,KACS,O
AAA,EAAK,IACN,IAAA,OACI,MAAA,CAAC,EAAM,MACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACp
C,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,KAGzC,IAAA,aAAc,CACX,MAAA,GACF,EAAC,EAAA,eAAA,O
AAQ,EAAM,EAAW,GACpC,MAAA,CAAC,EAAM,YACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,IA
EzD,IAAA,UAAW,CACR,MAAA,GACF,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,GACpC,MAAA,CAAC,E
AAM,SACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GAAoB,IAGzD,IAAA,UACI,MAAA,CAAC,EAAM,SA
CV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,KAeZC,IAAA
,YACI,MAAA,CAAC,EAAM,WACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,U
AAW,EAAM,EAAW,IAE1C,EAAC,EAAA,eAAA,OAAQ,EAAM,EAAW,KAGxC,IAAA,QACA,IAAA,MACI,M

AAA,CAAC,EAAM,KACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,UAAW,EAAM,EAAW,IAE1C,EAAC,EAAA,eAAA,gBAaIB,EAAM,EAAW,KAGjD,IAAA,iBAaKB,CACf,MAAA,GACF,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GAC3C,GACF,EAAC,EAAA,eAAA,WAAY,EAAM,EAAW,GACxC,MAAA,CAAC,EAAM,gBACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACpC,EAAY,IAEb,IAAA,iBAaKB,CACf,MAAA,GACF,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GAC3C,GACF,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,GACrC,MAAA,CAAC,EAAM,gBACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACpC,EAAY,IAEb,IAAA,eAAgB,CACb,MAAA,GACF,EAAC,EAAA,eAAA,YAAa,EAAM,EAAW,GAC1C,GACD,EAAC,EAAA,eAAA,aAAc,EAAM,EAAW,GACrC,cAEN,MAAA,CAAC,EAAM,cACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,GACpC,EAAW,IAEZ,IAAA,cACI,MAAA,CAAC,EAAM,aACV,EAAC,EAAA,eAAA,IAAK,EAAM,EAAW,IACpC,EAAC,EAAA,eAAA,QAAS,EAAM,EAAW,KAe9C,QACQ,MAAA,uBAaUB,EAaK,2BAIrC,QAAA,UAAA,EAAA,MAAM,EAAW,iBAaJB,QAAA,SAAA;;ACQN,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,UAAA,EAtGD,IAAA,EAAA,EAAA,QAAA,0BAMA,EAAA,QAAA,+BACA,EAAA,QAAA,wBACA,EAAA,EAAA,QAAA,oCACA,EAAA,EAAA,QAAA,iCACA,EAAA,EAAA,QAAA,qCACA,EAAA,EAAA,QAAA,kCACA,EAAA,EAAA,QAAA,iCACA,EAAA,EAAA,QAAA,oCACA,EAAA,EAAA,QAAA,+BACA,EAAA,EAAA,QAAA,oCACA,EAAA,EAAA,QAAA,+BACA,EAAA,EAAA,QAAA,iCACA,EAAA,EAAA,QAAA,kCACA,EAAA,EAAA,QAAA,uCACA,EAAA,EAAA,QAAA,mCACA,EAAA,EAAA,QAAA,oCACA,EAAA,EAAA,QAAA,kCACA,EAAA,EAAA,QAAA,wCA8EC,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAG,IAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EApEK,SAAU,EACZ,EAAY,EA4B,EACxC,GACI,MAAA,EACF,EAaE,EAAY,EA4B,KAChC,OAAA,EAaK,UACN,IAAA,aACI,OAAA,EAaI,KACP,IAAM,EAAW,UAAU,EAAM,EAAW,IAC7C,IAAA,aACI,OAAA,EAaI,KACP,IAAM,EAU,UAAU,EAAM,EAAW,IAC5C,IAAA,UACI,OAAA,EAaQ,UAAU,EAAM,EAAW,GACvC,IAAA,cACI,OAAA,EAaI,KACP,IAAM,EAAY,UAAU,EAAM,EAAW,IAC9C,IAAA,WACI,OAAA,EAaI,KAAK,IAAM,EAAS,UAAU,EAAM,EAAW,IACvD,IAAA,UACI,OAAA,EAaQ,UAAU,EAAM,EAAW,GACvC,IAAA,aACI,OAAA,EAaI,KACP,IAAM,EAAW,UAAU,EAAM,EAAW,IAC7C,IAAA,QACI,OAAA,EAaI,KAAK,IAAM,EAAM,UAAU,EAAM,EAAW,IACpD,IAAA,QACI,OAAA,EAaI,KAAK,IAAM,EAAM,UAAU,EAAM,EAAW,IACpD,IAAA,UACI,OAAA,EAaI,KAAK,IAAM,EAAM,UAAU,EAAM,EAAW,IACtD,IAAA,WACI,OAAA,EAaI,KAAK,IAAM,EAAS,UAAU,EAAM,EAAW,IACvD,IAAA,gBACI,OAAA,EAaI,KACP,IAAM,EAAC,UAAU,EAAM,EAAW,IACD,IAAA,YACI,OAAA,EAaI,KACP,IAAM,EAaU,UAAU,EAAM,EAAW,IAC5C,IAAA,aACI,OAAA,EAaI,KACP,IAAM,EAaU,UAAU,EAAM,EAAW,IAC5C,IAAA,WACI,OAAA,EAaI,KAAK,IAAM,EAAS,UAAU,EAAM,EAAW,IACvD,IAAA,iBACI,OAAA,EAaI,KACP,IAAM,EAaE,UAAU,EAAM,EAAW,IACjD,IAAA,aACI,OAAA,EAaU,UACb,EAAM,EAAW,EAAS,GAC3B,IAAA,SACG,MAAA,GAaW,EAaGB,EAAA,iBAAA,EAaK,IACIC,GAAA,GAAY,EAAS,eACbB,OAAA,EAAS,eACZ,IAaI,EAaJ,cAAkB,EAAM,EAAW,IAEjC,MAAA,uBAaUB,EAaK,yBAEtC,QACQ,MAAA,yBACa,EAaK,yBACpB,qHaxDV,CA2DG,EAAM,EAAW,GACpB,OAAA,EAaI,KAAK,UAAU,GACb,EAa8B,KAAM,GAAS,GAAG,OAaO,IAE1D,GAAG,OAaO;;AC9EU,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,sBAAA,EAavB,MAaO,EAaMx,YACa,EAa6B,GAC7B,EAaIC,GACjC,EAa+B,GAC/B,EAaID,IAHjD,KAAA,UAAA,EACA,KAAA,eAAA,EACA,KAAA,cAAA,EACA,KAAA,YAAA,EATL,KAAA,YAAc,CAAC,GAaI,EAAG,UAAW,GAaI,YAAa,GACID,KAAA,SAaM,C,CAAC,KAAK,aACzC,KAAA,OAAS,EAQV,KAAA,4BAGC,SAAS,EAAY,GACpB,MAAA,CAAC,GAAA,EAaI,UAAA,EAAW,YAAa,GAQIC,mBAaE,GACb,KAAK,WAAa,IACf,KAAA,SAaW,EACX,KAAA,6BAIL,qBACK,OAAA,KAAK,SAMV,uBACK,OAAA,KAAK,mBAaM,B,GAO7B,wBACK,OAAA,KAAK,mBAGN,4BACA,MAAA,EAaQ,GACT,IAAA,IAaI,EAaI,EAAG,EAaI,KAAK,SAAS,OAAS,EAAG,IAAK,CAC3C,MAAA,EAAW,KAAK,SAAS,MAAM,EAAG,KAAK,SAAS,OAAS,GAC/D,EAAM,KAAK,KAAK,qBAaQB,IAEvC,EAAM,KAAK,IACN,KAAA,mBAaQB,EAaGPB,qBAaQB,GACpB,OAAA,EACH,EACK,IACG,GAa2B,IAAf,EAaQ,IAaOC,IAAxB,EAaQ,

YACpC,MACG,EAAQ,aAAa,EAAQ,eACvC,KAAK,KACV,GAON,WAAW,GACL,KAAK,WACF,KAAA,SACA
,KAAA,SAAW,KAAK,SAAS,QACzB,KAAA,SAAS,KAAK,KAAK,SAAS,KAAK,OAAQ,IACzC,KAAA,mBAA
mB,QAAQ,KAAK,qBAAqB,KAAK,YAQnE,YACM,KAAA,KAAK,UAA Y,KAAK,SAAS,OAAS,GAKpC,MAA
A,IAAI,MAAM,2CAJX,KAAA,SAAW,KAAK,SAAS,QACzB,KAAA,SAAS,QAAQ,GACjB,KAAA,kBAaKb,Q
AU3B,gBACM,KAAA,KAAK,UAA Y,KAAK,SAAS,OAAS,GAWpC,MAAA,IAAI,MAAM,yDAX6B,CACxC,K
AAA,SAAW,KAAK,SAAS,QACzB,KAAA,SACC,MAAA,EACF,OAAO,OAAO,GA AI,KAAK,SAAS,KAAK,SA
AS,OAAS,IAC3D,EAAQ,aAAe,EACvB,EAAQ,GA AK,KAAK,OACb,KAAA,SAAS,QAAQ,EAAG,EAAG,GACv
B,KAAA,mBAAmB,OACpB,EAAG,EAAG,KAAK,qBAAqB,KAAK,YAM7C,UAAU,GACD,OAAA,KAAK,UA
AU,GAGxB,eAAe,GACR,KAAA,eAAe,EAAY,IAAM,EAGxC,eAAe,GACN,OAAA,KAAK,eAAe,GAG7B,cAAc,
GACP,KAAA,cAAc,EA AW,IAAM,EAGtC,cAAc,GACL,OAAA,KAAK,cAAc,GAG5B,QAAQ,GACD,IAAA,MA
AM,KAAO,KAAK,eAChB,KAAA,eAAe,GA AK,cAAc,GAGpC,IAAA,MAAM,KAAO,KAAK,cAChB,KAAA,cA
Ac,GA AK,cAAc,IA/If,QAAA,iBAAA;;ACkI5B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,
qBAAA,EAAA,QAAA,2BAAA,EAAA,QAAA,cAAA,EAAA,QAAA,eAAA,EAAA,QAAA,YAAA,EAtJD,IAAA,
EAAA,QAAA,iCAoBM,SAAU,EACZ,EA AWB,EA AiB,EACzC,GACI,MAAA,EAAY,IAAI,IACbB,EAA0B,GAC
5B,IAAA,EAAoB,KACpB,EA AuB,KAIrB,MAAA,EAAO,IAAI,IACX,EACF,OAAO,KAAK,GAAQ,IAAI,IAAQ,
EA Ac,EAAA,eAAA,GAAM,IAEpD,IAAA,EAA0B,GACb,MAAb,IACF,EA AgB,EAAU,IAAI,IAAQ,EA Ac,EA
A,eAAA,EA AK,MAAM,KAG3D,MAAA,EA AW,IAAI,GACd,KAAA,EAAS,OAAS,GAAG,CACpB,MAAA,EA
O,EAAS,OACIB,EA Ac,IAAS,EA Ae,IAAS,EAAY,KAC1C,MAAf,IAEF,GADA,EA Ac,GACW,SAAS,IAAI,GAA
S,EAAM,MACnC,OAAO,GAAQ,EA AU,IAAI,KAGnD,EA AU,IAAI,EA AK,MAGS,MAAxB,EA AU,EA AK,SAIw
B,IAAvC,EA Ae,QAAQ,EA AK,QAIU,IAAtC,EA Ac,QAAQ,EA AK,QAGJ,IAAvB,EA AK,OAAO,OAIhB,EA AK,O
AAO,QAAQ,IAEd,EA AK,IAAI,EAAM,QAGnB,EA AK,IAAI,EAAM,MACf,EAAS,KAAK,MATd,EA Ac,KAAK,
EA AK,QAYrB,MAAA,CAAC,OAAA,EAAQ,QAAA,EAAS,UAAA,EA AW,cAAA,EA Ae,YAAA,EA Aa,WAAA,
GAO5D,SAAU,EACZ,EA Ac,EACd,GACI,MAAA,UAAC,EAAD,OAA Y,GA AU,EACtB,EA AmB,GACnB,EA Aa,
OAAO,KAAK,GACP,IAAI,IAAQ,EA Ac,EAAA,eAAA,GAAM,IACbC,IAAI,GAAQ,EAAM,MAAM,IAC1C,EA
AY,EAAM,UAExB,EA AW,QAAQ,IACb,EA AU,IAAI,EAAM,OACtB,EAAS,KAAK,KAGIB,EAAM,QAAQ,QAA
Q,IACbB,EA AU,IAAI,EAAO,OACvB,EAAS,KAAK,KAGD,MAAb,GACF,EA AU,QAAQ,IACZ,EA AU,IAAI,EA
AK,OACrB,EAAS,KAAK,KAI d,MAAA,EAAO,IAAI,IACX,EA AuB,GACtB,KAAA,EAAS,OAAS,GAAG,CACp
B,MAAA,EAAO,EAAS,MA CtB,EA AK,IAAI,EA AK,MACT,EA AU,EA AK,OACIB,EA Aa,KAAK,GA EpB,EA AK
,SAAS,QAAQ,KACf,EA AK,IAAI,EAAM,OAAS,EA AU,IAAI,EAAM,OAC7C,EAAM,OAAO,MAAM,GAAS,EA
AK,IAAI,EAAM,QAC7C,EAAS,KAAK,KAIb,OAAA,EAGT,MAAM,EA AmB,CACvB,SAAU,QAAS,QAAS,OA
AQ,gBAAiB,cACrD,iBAaKb,KAAM,SA EpB,EAAoB,CACxB,sBAAuB,sBAAuB,sBAAuB,SAEjE,EA AiB,CACr
B,YAAa,cAAe,oBAAqB,sBACjD,kBAAmB,qBAGf,SAAU,EA Ac,GACrB,OAAA,EA AiB,QAAQ,EA AK,KAAO,
EAGxC,SAAU,EA Ae,GACtB,OAAA,EA AkB,QAAQ,EA AK,KAAO,EAGzC,SAAU,EAAY,GACnB,OAAA,EA
e,QAAQ,EA AK,KAAO;;ACtII B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,mBAAA,EAIB
IB,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,iCACA,EAAA,QAAA,oCAGA,EAAA,QAAA,uBACA,EAAA,Q
AAA,oBASM,MAAO,EA+FX,YAAoB,EAAsB,GAAtB,KAAA,MAAA,EAAsB,KAAA,OAAA,EA9FIC,KAAA,Y
AAmC,IAAI,IACvC,KAAA,WAA8B,GAM9B,KAAA,UAA Y,IACZ,KAAA,WAAqC,GACrC,KAAA,qBAA0D,G
AsF3D,KAAA,SAAW,EAAM,QACjB,KAAA,QAAU,EAAM,OACbB,KAAA,WAAa,EAAM,UACnB,KAAA,WA
Aa,EAAM,UACnB,KAAA,WAAa,EAAM,UAED,MAAnB,EAAM,WACR,OAAO,KAAK,EAAM,WAAW,QAAQ
,IAC9B,KAAA,qBAAqB,GACtB,IAAI,EA Ac,EAAM,UAAU,GAAO,QA5F/C,gBACK,OAAA,KAAK,OAAS,KA
AK,OAAO,UAA Y,KAAK,WAGhD,0BACK,OAAA,KAAK,OAAS,KAAK,OAAO,oBACZ,KAAK,qBAGxB,gBA
CK,OAAA,KAAK,OAAS,KAAK,OAAO,UAA Y,KAAK,WAGhD,cAAU,GACN,MAAA,EAAY,OAAO,KAAK,G
AAW,IACrC,GAAO,EA AU,GA AK,IAAI,GAAU,EAAO,KAC1C,KAAA,WAAa,GAAG,UAAU,GAC1B,KAAA,
WAAa,EA OhB,oBAAgB,GACb,KAAA,iBAAmB,EAGtB,aACK,OAAA,KAAK,QAAQ,IAAI,IACf,CACL,KAAM
,EA AK,KACX,MAAO,EA AK,WAAL,MACH,EA AK,WAAL,MAAyB,WACzB,EACJ,MAAO,EA AK,WAAL,MA
CH,EA AK,WAAL,MAAyB,WACzB,KAKN,cACK,OAAA,KAAK,SAAS,IAAI,IACbB,CACL,KAAM,EA AK,KA
CX,MAAO,EA AK,WAAL,MACH,EA AK,WAAL,MAAyB,WACzB,EACJ,MAAO,EA AK,WAAL,MACH,EA AK,
WAAL,MAAyB,WACzB,KAKN,iBACK,OAAA,KAAK,QAAQ,IAAI,GAAQ,EA AK,cAAgB,EA AK,MAGxD,kB

ACK,OAAA,KAAK,SAAS,IAAK,IACIB,MAAA,EAAO,EAAK,cAAgB,EAAK,KAChC,OAAA,EAAK,iBAAoB,
KAAQ,EAAK,gBAAmB,IAIhE,gBACK,OAAA,OAAO,KAAK,KAAK,YAAY,OAAO,CAAC,EAAK,KAC/C,EA
AI,GAAO,KAAK,WAAW,GAAG,UACzB,GACN,IA0BG,kBAakB,EAAGB,GACIC,MAAA,EAAe,EAAO,IAAI,
GAAQ,EAAK,MAAM,OAC7C,EAAGB,EAAQ,IAAI,GAAQ,EAAK,MAAM,OAC9C,OAAA,EAAa,KAAK,KAA
K,WAAa,KACvC,EAAc,KAAK,KAAK,WAotB,QAAQ,EAawB,GAChC,MAAA,GACF,EAAqB,EAAA,sBAAA,
EAAQ,EAAS,KAAK,UAAW,KAAK,aACzD,cAAC,EAAD,YAAGB,EAAhB,WAA6B,GAAC,EAC7C,GAAe,MA
Af,EACI,MAAA,IAAI,2CAC+B,EAAy,uCAC9B,EAAy,mBAC/B,iGACoC,MAGtC,GAAA,EAAc,OAAS,EAAG
,CACtB,MAAA,EAAW,EAAQ,IAAI,GAAG,EAAE,MAC9B,EAAU,OAAO,KAAK,GACtB,MAAA,IAAI,qCACy
B,mCAC3B,sCAA4C,MAG/C,OAAA,EACH,EAAA,4BAAA,KAAK,MAAO,KAAK,UAAW,GAYIC,QAAQ,EA
AwB,GAC9B,EAAS,KAAK,UAAU,GACIB,MAAA,EAAQ,OAAO,KAAK,GAAQ,OAC7B,KAAA,YAAY,GACZ
,KAAA,uBAAuB,GAC5B,EAAU,KAAK,WAAW,GACrB,KAAA,aAAa,GACZ,MAAA,EACF,EAAM,IAAI,GAA
Q,KAAK,MAAM,OAAM,EAAc,EAAA,eAAA,GAAM,KACrD,EAakB,EAAQ,IAAI,IAAQ,EAAc,EAAA,eAAA,
GAAM,IAC5D,IAAA,EAAc,EAAGB,IAAI,GAAQ,KAAK,MAAM,MAAM,IAGpC,IAAvB,EAAy,SACd,EAAc,K
AAK,UAGf,MAAA,EAAiB,KAAK,kBAakB,EAAy,GAGtD,IAAA,EAAe,KAAK,YAAY,IAAI,GACpB,MAAhB,
IACF,EAAe,KAAK,QAAQ,EAAQ,GAC/B,KAAA,YAAY,IAAI,EAAGB,IAGjC,MAAA,EAAiC,GACjC,EAA+B,
GAE9B,OAAA,EAAK,EAAA,MAAA,KACJ,MAAA,EAAU,IAAI,EAAJ,iBACZ,KAAK,UAAW,EAAGB,EACbC,
KAAK,qBACH,EAAU,OAAA,OAAA,GAawB,KAAK,WAE7C,OAAO,KAAK,GAAQ,QAAQ,IACpB,MAAC,E
AAU,IAAS,EAAc,EAAA,eAAA,GACIC,EAAoB,GAC1B,EAAQ,GAAS,EAAO,GACxB,EAAW,GAAY,IAGnB,
MAAA,EAAGB,KAAK,mBAAmB,GACxC,EAA2D,GAC5D,IAAA,IAAI,EAAI,EAAG,EAAI,EAAa,OAAQ,IAA
K,CACtC,MAAA,EAAO,EAAa,GACtB,IAAC,EAAW,EAAK,MAAO,CACpB,MAAA,GACF,EAAU,EAAA,WA
AA,EAAM,EAAy,EAAS,KAAK,kBAE1C,GAAA,EAAK,KAAA,UAAU,GACX,MAAA,IAAI,kCACsB,EAAK,2
BACjC,4CAEN,EAAW,EAAK,MAAQ,EACnB,KAAA,uBACD,EAAK,KAAM,EAAM,EAAy,EAAS,EACtC,EA
AiB,IAOIB,OAHY,MAAf,KAAK,QACP,EAAQ,QAAQ,GAEX,EAAQ,IAAI,IAAQ,EAAU,EAAA,WAAA,EAAM
,EAAy,MAInD,mBAAmB,GACnB,MAAA,EAAM,GAAG,OAAO,MACIB,GACA,OAAO,KAAK,GACP,IAAI,G
AAO,EAAU,IACrB,IAAI,GAaw,EAAQ,IAAI,GAAU,EAAO,MAC9C,OAAA,IAAI,IAAI,GAET,uBACJ,EAakB
,EAAy,EAC9B,EAA2B,EAC3B,EACA,GAGoB,YAAiB,EAAK,WAA6D,IAAnC,EAAy,QAAQ,KAIvD,EAAU,G
AAU,QAAQ,IACZ,MAAV,IACF,EAAgC,EAAO,KACIC,EAAgC,EAAO,KAAO,GAC/C,EAAK,SAAS,UAGtB,E
AAK,OAAO,QAAQ,IAGd,GAAMB,YAAnB,EAAM,SAawB,CAC1B,MAAA,GACF,EAA6B,EAAA,8BAAA,EA
AM,KAAM,EAAW,GACzC,MAAX,GACF,EAAQ,QAAQ,IACV,GAAA,IAAW,EAAc,IAAI,EAAO,IAAK,CACr
C,MAAA,EAAQ,EAAgC,EAAO,IACvC,IAAV,GACF,EAAO,iBACA,EAAgC,EAAO,KAC5B,MAAT,GAGT,EA
AgC,EAAO,aAkB/C,mBAAa,EAawB,GAEIC,OAAA,KAAK,cAAc,EAAQ,GAiBtB,oBACV,EAawB,EAAoB,G
AAsB,EACIE,EAAiC,GACjC,EAA+B,IAC5B,IACH,EAAS,KAAK,UAAU,GACnB,KAAA,YAAY,GACZ,KAAA
,uBAAuB,GAC5B,EAAU,KAAK,WAAW,GACrB,KAAA,aAAa,IAGd,MAAA,EAAU,IAAI,EAAJ,iBACZ,KAAK
,UAAW,EAAGB,EACbC,KAAK,qBAKH,QAAkB,KAAK,uBACzB,EAAQ,EAAS,EAAS,GACxB,EAAU,EAAQ,I
AAI,IAAQ,EAAU,EAAA,WAAA,EAAM,EAAW,IAGzD,EAAy,EAAQ,IAAI,GAAG,EAAE,IAC/B,EAAW,OAA
O,KAAK,GAAQ,IAAI,GAAQ,EAAO,GAAM,IACxD,EACF,IAAI,IAAY,IAAI,KAAc,KAAa,KAAK,YAcjD,OAb
P,OAAO,KAAK,GAaw,QAAQ,IACt,EAAU,GACIB,QAAQ,KACd,GAaw,EAAO,YAAe,EAAQ,IAAI,EAAO,
KACtD,EAAO,cAKM,MAAf,KAAK,QACP,EAAQ,QAAQ,GAGX,EAGH,2BACF,EAakB,EACIB,GACI,MAAA,
EAAe,EAAO,OAAO,CAAC,EAAK,EAAQ,KAC/C,EAAI,KAAK,OAAO,GAao,MAAQ,EACxB,GACN,IAEI,O
AAA,KAAK,cACR,EAAc,KAAK,aAAa,EAAM,EAAGB,GAa9C,6BACV,EAawB,EAA2B,EACnD,GACI,MAAA
,EAAQ,OAAO,KAAK,GACpB,EACF,EAAM,IAAI,GAAQ,KAAK,MAAM,OAAM,EAAc,EAAA,eAAA,GAAM,
KACrD,EAakB,EAAy,IAAI,IAAQ,EAAc,EAAA,eAAA,GAAM,IACHE,IAAA,EAAc,EAAGB,IAAI,GAAQ,KAA
K,MAAM,MAAM,IAGpC,IAAvB,EAAy,SACd,EAAc,KAAK,UAGf,MAAA,UAAC,EAAD,cAAy,EAAZ,YAA2
B,EAA3B,WAAwC,IAC1C,EACI,EAAA,sBAAA,EAAQ,EAAa,KAAK,UAAW,KAAK,YAG5C,EAA4B,IAC7B,
KAAe,KAAK,MAAM,WAAa,KAAK,YAAc,IAC7D,IAAI,IACG,CAAC,KAAA,EAAM,SAAU,EAAQ,kBAE5B,E
AAU,OAAA,OAAA,GAawB,KAAK,WAC7C,OAAO,KAAK,GAAQ,QAAQ,IACpB,MAAC,EAAU,IAAS,EAAc,
EAAA,eAAA,GACIC,EAAoB,GAC1B,EAAQ,GAAS,EAAO,GACxB,EAAW,GAAY,IAEnB,MAAA,EAA2D,GA
C3D,EAAGB,KAAK,mBAAmB,GACxC,EAakC,GACjC,KAAA,EAAM,OAAS,GAAG,CACjB,MAAA,EAAW,K

AAK,aACIB,EAAY,EAAO,EAAS,EAAY,EAAO,EAC/C,EAAiB,EAAiC,SACbD,QAAQ,IAAI,GAED,MAAf,GA
AwB,GAC1B,QAAQ,KACJ,mIAGA,MAAA,EACF,EACK,OACG,KAAS,EAAC,EAAA,eAAA,MACIB,EAAU,E
AAA,WAAA,EAAC,KAAM,EAAY,IACzC,IAAI,GAAQ,EAAC,MACtB,GAAA,EAAC,OAAS,EAAG,CACzB,IA
AA,EAAiB,GAMf,MALa,MAAf,IACF,EACI,2FAC2B,MAE3B,IAAI,qCACyB,mCACpB,oDACP,OAAmB,KAET
B,OAAA,EAGD,aACJ,EAAoB,EAA2B,EAC/C,EAA4B,EAC5B,EAA4B,EAC5B,EACA,GACI,MAAA,EAAqC,G
ACpC,KAAA,EAAM,OAAS,GAAG,CACjB,MAAA,EAAO,EAAM,MACnB,EAAQ,eAAiB,EAAC,SAC1B,IAAA
,EAAW,GAWX,GAPiB,UAAjB,EAAC,KAAK,KACV,EAAC,EAAA,eAAA,aAAc,EAAC,KAAM,EAAW,MACn
D,IAAY,EAAoB,EAAA,qBAAA,EAAC,KAAK,KAAM,IAKIB,MAA7B,EAAU,EAAC,KAAK,MAAE,CAC/B,M
AAA,GACF,EAAU,EAAA,WAAA,EAAC,KAAM,EAAW,EAAS,KAAK,kBAC7C,KACF,IAAY,EAAoB,EAAA,
qBAAA,EAAC,KAAK,KAAM,IAE7C,MAAA,EAAiB,EAAQ,eAC3B,EAAC,KAAA,UAAU,GACjB,EAAS,KAA
M,EAA8B,KAAK,IACbD,EAAU,GAAY,EACtB,EAAQ,eAAiB,EACpB,KAAA,uBACD,EAAU,EAAC,KAAM,E
AAW,EAAS,EACzC,EAAa,GACZ,KAAA,kBACD,EAAC,KAAM,EAAO,EAAS,EAAW,EAAO,GAC1C,MAGT,
EAAU,GAAY,EACjB,KAAA,uBACD,EAAU,EAAC,KAAM,EAAW,EAAS,EACzC,EAAa,GACZ,KAAA,kBAC
D,EAAC,KAAM,EAAO,EAAS,EAAW,EAAO,SAG9C,KAAA,kBACD,EAAC,KAAM,EAAO,EAAS,EAAW,EA
AO,GAG9C,OAAA,EAGD,kBACJ,EAAY,EAA2B,EACvC,EAA4B,EAC5B,GACF,EAAC,SAAS,QAAS,IACf,M
AAC,IAAc,EAAoB,EAAA,qBAAA,EAAU,KAAM,IACrD,EAAM,IAAc,EAAU,IAAI,EAAU,QAI3B,UAAjB,EA
AU,GACR,EAAU,WAAW,KAAK,MACf,EAAU,EAAA,WAAA,EAAM,EAAW,MAEXC,EAAM,IAAY,EACIB,E
AAM,KAAK,CAAC,SAAU,EAAQ,eAAgB,KAAM,KAGhD,EAAU,WAAW,MAAM,MACHb,EAAU,EAAA,WA
AA,EAAM,EAAW,MAE5C,EAAM,IAAY,EACIB,EAAM,KAAK,CAAC,SAAU,EAAQ,eAAgB,KAAM,QAQ1D,
UACE,OAAO,KAAK,KAAK,WACZ,QACG,GAAO,KAAK,UAAU,GAAC,QAAQ,GAAU,EAAO,YAGtD,uBAA
uB,GAC7B,OAAO,KAAK,GAAQ,QAAQ,IACpB,MAAA,EAAQ,EAAO,IACd,IAAc,EAAC,EAAA,eAAA,GAC7
B,EAAO,KAAK,MAAM,MAAM,GAC1B,GAAA,EAAC,WAAL,OAA4B,EAAC,WAAL,MAAyB,MAAO,CACx
D,MAAA,EAAQ,EAAC,WAAL,MAAyB,MACjC,EAAQ,EAAM,SAAW,EAAM,MAAM,QACvC,EAAM,MAA
M,MACR,CAAC,EAAC,KAA4B,IAAI,EAAM,IAAI,EAAM,KAAW,GAC3D,EAAA,KAAA,OACD,EACA,0B
AA4B,EAAC,sDACG,mBAC5B,EAAM,UAehB,EAAC,WAAL,OAA4B,EAAC,WAAL,MAAyB,OACID,EAAA,
KAAA,OACD,EAAM,QAQU,EAAC,WAAL,MAAyB,MACzC,0BAA4B,EAAC,sBAC7B,kCACG,EAAC,WAAL
,MAAyB,kBAaKb,EAAM,WAK1D,UAAU,GACV,MAAA,EAAY,B,GAC1B,IAAA,MAAM,KAAa,EACIB,GAA
mB,MAAnB,KAAK,YAAgD,MAA1B,KAAK,WAAW,QACN,MAArC,KAAK,WAAW,OAAO,GAAoB,CAE7C,
EADe,KAAK,WAAW,OAAO,GACxB,MAAQ,EAAO,QAe7B,EAAO,GAAa,EAAO,GAGxB,OAAA,EAGD,YAA
Y,GACZ,MAAA,EAAa,OAAO,KAAK,GAAQ,OAAO,IACtC,MAAC,IAAY,EAAC,EAAA,eAAA,GAC1B,OAA8
B,MAA9B,KAAK,MAAM,MAAM,KAETB,GAAA,EAAW,OAAS,EACHB,MAAA,IAAI,MACN,0DACU,iCAIV,
WAAW,GACV,OAAA,EAAQ,IAAI,IACb,GAAmB,MAAnB,KAAK,YAAiD,MAA3B,KAAK,WAAW,SACV,M
AAjC,KAAK,WAAW,QAAQ,GAAe,CAEIC,OADQ,KAAK,WAAW,QAAQ,GACzB,KAET,OAAA,GACN,IAGG
,aAAa,GACnB,EAAQ,QAAQ,IACR,MAAC,IAAkB,EAAC,EAAA,eAAA,GACnC,IAAC,KAAK,MAAM,MAAM,
GACd,MAAA,IAAI,qBAAqB,mCAh1Bb,QAAA,cAAA;;ACbE,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA
,IAAA,QAAA,qBAAA,EAAtB,MAAO,EACX,YACa,EAawC,GACxC,EAA6B,IAD7B,KAAA,sBAAA,EACA,K
AAA,aAAA,EAwb,aAAA,EAAC,GACpB,KAAA,sBAAsB,GAAQ,EAAU,OACxC,KAAA,aAAA,EAAU,IAAM,EA
QpC,yBAAYB,GACbB,OAAA,KAAK,sBAAsB,GAOpC,iBAAiB,GACR,OAAA,KAAK,aAAa,GAM3B,UACO,IA
AA,MAAM,KAAO,KAAK,aChB,KAAA,aAAA,GAAC,uBACHB,KAAK,aAAa,GAGtB,IAAA,MAAM,KAAQ,K
AAK,sBACjB,KAAA,sBAAsB,GAAM,iBAC1B,KAAK,sBAAsB,IA/CZ,QAAA,gBAAA;;ACma3B,aAAA,OAAA
,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,eAAA,EAAA,QAAA,WAAA,QAAA,mBAAA,QAAA,wBAA
A,EAxaD,IAAA,EAAA,QAAA,yBAIA,EAAA,QAAA,kCAEA,EAAA,QAAA,oBACA,EAAA,QAAA,sBAEO,MA
AM,EAAqB,oBA+ZjC,QAAA,mBAAA,EA9ZM,MAAM,EAAqB,a8ZjC,QAAA,mBAAA,EAnZK,MAAO,EAm
DX,YACY,EACA,EAA8B,IAD9B,KAAA,SAAA,EACA,KAAA,YAAA,EAnDJ,KAAA,QAQU,MAoDG,MAAf,I
ACG,KAAA,YAAc,IAehB,KAAA,gBAaKb,IAAI,EAaj,gBA/CrB,mBACK,OAAA,KAAK,QAGV,iBACK,OAA
A,KAAK,SAAS,WAGnB,kBACK,OAAA,KAAK,SAAS,YAGnB,aACK,OAAA,KAAK,SAAS,OAGnB,cACK,OA
AA,KAAK,SAAS,QAGnB,cACK,OAAA,KAAK,SAAS,UAGnB,eACK,OAAA,KAAK,UAAU,oBAGpB,qBACK,
OAAA,KAAK,UaqBN,gBACA,MAAA,EAAO,KAAK,SACb,GAA8B,MAA9B,EAAsB,KAepB,KAAA,QAQU,O

ACV,GAAoC,MAAhC,KAAK,YAAy,YACrB,KAAA,QAAU,EAAG,GAAA,mBAAmB,EAAGB,KAAK,iBACrD,
CACC,MAAA,EAAG,EAAG,GAAA,gBAAGB,EAAGB,KAAK,aACrD,GAAoB,IAApB,EAAS,OAGX,EAAS,KA
AK,EAAG,GAAA,mBAAmB,EAAGB,KAAK,mBACpD,GAAl,EAAS,OAAS,EACrB,MAAA,IAAI,8BACKB,EA
AS,qCACzB,CAAC,OAEV,KAAA,QAAU,EAAS,IAQtB,aAEA,GADC,KAAA,gBACoB,MAArB,KAAK,QAAQ,
KACT,MAAA,IAAI,MACN,iHAGA,MAAA,QAakB,KAAK,QAAQ,OAE9B,OAAA,KAAK,SAAS,GASvB,SAA
S,GACF,KAAA,UAAy,EACX,MAAA,EAAQ,KAAK,UAAU,cAEzB,IAAA,EAGF,EAfwC,MAAtC,KAAK,UAA
U,qBACiC,MAAhD,KAAK,UAAU,oBAAoB,UAE3B,KAAA,UAAU,oBAA4B,UAGpC,KAAK,UAAU,UAExB,K
AAA,UAAy,EAeZ,KAAA,WAAa,EAAM,SAAS,YAAy,EAAM,SAAS,cACtD,MAAA,EACF,EAAG,GAAA,cA
Ac,KAAK,UAAU,WAAy,KAAK,UAAU,aAQ3D,GAPC,KAAA,SAAW,IAAI,EAAl,cACZ,EAAGB,gBAAA,SAA
S,eAAe,EAAO,KAAK,YACnD,KAAA,SAAS,UAAy,KAAK,6BAA6B,GAGvD,KAAA,SAAS,gBAakB,KAAK,g
BAEH,MAA9B,EAAU,kBACmD,MAA5D,EAAU,iBAA0C,KAAc,CAC/D,MAAA,EACF,EAAGB,gBAAA,SAAS
,eAAe,EAAU,kBACjD,KAAA,YAAc,IAAI,EAAl,cAAkB,GAChC,KAAA,YAAy,UAAy,KAAK,SAAS,UAtC,K
AAA,YAAy,gBAakB,KAAK,gBACnC,KAAA,YAAy,aAAa,GAAl,IAG7B,OAAA,EA+CH,WAAK,EAAMC,GA
ExC,GAAwB,iBAAjB,EAA2B,CAC9B,MAAA,EAAG,EAAG,GAAA,gBAAGB,GAChC,GAAoB,IAApB,EAAS,
OACL,MAAA,IAAI,gDACoC,MACzC,GAAl,EAAS,OAAS,EACrB,MAAA,IAAI,8BACKB,EAAS,qCACzB,MAE
d,EAAe,EAAS,GAEtB,GAAqB,MAArB,EAAa,KACT,MAAA,IAAI,MACN,+GAIC,OAAA,EAAa,KAAK,KAAK
,WYyChC,QAAQ,EAAwC,GAEvC,OAAA,KAAK,QAAQ,EAAQ,KAAK,aAG3B,gBAAGB,GAElB,KAAE,aAAk
B,EAAPB,QAAgC,MAAM,QAAQ,IAEzC,OAAA,EAGL,IADJ,EAAS,MAAM,QAAQ,GAAU,EAAS,CAAC,IAC
C,SAAW,KAAK,WAAW,OAC9B,MAAA,IAAI,MACN,sDACuB,KAAK,WAAW,2CACpB,EAAO,yBAEzB,OA
AA,KAAK,WAAW,OAAO,CAAC,EAak,EAAG,KAC7C,EAAl,GAAC,EAAoB,GAC/B,GACN,IAGG,iBAaiB,G
AEhB,OADP,EAAU,GAAW,KAAK,YACIB,MAAM,QAAQ,GAAuB,EAAG,CAAC,GAmBpC,QAAQ,EAAwC,G
AE9C,EAAS,KAAK,gBAAGB,GAC9B,EAAU,KAAK,iBAaiB,GAC1B,MAAA,EAAS,KAAK,SAAS,QAAQ,EA
AQ,GACtC,OAAA,EAAO,OAAS,EAAl,EAAS,EAAO,GakBvC,mBACF,EACA,GACF,EAAS,KAAK,gBAAGB,
GAC9B,EAAU,KAAK,iBAaiB,GAC1B,MAAA,QAAe,KAAK,SAAS,aAAa,EAAQ,GACjD,OAAA,EAAO,OAAS
,EAAl,EAAS,EAAO,GAGrC,6BAA6B,GAC5B,OAAA,OAAO,KAAK,GAak,OAAO,CAAC,EAayB,KACvD,E
AAO,GAAO,CAAC,EAAl,IACZ,GACN,IAQL,UACO,KAAA,SAAS,UAEV,KAAK,aACF,KAAA,YAAy,UAGd,
KAAA,gBAAGB,WakCIB,eAAe,EACIB,EACA,EAA0B,IACxB,GAAY,MAAZ,EACI,MAAA,IAAI,MACN,0GA
GS,MAAX,IACF,EAAU,IAGR,EAAQ,WAC6B,MAAIC,EAA0B,OACvB,EAAoB,SAAS,OACjC,GAakC,KAEP
C,KAAc,IAAW,IAAqB,KAG5C,MAAA,EAAQ,IAAI,EAAG,EAAU,GAehC,aADD,EAAM,OACL,EACR,QAAA,
WAAA;:AlUtaD,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,OAAA,eAAA,QAAA,aAAA,CAAA,Y
AAA,EAAA,IAAA,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QAAA,iBAAA,CAAA,YAAA,EAAA,IAAA,WA
AA,OAAA,EAAA,kBAAA,OAAA,eAAA,QAAA,eAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,gB
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,cAAA,OAAA,eAAA,QA
AA,oBAAA,CAAA,YAAA,EAAA,IAAA,WAAA,OAAA,EAAA,WAHA,IAAA,EAAA,QAAA,0BACA,EAAA,Q
AAA,mCAEA,EAAA,QAAA;:oEmUFA,IAAA,EAAA,QAAA,yBAQA,SAAS,EAayB,GAChC,IAAM,EAAG,EA
AkB,MAAM,GACnC,EAAMB,EAAG,OAAO,EAAMB,GAehD,EAAMB,EAAG,QAAQ,EAakB,EAae,IAExD,O
AAO,EAAG,OAAO,EAakB,GAGrC,SAAS,EAAa,EAAoB,GACxC,OAAO,EAAG,IAAI,EAAO,GAGvB,SAAGB
,EACZ,EAA4B,GAC9B,OAAO,EAAG,KACN,WACI,OAAC,EAAG,KAAK,EAAG,QACR,EAae,EAAG,OAAO,
IAAa,WakBpD,SAAGB,EACZ,EACA,GACI,IAAA,EAAA,EAAA,MAAC,EAAA,EAAA,GAAe,EAAA,EAAA,G
AAc,EAAA,EAAA,GACpC,OAAO,EAAG,KAAK,WACb,IAAM,EAae,EAayB,GACxC,EAAC,EAAG,WAAW,E
AAG,MAAM,EAAG,EAAU,EAAG,SAAU,GAED,EACF,EAAG,KAAK,EAAG,OAAO,EAAC,GAA6B,SAE3D,E
AAU,EAAG,QAAQ,EAakB,CAAC,EAae,IAEvD,EAA8B,EAAG,IAAI,EAAS,EAAG,OAAO,EAAG,UAEjE,OA
AO,EAAG,IAAI,EACH,EAA4C,GACjD,EAAG,OAAO,EAAG,YAIvB,SAAGB,EAA2B,GAEnC,IAAA,EAAA,EA
AA,MAAC,EAAA,EAAA,GAAe,EAAA,EAAA,GAAC,EAAA,EAAA,GACpC,OAAO,EAAG,KAAK,WACb,IAA
M,EAae,EAayB,GACxC,EAAC,EAAG,WAAW,EAAG,MAAM,EAAG,EAAU,EAAG,SAAU,GAED,EACF,EA
AG,KAAK,EAAG,OAAO,EAAC,GAA6B,SAEjE,OAAO,EAAG,QAAQ,EAakB,CAAC,EAae,MAtdxD,QAAA,a
AAA,EAuBA,QAAA,uBAAA,EAqBA,QAAA,2BAAA;:oEC5EA,IAAA,EAAA,QAAA,yBAYA,EAAA,WACE,S
AAA,EACuB,EACH,GADG,KAAA,MAAA,EACH,KAAA,aAAA,EACIB,IAAM,EACF,KAAK,MAAM,OAAO,G

AAG,MACzB,EAAG,KAAK,QACgB,IAAnB,EAAW,KAAkC,IAAnB,EAAW,GACtC,WAAM,MAAA,gBAAgB,EAAW,GAAE,KAAK,EAAW,GAAE,kCAyE7D,OAjDE,EAAA,UAAA,QAAA,SAAQ,GAAR,IAAA,EAAA,KAUE,OOAO,EAAG,KAAK,WACb,IAAM,EAU,EAk,gBAAgB,EAAG,KAAK,EAAO,YAC9C,EAU,EAAG,WA AW,EAAS,GAEjC,EADU,EAk,MAAM,QAAQ,GACM,IAAI,SAAA,GAk,OOAA,EAAG,QAAQ,EAAG,CA AC,MAC3D,EAAe,EAk,kBAAkB,GAE5C,MAAO,CACL,cAAe,EAAG,QAAQ,EAAa,SACvC,QAAS,EAAa,Q ACtB,gBAAiB,EAAa,gBAC9B,gBAAiB,EAAa,gBAC9B,aAAc,EAAa,aAC3B,aAAc,EAAa,aAC3B,YAAa,EAAa, YAC1B,YAAa,EAAa,gBAqBhC,EAAA,UAAA,QAAA,WACE,KAAK,MAAM,WAef,EAjFA,GAAsB,QAAA,UA AA;:yaCdtB,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,gBAEA,EAAA,SAAA,GAAA,SAAA,mDA4BA,OA5B +B,EAAA,EAAA,GAC7B,EAAA,UAAA,gBAAA,SAAgB,GAEd,OOAO,EAAG,KAAK,WAAM,OOAA,EAAG,IA AI,EAAG,IAAI,EAAO,OOAQ,MAGpD,EAAA,UAAA,kBAAA,SAAkB,GAWhB,MAAO,CACL,QAVA,EAAA, GAWA,aAVA,EAAA,GAWA,aAVA,EAAA,GAWA,YAVA,EAAA,GAWA,QAVA,EAAA,GAWA,gBAVA,EAA A,GAWA,gBAVA,EAAA,GAWA,YAVA,EAAA,KAA,EA5BA,CAA+B,EAAA,WAAlB,QAAA,UAAA;:oECA A,QAAA,WAAa,CACxB,OOAQ,UAAW,WAAY,UAAW,WAAY,eACtD,gBAAiB,YAAa,aAAc,YAAa,aACzD,U AAW,WAAY,WAAY,YAAa,YAAa,cAGID,QAAA,cAAgB,QAAA,WAAW,OAM3B,QAAA,SACT,QAAA,WAA W,OOAO,SAAC,EAAoB,EAAW,GAehD,OADa,EAAO,GAAa,EACb,GACN,IAEP,IAAM,EAAsC,CAC1C,CAA C,UAAW,gBAAiB,CAAC,YAAa,gBAC3C,CAAC,YAAa,aAAc,CAAC,UAAW,YACxC,CAAC,WAAY,aAAc,CA AC,WAAY,iBACxC,CAAC,aAAc,iBAAkB,CAAC,aAAc,cAChD,CAAC,WAAY,aAAc,CAAC,YAAa,cACzC,CA AC,eAAgB,iBAAkB,CAAC,UAAW,aASpC,QAAA,WAA4B,CACvC,CAAC,OOAQ,WAAY,CAAC,UAAW,WA AY,CAAC,OOAQ,YACtD,CAAC,WAAY,YAAa,CAAC,OOAQ,gBACnC,CAAC,eAAgB,aAAc,CAAC,YAAa,aA C7C,CAAC,eAAgB,WAAY,CAAC,UAAW,YACzC,CAAC,WAAY,aAAc,CAAC,OOAQ,iBACpC,CAAC,gBAAi B,cAAe,CAAC,aAAc,cAChD,CAAC,gBAAiB,YAAa,CAAC,WAAY,aAC5C,CAAC,YAAa,eAGH,QAAA,uBAAY B,EAAqB,IACvD,SAAC,OOAC,EAAA,EAAA,GAAY,EAAA,EAAA,GACV,MAAA,CAAE,QAAA,SAAS,GAAa ,QAAA,SAAS;:oECIDzC,IAAA,EAAA,QAAA,gBAGA,SAAgB,EACZ,EACA,EACA,OAFC,EAAA,EAAA,GAA Q,EAAA,EAAA,GACR,EAAA,EAAA,GAk,B,EAAA,EAAA,GAEd,EAAA,EAAA,IAAW,EAAA,EAAA,OAGIB ,MAAO,CADQ,GAFiB,EAAA,KAA,Y,EAAA,MAEK,GADIC,GAAoB,EAAO,EAAO,IAKnD,SAAgB,EACZ,EAA W,EAAW,EAk,B,GAC1C,MAAO,CACL,EAAG,EAAQ,IAAI,EAAG,EAAG,GACtB,EAAG,EAAQ,IAAI,EAAG ,EAAG,EAAW,EAAA,gBAIpC,SAAgB,EACZ,EAAY,EAAsB,GAC7B,IACD,EAAA,EADC,EAAA,SAAU,EA A,SAAU,EAAA,GACrB,GAAC,EAAA,EAAA,EAAG,EAAA,EAAA,EACV,MAAO,CACL,EAAG,EAk,SAAW ,EAAe,EACIC,EAAG,EAk,SAAW,EAAe,GAItC,SAAgB,EAAa,EAAY,GAGvC,IAFA,IAAM,EAAC,IAAI,MA AM,GAErB,EAAl,EAAG,EAAl,EAAM,IACxB,EAAO,GAk,EAAG,OOAO,EAGT,SAAgB,EAAM,EAAW,EA Aa,GAC5C,OOAI,EAAl,EACC,EAEL,EAAl,EACC,EAef,EAGT,SAAgB,EACZ,EAAY,EAAY,EAAY,GACtC,IA AM,EAk,EAk,EACV,EAk,EAk,EACb,OOAO,EAk,EAk,EAk,EAxB,SAAgB,EAAW,EAAa,G ACtC,MAAO,CAAC,EAAG,EAAE,EAAl,EAAE,EAAG,EAAG,EAAE,EAAl,EAAE,GAGnC,SAAgB,EAAY,EA Aa,EAAa,GACpD,MAAO,CAAC,EAAG,EAAM,EAAE,EAAG,EAk,GAAM,EAAG,EAAM,EAAE,EAAG,EA A,K,IA5DtD,QAAA,SAAA,EAUA,QAAA,eAAA,EAQA,QAAA,eAAA,EAUA,QAAA,UAAA,EAUA,QAAA,MAA A,EAUA,QAAA,gBAAA,EAOA,QAAA,WAAA,EAIA,QAAA,YAAA;:oEC9DA,IAAA,EAAA,QAAA,gBAGA,E AAA,QAAA,UAOA,SAAS,EAAGB,EAAMb,EAAY,QAAA,IAAA,IAAA,EAAA,IAGtD,IAFA,IAAI,EAAW,EAC X,EAAS,EACJ,EAAl,EAAG,EAAl,EAU,OOAQ,IACb,EAk,UAAU,GAAG,MAAQ,IAC5B,GAU,EACV,G AAY,KAAA,IAAC,EAU,GAAG,EAAl,EAk,UAAU,GAAG,SAAS,EAAM,GAC3D,KAAA,IAAC,EAU,GA AG,EAAl,EAk,UAAU,GAAG,SAAS,EAAM,IAQ3D,OALe,IAAX,EACF,EAAW,EAAA,EAEX,GAAsB,EAejB ,EAGT,SAAS,EACL,EAAGB,EACb,EAAoC,OADnB,EAAA,EAAA,GAAM,EAAA,EAAA,GACtB,EAAA,EA A,GAAQ,EAAA,EAAA,GACL,EAAl,KAAK,QAAQ,EAAO,EAAS,EAAl,GAO,EAAS,GAO,GAElE,MAAO, CAAC,EADE,KAAK,QAAQ,EAAO,EAAS,EAAl,GAO,EAAS,GAO,GACvD,EAAC,GAGd,SAAS,EACL,EA AgB,EACb,EAAYc,EACzC,EA2B,EAC3B,GAQF,QARG,EAAA,EAAA,GAAQ,EAAA,EAAA,GACL,EAAC, EAk,B,GAehC,EAk,EAAY,EAAl,EAAoB,EAAY,EACvD,EAk,EAAY,EAAA,eAAiB,EAAl,GAAM,GAC5 C,EAk,EAAY,EAAA,eAAiB,EAAl,EAk,GAk,GACbD,EAAl,EAAS,EAAl,EACjB,EAAl,EAAS,EAAl,EA CZ,EAAl,EAAG,EAAl,EAAa,IAk,CACpC,EAAl,KAAK,IAAI,EAAG,EAAS,GAEB,IAAM,EAAS,EAk,B,C AAC,EADIC,EAAl,KAAK,IAAI,EAAG,EAAQ,GACa,EAAC,IACb,EAk,EAAO,EAAl,EAAoB,EAAO,EAGj

D,GAFa,EAaK,EAAY,EAAA,eAAiB,EAaI,GAAM,GAG5C,GAFa,EAaK,EAAY,EAAA,eAAiB,EAaI,EAaK,GAaK,GAKID,MAAO,CAAC,EAAC,EAaE,EAAC,GAGd,SAAS,EAcl,EAaGB,EAa2B,EAC3C,EAa2B,EAC3B,EAa0C,EACpC,EAaM,C,EAACn,C,GAKF,QAR8B,EAAA,EAAA,GAAM,EAAA,EAAA,GACjC,EAAA,EAAA,GAaQ,EAAA,EAAA,GACR,EAAA,EAAA,GAaQ,EAAA,EAAA,GAEL,EAaGB,GACbB,EAa0B,SAAC,GACvB,OAAA,EAAYB,EAAM,CAAC,EAAM,GAaO,CAAC,EAaQ,GAAS,IAE1D,EAaIb,EAAG,EAaIb,EACzC,IAAkB,CACrB,IAAM,EAAY,EACd,EAaU,EAaGB,EAaMB,EAC7C,EAaA,EAaA,CAAC,EAaQ,IAEvC,EAAM,KAaK,GAKb,IAFA,IAAI,GAaQ,EACR,EAaW,EAAA,EACN,EAaI,EAAG,EAaI,EAAM,OAAQ,IAAK,CACrC,IAAM,EAaO,EAaGB,EAaO,EAAM,IACtC,EAaO,IACt,EAaO,EACP,EAaW,GAGf,OAAO,EAGT,SAAS,EACL,EACA,OADC,EAAA,EAAA,GAaKB,EAAA,EAAA,GAiRb,MAAO,CAFMb,KAaK,OAAO,EAaMB,GAaO,EAAS,GAC/C,KAaK,OAAO,EAaMB,GAaO,EAAS,IAI3E,SAaGB,EACZ,EAa0B,EAC1B,EAAYB,EAaGB,EAae,EACxD,EAaUc,EACvC,EAaQb,OADpB,EAAA,EAAA,GAaU,EAAA,EAAA,QACU,IAAA,IAAA,EAAA,GAUvB,IATA,IAAM,EACF,EAaGB,IAAI,SAAA,GAaK,OAAA,IAAI,WAaW,EAAS,GAaO,KAaK,KAElD,EAaA,EAAA,IAAW,EAAA,EAAA,KAeZ,EAAA,EAAA,SAAA,CAAA,EAAA,GAAA,CAAA,EAAA,GAAA,GAAC,EAAA,EAAA,GAaQ,EAAA,EAAA,GAER,EAAA,EAAA,CAAA,EAAA,GAAA,GAAA,GAEE,EAaI,EAAG,EAaI,EAaQ,GAaK,EAC/B,IAAK,IAAI,EAaI,EAAG,EAaI,EAaO,GAaK,EAAG,CACjC,IAAM,EAaI,EAaI,EAaQ,EAeTb,GAaA,IADA,EAaA,GACV,CACd,IAAM,EAaO,EACT,CAAC,EAAG,EAAG,EAAG,GAaI,EAaA,EAaIb,EAC5C,CAAC,EAAM,GAaO,CAAC,EAaQ,GAAS,EAaMB,CAAC,EAaQ,GAC5D,EAaQ,GACR,GAaQ,IAcV,EAaW,GAAM,GAaK,IAM9B,OAAO,EAGT,SAaGB,EACZ,EAa0B,EAC1B,EAa6B,EAAYB,EACtD,EAaE,EAaGB,EAC/B,EAaKB,EACIB,OAFgC,EAAA,EAAA,GAaU,EAAA,EAAA,QAE1C,IAAA,IAAA,EAAA,GAWF,IAVA,IAAM,EACF,EAaGB,IAAI,SAAA,GAaK,OAAA,IAAI,WAaW,EAAS,GAaO,MAAM,KAe3D,EAaA,EAAA,IAAW,EAAA,EAAA,KAeZ,EAAA,EAAA,SAAA,CAAA,EAAA,GAAA,CAAA,EAAA,GAAA,GAAC,EAAA,EAAA,GAaQ,EAAA,EAAA,GAER,EAAA,EAAA,CAAA,EAAA,GAAA,GAAA,GAGE,EAaI,EAAG,EAaI,EAaQ,GAaK,EAC/B,IAAK,IAAI,EAaI,EAAG,EAaI,EAaO,GAaK,EAAG,CACjC,IAAM,EAaI,EAaI,EAaQ,EAeTb,GAaA,IADA,EAaA,GACV,CACd,IAAM,EAaO,EACT,CAAC,EAAG,EAAG,EAAG,GAaI,EAaA,EAaIb,EAC5C,CAAC,EAAM,GAaO,CAAC,EAaQ,GAAS,EAaMB,CAAC,EAaQ,GAC5D,EAaQ,GACR,GAaQ,IAcV,EAaW,GAAM,GAaK,EAaGB,KAM9C,OAAO,EAjET,QAAA,uBAAA,EAiCA,QAAA,2BAAA;;oECiA,IAAA,EAAA,QAAA,yBAGA,EAAA,QAAA,gBAEA,EAAA,QAAA,UAEA,SAaGB,EACZ,EAa2B,EAC3B,EAAYB,EAaGB,EAaE,EACxD,EAaUc,EACvC,EAaQb,EACrB,GAaF,QAFg,EAAA,EAAA,GAaU,EAAA,EAAA,GAIP,EAAA,EAAA,MAAC,EAAA,EAAA,GAAY,EAAA,EAAA,GAEB,EAAA,EAAA,MAAA,MAAA,EAAA,GAAC,EAAA,EAAA,GAaW,EAAA,EAAA,GAeZ,EACF,EAAG,QAAQ,EAaA,CAAC,EAaW,EAaU,EAAG,EAaA,gBAK/C,EAaW,IAAI,aAAa,EAaE,EAAA,cAAgB,GAAG,KAaK,GACHE,EAaI,EAAG,EAaI,EAaGB,OAAQ,IAG1C,IAFA,IAAM,EAaA,EAaI,EAAA,cAAgB,EACjC,EAaO,EAaGB,GACpB,EAaK,EAAG,EAaK,EAAA,cAAE,IAAM,CACzC,IAAM,EAaW,EAaK,UAAU,GAC1B,EAAS,EAaKB,EAAL,EAC5B,EAAS,GAaU,EAAS,MAC5B,EAAS,EAAS,GAaK,EAAS,SAAS,EACzC,EAAS,EAAS,GAaK,EAAS,SAAS,EAiVc,IAAA,EAAA,EAaA,SAAA,CAAA,EAAA,GAAA,CAAA,EAAA,GAAA,GAAC,EAAA,EAAA,GAaQ,EAAA,EAAA,GAGT,EAac,EAAG,OAAO,EAaU,CAAC,EAaC,EAAA,cAAE,IAE/D,EAAA,EAAA,IAAW,EAAA,EAAA,KAeZ,EAaiC,CACrC,cAAE,CAAC,eAAgB,cAAE,SAC/C,YAAa,CAAC,EAAY,GAC1B,SAaU,gyCAcSd,EAaI,KAaK,EAAM,KAaK,EAAM,0EAElB,EAaI,KAaK,EAAM,KAaK,EAAM,2FAIX,EAAY,mGAGV,EAAA,cAAa,6PAOX,EAaW,4DACK,EAAS,GAAG,wDACZ,EAaQ,GAAG,iGAGjC,EAaI,KAaK,EAAM,KAaK,EAAM,6FAElB,EAaI,KAaK,EAAM,KAaK,EAAM,wXAYxB,EAaW,ifAqBrC,OAdqB,EAAG,UACJ,cAChB,EAAS,CAAC,EAaC,EAaMB,IAvIjD,QAAA,yBAAA;;k6CCPA,IAAA,EAAA,QAAA,yBACA,EAAA,QAAA,yBAIA,EAAA,QAAA,+BACA,EAAA,QAAA,iCAEA,SAaGB,EACZ,EAa2B,GAC7B,OAAO,EAAG,KACN,WAAM,OAAO,EAAG,KAaK,EAAG,MACd,EAaC,EAAG,OAAO,IAAK,WAGvC,SAaGB,EACZ,EAa2B,EAawB,GACrD,OAAO,EAAG,KACN,WAAM,OAAA,EAAG,IAAI,EAAG,IAAI,EAAG,KAaK,EAAG,MAC3B,EAaC,EAAG,OAAO,IAAK,SAaU,EAAG,IAAI,EAaW,IAAK,KAGxE,SAAS,IACP,MAawB,UAAjB,EAAA,aAGT,SAASB,EACIB,EAa2B,EAa0B,EACrD,EAaGB,EAaE,EAC/B,EAaUc,EAaKB,EACzD,EAaIb,EACjB,OAFc,EAAA,EAAA,GAaU,EAAA,EAaA,eAA8C,IAAA,IAAA,EAAA,SACzD,IAAA,IAAA,EAAA,QAAiB,IAAA,IAAA,EAAA,SACjB,IAAA,IAAA,EAaA,0GAEl,EAaKB,EAAM,OAAO,SAAA,GAaQ,OAAA,EAaK,OAAS,IAiVd,KACI,EAASB,EAAG,KAaK,WA

CIC,IAAM,EAakB,EAAA,yBACpB,EAac,EAAa,EAAiB,EAAQ,EAAO,EAC3D,CAAC,EAAU,GAAU,EAAS,EAAa,EAC3C,GACE,EAac,EAAG,SAAS,qBAC5B,EAagB,OAAQ,EAagB,MACxC,EAagB,OAEpB,OAAO,EAagB,IACnB,SAAC,EAAG,GAAM,OAAA,EAAsB,EAAa,OAI9C,CAAA,EAAM,QAAQ,IAAI,EAAoB,IAAI,SAAA,GAAQ,OAAA,EAak,YAf1D,CAAA,EAAA,iBacF,EACK,EAAA,OAGL,EAAoB,QAAQ,SAAA,GAak,OAAA,EAAE,yBAET,MAAA,CAAA,EAAM,EAAa,eACrB,OADIB,EAAoB,EAAA,OACF,CAAA,EAAM,EAAY,eAApC,EAakB,EAAA,OAExB,EAA0B,EAAA,uBACtB,EAAMB,EAAiB,EAAiB,EAAQ,EAC7D,EAAQ,CAAC,EAAU,GAAU,EAAS,oBAG5C,MAAA,CAAA,EAAO,EAAwB,IAC3B,SAAC,EAAM,GAAM,MAAA,CAAE,KAAl,EAAE,KAAM,EAagB,GAAl,MAAK,EAEE,OAAM,WAGIE,SAAsB,EACIB,EAA2B,EAC3B,EAA+B,EAAe,EAagB,EAC9D,EAagB,EAauC,EACvD,EAAoB,EAAiB,EACrC,OAFiB,EAAA,EAAA,GAAU,EAAA,EAAA,eAC3B,IAAA,IAAA,EAAA,SAAoB,IAAA,IAAA,EAAA,QAAiB,IAAA,IAAA,EAAA,SACrC,IAAA,IAAA,EAAA,4GACI,EAakB,EAAM,OAAO,SAAA,GAAQ,OAAA,EAak,OAAS,IAIvD,KACI,EAAoB,EAAG,KAak,WACHC,IAAM,EAakB,EAAA,yBACpB,EAac,EAAa,EAAiB,EAAQ,EAAO,EAC3D,CAAC,EAAU,GAAU,EAAS,EAAa,EAC3C,GACE,EAac,EAAG,SAAS,qBAC9B,EAagB,OAAQ,EAagB,MACxC,EAagB,OAEIB,OAAO,EAagB,IACnB,SAAC,EAAG,GACA,OAAA,EAA0B,EAAa,EAakB,OAI9D,CAAA,EAAM,QAAQ,IAAI,EAakB,IAAI,SAAA,GAAK,OAAA,EAAE,YAhBID,CAAA,EAAA,iBAeF,EACK,EAAA,OAGL,EAakB,QAAQ,SAAA,GAak,OAaa,EAAE,yBAEP,MAAA,CAAA,EAAM,EAAa,eACrB,OADIB,EAAoB,EAAA,OACF,CAAA,EAAM,EAAY,eACd,OADtB,EAakB,EAAA,OACI,CAAA,EAAM,EAAiB,eAA7C,EAAsB,EAAA,OAE5B,EAagC,EAAA,2BAC5B,EAAMB,EAAiB,EACpC,EAAiB,EAAQ,EAAO,EAAQ,CAAC,EAAU,GAAU,EAC7D,oBAGN,MAAA,CAAA,EAAO,EAA8B,IACjC,SAAC,EAAM,GAAM,MAAA,CAAE,KAAM,EAagB,GAAl,KAAl,EAEE,OAAM,EAEE,MAAK,WAvGIE,QAAA,sBAAA,EAOA,QAAA,0BAAA,EAWA,QAAA,0BAAA,EA2CA,QAAA,8BAAA;;aCIEA,SAAS,EAak,GACZ,OAAO,KAak,MAAM,EAAl,0DAGxB,IAAA,EAAA,WAKE,SAAA,EAAY,EAAiB,GAC3B,KAak,cAAgB,IAAI,MAAM,GAC/B,KAak,kBAAoB,EACzB,KAak,gBAakB,EAkE3B,OA/DS,EAAA,UAAA,QAAP,SAAe,GACb,KAak,gBAagB,KAak,kBAAoB,EAC9C,KAak,KAak,KAak,mBAGV,EAAA,UAAA,QAAP,WACE,IAAM,EAAM,KAak,cAAc,GAl/B,OAHA,KAak,SAAS,EAAG,KAak,oBACtB,KAak,KAak,GACV,KAak,cAAc,KAak,iBAAMB,GAak,KACzC,GAGF,EAAA,UAAA,MAAP,WACE,OAAkC,IAA3B,KAak,kBAGP,EAAA,UAAA,KAAP,WACE,OAAO,KAak,iBAAMB,GAG1B,EAAA,UAAA,IAAP,WACE,OAAO,KAak,cAAc,MAAM,EAAG,KAak,iBAAMB,IAGtD,EAAA,UAAA,IAAP,WACE,OAAO,KAak,cAAc,IAGpB,EAAA,UAAA,KAAR,SAAa,GACX,KAAO,EAAl,GAak,KAak,KAak,EAak,GAAl,IACjC,KAak,SAAS,EAAG,EAak,IACtB,EAAl,EAak,IAIL,EAAA,UAAA,KAAR,SAAa,GACX,KAAO,EAAl,GAak,KAak,kBAakB,CACrC,IAAI,EAAl,EAAl,EAIZ,GAHI,EAAl,KAak,kBAAoB,KAak,KAak,EAAG,EAAl,IACd,KAEG,KAak,KAak,EAAG,GACHb,MAEF,KAak,SAAS,EAAG,GACjB,EAAl,IAIA,EAAA,UAAA,WAAR,SAAmB,GACjB,OAAO,KAak,gBAagB,KAak,cAAc,KAGzC,EAAA,UAAA,KAAR,SAAa,EAaw,GACtB,OAAO,KAak,WAaw,GAak,KAak,WAaw,IAGtC,EAAA,UAAA,SAAR,SAAiB,EAaw,GAC1B,IAAM,EAAl,KAak,cAAc,GAC7B,KAak,cAAc,GAak,KAak,cAAc,GAC3C,KAak,cAAc.GAAK,GAE5B,EA1EA,GAAa,QAAA,QAAA;;oECLb,IAAA,EAAA,QAAA,cAEA,SAAS,EAcl,EAAoB,EAAe,EAakB,EACrD,EAA4B,GAM9B,IAlM,IAAA,EAAA,EAAA,MAAC,EAAA,EAAA,GAAQ,EAAA,EAAA,GAEX,GAAe,EACb,EAAS,KAak,IAAI,EAaw,EAoB,GACjD,EAAO,KAak,IAAI,EAaw,EAaqB,EAAG,GACHd,EAaw,EAaq,EAaw,IAAQ,EAAU,CAGvD,IAFA,IAAM,EAAS,KAak,IAAI,EAaw,EAoB,GACjD,EAAO,KAak,IAAI,EAaw,EAaqB,EAAG,GACHd,EAaw,EAaq,EAaw,IAAQ,EAC7C,GAAl,EAAO,IAAI,EAAU,EAAU,GAac,EAAO,CACtD,GAAe,EACf,MAGJ,IAAK,EACH,MAIJ,OAAO,EAQT,SAAgB,EACZ,EAawB,EACxB,GAMF,IAlM,IAAA,EAAA,EAAA,MAAC,EAaa,EAAA,GAAQ,EAAA,EAAA,GAao,EAAA,EAAA,GAehB,EAAQ,IAAI,EAAA,QACd,EAAS,EAAQ,EAac,SAAC,GAAY,OAAX,EAAA,QAe5B,EAaw,EAAG,EAaw,IAAU,EAC1C,IAAK,IAAI,EAaw,EAAG,EAaw,IAAS,EACzC,IAAK,IAAI,EAAa,EAAG,EAAa,IAAgB,EAAY,CACHe,IAAM,EAaq,EAAO,IAAI,EAAU,EAAU,GAlzC,EAaq,GAKR,EACI,EAAY,EAAO,EAAU,EAAU,EACvC,IACN,EAAM,QAAQ,CAAC,MAAK,EAEE,KAAAM,CAAC,SAAQ,EAEE,SAAQ,EAEE,GAAl,KAM7D,OAAO,EA7BT,QAAA,wBAAA;;oECICA,IAAA,EAAA,QAAA,gBAGA,EAAA,QAAA,UACA,EAAA,QAAA,UAEM,EAAsC,EAAA,WAaw,IACnD,SAAC,OAAC,EAaa,EAAA,GAagB,EAAA,EAAA,GACd,MAAA,CAAE,EAAA,SAAS,GAaiB,EAAA,SAAS,MAEvC,EACF,EAaqB,IAAI,SAAC,GAaqB,OAAlB,EAAA,KAe3B,EACF,EAaqB,IAAI,SAAC,GAek,OADJ,EAAA,KAG/B,SAA

S,EACL,EAAGB,EAaiB,GACnC,IAAM,EAAW,EAAC,MAAM,GAAC,EAC1C,MAAO,CACL,EAAG,EAAC,IAAI,EAAM,EAAG,EAAM,EAAG,GACvC,EAAG,EAAC,IAAI,EAAM,EAAG,EAAM,EAAG,EAAW,IAItD,SAAS,EACL,EAaiB,EAASB,EACvC,GACF,MAAO,CACL,EAAG,EAAA,MAAM,KAAK,MAAM,EAAM,EAAI,GAae,EAAG,EAAS,GACzD,EAAG,EAAA,MAAM,KAAK,MAAM,EAAM,EAAI,GAae,EAAG,EAAQ,IAW5D,SAAS,EACL,EAAGB,EAA0B,EAC1C,EAA8B,EAAYB,EACvD,EAA+B,QAAA,IAAA,IAAA,EAAA,GAYjC,IAXM,IAAA,EAAA,EAAA,MAAC,EAAA,EAAA,GAAG,EAAA,EAAA,GAMT,EACF,EAAGB,EAJU,EAC1B,EAae,SAAU,EAAC,EAAQ,GAGA,GAG/C,EADmB,EAAA,WAAW,EAae,SAAU,GAeID,EAAI,EAAG,EAAI,EAakB,IAAK,CACzC,IAAM,EACF,EAAYB,EAAGB,EAAC,EAAQ,GAe7D,EAAC,EAAA,eAChB,EAASB,EAAG,EAASB,EAAG,EACID,GAeJ,EAaiB,EAAA,WACb,CACE,EAAG,EAASB,EAAI,EAC7B,EAAG,EAASB,EAAI,GAe/B,CAAC,EAAG,EAAY,EAAG,EAAG,EAAY,IAExC,IAAM,EACF,EAAYB,EAAGB,EAAC,EAAQ,GAC7D,EAAQ,EAAa,IACvB,EAASB,EAAG,EAASB,EAAG,GAeID,MAAO,CAAC,SAAU,EAAGB,KAAM,EAAA,WAAW,GAAMB,MAAK,GAS7E,SAAGB,EACZ,EAAqB,EAAwB,EAC7C,EAASB,EACtB,GACF,IAAM,EAAW,EAAO,MAAM,GACxB,EAAW,EAAMB,OAe9B,EAAGC,IAAI,MAAM,GAeZC,EAAA,EAAA,KAAgB,EAAA,EAAA,MACjB,EAAY,EAAA,eAAe,EAAU,EAAC,GAeZD,EAakB,EAAS,IAAM,CAC/B,MAAO,EACP,KAAM,EAAA,WAAW,EAAS,IAC1B,SAAU,GAKZ,IAAK,IAAI,EAAO,EAAW,EAAG,GAAG,IAAK,EAAM,CAC/C,IAAM,EAAMB,EAAMB,GACtC,EAAMB,EAAMB,GACxC,EAakB,KACjB,EAakB,KACrB,EAakB,GAAoB,EACIC,EAAM,EAakB,GAAMB,EAakB,EAC7D,EAAS,EAAC,IAM/B,IAAS,EAAO,EAAG,EAAO,IAAY,EAAM,CACpC,EAAMB,EAAMB,GACtC,EAAMB,EAAMB,GACxC,EAakB,KACjB,EAakB,KACrB,EAakB,GAAoB,EACIC,EAAM,EAakB,GAAMB,EAakB,EAC7D,EAAS,EAAC,IAI/B,OAAO,EA5CT,QAAA,WAAA;;oECrFA,IAAA,EAAA,QAAA,iCACa,EAAA,QAAA,iBACA,EAAA,QAAA,UAEA,SAAS,EACL,EAae,EAA0B,EACzC,OAD0C,EAAA,EAAA,EAAG,EAAA,EAAA,EAE/C,OAAO,EAAM,KAAK,SAAC,OACX,EADY,EAAA,UACsB,GAAY,SACpD,OAAO,EAAA,gBACI,EAAG,EAAG,EAASB,EAAG,EAASB,IAC5D,IAQR,SAAS,EACL,EAauB,EACvB,GAUF,OATkC,EAakB,OAChD,SAAC,EAAQ,EAAMB,OAAIB,EAAA,EAAA,SAAU,EAAA,EAAA,MAKIB,OAJK,EACG,EAae,EAakB,EAAU,KACjD,GAAU,GAEL,GACN,GAe+B,EAakB,OAM1D,IAAM,EAASB,EAYD5B,SAAGB,EACZ,EAA8B,EAC9B,EACA,EAAwC,EACxC,EAA2B,EAASB,QAAtB,IAAA,IAAA,EAAA,SAASB,IAAA,IAAA,EAAA,IAUnD,IATA,IAAM,EAAGB,GAehB,EAAQ,EAAA,wBACV,EAAGB,EAAqB,GAEnC,EAAMB,EAAY,EAI9B,EAAM,OAAS,IAASB,EAAM,SAAS,CAeZD,IAAM,EAAO,EAAM,UAOnB,IAAI,EACI,EAAO,EAfX,EAAA,eAAe,EAak,KAAM,EAAC,GAEM,EAak,KAAK,IAD5D,CAMA,IAAM,EAAY,EAAA,WACd,EAAM,EAAC,EAae,EAAC,EACjD,GAEE,EAAQ,EAaiB,EAAO,EAakB,GAExD,EAAM,KAAK,CAAC,UAAS,EAAE,MAAK,KAG9B,OAAO,EAAtCT,QAAA,oBAAA;;yaChGA,IAAA,EAAA,QAAA,yBAEA,EAAA,QAAA,gBAEM,EAae,EAAE,QAAS,OAAS,QAeZC,EAAA,SAAA,GAAA,SAAA,mDA2BA,OA3B4B,EAAA,EAAA,GAC1B,EAAA,UAAA,gBAAA,SAAGB,GACd,OAAO,EAAG,IAAI,EAAO,IAGvB,EAAA,UAAA,kBAAA,SAakB,GAEd,IAAA,EAAA,EAaa,GACA,EAAA,EAAA,GACA,EAAA,EAAA,GACA,EAAA,EAAA,GACA,EAAA,EAAA,GACA,EAAA,EAaa,GAIF,MAAO,CACL,QAAO,EACP,aALA,EAAA,GAMA,aAAY,EACZ,YAAW,EACX,QAAO,EACP,gBAae,EACf,gBAae,EACf,YAVA,EAAA,KAAa,EA3BA,CAA4B,EAAA,WAAf,QAAA,OAAA;;oECNb,IAAM,EACF,OEACE,EACF,2EAIJ,SAAGB,EAAMB,EAAGB,GACjD,IAAM,EAAY,eAAe,EAAM,QAeVc,OAAMB,IAAf,EACK,EAAoB,SAAW,EAE/B,EAAoB,QAAQ,EAau,IAAM,EAMvD,SAAGB,EACZ,EAAGB,EAAoB,GACtC,IAAM,EAaiC,CAAC,EAak,MAAO,IAAM,MAAO,GAAM,OACjE,EAAY,eAAe,EAAM,QAeVc,OAAMB,IAAf,EACK,EAAqB,SAAS,EAAM,GAAW,IAAM,EAERD,EAAqB,QAAQ,EAau,IAAI,EAAM,GAAW,IAC/D,EArBR,QAAA,mBAAA,EAYA,QAAA,oBAAA;;o6C3oBIBA,IAAA,EAAA,QAAA,yBAMA,SAAS,EAA4B,GAEnC,GAA2B,IAAvB,EAAM,cAA4C,IAAtB,EAAM,YACpC,MAAO,CAAC,EAAM,aAAc,EAAM,aAC7B,GAAoB,MAAhB,EAAM,QAaiC,MAAf,EAAM,MACvC,MAAO,CAAC,EAAM,OAAQ,EAAM,OAe5B,MAAM,IAAI,MACN,+DAIR,SAAS,EAawB,GAC/B,OAAl,EAAM,aAAa,WAAa,EAAM,aAAa,SAI9C,CAAC,EAAM,OAAQ,EAAM,OAERB,CAAC,EAAM,YAAa,EAAM,YAIrC,SAAGB,EAAa,GAC3B,GAAoC,oBAAXB,mBACP,aAAiB,mBACa,oBAAvB,kBACP,aAAiB,iBACpB,OAAO,EAA4B,GAC9B,GAA2B,oBAAhB,WAA+B,aAAiB,UChE,MAAO,CAAC,EAAM,OAAQ,EAAM,OACvB,GAC2B,oBAAvB,kBACP,aAAiB,iBACnB,OAAO,EAawB,GAC1B,GAAl,aAAiB,EAAG,OAC7B,MAAO,CAAC,EAAM,MAAM,GAAl,EAAM,MAAM,IAEpC,MAAM,IAAI,MAAM,8BAA8B,EAak,KAIvD,SAAS,EACL,EAAoB,GACtB,OAAQ,EAAa,GAak,GAaiB,EAG7C,SAAGB,EACZ,EAAYB,GAC3B,O

AAI,EAuB,EAiB,GACnC,EAGF,KAak,MAAM,EAakB,GAAgB,EAae,EA9BrE,QAAA,aAAA,EAwBA,QA
AA,uBAAA,EASA,IAAM,EAaqC,CACzC,IAAK,MACL,OAAQ,SACR,KAAM,OACN,KAAM,QAGF,IAA+B,E
AAA,IACIC,EAAMc,KAAM,IAC1C,EAAC,EAAMc,QAAS,GAC7C,EAAC,EAAMc,MAAO,IAC3C,EAAC,EA
AMc,MAAO,KAGvC,EA0B,GAC1B,EA0B,EAehC,SAAS,EACL,GACF,GAakC,iBAAvB,EAiC,CAC1C,I
AAM,EAAS,EAAGc,GAO/C,OALA,EAAG,KAak,OACc,iBAAX,EACP,WAAM,MAAA,kDACF,OAAO,OAAO
,GACT,KAak,KAai,YAAY,EAakB,MAC7C,EAWP,OATA,EAAG,KAak,OAC0B,iBAAvB,GACH,GAAsB,G
ACtB,GAAsB,EAC1B,WACI,MAAA,sDACI,EAuB,QAAQ,EAuB,aACnD,IAER,EAIX,SAAgB,EACZ,EACA,
EACA,OAAc,EAAA,EAAA,GAAa,EAAA,EAAA,GACV,EACF,EA+B,GAEnC,MAAO,CACL,EACI,EAac,E
AA8B,GACHd,EACI,EAa,EA8B,IAInD,SAAgB,EAac,GAC5B,OAAO,aAAiB,EAAG,OAAS,EAQ,EAAG,Q
AAQ,WAaw,GAGpE,SAAgB,EACZ,EA0B,EAC1B,OAD2B,EAAA,EAAA,GAAS,EAAA,EAAA,QACpC,IAA
A,IAAA,GAAA,GAI,IAKF,EACA,EACA,EACA,EACA,EACA,EAVE,EAAA,EAAA,MAAC,EAAA,EAAA,GA
GD,EAHS,EAAA,GAGQ,EASvB,GAai,EAViB,EAu,EAUJ,CAEZB,EAu,EAGV,IAAM,EAAY,GAFIB,EA
U,KAak,KAak,EAu,IAG9B,EAAO,EACP,EAAO,EACP,EAAO,KAak,MAAM,EAAY,GAC9B,EAAO,GAA
W,EAu,OACvB,CACL,EAu,EAGV,IAAM,EAaw,GAFjB,EAu,KAak,KAak,EAu,IAG9B,EAAO,KAA
K,MAAM,EAaw,GAC7B,EAAO,GAaw,EAu,GAC5B,EAAO,EACP,EAAO,EakBT,MAAO,CAAC,iBafib,E
AAG,KAak,WAE/B,IAAI,EAUJ,OARE,EADE,EACQ,EAAG,MAAM,eACf,EAAG,QAAQ,EAa,GAai,CAAC,
EAAS,IAehC,EAAG,MAAM,eAAe,EAa,CAAC,EAAS,IAG5C,EAAG,MAAM,EAAS,CAAC,CAAC,EAAM,G
AAO,CAAC,EAAM,GAAO,CAAC,EAAG,OAK1C,SAAU,CAAC,CAAC,EAAM,GAAO,CAAC,EAAM,KAG5D,
SAAgB,EACZ,EACA,EACA,EACA,EACA,OAHC,EAAA,EAAA,GAAMB,EAAA,EAAA,GACnB,EAAA,EAAA,
GAawB,EAAA,EAAA,GACxB,EAAA,EAAA,GAAC,EAAA,EAAA,GAAM,EAAA,EAAA,GAAO,EAAA,EAA
A,GAAC,EAAA,EAAA,GAAM,EAAA,EAAA,GAExB,YADE,IAAA,IAAA,GAAA,GACK,EAAG,KAak,WACb
,IAAI,EAakC,EAAG,MAAM,eAAe,EAC1D,CAAC,EAawB,IAawB,GAMrD,OAJI,IACF,EAaqB,EAAG,QAAQ
,IAG3B,EACH,EAoB,CAAC,EAAMB,GACxC,CAAC,CAAC,EAAM,GAAO,CAAC,EAAM,OAI9B,SAAgB,EA
CZ,EACA,EACA,OADC,EAAA,EAAA,GAAGB,EAAA,EAAA,GACHB,EAAA,EAAA,GAAC,EAAA,EAAA,GA
AM,EAAA,EAAA,GAAO,EAAA,EAAA,GAAC,EAAA,EAAA,GAAM,EAAA,EAAA,GAExB,OAAO,EAAG,KA
AK,WACb,IAAM,EA4B,EAAG,WAaw,GACHd,OAAO,EAAG,QAAQ,EAAG,MACHB,cACG,EAac,CAAC,C
ACb,GAAQ,EAiB,EAAO,EAAO,GACvC,GAAQ,EAAGB,EAAO,EAAO,IACrC,EAAO,EAiB,IACpB,EAiB,
EAAO,EAAO,IACnC,EAAO,EAAGB,IAAQ,EAAGB,EAAO,EAAO,KAehE,CAAC,GAai,CAAC,EAAGB,IAiB,
CAAC,MAIpD,SAAgB,EACZ,EAaqB,EACrB,GACF,OAAO,EAAG,KAak,WACb,IAAM,EA4B,EAAG,WAA
W,EAQ,GACxD,OAAO,EAAG,QACN,EAAG,MAAM,eAAe,EAac,EAAY,MAIID,SAAgB,EACZ,EAaqB,OA
AC,EAAA,EAAA,GAAS,EAAA,EAAA,GAE3B,EAAA,EAAA,GAAC,EAAA,EAAA,GAAQ,EAAA,EAAA,GAC
T,EAae,EAu,EA3B,EAAA,CAAA,EAAA,EAAA,EAAA,GAAC,EAAA,EAAA,GAAM,EAAA,EAAA,GAAM
,EAAA,EAAA,GAAM,EAAA,EAAA,GAsvB,OAvBe,EAQ,EAev,GAEX,EAAO,EACP,EAAO,EACP,EAAO,
KAak,MAAM,IAAO,EAae,EAAS,IACjD,EAAO,KAak,MAAM,IAAO,EAae,EAAS,MAGjD,EAAO,KAak,M
AAM,IAAQ,EAAM,EAAGB,EAQ,IACxD,EAAO,KAak,MAAM,IAAQ,EAAM,EAAGB,EAQ,IACxD,EAAO,
EACP,EAAO,GAUF,CAAC,QAPqB,EAAG,KAak,WACnC,IAAI,EAac,EAac,GAGhC,OFa,EAac,EAAG,M
AAM,EAa,CAAC,CAAC,EAAM,GAAO,CAAC,EAAM,GAAO,CAAC,EAAG,KAe9D,EAAG,MAAM,eAAe,E
AAa,CAAC,EAAS,MAGvC,QAAS,CAAC,IAAK,EAAM,KAAM,EAAM,MAAO,EAAM,OAAQ,IAGzE,SAAsB,
EAakB,oEAETC,MAAA,CAAA,EAAO,QAAQ,IAAI,EAQ,IAAI,SAAA,GAAU,OAAA,EAAO,iBAGID,SAAgB,
EACZ,EAAY,EAAGB,EAAGB,EAC5C,GACF,YAF8C,IAAA,IAAA,EAAA,QAC5C,IAAA,IAAA,EAAA,GACK,
CACL,MAAO,EAak,MACZ,UAAW,EAak,UAAU,IAAI,SAAC,OAAc,EAAA,EAAA,MAAO,EAAA,EAAA,K
AAM,EAAA,EAAA,SAac,MAAA,CAC3B,MAAK,EACL,KAai,EACJ,SAAU,CACR,EAAG,EAAS,EAai,EAAS
,EACzB,EAAG,EAAS,EAai,EAAS,OAM/D,SAAgB,EACZ,EAae,EAAGB,EAAGB,EAa,GAC9D,YADiD,IAAA
,IAAA,EAAA,QAAa,IAAA,IAAA,EAAA,GAC/C,IAAX,GAA2B,IAAX,GAA4B,IAAZ,GAA6B,IAAZ,EAC5C,E
AEF,EAAM,IAAI,SAAA,GAAQ,OAAA,EAU,EAAM,EAQ,EAQ,EAAS,KAGpE,SAAgB,EAAMB,EAAY,G
AC7C,MAAO,CACL,MAAO,EAak,MACZ,UAAW,EAak,UAAU,IACtB,SAAC,OAAc,EAAA,EAAA,MAAO,
EAAA,EAAA,KAAM,EAAA,EAAA,SAac,MAAA,CAC3B,MAAK,EACL,KAai,EACJ,SAAU,CAAC,EAAG,EA
Aa,EAai,EAAS,EAAG,EAAG,EAAS,OAKjE,SAAgB,EAoB,EAae,GACjD,OAAI,GAac,EACT,EAef,EAAM,

IAAI,SAAA,GAAQ,OAAA,EAAM,EAAM,KAGpD,SAAGB,EACZ,EAAe,EACf,EACA,EAakB,OAFF,EAAA,EAAA,GAAQ,EAAA,EAAA,GACvB,EAAA,EAAA,GAAuB,EAAA,EAAA,GAOpB,EACF,EAaw,GALV,EAAS, EAAQ,IAAM,EAAQ,QAAU,GAeZC,EAAQ,EAAQ,KAAO,EAAQ,OAAS,GAGN,EAAQ,KAAM,EAAQ,MAE7D ,OAAI,EACK,EAAoB,EAAa,GAeJc,EA5NX,QAAA,gCAAA,EAeA,QAAA,cAAA,EAIA,QAAA,eAAA,EAyDA, QAAA,+BAAA,EAoBA,QAAA,2BAAA,EAoBA,QAAA,SAAA,EAUA,QAAA,eAAA,EA+BA,QAAA,kBAAA,E AKA,QAAA,UAAA,EAgBA,QAAA,WAAA,EAQA,QAAA,mBAAA,EAYA,QAAA,oBAAA,EAOA,QAAA,kBA AA; ;soD4oBrTA,IAAA,EAAA,QAAA,8BACA,EAAA,QAAA,yBAGA,EAAA,QAAA,qBACA,EAAA,QAAA,eA CA,EAAA,QAAA,wCACA,EAAA,QAAA,wCACA,EAAA,QAAA,YACA,EAAA,QAAA,kBAGA,EAAA,QAAA, UAEM,GAA2B,EAC3B,GAA2B,EAoD3B,EAAsB,CAC1B,aAAc,cACd,aAAc,GACd,WAAy,EACZ,WAAy,KA GR,EAA4C,CAAC,cAAe,YAC5D,EAAsD,CAC1D,YAAe,CAAC,EAAG,GAAL,IACvB,SAAY,CAAC,GAAL,KA Eb,EAAwD,CAC5D,YAAe,CAAC,GAAM,IAAM,GAC5B,SAAY,CAAC,IAET,EAAYc,CAAC,EAAG,EAAG,GA EtD,SAAS,EAAoB,GAM3B,GAH2B,OAF3B,EAAS,GAAU,GAER,eACT,EAAO,aAAe,eAEpB,EAAMB,QAAQ, EAAO,cAAgB,EACpD,MAAM,IAAI,MACN,wBAAwB,EAAO,aAAY,sBACvB,GAK1B,GAH2B,MAAvB,EAA O,eACT,EAAO,aAAe,IAEpB,EAAa,EAAO,cAAc,QAAQ,EAAO,cAAgB,EACnE,MAAM,IAAI,MACN,wBAAw B,EAAO,aAAY,sBACvB,EAAa,EAAO,cAAa,qBACjC,EAAO,aAAY,KAM7C,GAHyB,MAArB,EAAO,aACT,EA AO,WAAa,GAeIB,EAAiB,EAAO,cAAc,QAAQ,EAAO,YAAc,EACrE,MAAM,IAAI,MACN,sBAAsB,EAAO,WA AU,sBACnB,EAAiB,EAAO,cAAa,qBACrC,EAAO,aAAY,KAM7C,GAHyB,MAArB,EAAO,aACT,EAAO,WAAa ,GAeIB,EAakB,QAAQ,EAAO,YAAc,EACjD,MAAM,IAAI,MACN,sBAAsB,EAAO,WAAU,sBACnB,EAAiB,q BACjB,EAAO,aAAY,KAG7C,OAAO,EAuGT,SAAS,EAA8B,GAC9B,IAAA,EAAA,EAAA,sBAAuB,EAAA,EA AA,cAAe,EAAA,EAAA,eAAgB,EAAA,EAAA,UAG7D,GAAL,EAawB,GAAO,EAawB,EACzD,MAAM,IAAI,M ACN,yBAAYB,EAAqB,mCAIpD,GAAL,GAaiB,EACnB,MAAM,IAAI,MACN,yBAAYB,EAAa,mBAI5C,GAAL,E AaiB,GAAO,EAAiB,EAC3C,MAAM,IAAI,MACN,0BAA0B,EAAc,mCAI9C,GAAL,GAAa,EACf,MAAM,IAAI, MAAM,qBAAqB,EAAS,KAIID,SAAS,EACL,GAEA,IAAA,EAAA,EAAA,sBACA,EAAA,EAAA,cACA,EAAA,E AAA,eACA,EAAA,EAAA,UACA,EAAA,EAAA,iBACA,EAAA,EAAA,YAGF,GAAL,EAawB,GAAO,EAawB,E ACzD,MAAM,IAAI,MACN,yBAAYB,EAAqB,mCAIpD,GAAL,GAaiB,EACnB,MAAM,IAAI,MACN,yBAAYB,E AAa,mBAI5C,GAAL,EAAiB,GAAO,EAAiB,EAC3C,MAAM,IAAI,MACN,0BAA0B,EAAc,mCAI9C,GAAL,GAA a,EACf,MAAM,IAAI,MAAM,qBAAqB,EAAS,KAGhD,GAAL,EAAMB,GAak,EAAMB,EAC7C,MAAM,IAAI,M ACN,4BAA4B,EAAGB,kCAIID,GAAL,GAae,GAak,EAac,GACpC,MAAM,IAAI,MACN,uBAAuB,EAaw,+BA zf7B,QAAA,wBAAiD,CAC5D,gBAAgB,EACbB,mBAAoB,SACpB,sBAAuB,GACvB,cAAe,GACf,eAAgB,GAC hB,UAAW,IAGA,QAAA,uCAC4B,CACnC,gBAAgB,EACbB,mBAAoB,SACpB,sBAAuB,GACvB,cAAe,GACf,e AAgB,GACbB,UAAW,GACX,iBAakB,GACIB,YAAa,IA4EnB,IAAA,EAAA,WAGE,SAAA,EAAY,GACV,KAA K,UAAy,EA+oBrB,OA5oBU,EAAA,UAAA,6BAAR,SAaQc,GAO7B,IAAA,EAAA,KAAA,UAAA,QAAA,GAO N,MAAO,CACL,cAPA,EAAA,aQA,cAPA,EAAA,cQA,QAPA,EAAA,QAQA,gBAPA,EAAA,gBAQA,gBAPA ,EAAA,kBAWI,EAAA,UAAA,oCAAR,SAa4C,GAQpC,IAAA,EAAA,KAAA,UAAA,QAAA,GAQN,MAAO,CA CL,cARA,EAAA,aASA,kBARA,EAAA,aASA,cARA,EAAA,cASA,QARA,EAAA,QASA,gBARA,EAAA,gBASA ,gBARA,EAAA,kBAYI,EAAA,UAAA,iDAAR,SAAYD,GAUjD,IAAA,EAAA,KAAA,UAAA,QAAA,GASN,MA AO,CACL,cATA,EAAA,aUA,YATA,EAAA,YAUA,cATA,EAAA,cAUA,QATA,EAAA,QAUA,gBATA,EAAA, gBAUA,gBATA,EAAA,gBAUA,aATA,EAAA,eAgDJ,EAAA,UAAA,wBAAA,SACI,EAAqB,EACrB,GAFJ,IAA A,EAAA,UAEI,IAAA,IAAA,EAAA,IASI,IAAA,EAAA,EAAA,aAAA,GAAC,EAAA,EAAA,GAAQ,EAAA,EAA A,GACT,EAAMc,EAAA,gCACrC,EAAoB,KAAK,UAAU,aAAc,CAAC,EAAQ,IACxD,EAAA,EAAA,eAAA,EA AA,GAAC,EAAA,EAAA,QAAS,EAAA,EAAA,QAGV,EAAA,EAAA,KAAA,+WACJ,EAAA,EAAA,aACA,EAA A,EAAA,cACA,EAAA,EAAA,QACA,EAAA,EAAA,gBACA,EAAA,EAAA,gBA2BF,OADA,EAAQ,UACD,CAC L,aAAY,EACZ,cAAa,EACb,QAAO,EACP,gBAae,EACf,gBAae,EACf,QAAO,EACP,iCAAgC,IA6B9B,EAAA,U AAA,cAAN,SACI,EACA,eAAA,IAAA,IAAA,EAAGC,QAAA,kJAoBnB,OAhBf,EAFA,EAAM,EAAA,GAAO,QA AA,wBAA4B,IAInC,EASF,KAAK,wBACD,EAAO,EAAO,mBAAoB,EAAO,uBAT/C,EAAY,EAAA,aACZ,EAAa ,EAAA,cAcB,EAAO,EAAA,QACP,EAAe,EAAA,gBACf,EAAe,EAAA,gBACf,EAAO,EAAA,QACP,EAAGC,EA AA,iCAK5B,EAakB,EAAa,MAA9B,EAAM,EAAA,GAae,EAak,EAAA,GAEL,CAAA,EAAM,EAAa,eAGZ,O AHhB,EAAS,EAAA,OACf,EAAa,UAES,CAAA,EAAM,EAAA,kBACxB,CAAC,EAae,EAAS,EAAiB,YAkB9C,

OAnBM,EAAGB,EAAA,OAef,EACH,EAAa,GADC,EACd,EAAa,GADa,EAC1B,EAAa,GADkC,EAC/C,EAAa,GAEb,EAQ,EAQA,OBACR,EAAW,EAAY,EAQb,EAC5C,KAAK,UAAU,aAAc,EAAO,cACpC,EAAO,eAAgB,EAAO,WAEIC,EAQ,EAAA,kBACJ,EAAO,CAAC,EAQ,GAAQ,EAkC,EAC1D,GA EJ,EAAc,UACd,EAQ,UACR,EAAGB,UChB,EAAGB,UAehB,CAAA,EAAO,CAAC,OAAM,EAAE,MAAK,EAAE,KAAM,EAQ,SA AU,UA0B3C,EAAA,UAAA,mBAAN,SACI,EACA,eAAA,IAAA,IAAA,EACI,QAAA,8KAuDgB,OA pDtB,EADA,EAAM,EAAA,GAAO,QAAA,uCAA2C,IAEID,EAkKB,EAAA,aAAa,GAA9B,EAAM,EAAA,GAAE,EAkK,EA A,GACd,EAAMC,EAAA,gCACrC,EAAO,mBAAoB,KAAK,UAAU,aAC1C,CAAC,EAQ,IAEP,EACF,EAAA,e AAe,EAAO,GADnB,EAAO,EAAA,QAAE,EAAO,EAAA,QAeJB,EAOF,EAAG,KAAK,WACJ,IAaF,EAbE,EA A,EAAA,iDAAA,GACJ,EAAA,EAAA,cACA,EAAA,EAAA,YACA,EAAA,EAAA,cACA,EAAA,EAAA,QACA,E AAA,EAAA,gBACA,EAAA,EAAA,gBAEI,EAAsB,EAAA,+BACxB,EA Ae,CAAC,EAQ,GAAQ,EACHC,CAAC ,CAAC,EAQ,IAK,EAQ,QAAS,CAAC,EAQ,KAAM,EAQ,QACvD,GAeJ,ONE,EAoB,EA MF,CACL,a AJmB,EAAA,aCjB,EAAG,QAAQ,GAAsB,EAAO,uBAI1C,YAAa,EACb,iBAkKB,EACIB,WAAY,EACZ,mBA AoB,EACpB,mBAAoB,KAvCtB,EAAY,EAAA,aACZ,EA AW,EAAA,YACX,EAAGB,EAAA,iBChB,EAAU,EA AA,WACV,EAkKB,EAAA,mBACIB,EAkKB,EAAA,mBASCE,CAAA,EAAM,EAAA,kBACxB,CAAC,EAkKB,EA AY,EAoB,YAajC,OA dhB,EAAGB,EAAA,OAef,EACH,EAAa,GADC,EACd,EAAa,GADa,EAC1B,EAAa,GA DkC,EAC/C,EAAa,GAeb,EAQ,EAAA,OBACR,EA AW,EAAY,EAQb,EAC5C,KAAK,UAAU,aAAc,EAAO,cA CpC,EAAO,eAAgB,EAAO,WAEIC,EAQ,EAAA,kBACJ,EAAO,CAAC,EAQ,GAAQ,EAkC,EAC1D,GAeKB ,CAAA,EAAM,EAAA,OBACxB,EA Ac,EAAa,EAAO,EAQ,EAC1C,KAAK,UAAU,aAAc,EAkC,EAC/D,EA A O,eAAgB,EAAO,YAAa,EAAO,iBACID,EAAO,uBAUX,OA dM,EAAGB,EAAA,OAMtB,EAQ,UACR,EAaA,UA Cb,EAAY,UACZ,EA AiB,UACjB,EA AW,UACX,EAAMB,UACnB,EAAMB,UAEnB,CAAA,EAAO,SAuCT,EA A A,UAAA,6BAAA,SACI,EAQb,EACrB,GAFJ,IAAA,EAAA,UA EI,IAAA,IAAA,EAAA,IASI,IAAA,EAAA,EA A A,aAAA,GAAC,EAAA,EAAA,GAAQ,EAAA,EAAA,GACT,EAAMC,EAAA,gCACrC,EAoB,KAAK,UAAU,aA Ac,CAAC,EAQ,IACxD,EAAA,EAAA,eAAA,EAAA,GACJ,EAAA,EAAA,QACA,EAAA,EAAA,QAGI,EAAA, EAAA,KAAA,wgBACJ,EAAA,EAAA,iBACA,EAAA,EAAA,cACA,EAAA,EAAA,QACA,EAAA,EAAA,gBACA ,EAAA,EAAA,gBAkCF,OAD A,EAQ,UACD,CACL,iBAAGB,EACHB,cAAa,EACb,QAAO,EACP,gBA Ae,EACf, gBA Ae,EACf,QAAO,EACP,iCAAgC,IA8B9B,EAAA,UAAA,mBAAN,SACI,EACA,eAAA,IAAA,IAAA,EAAGC, QAAA,kJAKBrB,OA db,EAFA,EAAM,EAAA,GAAO,QAAA,wBAA4B,IAGnC,EASF,KAAK,6BACD,EAAO,EA AO,mBAAoB,EAAO,uBAT/C,EAAGB,EAAA,iBChB,EAAa,EAAA,cACb,EAAO,EAAA,QACP,EA Ae,EAAA,g BACf,EA Ae,EAAA,gBACf,EAAO,EAAA,QACP,EAAGC,EAAA,iCAK5B,EAkKB,EA AiB,MAAIC,EAAM,EA A A,GAAE,EAkK,EAAA,GACP,CAAA,EAAM,EA AiB,eAGd,OA HhB,EAAO,EAAA,OACb,EA AiB,UA EK,CAAA ,EAAM,EAAA,kBACxB,CAAC,EA Ae,EAAS,EA AiB,YAkB9C,OAnBM,EAAGB,EAAA,OAef,EACH,EAAa,GA DC,EACd,EAAa,GADa,EAC1B,EAAa,GADkC,EAC/C,EAAa,GAeb,EAQ,EAAA,OBACR,EA AW,EAAY,EA A Qb,EAC5C,KAAK,UAAU,aAAc,EAAO,cACpC,EAAO,eAAgB,EAAO,WAEIC,EAQ,EAAA,kBACJ,EAAO,CA AC,EAQ,GAAQ,EAkC,EAC1D,GA EJ,EA Ac,UACd,EAQ,UACR,EAAGB,UChB,EAAGB,UAehB,CAAA,EA AO,CAAC,OAAM,EAAE,MAAK,EAAE,KAAI,EAAE,SA AU,UA0BnC,EAAA,UAAA,wBAAN,SACI,EACA,e AAA,IAAA,IAAA,EACI,QAAA,gLayDgB,OA tDtB,EAFA,EAAM,EAAA,GAAO,QAAA,uCAA2C,IAGID,EAk B,EAAA,aAAa,GAA9B,EAAM,EAAA,GAAE,EAkK,EAAA,GACd,EAAMC,EAAA,gCACrC,EAAO,mBAAoB, KAAK,UAAU,aAC1C,CAAC,EAQ,IACP,EACF,EAAA,eAAe,EAAO,GADnB,EAAO,EAAA,QAAE,EAAO,EA AA,QAeJB,EAQF,EAAG,KAAK,WACJ,IAAA,EAAA,EAAA,iDAAA,GACJ,EAAA,EAAA,cACA,EAAA,EAAA ,YACA,EAAA,EAAA,cACA,EAAA,EAAA,QACA,EAAA,EAAA,gBACA,EAAA,EAAA,gBACA,EAAA,EAAA, aAII,EAAsB,EAAA,+BACxB,EA Ae,CAAC,EAQ,GAAQ,EACHC,CAAC,CAAC,EAQ,IAK,EAQ,QAAS,C AAC,EAQ,KAAM,EAQ,QACvD,GAGE,EA A+B,EAAA,+BACjC,EA Ac,CAAC,EAQ,GAAQ,EAC/B,CAAC ,CAAC,EAQ,IAK,EAQ,QAAS,CAAC,EAQ,KAAM,EAQ,QACvD,GAEE,EAoB,EAK1B,MAAO,CAC L,aALmB,EAAA,aCnB,EAAG,QAAQ,GAAsB,EAAO,uBAKxC,YAAa,EACb,iBAkKB,EACIB,WAAY,EACZ, mBAAoB,EACpB,mBAAoB,EACpB,iBARE,EAAA,2BAA2B,MAIC/B,EAAY,EAAA,aACZ,EA AW,EAAA,YAC X,EAAGB,EAAA,iBChB,EAAU,EAAA,WACV,EAkKB,EAAA,mBACIB,EAkKB,EAAA,mBACIB,EAAGB,EA AA,iBAwCI,CAAA,EAAM,EAAA,kBACxB,CAAC,EAkKB,EAAY,EAoB,YAajC,OA dhB,EAAGB,EAAA,OA E f,EACH,EAAa,GADC,EACd,EAAa,GADa,EAC1B,EAAa,GADkC,EAC/C,EAAa,GAeb,EAQ,EAAA,OBACR,E

AAW,EAAY,EAaqB,EAC5C,KAAK,UAAU,aAAc,EAAO,cACpC,EAAO,eAAgB,EAAO,WAEIC,EEAQ,EAAA,
kBACJ,EAAO,CAAC,EEAQ,GAAQ,EAakC,EAC1D,GAekB,CAAA,EAAM,EAAA,8BACxB,EAac,EEAa,EA
kB,EAAO,EEAQ,EAC5D,KAAK,UAAU,aAAc,EAakC,EAC/D,EAAO,eAAgB,EAAO,YAAa,EAAO,iBACID,EA
AO,uBAWX,OafM,EAagB,EAAA,OAMtB,EEAQ,UACR,EEAa,UACb,EAAY,UACZ,EEAiB,UACjB,EAaw,U
ACX,EAaM,B,UACnB,EAaM,B,UACnB,EEAiB,UAEjB,CAAA,EAAO,SAGF,EAAA,UAAA,QAAP,WACE,KA
AK,UAAU,WAEnB,EAnpBA,GAwpBA,SAae,EAac,2GAI3B,GAHM,EAae,EAAO,aACtB,EEAa,EAAO,WACp
B,EEAa,EAAO,WACHb,MAAN,EACF,MAAM,IAAI,MACN,kJAMa,OADb,EAAM,EAAA,oBAAoB,EAac,EA
AY,GACvC,CAAA,EAAM,EAAO,eAAe,EAAO,UAAy,WAEIE,OAFM,EEAa,EAAA,OACb,EAAY,IAAI,EAAA,
UAAU,EAAY,GAC5C,CAAA,EAAO,IAAI,EEAQ,SAMrB,SAae,EAaw,yGAGxB,GAFM,EAae,EAAO,aACtB,
EEAa,EAAO,WACHb,MAAN,EACF,MAAM,IAAI,MACN,kJAMa,OADb,EAAM,EAAA,mBAaM,B,EAac,GAC
1B,CAAA,EAAM,EAAO,eAAe,EAAO,UAAy,WAEIE,OAFM,EEAa,EAAA,OACb,EAAS,IAAI,EAAA,OAAO,E
AAY,GACtC,CAAA,EAAO,IAAI,EEAQ,SAerB,SAAsB,EAak,eAAA,IAAA,IAAA,EAAA,6DAGzB,MAA4B,c
AD5B,EAAS,EAaO,B,IACIB,aACT,CAAA,EAAO,EAaw,IACe,gBAaxB,EAAO,aAchB,CAAA,EAAO,EAac,IA
ErB,CAAA,EAAO,UAhTBE,QAAA,QAAA,EAwsBb,QAAA,KAAA;;aCt/BA,SAagB,EACZ,EACA,EEA4D,GAO
9D,IANA,IAAM,EAAM,EAAO,WAaw,MAE1B,EAAM,EAej,EAAY,GAak,EAai,KAAK,GADIB,EAAA,GAe
R,EAAO,EAAO,EAai,EAai,EACnB,GAak,EAAM,GAak,EAAM,GAak,EACIC,IAAK,IAAI,GAak,EAAM,
GAak,EAAM,GAak,EAAM,CAGxC,GADI,EAAY,KAAK,MAAM,EAai,EAai,EAai,GAak,IAIHd,IAAS,GA
AK,EAAM,GAak,EAAM,GAak,EACIC,IAAS,GAak,EAAM,GAak,EAAM,GAak,EACIC,EAai,YAAc,EAC
d,KAAK,MAAM,EAai,EAai,EAai,GAak,IAAuB,EAAM,EAC7D,EAai,UAAU,EAAO,EAAG,GAG5B,EAai,
YAAc,yDAvBpB,QAAA,QAAA;;oECDA,IAAA,EAAA,QAAA,UAGA,EAAA,QAAA,UAEM,EAAYD,GAQ/D,S
AAS,IACP,MAAQ,iCAaiC,KAAK,UAAU,WAG1D,SAAS,EACL,EACA,EEAiD,EACjD,OAFc,EAAA,EAAA,
MAAe,EAAA,EAAA,OACf,EAAA,EAAA,MAAe,EAAA,EAAA,OAEIB,GAai,IAAW,GAAU,IAAY,EACnC,MA
AM,IAAI,MAAM,iCAaiC,EAak,mBACID,EAAM,IAAI,EAAO,KAAK,EAak,mBAaM,B,EAAM,IAAI,GAIHd,
SAAS,EAaqB,GAC5B,IAAM,EAAM,EAAO,WAaw,MAC9B,EAai,OAAO,EAAG,GACd,EAai,WAaw,EA
O,MAAO,GAG/B,SAAS,EACL,EAa+B,EAC/B,GACF,EAai,yBAA2B,EAC/B,EAai,UAAU,EAAO,EAAG,GA
G1B,SAAS,IAEP,OADwB,SAAS,cAAc,UAIjD,SAAS,EEA6B,GAIPc,OAHK,EAakB,KACrB,EAakB,GAAM,K
AEnB,EAakB,GAG3B,SAAS,EACL,EAakB,EAaO,B,GACjC,IAAA,EAAA,EAAA,OAAQ,EAAA,EAAA,MACT
,EAAM,EAAO,WAaw,MAC9B,EAAO,MAAQ,EACf,EAAO,OAAS,EACHB,EAai,UAAU,EAAG,EAAG,EAAO
,GAC3B,EAai,OACA,IACF,EAAA,QAAQ,EEAQ,EAAO,IAGtB,EAAY,OAAS,QAAQ,EAau,MACxC,EAai,U
AAU,EAAO,EAAG,EAAG,EAAO,IAEPc,EAai,UAGN,SAAS,EACL,EAakB,EACIB,GACF,IAAM,EAAS,EA
6B,GAM5C,OALmB,IAAf,EACF,EAaO,B,EAAO,GAe3B,EAAY,B,EAAO,EAAY,GAEvC,EAGT,SAAS,EAaO,B,
EAakB,GACtC,IAAA,EAAA,EAAA,MAAO,EAAA,EAAA,OACd,EAAO,MAAQ,EACf,EAAO,OAAS,EACJ,EA
AO,WAaw,MAE1B,UAAU,EAAO,EAAG,EAAG,EAAO,GAKpC,SAAS,EAawB,EAakB,GACjD,EAAO,MAA
Q,EAAM,MACrB,EAAO,OAAS,EAAM,OACV,EAAO,WAaw,MAE1B,aAAa,EAAO,EAAG,GAG7B,SAAS,EA
CL,EAakB,GACpB,IAAM,EAAS,EEA6B,GAG5C,OAFa,EAawB,EAAO,GAExB,EAkCT,SAagB,EACZ,EA
A,EAMA,EAMA,EAaqB,GACvB,QAbE,IAAA,IAAA,EAAA,CACE,EAAG,EACH,EAAG,EACH,EAAG,EACH,
EAAG,SAEL,IAAA,IAAA,EAAA,CACE,EAAG,EACH,EAAG,EACH,EAAG,EACH,EAAG,EACH,EAAG,WAEL,IAAA,IAAA
,GAAA,QAAqB,IAAA,IAAA,EAAA,CAA2B,IAC9C,MAAM,QAAQ,IACsB,IAApC,EAAYB,OAC3B,OAAO,KA
GT,IAAI,EAUE,GAHJ,EAHG,MAAM,QAAQ,GAGe,EAFA,CAAC,IAK7B,GAAC,EAAA,EAAA,MAAO,EAAA,
EAAA,OACR,EEAQ,IAAI,kBAakB,EEAQ,EAAS,GAErD,SAAS,EACL,EEA0B,EEAa,EAagB,EACvD,EAagB
,QAAA,IAAA,IAAA,EAAA,CAAgB,EAAG,EAAG,EAAG,IAAK,EAAG,IAAK,EAAG,MAC3D,IAAK,IAAI,GA
AK,EEAQ,GAak,EEAQ,IACjC,IAAK,IAAI,GAak,EEAQ,GAak,EEAQ,IACjC,GAAU,IAAN,GAaiB,IAAN,E
AAS,CACtB,IAAM,GAak,EAAM,GAak,GAAS,EAAS,GACxC,EAAM,EAai,EAai,GAak,EAAM,EACzB,EA
AM,EAai,EAai,GAak,EAAM,EACzB,EAAM,EAai,EAai,GAak,EAAM,EACzB,EAAM,EAai,EAai,GAak,
EAAM,GAMjC,SAAS,EACL,EACA,EACA,EACA,EACA,EACA,QADA,IAAA,IAAA,EAAA,CAA2B,SAC3B,I
AAA,IAAA,EAAA,GAGF,IADA,IAAI,EAAYB,EACpB,GAak,EEAQ,GAak,EEAQ,IACjC,mBAAS,GACP,GA
AU,IAAN,GAaiB,IAAN,EAAS,CACtB,IAAM,GAak,EAAM,GAak,GAAS,EAAS,GACnC,EAac,KAAK,SA
A,GAAM,OAAA,IAAO,EAaiB,OACpD,GAA0B,KAJvB,GAak,EEAQ,GAak,EEAQ,MAA1B,GASX,OAAO,E

AAyB,EAGIC,IAAK,IAAI,EAAl,EAAG,EAAl,EAaQ,GAaK,EAC/B,mBAAS,GACP,IAAM,EAAl,EAAl,EAaQ,
EACtB,EAAM,EAAl,EAAl,GAaK,EAaW,EAC9B,EAAM,EAAl,EAAl,GAaK,EAaW,EAC9B,EAAM,EAAl,E
AAI,GAaK,EAaW,EAC9B,EAAM,EAAl,EAAl,GAaK,EAaW,EAC9B,mBAAS,GACP,GAAl,EAaC,KACV,SA
AA,GAAM,OAAA,IAAO,EAa8B,GAAG,KAaK,KAaK,CAC9D,EAAM,EAAl,GAaK,EAaW,EAC1B,EAAM,E
AAI,EAAl,GAaK,EAaW,EAC9B,EAAM,EAAl,EAAl,GAaK,EAaW,EAC9B,EAAM,EAAl,EAAl,GAaK,EAa
W,EAC9B,IAAM,EAaA,EACf,EAa8B,GAAG,KAAM,EAAG,EAAG,EAC7C,GACA,GAaE,EAAl,GAaK,GAa
K,EAAl,EAAl,GAaU,EAAl,GAaK,GACxD,EAAl,EAAl,GAAS,GACnB,EAaW,EAaO,EAAG,EAAG,EAaO,K
AZ5B,EAAl,EAAG,EAAl,EAa8B,OAAQ,MAAjD,IANF,EAAl,EAAG,EAAl,EAaO,GAaK,IAAvB,GAYBX,OA
AO,IAAI,UAAU,EAaO,EAaO,GAIGrC,QAAA,OAAA,EAqGA,IAAM,EAaUD,CAC3D,CAAC,IAAK,GAAl,KA
AM,CAAC,IAAK,GAAl,KAAM,CAAC,IAAK,GAAl,KAAM,CAAC,IAAK,GAAl,KAC1D,CAAC,IAAK,GAAl,
KAAM,CAAC,IAAK,GAAl,KAAM,CAAC,IAAK,GAAl,IAAM,CAAC,IAAK,IAAK,IAC3D,CAAC,IAAK,IAAK
,IAAK,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAAK,IAC3D,CAAC,IAAK,IAAK,I
AAK,CAAC,IAAK,IAAK,IAAK,CAAC,GAAl,IAAK,IAAM,CAAC,GAAl,IAAK,KAC1D,CAAC,GAAl,IAAK,K
AAM,CAAC,GAAl,IAAK,KAAM,CAAC,GAAl,IAAK,KAAM,CAAC,GAAl,IAAK,KAC1D,CAAC,GAAl,IAAK
,KAAM,CAAC,GAAl,IAAK,KAAM,CAAC,GAAl,IAAK,KAAM,CAAC,GAAl,GAAl,MAoB3D,SAAGB,EACZ,
EACA,GAEF,QAFE,IAAA,IAAA,EAAA,GAEE,MAAM,QAAQ,IAAiD,IAA5B,EAaiB,OACtD,OAaO,KAYT,IA
TA,IAAI,EAME,GAfJ,EAHG,MAAM,QAAQ,GAGa,EAFA,CAAC,IAI3B,GAAC,EAAA,EAAA,MAAO,EAAA,
EAAA,OACR,EAaQ,IAAI,kBAaKB,EAaQ,EAAS,GAe5C,EAAl,EAAG,EAAl,EAAS,IAAS,EAAG,CAEvC,IAA
M,EAaQ,EAaJ,EACV,EAAM,EAAl,GAaK,IACf,EAAM,EAAl,GAaK,IACf,EAAM,EAAl,GAaK,IACf,EAAM
,EAAl,GAaK,IACf,IAAK,IAAI,EAAl,EAAG,EAAl,EAa4B,OAAQ,IAAK,CAC3D,IAAM,EAAS,EAa4B,GAAG
,KAaK,GACnD,IAAGB,IAAZ,EAaE,CACjB,IAAM,EAaQ,EAaW,GACzB,IAAK,EACH,MAAM,IAAI,MAAM,
uCAAuC,GAeZD,EAAM,EAAl,GAaK,EAAM,GACrB,EAAM,EAAl,GAaK,EAAM,GACrB,EAAM,EAAl,GAa
K,EAAM,GACrB,EAAM,EAAl,GAaK,MAIrB,OAaO,IAAI,UAAU,EAaO,EAaO,GAtCrC,QAAA,kBAAA,EAy
CA,IAAM,EAaE,CACnB,QAAS,UACT,YAAa,eACb,KAAM,OACN,eAAgB,oBAuBIB,SAAGB,EACZ,EAa2B,E
AAKB,EAC7C,EAaMB,EAaOB,QAaVc,IAAA,IAAA,EAAA,SAaMB,IAAA,IAAA,EAAA,QAaOB,IAAA,IAAA
,GAAA,GACnC,IAAA,EAAA,EAAA,aAAA,GAAC,EAAA,EAAA,GAaQ,EAAA,EAAA,GACf,EAaO,MAaQ,E
ACf,EAaO,OAAS,EAehB,IAAM,EAAM,EAaO,WAaW,MAS9B,GARA,EAAl,OACA,GACf,EAaQB,GAGvB,
EAAl,UAAU,EAaO,EAAG,GAExB,EAAl,YAAc,EACd,EAaW,CACb,EAaQB,CAAC,MAAK,EAaE,OAAM,G
AAG,EAaW,QAAS,QAe1D,IAEM,EAaC,EAfP,EAaiC,EAaW,EAaA,MAG5D,EAAGB,EAaA,aACvC,EAAl,U
AAU,EAaA,EAAG,EAAG,EAaO,GAe1C,EAAl,UAYBN,SAAGB,EACZ,EAa2B,EAaKB,EAC7C,EAaMB,EAa
oB,EACvC,QADA,IAAA,IAAA,EAAA,SAaMB,IAAA,IAAA,EAAA,QAaOB,IAAA,IAAA,GAAA,QACvC,IAA
A,IAAA,EAAA,IACI,IAAA,EAAA,EAAA,aAAA,GAAC,EAAA,EAAA,GACP,EAaQB,CAAC,MADP,EAAA,G
ACc,OAAM,GAAG,EAaW,QAAS,QAe1D,IACM,EAaC,EADP,EAaiC,EAaW,EAaA,MAE5D,EAAGB,EAaA,a
AEvC,EAaO,MAaQ,EAAY,MAC3B,EAaO,OAAS,EAAY,OAe5B,IAAM,EAAM,EAaO,WAaW,MAC9B,EAa
I,OACA,GACf,EAaQB,GAGvB,IAAM,EACf,EAa6B,EAaA,gBACxC,EAaQB,EAAGB,WAaW,MActD,EAAG
B,MAaQ,EAAY,OAAS,EAAM,GACnD,EAAGB,OAAS,EAAY,QAaU,EAAM,GACrD,EAaMB,UACf,EAaA,EA
AG,EAAG,EAAY,MAAO,EAAY,OAAQ,EAAG,EAC7D,EAAGB,MAAO,EAAGB,QAC3C,EAAl,uBAawB,EAC
5B,EAAl,UACA,EAaiB,EAAG,EAAG,EAAGB,MAAO,EAAGB,OAAQ,EACtE,EAAG,EAaO,MAAO,EAaO,QA
G5B,IAAK,IAAI,EAAl,EAAG,EAAl,EAAGB,MAAO,IACzC,EAAl,YACJ,EAAl,YAAc,UACIB,EAAl,OAaO,EA
AiB,EAAG,GAC/B,EAAl,OAaO,EAaiB,EAAG,EAaO,QACtC,EAAl,SAKN,IAAS,EAAl,EAAG,EAAl,EAAGB,
OAAQ,IAC1C,EAAl,YACJ,EAAl,YAAc,UACIB,EAAl,OAaO,EAAG,EAaiB,GAC/B,EAAl,OAaO,EAaO,MA
AO,EAaiB,GAC1C,EAAl,SAGN,EAAl,YAAc,EAAM,EACxB,EAAl,UAAU,EAaO,EAAG,EAAG,EAAY,MAA
O,EAAY,QAC1D,EAAl,UAGN,SAAS,EACL,EACA,GACf,IAIM,EACf,EALwB,EACxB,EAaYB,CAAC,EAAG,
EAAG,EAAG,EAAG,EAAG,EAAG,EAAG,KAC/C,CAAC,EAAG,EAAG,EAAG,EAAG,EAAG,EAAG,EAAG,IA
GgC,EAaA,MACvE,OAaUB,IAAnB,EACK,EAeA,EACH,EAAGB,EAAGB,EAaA,aAwBrD,SAAGB,EACZ,EAa2
B,EAC3B,EACA,EAaOB,EAaOB,QAA9C,IAAA,IAAA,EAAA,QAaOB,IAAA,IAAA,EAAA,QAaOB,IAAA,IAA
A,GAAA,GACHD,IAAM,EAaE,EACjB,EAaO,EAASB,EAaA,SAC9C,EAaO,MAaQ,EAaA,MAC5B,EAaO,OA
AS,EAaA,OAe7B,IAAM,EAAM,EAaO,WAaW,MAE9B,GAAl,MAAM,QAAQ,IACqB,IAAnC,EAawB,OAC1B

GAAAA,EAAlhF,KAAlKf,EAAOT,EAAlI,GAAMA,KAAS,KAAlKO,MFzBpD,QEgCS,MAAA,SAASC,GACHA ,WAAAA,EAAlK,IAIR,SAAA,SAASC,EAAMC,EAAlWC,GAC9B3E,IAAAA,OAAAA,EAEG,OAAA,WACC4D,IA AAAA,EAAM,KACNrD,EAAOE,UAMPmE,IAAAA,EAAlUD,IAAOb3E,EAEvBA,aAAAA,GACHd,EAAAA,W ARD2F,WACG,EAAA,KACLF,GAAlBF,EAAlK5D,MAAM+C,EAAlKrD,IAMVME,GAElBE,GACG/D,EAAAA, MAAM+C,EAAlKrD,KAKb,QAAA,SAASqD,GACZA,OAAAA,EAAlKb,QAAgBIB,EAAlKb,UACrBvB,EAAlUn E,KAAlKwE,IAGX,YAAA,SAASA,GACbA,YAAQmB,IAArnB,GAGD,OAAA,SAASA,GACRA,OAAQ,OAA R A,GFrEX,MAAA,SAAA,GAAA,SAAA,EAAA,GAAA,OAAA,EAAA,MAAA,KAAA,WAAA,OAAA,EAAA,SA AA,WAAA,OAAA,EAAA,YAAA,EAAA,CEwES,SAASA,GACPoB,OAAAA,MAAMpB,KAGNpD,QAAAA,MA AMyE,SAAW,SAASrB,GAC1BA,OAAAA,EAAlSb,cAAgB1E,OAGnB,SAAA,SAASoD,GACVA,OAAAA,IAA QE,OAAOF,IAGd,SAAA,SAASA,GACVA,OAAAA,IAAQ,EAAM,GAGb,SAAA,SAASA,GACVA,OAAAA,IA AQ,EAAM,IAGZ,UAAA,SAASA,GACXA,OAAQ,IAARA,IAAyB,IAARA,GAGd,WAAA,SAASA,GACZE,M AAwC,sBAAXCA,OAAOID,UAAU4B,SAASpD,KAAlKwE,KCvIpCuB,EAAlKb,CAEtB,CACUC,OAAAA,EAAlO C,SACF,YAAA,CACK,eAAA,CACR,KAAA,SAASC,GACPC,IAAAA,EAAlOD,EAASE,MAAM,sCACxBD,OAAS,OAATA,GAIG,CACE,MAAA,MACFE,IAAAA,SACH,KACAF,EAAlK,GAAG/C,WAAa+C,EAAlK,GAAG/C,W AC7B+C,EAAlK,GAAG/C,WAAa+C,EAAlK,GAAG/C,WAC7B+C,EAAlK,GAAG/C,WAAa+C,EAAlK,GAAG/C, WAAY,KAlxCA,MAAAA,GAGK,aAAA,CACN,KAAA,SAAS8C,GACPC,IAAAA,EAAlOD,EAASE,MAAM,qB ACxBD,OAAS,OAATA,GAIG,CACE,MAAA,MACFE,IAAAA,SAAS,KAAOF,EAAlK,GAAG/C,WAAY,KAltC A,MAAAA,GAGA,QAAA,CACD,KAAA,SAAS8C,GACPC,IAAAA,EAAlOD,EAASE,MAAM,4CACxBD,OAAS ,OAATA,GAIG,CACE,MAAA,MACJG,EAAAA,WAAWH,EAAlK,IACHBG,EAAAA,WAAWH,EAAlK,IACHBG, EAAAA,WAAWH,EAAlK,MAIhB/C,MAAAA,GAGC,SAAA,CACF,KAAA,SAAS8C,GACPC,IAAAA,EAAlOD, EAASE,MAAM,wDACxBD,OAAS,OAATA,GAIG,CACE,MAAA,MACJG,EAAAA,WAAWH,EAAlK,IACHBG,E AAAAA,WAAWH,EAAlK,IACHBG,EAAAA,WAAWH,EAAlK,IACHBG,EAAAA,WAAWH,EAAlK,MAIhB/C,MA AAAAA,KAMb,CACU4C,OAAAA,EAAlOO,SAEF,YAAA,CAEN,IAAA,CACG,KAAA,SAASL,GACN,MAAA,CA CE,MAAA,MACFA,IAAAA,EACW,eAAA,QAlb,MAAA,SAASnD,GACPA,OAAAA,EAAlMiB,QASrB,CACUg C,OAAAA,EAAlOH,QACF,YAAA,CACA,UAAA,CACH,KAAA,SAASK,GACTA,OAAOb,IAApBA,EAASzF,Q AIN,CACE,MAAA,MACJyF,EAAAA,EAAS,GACTA,EAAAA,EAAS,GACTA,EAAAA,EAAS,KAIT,MAAA,SA ASnD,GACP,MAAA,CAACA,EAAlMM,EAAlGN,EAAlMS,EAAlGT,EAAlMU,KAlxB,WAAA,CACJ,KAAA,SAA SyC,GACTA,OAAOb,IAApBA,EAASzF,QACN,CACE,MAAA,MACJyF,EAAAA,EAAS,GACTA,EAAAA,EAAS,GACTA,EAAAA,EAAS,GACTA,EAAAA,EAAS,GACTA,EAAAA,EAAS,KAIT,MAAA,SAASnD,GACP,MAAA,CAACA,EAAlMM,EA AlGN,EAAlMS,EAAlGT,EAAlMU,EAAlGV,EAAlMW,OAAljD,CACUsC,OAAAA,EAAlOvB,SACF,YAAA,CAED,S AAA,CACF,KAAA,SAASyB,GACTF,SAAAA,EAAlOO,SAASL,EAAS7C,IAC3B2C,EAAlOO,SAASL,EAAS1C,I ACzBwC,EAAlOO,SAASL,EAASzC,IACzBuC,EAAlOO,SAASL,EAASxC,KACIB,CACE,MAAA,MACJwC,EA AAAAA,EAAS7C,EACT6C,EAAAA,EAAS1C,EACT0C,EAAAA,EAASzC,EACTyC,EAAAA,EAASxC,IAMX,MAA A,SAASX,GACP,MAAA,CACFA,EAAAA,EAAlMM,EACNN,EAAAA,EAAlMS,EACNT,EAAAA,EAAlMU,EAC NV,EAAAA,EAAlMW,KAKN,QAAA,CACD,KAAA,SAASwC,GACTF,SAAAA,EAAlOO,SAASL,EAAS7C,IAC 3B2C,EAAlOO,SAASL,EAAS1C,IACzBwC,EAAlOO,SAASL,EAASzC,KACIB,CACE,MAAA,MACJyC,EAAAA, EAAS7C,EACT6C,EAAAA,EAAS1C,EACT0C,EAAAA,EAASzC,IAMX,MAAA,SAASV,GACP,MAAA,CACF A,EAAAA,EAAlMM,EACNN,EAAAA,EAAlMS,EACNT,EAAAA,EAAlMU,KAKL,SAAA,CACF,KAAA,SAASy C,GACTF,SAAAA,EAAlOO,SAASL,EAASvC,IAC3BqC,EAAlOO,SAASL,EAAStC,IACzBoC,EAAlOO,SAASL,E AASpC,IACzBkC,EAAlOO,SAASL,EAASxC,KACIB,CACE,MAAA,MACJwC,EAAAA,EAASvC,EACTuC,EA AAAAA,EAAStC,EACTsC,EAAAA,EAASpC,EACToC,EAAAA,EAASxC,IAMX,MAAA,SAASX,GACP,MAAA,CA CFA,EAAAA,EAAlMY,EACNZ,EAAAA,EAAlMa,EACNb,EAAAA,EAAlMe,EACNf,EAAAA,EAAlMW,KAKN,Q AAA,CACD,KAAA,SAASwC,GACTF,SAAAA,EAAlOO,SAASL,EAASvC,IAC3BqC,EAAlOO,SAASL,EAAStC, IACzBoC,EAAlOO,SAASL,EAASpC,KACIB,CACE,MAAA,MACJoC,EAAAA,EAASvC,EACTuC,EAAAA,EA ASStC,EACTsC,EAAAA,EAASpC,IAMX,MAAA,SAASf,GACP,MAAA,CACFA,EAAAA,EAAlMY,EACNZ,EAAl A,EAAlMa,EACNb,EAAAA,EAAlMe,QAQjB0C,OAAAA,EACAC,OAAAA,EAAlEC,EAAY,WACL,GAAA,EAEL R,IAAAA,EAAlW7E,UAAUZ,OAAS,EAAluF,EAAlON,QAAlQrE,WAAaA,UAAU,GAKBvEoF,OAAlBAIC,EAAAA ,KAAlKwB,EAAlIb,SAASY,GACHCA,GAAAA,EAAlOC,OAAOV,GAYTF,OAXAZB,EAAAA,KAAlKoC,EAAlOE,

YAAa,SAASC,EAAY3D,GAG/CsD,GAFKK,EAAAA,EAAWC,KAAKb,IAER,IAAbO,IAAiC,IAAXD,EAIjBR,O
AHIQ,EAAAA,EACJrD,EAAAA,eAAiBA,EACjB2D,EAAAA,WAAaA,EACbd,EAAOb,QAIxXa,EAAOb,QAIxSb
,GC3RLO,OAAAA,EAEEC,EAAY,CACJ,WAAA,SAAStD,EAAGC,EAAGE,GACnBoD,IAAAA,EAAK5D,KAA
K6D,MAAMxD,EAAl,IAAM,EAElByD,EAAlzD,EAAl,GAACKL,KAAK6D,MAAMxD,EAAl,IAC5B0D,EAAlv
D,GAACK,EAAMF,GACf0D,EAAlxD,GAACK,EAAOsD,EAAlxD,GACpB2D,EAAlzD,GAACK,GAAQ,EAAMsD,G
AAKxD,GAE5B4D,EAAl,CACR,CAAC1D,EAAGyD,EAAGF,GACP,CAACC,EAAGxD,EAAGuD,GACP,CAA
CA,EAAGvD,EAAGyD,GACP,CAACF,EAAGC,EAAGxD,GACP,CAACyD,EAAGF,EAAGvD,GACP,CAACA,
EAAGuD,EAAGC,IACPJ,GAEK,MAAA,CACFM,EAAO,IAAPA,EAAE,GACFA,EAAO,IAAPA,EAAE,GACFA,
EAAO,IAAPA,EAAE,KAIG,WAAA,SAASnE,EAAGG,EAAGC,GACnBgE,IAAAA,EAAMnE,KAAKmE,IAAlp
E,EAAGG,EAAGC,GACrBiE,EAAMpE,KAAKoE,IAAlrE,EAAGG,EAAGC,GACrBkE,EAAQD,EAAMD,EACH
B9D,OAAAA,EAGA+D,OAAQ,IAARA,EAGK,CACFE,EAAAA,IACA,EAAA,EACA,EAAA,IAKD,EADfvE,IA
AMqE,GACHIE,EAAlC,GAACKe,EAALnE,IAAMkE,EACX,GAACKjE,EAAlJ,GAACKsE,EAEd,GAACKtE,EAAlG,
GAACKmE,GAEf,GAAA,GACG,IACD,GAAA,GAGA,CACFhE,EAAl,IAAJA,EACAC,EAvBC+D,EAAQD,EAw
BTA,EAAAA,EAAM,OAID,WAAA,SAASrE,EAAGG,EAAGC,GACrBO,IAAAA,EAAM,KAAK6D,mBAAMb,E
AAG,EAAGxE,GAGjCW,OAFD,EAAA,KAAK6D,mBAAMb7D,EAACK,EAAGR,GACHC,EAAA,KAAKqE,mBA
AMb7D,EAACK,EAAGP,IAIpB,mBAAA,SAASO,EAACK8D,GACxB9D,OAAAA,GAAYb,EAAljB8D,EAauB,KA
GrB,mBAAA,SAAS9D,EAACK8D,EAAGBC,GACzCA,OAAAA,IAAUf,EAAGc,EAAljBc,GAauB9D,IAAQ,KAA
QgD,KJIC3E,EAAA,mBAAA,QAAA,iBAAA,OAAA,SAAA,SAAA,GAAA,cAAA,GAAA,SAAA,GAAA,OAAA,
GAAA,mBAAA,QAAA,EAAA,cAAA,QAAA,IAAA,OAAA,UAAA,gBAAA,GAAA,EAAA,SAAA,EAAA,GAA
A,KAAA,aAAA,GAAA,MAAA,IAAA,UAAA,sCAA,EAAA,WAAA,SAAA,EAAA,EAAA,GAAA,IAAA,IAAA
,EAAA,EAAA,EAAA,EAAA,OAAA,IAAA,CAAA,IAAA,EAAA,EAAA,GAAA,EAAA,WAAA,EAAA,aAAA,E
AAA,EAAA,cAAA,EAAA,UAAA,IAAA,EAAA,UAAA,GAAA,OAAA,eAAA,EAAA,EAAA,IAAA,IAAA,OAA
A,SAAA,EAAA,EAAA,GAAA,OAAA,GAAA,EAAA,EAAA,UAAA,GAAA,GAAA,EAAA,EAAA,GAAA,GAA
A,GAAA,EAAA,SAAA,EAAA,EAAA,EAAA,GAAA,OAAA,IAAA,EAAA,SAAA,WAAA,IAAA,EAAA,OAAA,
yBAAA,EAAA,GAAA,QAAA,IAAA,EAAA,CAAA,IAAA,EAAA,OAAA,eAAA,GAAA,OAAA,OAAA,OAAA,E
AAA,EAAA,EAAA,EAAA,GAAA,GAAA,UAAA,EAAA,OAAA,EAAA,MAAA,IAAA,EAAA,EAAA,IAAA,YA
AA,IAAA,EAAA,EAAA,KAAA,QAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,mBAAA,GAAA,OAAA,EA
AA,MAAA,IAAA,UAAA,kEAAA,GAAA,EAAA,UAAA,OAAA,OAAA,GAAA,EAAA,UAAA,CAAA,YAAA,C
AAA,MAAA,EAAA,YAAA,EAAA,UAAA,EAAA,cAAA,KAAA,IAAA,OAAA,eAAA,OAAA,eAAA,EAAA,GA
AA,EAAA,UAAA,IAAA,EAAA,SAAA,EAAA,GAAA,IAAA,EAAA,MAAA,IAAA,eAAA,6DAAA,OAAA,GAA
A,iBAAA,GAAA,mBAAA,EAAA,EAAA,GKpCMgB,EAAAA,WACU,SAAA,IAGR,GLgCR,EAAA,KAAA,GKI
CS9E,KAAAA,QAAUwD,EAAljF,MAAM,KAAMJ,YAEhB,IAAljB,KAAK6B,QACD,MAAA,IAAlxD,MAAM,u
CAGbwD,KAAAA,QAAQQ,EAAl,KAAKR,QAAQQ,GAACK,EL4BvC,OAAA,EAAA,EAAA,CAAA,CAAA,IAA
A,WKzBa,MAAA,WACFuE,OAAAA,EAAC,QLwBzB,CAAA,IAAA,cKrBgB,MAAA,WACLA,OAAAA,EAAC,
MAAM,KLoB/B,CAAA,IAAA,aKjBe,MAAA,WACJ,OAAA,KAAK/E,QAAQ4D,WAAWoB,MAAM,ULgBzC,E
KpCMF,GAwBN,SAASG,EAAMb7D,EAAlQ8D,EAAWC,GACtCC,OAAAA,eAAehE,EAAlQ8D,EAAW,CACIC,I
AAA,WACC,MAAuB,QAAvB,KAAKIF,QAAQqF,MACR,KAAKrF,QAAQkF,IAGhBI,EAAAA,eAAe,KAAMJ,E
AAWC,GAEB,KAAKnF,QAAQkF,KAGjB,IAAA,SAAStE,GACe,QAAvB,KAAKZ,QAAQqF,QAQTC,EAAAA,
eAAe,KAAMJ,EAAWC,GACjCnF,KAAAA,QAAQqF,MAAQ,OAGlBrF,KAAAA,QAAQkF,GAAatE,KAKhC,S
AAS2E,EAAMbnE,EAAlQ8D,GAC3BE,OAAAA,eAAehE,EAAlQ8D,EAAW,CACIC,IAAA,WACC,MAAuB,QA
AvB,KAAKIF,QAAQqF,MACR,KAAKrF,QAAQkF,IAGhBM,EAAAA,eAAe,MAEd,KAAKxF,QAAQkF,KAGjB
,IAAA,SAAStE,GACe,QAAvB,KAAKZ,QAAQqF,QAQTC,EAAAA,eAAe,MACHbxF,KAAAA,QAAQqF,MAA
Q,OAGlBrF,KAAAA,QAAQkF,GAAatE,KAMhCkE,EAAMQ,eAAiB,SAASzF,EAAlQ8D,EAAWC,GAC5CtF,GA
AwB,QAAxB,EAAMG,QAAQqF,MACVrF,EAAAA,QAAQkF,GAAaO,EAACK,mBAAMb7F,EAAMG,QAAQ
c,IAAKqE,OACjE,CAAA,GAA4B,QAAxBtF,EAAMG,QAAQqF,MAGjB,MAAA,IAAl7I,MAAM,yBAFTmJ,EA
AAA,OAAO9F,EAAMG,QAAyF,EAACKG,WAAW/F,EAAMG,QAAQS,EAAGZ,EAAMG,QAAQU,EAAGb,EA
AMG,QAAQY,MAMjGkE,EAAMU,eAAiB,SAAS3F,GACxB9D,IAAAA,EAASmC,EAACKI,WAAWhG,EAAMM
,EAAGN,EAAMS,EAAGT,EAAMU,GAehDoF,EAAAA,OAAO9F,EAAMG,QACIB,CACKsD,EAAAA,EAAlO5

C,EACP4C,EAAAA,EAAO1C,IAITkC,EAAOJ,MAAMY,EAAO7C,GAEdqC,EAAOnB,YAAY9B,EAAMG,QAAQS,KACpCT,EAAAA,QAAQS,EAAI,GAFZT,EAAAA,QAAQS,EAAI6C,EAAO7C,GAM7BqE,EAAMgB,WAAa,CAAC,IAAK,IAAK,IAAK,IAAK,IAAK,IAAK,MAAO,KAeZDb,EAAMbH,EAAMxG,UAAW,IAAK,GACzC2G,EAAMbH,EAAMxG,UAAW,IAAK,GACzC2G,EAAMbH,EAAMxG,UAAW,IAAK,GAeZCiH,EAAMBT,EAAMxG,UAAW,KACpCiH,EAAMBT,EAAMxG,UAAW,KACpCiH,EAAMBT,EAAMxG,UAAW,KAepCkD,OAAO4D,eAAeN,EAAMxG,UAAW,IAAK,CACrC,IAAA,WACI,OAAA,KAAK0B,QAAQqG,GAGjB,IAAA,SAASI,GACPZ,KAAAA,QAAQqG,EAAII,KAIrBY,OAAO4D,eAAeN,EAAMxG,UAAW,MAAO,CACvC,IAAA,WAKI,MAJqB,SAAvB,KAAK0B,QAAQqF,QACXrF,KAAAA,QAAQc,IAAM2E,EAAKM,WAAW,KAAK5F,EAAG,KAAKG,EAAG,KAAKC,IAGnD,KAAKP,QAAQc,KAGjB,IAAA,SAASF,GACPZ,KAAAA,QAAQqF,MAAQ,MACHBrF,KAAAA,QAAQc,IAAMF,KChIjBoF,IAAAA,EAAAA,WACQC,SAAAA,EAAAA,EAAQC,GNkCtB,EAAA,KAAA,GMjCSC,KAAAA,aAAeF,EAAOC,GAMtBE,KAAAA,WAAaC,SAASC,cAAc,OAMpCL,KAAAA,OAASA,EAMTC,KAAAA,SAAWA,EAOXK,KAAAA,gBAAa9D,EAOb+D,KAAAA,sBAAMb/D,ENC5B,OAAA,EAAA,EA AA,CAAA,CAAA,IAAA,WMUWP,MAAAA,SAAAA,GAEA,OADFqE,KAAAA,WAAarE,EACX,ONZX,CAAA,IAAA,iBMwBiBA,MAAAA,SAAAA,GAEN,OADFsE,KAAAA,iBAAMbTE,EACjB,ON1BX,CAAA,IAAA,WMkCWuE,MAAAA,SAAAA,GAOA,OANFR,KAAAA,OAAO,KAAKC,UAYO,EACzB,KAAKF,YACFA,KAAAA,WAAWzJ,KAAK,KAAM2J,GAGxBC,KAAAA,gBACE,ONzCX,CAAA,IAAA,WMiDa,MAAA,WACF,OAAA,KAAKT,OAAO,KAAKC,YNID5B,CAAA,IAAA,gBM0dB,MAAA,WACP,OAAA,ON3DX,CAAA,IAAA,aMiEe,MAAA,WACJ,OAAA,KAAKC,eAAiB,KAAKQ,eNIeT,EMnCMX,GCJAY,EAAY,CACJ,WAAA,CAAC,UACA,YAAA,CAAC,QAAS,YAAa,YAAa,UAAW,aAC5C,eAAA,CAAC,YAGbC,EAAGb,GACtB/D,EAAOzB,KAAKuF,EAAW,SAAShG,EAAGkG,GAC1BzF,EAAAA,KAAKT,EAAG,SAAS/D,GACRA,EAAAA,GAAKiK,MAIvB,IAAMC,EAAMb,kBAEzB,SAASC,EAAiBC,GACpBA,GAAQ,MAARA,GAAenE,EAAOnB,YAAYsF,GAC7B,OA AA,EAGH/D,IAAAA,EAAQ+D,EAAI/D,MAAM6D,GAepB,OAACjE,EAAOoE,OAAOhE,GAMZ,EALEE,WAAWF,EAAM,IAY5B,IAAMiE,EAAM,CAOM,eAAA,SAASC,EAAMC,QACHb5E,IAAT2E,QAAqC3E,IAAf2E,EA AKE,QAE1BC,EAAAA,cAAgBF,EAAa,WACzB,OAAA,GACL,aAGCC,EAAAA,MAAME,cAAgBH,EAAa,OA AS,OAC5CC,EAAAA,MAAMG,gBAakBJ,EAAa,OAAS,OAC9CK,EAAAA,aAAeL,EAAa,KAAO,QAS1B,eAA A,SAASD,EAAMO,EAAKC,GAC9BC,IAAAA,EAAWD,EACXE,EAAaH,EAEB7E,EAAOnB,YAAYmG,KACR,GAAA,GAGXhF,EAAOnB,YAAYkG,KACV,GAAA,GAGRP,EAAAA,MAAMS,SAAW,WAEIBD,IACGR,EA AA,MAAMU,KAAO,EACbV,EAAAA,MAAMW,MAAQ,GAejBJ,IACGP,EAAAA,MAAMY,IAAM,EACZZ,EA AAA,MAAMa,OAAS,IAUb,UAAA,SAASf,EAAMgB,EAAWC,EAAMC,GACnCC,IAAAA,EAASF,GAAQ,GAC jBG,EAAY3B,EAACuB,GAC5B,IAACI,EACG,MAAA,IAAIhM,MAAM,cAAgB4L,EAAY,mBAExCK,IAAAA,E AAMpC,SAASqC,YAAYF,GACzBA,OAAA,GACD,IAAA,cAEKG,IAAAA,EAAUJ,EAAOK,GAACL,EAAOI, SAAW,EACxCE,EAAUN,EAAOO,GAACP,EAAOM,SAAW,EAC1CE,EAAAA,eAAeX,EAAWG,EAAOS,UAA W,EAC9CT,EAAOU,aAAc,EAAMC,OAAQX,EAAOY,YAAc,EACxD,EAIO,EAAA,EAAA,GAAA,GAAA,GAA O,GAAO,EAAO,EAAG,MPtE3C,MOyEW,IAAA,iBAEKc,IAAAA,EAAOX,EAAY,mBAAqBZ,EAAIa,aACnCC ,EAAAA,SAAShB,EAAQ,CACV,YAAA,EACH,SAAA,EACD,QAAA,EACE,UAAA,EACD,SAAA,EACA9F,aA AAA,EACCA,cAAAA,IAEP2F,EAAAA,EAAWG,EAAOS,UAAW,EACHCT,EAAOU,WAAyC,OACnBX,EAAO iB,QAASjB,EAAOkB,OACvBIB,EAAOmB,SAAUnB,EAAOb,QACxBpB,EAAOqB,QAASrB,EAAOsB,UPzFn C,MAAA,QO8Fc,EAAAA,UAAU1B,EAAWG,EAAOS,UAAW,EAAOT,EAAOU,aAAc,GAItEM,EAAAA,SAA Sd,EAAKH,GACHByB,EAAAA,cAAcB,IAUf,KAAA,SAASrB,EAAM4C,EAAO7H,EAAM8H,GAC1BC,IAAAA ,EAAOD,IAAW,EAMjB9C,OALHC,EAAK+C,iBACFA,EAAAA,iBAAiBH,EAAO7H,EAAM+H,GAC1B9C,EA AKgD,aACTA,EAAAA,YAAY,KAAOJ,EAAO7H,GAe1BgF,GAUD,OAAA,SAASC,EAAM4C,EAAO7H,EA AM8H,GAC5BC,IAAAA,EAAOD,IAAW,EAMjB9C,OALHC,EAAKiD,oBACFA,EAAAA,oBAAoBL,EAAO7H,E AAM+H,GAC7B9C,EAAKkD,aACTA,EAAAA,YAAY,KAAON,EAAO7H,GAe1BgF,GAQC,SAAA,SAASC,EA AMoB,GACnBpB,QAAmB3E,IAAnB2E,EAAKoB,UACFA,EAAAA,UAYYA,OACZ,GAAPb,EAAKoB,YAAc A,EAAW,CACjC+B,IAAAA,EAAUnD,EAAKoB,UAAUgC,MAAM,OACD,IAAhCD,EAAQE,QAAQjC,KACVn K,EAAAA,KAAKmK,GACRA,EAAAA,UAYY+B,EAAQG,KAAK,KAAKC,QAAQ,OAAQ,IAAIA,QAAQ,OAA Q,KAGpExD,OAAAA,GAQI,YAAA,SAASC,EAAMoB,GACtBA,GAAAA,EACEpB,GAAAA,EAAKoB,YAAcA ,EACHBoC,EAAAA,gBAAgB,aAchB,CACCL,IAAAA,EAAUnD,EAAKoB,UAAUgC,MAAM,MAC/BK,EAQ

N,EAAQE,QAAQjC,IACf,IAAXqC,IACMC,EAAAA,OAAOD,EAAO,GACjBrC,EAAAA,UAYY+B,EAAQG,KA
AK,WAI7BIC,EAAAA,eAAY/F,EA EZ0E,OAAAA,GAGC,SAAA,SAASC,EAAMoB,GACHb,OAAA,IAAIuC,O
AAO,aAAevC,EAAY,cAAcvF,KAAKmE,EA AKoB,aAAc,GAO3E,SAAA,SAASpB,GACXE,IAAAA,EAAQ0D,i
BAAiB5D,GAExBJ,OAAAA,EA AiBM,EAAM,sBAC5BN,EA AiBM,EAAM,uBACvBN,EA AiBM,EAAM,iBACv
BN,EA AiBM,EAAM,kBACvBN,EA AiBM,EAAM2D,QAOhB,UAAA,SAAS7D,GACZE,IAAAA,EAAQ0D,iBAA
iB5D,GAExBJ,OAAAA,EA AiBM,EAAM,qBAC5BN,EA AiBM,EAAM,wBACvBN,EA AiBM,EAAM,gBACvBN,
EA AiBM,EAAM,mBACvBN,EA AiBM,EAAM4D,SAOhB,UAAA,SAASC,GACd/D,IAAAA,EAAO+D,EACLC,E
AAS,CAAEpD,KAAM,EAAGE,IAAK,GAC3Bd,GAAAA,EA AKiE,aACJ,GACMrD,EAAAA,MAAQZ,EA AKkE,
WACbpD,EAAAA,KAAOd,EA AKmE,UACZnE,EAAAA,EA AKiE,mBACLjE,GA EJgE,OAAAA,GAQC,SAAA,S
AAShE,GACVA,OAAAA,IAASf,SAASmF,gBA AkBpE,EA AKqE,MAAQrE,EA AKsE,QCtQ3DC,EAAAA,SAAA
A,GACQ1F,SAAA,EAAAA,EAAQC,GR6BtB,EAAA,KAAA,GQ5BUD,IAAAA,EAAAA,EAAAA,MAAAA,EA
AAA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KAAAA,EAAQC,IAER0F,EAAAA,ER0BV,OQzBSC,EAAA
A,OAAS,EA AKIF,WAE dmF,EAAAA,WAAazF,SAASC,cAAc,SACpCwF,EAAAA,WAAWC,aAAa,OAAQ,YAM
jCnK,EAAAA,KAAK,EA AKkK,WAA Y,SAJjBE,WACDC,EAAAA,UAAUL,EAAMC,UAGsB,GA EzCzF,EAAA
A,WAAW8F,YAAY,EA AKJ,YAG5BpF,EAAAA,gBRWT,EAAA,OAAA,EAAA,EQ9BgCV,GR8BhC,EAAA,EA
AA,CAAA,CAAA,IAAA,WQRWpF,MAAAA,SAAA,GACD2C,IAAAA,EAAAA,EAAAA,EAAAA,UAAAA,W
AAAA,OAAAA,eAAAA,EAAAA,WAAAA,WAAAA,MAAAA,KAAAA,KAA0B3C,GAKzB2C,OA JH,KAAKiD,
kBACFA,KAAAA,iBAAiB1J,KAAK,KAAM,KAAK6J,YA EnCkF,KAAAA,OAAS,KAAKIF,WACZpD,IRES,CA
AA,IAAA,gBQCkB,MAAA,WRDIB,OQE4B,IAApB,KAAKoD,YACFmF,KAAAA,WAAWC,aAAa,UAAW,WA
CnCD,KAAAA,WAAWK,SAAU,EACrBN,KAAAA,QAAS,IAETC,KAAAA,WAAWK,SAAU,EACrBN,KAAAA
,QAAS,GRRpB,EAAA,EAAA,UAAA,WAAA,OAAA,eAAA,EAAA,WAAA,gBAAA,MAAA,KAAA,UAAA,EQ9
BMF,GCIAS,EAAAA,SAAA,GACQnG,SAAA,EAAAA,EAAQC,EAAUmG,GTyBhC,EAAA,KAAA,GSxBup
G,IAAAA,EAAAA,EAAAA,MAAAA,EAAAA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KAAAA,EAAQC,I
AEVoG,EAAUD,EAERT,EAAAA,EA QF9I,GAFCyJ,EAAAA,SAAWIG,SAASC,cAAc,UAEnCxD,EAAOH,QAA
Q2J,GAAU,CACrBE,IAAAA,EAAM,GACLnL,EAAAA,KAAKiL,EAAS,SAASG,GACxBA,EAAAA,GAAWA,I
AEPD,EAAAA,ETOhB,OSJWnL,EAAAA,KAAKiL,EAAS,SAASzH,EAAOnD,GAC7BgL,IAAAA,EAAMrG,SA
ASC,cAAc,UAC/BqG,EAAAA,UAYYjL,EACZqK,EAAAA,aAAa,QAASIH,GACpB0H,EAAAA,SAASL,YAAY
Q,KAIxBhG,EAAAA,gBAED9E,EAAAA,KAAK,EA AK2K,SAAU,SAAU,WAC1BK,IAAAA,EA Ae,KAAKN,QA
AQ,KAAKO,eAAehI,MAChDoH,EAAAA,SAASW,KAGZxG,EAAAA,WAAW8F,YAAY,EA AKK,UTXrC,EAA
A,OAAA,EAAA,ES1B+BvG,GT0B/B,EAAA,EAAA,CAAA,CAAA,IAAA,WScWpF,MAAAA,SAAA,GACD2C
,IAAAA,EAAAA,EAAAA,EAAAA,UAAAA,WAAAA,OAAAA,eAAAA,EAAAA,WAAAA,WAAAA,MAAAA,
KAAAA,KAA0B3C,GAKzB2C,OAHH,KAAKiD,kBACFA,KAAAA,iBAAiB1J,KAAK,KAAM,KAAK6J,YAEjC
pD,ITpBX,CAAA,IAAA,gBSuBkB,MAAA,WACV4D,OAAAA,EA AI2F,SAAS,KAAKP,UAAkB,MACnCA,KAA
AA,SAASIH,MAAQ,KAAK8B,WTzB/B,EAAA,EAAA,UAAA,WAAA,OAAA,eAAA,EAAA,WAAA,gBAAA,M
AAA,KAAA,WAAA,ES1BMyF,GCJAW,EAAAA,SAAA,GACQ9G,SAAA,EAAAA,EAAQC,GV6BtB,EAAA
,KAAA,GU5BUD,IAAAA,EAAAA,EAAAA,MAAAA,EAAAA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KA
AAA,EAAQC,IAER0F,EAAAA,EAEGI,SAAA,IACDC,EAAAA,SAASL,EAAMoB,QAAQnI,OVuBnC,OUdSm
I,EAAAA,QAAU3G,SAASC,cAAc,SACjC0G,EAAAA,QAAQjB,aAAa,OAAQ,QAE9BnK,EAAAA,KAAK,EAA
KoL,QAAS,QAAShB,GAC5BpK,EAAAA,KAAK,EA AKoL,QAAS,SAAUhB,GAC7BpK,EAAAA,KAAK,EA AK
oL,QAAS,OAXdC,WACHrB,EAAMpF,kBACFA,EAAAA,iBAAiB1J,KAAK80,EAAOA,EAAMjF,cAUzC/E,EA
AAA,KAAK,EA AKoL,QAAS,UAAW,SAASnQ,GACvB,KAAdA,EAAE+M,SACCsD,KAAAA,SAIJxG,EAAAA,
gBAEAN,EAAAA,WAAW8F,YAAY,EA AKc,SVArC,EAAA,OAAA,EAAA,EU9B+BhH,GV8B/B,EAAA,EAAA,
CAAA,CAAA,IAAA,gBUGkB,MAAA,WVHIB,OUMSmB,EA AI2F,SAAS,KAAKE,WACHBA,KAAAA,QAAQnI
,MAAQ,KAAK8B,YVPhC,EAAA,EAAA,UAAA,WAAA,OAAA,eAAA,EAAA,WAAA,gBAAA,MAAA,KAAA,
UAAA,EU9BMoG,GCRN,SAASI,EAAYvE,GACbwE,IAAAA,EA AKxE,EAAEII,WACTkN,OAAAA,EAAG3C,
QAAQ,MAAQ,EACd2C,EAAG7P,OAAS6P,EAAG3C,QAAQ,KAAO,EAGhC,EAeH4C,IAAAA,EAAAA,EAAAA,M
AAAA,EAAAA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KAAAA,EAAQC,IAERoH,EAAU/E,GAAU,GXa9

B,OWXSgF,EAAAA,MAAQD,EAAQ/I,IACHBiJ,EAAAA,MAAQF,EAAQ9I,IACHBiJ,EAAAA,OAASH,EAAQI, KAEIB5K,EAAOnB,YAAy,EAak8L,QACA,IAAtB,EAakIH,aACFwH,EAAAA,cAAgB,EAGhBA,EAAAA,cA AgBvN,KAAKwN,IAAI,GAaIxN,KAAK6D,MAAM7D,KAAKyN,IAAIzN,KAAK0N,IAAI,EAak3H,eAAiB/F, KAAK2N,OAAS,GAGhGJ,EAAAA,cAAgB,EAakF,OAGvBO,EAAAA,YAAcb,EAAY,EAakQ,eXJxC,EAAA, OAAA,EAAA,EWjB+B3H,GXiB/B,EAAA,EAAA,CAAA,CAAA,IAAA,WWOWpF,MAAAA,SAAAA,GACHqN ,IAAAA,EAakrN,EAYaqN,YAVHxL,IAAf,KAAK8K,OAAuBU,EAak,KAAKV,MACnC,EAAA,KAAKA,WA Cc9K,IAAf,KAAK+K,OAAuBS,EAak,KAAKT,QAC1C,EAAA,KAAKA,YAGQ/K,IAAhB,KAAKgL,QAAwBQ ,EAak,KAAKR,QAAW,IAC/CrN,EAAAA,KAAKC,MAAM4N,EAak,KAAKR,QAAU,KAAKA,QAGrBQ,EA A AA,EAAAA,UAAAA,WAAAA,OAAAA,eAAAA,EAAAA,WAAAA,WAAAA,MAAAA,KAAAA,KAAAA,KXp B1B,CAAA,IAAA,MW8BMC,MAAAA,SAAAA,GAEK,OADFX,KAAAA,MAAQW,EACN,OXhCX,CAAA,IAA A,MW0CMC,MAAAA,SAAAA,GAEK,OADFX,KAAAA,MAAQW,EACN,OX5CX,CAAA,IAAA,OWyDOC,M AAAAA,SAAAA,GAII,OAHFx,KAAAA,OAASW,EACTT,KAAAA,cAAgBS,EACHBJ,KAAAA,YAAcb,EAAYiB ,GACxB,SX7DX,EWjBmf,GCpBN,SAASgB,EAaexJ,EAAOyJ,GACvBC,IAAAA,EAAQnO,KAAKwN,IAAI,GA AIU,GACpBIO,OAAAA,KAAKC,MAAMwE,EAAQ0J,GAASA,EAiB/BC,IAAAA,EAAAA,SAAAA,GACQvI,S AAAAA,EAAAA,EAAQC,EAAUqC,GZiBhC,EAAA,KAAA,GYhBUtC,IAAAA,EAAAA,EAAAA,MAAAA,EAA AA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KAAAA,EAAQC,EAAUqC,IAEnBkG,EAAAA,uBAAwB,EA E vB7C,IAAAA,EAAAA,EAMF8C,OAAAA,EASKC,SAAAA,IACH/C,EAAMPf,kBACFA,EAAAA,iBAaiB1J,KA AK8O,EAAOA,EAAMjF,YAQpCiI,SAAAA,EAAY/R,GACBgS,IAAAA,EAAOH,EAAQ7R,EAEEgM,QACjBoD, EAAAA,SAASL,EAAMjF,WAAakI,EAaOjD,EAAM+B,eAEvC9Q,EAAAA,EAEEgM,QAGHiG,SAAAA,IACH C,EAAAA,OAAO7F,OAAQ,YAAa0F,GAC5BG,EAAAA,OAAO7F,OAAQ,UAAW4F,GZtBpC,IAAA,OYgCS9B, EAAAA,QAAU3G,SAASC,cAAc,SACjC0G,EAAAA,QAAQjB,aAAa,OAAQ,QAI9BnK,EAAAA,KAAK,EAako L,QAAS,SAzCdhB,WACDgD,IAAAA,EAAY5L,WAAWwI,EAAMoB,QAAQnI,OACtC/B,EAaOJ,MAAMsM,IA CV/C,EAAAA,SAAS+C,KAuCfpN,EAAAA,KAAK,EAakoL,QAAS,OA7BdC,WZTb,MYuCQrL,EAAAA,KAA K,EAakoL,QAAS,YAbdiC,SAAYpS,GACf+E,EAAAA,KAAKsH,OAAQ,YAAa0F,GAC1BhN,EAAAA,KAAKs H,OAAQ,UAAW4F,GACpBjS,EAAAA,EAEEgM,UAWRjH,EAAAA,KAAK,EAakoL,QAAS,UAAW,SAASnQ, GAEvB,KAAdA,EAEE+M,UACE6E,EAAAA,uBAAwB,EACzBvB,KAAAA,OACCuB,EAAAA,uBAAwB,EZ7C tC,OYkDS/H,EAAAA,gBAEAN,EAAAA,WAAW8F,YAAy,EAakC,SZpDrC,EAAA,OAAA,EAAA,EYIBkCK,G ZkBiC,EAAA,EAAA,CAAA,CAAA,IAAA,gBYuDkB,MAAA,WZvDIB,OYwDSL,KAAAA,QAAQnI,MAAQ,KA AK4J,sBAAwB,KAAK9H,WAAa0H,EAAe,KAAK1H,WAAy,KAAKqH,aZxD7G,EAAA,EAAA,UAAA,WAAA, OAAA,eAAA,EAAA,WAAA,gBAAA,MAAA,KAAA,UAAA,EYIBMQ,GCpBN,SAAShC,EAai5L,EAAGsO,EA AIC,EAaIC,EAaIC,GACnBD,OAAAA,GAAMbXo,EAaiSo,IAAOC,EAakD,IAA7BG,EAakD,GAMbDe,IAA AA,EAAAA,SAAAA,GACQrJ,SAAAA,EAAAA,EAAQC,EAAU3B,EAakC,EAakKJ,GbiB1C,EAAA,KAAA,GA hBUzH,IAAAA,EAAAA,EAAAA,MAAAA,EAAAA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KAAAA,EA AQC,EAAU,CAAE3B,IAAKA,EAakC,IAAKA,EAakKJ,KAAMA,KAe9C9B,EAAAA,EAoBGgD,SAAAA,EA AY/R,GACjB0S,EAAAA,iBAEiC,IAAAA,EAAS5D,EAAM6D,aAAaC,wBAM3B,OAJDzD,EAAAA,SACJO,EA AI3P,EAae8L,QAAS6G,EAaoxH,KAAMwH,EAaoVH,MAAO2D,EAAM2B,MAAO3B,EAAM4B,SAGxD,EA GAsB,SAAAA,IACHC,EAAAA,OAAO7F,OAAQ,YAAa0F,GAC5BG,EAAAA,OAAO7F,OAAQ,UAAW4F,GAC 1BID,EAAMPf,kBACFA,EAAAA,iBAaiB1J,KAAK8O,EAAOA,EAAMjF,YAWpCgJ,SAAAA,EAAY9S,GACb8 L,IAAAA,EAAU9L,EAEE+S,QAAQ,GAAGjH,QACvB6G,EAAS5D,EAAM6D,aAAaC,wBAE5BzD,EAAAA,SA CJO,EAai7D,EAAS6G,EAaoxH,KAAMwH,EAaoVH,MAAO2D,EAAM2B,MAAO3B,EAAM4B,QAItdqC,SA AAA,IACHd,EAAAA,OAAO7F,OAAQ,YAAayG,GAC5BZ,EAAAA,OAAO7F,OAAQ,WAAy2G,GAC3BjE,EA AMPf,kBACFA,EAAAA,iBAaiB1J,KAAK8O,EAAOA,EAAMjF,Yb9CjD,OaZS8I,EAAAA,aAAepJ,SAASC,cA Ac,OACtCwJ,EAAAA,aAAezJ,SAASC,cAAc,OAevC1E,EAAAA,KAAK,EAak6N,aAAc,YAMnBR,SAAYpS,G ACV2O,SAAAA,cAAc0B,OAEnBtL,EAAAA,KAAKsH,OAAQ,YAAa0F,GAC1BhN,EAAAA,KAAKsH,OAAQ, UAAW4F,GAehBjS,EAAAA,KAXV+E,EAAAA,KAAK,EAak6N,aAAc,aAkCnBM,SAAaIT,GACHBA,GAAqB, IAARBA,EAEE+S,QAAQrS,Ob3BpB,Oa4BUqE,EAAAA,KAAKsH,OAAQ,YAAayG,GAC1B/N,EAAAA,KAAK sH,OAAQ,WAAy2G,GACjBhT,EAAAA,KApCVmT,EAAAA,SAAS,EAakP,aAAc,UAC5BO,EAAAA,SAAS,E AAKF,aAAc,aAuD3BpJ,EAAAA,gBAEA+I,EAAAA,aAAavD,YAAy,EAak4D,cAC9B1J,EAAAA,WAAW8F,Y

AAy,EAAKuD,cbrDrC,EAAA,OAAA,EAAA,EalBqCpC,GbkBrC,EAAA,EAAA,CAAA,CAAA,IAAA,gBawDkB,
MAAA,WACR4C,IAAAA,GAAO,KAAKtJ,WAAa,KAAK4G,QAAU,KAAKC,MAAQ,KAAKD,ObzDpE,Oa0DS
uC,KAAAA,aAAaxI,MAAM2D,MAAc,IAANgF,EAAY,Ib1DhD,EAAA,EAAA,UAAA,WAAA,OAAA,eAAA,EA
AA,WAAA,gBAAA,MAAA,KAAA,UAAA,EalBMX,GCZAY,EAAAA,SAAAA,GACQjK,SAAAA,EAAAA,EA
QC,EAAUik,Gd6BhC,EAAA,KAAA,Gc5BUiK,IAAAA,EAAAA,EAAAA,MAAAA,EAAAA,WAAAA,OAAAA,
eAAAA,IAAAA,KAAAA,KAAAA,EAAQC,IAER0F,EAAAA,Ed0BV,OcxBSwE,EAAAA,SAAW/J,SAASC,cAA
c,OACiC8J,EAAAA,SAASzD,eAAqBIK,IAAT0N,EAaqB,OAASA,EAepDvO,EAAAA,KAAK,EAakwO,SAAU
,QAAS,SAASvT,GAGjC,OAFL0S,EAAAA,iBACIc,EAAAA,QACC,IAGLL,EAAAA,SAAS,EAaKI,SAAU,UA
vBhK,EAAAA,WAAW8F,YAAY,EAakKE,UdarC,EAAA,OAAA,EAAA,Ec9BiCpK,Gd8BjC,EAAA,EAAA,CAA
A,CAAA,IAAA,OcVS,MAAA,WACD,KAAKO,YACFA,KAAAA,WAAWzJ,KAAK,MAEIB6J,KAAAA,WAAW
7J,KAAK,KAAKmJ,QACtB,KAAKO,kBACFA,KAAAA,iBAAiB1J,KAAK,KAAM,KAAK6J,gBdI5C,Ec9BMuJ,
GCAAI,EAAAA,SAAAA,GACQrK,SAAAA,EAAAA,EAAQC,Gf6BtB,EAAA,KAAA,Ge5BUD,IAAAA,EAAAA
,EAAAA,MAAAA,EAAAA,WAAAA,OAAAA,eAAAA,IAAAA,KAAAA,KAAAA,EAAQC,IAETqK,EAAAA,Q
AAU,IAAIzL,EAAM,EAak6B,YACzB6J,EAAAA,OAAS,IAAI1L,EAAM,GAeIB8G,IAAAA,EAAAA,EAEDx
F,EAAAA,WAAaC,SAASC,cAAc,OAerCmK,EAAAA,eAAe,EAakrK,YAAY,GAe/BsK,EAAAA,WAAarK,SA
AS,cAAc,OACpCoK,EAAAA,WAAWII,UAYY,WAEvBmI,EAAAA,mBAAqBtK,SAASC,cAAc,OAC5CqK,EA
AA,mBAAmBnI,UAYY,mBAE/BoI,EAAAA,aAAevK,SAASC,cAAc,OACtCsK,EAAAA,aAAapI,UAYY,aCzBqI,
EAAAA,oBAAsB,aAEtBC,EAAAA,WAAazK,SAASC,cAAc,OACpCwK,EAAAA,WAAWtI,UAYY,WAEvBuI,E
AAAA,YAAc1K,SAASC,cAAc,OACrCyK,EAAAA,YAAYvI,UAYY,YAExBwE,EAAAA,QAAU3G,SAASC,cA
Ac,SACjC0G,EAAAA,QAAQvB,KAAO,OACfuF,EAAAA,mBAAqB,aAEtBpP,EAAAA,KAAK,EAakoL,QAAS
,UAAW,SAASnQ,GACvB,KAAaA,EAae+M,SACG9M,EAAAA,KAAK,QAIz8E,EAAAA,KAAK,EAakoL,QA
AS,OAAQC,GAe3BrL,EAAAA,KAAK,EAak8O,WAAy,YAAa,WAEICV,EAAAA,SAAS,KAAM,QACfpO,KA
AKsH,OAAQ,UAAW,WACnB+H,EAAAA,YAAYrF,EAAM8E,WAAy,YAIpC9O,EAAAA,KAAK,EAak8O,W
AAY,aAAc,WAEncV,EAAAA,SAAS,KAAM,QACfpO,KAAKsH,OAAQ,WAAy,WACpB+H,EAAAA,YAAYrF,
EAAM8E,WAAy,YAIICQ,IAAAA,EAaa7K,SAASC,cAAc,OA8EjC6K,SAAAA,EAauT,GACXA,EAAAA,GA
CF+E,EAAAA,KAAKsH,OAAQ,YAAakI,GAC1BxP,EAAAA,KAAKsH,OAAQ,YAAakI,GAC1BxP,EAAAA,KA
AKsH,OAAQ,UAAWmI,GACxBzP,EAAAA,KAAKsH,OAAQ,WAAymI,GAGtBC,SAAAA,EAawzU,GACbA,
EAAAA,GACD+E,EAAAA,KAAKsH,OAAQ,YAAaqI,GAC1B3P,EAAAA,KAAKsH,OAAQ,YAAaqI,GAC1B3P
,EAAAA,KAAKsH,OAAQ,UAAWsI,GACxB5P,EAAAA,KAAKsH,OAAQ,WAAysI,GAGtBH,SAAAA,IACHtC,
EAAAA,OAAO7F,OAAQ,YAAakI,GAC5BrC,EAAAA,OAAO7F,OAAQ,YAAakI,GAC5BrC,EAAAA,OAAO7F,
OAAQ,UAAWmI,GAC1BtC,EAAAA,OAAO7F,OAAQ,WAAymI,Gf7HrC,IeiIaG,SAAAA,IACHzC,EAAAA,OA
AO7F,OAAQ,YAAaqI,GAC5BxC,EAAAA,OAAO7F,OAAQ,YAAaqI,GAC5BxC,EAAAA,OAAO7F,OAAQ,UA
AWsI,GAC1BzC,EAAAA,OAAO7F,OAAQ,WAAysI,GfIrC,IeyIavE,SAAAA,IACD7O,IAAAA,EAaiOf,EAU,
KAAKqB,QACf,IAANzG,GACImS,EAAAA,QAAQvQ,QAAU5B,EACIB6N,EAAAA,SAASL,EAAM2E,QAAQk
B,eAExB5M,KAAAA,MAAQ+G,EAAM2E,QAAQrQ,WAIByO,SAAAA,IACH/C,EAAMpF,kBACFA,EAAAA,i
BAAiB1J,KAAK8O,EAaoA,EAAM2E,QAAQkB,cAe5CL,SAAAA,EAAMvU,IACoB,IAA7BA,EAae4O,KAAK
hB,QAAQ,UAAqB8E,EAAAA,iBAEICmC,IAAAA,EAAY9F,EAAM+E,mBAAmBjB,wBACb7S,EAAAA,EA
AE+S,SAAW/S,EAae+S,QAAQ,IAAO/S,EAAPd8L,EAJQ,EAIRA,QAASE,EAJD,EAICA,QACbnI,GAaKiI,EAU
+I,EAU1J,OAAS0J,EAUzJ,MAAQyJ,EAU1J,MAC9DpH,EAai,GAaKiI,EAU6I,EAUxJ,MAAQwJ,EA
UvJ,OAASuJ,EAUxJ,KAoB/D,OAlBhtH,EAai,EACF,EAAA,EACKA,EAai,IACT,EAAA,GAGFF,EAai,EAC
F,EAAA,EACKA,EAai,IACT,EAAA,GAGA6P,EAAAA,QAAQ3P,EAaiA,EACZ2P,EAAAA,QAAQ7P,EAaiA,
EAezUL,EAAAA,SAASL,EAAM2E,QAAQkB,eAGtB,EAGAF,SAAAA,EAak1U,IACqB,IAA7BA,EAae4O,K
AAKhB,QAAQ,UAAqB8E,EAAAA,iBAEICmC,IAAAA,EAAY9F,EAAMmF,YAAYrB,wBAEhCjP,EAai,IA
Da5D,EAae+S,SAAW/S,EAae+S,QAAQ,IAAO/S,GAA3CgM,QACe6I,EAUxJ,MAAQwJ,EAUvJ,OAASuJ,EA
UxJ,KAY/D,OAVHzH,EAai,EACF,EAAA,EACKA,EAai,IACT,EAAA,GAGA8P,EAAAA,QAAQ9P,EAQ,IA
AJA,EAezwL,EAAAA,SAASL,EAAM2E,QAAQkB,eAEtB,EFInB,Oe6BW9L,EAAAA,OAAO,EAak+K,WAA
WpJ,MAAO,CAC5B,MAAA,QACC,OAAA,QACC,QAAA,MACQ,gBAAA,OACN,UAAA,gCAGN3B,EAAAA,O
AAO,EAaKiL,aAAatJ,MAAO,CAC3B,SAAA,WACH,MAAA,OACC,OAAA,OACA,OAAA,EAakuJ,qBAauB,

EAAKN,QAAQ3P,EAAI,GAAM,OAAS,QACzD,UAAA,8BACG,aAAA,OACN,OAAA,IAGH+E,EAAAA,OAAO
,EAAKmL,WAAWxJ,MAAO,CACzB,SAAA,WACH,MAAA,OACC,OAAA,MACK,YAAA,iBACL,OAAA,IAG
H3B,EAAAA,OAAO,EAAKgL,mBAAMBrJ,MAAO,CACpC,MAAA,QACC,OAAA,QACA,OAAA,iBACK,YAA
A,MACJ,QAAA,eACD,OAAA,YAGH3B,EAAAA,OAAOuL,EAAW5J,MAAO,CACvB,MAAA,OACC,OAAA,O
ACI,WAAA,SAGC4J,EAAAA,EAY,MAAO,gBAAiB,QA5CvL,EAAAA,OAAO,EAAKoL,YAAYzJ,MAAO,C
AC7B,MAAA,OACC,OAAA,QACA,OAAA,iBACA,OAAA,YACE,SAAA,WACL,IAAA,MACE,MAAA,QAGG,
EAAA,EAAKyJ,aAEVpL,EAAAA,OAAO,EAAKqH,QAAQ1F,MAAO,CACvB,QAAA,OAEE,UAAA,SAGJ,MA
AA,OACC,OAAA,EACI,WAAA,OACA,WAAA,EAAK0J,mBAAqB,oBAGpCpP,EAAAA,KAAK,EAAK+O,mB
AAoB,YAAaQ,GAC3CvP,EAAAA,KAAK,EAAK+O,mBAAoB,aAAcQ,GA5CvP,EAAAA,KAAK,EAAKgP,aA
Ac,YAAaO,GACrCvP,EAAAA,KAAK,EAAKgP,aAAc,aAAcO,GA5CvP,EAAAA,KAAK,EAAKmP,YAAa,YA
AaO,GACpC1P,EAAAA,KAAK,EAAKmP,YAAa,aAAcO,GakDpCX,EAAAA,mBAAMBzE,YAAYgF,GAC/BR,
EAAAA,WAAWxE,YAAY,EAAK0E,cAC5BF,EAAAA,WAAWxE,YAAY,EAAKyE,oBAC5BD,EAAAA,WAA
WxE,YAAY,EAAK6E,aAC5BA,EAAAA,YAAY7E,YAAY,EAAK4E,YAE7B1K,EAAAA,WAAW8F,YAAY,EA
AKc,SAC5B5G,EAAAA,WAAW8F,YAAY,EAAKwE,YAE5BhK,EAAAA,gBfIKT,EAAA,OAAA,EAAA,Ee9B8
BV,Gf8B9B,EAAA,EAAA,CAAA,CAAA,IAAA,gBesNkB,MAAA,WACR5H,IAAAA,EAAIoF,EAAU,KAAKmD
,YAErBvI,IAAM,IAANA,EAAa,CACXuT,IAAAA,GAAW,EAIRtQ,EAAAA,KAAKyD,EAAMgB,WAA,Y,SAAS
Z,GACjC,IAACpC,EAAOnB,YAAYvD,EAAE8G,MAAgBpC,EAAOnB,YAAY,KAAK4O,QAAQvQ,QAAQkF,K
AChF9G,EAAE8G,KAAe,KAAKqL,QAAQvQ,QAAQkF,GAEB/OADI,GAAA,EACJ,IAER,MAICyM,GACKhM,
EAAAA,OAAO,KAAK4K,QAAQvQ,QAAS5B,GAJjCuH,EAAAA,OAAO,KAAK6K,OAAOxQ,QAAS,KAAKuQ
,QAAQvQ,SAE3CwQ,KAAAA,OAAOhQ,EAAI,EAEVOR,IAAAA,EAAQ,KAAKrB,QAAQ3P,EAAI,IAAO,KAA
K2P,QAAQ7P,EAAI,GAAO,IAAM,EAC9DmR,EAAQ,IAAMD,EAEBjM,EAAAA,OAAO,KAAKiL,aAAatJ,MA
AO,CACzB,WAAA,IAAM,KAAKij,QAAQ7P,EAAI,EAAI,KAC5B,UAAA,KAAO,EAAI,KAAK6P,QAAQ3P,G
AAK,EAAI,KAC3B,gBAAA,KAAK4P,OAAOsB,cACrB,OAAA,KAAKjB,oBAAsB,OAASe,EAAO,IAAMA,EA
AO,IAAMA,EAAO,MAG1Ed,KAAAA,WAAWxJ,MAAMyK,UAAyC,KAA5B,EAAI,KAAKxB,QAAQ9P,EAAI,
KAAa,KAehE+P,KAAAA,OAAO9P,EAAI,EACX8P,KAAAA,OAAO5P,EAAI,EAED,EAAA,KAAK+P,mBAAo
B,OAAQ,OAAQ,KAAKH,OAAOsB,eAE/D9E,KAAAA,QAAQnI,MAAQ,KAAK0L,QAAQrQ,WAE3ByF,EAAA
A,OAAO,KAAKqH,QAAQ1F,MAAO,CACf,gBAAA,KAAKiJ,QAAQuB,cACvB,MAAA,OAASF,EAAO,IAAMA
,EAAO,IAAMA,EAAO,IACrC,WAAA,KAAKZ,mBAAqB,QAAUa,EAAQ,IAAMA,EAAQ,IAAMA,EAAQ,afvQ1
F,Ee9BMvB,GA0SA0B,EAAU,CAAC,QAAS,MAAO,WAA,Y,OAAQ,IAErD,SAASC,EAAe7K,EAAMwB,EAAG
pI,EAAGD,GAC7B+G,EAAAA,MAAM4K,WAAa,GACjB7Q,EAAAA,KAAK2Q,EAAS,SAASG,GACvB7K,EA
AAA,MAAM8K,SAAW,eAAiBD,EAAS,mBAAqBvJ,EAAI,KAAOpI,EAAI,QAAUD,EAAI,aAIg,SAAS8R,EA
YjL,GACdE,EAAAA,MAAM4K,WAAa,GACnB5K,EAAAA,MAAM8K,SAAW,qIACjB9K,EAAAA,MAAM8K,
SAAW,kIACjB9K,EAAAA,MAAM8K,SAAW,6HACjB9K,EAAAA,MAAM8K,SAAW,8HACjB9K,EAAAA,MA
AM8K,SAAW,0HCpUxB,IAAME,EAAM,CACJ,KAAA,SAASC,EAAKC,GACZC,IAAAA,EAAMD,GAASnM,S
ACfqM,EAAOD,EAAInM,cAAc,QAC1BmF,EAAAA,KAAO,WACpKH,EAAAA,IAAM,aACNjH,EAAAA,KAA
O6G,EACRK,EAAAA,qBAAqB,QAAQ,GAAG1G,YAAYwG,IAG1C,OAAA,SAASG,EAAYL,GACrBC,IAAAA,
EAAMD,GAASnM,SACfyM,EAAWzM,SAASC,cAAc,SAC/BmF,EAAAA,KAAO,WACpKB,EAAAA,UAAyKqG,
EACfE,IAAAA,EAAON,EAAIG,qBAAqB,QAAQ,GAC1C,IACG1G,EAAAA,YAAY4G,GACjB,MAAOjW,OC/B
PmW,EAAAA,4pBCqBAC,EAAoB,SAAShN,EAAQC,GACnCC,IAAAA,EAAeF,EAAOC,GAGxBpD,OAAAA,E
AAOH,QAAQxE,UAAU,KAAO2E,EAAOvB,SAASpD,UAAU,IACrD,IAAIiO,EAAiBnG,EAAQC,EAAU/H,UA
AU,IAItD2E,EAAOO,SAAS8C,GAEdrD,EAAOO,SAASIF,UAAU,KAAO2E,EAAOO,SAASIF,UAAU,IAEzD2E,
EAAOO,SAASIF,UAAU,IACrB,IAAIImR,EAAuBrJ,EAAQC,EAC1B/H,UAAU,GAAIA,UAAU,GAAIA,UAAU,I
AGjD,IAAIImR,EAAuBrJ,EAAQC,EAAU/H,UAAU,GAAIA,UAAU,IAIIE2E,EAAOO,SAASIF,UAAU,IACrB,IA
AIqQ,EAAoBvI,EAAQC,EACrB,CAAE3B,IAAKpG,UAAU,GAAIqG,IAAKrG,UAAU,GAAIuP,KAAMvP,UAA
U,KAERe,IAAIqQ,EAAoBvI,EAAQC,EAAU,CAAE3B,IAAKpG,UAAU,GAAIqG,IAAKrG,UAAU,KAGnF2E,E
AAOC,SAASoD,GACX,IAAI4G,EAAiB9G,EAAQC,GAGICpD,EAAOoQ,WAAW/M,GACb,IAAI+J,EAAmBjK,
EAAQC,EAAU,IAG9CpD,EAAOqQ,UAAUhN,GACZ,IAAIwF,EAAkB1F,EAAQC,GAGhC,MCjDT,SAASkN,E
AAsBC,GACIBA,WAAAA,EAAU,IAAO,IAG9B,IAAA,EAAenK,OAAOkK,uBACIBIK,OAAOoK,6BACPPK,OA

AOqK,0BACPrK,OAAOsK,wBACPtK,OAAOuK,yBACPL,ECNEM,EAAAA,WACU,SAAA,IpBqChB,EAAA,K
AAA,GoBpCSC,KAAAA,kBAaObtN,SAASC,cAAc,OACzCX,EAAAA,OAAO,KAAKgo,kBAaKBrM,MAAO,C
ACzB,gBAAA,kBACZ,IAAA,EACC,KAAA,EACG,QAAA,OACD,OAAA,OACC,QAAA,EACS,iBAAA,sBACN,
WAAA,wBAGVsM,EAAAA,eAAe,KAAKD,mBACnBA,KAAAA,kBAaKBrM,MAAMS,SAAW,QAEnC3B,KAA
AA,WAAaC,SAASC,cAAc,OACICX,EAAAA,OAAO,KAAKS,WAAWkB,MAAO,CACzB,SAAA,QACD,QAAA,
OACD,OAAA,OACC,QAAA,EACS,iBAAA,uDACN,WAAA,iDAILuM,SAAAA,KAAK3H,YAAY,KAAKyH,mB
ACtBE,SAAAA,KAAK3H,YAAY,KAAK9F,YAEzBwF,IAAAA,EAAQ,KACVhK,EAAAA,KAAK,KAAK+R,kB
AAmB,QAAS,WACICG,EAAAA,SpBKZ,OAAA,EAAA,EAAA,CAAA,CAAA,IAAA,OoBDS,MAAA,WACCII,I
AAAA,EAAQ,KAET+H,KAAAA,kBAaKBrM,MAAMyM,QAAU,QAeIC3N,KAAAA,WAAWkB,MAAMyM,Q
AAU,QAC3B3N,KAAAA,WAAWkB,MAAM0M,QAAU,EAE3B5N,KAAAA,WAAWkB,MAAM2M,gBAaKB,a
AEnCC,KAAAA,SAEEC,EAAAA,MAAM,WACLR,EAAAA,kBAaKBrM,MAAM0M,QAAU,EACIC5N,EAAAA
,WAAWkB,MAAM0M,QAAU,EAC3B5N,EAAAA,WAAWkB,MAAM2M,gBAaKB,epBd/C,CAAA,IAAA,OoBq
BS,MAAA,WACCri,IAAAA,EAAQ,KAERki,EAAO,SAAPA,IACE1N,EAAAA,WAAWkB,MAAMyM,QAAU,O
AC3BJ,EAAAA,kBAaKBrM,MAAMyM,QAAU,OAEPChF,EAAAA,OAAOnD,EAAMxF,WAAy,sBAaUB0N,G
AChD/E,EAAAA,OAAOnD,EAAMxF,WAAy,gBAaiB0N,GAC1C/E,EAAAA,OAAOnD,EAAMxF,WAAy,iBA
AkB0N,IAG7CIS,EAAAA,KAAK,KAAKwE,WAAy,sBAaUB0N,GAC7CIS,EAAAA,KAAK,KAAKwE,WAAy,
gBAaiB0N,GACvCIS,EAAAA,KAAK,KAAKwE,WAAy,iBAaKB0N,GAEvCH,KAAAA,kBAaKBrM,MAAM0
M,QAAU,EAeIC5N,KAAAA,WAAWkB,MAAM0M,QAAU,EAC3B5N,KAAAA,WAAWkB,MAAM2M,gBAaKB
B,epBxC5C,CAAA,IAAA,SoB2CW,MAAA,WACF7N,KAAAA,WAAWkB,MAAMU,KAAOkB,OAAOkL,WAA
a,EAAIjN,EAAIkN,SAAS,KAAKjO,YAAc,EAAI,KACpFA,KAAAA,WAAWkB,MAAMY,IAAMgB,OAAOoL,Y
AAc,EAAInN,EAAIoN,UAAU,KAAKnO,YAAc,EAAI,SpB7C9F,EoBtCMsN,GpBsCN,EAAA,EAAA,srLqBzBA
pB,EAAIkC,OAAOC,GAGX,IAAMC,EAAGB,KAehBC,EAAGB,GAGhBC,EAAsB,GAETBC,EAA8B,UAE9BC,E
AA0B,WAC1B,IACK,QAAE5L,OAAO6L,aAchB,MAAOIY,GACA,OAAA,GAJqB,GAQ5BmY,OAAAA,EAGA
C,GAaKB,EAGIBC,QAAAA,EAGApB,IAAO,EAGLqB,GAae,GA2BfC,GAAM,SAANA,EAae/M,GACbuD,IAA
AA,EAAQ,KAeVrD,EAASF,GAAQ,GAMhBjC,KAAAA,WAAaC,SAASC,cAAc,OACpC+O,KAAAA,KAAOhP,
SAASC,cAAc,MAC9BF,KAAAA,WAAW8F,YAAY,KAAKmJ,MAE7BrF,EAAAA,SAAS,KAAK5J,WAAySo,G
AMzBY,KAAAA,UAAy,GAeZC,KAAAA,cAAgB,GAMhBC,KAAAA,oBAAsB,GAoBtBC,KAAAA,uCAAYC,G
AEzCC,KAAAA,YAAc,GAGV5S,EAAAA,EAAOyG,SAAShB,EAAQ,CACnB,YAAA,EACD,WAAA,EACJ6M,
MAAAA,EAAIO,gBAGJ7S,EAAAA,EAAOyG,SAAShB,EAAQ,CACpBA,UAAAA,EAAOqN,UACRrN,SAAAA,
EAAOqN,YAGd9S,EAAOnB,YAAY4G,EAAOsN,MAMtBA,EAAAA,KAAO,CAAEC,OAAQjB,GAJpBtM,EAA
OuN,SACFD,EAAAA,KAAKC,OAASvN,EAAOuN,QAM5BhT,EAAOnB,YAAY4G,EAAOwN,SAAWxN,EAAO
yN,UACjC3X,GAAAA,KAAK,MAIb4X,EAAAA,UAAyNt,EAAOnB,YAAY4G,EAAOwN,SAAWxN,EAAO0N,
UAE3D1N,EAAOqN,WAAa9S,EAAOnB,YAAY4G,EAAO2N,cACzCA,EAAAA,YAAa,GAMIBC,IA+QIC,EA/Q
JD,EACFrB,GAC+D,SAA/DC,aAAsB,QAAQC,GAAoB,KAAM,YAE7CC,OAAAA,EACAC,OAAAA,EA8JA1T
,GA5JG2T,OAAAA,iBAaiB,KAAA,CAOZ,OAAA,CACD,IAAA,WACIIO,OAAAA,EAAOwN,SAIN,WAAA,CA
CL,IAAA,WACIxN,OAAAA,EAAO2N,aAQP,UAAA,CACJ,IAAA,WACI3N,OAAAA,EAAOqN,YAQN,WAAA,
CACL,IAAA,WACIrN,OAAAA,EAAOmO,aAQV,OAAA,CACD,IAAA,WACC9K,OAAAA,EAAMmK,OACDn
K,EAAM+K,UAAUb,OAGIBvN,EAAOsN,KAAKC,QAGhB,IAAA,SAASIV,GACRgL,EAAMmK,OACFY,EAA
AA,UAAUb,OAASIV,EAeIBiV,EAAAA,KAAKC,OAASIV,EAef,GAAA,MACfgW,EAAAA,WAQH,MAAA,C
ACA,IAAA,WACIrO,OAAAA,EAAO0C,OAEX,IAAA,SAASrK,GACLqK,EAAAA,MAAQrK,EACNgL,GAAAA
,EAAOhL,KASd,KAAA,CACC,IAAA,WACI2H,OAAAA,EAAOhJ,MAEX,IAAA,SAASqB,GAELrB,EAAAA,K
AAOqB,EACV4V,IACO7J,EAAAA,UAAyPE,EAAOhJ,QAS1B,OAAA,CACD,IAAA,WACIgj,OAAAA,EAAOs
O,QAEX,IAAA,SAASjW,GACLiW,EAAAA,OAASjW,EACZ2H,EAAOsO,OACL7G,EAAAA,SAASpE,EAAMy
J,KAAMD,EAAI0B,cAEzB7F,EAAAA,YAAyF,EAAMyJ,KAAMD,EAAI0B,cAK7BC,KAAAA,WAEdnL,EAA
MoL,gBACFA,EAAAA,cAAcrK,UAAy/L,EAAIwU,EAAI6B,UAAy7B,EAAI8B,eASxD,KAAA,CACC,IAAA,W
ACI3O,OAAAA,EAAOsN,OASD,gBAAA,CAEV,IAAA,WACIM,OAAAA,GAeJ,IAAA,SAASjM,GACR4K,IAC
gB5K,EAAAA,EACdA,EACeTl,EAAAA,KAAKsH,OAAQ,SAAUqN,GAEvBxH,EAAAA,OAAO7F,OAAQ,SAA
UqN,GAeIBY,aAAAA,QAAQb,GAAoB1K,EAAO,WAAy1B,QAOLepH,EAAOnB,YAAY4G,EAAOwN,QAAS,

CAOjCjB,GANC+B,KAAAA,OAAStO,EAAOsO,SAAU,EAE3B7G,EAAAA,SAAS,KAAK5J,WAAYgP,EAAIgC
,YAC9B3G,EAAAA,eAAe,KAAKrK,YAAY,GAGhC0O,GACEqB,EAAiB,CACbA,EAAAA,iBAaKB,EAEIBkB,I
AAAA,EAAWtC,aAAAsB,QAAQC,GAAoB,KAAM,QAe5De,IACKxB,EAAAA,KAAOyB,KAAKC,MAAMF,IA
K1BL,KAAAA,cAAgB3Q,SAASC,cAAc,OACvC0Q,KAAAA,cAAcK,UAAyYI,EAAI8B,YAC/BIH,EAAAA,SA
AS,KAAKgH,cAAe5B,EAAIoC,oBACjCjP,EAAOmO,YACL1G,EAAAA,SAAS,KAAKgH,cAAe5B,EAAIqC,iB
AChCrR,KAAAA,WAAWsR,aAAa,KAAKV,cAAe,KAAK5Q,WAAWuR,WAAW,MAExE3H,EAAAA,SAAS,K
AAKgH,cAAe5B,EAAIwC,oBAChCxR,KAAAA,WAAW8F,YAAY,KAAK8K,gBAG/BpV,EAAAA,KAAK,KAA
KoV,cAAe,QAAS,WAC9BH,EAAAA,QAAUjL,EAAMiL,aAGnB,MACiBpU,IAAIB8F,EAAOsO,SACFA,EAAA
A,QAAS,GAGZgB,IAAAA,EAExR,SAASyR,eAAevP,EAAOhJ,MACHDyQ,EAAAA,SAAS6H,EAAc,mBAEhB
E,EAAAA,GAAOnM,EAAOiM,GAQRb7H,EAAAA,SAAS,KAAKqF,KAAMD,EAAI0B,cAExB9G,EAAAA,SAA
SwG,EAAU,SACnB5U,EAAAA,KAAK4U,EAAU,QATE,SAAS3Z,GAGrB,OAFLOs,EAAAA,iBACiSh,EAAAA,
QAAUjL,EAAMiL,QACf,IAQJtO,EAAOsO,SACLA,KAAAA,QAAS,GAIdtO,EAAOqN,YACL9S,EAAOnB,YA
AY4G,EAAOwN,UACxBd,IACmB5O,GAAAA,SAASC,cAAc,OACxCOJ,EAAAA,SAASKf,GAAoBR,GAC7B1E
,EAAAA,SAASKf,GAAoBE,EAAI4C,4BAC5BnE,SAAAA,KAAK3H,YAAYgJ,IACR,GAAA,GAIDhJ,GAAAA,
YAAY,KAAK9F,YAGhC4J,EAAAA,SAAS,KAAK5J,WAAYgP,EAAI6C,mBAK/B,KAAKIC,QACCnK,GAAAA
,EAAOrD,EAAO0C,QAItBiN,KAAAA,gBAaKB,WACfC,EAAAA,qBAGJvW,EAAAA,KAAKsH,OAAQ,SAAU,
KAAKgP,iBAC5BtW,EAAAA,KAAK,KAAKyT,KAAM,sBAaU,B,KAAK6C,iBAC5CtW,EAAAA,KAAK,KAAK
yT,KAAM,gBAaI,B,KAAK6C,iBACtCtW,EAAAA,KAAK,KAAKyT,KAAM,iBAaKB,KAAK6C,iBACtCnB,KA
AAA,WAEDxO,EAAO0N,WACO,GAAA,MAGG,EAAA,WACfnB,GAA0F,SAAhEC,aAAAsB,QAAQC,GAAoB1
K,EAAO,aAC/DuL,aAAAA,QAAQb,GAAoB1K,EAAO,OAAQ0L,KAAKc,UAAUxM,EAAMyM,mBAK5EC,KA
AAA,6BAA+B/B,EAU/BhO,EAAOwN,UAPJK,EAAOxK,EAAM+K,WACd1L,OAAS,EACPKJ,EAAAA,MAAM,
WACNIJ,EAAAA,OAAS,MAwbP,SAAS8M,GAAOQ,EAACK,EAAQC,GACrBC,IAAAA,EAACKrS,SAASC,cA
Ac,MAW3BoS,OAVHF,GACcM,EAAAA,YAAYsM,GAGbC,EACEpD,EAAAA,KAAKqC,aAAagB,EAAID,GA
EtBpD,EAAAA,KAAKnJ,YAAYwM,GAEnB3B,EAAAA,WACG2B,EAGT,SAASC,GAAgBJ,GACnBxJ,EAAAA
,OAAO7F,OAAQ,SAAUqP,EAAIL,iBAE7BK,EAAID,8BACFvJ,EAAAA,OAAO7F,OAAQ,SAAUqP,EAAID,8B
AIrC,SAASM,GAAMBL,EAACKM,GACzBnM,IAAAA,EAAM6L,EAAIO,gBAAgBP,EAAIO,gBAAgBjM,eAG9C
F,EAAAA,UADfKM,EACcnM,EAAI7H,MAAQ,IAEZ6H,EAAI7H,MAIxB,SAASKu,GAakBR,EAACKG,EAAIM,
GAuE9BA,GAtEOC,EAAAA,KAAOP,EACPQ,EAAAA,MAAQX,EAEZ5S,EAAAA,OAAOqT,EAA+C,CAKID,
QAAA,SAAS1M,GACZnO,GAAAA,UAAUZ,OAAS,EAAG,CACIB4b,IAAAA,EAACh,EAAWC,KAAKG,mBA
G7BC,OAFIC,EAAAA,SAEJD,GACLD,EACAS,EAAW/S,OACX+S,EAAW9S,SACX,CACUiT,OAAAA,EACK,
YAAA,CAACrW,EAAON,QAAQRc,cAK/B2E,GAAAA,EAAOH,QAAQ2J,IAAYxJ,EAAOvB,SAAS+K,GAAU,
CACjD6M,IAAAA,EAACh,EAAWC,KAAKG,mBAG7BC,OAFIC,EAAAA,SAEJD,GACLD,EACAS,EAAW/S,O
ACX+S,EAAW9S,SACX,CACUiT,OAAAA,EACK,YAAA,CAAC7M,OAWhB,KAAA,SAAS/M,GAENyZ,OADI
C,EAAAA,KAAKM,kBAaKBa,kBAaKB5M,UAAyPn,EACzDyZ,GAOD,OAAA,WAECA,OADIE,EAAAA,MA
AMM,OAAOR,GACjBA,GAOD,OAAA,WAECA,OADIE,EAAAA,MAAMI,OAAON,GACjBA,KAKPA,aAAsB1
J,EAawB,CAC1CmK,IAAAA,EAAM,IAAIjL,EAAoBwK,EAAW/S,OAAQ+S,EAAW9S,SACHe,CAAE3B,IAAK
yU,EAAWzL,MAAO/I,IAAKwU,EAAWxL,MAAOE,KAAMsL,EAAWvL,SAE5DpM,EAAAA,KAAK,CAAC,gB
AAiB,WAAY,iBAaKB,OAAQ,MAAO,OAAQ,SAASqY,GACpFC,IAAAA,EAACKX,EAAWU,GACHBE,EAACKH,
EAAIC,GACJA,EAAAA,GAAUD,EAAIC,GAAU,WAC3Bzb,IAAAA,EAAOC,MAAMI,UAAU4C,MAAMPe,K
AAKqB,WAEjCwb,OADJpb,EAAAA,MAAMkb,EAACKxb,GACP0b,EAAGpb,MAAMya,EAAY/a,MAI5B+R,EA
AAA,SAAS0I,EAAI,cACNtS,EAAAA,WAAWsR,aAAa+B,EAAIrT,WAAY4S,EAAW5S,WAAWmT,wBACpE,G
AAIP,aAAsBxK,EAaqB,CAC9CrO,IAAAA,EAAI,SAAS0Z,GAEB/W,GAAAA,EAAOO,SAAS2V,EAAWzL,QA
AUzK,EAAOO,SAAS2V,EAAWxL,OAAQ,CAIPeS,M,IAAAA,EAAUd,EAAWC,KAAKM,kBAaKBa,kBAaKB5
M,UAC9DoN,EAaef,EAawe,MAAMxD,YAAYjL,QAAQuO,IAAe,EAE9DM,EAAAA,SACLU,IAAAA,EAAGB
X,GACpBd,EACAS,EAAW/S,OACX+S,EAAW9S,SACX,CACU8S,OAAAA,EAAWC,KAAKG,mBACX,YAAA,
CAACJ,EAAWzL,MAAOyL,EAAWxL,MAAOwL,EAAWvL,UAM1DuM,OAHOza,EAAAA,KAAKua,GACfC,G
AAcC,EAACr,SAEZBQ,EAGFH,OAAAA,GAGEtV,EAAAA,IAAMzB,EAAOmX,QAAQ9Z,EAAG6Y,EAAWzU
,KACnCC,EAAAA,IAAM1B,EAAOmX,QAAQ9Z,EAAG6Y,EAAWxU,UACrCwU,aAAsBrN,GAC3B/J,EAAAA,

KAaK8W,EAaI,QAAS,WaChBwB,EAAAA,UAAUIB,EAaWIN,WAAY,WAGnCIK,EAAAA,KAaKoX,EAaW
IN,WAAY,QAAS,SAASjP,GAC9Csd,EAAAA,qBAEKnb,aaAsB9I,GAC3BtO,EAAAA,KAaK8W,EAaI,QAAS,
WaChBwB,EAAAA,UAAUIB,EAaW5I,SAAU,WAGjCxO,EAAAA,KAaK8W,EAaI,YAAa,WaCpB1I,EAAAA
,SAASgJ,EAaW5I,SAAU,WAGhCxO,EAAAA,KAaK8W,EAaI,WAAY,WaCnBzH,EAAAA,YAAy+H,EAaW
5I,SAAU,YAE9B4I,aaAsB1I,IAC3BN,EAAAA,SAAS0I,EAaI,SACNhS,EAAAA,cAAgB5D,EAaOmX,QAAQ,S
AAShT,GAE1CA,OADJK,EAAAA,MAAM8S,gBAaKbPb,EAaWzI,QAAQrQ,WaCvC+G,GACn+R,EAaWtS,e
AEHA,EAAAA,iBAGFuF,EAAAA,SAAWnJ,EAaOmX,QAAQ,SAAShT,GAKrCA,OAJHsR,EAaI5B,UAAUmC
,iBAaMBE,EAaWqB,cAC3B9B,GAAAA,EAaI5B,WAaW,GAG7B1P,GACn+R,EAaW/M,UAGhB,SAASqO,G
AAiB/B,EAaKS,GAEvB5C,IAAAA,EAaOmC,EAaI5B,UAIx4D,EAaenE,EAaKZ,oBAAoB/K,QAAQuO,EAa
W/S,QAG7DsU,IAaKB,IAaIBA,EAaQb,CAEnBC,IAAAA,EAaAgBpE,EAaKX,uCAAuC8E,GAc5DnE,QAaVkB3
T,IAaIB+X,IACc,EAAA,GACX/E,EAAAA,uCAAuC8E,GAC1CC,GAIUxB,EAAAA,EAaW9S,UAAy8S,EAaGjC
5C,EAaKP,MAAQO,EAaKP,KAaK4E,WAAY,CAC/BC,IAAAA,EAaYtE,EAaKP,KAaK4E,WAGxB3E,OAA
AA,EAaE4E,GAAAA,EAaUnC,EAaIzC,QACP4E,EAAAA,EAaUnC,EAaIzC,YACIB,CAAA,IAaI4E,EAaU7
F,GrBjic3B,OqBmiCiB6F,EAAAA,EAaU7F,GAOjBiB,GAAAA,EAaOyE,SAA+D9X,IAa9CqT,EAaOyE,GAA
cvB,EAaW9S,UAAyB,CAE7ErB,IAAAA,EAaQiR,EAaOyE,GAacvB,EAaW9S,UAGnCC,EAAAA,aaAetB,E
ACfoH,EAAAA,SAASpH,MAM5B,SAASwU,GAaId,EAaKtS,EAaQC,EAaUqC,GAC9BtC,QAaQbxD,IAArB
wD,EAaOC,GACH,MAAA,IAaI1J,MAAJ,WAaQByJ,EAaRb,sBAaIDC,EAaJd,KAGJ8S,IAAAA,OAAAA,EA
EazQ,GAAAA,EAaO1I,MACI,EAAA,IAaIyQ,EAaAgBrK,EAaQC,OACpC,CACCyU,IAAAA,EAaC,CAAC1U,
EAaQC,GAAU1I,OAAO+K,EAaOoS,aACxC1H,EAAAA,EAaKB1U,MAAMga,EAaKoC,GAGxCpS,EAaOqS,
kBAaKB5U,IACpB4U,EAAAA,OAAsrS,EAaOqS,OAAO3B,MAGfV,GAAAA,EAaKS,GAeIBhJ,EAAAA,SAA
SgJ,EAaW5S,WAAY,KAe9B7G,IAAAA,EAaO8G,SAASC,cAAc,QAChC0J,EAAAA,SAASzQ,EAAM,iBACdo
N,EAAAA,UAAyqM,EAaW9S,SAEtB2U,IAAAA,EAaYxU,SAASC,cAAc,OAC/B4F,EAAAA,YAAy3M,GAC
Z2M,EAAAA,YAAy8M,EAaW5S,YAE3BsS,IAAAA,EAaKX,GAAOQ,EAaKsC,EAaWtS,EAaOqS,QAaC5B
,OAXHhJ,EAAAA,SAAS0I,EAaItD,GAaI0F,sBACjB9B,aaAsB1I,EACpBN,EAAAA,SAAS0I,EAaI,SAEb1I,E
AAAA,SAAS0I,EAAb,EAawBM,EAaWrS,aAGnB4R,GAAAA,EAaKG,EAaIM,GAEvBzD,EAAAA,cAAcIX,K
AAK2a,GAehBA,EAGT,SAAS1C,GAAoBiC,EAaK7W,GAeZB2E,OAAAA,SAAS0U,SAASrP,KAAO,IAAMhK
,EAaGxC,SAASzS,GAaGbzC,EAaKhZ,EAAM0b,GAC5BvO,IAAAA,EAAMrG,SAASC,cAAc,UAC/BqG,EAAA
A,UAAyPn,EACzSf,EAAAA,MAAQtf,EACRuZ,EAAAA,gBAaAgB5M,YAAyQ,GAC5BuO,IACEnC,EAAAA,
gBAaAgBjM,cAAgB0L,EAaIO,gBAaAgBvb,OAAS,GAIRe,SAAS2d,GAAgB3C,EAaK4C,GACpB7T,EAAAA,MA
AMyM,QAAUwE,EAaIpC,gBAaKB,QAAU,OAG1D,SAASiF,GAAy7C,GACb8C,IAAAA,EAAM9C,EAaI+C,
WAaajV,SAASC,cAAc,MAEhD0J,EAAAA,SAASuI,EAaInS,WAAY,YAEzBiP,EAAAA,KAaKqC,aaAa2D,EA
AK9C,EAaIID,KAaKkG,YAEhCvL,EAAAA,SAASqL,EAaK,YAEZG,IAAAA,EAaQnV,SAASC,cAAc,QAC/B
qG,EAAAA,UAAy,SACdqD,EAAAA,SAASwL,EAaO,gBAGdC,IAAAA,EAASpV,SAASC,cAAc,QAC/BqG,EA
AAA,UAAy,OACfqD,EAAAA,SAASyL,EAaQ,UACjBzL,EAAAA,SAASyL,EAaQ,QAefC,IAAAA,EAaUrV,S
AASC,cAAc,QAC/BqG,EAAAA,UAAy,MACHBqD,EAAAA,SAAS0L,EAAS,UACIB1L,EAAAA,SAAS0L,EAAS,
WAEhBC,IAAAA,EAaUtV,SAASC,cAAc,QAC/BqG,EAAAA,UAAy,SACHBqD,EAAAA,SAAS2L,EAAS,UA
CIB3L,EAAAA,SAAS2L,EAAS,UAehBC,IAAAA,EAASrD,EAaIO,gBAaKBzS,SAASC,cAAc,UAWBxDwO,GA
tBaYd,EAaI1C,MAAQ0C,EAaI1C,KAaK4E,WaChBpZ,EAAAA,KAaKkX,EAaI1C,KAaK4E,WAAY,SAAS
5V,EAaOnD,GAC/B6W,GAAAA,EAaK7W,EAaKA,IAAQ6W,EAaIzC,UAGxBYc,GAAAA,EAaK1D,GAA6B
,GAGhDjT,EAAAA,KAaKga,EAaQ,SAAU,WaCpB,IAAA,IAaI/Q,EAaQ,EAAGA,EAaQ0N,EAaIO,gBAaAgB
vb,OAAQsN,IACIDiO,EAAAA,gBAaAgBjO,GAAO8B,UAAy4L,EAaIO,gBAaAgBjO,GAAOhG,MAGhEiR,EA
AA,OAAS,KAaKjR,QAGhBqH,EAAAA,YAAy0P,GACZ1P,EAAAA,YAAySP,GACZtP,EAAAA,YAAyUP,GA
CZvP,EAAAA,YAAyWP,GACZxP,EAAAA,YAAyYP,GAeZ7G,EAaWb,CACpBqG,IAAAA,EAaU9U,SAASw
V,eAAe,oBACICC,EAaUBzV,SAASwV,eAAe,oBACjCxV,SAASwV,eAAe,mBAehCvU,MAAMyM,QAAU,QAe
sC,SAA9DgB,aaAsB,QAAQC,GAAoBiC,EAaK,aAC3BxM,EAAAA,aaAa,UAAW,WAG/BwM,GAAAA,EA
K4C,GAGjBvZ,EAAAA,KAaKka,EAASB,SAAU,WaCn3F,EAAAA,iBAaMBoc,EAaIpC,gBACXoC,GAAAA
,EAaK4C,KAIInBY,IAAAA,EAaYB1V,SAASwV,eAAe,sBAEnDja,EAAAA,KAaKma,EAaWb,UAAW,SAASIf,
IAC/CA,EAaE8M,SAaWb,KAAZ9M,EAaEmf,OAA8B,KAAdnf,EAaE+M,SACtBkK,EAAAA,SAIdIS,EAAAA,

KAACK4Z,EAAO,QAAS,WACA7O,EAAAA,UAA2YK,KAACKc,UAAUG,EAAIF,qBAaIB5V,EAAW,GACpEwZ,
EAAAA,OACSC,EAAAA,QACAN,EAAAA,WAGrBha,EAAAA,KAACK6Z,EAAQ,QAAS,WACpBU,EAAAA,SA
GFva,EAAAA,KAACK8Z,EAAS,QAAS,WACnBU,IAAAA,EAAaC,OAAO,4BACtBD,GACEE,EAAAA,OAAOF,
KAIXxa,EAAAA,KAACK+Z,EAAS,QAAS,WACrB/E,EAAAA,WAMR,SAAS2F,GAAgBhE,GACnBiE,IAAAA,O
AAAA,EAeKC,SAAAA,EAACK5f,GAOL,OANL0S,EAAAA,iBAEEtE,EAAAA,OAASuR,EAAU3f,EAAE8L,QA
CrBoO,EAAAA,WACMla,EAAAA,EAAE8L,SAEL,EAGA+T,SAAAA,IACHzL,EAAAA,YAAySH,EAAIvB,cA
Ae5B,GAAIuH,YACnC5N,EAAAA,OAAO7F,OAAQ,YAAauT,GAC5B1N,EAAAA,OAAO7F,OAAQ,UAAWwT
,GAGvBE,SAAAA,EAAU/f,GASV,OARL0S,EAAAA,iBAEQ1S,EAAAA,EAAE8L,QAERqH,EAAAA,SAASuI,E
AAIvB,cAAe5B,GAAIuH,YACnC/a,EAAAA,KAACKsH,OAAQ,YAAauT,GAC1B7a,EAAAA,KAACKsH,OAAQ,U
AAWwT,IAErB,EAAtCLG,EAAAA,gBAaKBxW,SAASC,cAAc,OAETCX,EAAAA,OAAO4S,EAAIsE,gBAaGBvV
,MAAO,CAEHc,MAAA,MACK,WAAA,OACJ,OAAA,QACA,OAAA,YACE,SAAA,aAiCR1F,EAAAA,KAACK2
W,EAAIsE,gBAaIB,YAAaD,GACvChb,EAAAA,KAACK2W,EAAIvB,cAAe,YAAa4F,GAERcXW,EAAAA,WAA
WsR,aAAaa,EAAIsE,gBAaIBtE,EAAInS,WAAWmT,mBAGIE,SAASuD,GAASvE,EAAKwE,GACjB3W,EAAA
A,WAAWkB,MAAM2D,MAAQ8R,EAAI,KAG7BxE,EAAI+C,YAAc/C,EAAI3C,YACpB0F,EAAAA,WAAWhU
,MAAM2D,MAAQ8R,EAAI,MAE/BxE,EAAIvB,gBACFA,EAAAA,cAAc1P,MAAM2D,MAAQ8R,EAAI,MAIx
,SAASC,GAAiBzE,EAACK0E,GACvB1Z,IAAAA,EAAW,GAmBVA,OAHBaIC,EAAAA,KAACKkX,EAAI/C,oBA
AqB,SAASvO,EAACK4D,GAC3CqS,IAAAA,EAAC,GAGd1C,EACJjC,EAAI9C,uCAAuC5K,GAGtCxJ,EAAAA,K
AAKmZ,EAAe,SAASxB,EAAY9S,GACICA,EAAAA,GAAY+W,EAAMbJE,EAAW7S,aAAe6S,EAAWrS,aAlzE
kE,EAAAA,GAASqS,IAGb3Z,EAGT,SAAS4Z,GAAqB5E,GACvB,IAAA,IAAI1N,EAAQ,EAAGA,EAAQ0N,EA
AIO,gBAaGBvb,OAAQsN,IACID0N,EAAIO,gBAaGBjO,GAAOHg,QAAU0T,EAAIzC,SACvCgD,EAAAA,gBA
AgBjM,cAAgBhC,GAK1C,SAASuS,GAAeC,GACS,IAA3BA,EAAGb9f,QACIT,EAAAA,KAACKoM,OAAQ,WA
ClBmU,GAAAA,KAIZhc,EAAAA,KAACKgc,EAAiB,SAAS/Y,GACICoC,EAAAA,kBAn7BN0O,GAAIkI,WAAa,
WACR,IAACxJ,GACDzS,EAAAA,KAACK8T,GAAC,SAASoD,GAC7BnS,EAAAA,WAAWkB,MAAMyM,QAAU
D,GAAO,OAAS,MAInDsB,GAAI6C,iBAAMb,IACvB7C,GAAI4C,2BAA6B,KACjC5C,GAAIgc,WAAa,OACjB
hC,GAAI0F,qBAAuB,KAC3B1F,GAAImI,eAAiB,qBACrBnI,GAAI0B,aAAe,SACnB1B,GAAIoC,mBAAqB,eAC
zBpC,GAAIqC,gBAaKB,YACtBrC,GAAIwC,mBAAqB,eACzBxC,GAAIuH,WAAa,OAejBvH,GAAIO,cAAgB,I
ACpBP,GAAI8B,YAAc,iBACIB9B,GAAI6B,UAAy,gBAEHb7B,GAAIoI,gBAaKB,SAAS3gB,GACO,SAAhCwJ,
SAASmF,cAAcC,MACxB5O,EAAEmf,QAAUrH,GAAiB9X,EAAE+M,UAAy+K,GACxC2I,GAAAA,cAGRnW,
EAAIvF,KAACKsH,OAAQ,UAAWkM,GAAIoI,iBAaIB,GAejD1a,EAAO6C,OACLyp,GAAI9W,UAGJ,CAyBO,I
AAA,SAAS2H,EAAQC,GACbmT,OAAAA,GACL,KACApT,EACAC,EACA,CACehI,YAAAA,MAAMI,UAAU4
C,MAAMpE,KAACKqB,UAAW,MAyB/C,SAAA,SAAS8H,EAAQC,GACIBmT,OAAAA,GACL,KACApT,EACA
C,EACA,CACS,OAAA,KAUL,OAAA,SAAS8S,GAEV3D,KAAAA,KAACKoI,YAAyZE,EAAWC,MAC5BID,KA
AAA,cAAcZK,OAAO,KAACKyK,cAAc9K,QAAQuO,GAAa,GAC5DpN,IAAAA,EAAQ,KACPuI,EAAAA,MAAM
,WACL4C,EAAAA,cASD,QAAA,WACH,GAAA,KAACKhB,OACD,MAAA,IAAIvZ,MACR,8GAKA,KAACKoZ,
WACY6H,GAAAA,YAAy,KAACKrX,YAGhCwF,IAAAA,EAAQ,KACpVk,EAAAA,KAACK,KAACKiU,UAAW,S
AASoI,GAC7BC,EAAAA,aAAaD,KAGjB3O,EAAAA,OAAO7F,OAAQ,UAAWkM,GAAIoI,iBAaIB,GAEnC,G
AAA,OAwp,UAAA,SAASje,GAGd,QAAyBkD,IAAZB,KAACK6S,UAAU/V,GACX,MAAA,IAAI/C,MAAM,sDA
CF+C,EAAO,KAGjBqe,IAAAA,EAAe,CAAEre,KAAMA,EAAMwW,OAAQ,MAK9BH,EAAAA,UAAy,KAACK
A,UAG1B,KAACK,MACFA,KAAAA,KAACKgI,SACLhI,KAAAA,KAACKgI,QAAQte,KAELsX,EAAAA,OAAS,K
AAKhB,KAACKgI,QAAQte,GAAMsX,OAGjChB,EAAAA,KAAO,KAAKA,KAACKgI,QAAQte,IAGICgZ,IAAAA,
EAAM,IAAIInD,GAAIwI,GACftI,KAAAA,UAAU/V,GAAQgZ,EAEjBG,IAAAA,EAAKX,GAAO,KAAMQ,EAAI
nS,YAErBmS,OADHvI,EAAAA,SAAS0I,EAAI,UACVH,GAQK,aAAA,SAASuF,GACHbzI,KAAAA,KAACKoI,Y
AAyK,EAAO1X,WAAW2X,sBAEjC,KAACKzI,UAAUwI,EAAOve,MAGzB,KAACKsW,MACFA,KAAAA,KAACK
gI,SACLhI,KAAAA,KAACKgI,QAAQC,EAAOve,cACIB,KAACKsW,KAACKgI,QAAQC,EAAOve,MAGIBue,GAA
AA,GAEVIS,IAAAA,EAAQ,KAEPvK,EAAAA,KAACKyc,EAAOXI,UAAW,SAASoI,GAC9BC,EAAAA,aAAaD,K
AGfvJ,EAAAA,MAAM,WACL4C,EAAAA,cAOJ,KAAA,WACCF,KAAAA,QAAS,GAMT,MAAA,WACAA,KAA
AAA,QAAS,GAMV,KAAA,WACCzQ,KAAAA,WAAWkB,MAAMyM,QAAU,QAM5B,KAAA,WACC3N,KAA
AA,WAAWkB,MAAMyM,QAAU,IAIxB,SAAA,WAEFqC,IAAAA,EAAO,KAACKO,UACdP,GAAAA,EAACKF,W

AAy,CACbhO,IAAAA,EAAMf,EAAl6W,UAAU5H,EAakf,MAAMnN,IACjCzH,EAAl,EAEDY,EAAAA,KAA
K+U,EAakf,KAakS,WAAY,SAASsG,GACn7H,EAakR,WAAaqI,IAAS7H,EAakf,AC/BnU,GAAAA,EA
AlON,UAAU0J,MAInB/U,OAAOoL,YAAcpM,EAAM0M,EAAsBnU,GAC/CuP,EAAAA,SAASoG,EAakhQ,WA
AYgP,GAAImI,gBAC7BII,EAAAA,KAak/N,MAAM4D,OAAShC,OAAOoL,YAAcpM,EAAM0M,EAAsB,OAET
E3D,EAAAA,YAAymf,EAakhQ,WAAYgP,GAAImI,gBAC7BII,EAAAA,KAak/N,MAAM4D,OAAS,QAlzBk
L,EAakYg,iBACA1I,EAAAA,MAAM,WACN0I,EAAAA,gBAagBvV,MAAM4D,OAASkL,EAakf,KAak6I,a
AAe,OAI7D9H,EAakY,gBACFA,EAAAA,cAAc1P,MAAM2D,MAAQmL,EAaknL,MAAQ,OAI/BnI,kBAAAA,
EAAOqb,SAAS,WAakBpH,KAAAA,YAAe,IAY1D,SAAS,WAMJ,GALAJU,EAaOnB,YAAyqT,MACL,EAAA,
IAAIb,GACnN,WAAWuG,UAAyR,GAGnC,KAakrI,OACD,MAAA,IAAIvZ,MAAM,kDAGZoP,IAAAA,EA
AQ,KAEPvK,EAAAA,KAaknD,MAAMI,UAAU4C,MAAMpE,KAakqB,WAAY,SAAS8H,GACjB,IAArC2F,E
AAM4J,oBAAoBjY,QACbQO,GAAAA,IAEqC,IAA/CA,EAAM4J,oBAAoB/K,QAAQxE,IAC9BuP,EAAAA,oB
AAoBnX,KAak4H,KAI/B,KAak2P,WAEe,GAAA,KAAM,KAak3K,QAQf,QAAA,WAEASn,IADHA,IAAAA,
EAAM,KACHA,EAAlxC,QACHwC,EAAAA,EAAlxC,OAELwC,OAAAA,GAQM,cAAA,WACPhV,IAAAA,EA
AW,KAakS,KAmBfS,OAIbEsT,EAAAA,OAAS,KAAKA,OAGnB,KAakrB,oBAAoBjY,OAAS,IAC3BuY,EA
AAA,OAAS,KAAKA,OAElBvS,EAASkX,aACHA,EAAAA,WAAa,IAGfA,EAAAA,WAAW,KAak3E,QAAUkH
,GAAiB,OAG7Ca,EAAAA,QAAU,GACZxc,EAAAA,KAak,KAakIU,UAAW,SAAS7I,EAAS/K,GACnCmc,EA
AAA,QAAQnc,GAAO+K,EAQ4L,kBAG3B9U,GAGH,KAAA,WACC,KAakS,KAak4E,aACR5E,KAAAA,K
AAK4E,WAAa,IAGpB5E,KAAAA,KAak4E,WAAW,KAak3E,QAAUkH,GAAiB,MACIC,GAAA,MAAM,GAC
pB1E,KAAAA,gCAGC,OAAA,SAAS8D,GACV,KAakvG,KAak4E,aAER5E,KAAAA,KAak4E,WAAa,GACI
B5E,KAAAA,KAak4E,WAAW5F,GAA+BmI,GAAiB,MAAM,IAGxEnH,KAAAA,KAak4E,WAAW2B,GAAc
Y,GAAiB,MAC/CIH,KAAAA,OAASsG,EACE,GAAA,KAAMA,GAAY,GAC7B9D,KAAAA,gCAGC,OAAA,SA
ASC,GACRIX,EAAAA,KAak,KAakku,cAAe,SAASyD,GAEIC,KAakrC,UAAUd,KAak4E,WAGNIC,GAAA
A,GAAO,KAak5B,UAAWqC,GAF7B/M,EAAAA,SAAS+M,EAAW7S,cAM7B6S,EAAWxS,kBACFA,EAAAA,i
BAAiB1J,KAakKc,EAAYA,EAAWrS,aAEzD,MAElf,EAAAA,KAak,KAakIU,UAAW,SAASwI,GAC5BIH,E
AAAA,OAAOkH,KAGXvF,GACgB,GAAA,KAak5B,WAAW,IAI/B,OAAA,SAASqC,GACT5P,IAAAA,EAAM
C,IAA5B,KAakSM,YAAynY,OACzBmY,KAAAA,YAAyR,KAak2a,GACIB5P,GACa,GAAA,KAakSM,cAI
T,cAAA,WACnrU,EAAAA,KAak,KAakku,cAAe,SAASyD,GAC5BtS,EAAAA,kBAEnrF,EAAAA,KAak,KA
AKIU,UAAW,SAASwI,GAC5BpX,EAAAA,qBrB30BR,IAAM7G,GAAQ,CACZiF,MAAAA,EACDW,KAAAA,E
ACKjC,UAAAA,GAqBb,QAAA,MAAA,GAIBA,IAAa6a,GAAC,CACbrY,WAAAA,EACO2F,kBAAAA,EACDS,i
BAAAA,EACAW,iBAAAA,EACAM,iBAAAA,EACGmB,oBAAAA,EACGc,uBAAAA,EACJY,mBAAAA,EAC
HI,gBAAAA,GASnB,QAAA,YAAA,GANA,IAAanJ,GAAM,CAAEA,IAAKmX,GAM1B,QAAA,IAAA,GAJA,IA
Aa/F,GAAM,CAEnD,IAAKmJ,IAI1B,QAAA,IAAA,GAFA,IAAanJ,GAAMmJ,GAEnB,QAAA,IAAA,GAAA,IA
AA,GAAe,CAAA,MAAA,GAAA,YAAA,GAAA,IAAA,GAAA,IAAA,GAaf,IAAA,IAAA,GAAA,GAAA,QAAA,
QAAA;;AsBjDA,IAAA,GAJA,SAAS,EAAA,GAAA,iBAAA,SAAS,oBAAA,OAAA,OAAA,QAAA,IAAA,mBA
AA,GAAA,EAAA,IAAA,EAAA,GAAA,EAAA,MAAA,IAAA,CAAA,KAAA,WAAA,IAAA,EAAA,WAAA,SAA
A,EAAA,GAAA,OAAA,EAAA,YAAA,EAAA,KAAA,EAAA,SAAS,EAAA,GAAA,IAAA,IAAA,EAAA,EAAA,
EAAA,EAAA,SAAS,OAAA,IAAA,EAAA,SAAS,GAAA,MAAA,QAAA,IAAA,EAAA,QAAA,OAAA,EAAA,E
AAA,IAAA,EAAA,EAAA,EAAA,SAAS,cAAA,OAAA,EAAA,MAAA,QAAA,uEAAA,EAAA,iBAAA,QAAA,S
AAA,GAAA,EAAA,iBACA,IAAA,EAAA,EAAA,SAAS,UAAA,GAAA,IAAA,GAAA,aAAA,MAAA,MAAA,EA
AA,EAAA,EAAA,EAAA,EAAA,EAAA,IAAA,EAAA,MAAA,MAAA,OAAA,SAAS,EAAA,EAAA,IAAA,EA
A,MAAA,KAAA,OAAA,SAAS,GAAA,KAAA,aAAA,KAAA,YAAA,OAAA,IAAA,EAAA,EAAA,IAAA,EAAA,
MAAA,KAAA,OAAA,SAAS,OAAA,EAAA,GAAA,CAAA,SAAS,GAAA,IAAA,EAAA,SAAS,EAAA,UAAA,E
AAA,MAAA,WAAA,GAAA,aAAA,MAAA,OAAA,IAAA,WAAA,IAAA,IAAA,GAAA,aAAA,MAAA,MAAA,G
AAA,EAAA,OAAA,EAAA,EAAA,KAAA,EAAA,EAAA,MAAA,EAAA,OAAA,IAAA,GAAA,EAAA,GAAA,KA
AA,EAAA,EAAA,EAAA,EAAA,GAAA,CAAA,IAAA,EAAA,YAAA,OAAA,EAAA,OAAA,EAAA,eACA,QAA
A,EAAA,gBAAA,SAAS,OAAA,GAAA,OAAA,WAAA,EAAA,KAAA,OAAA,WAAA,EAAA,QAAA,IACA,OA
DA,EAAA,MAAA,SAAS,EAAA,EAAA,GAAA,IAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,KAAA,MAA
A,EAAA,EAAA,OAAA,kBAAA,GAAA,EAAA,GAAA,EAAA,EAAA,GAAA,EAAA,EAAA,EAAA,EAAA,EAA

A,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EAAA,EAAA,GAAA,EAAA,EAAA,GAAA,EAAA,EAAA,
SAAA,cAAA,UAAA,EAAA,MAAA,EAAA,EAAA,OAAA,EAAA,EAAA,MAAA,QAAA,yBAAA,IAAA,EAAA,
EAAA,WAAA,MACA,OADA,EAAA,KAAA,QAAA,EAAA,EAAA,gCAAAA,EAAA,aAAA,MAAA,EAAA,UAA
A,EAAA,EAAA,SAAA,EAAA,EAAA,EAAA,GAAA,EAAA,UAAA,EAAA,EAAA,SAAA,EAAA,EAAA,GACA,
EAAA,SAAA,EAAA,EAAA,EAAA,GAAA,EAAA,UAAA,EAAA,EAAA,YAAA,GAAA,EAAA,SAAA,EAAA,E
AAA,EAAA,GAAA,CAAA,IAAA,EAAA,OAAA,SAAA,EAAA,GAAA,EAAA,KAAA,IAAA,EAAA,GAAA,EA
AA,KAAA,IAAA,EAAA,GAAA,EAAA,UAAA,EAAA,EAAA,YAAA,EAAA,EAAA,SAAA,EAAA,EAAA,EAA
A,GAAA,EAAA,UAAA,EAAA,EAAA,SAAA,EAAA,GAAA,IAAA,EAAA,KAAA,EAAA,GAAA,IAAA,EAAA,
GAAA,IAAA,EAAA,GAAA,EAAA,UAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EAAA,EA
AA,EAAA,GAAA,EAAA,SAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EAAA,UAAA,EAAA,EAAA,YAA
A,GAAA,EAAA,SAAA,EAAA,EAAA,EAAA,EAAA,EAAA,GAAA,EAAA,EAAA,GAAA,OAAA;;ACY20mB,a
AAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,oBAAA,EAAA,QAAA,iBAAA,GAAA,QAAA,K
AAA,GAAA,QAAA,qBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,qBAAA,EAAA,QAAA,UAAA,EAAA,QAAA,
uBAAA,QAAA,QAAA,QAAA,UAAA,QAAA,UAAA,QAAA,QAAA,QAAA,aAAA,QAAA,eAAA,EAA30mB,IA
AA,EAAA,EAAA,QAAA,0BAAwJ,EAAA,QAAA,8BAAmrmB,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,K
AAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,GA
AA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA
,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA
,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,y
BAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,G
AAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EAA5nmB,IAAIC,EAAqB
,CAAC,EAAE,GAAG,IAAI,SAASC,EAAwB5hB,GAAQ6hB,EAAAA,KAAAA,OAAO,iBAAiB7hB,EAAE,WAA
iB,MAAA,iCAAiC8hB,EAAKD,KAAAA,OAAOF,EAAqB/T,QAAQ5N,IAAI,EAAE,WAAiB,MAAA,mBAAmB
A,EAAE,gDAAGD,SAAS+hB,EAAhB/hB,EAAEwH,GAAQqa,EAAAA,KAAAA,OAAO,iBAAiB7hB,EAAE,WA
AiB,MAAA,+BAA+B8hB,EAAKD,KAAAA,QAAQ7hB,EAAE,GAAGwH,GAAG,EAAE,WAAiB,MAAA,iBAAi
BxH,EAAE,iCAAiCwH,EAAE,MAAM,SAASwa,EAAahiB,GAAU,OAAA,EAAK,EAAA,MAAA,WAAiB,MAA
A,UAAUA,EAAEiiB,QAAQjB,EAAEA,EAAEkiB,WAAWliB,GAAE,EAAIA,EAAAA,KAAAA,EAAE,QAAO,E
AAIA,EAAAA,KAAAA,EAAE,KAAK,IAAImiB,EAAU,WAAoBniB,SAAAA,EAAEA,EAAEwH,GAAQ4a,KAA
AA,MAAMpiB,EAAMsD,IAAAA,EAAE,KAAK8e,MAAMC,OAAO,GAAGC,MAAWT,EAAAA,KAAAA,QAA
Q,IAAIve,EAAE,KAAK,IAAIA,EAAE,GAAG,WAAiB,MAAA,gBAAGbA,EAAE,GAAG,KAAKA,EAAE,GAA
G,sBAAsB,KAAKif,aAAa/a,EAASxH,OAAAA,EAAEyB,UAAU+gB,QAAQ,SAASxiB,GAAOwH,IAAAA,EAA
E,KAAy,OAAA,EAAK,EAAA,MAAA,WAAeIE,IAAAA,EAAE0e,EAAahiB,GAAGyiB,WAAW,GAAGC,EAAE
Ib,EAAE4a,MAAMI,QAAQlf,GAAGqf,EAAED,EAAE,GAAGnhB,EAAEmhB,EAAE,GAAG7e,EAAE6e,EAAE,
GAAG/e,EAAE+e,EAAE,GAAS,MAAA,CAACE,cAAcrhB,EAAEshB,UAAUC,UAAUC,QAAQJ,EAAEE,UAAU
G,gBAAGBnf,EAAEgf,UAAUI,gBAAGBtf,EAAEkf,cAAc7iB,EAAEyB,UAAUyhB,QAAQ,WAAgBd,KAAAA,M
AAMc,WAAWljB,EAAIhB,GAAuhB,SAASmjB,EAAKnjB,GAAUuD,OAAAA,KAAK6D,MAAMpH,EAAE,GA
A28jB,QAAA,UAAA,EAAx8jB,IAAIojB,EAAQ,WAAoBpjB,SAAAA,EAAEA,EAAEwH,GAAQ6b,KAAAA,cA
Ac,IAAIhiB,MAAMrB,GAAG,KAAKsjB,kBAAkB,EAAE,KAAKC,gBAAGb/b,EAASxH,OAAAA,EAAEyB,UA
AU+hB,QAAQ,SAASxjB,GAAQqjB,KAAAA,gBAAGb,KAAKC,kBAAkBtjB,EAAE,KAAKyjB,KAAK,KAAKH
,mBAAmBtjB,EAAEyB,UAAUiiB,QAAQ,WAAeIjB,IAAAA,EAAE,KAAKqjB,cAAc,GAAU,OAAA,KAAKM,S
AAS,EAAE,KAAKL,oBAAoB,KAAKM,KAAK,GAAG,KAAKP,cAAc,KAAKC,iBAAiB,GAAG,KAAKtjB,GAA
GA,EAAEyB,UAAUoiB,MAAM,WAAiB,OAAC,IAAI,KAAKP,kBAAkBtjB,EAAEyB,UAAUqiB,KAAK,WAAK
B,OAAA,KAAKR,iBAAiB,GAAGtjB,EAAEyB,UAAUsiB,IAAI,WAAkB,OAAA,KAAKV,cAAAchf,MAAM,EAA
E,KAAKif,iBAAiB,IAAI tjB,EAAEyB,UAAUkG,IAAI,WAAkB,OAAA,KAAK0b,cAAc,IAAIrjB,EAAEyB,UAA
UgiB,KAAK,SAASzjB,GAAQA,KAAAA,EAAE,GAAG,KAAKgb,KAAKb,EAAKnjB,GAAGA,IAAI,KAAK2j
B,SAAS3jB,EAAEmjB,EAAKnjB,IAAIA,EAAEmjB,EAAKnjB,IAAIA,EAAEyB,UAAUmiB,KAAK,SAAS5jB,G
AAQ,KAAA,EAAEA,GAAG,KAAKsjB,kBAAkB,CAAK9b,IAAAA,EAAE,EAAExH,EAAKwH,GAAAA,EAAE,
KAAK8b,kBAAkB,KAAKU,KAAKxc,EAAEA,EAAE,IAAIA,KAAK,KAAKwc,KAAKhkB,EAAEwH,GAAG,M

AAWmc,KAAAA,SAAS3jB,EAAEwH,GAAGxH,EAAEwH,IAAIxH,EAAEyB,UAAUwiB,WAAW,SAASjkB,GA
AU,OAAA,KAAKujB,gBAAgB,KAAKF,cAAcrjB,KAAKA,EAAEyB,UAAUuiB,KAAK,SAAShkB,EAAEwH,G
AAU,OAAA,KAAKyc,WAAWjkB,GAAG,KAAKikB,WAAWzc,IAAIxH,EAAEyB,UAAUkiB,SAAS,SAAS3jB,E
AAEwH,GAAOIE,IAAAA,EAAE,KAAK+f,cAAcrjB,GAAQqjB,KAAAA,cAAcrjB,GAAG,KAAKqjB,cAAc7b,G
AAG,KAAK6b,cAAc7b,GAAGIE,GAAGtD,EAA5sC,GAAitC,SAASkkB,EAA4BlkB,EAAEwH,EAAEIE,EAAEo
f,EAAEC,EAAEphB,GAAO,IAAA,IAAIsC,EAAEtC,EAAE+gB,MAAM3e,EAAEE,EAAE,GAAGsgB,EAAEtgB,
EAAE,GAAGsB,GAAE,EAAGkC,EAAE9D,KAAKoe,IAAIrE,EAAEqf,EAAE,GAAGlb,EAAEIE,KAAKmE,IAA
IpE,EAAEqf,EAAE,EAAEhf,GAAGygB,EAAE/c,EAAE+c,EAAE3c,IAAI2c,EAAE,CAAK,IAAA,IAAI9c,EAAE/
D,KAAKoe,IAAI+a,EAAEC,EAAE,GAAG/e,EAAEL,KAAKmE,IAAIgb,EAAEC,EAAE,EAAEwB,GAAGE,EA
AE/c,EAAE+c,EAAEzgB,IAAIygB,EAAE,GAAG9iB,EAAE+iB,IAAIF,EAAEC,EAAErkB,GAAGwH,EAAE,CA
ACrC,GAAE,EAAG,MAAS,IAACA,EAAE,MAAaA,OAAAA,EAAE,SAASof,EAAwBvkB,EAAEwH,EAAEIE,G
AAO,IAAA,IAAIof,EAAEpf,EAAEgf,MAAMK,EAAED,EAAE,GAAGnhB,EAAEmhB,EAAE,GAAG7e,EAAE6
e,EAAE,GAAG/e,EAAE,IAAIyf,EAAQT,EAAEphB,EAAEsC,EAAE,SAAS7D,GAAUA,OAAAA,EAAEwkB,QA
AQL,EAAE,EAAEA,EAAExB,IAAIwB,EAAE,IAAI,IAAIhf,EAAE,EAAEA,EAAE5D,IAAI4D,EAAE,IAAI,IAA
IkC,EAAE,EAAEA,EAAExD,IAAIwD,EAAE,CAAKI,IAAAA,EAAEnE,EAAEghB,IAAIH,EAAEhf,EAAEkC,G
AAGI,EAAEzH,GAAGkkB,EAA4B7c,EAAEI,EAAE0c,EAAEhf,EAAEqC,EAAEIE,IAAIK,EAAE6f,QAAQ,CA
ACgB,MAAM/c,EAAEgd,KAAK,CAACC,SAASP,EAAEQ,SAASxf,EAAEyf,GAAGvd,KAAY1D,OAAAA,EA
E,IAAIkhB,EAAU,CAAC,OAAO,UAAU,WAAW,UAAU,WAAW,eAAe,gBAAgB,YAAY,aAAa,YAAY,aAAa,U
AAU,WAAW,WAAW,YAAY,YAAY,cAAc,EAACD,EAAUnkB,OAAOqkB,EAAQF,EAAUG,OAAO,SAASh1B,
EAAEwH,EAAEIE,GAAUtD,OAAAA,EAAEwH,GAAGIE,EAAEtD,GAAG,IAAIilB,EAAMb,CAAC,CAAC,UA
AU,gBAAgB,CAAC,YAAY,gBAAgB,CAAC,YAAY,aAAa,CAAC,UAAU,YAAY,CAAC,WAAW,aAAa,CAAC,
WAAW,iBAAiB,CAAC,aAAa,iBAAiB,CAAC,aAAa,cAAc,CAAC,WAAW,aAAa,CAAC,YAAY,cAAc,CAAC,eA
Ae,iBAAiB,CAAC,UAAU,aAAaC,EAAU,CAAC,CAAC,OAAO,WAAW,CAAC,UAAU,WAAW,CAAC,OAAO,
YAAY,CAAC,WAAW,YAAY,CAAC,OAAO,gBAAgB,CAAC,eAAe,aAAa,CAAC,YAAY,aAAa,CAAC,eAAe,W
AAW,CAAC,UAAU,YAAY,CAAC,WAAW,aAAa,CAAC,OAAO,iBAAiB,CAAC,gBAAgB,cAAc,CAAC,aAAa,c
AAc,CAAC,gBAAgB,YAAY,CAAC,WAAW,aAAa,CAAC,YAAY,eAAeC,EAAqBF,EAAMbTV,IAAI,SAAS3P,G
AAOwH,IAAAA,EAAExH,EAAE,GAAGsD,EAAEtD,EAAE,GAAS,MAAA,CAAC+kB,EAAQvd,GAAGud,EA
QzhB,MAAM8hB,EAAa,CAAC,YAAY,aAAa,wBAAwB,uBAAuB,uBAAuB,uBAAuB,uBAAuB,sBAAsB,sBAAs
B,aAAa,wBAAwB,YAAY,cAAc,aAAa,wBAAwB,uBAAuB,uBAAuB,uBAAuB,uBAAuB,sBAAsB,sBAAsB,aAA
a,wBAAwB,aAAa,SAASC,EAAer1B,EAAEwH,EAAEIE,EAAEof,GAAS,MAAA,CAACzW,EAAEyW,EAAE4B,I
AAItkB,EAAEwH,EAAEIE,GAAGy1,EAAE2W,EAAE4B,IAAItkB,EAAEwH,EAAEIE,EAAEwhB,IAAgB,SAAS
Q,EAAet1B,EAAEwH,EAAEIE,GAAOof,IAAAA,EAAE2C,EAAer1B,EAAE0kB,SAAS1kB,EAAE2kB,SAAS3kB,
EAAE4kB,GAAGthB,GAAGqf,EAAED,EAAEzW,EAAE1K,EAAEmhB,EAAE3W,EAAQ,MAAA,CAACA,EA
E/L,EAAE2kB,SAASnd,EAAEjG,EAAE0K,EAAEjM,EAAE0kB,SAASld,EAAEmb,GAAG,SAAS4C,EAAMv1B,
EAAEwH,EAAEIE,GAAUtD,OAAAA,EAAEwH,EAAEA,EAAExH,EAAEsD,EAAEA,EAAEtD,EAAE,SAASwl
B,EAAgBx1B,EAAEwH,EAAEIE,EAAEof,GAAOC,IAAAA,EAAErf,EAAEtD,EAAEuB,EAAEmhB,EAAElb,EA
ASmb,OAAAA,EAAEA,EAAEphB,EAAEA,EAAE,SAASkkB,EAAWz1B,EAAEwH,GAAS,MAAA,CAACuE,EA
AE/L,EAAE+L,EAAEvE,EAAEuE,EAAEE,EAAEjM,EAAEiM,EAAEzE,EAAEyE,GAAosc,QAAA,aAAA,EA
A,QAAA,UAAA,EAAA,QAAA,QAAA,EAAA,QAAA,UAAA,EAJsc,IAAIyZ,EAAqBR,EAAUvV,IAAI,SAAS3
P,GAAOwH,IAAAA,EAAExH,EAAE,GAAGsD,EAAEtD,EAAE,GAAS,MAAA,CAAC+kB,EAAQvd,GAAGud,
EAAQzhB,MAAMqiB,EAAMBD,EAAqB/V,IAAI,SAAS3P,GAAUA,OAAAA,EAAE,KAAK41B,EAAMBF,EA
qB/V,IAAI,SAAS3P,GAAUA,OAAAA,EAAE,KAAK,SAAS61B,EAAgB71B,EAAEwH,EAAEIE,GAAOof,IAAA
A,EAAEpf,EAAEgf,MAAM,GAAG,EAAQ,MAAA,CAACrW,EAAE3I,EAAEghB,IAAI9c,EAAEyE,EAAEzE,EA
AEuE,EAAE/L,GAAG+L,EAAEzI,EAAEghB,IAAI9c,EAAEyE,EAAEzE,EAAEuE,EAAE2W,EAAE1iB,IAAI,SA
AS81B,EAAY91B,EAAEwH,EAAEIE,EAAEof,GAAS,MAAA,CAACzW,EAAEsZ,EAAMhiB,KAAKC,MAAMx
D,EAAEiM,EAAEzE,GAAG,EAAEIE,EAAE,GAAGy1,EAAEwZ,EAAMhiB,KAAKC,MAAMxD,EAAE+L,EA
EvE,GAAG,EAAEkb,EAAE,IAAI,SAASqD,EAAYB/1B,EAAEwH,EAAEIE,EAAEof,EAAEC,EAAEphB,EAAEs
C,EAAEF,QAAQ,IAAIA,IAAIA,EAAE,GAAO,IAAA,IAAIwgB,EAAEzB,EAAEJ,MAAMnd,EAAEgf,EAAE,GA

AG9c,EAAE8c,EAAE,GAAG1c,EAAEoe,EAAGb7Ib,EAAE8Ib,EAAYbte,EAAE0D,SAAS3J,EAAE4D,EAAEkC
,GAAGxD,GAAGugB,EAAEqB,EAAWje,EAAE0D,SAASzD,GAAGH,EAAE,EAAEA,EAAE3D,EAAE2D,IAAI,
CAAK1D,IAAAA,EAAEKiB,EAAYB1B,EAAE7iB,EAAE4D,EAAEkC,GAAGgd,EAAEgB,EAaezhB,EAAEqI,E
AAErI,EAAEmI,EAAEzI,EAAEqf,GAAGyB,EAAEqB,EAAW,CAAC1Z,EAAEnI,EAAEmI,EAAExK,EAAE0K,
EAAErI,EAAEqI,EAAE1K,GAAG,CAACwK,EAAEsY,EAAEtY,EAAEE,EAAEoY,EAAEpY,IAAQxI,IAAAA,E
AAEqiB,EAAYB1B,EAAE7iB,EAAE4D,EAAEkC,GAAG2e,EAAEtD,EAAE4B,IAAI7gB,EAAEWI,EAAExI,EA
AEsI,EAAEzI,GAAS,MAAA,CAAC4H,SAASkZ,EAAEK,KAAKI,EAAUvhB,GAAGkHb,MAAMwB,GAAG,SA
ASC,EAAWjmB,EAAEWH,EAAEIE,EAAEof,EAAEC,EAAEphB,GAAOsc,IAAAA,EAAE2D,EAAE8a,MAAM,
GAAG3e,EAAEgiB,EAAMbjB,OAAOyjB,EAAE,IAAI9iB,MAAMwC,GAAGsB,EAAEnF,EAAEyK,KAAKpd,
EAAErH,EAAEwkB,MAAM/c,EAAE6d,EAAengB,EAAEud,EAAEpf,GAAG6gB,EAAEHf,EAAEYf,IAAI,CAACJ
,MAAMnd,EAAEod,KAAKI,EAAU1f,EAAEYf,IAAI1Z,SAASzD,GAAO,IAAA,IAAI2c,EAAEzG,B,EAAE,EAAE
yG,B,GAAG,IAAIA,EAAE,CAAK9c,IAAAA,EAAEqe,EAAMbvB,GAAGxgB,EAAEgiB,EAAMbxB,GAAGD,EA
AE7c,KAAK6c,EAAEvG,B,KAAKugB,EAAEvG,B,GAAGmiB,EAAYB3B,EAAED,EAAE7c,GAAG1D,EAAE4D,E
AAEIE,EAAEof,EAAEnhB,IAAQ6iB,IAAAA,EAAE,EAAEA,EAAEzG,B,IAAIyG,B,EAAG9c,EAAEse,EAAMbxB
,GAAGxgB,EAAE+hB,EAAMbvB,GAAGD,EAAE7c,KAAK6c,EAAEvG,B,KAAKugB,EAAEvG,B,GAAGmiB,EA
AYB3B,EAAED,EAAE7c,GAAG1D,EAAE4D,EAAEIE,EAAEof,EAAEC,IAAWwB,OAAAA,EAAE,SAAS+B,E
AAoCImB,EAAEWH,EAAEIE,EAAEof,GAAOC,IAAAA,EAAErf,EAAEyI,EAAExK,EAAE+B,EAAE2I,EAASj
M,OAAAA,EAAEmmB,KAAK,SAASnmB,GAAOsd,IAAAA,EAAEtD,EAAEomB,UAAU1D,GAAGxX,SAAGB
sa,OAAAA,EAAGbjkB,EAAEohB,EAAErf,EAAE2I,EAAE3I,EAAEyI,IAAIvE,IAAI,SAAS6e,EAaiBrmB,EAAE
wH,EAAEIE,GAAUA,OAAAA,EAAE0hB,OAAO,SAAS1hB,EAAEof,EAAEC,GAAOphB,IAAAA,EAAEmhB,E
AAExX,SAASrH,EAAE6e,EAAE8B,MAAa0B,OAAAA,EAaoCImB,EAAEWH,EAAEjG,EAAEohB,KAAKrf,GA
AGO,GAAGP,GAAG,GAAGA,EAAE5C,OAAO,IAAI4IB,EAAoB,EAAE,SAASC,EAaoBvmB,EAAEWH,EAAEI
E,EAAEof,EAAEC,EAAEphB,EAAEsC,EAAEF,QAAQ,IAAIE,IAAIA,EAAE,SAAI,IAASF,IAAIA,EAAE,IAAQ,
IAAA,IAAIwgB,EAAE,GAAGhf,EAAEof,EAawB1gB,EAAEyiB,EAaoBtmB,GAAGqH,EAAE1D,EAAEA,EA
EwgB,EAAEzjB,OAAOa,IAAI4D,EAAE0e,SAAS,CAAKpc,IAAAA,EAAEtC,EAAEue,UAAa,IAACwC,EAaoC/
B,EAAE9c,EAAEie,EAae7d,EAAEgd,KAAK9B,EAAEnb,GAAGC,EAAEgd,KAAKG,IAAI,CAAKR,IAAAA,EA
AE6B,EAAWxe,EAAEzH,EAAEWH,EAAEmb,EAAErf,EAAEof,GAAGpb,EAAE+e,EAaiBIC,EAAE9c,EAAE+c
,GAAGD,EAAE3iB,KAAK,CAAC4kB,UAAUhc,EAAEI,MAAMld,KAAy6c,OAAAA,EAAE,IAAIqC,EAAS,W
AAiB,OAACA,EAAS7hB,OAAO8hB,QAAQ,SAASzmB,GAAO,IAAA,IAAIwH,EAAEIE,EAAE,EAAEof,EAAE
phB,UAAUZ,OAAO4C,EAAEof,EAAEpf,IAAI,IAAI,IAAIqf,KAAKnb,EAAEIG,UAAUgC,GAAGqB,OAAOID,
UAAUilB,eAAezmB,KAAKuH,EAAEmb,KAAK3iB,EAAE2iB,GAAGnb,EAAEmb,IAAW3iB,OAAAA,IAAI0B,
MAAM,KAAKJ,YAAY,SAASqlB,EAau3mB,EAAEWH,EAAEIE,EAAEof,GAAU,OAAA,IAAIpf,IAAIA,EAAE
sjB,UAAU,SAASjE,EAAEphB,GAAYsC,SAAAA,EAAE7D,GAAM,IAACmkB,EAAEzB,EAAEmE,KAAK7mB,I
AAI,MAAMA,GAAGuB,EAAEvB,IAAa2D,SAAAA,EAAE3D,GAAM,IAACmkB,EAAEzB,EAAEoE,MAAM9m
B,IAAI,MAAMA,GAAGuB,EAAEvB,IAAamkB,SAAAA,EAAEnkB,GAAGA,EAAE+mB,KAAKpE,EAAE3iB,E
AAEgI,OAAO,IAAIIE,EAAE,SAASke,GAAGA,EAAExH,EAAEgI,SAASgf,KAAKnbjB,EAAEF,GAAGwgB,GA
AGzB,EAAEA,EAAEhhB,MAAM1B,EAAEWH,GAAG,KAAKqf,UAAU,SAASI,EAAYjnB,EAAEWH,GAAOIE,I
AAAA,EAAEof,EAAEC,EAAEphB,EAAEsC,EAAE,CAACqjB,MAAM,EAAEC,KAAK,WAAC,GAAA,EAAExE
,EAAE,GAAG,MAAMA,EAAE,GAAUA,OAAAA,EAAE,IAAIyE,KAAK,GAAGC,IAAI,IAAW9IB,OAAAA,EA
AE,CAACslB,KAAKljB,EAAE,GAAGmjB,MAAMnjB,EAAE,GAAG2jB,OAAO3jB,EAAE,IAAI,mBAAMb4jB,
SAAShmB,EAAEgmB,OAAOC,UAAU,WAakB,OAAA,OAAOjmB,EAawoC,SAAAA,EAAEpC,GAAU,OAAA
,SAASoC,GAAU,OAAA,SAASpC,GAAM+B,GAAAA,EAAE,MAAM,IAAImkB,UAAU,mCAAwC5jB,KAAAA,
GAAG,IAAOP,GAAAA,EAAE,EAAEof,IAAIC,EAAE,EAAEphB,EAAE,GAAGmhB,EAAE4E,OAAO/IB,EAAE,
GAAGmhB,EAAEoE,SAASnE,EAAED,EAAE4E,SAAS3E,EAAE1iB,KAAKyIb,GAAG,GAAGA,EAAEmE,SA
ASIE,EAAEA,EAAE1iB,KAAKyIb,EAAEnhB,EAAE,KAAKwIb,KAAK,OAAOpE,EAASD,OAAAA,EAAE,EA
AEC,IAAIphB,EAAE,CAAC,EAAEA,EAAE,GAAGohB,EAAE3a,QAAQzG,EAAE,IAAS,KAAA,EAao,KAAA,
EAAEohB,EAAEphB,EAAE,MAAW,KAAA,EAASsC,OAAAA,EAAEqjB,QAAQ,CAAClf,MAAMzG,EAAE,GA
AGwIb,MAAK,GAAS,KAAA,EAAEljB,EAAEqjB,QAAQxE,EAAEnhB,EAAE,GAAGA,EAAE,CAAC,GAAG,S

AAc,KAAA,EAAEA,EAAEsC,EAAEwjB,IAAIK,MAAM7jB,EAAEujB,KAAKM,MAAM,SAAS,QAAW,KAAE/
E,GAAGA,EAAE9e,EAAEujB,MAAM1mB,OAAO,GAAGiiB,EAAEA,EAAEjiB,OAAO,MAAM,IAAIa,EAAE,I
AAI,IAAIA,EAAE,IAAI,CAACsC,EAAE,EAAE,SAAY,GAAA,IAAIc,EAAE,MAAMohB,GAAGphB,EAAE,G
AAGohB,EAAE,IAAIphB,EAAE,GAAGohB,EAAE,IAAI,CAAC9e,EAAEeqjB,MAAM3iB,EAAE,GAAG,MAAS,
GAAA,IAAIA,EAAE,IAAIsc,EAAEeqjB,MAAMvE,EAAE,GAAG,CAAC9e,EAAEeqjB,MAAMvE,EAAE,GAAG
A,EAAEphB,EAAE,MAASohB,GAAAA,GAAG9e,EAAEeqjB,MAAMvE,EAAE,GAAG,CAAC9e,EAAEeqjB,MA
AMvE,EAAE,GAAG9e,EAAEwjB,IAAI7iB,KAAKD,GAAG,MAAMohB,EAAE,IAAI9e,EAAEwjB,IAAIK,MAA
M7jB,EAAEujB,KAAKM,MAAM,SAASnmB,EAAEiG,EAAEvH,KAAKD,EAAE6D,GAAG,MAAM7D,GAAGu
B,EAAE,CAAC,EAAEvB,GAAG0iB,EAAE,EAAS,QAACpf,EAAEqf,EAAE,EAAK,GAAA,EAAEphB,EAAE,G
AAG,MAAMA,EAAE,GAAS,MAAA,CAACyG,MAAMzG,EAAE,GAAGA,EAAE,QAAG,EAAOwlB,MAAK,G
AAjxB,CAAsxB,CAACxIB,EAAEoC,MAAM,SAASgkB,EAAgC3nB,EAAEwH,EAAEIE,GAAUtd,OAAAA,EA
AEsD,GAAGkE,EAAEIE,EAAE,SAASskB,EAAqB5nB,EAAEwH,GAAU2d,OAAAA,EAAqBH,OAAO,SAAS1h
B,EAAEof,GAAOC,IAAAA,EAAED,EAAE,GAAGnhB,EAAEmhB,EAAE,GAAUif,OAAAA,EAAGC3nB,EAAE
2iB,GAAG6B,MAAMxB,EAAEuB,GAAGijB,MAAMhd,GAAGIE,GAAGA,EAAE9B,KAAK,CAACxB,EAAE2
iB,GAAG3iB,EAAEuB,KAAK+B,IAAI,IAAI,IAAIukB,EAAkBC,OAAOD,kBAakBE,EAAkBD,OAAOC,kBAak
B,SAASC,EAAehOB,GAAUA,OAAAA,EAAEgIB,OAAO,SAAShIB,EAAEwH,GAAOIE,IAAAA,EAAEtD,EAAE
ioB,KAAKvF,EAAE1iB,EAAEkoB,KAAKvF,EAAE3iB,EAAEmoB,KAAK5mB,EAAEvB,EAAEooB,KAAKvKB
,EAAE2D,EAAE0D,SAASvH,EAAEE,EAAEKI,EAAEoY,EAAEtgB,EAAEoI,EAAQ,MAAA,CAACgc,KAAK1k
B,KAAKoE,IAAIrE,EAAEK,GAAGukB,KAAK3kB,KAAKoE,IAAI+a,EAAEyB,GAAGgE,KAAK5kB,KAAKme
,IAAIlib,EAAEhf,GAAGykB,KAAK7kB,KAAKme,IAAIInG,EAAE4iB,KAAK,CAAC8D,KAAKJ,EAAkBK,KAA
KL,EAAkBM,KAAKJ,EAAkBK,KAAKL,IAAoB,SAASM,EAAqBroB,GAAOwH,IAAAA,EAAEwgB,EAAehOB,
GAAGsD,EAAEkE,EAAE2gB,KAAKzF,EAAElb,EAAE4gB,KAAKzF,EAAEnb,EAAEygB,KAAK1mB,EAAEiG
,EAAE0gB,KAAW,MAAA,CAAC,CAACnc,EAAEzI,EAAE2I,EAAEyW,GAAG,CAAC3W,EAAE4W,EAAE1W,
EAAEyW,GAAG,CAAC3W,EAAE4W,EAAE1W,EAAE1K,GAAG,CAACwK,EAAEzI,EAAE2I,EAAE1K,IAAI,
SAAS+mB,EAAetoB,EAAEwH,GAAU,YAAA,IAASA,IAAIA,EAAE,WAAWmf,EAAU,UAAK,OAAO,EAAO,
WAAerjB,IAAAA,EAAS2jB,OAAAA,EAAY,KAAK,SAASvE,GAAUA,OAAAA,EAAEwE,OAAAY,KAAA,EAA
Q,MAAA,CAAC,EAAElNB,EAAEuOB,QAAa,KAAA,EAASjIB,OAAAA,EAAEof,EAAEyE,OAAO,CAAC,GAA
E,EAAOnNB,EAAAA,QAAAA,EAAEsiB,MAAM9a,EAAEIE,SAAS,SAASklB,EAAkxOB,GAAU2mB,OAAAA,
EAAU,UAAK,OAAO,EAAO,WAAkBM,OAAAA,EAAY,KAAK,SAASzf,GAAS,MAAA,CAAC,EAAEof,QAAQ
7C,IAAIjB,EAAE2P,IAAI,SAAS3P,GAAUsoB,OAAAA,EAAetoB,EAAE,mBAAmB,SAASyoB,EAAUzoB,EAA
EwH,EAAEIE,EAAEof,EAAEC,GAAU,YAAA,IAASD,IAAIA,EAAE,QAAG,IAASC,IAAIA,EAAE,GAAG,CAA
C6B,MAAMxB,EAAEwkB,MAAM4B,UAAUpmB,EAAEomB,UAAUzW,IAAI,SAAS3P,GAAOuB,IAAAA,EA
AEvB,EAAEwkB,MAAM3gB,EAAE7D,EAAEyKB,KAAK9gB,EAAE3D,EAAEkL,SAAe,MAAA,CAACsZ,MAA
MjjB,EAAEkjB,KAAK5gB,EAAEqH,SAAS,CAACa,EAAEpI,EAAEoI,EAAEzI,EAAEqf,EAAE1W,EAAEtI,EA
AEsI,EAAEzE,EAAEkb,OAAO,SAASgG,EAAW1oB,EAAEwH,EAAEIE,EAAEof,EAAEC,GAAU,YAAA,IAAS
D,IAAIA,EAAE,QAAG,IAASC,IAAIA,EAAE,GAAG,IAAIrf,GAAG,IAAIke,GAAG,IAAIkb,GAAG,IAAIC,EA
AE3iB,EAAEA,EAAE2P,IAAI,SAAS3P,GAAUyoB,OAAAA,EAAUzoB,EAAEwH,EAAEIE,EAAEof,EAAEC,K
AAK,SAASgG,EAAmB3oB,EAAEwH,GAAS,MAAA,CAACgd,MAAMxB,EAAEwkB,MAAM4B,UAAUpmB,
EAAEomB,UAAUzW,IAAI,SAAS3P,GAAOsD,IAAAA,EAAEtD,EAAEwkB,MAAM9B,EAAE1iB,EAAEyKB,K
AAK9B,EAAE3iB,EAAEkL,SAAe,MAAA,CAACsZ,MAAMlhB,EAAEmhB,KAAK/B,EAAExX,SAAS,CAACa,
EAAEvE,EAAE,EAAEmb,EAAE5W,EAAEE,EAAE0W,EAAE1W,OAAO,SAAS2c,EAAoB5oB,EAAEwH,GAA
UA,OAAAA,GAAG,EAAExH,EAAEA,EAAE2P,IAAI,SAAS3P,GAAU2oB,OAAAA,EAAMB3oB,EAAEwH,KAA
AK,SAASqhB,EAAYB7oB,GAAUA,OAAAA,aAAa8oB,EAAb,OAAoB,CAAC9oB,EAAEsiB,MAAM,GAAGtiB,
EAAEsiB,MAAM,IAAI,CAACtiB,EAAEqO,OAAOrO,EAAEoO,OAAO,SAAS2a,EAAC/oB,GAAUA,OAAAA,aA
Aa8oB,EAAb,OAAoB9oB,EAAEgpB,EAAQC,QAAAA,WAAWjpB,GAAG,SAASkpB,EAAelpB,EAAEwH,GAA
OIE,IAAAA,EAAEkE,EAAE,GAAGkb,EAAElb,EAAE,GAAGmb,EAAEkG,EAAYB7oB,GAAGuB,EAAEohB,E
AAE,GAAG9e,EAAE8e,EAAE,GAAGhf,EAAE+e,EAAEpf,EAAE6gB,EAAE,CAAC,EAAE,EAAE,EAAE,GAA
Ghf,EAAEgf,EAAE,GAAG9c,EAAE8c,EAAE,GAAG1c,EAAE0c,EAAE,GAAGC,EAAED,EAAE,GAAUtgB,OA

AAA,EAAEtC,EAAEoC,GAAGwB,EAAE,EAAEkC,EAAE,EAAEI,EAAEIE,KAAKC,MAAM,IAAIG,EAAEpC,
EAAEsC,IAAIugB,EAAE7gB,KAAKC,MAAM,IAAIG,EAAEpC,EAAEsC,MAAMsB,EAAE5B,KAAKC,MAAM
,IAAI,EAAEG,EAAEE,EAAEtC,IAAI8F,EAAE9D,KAAKC,MAAM,IAAI,EAAEG,EAAEE,EAAEtC,IAAIkG,EA
AE,EAAE2c,EAAE,GAAG,CAAC+E,SAAQ,EAAK,EAAA,MAAA,WAAe3hB,IAAAA,EAAEuhB,EAAc/oB,GA
AS,OAACwH,GAAE,EAAMA,EAAAA,OAAAA,EAAE,CAAC,CAACrC,EAAEkC,GAAG,CAACI,EAAE2c,GA
AG,CAAC,EAAE,MAAMgF,eAAe,CAAC9IB,EAAEof,MAAM2G,QAAQ,CAAChe,IAAIIG,EAAEgG,KAAKID,
EAAE2D,MAAMgZ,EAAE9Y,OAAOjE,IAAI,SAASiiB,GAABtpB,EAAEwH,EAAEIE,EAAEof,EAAEC,GAO
phB,IAAAA,EAAEiG,EAAE,GAAG3D,EAAE2D,EAAE,GAAG7D,EAAEL,EAAE,GAAG6gB,EAAE7gB,EAAE,
GAAG6B,EAAEujB,EAAW1oB,GAAGuB,EAAEmhB,EAAErX,IAAIqX,EAAEpX,QAAQ3H,GAAGE,EAAE6e,
EAAEvX,KAAKuX,EAAEtX,OAAO+Y,GAAGzB,EAAErX,KAAKqX,EAAEvX,MAAawX,OAAAA,EAAEiG,E
AAoBzjB,EAAEtB,GAAGsB,EAAE,SAASokB,GAAIvpB,EAAEwH,GAAU,OAAA,EAAK,EAAA,MAAA,WAA
elE,IAAAA,EAAEtD,EAAEwe,KAAI,EAAOhX,EAAAA,QAAAA,EAAE,UAAiBxH,OAAAA,EAAEwpB,IAAI
mB,EAAEmmB,KAAI,EAAOjiB,EAAAA,QAAAA,EAAE,aAAa,SAASkiB,GAAS1pB,GAAOwH,IAAAA,EAAE
xH,EAAEsiB,MAAMhf,EAAEke,EAAE,GAAGkb,EAAElb,EAAE,GAAGmb,EAAEnb,EAAE,GAAU,OAAA,EA
AK,EAAA,MAAA,WAAeA,IAAAA,EAAExH,EAAE2pB,QAAQ,CAACrmB,EAAEof,EAAEC,IAAIiH,OAAO,G
AAGroB,EAAEiG,EAAEgX,KAAI,EAAOkE,EAAAA,QAAAA,EAAE,UAAUD,WAAW,GAAG5e,EAAE0IB,GA
AI/hB,EAAEkb,GAAGD,WAAW,GAAU,OAAA,EAAO,EAAA,QAAA,CAAClhB,EAAEsC,GAAG,KAAK,SAA
SgmB,GAAoB7pB,EAAEwH,GAAO,IAAA,IAAIIE,EAAEke,EAAE8a,MAAM,GAAGI,EAAE,IAAIoH,aAAaxm
B,GAAGqf,EAAE,EAAEA,EAAErf,EAAEqf,IAAI,CAAKphB,IAAAA,EAAEiG,EAAE8c,IAAI3B,EAAE,GAAG
9e,EAAE2D,EAAE8c,IAAI3B,EAAE,GAAGD,EAAEC,GAAG3iB,EAAEskB,IAAI/iB,EAAEsC,EAAE8e,GAAU
D,OAAAA,EAAE,SAASqH,GAAiB/pB,EAAEwH,EAAEIE,EAAEof,GAAS,MAAA,CAACzW,EAAEyW,EAAE4
B,IAAItkB,EAAEwH,EAAEIE,GAAGyi,EAAE2W,EAAE4B,IAAItkB,EAAEwH,EAAEIE,EAAEwhB,IAAgB,SA
ASkF,GAAiBhqB,EAAEwH,GAAO,IAAA,IAAIIE,EAAE,GAAGof,EAAE,EAAEA,EAAEoC,EAACP,IAAI,CA
AKC,IAAAA,EAAEoH,GAAiB/pB,EAAEskB,IAAI5B,EAAE,GAAGuH,UAAUjqB,EAAEskB,IAAI5B,EAAE,G
AAGuH,UAAUvH,EAAElb,GAAGjG,EAAEohB,EAAE5W,EAAEII,EAAE8e,EAAE1W,EAAE3I,EAAE9B,KAA
KqC,GAAGP,EAAE9B,KAAKD,GAAU,OAAA,EAAS+B,EAAAA,UAAAA,EAAE,CAACwhB,EAAc,IAAI,SAA
SoF,GAAGBlqB,EAAEwH,EAAEIE,GAAU,OAAA,EAAK,EAAA,MAAA,WAAeof,IAAAA,EAAEsH,GAAiBhq
B,EAAEsD,GAAUtD,OAAAA,EAAEmqB,WAAWV,KAAI,EAAOjiB,EAAAA,QAAAA,EAAE,UAAU0a,UAAU
1F,IAAIkG,KAAK,SAAS0H,GAAiBpqB,EAAEwH,EAAEIE,GAAUqjB,OAAAA,EAAU,UAAK,OAAO,EAAO,
WAAejE,IAAAA,EAAEC,EAAEphB,EAAEsC,EAAEF,EAAEwgB,EAAEhf,EAAEkC,EAAEI,EAAE2c,EAAS6C
,OAAAA,EAAY,KAAK,SAAS3f,GAAUA,OAAAA,EAAE4f,OAAY,KAAA,EAASxE,OAAAA,EAAE,EAAEC,E
AAE+G,GAAS1pB,GAAG,CAAC,EAAE4mB,QAAQ7C,IAAI,CAACuE,EAAetoB,GAAGsoB,EAAE9gB,GAAG8
gB,EAAE3F,EAAE,YAAiB,KAAA,EAASphB,OAAAA,EAAE+F,EAAE6f,OAAOtjB,EAAEtC,EAAE,GAAGoC,
EAAEpC,EAAE,GAAG4iB,EAAE5iB,EAAE,GAAG,CAAC,EAAE+mB,EAAenjB,EAAE+kB,GAAGB/F,EAAE7
gB,EAAEK,KAAU,KAAA,EAAS0D,OAAAA,EAAEC,EAAE6f,OAAO1f,EAAEpG,MAAMgpB,KAAKR,GAAo
BhmB,EAAEsgB,IAAIC,EAAE3c,EAAEKI,IAAI,SAAS3P,EAAEwH,GAAUkb,OAAAA,GAAG1iB,EAAE,CAA
CkL,SAAS,CAACe,EAAE5E,EAAEid,IAAI9c,EAAE,GAAGuE,EAAE1E,EAAEid,IAAI9c,EAAE,IAAIid,KAAKI
,EAAUrd,GAAGgd,MAAMxkB,KAAK2iB,EAAEO,UAAU/d,EAAE+d,UAAU,CAAC,EAAE,CAACKD,UAAUh
C,EAAEI,MAAM9B,EAAE0B,EAAE1jB,cAAc,IAAI4pB,GAAMb,2EAA2EC,GAAKb,0EAA0E,SAASC,GAAM
BxqB,EAAEwH,GAAOIE,IAAAA,EAAE,eAAetD,EAAE,QAAe,OAAA,GAAGwH,EAAE+iB,GAAKb,SAASjnB,
EAAEinB,GAAKb,QAAQ/iB,EAAE,IAAIIE,EAAE,SAASmnB,GAAoBzqB,EAAEwH,EAAEIE,GAAOof,IAAAA
,EAAE,CAAG,EAAA,MAAU,IAAA,MAAS,GAAA,OAAOC,EAAE,eAAe3iB,EAAE,QAAe,OAAA,GAAGsD,E
AAEgnB,GAAMb,SAAS5H,EAAElb,GAAG,IAAImb,EAAE2H,GAAMb,QAAQhnB,EAAE,IAAIof,EAAElb,GA
AG,IAAImb,EAAE,SAAS+H,GAAe1qB,GAAU,OAAA,EAAK,EAAA,MAAA,WAAqBA,UAAAA,EAAEiiB,QA
AQjiB,EAAEA,EAAEKiB,WAAe1a,IAAAA,GAAE,EAAO,EAAA,QAAA,EAAE,QAAQ,OAAO,SAAgBxH,OAA
AA,EAAEwc,IAAIhV,KAAK,IAAImjB,GAAO,WAAoB3qB,SAAAA,EAAEA,EAAEwH,GAAQ4a,KAAAA,MA
AMpiB,EAAMsD,IAAAA,EAAE,KAAK8e,MAAMC,OAAO,GAAGC,MAAWT,EAAAA,KAAAA,QAAQ,IAAIv
e,EAAE,KAAK,IAAIA,EAAE,GAAG,WAAiB,MAAA,gBAAGBA,EAAE,GAAG,KAAKA,EAAE,GAAG,kCAAK

C,KAAKif,aAAa/a,EAASxH,OAAAA,EAAEyB,UAAU+gB,QAAQ,SAASxiB,GAAOwH,IAAAA,EAAE,KAAY,
OAAA,EAAK,EAAA,MAAA,WAAeIE,IAAAA,EAAEonB,GAAe1qB,GAAGyiB,WAAW,GAAGC,EAAElB,EAA
E4a,MAAMI,QAAQlf,GAAGqf,EAAED,EAAE,GAAGnhB,EAAEmhB,EAAE,GAAG7e,EAAE6e,EAAE,GAAS,
MAAA,CAACE,cAAcF,EAAE,GAAGG,UAAUC,UAAUC,QAAQlf,EAAEgf,UAAUG,gBAAgBL,EAAEE,UAA
UI,gBAAgB1hB,EAAEshB,cAAc7iB,EAAEyB,UAAUyhB,QAAQ,WAAgBd,KAAAA,MAAMc,WAAWljB,EAA
5hB,GAAiiB4qB,GAAoB,CAACC,aAAa,cAAcI,aAAa,GAAGuI,WAAW,IAAIC,gBAAgB,KAAKC,GAAMB,CA
AC,cAAc,YAAYC,GAAa,CAACC,YAAY,CAAC,EAAE,GAAG,IAAIC,SAAS,CAAC,GAAG,KAAKC,GAAuB,
CAAC,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,IAAI,KAAKC,GAAiB,CAACH,YAAY,CAAC,G
AAG,IAAI,GAAGC,SAAS,CAAC,IAAIG,GAakB,CAAC,EAAE,EAAE,GAAG,SAASC,GAAoBvrB,GAAM,GA
AA,OAAOA,EAAEA,GAAG4qB,IAAqBC,eAAe7qB,EAAE6qB,aAAa,eAAeG,GAAmBpd,QAAQ5N,EAAE6qB,
cAAc,EAAE,MAAM,IAAIrB,MAAM,wBAAwBK,EAAE6qB,aAAa,sBAAsBG,IAAuB,GAAA,MAAMhrB,EAA
E+qB,kBAakB/qB,EAAE+qB,gBAAgB,KAAKK,GAAuBxd,QAAQ5N,EAAE+qB,iBAAiB,EAAE,MAAM,IAAIp
rB,MAAM,2BAA2BK,EAAE+qB,gBAAgB,sBAAsBK,IAA2B,GAAA,MAAMprB,EAAEuiB,eAAeviB,EAAEuiB,
aAAa,IAAI0I,GAAajrB,EAAE6qB,cAAcjd,QAAQ5N,EAAEuiB,cAAc,EAAE,MAAM,IAAI5iB,MAAM,wBAAw
BK,EAAEuiB,aAAa,sBAAsB0I,GAAajrB,EAAE6qB,cAAc,qBAAqB7qB,EAAE6qB,aAAa,KAAQ,GAAA,MAA
M7qB,EAAE8qB,aAAa9qB,EAAE8qB,WAAW,GAAGO,GAAiBrrB,EAAE6qB,cAAcjd,QAAQ5N,EAAE8qB,YA
AY,EAAE,MAAM,IAAIrB,MAAM,sBAAsBK,EAAE8qB,WAAW,sBAAsBO,GAAiBrrB,EAAE6qB,cAAc,qBA
AqB7qB,EAAE6qB,aAAa,KAAQ,GAAA,MAAM7qB,EAAEwrB,aAAaxrB,EAAEwrB,WAAW,GAAGF,GAakB
1d,QAAQ5N,EAAEwrB,YAAY,EAAE,MAAM,IAAI7rB,MAAM,sBAAsBK,EAAEwrB,WAAW,sBAAsBF,GAA
kB,qBAAqBtrB,EAAE6qB,aAAa,KAAAY7qB,OAAAA,EAAg4H,QAAA,uBAAA,GAA93H,IAAIyrB,GAA+B,CA
ACC,gBAAe,GAaic,GAA8B,CAACD,gBAAe,EAAGE,cAAc,EAAEC,eAAe,GAAGC,UAAU,IAAI,SAASC,GA
A+B/rB,GAAOwH,IAAAA,EAAExH,EAAE4rB,cAActoB,EAAEtD,EAAE6rB,eAAenJ,EAAE1iB,EAAE8rB,UA
AatkB,GAAAA,GAAG,EAAE,MAAM,IAAI7H,MAAM,yBAAyB6H,EAAE,mBAAsBIE,GAAAA,EAAE,GAAG
A,EAAE,EAAE,MAAM,IAAI3D,MAAM,0BAA0B2D,EAAE,mCAAsCof,GAAAA,GAAG,EAAE,MAAM,IAAI/i
B,MAAM,qBAAqB+iB,EAAE,KAAK,IAAIsJ,GAAQ,WAAoBhsB,SAAAA,EAAEA,EAAEwH,GAAQykB,KAA
AA,UAAUjsB,EAAE,KAAK+qB,gBAAgBvjB,EAASxH,OAAAA,EAAEyB,UAAUyqB,sBAAsB,SAASIsB,EAA
EwH,GAAU,YAAA,IAASA,IAAIA,EAAEmkB,IAA+BhF,EAAU,UAAK,OAAO,EAAO,WAAerjB,IAAAA,EAA
Eof,EAAEC,EAAEphB,EAAEsC,EAAEF,EAAEwgB,EAAEhf,EAAEkC,EAAEI,EAAE2c,EAAE9c,EAAE1D,EA
AEygB,EAAE5gB,EAAEuiB,EAAEmG,EAAEC,EAAEroB,EAAEsoB,EAAEpgB,EAASgb,OAAAA,EAAY,KAA
K,SAASqF,GAAUA,OAAAA,EAAEpF,OAAAY,KAAA,EAAS5jB,OAAAA,EAAEkjB,EAAS,GAAGmF,GAA8Bn
kB,GAAGukB,GAA+BvkB,GAAGkb,EAAE,KAAKuJ,UAAU1J,aAAaI,EAAE,KAAKoI,gBAAgBnJ,EAAwBc,G
AAGX,EAAsB,KAAKgjB,gBAAgBriB,GAAGnhB,EAAEsN,EAAYB7oB,GAAG6D,EAAEtC,EAAE,GAAGoC,EA
AEpC,EAAE,GAAG4iB,EAAE+E,EAAelpB,EAAE,CAAC2iB,EAAEA,IAAIxd,EAAEgf,EAAEgF,QAAQ9hB,EA
AE8c,EAAEkF,QAAQ5hB,EAAE,KAAKwkB,UAAUzJ,QAAQrd,GAAGif,EAAE3c,EAAEmb,cAActb,EAAEG,E
AAEsB,QAAQnf,EAAE6D,EAAEub,gBAAgBqB,EAAE5c,EAAEwb,gBAAgB,CAAC,EAAEuF,EAAkB,CAACp
E,EAAE9c,EAAE1D,EAAEygB,KAAU,KAAA,EAAS5gB,OAAAA,EAAE6oB,EAAEnF,OAAOnB,EAAEviB,EA
AE,GAAG0oB,EAAE1oB,EAAE,GAAG2oB,EAAE3oB,EAAE,GAAGM,EAAEN,EAAE,GAAG,CAAC,EAAE8i
B,EAAoBP,EAAEmG,EAAEC,EAAEroB,EAAE2e,EAAEpF,EAAEsoB,cAActoB,EAAEuoB,eAAevoB,EAAEwo
B,YAAiB,KAAA,EAASO,OAAAA,EAAEC,EAAEnF,OAAOlb,EAAEqd,GAakB+C,EAAE,CAACxoB,EAAEF,
GAAG,CAACgf,EAAEA,GAAGtb,EAAE/D,EAAEooB,gBAAgBtH,EAAEIB,UAAU5b,EAAE4b,UAAUtf,EAAEs
f,UAAUmB,EAAEnB,UAAU/d,EAAE+d,UAAU,CAAC,EAAEjX,SAASjM,EAAEyB,UAAU8qB,mBAAmB,SAA
SvsB,EAAEwH,GAAU,YAAA,IAASA,IAAIA,EAAEikB,IAAGc9E,EAAU,UAAK,OAAO,EAAO,WAAerjB,IAA
AA,EAAEof,EAAEC,EAAEphB,EAAEsC,EAAEF,EAAEwgB,EAAEhf,EAAEkC,EAAEI,EAAE2c,EAAE9c,EAA
E1D,EAAEygB,EAAE5gB,EAAEuiB,EAASiB,OAAAA,EAAY,KAAK,SAASkF,GAAUA,OAAAA,EAAEjF,OA
AY,KAAA,EAAS5jB,OAAAA,EAAEkjB,EAAS,GAAGiF,GAA+BjkB,GAAGkb,EAAE,KAAKuJ,UAAU1J,aAAa
I,EAAE,KAAKoI,gBAAgBnJ,EAAwBc,GAAGX,EAAsBY,EAAED,GAAGnhB,EAAEsN,EAAYB7oB,GAAG6D
,EAAEtC,EAAE,GAAGoC,EAAEpC,EAAE,GAAG4iB,EAAE+E,EAAelpB,EAAE,CAAC2iB,EAAEA,IAAIxd,E
AAEgf,EAAEgF,QAAQ9hB,EAAE8c,EAAEkF,QAAQ5hB,EAAE,KAAKwkB,UAAUzJ,QAAQrd,GAAGif,EAA

E3c,EAAEmb,cAAActb,EAAEG,EAAEsb,QAAQnf,EAAE6D,EAAEub,gBAAgBqB,EAAE5c,EAAEwb,gBAAgB,C
AAC,EAAEmH,GAAiBhG,EAAE9c,EAAEob,IAAS,KAAA,EAASjf,OAAAA,EAAE0oB,EAAEhF,OAAOnB,EA
AEsD,GAakB,CAAC7IB,GAAG,CAACI,EAAEF,GAAG,CAACgf,EAAEA,GAAGtb,EAAE/D,EAAEooB,gBAA
gBtH,EAAEiB,UAAU5b,EAAE4b,UAAUuf,EAAEsf,UAAUmB,EAAEnB,UAAU/d,EAAE+d,UAAU,CAAC,EAA
E8C,EAAE,UAAUhmB,EAAEyB,UAAU+qB,cAAc,SAASxsB,EAAEwH,GAAUmf,OAAAA,EAAU,UAAK,OAA
O,EAAO,WAAkBM,OAAAA,EAAY,KAAK,SAAS3jB,GAAUA,OAAAA,EAAE4jB,OAAAY,KAAA,EAAQ,MAA
A,iBAAiB1f,EAAEiB,eAAe,CAAC,EAAE,GAAG,CAAC,EAAE,KAAKF,mBAAmBvsB,EAAEwH,IAAS,KAA
A,EAAQ,MAAA,CAAC,EAAE,CAACIE,EAAE6jB,SAAc,KAAA,EAAQ,MAAA,CAAC,EAAE,KAAK+E,sBAA
sBlS,EAAEwH,UAAUxH,EAAEyB,UAAUyhB,QAAQ,WAAgB+I,KAAAA,UAAU/I,WAAWljB,EAApOE,GAA
yoE,SAAS0sB,GAAc1sB,GAAU2mB,OAAAA,EAAU,UAAK,OAAO,EAAO,WAAenf,IAAAA,EAAEIE,EAAEof
,EAAEC,EAAEphB,EAAEsC,EAASojB,OAAAA,EAAY,KAAK,SAAStjB,GAAUA,OAAAA,EAAEujB,OAAAY,K
AAA,EAAK1f,GAAAA,EAAExH,EAAEuiB,aAAajf,EAAEtD,EAAEwrB,WAAW9I,EAAE1iB,EAAE8qB,WAA
W,MAAM6B,EAAG,MAAM,IAAIhtB,MAAM,kJAAyJgjB,OAAAA,EAAE8H,GAAoBjjB,EAAEkB,EAAEpf,GA
AG,CAAC,GAAE,EAAetD,EAAAA,gBAAAA,EAAE4sB,UAAUjK,IAAS,KAAA,EAASphB,OAAAA,EAAEoC,
EAAEwjB,OAAOtjB,EAAE,IAAIse,EAAU5gB,EAAEiG,GAAG,CAAC,EAAE,IAAIwkB,GAAQnoB,EAAE7D,E
AAE+qB,uBAAuB,SAAS8B,GAAW7sB,GAAU2mB,OAAAA,EAAU,UAAK,OAAO,EAAO,WAAenf,IAAAA,E
AAEIE,EAAEof,EAAEC,EAAEphB,EAAS0IB,OAAAA,EAAY,KAAK,SAASpjB,GAAUA,OAAAA,EAAEqjB,O
AAAY,KAAA,EAAK1f,GAAAA,EAAExH,EAAEuiB,aAAajf,EAAEtD,EAAEwrB,WAAW,MAAMmB,EAAG,MA
AM,IAAIhtB,MAAM,kJAAyJ+iB,OAAAA,EAAE8H,GAAmBhjB,EAAEIE,GAAG,CAAC,GAAE,EAAetD,EAA
AA,gBAAAA,EAAE4sB,UAAUIK,IAAS,KAAA,EAASC,OAAAA,EAAE9e,EAAEsjB,OAAO5IB,EAAE,IAAIop
B,GAAOhI,EAAEnb,GAAG,CAAC,EAAE,IAAIwkB,GAAQzqB,EAAEvB,EAAE+qB,uBAAuB,SAAS/R,GAAKh
Z,GAAU,YAAA,IAASA,IAAIA,EAAE4qB,IAAQjBjE,EAAU,UAAK,OAAO,EAAO,WAAkBM,OAAAA,EAAY,
KAAK,SAASzf,GAAS,MAAA,cAAcxH,EAAEurB,GAAoBvrB,IAAI6qB,aAAa,CAAC,EAAEgC,GAAW7sB,IAA
I,gBAAgBA,EAAE6qB,aAAa,CAAC,EAAE6B,GAAc1sB,IAAI,CAAC,EAAE,UAAU,QAAA,QAAA;;ACsN10m
B,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,EAAA,QAAA,+BAAA,EAAA,QAAA
,gBAAA,EAAA,QAAA,UAAA,EAAA,QAAA,YAAA,EAAA,QAAA,aAAA,EAAA,QAAA,cAAA,EAAA,QAAA,
gBAAA,EAAA,QAAA,eAAA,EAAA,QAAA,oBAAA,EAAA,QAAA,kBAAA,EAAA,QAAA,kBAAA,EAAA,QA
AA,uBAAA,QAAA,4BAAA,EatND,IAAA,EAAA,EAAA,QAAA,+BACA,EAAA,EAAA,QAAA,0BAqNC,SAAA
,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,QAAA,OAAA,EAAA,WAAA,OAAA,GAAA
,EAAA,SAAA,EAAA,GAAA,GAAA,GAAA,EAAA,WAAA,OAAA,EAAA,IAAA,EAAA,IAAA,GAAA,GAAA,E
AAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAAA,GAAA,MAAA,EAAA,CAAA,IAAA,EAA
A,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAAA,OAAA,UAAA,eAAA,KAAA,EAAA,GAA
A,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAAA,IAAA,EAAA,KAAA,EAAA,KAAA,OAA
A,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,
EAAA,GAAA,EAnND,MAAM8sB,EAAQ,OACRC,EAAqB,MACrBC,EAAa,EAENC,EAAyB,kBA+MrC,QAAA,
uBA/MqC,kBAC/B,MAAMC,EAAyB,qBA8MrC,QAAA,uBAAA,EA7MD,MAAMC,EAA6B,wCAC7BC,EAAmC
,sBAEzC,SAASC,IACA,MAAA,WAAWjnB,KAAKknB,UAAUC,WAGnC,SAASC,IACA,MAAA,oBAAoBpnB,
KAAKknB,UAAUC,WAGrC,SAASE,IACPJ,OAAAA,KAAeG,IAGxB,SAASE,EAAqBC,EAAcC,EAAaC,EAAG
B,IAEIE,IADDC,IAAAA,EAAQtB,SAASukB,uBAAuB,iBACnCsB,EAAI,EAAGA,EAAIusB,EAAMptB,OAA
Qa,IAAK,EAC1BusB,EAAMvsB,GAAGysB,aAAeF,EAAMvsB,GAAG0sB,YAChCN,IACVG,EAAMvsB,GAAG
2sB,WAAWA,WAAWzjB,MAAQmjB,EACjB,KAAIBC,IACFC,EAAMvsB,GAAGkJ,MAAQojB,KAMIB,SAAS
M,IACdT,EACIR,EAAwBE,EACxBD,GAMC,SAASiB,EACZC,EAAeC,EAAe,UAAWC,EAAY,QACnDF,GACF
7kB,SAASwV,eAAesP,GAAc7jB,MAAMyM,QAAU,QACtD1N,SAASwV,eAAeuP,GAAW9jB,MAAMyM,QAA
U,SAEnD1N,SAASwV,eAAesP,GAAc7jB,MAAMyM,QAAU,OACtD1N,SAASwV,eAAeuP,GAAW9jB,MAAMy
M,QAAU,SAIhd,SAASsX,EAAUC,EAAKxiB,EAAGF,EAAGzI,EAAGN,GACtCyrB,EAAIC,YACJD,EAAIE,IA
AI5iB,EAAGE,EAAG3I,EAAG,EAAG,EAAIC,KAAKqrB,IAC7BH,EAAII,UAAAY7rB,EACHByrB,EAAIK,OAM
C,SAASC,GAAaC,EAAIC,IAAMC,EAAIC,GAAKnsB,EAAOosB,EAAOX,GAC5DA,EAAIC,YACJD,EAAIY,O
AAOJ,EAAKG,EAAOJ,EAAKI,GAC5BX,EAAIa,OAAOH,EAAKC,EAAOF,EAAKE,GAC5BX,EAAIc,UAAAYv

C,EACbByB,EAAIe,YAAcxsB,EACIByrB,EAAIgb,SAMC,SAASC,EAAatJ,EAAWuJ,EAAelB,EAAKW,EAAQ,
GAlzDQ,SAAAA,GAAQ,EAAC3jB,EAAD,EAAIF,IACZ,MAAA,CAACE,EAAGF,GAHT8jB,EAAQjI,qBAAqB
xB,EAAWuJ,GAM1BxrB,QAASiiB,IACzB2I,EACIa,EAAQxJ,EAAU,GAAGIb,UAAW0kB,EAAQxJ,EAAU,GA
AGIb,UAAW4hB,EACbEsC,EAAOX,KAOR,SAASqB,EAAc1J,EAAWuJ,EAAelB,EAAKW,EAAQ,GAC9D,IAA
A,IAAI7tB,EAAI,EAAGA,EAAI6kB,EAAU11B,OAAQa,IAAK,CACnCWuB,MAAAA,EAAW3J,EAAU7kB,GAE
vBwuB,GAAAA,EAAsvL,MAAQmL,EACnB,SAGI,MAAA,EAAC1jB,EAAD,EAAIF,GAAGkGB,EAAS7kB,SA
CxBSjB,EAAUC,EAAKxiB,EAAImjB,EAAOrjB,EAAIqjB,EAAO,EAAGtC,IASrC,SAASkD,EAAgB5J,EAAWqI,
GACnCWuB,MAAAA,EAAcJ,EAAQ7H,eAAe5B,GAE3CqI,EAAIyB,KACAD,EAAY9H,KAAM8H,EAAY7H,KA
AM6H,EAAYhI,KAAOgl,EAAy9H,KACnE8H,EAAY/H,KAAO+H,EAAY7H,MAEnCqG,EAAIe,YAAcW,iBAC
IB1B,EAAIgb,SAMC,eAAeW,EAaezsB,EAAG8qB,GACbC,MAACpgB,EAAQD,GAASzK,EAAE2e,MACpB+N
,EAAY,IAAIC,UAAUliB,EAAOC,GAEjCka,QAAa5kB,EAAE4kB,OAEB,IAAA,IAAIhnB,EAAI,EAAGA,EAAI
8M,EAASD,IAAS7M,EAAG,CACjCgvB,MAAAA,EAAQ,EAAJhvB,EACJ0I,EAAQ,EAAJ1I,EAEV8uB,EAAU9
H,KAAKgl,EAAI,GAAKhI,EAAKte,EAAI,GACjComB,EAAU9H,KAAKgl,EAAI,GAAKhI,EAAKte,EAAI,GACj
ComB,EAAU9H,KAAKgl,EAAI,GAAKhI,EAAKte,EAAI,GACjComB,EAAU9H,KAAKgl,EAAI,GAAK,IAG1B9
B,EAAI+B,aAAaH,EAAW,EAAG,GAM1B,SAASI,EAAoBC,EAAO5M,EAAM6M,GAC/CA,EAAOviB,MAAQ0
V,EAAK,GACpB6M,EAAOtI,OAASyV,EAAK,GACT6M,EAAOC,WAAW,MAE1BC,UAAUH,EAAO,EAAG,
GAQnB,SAASI,EAakBC,EAAexO,EAacoO,GAK7DK,EAJYL,EAAOC,WAAW,MAETG,EAAcH,IAAIkD,EA
AGsE,OAAO1O,EAAC,UADhD,EAGuBuK,GAOxC,SAASkE,EAAWvC,EAAYc,EAAQC,EAAQnuB,GACjCul
B,MAAAA,EAAO2I,EAAOE,SAASC,OAExB,IAAA,IAAI9vB,EAAI,EAAGA,EAAIgnB,EAAK7nB,OAAQa,GA
AK,EAAG,CACjC+vB,MAAAA,EAAS/I,EAAKhNB,GACdgb,EAAShJ,EAAKhNB,EAAI,GAET,IAAXgwB,GA
A2B,IAAXD,IACIB7C,EAAIC,YACJD,EAAIE,IAAI4C,EAAQD,EAAQH,EAAQ,EAAG,EAAI5tB,KAAKqrB,IA
C5CH,EAAII,UAAy7tB,EACbByrB,EAAIK,SAUH,SAAS0C,EACZT,EAAehO,EAASR,EAAC6M,EAAQ,EAAG
X,GAC7CgD,MAAAA,EACF5B,EAAQ6B,WAAWxH,gBAAGb6G,EAAexO,EAACq,GAE9D4O,EAACZ,EAACk
,SAASC,OACrCO,EAAMBH,EAAaL,SAASC,OAElC,IAAA,IAAI9vB,EAAI,EAAGA,EAAIowB,EAAyJxB,OA
AQa,GAAK,EAAG,CAM9CwtB,EACI,CANa4C,EAAypwB,GAAKghB,EACjBoP,EAAypwB,EAAI,GAAKghB,
GAKZ,CAJLqP,EAAiBrwB,GACjBqwB,EAAiBrwB,EAAI,IAGcurB,EAAOsC,EAAOX;;AC/LnE,aAAA,OAAA,e
AAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAAA,QAAA,KAAA,QAAA,aAAA,EAIBA,MAAMoD,EAAU,
CACtB,CAAC,IAAK,GAAL,KAAM,CAAC,IAAK,GAAL,KAAM,CAAC,IAAK,GAAL,KAAM,CAAC,IAAK,GAAL,IAAM,CAAC,IAAK,IA
AK,IAC3D,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAA
K,IAC3D,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAAK,IAAK,CAAC,GAAL,IAAK,IAAM,CAAC,GAAL,IAAK,
KAC1D,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAA
K,KAC1D,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,G
AAI,MAypD,QAAA,QAAA,EATA,MAAMC,EAAO,CACIB,CAAC,IAAK,GAAL,KAAM,CAAC,IAAK,GAAL,K
AAM,CAAC,IAAK,GAAL,KAAM,CAAC,GAAL,GAAL,KACzD,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK
,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAC1D,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IA
AK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAC1D,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,
IAAK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAC1D,CAAC,GAAL,IAAK,KAAM,CAAC,GA
AL,IAAK,KAAM,CAAC,GAAL,IAAK,KAAM,CAAC,GAAL,IAAK,KAC1D,CAAC,GAAL,IAAK,IAAM,CAAC,I
AAK,IAAK,IAAK,CAAC,IAAK,IAAK,IAAK,CAAC,IAAK,IAAK,KAGtD,QAAA,KAAA,EAAA,MAAMC,EA
AW,CACtB,CAAC,IAAK,EAAG,IAAQ,CAAC,IAAK,GAAL,IAAO,CAAC,IAAK,GAAL,IAAO,CAAC,IAAK,GA
LI,IAC7D,CAAC,IAAK,GAAL,IAAO,CAAC,IAAK,IAAK,IAAM,CAAC,IAAK,IAAK,IAAM,CAAC,IAAK,IAAK,I
AC9D,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK
,KAC9D,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IA
AK,KAC9D,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,IAAK,KAAM,CAAC,IAAK,
IAAK,KAC9D,CAAC,GAAL,IAAK,KAAO,CAAC,GAAL,IAAK,KAAO,CAAC,GAAL,IAAK,KAAO,CAAC,GA
LI,IAAK,MANxD,QAAA,SAAA;;ACgrBC,aAAA,OAAA,eAAA,QAAA,aAAA,CAAA,OAAA,IAAA,QAAA,SAA
A,EArsBR,QAAA,kCACA,IAAA,EAAA,EAAA,QAAA,gCACA,EAAA,EAAA,QAAA,YACA,EAAA,EAAA,QA

AA,aAEA,EAAA,QAAA,eACA,EAAA,EAAA,QAAA,wBA+rBQ,SAAA,EAAA,GAAA,OAAA,GAAA,EAAA,W
AAA,EAAA,CAAA,QAAA,GAAA,SAAA,IAAA,GAAA,mBAAA,QAAA,OAAA,KAAA,IAAA,EAAA,IAAA,Q
AAA,OAAA,EAAA,WAAA,OAAA,GAAA,EAAA,SAAA,EAAA,GAAA,GAAA,EAAA,WAAA,OAAA,E
AAA,IAAA,EAAA,IAAA,GAAA,GAAA,EAAA,IAAA,GAAA,OAAA,EAAA,IAAA,GAAA,IAAA,EAAA,GAA
A,GAAA,MAAA,EAAA,CAAA,IAAA,EAAA,OAAA,gBAAA,OAAA,yBAAA,IAAA,IAAA,KAAA,EAAA,GAA
A,OAAA,UAAA,eAAA,KAAA,EAAA,GAAA,CAAA,IAAA,EAAA,EAAA,OAAA,yBAAA,EAAA,GAAA,KAA
A,IAAA,EAAA,KAAA,EAAA,KAAA,OAAA,eAAA,EAAA,EAAA,GAAA,EAAA,GAAA,EAAA,IAAA,OAAA,
EAAA,QAAA,EAAA,GAAA,EAAA,IAAA,EAAA,GAAA,EA5rBR,MAAMC,EAAQ,IAAIC,EAAJ,QAERC,EAA
Q,CACZC,MAAO,KACPC,OAAQ,KACRC,IAAK,KACLC,iBAaKB,GAEIBC,sBAAsB,EACtBC,oBAAoB,EACp
BC,gBAAGB,EACHBC,oBAAoB,EACpBC,oBAAoB,GAGtB,SAAStF,IACA,MAAA,WAAWjnB,KAAKknB,UA
AUC,WAGnC,SAASC,IACA,MAAA,oBAAoBpnB,KAAKknB,UAAUC,WAG5C,SAASE,IACAJ,OAAAA,KAAE
G,IAGxB,eAAeOf,IACtF,IAACtF,UAAUuF,eAAiBvF,UAAUuF,aAAaC,iBAE9C,OADPC,QAAQ/hB,IAAI,qCAC
L,GAOfgiB,aAJe1F,UAAUuF,aAAaC,oBAEhBG,OAAOC,GAA0B,eAAhBA,EAAOC,MAKvD,SAASC,IACHIB,
EAAMC,OAASD,EAAMC,MAAMkb,YAC7BnB,EAAMC,MAAMkb,UAAUC,YAAynvB,QAAQovB,IACxCA,
EAAMC,SAERtB,EAAMC,MAAMkb,UAAy,MAI5B,eAAeI,EAAoBC,GAC3BC,MAAAA,QAAoBf,IAErB,IAA
A,IAAIrxB,EAAI,EAAGA,EAAIoyB,EAAYjzB,OAAQa,IAAK,CACrCqyB,MAAAA,EAAaD,EAAYpyB,GAC3B
qyB,GAAAA,EAAW1M,QAAUwM,EACHBE,OAAAA,EAAWC,SAIf,OAAA,KAMT,SAASC,EAACJ,GACjB,O
AACa,GAGDA,EAAYK,cAAcC,SAAS,QAC9B,cAHA,OASX,eAAeC,EAAeP,GACxBG,IAAAA,EACAK,EAO
G,OALHR,IACFG,QAAiBJ,EAAoBC,GAErCQ,EAAazG,IAAaqG,EAACJ,GAAe,MAEID,CAACG,SAAAA,EAA
UK,WAAAA,GAOpB,eAAeC,EAAYT,GACrB,IAACpG,UAAUuF,eAAiBvF,UAAUuF,aAAauB,aAC/C,MAAA,I
AAIz0B,MACN,iEAGA00B,MAAAA,EAAe7qB,SAASwV,eAAe,SAE7CoU,IAEMd,MAAAA,QAAyB2B,EAAe
P,GAExCtB,QAAe9E,UAAUuF,aAAauB,aACxC,CAAU,OAAA,EAAGB9B,MAAAA,IAGvB,OAFP+B,EAAahB,
UAAyJB,EAElB,IAAIxL,QAAS0N,IACIBD,EAAaE,iBAAmB,MAC9BF,EAAajmB,MAAQimB,EAAaG,WACIC
H,EAAahmB,OAASgmB,EAAaI,YACnCH,EAAQD,OAKd,eAAeK,EAAUhB,GACnB,IACfXB,EAAMC,YAAcg
C,EAAYT,GACHc,MAAO1zB,GACH20B,IAAAA,EAAOnrB,SAASwV,eAAe,QAI7Bhf,MAHN20B,EAAK3G,Y
AAc,oFAEnB2G,EAAKIqB,MAAMyM,QAAU,QACfIX,EAGRkyB,EAAMC,MAAMyC,OAGd,MAAMC,EAAoB
,EAEPBC,EAA6BrH,IAAa,GAAO,IACjDsH,EAAYB,GACzBC,EAAqC,SAERCC,EAA0B,EAC1BC,EAAsB,GACt
BC,EAAkC,MAElCC,EAAW,CACfC,UAAW,wBACXC,SAAU,UACVC,OAAQ,KACR7J,gBAAGB,EACHB8J,M
AAO,CACL3K,aAAc,cACdtI,aAAc,GACdkT,mBAAoB,MACpB3K,WAAy,GACZU,WAAy,GAEdkK,oBAAqB,
CACnB9J,cAAe,EACfC,eAAgB,GACHBC,UAAW,GACX6J,uBAAwB,GACxBC,YAAa,IAEfC,aAAc,CACZC,sB
AAuB,GACvBC,OAAQ,OACRC,gBAAGB,EACHB7e,QAAS,GACT8e,qBAAsB,EACtBC,eAAgB,EACHBC,eAAg
B,GAEIBC,QAAS,CACPC,WAAy,UACZN,OAAQ,UACRD,sBAAuB,GACvB3e,QAAS,GACTmf,mBAAoB,EA
CpBC,uBAAwB,GAE1BC,SAAU/I,KAGZ,SAASgJ,EAAGBC,GACjBjwB,MAAAA,EAAS,CAACkwB,QAAS,M
AMIBlwB,OAJPiwB,EAAQvyB,QAAQoxB,IACd9uB,EAAO8uB,EAAOrO,OAASqO,EAAOrO,QAGzBzgB,EA
MT,SAASmwB,EAASF,GACVhb,MAAAA,EAAM,IAAImb,EAAIte,QAAAA,IAAI,CAACnK,MAAO,MAE5B0o
B,IAAAA,EAAYB,KAC7B1B,EAASnI,EAAD,wBAA2B,WACjC6J,EAAuB1nB,SAAS,aAEICsM,EAAIc,IAAI4Y
,EAAUnI,EAAIB,wBAA0CvqB,KAAKwqB,EAA/C,yBACA,EAAA,EAAA,kCAEAxR,EAAIc,IAAI4Y,EAAU,SA
AUqB,EAAgBC,IACvCvnB,SAAS,eAAeukB,GACvBxB,EAAM6E,gBAAiB,QAejBrC,EAAUhB,GAehBxB,EA
AM6E,gBAAiB,IAG7Brb,EAAIc,IAAI4Y,EAAU,kBASZ4B,MAAAA,EACfTB,EAAIc,IAAI4Y,EAAU,YAAa,CA
AC,SAAU,0BAM1CI,IAAAA,EAAQ9Z,EAAIub,UAAU,SAOtBC,EAAYB,KACpBC,SAAAA,EAAsB5U,EAAc6
U,GACvCF,GACFA,EAAuBza,SAEzB2Y,EAASI,MAAMjT,aAAeA,GAC9B2U,EAC11B,EAAMhZ,IAAI4Y,EA
ASI,MAAO,eAAgB4B,IACvBjoB,SAAS,SAASoT,GACvC2P,EAAMO,gBAAiB,EACvB2C,EAASI,MAAMjT,cA
AgBA,IAQ/B8U,IAAAA,EAA+B,KAC1BC,SAAAA,EACL7B,EACA8B,GAEEF,GACFA,EAA6B5a,SAE/B2Y,E
AASI,MAAMC,mBAAqBA,GACpC4B,EAA+B7B,EAAMhZ,IACjC4Y,EAASI,MAAO,qBAAsB+B,IACbpoB,SA
AS,SAASsmB,GAC7CL,EAASI,MAAMC,mBAAqBA,IASpC+B,IAAAA,EAauB,KACIBC,SAAAA,EAAoB3M,
EAAY4M,GACnCF,GACFA,EAAqB/a,SAEvB2Y,EAASI,MAAM1K,WAAaA,GAC5B0M,EACIhC,EAAMhZ,IA
AI4Y,EAASI,MAAO,aAAcC,IACvBvoB,SAAS,SAAS2b,GACrCoH,EAAMM,oBAAqB,EAC3B4C,EAASI,MA
AM1K,YAAcA,IAU7B6M,IAAAA,EAAuB,KAEIBC,SAAAA,IADAC,IAAoBrM,EAAYsM,EAeH,gBAAhC1C,E

AASI,MAAM3K,cACjByM,EACItC,EACA,CAAC,MAAO,SAAU,OAAQ,SAC9BmC,EAAsBpC,EAawB,CAAC,EAAG,KACIDOC,EAAoB3C,EAA4B,CAAC,GAAM,IAAM,MAE7DwC,EACInC,EAAiC,CAAC,MAAO,SAAU,OAAQ,SAC/DgC,EAAsBjC,EAAqB,CAAC,GAAl,KACHDuC,EAAoBxC,EAAyB,CAAC,KAZBrBzJ,EA2BPqJ,EA3BmBiD,EA2BA,CAAC,EAAG,EAAG,GA1B1CH,GACFA,EAAqBlb,SAEvB2Y,EAAS5J,YAAcA,EACvB4J,EAASI,MAAMhK,YAAcA,GAC7BmM,EACInC,EAAMhZ,IAAI4Y,EAASI,MAAO,aAAcsC,IACvB3oB,SAAS,SAASqc,GACrC0G,EAAMS,oBAAqB,EAC3ByC,EAASI,MAAMhK,YAAcA,IAuBjCsL,EACItB,EAAMhZ,IAAI4Y,EAASI,MAAO,eAAgB,CAAC,WAAY,gBAC3DJ,EAASvK,aAAeuK,EAASI,MAAM3K,aACvCiM,EAAuB3nB,SAAS,SAAS0b,GAEvCqH,EAAMK,sBAAuB,EAC7B6C,EAASI,MAAM3K,aAAeA,EAC9B+M,MAGFA,IACApC,EAAMuC,OAEAC,MAAAA,EACFtc,EAAIc,IAAI4Y,EAAU,WAAY,CAAC,eAAgB,YAE/CS,IAAAA,EAaena,EAAIub,UAAU,gBACjCpB,EAAarZ,IAAI4Y,EAASS,aAAc,wBAAYB,EAAK,GACHeoC,MAAAA,EACFpC,EAAarZ,IAAI4Y,EAASS,aAAc,SAAU,CAAC,OAAQ,UAE3DH,IAyBAwC,EACAC,EACAhC,EACAD,EACAF,EA7BAN,EAAsBha,EAAIub,UAAU,uBACxCvB,EAAoBIZ,IACb4Y,EAASM,oBAAqB,gBAAiB,EAAG,GAAl,GAC1DA,EAAoBIZ,IACb4Y,EAASM,oBAAqB,iBAakB,EAAK,GACzDA,EAAoBIZ,IAAI4Y,EAASM,oBAAqB,YAAa,EAAG,GAAl,GAC1EA,EAAoBIZ,IACb4Y,EAASM,oBAAqB,yBAA0B,EAAG,GAAl,GACnEA,EAAoBIZ,IACb4Y,EAASM,oBAAqB,cAAe,EAAG,GAAl,GACxDA,EAAoBqC,OAEPf,EAAoB7nB,SAAS,SAASnH,GAC5BotB,OAAAA,EAASC,WACV,IAAA,gBACHK,EAAoB0C,QACpBC,qBAAqBN,OACrB,MACG,IAAA,eACHM,qBAAqBD,QACrB1C,EAAoBqC,UAW1BE,EAA6B9oB,SAAS,SAASmpB,GAC1B,SAAfA,GACEH,GACFA,EAAGb1b,SAEd0Z,GACFA,EAAe1Z,SAEjByb,EACIrC,EAAarZ,IAAI4Y,EAASS,aAAc,UAAW,EAAK,GAC5DK,EAAiBL,EAAarZ,IAAI4Y,EAASS,aAAc,kBACnCnuB,IAAI,GACJC,IAAI,IACJkJ,KAAK,GAC3BmlB,EACIH,EAAarZ,IAAI4Y,EAASS,aAAc,mBACpB,UAAfyC,IACLJ,GACFA,EAACzb,SAEZyZ,GACFA,EAAezZ,SAEbuZ,GACFA,EAAevZ,SAEjB0b,EAakBtC,EACKrZ,IACG4Y,EAASS,aACT,wBAEHnuB,IAAI,GACJC,IAAI,IACJkJ,KAAK,GAC5BslB,EAAiBN,EAAarZ,IAAI4Y,EAASS,aAAc,kBACnCnuB,IAAI,GACJC,IAAI,IACJkJ,KAAK,MAK/BonB,EAA6B7oB,SAASgmB,EAASS,aAAe,QAExDK,IAAAA,EAAU1a,EAAIub,UAAU,YAC5Bb,EAAQ5Z,IAAI4Y,EAASgB,QAAS,wBAAYB,EAAK,GAC5DA,EAAQ5Z,IACJ4Y,EAASgB,QAAS,SAAU,CAAC,UAAW,aAAc,iBAC1DA,EAAQ5Z,IAAI4Y,EAASgB,QAAS,UAAW,EAAK,GAC9CA,EAAQ5Z,IAAI4Y,EAASgB,QAAS,aAAczxB,OAAOC,KAAK2zB,IACnDppB,SAASknB,IACRmC,EAAwBnC,KAe9BmC,EAAwBpD,EAASgB,QAAQC,YACzCD,EAAQ5Z,IAAI4Y,EAASgB,QAAS,sBAAsB1uB,IAAI,GAAGC,IAAI,IAAIkJ,KAAK,GACxEuLB,EAAQ5Z,IAAI4Y,EAASgB,QAAS,0BACzB1uB,IAAI,GACJC,IAAI,IACJkJ,KAAK,GACvulB,EAAQ2B,OAERC,EAAmB7oB,SAAS,SAASspB,GACZ,iBAAnBA,GACF5C,EAAakC,OACb3B,EAAQgC,QACR5uB,SAAswV,eAAe,UAAUvU,MAAMyM,QAAU,SAEId2e,EAAauC,QACbhC,EAAQ2B,OACrvuB,SAASwV,eAAe,UAAUvU,MAAMyM,QAAU,kBAItDwE,EAAIc,IAAI4Y,EAAU,WAAWjmB,SAASqnB,IACbCA,EACFhtB,SAASwN,KAAK3H,YAAy2iB,EAAM1nB,KAehCd,SAASwN,KAAK4J,YAAyOR,EAAM1nB,OAKtC,SAASkuB,EAAwBnC,GACzBqC,MAAAA,EAASlvB,SAASwV,eAAe,UACvC0Z,EAAO5oB,UAAy,GAEB6oB,MAAAA,EAaAJ,EAAGbIC,GAC7BxR,EAAy+T,EAAQC,cAErB,IAAA,IAAI3B,EAAL,EAAGA,EAAIo3B,EAAWj4B,OAAQa,IAAK,CACpCu3B,MAAAA,EAAYH,EAAWp3B,GACvBw3B,EAAQvvB,SAASC,cAAc,MAErCsV,EAAMjpB,UAC+CgpB,4DAAAA,OAAAA,EAAU,GAC3DA,KAAAA,OAAAA,EAAU,GAAMA,KAAAA,OAAAA,EAAU,GACxBjU,wBAAAA,OAAAA,EAAU,tjB,IAEHBm3B,EAAOrpB,YAAy0pB,IAOVb,SAASC,IACPhH,EAAMiH,UAAU,GACZ7D,EAASoB,SACXhtB,SAASwN,KAAK3H,YAAy2iB,EAAM1nB,KAIpC,eAAe4uB,IAEL9D,OAAA,EAASC,WACV,IAAA,wBACI,aAAMnD,EAAMG,IAAI8G,mBAAMbjH,EAAMC,MAAO,CACrDsD,mBAAoBL,EAASI,MAAMC,mBACnCK,sBAAuBV,EAASS,aAAaC,sBAC7CIK,cAAewJ,EAASM,oBAAoB9J,cAC5CC,eAAgBuJ,EAASM,oBAAoB7J,eAC7CC,UAAWsj,EAASM,oBAAoB5J,UACx6J,uBACIP,EAASM,oBAAoBC,uBACjCC,YAAaR,EAASM,oBAAoBE,cAEzC,IAAA,SACI,aAAM1D,EAAMG,IAAI+G,cAAcIH,EAAMC,MAAO,CAChDsD,mBAAoBL,EAASI,MAAMC,mBACnCK,sBAAuBV,EAASS,aAAaC,sBAC7CIK,cAAewJ,EAASM,oBAAoB9J,cAC5CC,eAAgBuJ,EAASM,oBAAoB7J,eAC7CC,UAAWsj,EAASM,oBAAoB5J,YAKvCuN,OAxBuB,KA2BhC,eAAeC,IACLIE,OAAAA,EAASC,WACV,IAAA,wBACI,aAAMnD,EAAMG,IAAIkH,wBAAwBrH,EAAMC,MAAO,CAC1DsD,mBAAoBL,EAASI,MAAMC,mBACnCK,sBAAuBV,EAASS,aAAaC,sBAC7CIK,cAAewJ,EAASM,oBAAoB9J,cAC5CC,eAAgBuJ,EAASM,oBAAoB7J,eAC7CC,UAAWsj,EAASM,oBAAoB5J,UACx6J,uBACIP,EAASM,oBAAoBC,uBACjCC,YAAaR,EAASM,oBAAoBE,cAEzC,IAAA,SACI,aAAM1D,EAAMG

,IAAI mH,mBAAmBtH,EAAMC,MAAO,CACrDsD,mBAAoBL,EAASI,MAAMC,mBACnCK,sBAAuBV,EAASS,
aAAaC,sBAC7CIK,cAAewJ,EAASM,oBAAoB9J,cAC5CC,eAAgBuJ,EAASM,oBAAoB7J,eAC7CC,UAAWsJ,EA
ASM,oBAAoB5J,YAKvC2N,OAAAA,4BAGT,SAASC,EAAUC,EAAgCC,EAakBnL,GAC/DptB,MAAMyE,QA
AQ6zB,GACHBA,EAA+Bx1B,QAAQ01B,IACjCC,IAAAA,EAAOD,EAAMBC,KAC1BF,IACFE,EAAOIB,EAAQ
jQ,mBAAmBmR,EAAMD,EAAMBzrB,SAE/C0rB,EAAAA,EAAAA,eAAAA,EAAK1T,UAAW,GAAKqI,IACtBq
L,EAAAA,EAAAA,cAAAA,EAAK1T,UAAW,GAAKqI,KAGpCkL,EAA+BI,SAAS51B,QAAQ21B,IAC1CF,IAC
FE,EAAOIB,EAAQjQ,mBACXmR,EAAMH,EAA+BvrB,SAE7B0rB,EAAAA,EAAAA,eAAAA,EAAK1T,UAAW
,GAAKqI,IACtBqL,EAAAA,EAAAA,cAAAA,EAAK1T,UAAW,GAAKqI,KAKxC,eAAeuL,KACG,EAAA,EAA
A,kBAAA,GACHB9H,EAAMG,UAAYuG,EAAQ5f,KAAK,CAC7B6R,aAAcuK,EAASI,MAAM3K,aAC7BtI,aAA
c6S,EAASI,MAAMjT,aAC7BuI,WAAySk,EAASI,MAAM1K,WAC3BU,WAAy4J,EAASI,MAAMhK,cAEb,EA
AA,EAAA,kBAAA,GAOIB,SAASyO,IACDtJ,MAAAA,EAASnnB,SAASwV,eAAe,WAGxBkb,eAAAA,KAGThI,
EAAMK,sBAAwBL,EAAMM,oBACpCN,EAAM6E,gBAakB7E,EAAMO,gBAC9BP,EAAMS,sBACRI,QAAQ/h
B,IAAI,iBACZgpB,IACA9H,EAAMK,sBAAuB,EAC7BL,EAAMM,oBAAqB,EAC3BN,EAAMO,gBAAiB,EACv
BP,EAAMS,oBAAqB,GAI7BX,EAAMmI,QAEAP,MAAAA,EAAMbxE,EAAS1J,eAE1B0J,OAAAA,EAASE,UA
CV,IAAA,eACG+D,MAAAA,QAAgCH,IAC9B9D,OAAAA,EAASS,aAAaE,QACvB,IAAA,OACGtH,MAAAA,E
AAMkC,EAAOC,WAAW,MACxBwJ,EAakB,CAAC92B,EAAG,IAAKG,EAAG,IAAKC,EAAG,IAAKC,EAAG,
KAC9C02B,EAakB,CAAC/2B,EAAG,EAAGG,EAAG,EAAGC,EAAG,EAAGC,EAAG,KACxC22B,EAAO1B,E
AAQ2B,OACjBIB,EAAyBe,EAAiBC,GAC1C,GA EJzB,EAAQ4B,SACJ7J,EAAQuB,EAAMC,MAAOmI,EAAMI
F,EAASS,aAAa1e,QACjDie,EAASS,aAAaK,eAAgB0D,GAC1CF,EAAUL,EAAyBO,EAakBnL,GACrD,MACG,I
AAA,QACHmK,EAAQ6B,gBACJ9J,EAAQuB,EAAMC,MAAOkH,GACpBjE,EAASS,aAAaI,qBACvBb,EAASS,
aAAaM,eAAgByD,GAI9C,MACG,IAAA,UACGnL,MAAAA,EAAMkC,EAAOC,WAAW,MACxB6I,QAAoCH,I
ACpCoB,EAAuB9B,EAAQ+B,kBACjCIB,EACAlB,EAAGBnD,EAASgB,QAAQC,aAE/BH,EAAiB,EACfd,OAA
AA,EAASgB,QAAQL,QACIB,IAAA,aACG6E,MAAAA,EAAiB,GAEvBhC,EAAQiC,kBACJIK,EAAQuB,EAAM
C,MAAOuI,EACrBtF,EAASgB,QAAQjf,QAAS+e,EAAgB0D,EAC1CgB,GACJ,MACG,IAAA,UACHhC,EAAQ4
B,SACJ7J,EAAQuB,EAAMC,MAAOuI,EAASbTf,EAASje,QACpD+e,EAAgB0D,GACpB,MACG,IAAA,eACGk
B,MAAAA,EAakB,CAAC,EAAG,GAC5BIC,EAAQmC,aACJpK,EAAQuB,EAAMC,MAAOsH,EACrBqB,EAAi
B1F,EAASgB,QAAQE,mBACICIB,EAASgB,QAAQD,eAAgByD,GA EzCF,EAAUD,EAA6BG,EAakBnL,GAO7
DuD,EAAMgJ,MAENZkB,sBAAsB2jB,GAGxBA,GAMK,eAAe,UAEdjB,IACNxB,SAASwV,eAAe,WAAWvU
,MAAMyM,QAAU,OACnD1N,SAASwV,eAAe,QAAQvU,MAAMyM,QAAU,qBAE1Cwd,EAAUU,EAASG,QAE
rBmB,IAAAA,QAAgB9D,IAEpBoG,IACApC,EAASF,GAETuD,IAIF3M,UAAU8G,aAAe9G,UAAU8G,cAC/B9G
,UAAU4N,oBAAsB5N,UAAU6N,gBAE9CF", "file": "demos.ab0c720b.js", "sourceRoot": "..", "sourcesContent": ["/**
\n * @license
\n * Copyright 2020 Google LLC. All Rights Reserved.
\n * Licensed under the Apache License,
Version 2.0 (the \"License\");
\n * you may not use this file except in compliance with the License.
\n * You may
obtain a copy of the License at
\n * http://www.apache.org/licenses/LICENSE-2.0
\n * Unless required by
applicable law or agreed to in writing, software
\n * distributed under the License is distributed on an \"AS IS\"
BASIS,
\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
\n * See the
License for the specific language governing permissions and
\n * limitations under the License.
\n *
=====
\n *
\n * \nimport { Backend, DataId } from './tensor';
\nimport { BackendValues, DataType } from './types';
\n\nexport
const EPSILON_FLOAT32 = 1e-7;
\nexport const EPSILON_FLOAT16 = 1e-4;
\n\n// Required information for all
backends.
\nexport interface BackendTimingInfo {
\n kernelMs: number|{error: string};
\n getExtraProfileInfo?():
string; // a field for additional timing information
\n // e.g. packing / unpacking for WebGL
backend
\n}\n\nexport interface TensorStorage {
\n read(dataId: DataId): Promise<BackendValues>;
\n readSync(dataId: DataId): BackendValues;
\n disposeData(dataId: DataId, force?: boolean): boolean;
\n write(values: BackendValues, shape: number[], dtype: DataType): DataId;
\n move(\n dataId: DataId, values:
BackendValues, shape: number[], dtype: DataType,
\n refCount: number): void;
\n memory(): {unreliable:
boolean}; // Backend-specific information.
\n /** Returns number of data ids currently in the storage. */
\n numDataIds(): number;
\n refCount(dataId: DataId): number;
\n}\n\n/** Convenient class for storing tensor-related

```

data. */\nexport class DataStorage<T> {\n  private data = new WeakMap<DataId, T>();\n  private dataIdsCount = 0;\n\n  constructor(private backend: KernelBackend, private dataMover: DataMover) {\n\n  get(dataId: DataId) {\n    if (!this.data.has(dataId)) {\n      this.dataMover.moveData(this.backend, dataId);\n    }\n    return this.data.get(dataId);\n  }\n\n  set(dataId: DataId, value: T): void {\n    this.dataIdsCount++;\n    this.data.set(dataId, value);\n  }\n\n  has(dataId: DataId): boolean {\n    return this.data.has(dataId);\n  }\n\n  delete(dataId: DataId): boolean {\n    this.dataIdsCount--;\n    return this.data.delete(dataId);\n  }\n\n  numDataIds(): number {\n    return this.dataIdsCount;\n  }\n}\n\nexport interface DataMover {\n  /**\n   * To be called by backends whenever they see a dataId that they don't own.\n   * Upon calling this method, the mover will fetch the tensor from another\n   * backend and register it with the current active backend.\n   */\n  moveData(backend: KernelBackend, dataId: DataId): void;\n}\n\nexport interface BackendTimer {\n  // check if backend timer is available\n  timerAvailable(): boolean;\n  time(f: () => void): Promise<BackendTimingInfo>;\n}\n\n/**\n * The interface that defines the kernels that should be implemented when\n * adding a new backend. New backends don't need to implement every one of the\n * methods, this can be done gradually (throw an error for unimplemented\n * methods).\n */\nexport class KernelBackend implements TensorStorage, Backend, BackendTimer {\n  refCount(dataId: DataId): number {\n    return notYetImplemented('refCount');\n  }\n  incRef(dataId: DataId): void {\n    return notYetImplemented('incRef');\n  }\n  timerAvailable(): boolean {\n    return true;\n  }\n  time(f: () => void): Promise<BackendTimingInfo> {\n    return notYetImplemented('time');\n  }\n  read(dataId: object): Promise<BackendValues> {\n    return notYetImplemented('read');\n  }\n  readSync(dataId: object): BackendValues {\n    return notYetImplemented('readSync');\n  }\n  numDataIds(): number {\n    return notYetImplemented('numDataIds');\n  }\n  disposeData(dataId: object, force?: boolean): boolean {\n    return notYetImplemented('disposeData');\n  }\n  write(values: BackendValues, shape: number[], dtype: DataType): DataId {\n    return notYetImplemented('write');\n  }\n  move(\n    dataId: DataId, values: BackendValues, shape: number[], dtype: DataType,\n    refCount: number): void {\n    return notYetImplemented('move');\n  }\n  memory(): {unreliable: boolean; reasons?: string[]} {\n    return notYetImplemented('memory');\n  }\n  /** Returns the highest precision for floats in bits (e.g. 16 or 32) */\n  floatPrecision(): 16|32 {\n    return notYetImplemented('floatPrecision');\n  }\n  /** Returns the smallest representable number. */\n  epsilon(): number {\n    return this.floatPrecision() === 32 ? EPSILON_FLOAT32 : EPSILON_FLOAT16;\n  }\n  dispose(): void {\n    return notYetImplemented('dispose');\n  }\n}\n\nfunction notYetImplemented(kernelName: string): never {\n  throw new Error(\n    `'$${kernelName}' not yet implemented or not found in the registry. ` +\n    `This kernel may not be supported by the tfjs backend you have chosen`);\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\n*/\n\nimport {DataType, DataTypeMap, FlatVector, NumericDataType, RecursiveArray, TensorLike, TypedArray} from './types';\n\n/**\n * Shuffles the array in-place using Fisher-Yates algorithm.\n */\nconst a = [1, 2, 3, 4, 5];\n\n// tf.util.shuffle(a);\n// console.log(a);\n\n/**\n * @param array The array to shuffle in-place.\n */\n@doc {heading: 'Util', namespace: 'util'}\nexport function shuffle(array: any[]|Uint32Array|Int32Array|Float32Array): void {\n  let counter = array.length;\n  let temp = 0;\n  let index = 0;\n  // While there are elements in the array\n  while (counter > 0) {\n    // Pick a random index\n    index = (Math.random() * counter) | 0;\n    // Decrease counter by 1\n    counter--;\n    // And swap the last element with it\n    temp = array[counter];\n    array[counter] = array[index];\n    array[index] = temp;\n  }\n}\n\n/**\n * Shuffles two arrays in-place the same way using Fisher-Yates algorithm.\n */\nconst a = [1,2,3,4,5];\nconst b = [11,22,33,44,55];\n\n// tf.util.shuffleCombo(a, b);\n// console.log(a, b);\n\n/**\n * @param array The first array to shuffle in-place.\n * @param array2 The second array to shuffle in-place with the same permutation\n * as the

```

```

first array.\n * \n * @doc {heading: 'Util', namespace: 'util'}\n * \n // tslint:disable-next-line:no-any\nexport function
shuffleCombo(array: any[]|Uint32Array|Int32Array|Float32Array,\n // tslint:disable-next-line:no-any\n
array2: any[]|Uint32Array|Int32Array|Float32Array): void {\n\n if (array.length !== array2.length) {\n throw
Error(\n `Array sizes must match to be shuffled together` +\n `First array length was ${array.length}` +\n
`Second array length was ${array2.length}`);\n }\n let counter = array.length;\n let temp, temp2;\n let index = 0;\n
// While there are elements in the array\n while (counter > 0) {\n // Pick a random index\n index =
(Math.random() * counter) | 0;\n // Decrease counter by 1\n counter--;\n // And swap the last element of each
array with it\n temp = array[counter];\n temp2 = array2[counter];\n array[counter] = array[index];\n
array2[counter] = array2[index];\n array[index] = temp;\n array2[index] = temp2;\n }\n}\n\n/** Clamps a value
to a specified range. *\nexport function clamp(min: number, x: number, max: number): number {\n return
Math.max(min, Math.min(x, max));\n}\n\nexport function nearestLargerEven(val: number): number {\n return val
% 2 === 0 ? val : val + 1;\n}\n\nexport function sum(arr: number[]): number {\n let sum = 0;\n for (let i = 0; i <
arr.length; i++) {\n sum += arr[i];\n }\n return sum;\n}\n\n/**\n * Returns a sample from a uniform [a, b)
distribution.\n * \n * @param a The minimum support (inclusive).\n * @param b The maximum support
(exclusive).\n * @return A pseudorandom number on the half-open interval [a,b).\n *\nexport function
randUniform(a: number, b: number) {\n const r = Math.random();\n return (b * r) + (1 - r) * a;\n}\n\n/** Returns
the squared Euclidean distance between two vectors. *\nexport function distSquared(a: FlatVector, b: FlatVector):
number {\n let result = 0;\n for (let i = 0; i < a.length; i++) {\n const diff = Number(a[i]) - Number(b[i]);\n
result += diff * diff;\n }\n return result;\n}\n\n/**\n * Asserts that the expression is true. Otherwise throws an error
with the\n * provided message.\n * \n * ```js\n * const x = 2;\n * tf.util.assert(x === 2, 'x is not 2');\n * ```\n * \n *
@param expr The expression to assert (as a boolean).\n * @param msg A function that returns the message to report
when throwing an\n * error. We use a function for performance reasons.\n * \n * @doc {heading: 'Util',
namespace: 'util'}\n *\nexport function assert(expr: boolean, msg: () => string) {\n if (!expr) {\n throw new
Error(typeof msg === 'string' ? msg : msg());\n }\n}\n\nexport function assertShapesMatch(\n shapeA: number[],
shapeB: number[], errorMessagePrefix = "): void {\n assert(\n arraysEqual(shapeA, shapeB),\n () =>
errorMessagePrefix + `Shapes ${shapeA} and ${shapeB} must match`);\n}\n\nexport function assertNonNull(a:
TensorLike): void {\n assert(\n a != null,\n () => `The input to the tensor constructor must be a non-null
value.`);\n}\n\n// NOTE: We explicitly type out what T extends instead of any so that\n// util.flatten on a nested
array of number doesn't try to infer T as a\n// number[][], causing us to explicitly type util.flatten<number>().\n\n/**\n *
Flattens an arbitrarily nested array.\n * \n * ```js\n * const a = [[1, 2], [3, 4], [5, [6, [7]]]];\n * const flat =
tf.util.flatten(a);\n * console.log(flat);\n * ```\n * \n * @param arr The nested array to flatten.\n * @param result
The destination array which holds the elements.\n * @param skipTypedArray If true, avoids flattening the typed
arrays. Defaults\n * to false.\n * \n * @doc {heading: 'Util', namespace: 'util'}\n *\nexport function nflatten<T
extends number|boolean|string|Promise<number>|TypedArray>(\n arr: T|RecursiveArray<T>, result: T[] = [],
skipTypedArray = false): T[] {\n if (result == null) {\n result = [];\n }\n if (Array.isArray(arr) ||
isTypedArray(arr) && !skipTypedArray) {\n for (let i = 0; i < arr.length; ++i) {\n flatten(arr[i], result,
skipTypedArray);\n }\n } else {\n result.push(arr as T);\n }\n return result;\n}\n\n/**\n * Returns the size
(number of elements) of the tensor given its shape.\n * \n * ```js\n * const shape = [3, 4, 2];\n * const size =
tf.util.sizeFromShape(shape);\n * console.log(size);\n * ```\n * \n * @doc {heading: 'Util', namespace: 'util'}\n *\nexport function sizeFromShape(shape: number[]): number {\n if (shape.length === 0) {\n // Scalar.\n return
1;\n }\n let size = shape[0];\n for (let i = 1; i < shape.length; i++) {\n size *= shape[i];\n }\n return
size;\n}\n\nexport function isScalarShape(shape: number[]): boolean {\n return shape.length === 0;\n}\n\nexport
function arraysEqual(n1: FlatVector, n2: FlatVector) {\n if (n1 === n2) {\n return true;\n }\n if (n1 == null || n2
=== null) {\n return false;\n }\n\n if (n1.length !== n2.length) {\n return false;\n }\n for (let i = 0; i < n1.length;
i++) {\n if (n1[i] !== n2[i]) {\n return false;\n }\n }\n return true;\n}\n\nexport function isInt(a: number):
boolean {\n return a % 1 === 0;\n}\n\nexport function tanh(x: number): number {\n // tslint:disable-next-line:no-
any\n if ((Math as any).tanh !== null) {\n // tslint:disable-next-line:no-any\n return (Math as any).tanh(x);\n }\n
if (x === Infinity) {\n return 1;\n } else if (x === -Infinity) {\n return -1;\n } else {\n const e2x = Math.exp(2

```

```

* x);\n return (e2x - 1) / (e2x + 1);\n }\n\n\nexport function sizeToSquarishShape(size: number): [number,
number] {\n const width = Math.ceil(Math.sqrt(size));\n return [width, Math.ceil(size / width)];\n}\n\n\n**\n *
Creates a new array with randomized indicies to a given quantity.\n * \n * ```\n * const randomTen =
tf.util.createShuffledIndicies(10);\n * console.log(randomTen);\n * ```\n * \n * @param number Quantity of how
many shuffled indicies to create.\n * \n * @doc {heading: 'Util', namespace: 'util'}\n * \n\nexport function
createShuffledIndicies(n: number): Uint32Array {\n const shuffledIndicies = new Uint32Array(n);\n for (let i = 0; i
< n; ++i) {\n shuffledIndicies[i] = i;\n }\n shuffle(shuffledIndicies);\n return shuffledIndicies;\n}\n\n\nexport
function rightPad(a: string, size: number): string {\n if (size <= a.length) {\n return a;\n }\n return a + '
'.repeat(size - a.length);\n}\n\n\nexport function repeatedTry(\n checkFn: () => boolean, delayFn = (counter:
number) => 0, \n maxCounter?: number): Promise<void> {\n return new Promise<void>((resolve, reject) => {\n
let tryCount = 0;\n\n const tryFn = () => {\n if (checkFn()) {\n resolve();\n return;\n }\n\n
tryCount++;\n\n const nextBackoff = delayFn(tryCount);\n\n if (maxCounter != null && tryCount >=
maxCounter) {\n reject();\n return;\n }\n\n setTimeout(tryFn, nextBackoff);\n }; \n\n tryFn();\n
});\n}\n\n\n**\n * Given the full size of the array and a shape that may contain -1 as the\n * implicit dimension,
returns the inferred shape where -1 is replaced.\n * E.g. For shape=[2, -1, 3] and size=24, it will return [2, 4, 3].\n
*\n * @param shape The shape, which may contain -1 in some dimension.\n * @param size The full size (number of
elements) of the array.\n * @return The inferred shape where -1 is replaced with the inferred size.\n * \n\nexport
function inferFromImplicitShape(\n shape: number[], size: number): number[] {\n let shapeProd = 1;\n let
implicitIdx = -1;\n\n for (let i = 0; i < shape.length; ++i) {\n if (shape[i] >= 0) {\n shapeProd *= shape[i];\n }
else if (shape[i] === -1) {\n if (implicitIdx !== -1) {\n throw Error(\n `Shapes can only have 1 implicit
size. ` + \n `Found -1 at dim ${implicitIdx} and dim ${i}`);\n }\n\n implicitIdx = i;\n } else if (shape[i]
< 0) {\n throw Error(`Shapes can not be < 0. Found ${shape[i]} at dim ${i}`);\n }\n }\n\n if (implicitIdx === -
1) {\n if (size > 0 && size !== shapeProd) {\n throw Error(`Size(${size}) must match the product of shape
${shape}`);\n }\n\n return shape;\n }\n\n if (shapeProd === 0) {\n throw Error(\n `Cannot infer the missing
size in [${shape}] when ` + \n `there are 0 elements`);\n }\n\n if (size % shapeProd !== 0) {\n throw Error(\n
`The implicit shape can't be a fractional number. ` + \n `Got ${size} / ${shapeProd}`);\n }\n\n\n const newShape
= shape.slice();\n newShape[implicitIdx] = size / shapeProd;\n return newShape;\n}\n\n\nexport function
parseAxisParam(\n axis: number|number[], shape: number[]): number[] {\n const rank = shape.length;\n\n //
Normalize input\n axis = axis == null ? shape.map((s, i) => i) : [].concat(axis);\n\n // Check for valid range\n
assert(\n axis.every(ax => ax >= -rank && ax < rank),\n () => \n `All values in axis param must be in
range [-${rank}, ${rank}) but ` + \n `got axis ${axis}`);\n\n // Check for only integers\n assert(\n
axis.every(ax => isInt(ax)),\n () => `All values in axis param must be integers but ` + \n `got axis
${axis}`);\n\n // Handle negative axis.\n return axis.map(a => a < 0 ? rank + a : a);\n}\n\n\n**\n * Reduces the shape by
removing all dimensions of shape 1. \n * \n\nexport function squeezeShape(shape: number[], axis?: number[]):\n {newShape: number[], keptDims: number[]} {\n const newShape: number[] = [];\n const keptDims: number[] =
[];\n\n const isEmptyArray = axis != null && Array.isArray(axis) && axis.length === 0;\n const axes = (axis == null
|| isEmptyArray) ?\n null :\n parseAxisParam(axis, shape).sort();\n\n let j = 0;\n for (let i = 0; i < shape.length;
++i) {\n if (axes != null) {\n if (axes[j] === i && shape[i] !== 1) {\n throw new Error(\n `Can't
squeeze axis ${i} since its dim '${shape[i]}' is not 1`);\n }\n\n if ((axes[j] == null || axes[j] > i) && shape[i] ===
1) {\n newShape.push(shape[i]);\n keptDims.push(i);\n }\n\n if (axes[j] <= i) {\n j++;\n }\n }\n\n if (shape[i] !== 1) {\n
newShape.push(shape[i]);\n keptDims.push(i);\n }\n }\n\n return {newShape, keptDims};\n}\n\n\nexport function
getTypedArrayFromDType<D extends NumericDataType>(\n dtype: D, size:
number): DataTypeMap[D] {\n let values = null;\n if (dtype == null || dtype === 'float32') {\n values = new
Float32Array(size);\n } else if (dtype === 'int32') {\n values = new Int32Array(size);\n } else if (dtype ===
'bool') {\n values = new Uint8Array(size);\n } else {\n throw new Error(`Unknown data type ${dtype}`);\n }\n\n
return values as DataTypeMap[D];\n}\n\n\nexport function getArrayFromDType<D extends DataType>(\n dtype:
D, size: number): DataTypeMap[D] {\n let values = null;\n if (dtype == null || dtype === 'float32') {\n values =
new Float32Array(size);\n } else if (dtype === 'int32') {\n values = new Int32Array(size);\n } else if (dtype ===

```

```

'bool') {\n  values = new Uint8Array(size);\n } else if (dtype === 'string') {\n  values = new
Array<'string'>(size);\n } else {\n  throw new Error('Unknown data type ${dtype}');\n }\n return values as
DataTypeMap[D];\n}\n\nexport function checkConversionForErrors<D extends DataType>(\n vals:
DataTypeMap[D]|number[], dtype: D): void {\n for (let i = 0; i < vals.length; i++) {\n  const num = vals[i] as
number;\n  if (isNaN(num) || !isFinite(num)) {\n    throw Error('A tensor of type ${dtype} being uploaded
contains ${num}.');\n  }\n }\n}\n\n/** Returns true if the dtype is valid. */\nexport function isValidDtype(dtype:
DataType): boolean {\n return dtype === 'bool' || dtype === 'complex64' || dtype === 'float32' ||\n dtype ===
'int32' || dtype === 'string';\n}\n\n/**\n * Returns true if the new type can't encode the old type without loss of\n *
precision.\n */\nexport function hasEncodingLoss(oldType: DataType, newType: DataType): boolean {\n if
(newType === 'complex64') {\n  return false;\n }\n if (newType === 'float32' && oldType !== 'complex64') {\n
return false;\n }\n if (newType === 'int32' && oldType !== 'float32' && oldType !== 'complex64') {\n  return
false;\n }\n if (newType === 'bool' && oldType === 'bool') {\n  return false;\n }\n return true;\n}\n\nexport
function isArray(a: {}): a is Float32Array|Int32Array|Uint8Array {\n return a instanceof Float32Array || a
instanceof Int32Array ||\n a instanceof Uint8Array;\n}\n\nexport function bytesPerElement(dtype: DataType):
number {\n if (dtype === 'float32' || dtype === 'int32') {\n  return 4;\n } else if (dtype === 'complex64') {\n
return 8;\n } else if (dtype === 'bool') {\n  return 1;\n } else {\n  throw new Error('Unknown dtype ${dtype}');\n
}\n}\n\n/**\n * Returns the approximate number of bytes allocated in the string array - 2\n * bytes per character.
Computing the exact bytes for a native string in JS is\n * not possible since it depends on the encoding of the html
page that serves\n * the website.\n */\nexport function bytesFromStringArray(arr: Uint8Array[]): number {\n if (arr
=== null) {\n  return 0;\n }\n let bytes = 0;\n arr.forEach(x => bytes += x.length);\n return bytes;\n}\n\n/**
Returns true if the value is a string. */\nexport function isString(value: {}): value is string {\n return typeof value
=== 'string' || value instanceof String;\n}\n\nexport function isBoolean(value: {}): boolean {\n return typeof value
=== 'boolean';\n}\n\nexport function isNumber(value: {}): boolean {\n return typeof value ===
'number';\n}\n\nexport function inferDtype(values: TensorLike): DataType {\n if (Array.isArray(values)) {\n
return inferDtype(values[0]);\n }\n if (values instanceof Float32Array) {\n  return 'float32';\n } else if (values
instanceof Int32Array || values instanceof Uint8Array) {\n  return 'int32';\n } else if (isNumber(values)) {\n
return 'float32';\n } else if (isString(values)) {\n  return 'string';\n } else if (isBoolean(values)) {\n  return
'bool';\n }\n return 'float32';\n}\n\nexport function isFunction(f: Function) {\n return !!f && f.constructor &&
f.call &&
f.apply;\n}\n\nexport function nearestDivisor(size: number, start: number): number {\n for (let i = start; i < size;
++i) {\n  if (size % i === 0) {\n    return i;\n  }\n }\n return size;\n}\n\nexport function computeStrides(shape:
number[]): number[] {\n const rank = shape.length;\n if (rank < 2) {\n  return [];\n }\n\n // Last dimension has
implicit stride of 1, thus having D-1 (instead of D)\n // strides.\n const strides = new Array(rank - 1);\n strides[rank
- 2] = shape[rank - 1];\n for (let i = rank - 3; i >= 0; --i) {\n  strides[i] = strides[i + 1] * shape[i + 1];\n }\n
return
strides;\n}\n\nfunction createNestedArray(offset: number, shape: number[], a: TypedArray) {\n const ret = new
Array();\n if (shape.length === 1) {\n  const d = shape[0];\n  for (let i = 0; i < d; i++) {\n    ret[i] = a[offset +
i];\n  }\n } else {\n  const d = shape[0];\n  const rest = shape.slice(1);\n  const len = rest.reduce((acc, c) => acc
* c);\n  for (let i = 0; i < d; i++) {\n    ret[i] = createNestedArray(offset + i * len, rest, a);\n  }\n }\n return
ret;\n}\n\n// Provide a nested array of TypedArray in given shape.\nexport function toNestedArray(shape: number[],
a: TypedArray) {\n if (shape.length === 0) {\n  // Scalar type should return a single number.\n  return a[0];\n }\n
const size = shape.reduce((acc, c) => acc * c);\n if (size === 0) {\n  // A tensor with shape zero should be turned
into empty list.\n  return [];\n }\n if (size !== a.length) {\n  throw new Error(`[${shape}] does not match the
input size ${a.length}.`);\n }\n return createNestedArray(0, shape, a);\n}\n\nexport function
makeOnesTypedArray<D extends DataType>(\n size: number, dtype: D): DataTypeMap[D] {\n const array =
makeZerosTypedArray(size, dtype);\n for (let i = 0; i < array.length; i++) {\n  array[i] = 1;\n }\n return
array;\n}\n\nexport function makeZerosTypedArray<D extends DataType>(\n size: number, dtype: D):
DataTypeMap[D] {\n if (dtype === null || dtype === 'float32' || dtype === 'complex64') {\n  return new
Float32Array(size) as DataTypeMap[D];\n } else if (dtype === 'int32') {\n  return new Int32Array(size) as
DataTypeMap[D];\n } else if (dtype === 'bool') {\n  return new Uint8Array(size) as DataTypeMap[D];\n } else

```

```

{\n  throw new Error(`Unknown data type ${dtype}`);\n }}\n\n/**\n * Make nested `TypedArray` filled with
zeros.\n * @param shape The shape information for the nested array.\n * @param dtype dtype of the array
element.\n */\nexport function makeZerosNestedTypedArray<D extends DataType>(\n  shape: number[], dtype: D)
{\n  const size = shape.reduce((prev, curr) => prev * curr, 1);\n  if (dtype == null || dtype === 'float32') {\n  return
toNestedArray(shape, new Float32Array(size));\n } else if (dtype === 'int32') {\n  return toNestedArray(shape,
new Int32Array(size));\n } else if (dtype === 'bool') {\n  return toNestedArray(shape, new Uint8Array(size));\n }
else {\n  throw new Error(`Unknown data type ${dtype}`);\n }}\n\nexport function
assertNonNegativeIntegerDimensions(shape: number[]) {\n  shape.forEach(dimSize => {\n  assert(\n
Number.isInteger(dimSize) && dimSize >= 0,\n    () =>\n      `Tensor must have a shape comprised of
positive integers but got ` +\n        `shape [${shape}].`);\n });\n }\n\n/**\n * Computes flat index for a given
location (multidimensional index) in a\n * Tensor/multidimensional array.\n * @param locs Location in the
tensor.\n * @param rank Rank of the tensor.\n * @param strides Tensor strides.\n */\nexport function locToIndex(\n
  locs: number[], rank: number, strides: number[]): number {\n  if (rank === 0) {\n  return 0;\n } else if (rank ===
1) {\n  return locs[0];\n }\n  let index = locs[locs.length - 1];\n  for (let i = 0; i < locs.length - 1; ++i) {\n  index
+= strides[i] * locs[i];\n }\n  return index;\n }\n\n/**\n * Computes the location (multidimensional index) in a
tensor/multidimensional\n * array for a given flat index.\n * @param index Index in flat array.\n * @param rank
Rank of tensor.\n * @param strides Strides of tensor.\n */\nexport function indexToLoc(\n  index: number, rank:
number, strides: number[]): number[] {\n  if (rank === 0) {\n  return [];\n } else if (rank === 1) {\n  return
[index];\n }\n  const locs: number[] = new Array(rank);\n  for (let i = 0; i < locs.length - 1; ++i) {\n  locs[i] =
Math.floor(index / strides[i]);\n  index -= locs[i] * strides[i];\n }\n  locs[locs.length - 1] = index;\n  return
locs;\n }\n\n/**\n * This method asserts whether an object is a Promise instance.\n * @param object\n */\n//
tslint:disable-next-line: no-any\nexport function isPromise(object: any) {\n  // We chose to not use 'obj instanceof
Promise' for two reasons:\n  // 1. It only reliably works for es6 Promise, not other Promise\n  // implementations.\n
// 2. It doesn't work with framework that uses zone.js. zone.js monkey patch\n  // the async calls, so it is possible
the obj (patched) is comparing to a\n  // pre-patched Promise.\n  return object && object.then && typeof
object.then === 'function';\n }\n\n",/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {Platform} from './platforms/platform';\nimport {isPromise} from './util_base';\n\n// Expects flags from
URL in the format ?tfjsflags=FLAG1:1,FLAG2:true.\nconst TENSORFLOWJS_FLAGS_PREFIX =
'tfjsflags';\n\ntype FlagValue = number|boolean;\ntype FlagEvaluationFn = (() => FlagValue)|((() =>
Promise<FlagValue>));\nexport type Flags = {\n  [featureName: string]: FlagValue;\n};\nexport type
FlagRegistryEntry = {\n  evaluationFn: FlagEvaluationFn;\n  setHook?: (value: FlagValue) => void;\n};\n\n/**\n *
The environment contains evaluated flags as well as the registered platform.\n * This is always used as a global
singleton and can be retrieved with\n * `tf.env()`.\n */\n@doc {heading: 'Environment'}\nexport class
Environment {\n  private flags: Flags = {};\n  private flagRegistry: {[flagName: string]: FlagRegistryEntry} =
{};\n  private urlFlags: Flags = {};\n  platformName: string;\n  platform: Platform;\n  // tslint:disable-next-line:
no-any\n  constructor(public global: any) {\n    this.populateURLFlags();\n  }\n  setPlatform(platformName:
string, platform: Platform) {\n    if (this.platform != null) {\n      console.warn(\n        `Platform
${this.platformName} has already been set.` +\n        `Overwriting the platform with ${platform}.`);\n    }\n    this.platformName = platformName;\n    this.platform = platform;\n  }\n  registerFlag(\n    flagName: string,
evaluationFn: FlagEvaluationFn,\n    setHook?: (value: FlagValue) => void) {\n    this.flagRegistry[flagName] =
{evaluationFn, setHook};\n  }\n  // Override the flag value from the URL. This has to happen here because the\n  //

```

```

environment is initialized before flags get registered.\n  if (this.urlFlags[flagName] != null) {\n    const flagValue
= this.urlFlags[flagName];\n    console.warn(\n      `Setting feature override from URL ${flagName}:
${flagValue}.`);\n    this.set(flagName, flagValue);\n  }\n}\n\n async getAsync(flagName: string):
Promise<FlagValue> {\n  if (flagName in this.flags) {\n    return this.flags[flagName];\n  }\n\n  this.flags[flagName] = await this.evaluateFlag(flagName);\n  return this.flags[flagName];\n}\n\n get(flagName:
string): FlagValue {\n  if (flagName in this.flags) {\n    return this.flags[flagName];\n  }\n\n  const flagValue =
this.evaluateFlag(flagName);\n  if (isPromise(flagValue)) {\n    throw new Error(\n      `Flag ${flagName}
cannot be synchronously evaluated. ` +\n      `Please use getAsync() instead.`);\n  }\n\n  this.flags[flagName] =
flagValue as number | boolean;\n\n  return this.flags[flagName];\n}\n\n getNumber(flagName: string): number
{\n  return this.get(flagName) as number;\n}\n\n getBool(flagName: string): boolean {\n  return
this.get(flagName) as boolean;\n}\n\n getFlags(): Flags {\n  return this.flags;\n}\n\n // For backwards
compatibility.\n get features(): Flags {\n  return this.flags;\n}\n\n set(flagName: string, value: FlagValue): void
{\n  if (this.flagRegistry[flagName] == null) {\n    throw new Error(\n      `Cannot set flag ${flagName} as it
has not been registered.`);\n  }\n  this.flags[flagName] = value;\n  if (this.flagRegistry[flagName].setHook !=
null) {\n    this.flagRegistry[flagName].setHook(value);\n  }\n}\n\n private evaluateFlag(flagName: string):
FlagValue|Promise<FlagValue> {\n  if (this.flagRegistry[flagName] == null) {\n    throw new Error(\n
`Cannot evaluate flag '${flagName}': no evaluation function found.`);\n  }\n  return
this.flagRegistry[flagName].evaluationFn();\n}\n\n setFlags(flags: Flags) {\n  this.flags = Object.assign({},
flags);\n}\n\n reset() {\n  this.flags = {};\n  this.urlFlags = {};\n  this.populateURLFlags();\n}\n\n private
populateURLFlags(): void {\n  if (typeof this.global === 'undefined' ||\n    typeof this.global.location ===
'undefined' ||\n    typeof this.global.location.search === 'undefined') {\n    return;\n  }\n\n  const urlParams =
getQueryParams(this.global.location.search);\n  if (TENSORFLOWJS_FLAGS_PREFIX in urlParams) {\n
const keyValues = urlParams[TENSORFLOWJS_FLAGS_PREFIX].split(',');\n    keyValues.forEach(keyValue =>
{\n      const [key, value] = keyValue.split(':') as [string, string];\n      this.urlFlags[key] = parseValue(key,
value);\n    });\n  }\n}\n\n\nexport function getQueryParams(queryString: string): {[key: string]: string} {\n
const params = {};\n  queryString.replace(/(?:&|(?=[^=&]+)(?:=([^\&]*)))/g, (s, ...) => {\n    decodeParam(params,
t[0], t[1]);\n    return t.join('=');\n  });\n  return params;\n}\n\n\nfunction decodeParam(\n  params: {[key: string]:
string},\n  name: string,\n  value?: string) {\n  params[decodeURIComponent(name)] = decodeURIComponent(value ||
'');\n}\n\n\nfunction parseValue(flagName: string, value: string): FlagValue {\n  value = value.toLowerCase();\n  if
(value === 'true' || value === 'false') {\n    return value === 'true';\n  } else if (`${+ value}` === value) {\n
return +value;\n  }\n  throw new Error(\n    `Could not parse value flag value ${value} for flag
${flagName}.`);\n}\n\n\n/**\n * Returns the current environment (a global singleton).\n *\n * The environment object
contains the evaluated feature values as well as the\n * active platform.\n *\n * @doc {heading: 'Environment'}\n
*\n\nexport function env() {\n  return ENV;\n}\n\n\nexport let ENV: Environment = null;\n\nexport function
setEnvironmentGlobal(environment: Environment) {\n  ENV = environment;\n}\n\n\n", // shim for using process in
browser\n\nvar process = module.exports = {};\n\n\n// cached from whatever global is present so that test runners that
stub it\n\n// don't break things. But we need to wrap it in a try catch in case it is\n\n// wrapped in strict mode code which
doesn't define any globals. It's inside a\n\n// function because try/catches deoptimize in certain engines.\n\n\nvar
cachedSetTimeout;\n\nvar cachedClearTimeout;\n\n\nfunction defaultSetTimeout() {\n  throw new Error('setTimeout
has not been defined');\n}\n\n\nfunction defaultClearTimeout () {\n  throw new Error('clearTimeout has not been
defined');\n}\n\n\n(function () {\n  try {\n    if (typeof setTimeout === 'function') {\n      cachedSetTimeout =
setTimeout;\n    } else {\n      cachedSetTimeout = defaultSetTimeout;\n    }\n  } catch (e) {\n
cachedSetTimeout = defaultSetTimeout;\n  }\n  try {\n    if (typeof clearTimeout === 'function') {\n
cachedClearTimeout = clearTimeout;\n    } else {\n      cachedClearTimeout = defaultClearTimeout;\n    }\n  }
catch (e) {\n    cachedClearTimeout = defaultClearTimeout;\n  }\n}\n\n\n\nfunction runTimeout(fun) {\n  if
(cachedSetTimeout === setTimeout) {\n    //normal environments in sane situations\n    return setTimeout(fun,
0);\n  }\n  // if setTimeout wasn't available but was latter defined\n  if ((cachedSetTimeout === defaultSetTimeout
|| !cachedSetTimeout) && setTimeout) {\n    cachedSetTimeout = setTimeout;\n    return setTimeout(fun, 0);\n
}

```



```

}
try {
  // when when somebody has screwed with setTimeout but no I.E. maddness
  return
cachedSetTimeout(fun, 0);
} catch(e){
  try {
    // When we are in I.E. but the script has been eveled
    so I.E. doesn't trust the global object when called normally
    return cachedSetTimeout.call(null, fun, 0);
  } catch(e){
    // same as above but when it's a version of I.E. that must have the global object for 'this',
    hopefully our context correct otherwise it will throw a global error
    return cachedSetTimeout.call(this, fun,
0);
  }
}
function runClearTimeout(marker) {
  if (cachedClearTimeout === clearTimeout) {
    //normal enviroments in sane situations
    return clearTimeout(marker);
  }
  // if clearTimeout wasn't
  available but was latter defined
  if ((cachedClearTimeout === defaultClearTimeout || !cachedClearTimeout) &&
clearTimeout) {
    cachedClearTimeout = clearTimeout;
    return clearTimeout(marker);
  }
  try {
    // when when somebody has screwed with setTimeout but no I.E. maddness
    return
cachedClearTimeout(marker);
  } catch (e){
    try {
      // When we are in I.E. but the script has been
      eveled so I.E. doesn't trust the global object when called normally
      return cachedClearTimeout.call(null,
marker);
    } catch (e){
      // same as above but when it's a version of I.E. that must have the global object
      for 'this', hopefully our context correct otherwise it will throw a global error.
      // Some versions of I.E. have
      different rules for clearTimeout vs setTimeout
      return cachedClearTimeout.call(this, marker);
    }
  }
}
var queue = [];
var draining = false;
var currentQueue;
var queueIndex = -1;
function
cleanUpNextTick() {
  if (!draining || !currentQueue) {
    return;
  }
  draining = false;
  if
(currentQueue.length) {
    queue = currentQueue.concat(queue);
  } else {
    queueIndex = -1;
  }
  if
(queue.length) {
    drainQueue();
  }
}
function drainQueue() {
  if (draining) {
    return;
  }
  var timeout = runTimeout(cleanUpNextTick);
  draining = true;
  var len = queue.length;
  while(len) {
    currentQueue = queue;
    queue = [];
    while (++queueIndex < len) {
      if (currentQueue) {
        currentQueue[queueIndex].run();
      }
    }
    queueIndex = -1;
    len = queue.length;
  }
  currentQueue = null;
  draining = false;
  runClearTimeout(timeout);
}
process.nextTick = function (fun)
{
  var args = new Array(arguments.length - 1);
  if (arguments.length > 1) {
    for (var i = 1; i <
arguments.length; i++) {
      args[i - 1] = arguments[i];
    }
  }
  queue.push(new Item(fun, args));
  if (queue.length === 1 && !draining) {
    runTimeout(drainQueue);
  }
};
// v8 likes predictable
objects
function Item(fun, array) {
  this.fun = fun;
  this.array = array;
}
Item.prototype.run = function ()
{
  this.fun.apply(null, this.array);
};
process.title = 'browser';
process.browser = true;
process.env =
{};
process.argv = [];
process.version = ''; // empty string to avoid regexp issues
process.versions =
{};
function noop() {}
process.on = noop;
process.addListener = noop;
process.once = noop;
process.off =
noop;
process.removeListener = noop;
process.removeAllListeners = noop;
process.emit =
noop;
process.prependListener = noop;
process.prependOnceListener = noop;
process.listeners = function
(name) {
  return []
}
process.binding = function (name) {
  throw new Error('process.binding is not
supported');
};
process.cwd = function () {
  return ''
};
process.chdir = function (dir) {
  throw new
Error('process.chdir is not supported');
};
process.umask = function() {
  return 0;
};
/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the
 * "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the
 * License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or
 * agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for
 * the specific language governing permissions and
 * limitations under the License.
 */
=====
*/
// Note that the identifier globalNameSpace is scoped to this module, but will
// always resolve to the same
global object regardless of how the module is
resolved.
tslint:disable-next-line:no-any
let globalNameSpace:
{[_tfGlobals: Map<string, any>];}
export function getGlobalNamespaces():
{[_tfGlobals: Map<string, any>]}
if (globalNameSpace == null) {
  // tslint:disable-next-line:no-any
  let ns:
any;
  if (typeof (window) !== 'undefined') {
    ns = window;
  } else if (typeof (global) !== 'undefined') {
    ns = global;
  } else if (typeof (process) !== 'undefined') {
    ns = process;
  } else if (typeof (self) !==

```



```

Pick<NamedTensorInfoMap, 'a'|'b'>;\n\nexport const Bincount = 'Bincount';\nexport type BincountInputs =
Pick<NamedTensorInfoMap, 'x'|'weights'>;\nexport interface BincountAttrs {\n  size: number;\n}\n\nexport const
BroadcastTo = 'BroadcastTo';\nexport type BroadcastToInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport
interface BroadCastToAttrs {\n  shape: number[];\n  inputShape: number[]; // for gradient\n}\n\nexport const Cast =
'Cast';\nexport type CastInputs = UnaryInputs;\nexport interface CastAttrs {\n  dtype: DataType;\n}\n\nexport const
Ceil = 'Ceil';\nexport type CeilInputs = UnaryInputs;\n\nexport const ClipByValue = 'ClipByValue';\nexport type
ClipByValueInputs = UnaryInputs;\nexport interface ClipByValueAttrs {\n  clipValueMin: number;\n  clipValueMax: number;\n}\n\nexport const Complex = 'Complex';\nexport type ComplexInputs =
Pick<NamedTensorInfoMap, 'real'|'imag'>;\n\nexport const ComplexAbs = 'ComplexAbs';\nexport type
ComplexAbsInputs = UnaryInputs;\n\nexport const Concat = 'Concat';\nexport type ConcatInputs =
TensorInfo[];\nexport interface ConcatAttrs {\n  axis: number;\n}\n\nexport const Conv2D = 'Conv2D';\nexport type
Conv2DInputs = Pick<NamedTensorInfoMap, 'x'|'filter'>;\nexport interface Conv2DAttrs {\n  strides: [number,
number]|number;\n  pad: 'valid'|'same'|number|ExplicitPadding;\n  dataFormat: 'NHWC'|'NCHW';\n  dilations:
[number, number]|number;\n  dimRoundingMode?: 'floor'|'round'|'ceil';\n}\n\nexport const Conv2DBackpropFilter =
'Conv2DBackpropFilter';\nexport type Conv2DBackpropFilterInputs = Pick<NamedTensorInfoMap,
'x'|'dy'>;\nexport interface Conv2DBackpropFilterAttrs {\n  strides: [number, number]|number;\n  pad:
'valid'|'same'|number|ExplicitPadding;\n  dataFormat: 'NHWC'|'NCHW';\n  dimRoundingMode?:
'floor'|'round'|'ceil';\n  filterShape: [number, number, number, number];\n}\n\nexport const Conv2DBackpropInput =
'Conv2DBackpropInput';\nexport type Conv2DBackpropInputInputs = Pick<NamedTensorInfoMap,
'dy'|'filter'>;\nexport interface Conv2DBackpropInputAttrs {\n  strides: [number, number]|number;\n  pad:
'valid'|'same'|number|ExplicitPadding;\n  dataFormat: 'NHWC'|'NCHW';\n  dimRoundingMode?:
'floor'|'round'|'ceil';\n  inputShape: [number, number, number, number];\n}\n\nexport const Conv3D =
'Conv3D';\nexport type Conv3DInputs = Pick<NamedTensorInfoMap, 'x'|'filter'>;\nexport interface Conv3DAttrs
{\n  strides: [number, number, number]|number;\n  pad: 'valid'|'same';\n  dataFormat: 'NDHWC'|'NCDHW';\n  dilations: [number, number, number]|number;\n}\n\nexport const Conv3DBackpropFilterV2 =
'Conv3DBackpropFilterV2';\nexport type Conv3DBackpropFilterV2Inputs = Pick<NamedTensorInfoMap,
'x'|'dy'>;\nexport interface Conv3DBackpropFilterV2Attrs {\n  strides: [number, number, number]|number;\n  pad:
'valid'|'same';\n  filterShape: [number, number, number, number, number];\n}\n\nexport const
Conv3DBackpropInputV2 = 'Conv3DBackpropInputV2';\nexport type Conv3DBackpropInputV2Inputs =\nPick<NamedTensorInfoMap, 'dy'|'filter'>;\nexport interface Conv3DBackpropInputV2Attrs {\n  strides: [number,
number, number]|number;\n  pad: 'valid'|'same';\n  inputShape: [number, number, number, number,
number];\n}\n\nexport const Cos = 'Cos';\nexport type CosInputs = UnaryInputs;\n\nexport const Cosh =
'Cosh';\nexport type CoshInputs = UnaryInputs;\n\nexport const Cumsum = 'Cumsum';\nexport type CumsumInputs
= Pick<NamedTensorInfoMap, 'x'>;\nexport interface CumsumAttrs {\n  axis: number;\n  exclusive: boolean;\n  reverse: boolean;\n}\n\nexport const CropAndResize = 'CropAndResize';\nexport type CropAndResizeInputs =\nPick<NamedTensorInfoMap, 'image'|'boxes'|'boxInd'>;\nexport interface CropAndResizeAttrs {\n  cropSize:
[number, number];\n  method: 'bilinear'|'nearest';\n  extrapolationValue: number;\n}\n\nexport const DenseBincount
= 'DenseBincount';\nexport type DenseBincountInputs = Pick<NamedTensorInfoMap, 'x'|'weights'>;\nexport
interface DenseBincountAttrs {\n  size: number;\n  binaryOutput?: boolean;\n}\n\nexport const DepthToSpace =
'DepthToSpace';\nexport type DepthToSpaceInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport interface
DepthToSpaceAttrs {\n  blockSize: number;\n  dataFormat: 'NHWC'|'NCHW';\n}\n\nexport const
DepthwiseConv2dNative = 'DepthwiseConv2dNative';\nexport type DepthwiseConv2dNativeInputs =\nPick<NamedTensorInfoMap, 'x'|'filter'>;\nexport interface DepthwiseConv2dNativeAttrs {\n  strides: [number,
number]|number;\n  pad: 'valid'|'same'|number;\n  dataFormat: 'NHWC'|'NCHW';\n  dilations: [number,
number]|number;\n  dimRoundingMode?: 'floor'|'round'|'ceil';\n}\n\nexport const
DepthwiseConv2dNativeBackpropFilter = 'DepthwiseConv2dNativeBackpropFilter';\nexport type
DepthwiseConv2dNativeBackpropFilterInputs =\nPick<NamedTensorInfoMap, 'x'|'dy'>;\nexport interface
DepthwiseConv2dNativeBackpropFilterAttrs {\n  strides: [number, number]|number;\n  dilations: [number,

```

```

number]]number;\n pad: 'valid'|'same'|number;\n dimRoundingMode?: 'floor'|'round'|'ceil';\n filterShape: [number,
number, number, number];\n}\n\n\nexport const DepthwiseConv2dNativeBackpropInput =\n'DepthwiseConv2dNativeBackpropInput';\nexport type DepthwiseConv2dNativeBackpropInputInputs =\nPick<NamedTensorInfoMap, 'dy'|'filter'>;\nexport interface DepthwiseConv2dNativeBackpropInputAttrs {\n
strides: [number, number]]number;\n dilations: [number, number]]number;\n pad: 'valid'|'same'|number;\n
dimRoundingMode?: 'floor'|'round'|'ceil';\n inputShape: [number, number, number, number];\n}\n\n\nexport const
Diag = 'Diag';\nexport type DiagInputs = Pick<NamedTensorInfoMap, 'x'>;\n\n\nexport const Dilation2D =
'Dilation2D';\nexport type Dilation2DInputs = Pick<NamedTensorInfoMap, 'x'|'filter'>;\nexport interface
Dilation2DAttrs {\n
strides: [number, number]]number;\n pad: 'valid'|'same'|number;\n dilations: [number,
number]]number;\n}\n\n\nexport const Dilation2DBackpropInput = 'Dilation2DBackpropInput';\nexport type
Dilation2DBackpropInputInputs =\n Pick<NamedTensorInfoMap, 'x'|'filter'|'dy'>;\n\n\nexport const
Dilation2DBackpropFilter = 'Dilation2DBackpropFilter';\nexport type Dilation2DBackpropFilterInputs =\n
Pick<NamedTensorInfoMap, 'x'|'filter'|'dy'>;\n\n\nexport const RealDiv = 'RealDiv';\nexport type RealDivInputs =
BinaryInputs;\n\n\nexport const Elu = 'Elu';\nexport type EluInputs = Pick<NamedTensorInfoMap, 'x'>;\n\n\nexport
const EluGrad = 'EluGrad';\nexport type EluGradInputs = Pick<NamedTensorInfoMap, 'dy'|'y'>;\n\n\nexport const Erf
= 'Erf';\nexport type ErfInputs = UnaryInputs;\n\n\nexport const Equal = 'Equal';\nexport type EqualInputs =
BinaryInputs;\n\n\nexport const Exp = 'Exp';\nexport type ExpInputs = UnaryInputs;\n\n\nexport const ExpandDims =
'ExpandDims';\nexport type ExpandDimsInputs = Pick<NamedTensorInfoMap, 'input'>;\nexport interface
ExpandDimsAttrs {\n
dim: number;\n}\n\n\nexport const Expm1 = 'Expm1';\nexport type Expm1Inputs =
UnaryInputs;\n\n\nexport const FFT = 'FFT';\nexport type FFTInputs = Pick<NamedTensorInfoMap,
'input'>;\n\n\nexport const Fill = 'Fill';\nexport interface FillAttrs {\n
shape: number[];\n value: number|string;\n
dtype: DataType;\n}\n\n\nexport const FlipLeftRight = 'FlipLeftRight';\nexport type FlipLeftRightInputs =
Pick<NamedTensorInfoMap, 'image'>;\n\n\nexport const Floor = 'Floor';\nexport type FloorInputs =
UnaryInputs;\n\n\nexport const FloorDiv = 'FloorDiv';\nexport type FloorDivInputs = BinaryInputs;\n\n\nexport const
FusedBatchNorm = 'FusedBatchNorm';\nexport type FusedBatchNormInputs =\n Pick<NamedTensorInfoMap,
'x'|'scale'|'offset'|'mean'|'variance'>;\nexport interface FusedBatchNormAttrs {\n
varianceEpsilon:
number;\n}\n\n\nexport const GatherV2 = 'GatherV2';\nexport type GatherV2Inputs = Pick<NamedTensorInfoMap,
'x'|'indices'>;\nexport interface GatherV2Attrs {\n
axis: number;\n batchDims: number;\n}\n\n\nexport const
GatherNd = 'GatherNd';\nexport type GatherNdInputs = Pick<NamedTensorInfoMap, 'params'|'indices'>;\n\n\nexport
const Greater = 'Greater';\nexport type GreaterInputs = BinaryInputs;\n\n\nexport const GreaterEqual =
'GreaterEqual';\nexport type GreaterEqualInputs = BinaryInputs;\n\n\nexport const Identity = 'Identity';\nexport type
IdentityInputs = Pick<NamedTensorInfoMap, 'x'>;\n\n\nexport const IFFT = 'IFFT';\nexport type IFFTInputs =
Pick<NamedTensorInfoMap, 'input'>;\n\n\nexport const Imag = 'Imag';\nexport type ImagInputs =
Pick<NamedTensorInfoMap, 'input'>;\n\n\nexport const IsFinite = 'IsFinite';\nexport type IsFiniteInputs =
UnaryInputs;\n\n\nexport const IsInf = 'IsInf';\nexport type IsInfInputs = UnaryInputs;\n\n\nexport const IsNan =
'IsNan';\nexport type IsNanInputs = UnaryInputs;\n\n\nexport const LeakyRelu = 'LeakyRelu';\nexport type
LeakyReluInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport interface LeakyReluAttrs {\n
alpha:
number;\n}\n\n\nexport const Less = 'Less';\nexport type LessInputs = BinaryInputs;\n\n\nexport const LessEqual =
'LessEqual';\nexport type LessEqualInputs = BinaryInputs;\n\n\nexport const LinSpace = 'LinSpace';\nexport interface
LinSpaceAttrs {\n
start: number;\n stop: number;\n num: number;\n}\n\n\nexport const Log = 'Log';\nexport type
LogInputs = UnaryInputs;\n\n\nexport const Log1p = 'Log1p';\nexport type Log1pInputs = UnaryInputs;\n\n\nexport
const LogicalAnd = 'LogicalAnd';\nexport type LogicalAndInputs = BinaryInputs;\n\n\nexport const LogicalNot =
'LogicalNot';\nexport type LogicalNotInputs = Pick<NamedTensorInfoMap, 'x'>;\n\n\nexport const LogicalOr =
'LogicalOr';\nexport type LogicalOrInputs = BinaryInputs;\n\n\nexport const LogSoftmax = 'LogSoftmax';\nexport
type LogSoftmaxInputs = Pick<NamedTensorInfoMap, 'logits'>;\nexport interface LogSoftmaxAttrs {\n
axis:
number;\n}\n\n\nexport const LRN = 'LRN';\nexport type LRNInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport
interface LRNAttrs {\n
depthRadius: number;\n bias: number;\n alpha: number;\n beta: number;\n}\n\n\nexport
const LRNGrad = 'LRNGrad';\nexport type LRNGradInputs = Pick<NamedTensorInfoMap, 'x'|'y'|'dy'>;\nexport

```

```

interface LRNGradAttrs {\n depthRadius: number;\n bias: number;\n alpha: number;\n beta:
number;\n}\n\nexport const Max = 'Max';\nexport type MaxInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport
interface MaxAttrs {\n reductionIndices: number|number[];\n keepDims: boolean;\n}\n\nexport const Maximum =
'Maximum';\nexport type MaximumInputs = BinaryInputs;\n\nexport const MaxPool = 'MaxPool';\nexport type
MaxPoolInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport interface MaxPoolAttrs {\n filterSize: [number,
number]|number;\n strides: [number, number]|number;\n pad: 'valid'|'same'|number;\n dimRoundingMode?:
'floor'|'round'|'ceil';\n}\n\nexport const MaxPoolGrad = 'MaxPoolGrad';\nexport type MaxPoolGradInputs =
Pick<NamedTensorInfoMap, 'dy'|'input'|'output'>;\nexport interface MaxPoolGradAttrs {\n filterSize: [number,
number]|number;\n strides: [number, number]|number;\n pad: 'valid'|'same'|number;\n dimRoundingMode?:
'floor'|'round'|'ceil';\n}\n\nexport const MaxPool3D = 'MaxPool3D';\nexport type MaxPool3DInputs =
Pick<NamedTensorInfoMap, 'x'>;\nexport interface MaxPool3DAttrs {\n filterSize: [number, number,
number]|number;\n strides: [number, number, number]|number;\n pad: 'valid'|'same'|number;\n dataFormat:
'NDHWC'|'NCDHW';\n dimRoundingMode?: 'floor'|'round'|'ceil';\n}\n\nexport const MaxPool3DGrad =
'MaxPool3DGrad';\nexport type MaxPool3DGradInputs =\n Pick<NamedTensorInfoMap,
'dy'|'input'|'output'>;\nexport interface MaxPool3DGradAttrs {\n filterSize: [number, number, number]|number;\n
strides: [number, number, number]|number;\n pad: 'valid'|'same'|number;\n dimRoundingMode?:
'floor'|'round'|'ceil';\n}\n\nexport const MaxPoolWithArgmax = 'MaxPoolWithArgmax';\nexport type
MaxPoolWithArgmaxInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport interface MaxPoolWithArgmaxAttrs {\n
filterSize: [number, number]|number;\n strides: [number, number]|number;\n pad: 'valid'|'same'|number;\n
includeBatchInIndex: boolean;\n}\n\nexport const Mean = 'Mean';\nexport type MeanInputs =
Pick<NamedTensorInfoMap, 'x'>;\nexport interface MeanAttrs {\n axis: number|number[];\n keepDims:
boolean;\n}\n\nexport const Min = 'Min';\nexport type MinInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport
interface MinAttrs {\n axis: number|number[];\n keepDims: boolean;\n}\n\nexport const Minimum =
'Minimum';\nexport type MinimumInputs = BinaryInputs;\n\nexport const MirrorPad = 'MirrorPad';\nexport type
MirrorPadInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport interface MirrorPadAttrs {\n paddings:
Array<[number, number]>;\n mode: 'reflect'|'symmetric';\n}\n\nexport const Mod = 'Mod';\nexport type ModInputs
= BinaryInputs;\n\nexport const Multinomial = 'Multinomial';\nexport type MultinomialInputs =
Pick<NamedTensorInfoMap, 'logits'>;\nexport interface MultinomialAttrs {\n numSamples: number;\n seed:
number;\n normalized: boolean;\n}\n\nexport const Multiply = 'Multiply';\nexport type MultiplyInputs =
BinaryInputs;\n\nexport const Neg = 'Neg';\nexport type NegInputs = UnaryInputs;\n\nexport const NotEqual =
'NotEqual';\nexport type NotEqualInputs = BinaryInputs;\n\nexport const NonMaxSuppressionV3 =
'NonMaxSuppressionV3';\nexport type NonMaxSuppressionV3Inputs =\n Pick<NamedTensorInfoMap,
'boxes'|'scores'>;\nexport interface NonMaxSuppressionV3Attrs {\n maxOutputSize: number;\n iouThreshold:
number;\n scoreThreshold: number;\n}\n\nexport const NonMaxSuppressionV4 =
'NonMaxSuppressionV4';\nexport type NonMaxSuppressionV4Inputs =\n Pick<NamedTensorInfoMap,
'boxes'|'scores'>;\nexport interface NonMaxSuppressionV4Attrs {\n maxOutputSize: number;\n iouThreshold:
number;\n scoreThreshold: number;\n padToMaxOutputSize: boolean;\n}\n\nexport const NonMaxSuppressionV5
= 'NonMaxSuppressionV5';\nexport type NonMaxSuppressionV5Inputs =\n Pick<NamedTensorInfoMap,
'boxes'|'scores'>;\nexport interface NonMaxSuppressionV5Attrs {\n maxOutputSize: number;\n iouThreshold:
number;\n scoreThreshold: number;\n softNmsSigma: number;\n}\n\nexport const OnesLike = 'OnesLike';\nexport
type OnesLikeInputs = UnaryInputs;\n\nexport const OneHot = 'OneHot';\nexport type OneHotInputs =
Pick<NamedTensorInfoMap, 'indices'>;\nexport interface OneHotAttrs {\n depth: number;\n onValue: number;\n
offValue: number;\n}\n\nexport const Pack = 'Pack';\nexport type PackInputs = TensorInfo[];\nexport interface
PackAttrs {\n axis: number;\n}\n\nexport const PadV2 = 'PadV2';\nexport type PadV2Inputs =
Pick<NamedTensorInfoMap, 'x'>;\nexport interface PadV2Attrs {\n paddings: Array<[number, number]>;\n
constantValue: number;\n}\n\nexport const Pool = 'Pool';\nexport type PoolInputs = Pick<NamedTensorInfoMap,
'input'>;\n\nexport const Pow = 'Pow';\nexport type PowInputs = BinaryInputs;\n\nexport const Prelu =
'Prelu';\nexport type PreluInputs = Pick<NamedTensorInfoMap, 'x'|'alpha'>;\n\nexport const Prod = 'Prod';\nexport

```

```

type ProdInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface ProdAttrs {\n axis: number|number[];\n
keepDims: boolean;\n}\n\nnextport const Range = 'Range';\nextport interface RangeAttrs {\n start: number;\n stop:
number;\n step: number;\n dtype: 'float32'|'int32';\n}\n\nnextport const Real = 'Real';\nextport type RealInputs =
Pick<NamedTensorInfoMap, 'input'>;\n\nnextport const Reciprocal = 'Reciprocal';\nextport type ReciprocalInputs =
UnaryInputs;\n\nnextport const Relu = 'Relu';\nextport type ReluInputs = Pick<NamedTensorInfoMap, 'x'>;\n\nnextport
const Reshape = 'Reshape';\nextport type ReshapeInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface
ReshapeAttrs {\n shape: number[];\n}\n\nnextport const ResizeNearestNeighbor = 'ResizeNearestNeighbor';\nextport
type ResizeNearestNeighborInputs = Pick<NamedTensorInfoMap, 'images'>;\nextport interface
ResizeNearestNeighborAttrs {\n alignCorners: boolean;\n halfPixelCenters: boolean;\n size: [number,
number];\n}\n\nnextport const ResizeNearestNeighborGrad = 'ResizeNearestNeighborGrad';\nextport type
ResizeNearestNeighborGradInputs =\n Pick<NamedTensorInfoMap, 'images'|'dy'>;\nextport type
ResizeNearestNeighborGradAttrs = ResizeNearestNeighborAttrs;\n\nnextport const ResizeBilinear =
'ResizeBilinear';\nextport type ResizeBilinearInputs = Pick<NamedTensorInfoMap, 'images'>;\nextport interface
ResizeBilinearAttrs {\n alignCorners: boolean;\n halfPixelCenters: boolean;\n size: [number,
number];\n}\n\nnextport const ResizeBilinearGrad = 'ResizeBilinearGrad';\nextport type ResizeBilinearGradInputs =
Pick<NamedTensorInfoMap, 'images'|'dy'>;\nextport type ResizeBilinearGradAttrs = ResizeBilinearAttrs;\n\nnextport
const Relu6 = 'Relu6';\nextport type Relu6Inputs = Pick<NamedTensorInfoMap, 'x'>;\n\nnextport const Reverse =
'Reverse';\nextport type ReverseInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface ReverseAttrs {\n dims:
number|number[];\n}\n\nnextport const Round = 'Round';\nextport type RoundInputs = UnaryInputs;\n\nnextport const
Rsqrt = 'Rsqrt';\nextport type RsqrtInputs = UnaryInputs;\n\nnextport const ScatterNd = 'ScatterNd';\nextport type
ScatterNdInputs = Pick<NamedTensorInfoMap, 'indices'|'updates'>;\nextport interface ScatterNdAttrs {\n shape:
number[];\n}\n\nnextport const Select = 'Select';\nextport type SelectInputs = Pick<NamedTensorInfoMap,
'condition'|'t'|'e'>;\n\nnextport const Selu = 'Selu';\nextport type SeluInputs = Pick<NamedTensorInfoMap,
'x'>;\n\nnextport const Slice = 'Slice';\nextport type SliceInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface
SliceAttrs {\n begin: number|number[];\n size: number|number[];\n}\n\nnextport const Sin = 'Sin';\nextport type
SinInputs = UnaryInputs;\n\nnextport const Sinh = 'Sinh';\nextport type SinhInputs = UnaryInputs;\n\nnextport const
Sign = 'Sign';\nextport type SignInputs = UnaryInputs;\n\nnextport const Sigmoid = 'Sigmoid';\nextport type
SigmoidInputs = UnaryInputs;\n\nnextport const Softplus = 'Softplus';\nextport type SoftplusInputs =
UnaryInputs;\n\nnextport const Sqrt = 'Sqrt';\nextport type SqrtInputs = UnaryInputs;\n\nnextport const Sum =
'Sum';\nextport type SumInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface SumAttrs {\n axis:
number|number[];\n keepDims: boolean;\n}\n\nnextport const SpaceToBatchND = 'SpaceToBatchND';\nextport type
SpaceToBatchNDInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface SpaceToBatchNDAttrs {\n
blockShape: number[];\n paddings: number[][];\n}\n\nnextport const SplitV = 'SplitV';\nextport type SplitVInputs =
Pick<NamedTensorInfoMap, 'x'>;\nextport interface SplitVAttrs {\n numOrSizeSplits: number[]|number;\n axis:
number;\n}\n\nnextport const Softmax = 'Softmax';\nextport type SoftmaxInputs = Pick<NamedTensorInfoMap,
'logits'>;\nextport interface SoftmaxAttrs {\n dim: number;\n}\n\nnextport const SquaredDifference =
'SquaredDifference';\nextport type SquaredDifferenceInputs = BinaryInputs;\n\nnextport const Square =
'Square';\nextport type SquareInputs = Pick<NamedTensorInfoMap, 'x'>;\n\nnextport const Sub = 'Sub';\nextport type
SubInputs = BinaryInputs;\n\nnextport const SparseToDense = 'SparseToDense';\nextport type SparseToDenseInputs
=\n Pick<NamedTensorInfoMap, 'sparseIndices'|'sparseValues'|'defaultValue'>;\nextport interface
SparseToDenseAttrs {\n outputShape: number[];\n}\n\nnextport const StridedSlice = 'StridedSlice';\nextport type
StridedSliceInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface StridedSliceAttrs {\n begin: number[];\n
end: number[];\n strides: number[];\n beginMask: number;\n endMask: number;\n ellipsisMask: number;\n
newAxisMask: number;\n shrinkAxisMask: number;\n}\n\nnextport const Tan = 'Tan';\nextport type TanInputs =
UnaryInputs;\n\nnextport const Tanh = 'Tanh';\nextport type TanhInputs = UnaryInputs;\n\nnextport const Tile =
'Tile';\nextport type TileInputs = Pick<NamedTensorInfoMap, 'x'>;\nextport interface TileAttrs {\n reps:
number[];\n}\n\nnextport const TopK = 'TopK';\nextport type TopKInputs = Pick<NamedTensorInfoMap,
'x'>;\nextport interface TopKAttrs {\n k: number;\n sorted: boolean;\n}\n\nnextport const Transpose =

```

```

'Transpose';\nexport type TransposeInputs = Pick<NamedTensorInfoMap, 'x'>;\nexport interface TransposeAttrs {\n
perm: number[];\n}\n\nexport const Unique = 'Unique';\nexport type UniqueInputs = Pick<NamedTensorInfoMap,
'x'>;\nexport interface UniqueAttrs {\n axis: number;\n}\n\nexport type UnaryInputs =
Pick<NamedTensorInfoMap, 'x'>;\nexport const Unpack = 'Unpack';\nexport type UnpackInputs =
Pick<NamedTensorInfoMap, 'value'>;\nexport interface UnpackAttrs {\n axis: number;\n}\n\nexport const
UnsortedSegmentSum = 'UnsortedSegmentSum';\nexport type UnsortedSegmentSumInputs =\n
Pick<NamedTensorInfoMap, 'x'|'segmentIds'>;\nexport interface UnsortedSegmentSumAttrs {\n numSegments:
number;\n}\n\nexport const ZerosLike = 'ZerosLike';\nexport type ZerosLikeInputs = UnaryInputs;\n\n/**\n *
TensorFlow.js-only kernels\n */\nexport const Step = 'Step';\nexport type StepInputs = UnaryInputs;\nexport
interface StepAttrs {\n alpha: number;\n}\n\nexport const FromPixels = 'FromPixels';\nexport interface
FromPixelsInputs {\n pixels: PixelData|ImageData|HTMLImageElement|HTMLCanvasElement|\n
HTMLVideoElement|ImageBitmap;\n}\n\nexport interface FromPixelsAttrs {\n numChannels: number;\n}\n\nexport
const RotateWithOffset = 'RotateWithOffset';\nexport type RotateWithOffsetInputs = Pick<NamedTensorInfoMap,
'image'>;\nexport interface RotateWithOffsetAttrs {\n radians: number;\n fillValue: number|[number, number,
number];\n center: number|[number, number];\n}\n\nexport const _FusedMatMul = '_FusedMatMul';\n//
tslint:disable-next-line: class-name\nexport interface _FusedMatMulInputs extends NamedTensorInfoMap {\n a:
TensorInfo;\n b: TensorInfo;\n bias?: TensorInfo;\n preluActivationWeights?: TensorInfo;\n}\n// tslint:disable-
next-line: class-name\nexport interface _FusedMatMulAttrs {\n transposeA: boolean;\n transposeB: boolean;\n
activation: Activation;\n leakyreluAlpha?: number;\n}\n\nexport const FusedConv2D = 'FusedConv2D';\nexport
interface FusedConv2DInputs extends NamedTensorInfoMap {\n x: TensorInfo;\n filter: TensorInfo;\n bias?:
TensorInfo;\n preluActivationWeights?: TensorInfo;\n}\n\nexport interface FusedConv2DAttrs {\n strides: [number,
number]|[number;\n pad: 'valid'|'same'|number|ExplicitPadding;\n dataFormat: 'NHWC'|'NCHW';\n dilations:
[number, number]|number;\n dimRoundingMode: 'floor'|'round'|'ceil';\n activation: Activation;\n leakyreluAlpha?:
number;\n}\n\nexport const FusedDepthwiseConv2D = 'FusedDepthwiseConv2D';\nexport interface
FusedDepthwiseConv2DInputs extends NamedTensorInfoMap {\n x: TensorInfo;\n filter: TensorInfo;\n bias?:
TensorInfo;\n preluActivationWeights?: TensorInfo;\n}\n\nexport interface FusedDepthwiseConv2DAttrs {\n
strides: [number, number]|number;\n pad: 'valid'|'same'|number;\n dataFormat: 'NHWC'|'NCHW';\n dilations:
[number, number]|number;\n dimRoundingMode: 'floor'|'round'|'ceil';\n activation: Activation;\n leakyreluAlpha?:
number;\n}\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\nimport {env} from './environment';\nimport {getGlobal} from './global_util';\nimport {NamedGradientMap}
from './tape';\nimport {Tensor} from './tensor';\nimport {DataType, RecursiveArray} from './types';\n\nconst
kernelRegistry =\n  getGlobal('kernelRegistry', () => new Map<string, KernelConfig>());\nconst gradRegistry =\n  getGlobal('gradRegistry', () => new Map<string, GradConfig>());\n\nexport type DataId = object;\n\nntype
AttributeValue =\n  number|number[]|boolean|boolean[]|string|string[]|NamedAttrMap;\n\n/** These are extra non-
tensor/primitive params passed to kernel functions. */\nexport type Attribute =
AttributeValue|RecursiveArray<AttributeValue>;\n\n/** Specifies the code to run when executing a kernel.
*/\nexport type KernelFunc = (params: {\n inputs: NamedTensorInfoMap,\n backend: {},\n attrs?:
NamedAttrMap,\n}) => TensorInfo|TensorInfo[];\n\n/** The function to run when computing a gradient during
backprop. */\nexport type GradFunc =\n  (dy: Tensor|Tensor[], saved: Tensor[], attrs: NamedAttrMap) =>\n
NamedGradientMap;\n\n/** Function that gets called after the backend initializes. */\nexport type KernelSetupFunc
= (backend: {}) => void;\n\n/** Function that gets called right before the backend is disposed. */\nexport type

```

```

KernelDisposeFunc = KernelSetupFunc;\n\n/** Config object for registering a kernel in the global registry.
*\nexport interface KernelConfig {\n  kernelName: string;\n  backendName: string;\n  kernelFunc: KernelFunc;\n  setupFunc?: KernelSetupFunc;\n  disposeFunc?: KernelDisposeFunc;\n}\n\n/** Config object for registering a
gradient in the global registry. *\nexport interface GradConfig {\n  kernelName: string;\n  inputsToSave?:
string[];\n  // When saveAllInputs is true, all inputs will be saved. Only use this flag\n  // if inputs is an array of
Tensors.\n  saveAllInputs?: boolean;\n  outputsToSave?: boolean[];\n  gradFunc: GradFunc;\n}\n\n/** Holds
metadata for a given tensor. *\nexport interface TensorInfo {\n  dataId: DataId;\n  shape: number[];\n  dtype:
DataType;\n}\n\nexport interface NamedTensorInfoMap {\n  [name: string]: TensorInfo;\n}\n\nexport interface
NamedAttrMap {\n  [name: string]: Attribute;\n}\n\n/**\n * Returns the kernel function (code) associated with the
provided names.\n * @param kernelName The official name of the kernel.\n * @param backendName The
official name of the backend.\n *\nexport function getKernel(\n  kernelName: string, backendName: string):
KernelConfig {\n  const key = makeKey(kernelName, backendName);\n  return kernelRegistry.get(key);\n}\n\n/**\n * Returns the registered gradient info associated with the provided kernel.\n * @param kernelName The official TF
kernel name.\n *\nexport function getGradient(kernelName: string): GradConfig {\n  return
gradRegistry.get(kernelName);\n}\n\nexport function getKernelsForBackend(backendName: string): KernelConfig[]
{\n  const it = kernelRegistry.entries();\n  const result: KernelConfig[] = [];\n\n  while (true) {\n    const {done,
value} = it.next();\n    if (done) {\n      break;\n    }\n    const [key, config] = value;\n    const [backend, ] =
key.split('_');\n    if (backend === backendName) {\n      result.push(config);\n    }\n  }\n  return result;\n}\n\n/**\n * Registers the function (forward pass) for the kernel in a global registry.\n * @param config A config object with
the following properties:\n * - `kernelName` The official name of the kernel.\n * - `backendName` The official
name of the backend.\n * - `kernelFunc` The function to run during the forward pass of the kernel.\n * - `setupFunc`
Optional. Gets called once, after the backend initializes.\n * - `disposeFunc` Optional. Gets called once, right before
the backend is\n * disposed.\n *\nexport function registerKernel(config: KernelConfig) {\n  const {kernelName,
backendName} = config;\n  const key = makeKey(kernelName, backendName);\n  if (kernelRegistry.has(key)) {\n
console.warn(\n    `The kernel '${kernelName}' for backend ` +\n    ` '${backendName}' is already
registered`);\n  }\n  kernelRegistry.set(key, config);\n}\n\n/**\n * Registers a gradient function for a given kernel in
the global registry,\n * to be used during the back-propagation of that kernel.\n * @param config An object with
the following properties:\n * - `kernelName` The name of the kernel that the gradient function is for.\n * -
`gradFunc` The function to run during back-propagation.\n *\nexport function registerGradient(config: GradConfig)
{\n  const {kernelName} = config;\n\n  if (gradRegistry.has(kernelName)) {\n    // TODO (yassogba) after 3.0 assess
whether we need to keep this gated\n    // to debug mode.\n    if (env().getBool('DEBUG')) {\n
console.warn(`Overriding the gradient for '${kernelName}'`);\n    }\n  }\n  gradRegistry.set(kernelName,
config);\n}\n\n/**\n * Removes the kernel function from the registry.\n * @param kernelName The official
name of the kernel.\n * @param backendName The official name of the backend.\n *\nexport function
unregisterKernel(\n  kernelName: string, backendName: string): void {\n  const key = makeKey(kernelName,
backendName);\n  if (!kernelRegistry.has(key)) {\n    throw new Error(\n      `The kernel '${kernelName}' for
backend ` +\n      ` '${backendName}' is not registered`);\n  }\n  kernelRegistry.delete(key);\n}\n\n/** Removes the
registered gradient from the global registry. *\nexport function unregisterGradient(kernelName: string): void {\n
if (!gradRegistry.has(kernelName)) {\n  throw new Error(\n    `The gradient '${kernelName}' for backend is not
registered`);\n  }\n  gradRegistry.delete(kernelName);\n}\n\n/**\n * Finds kernels that have already been registered
to a backend and re-registers\n * them for a new backend. Useful for registering custom backends.\n * @param
registeredBackendName Already registered backend.\n * @param newBackendName New backend.\n *\nexport
function copyRegisteredKernels(\n  registeredBackendName: string, newBackendName: string): void {\n  const
kernels = getKernelsForBackend(registeredBackendName);\n  kernels.forEach(kernelConfig => {\n    const
newKernelConfig =\n      Object.assign({}, kernelConfig, {backendName: newBackendName});\n    registerKernel(newKernelConfig);\n  });\n}\n\nfunction makeKey(kernelName: string, backendName: string) {\n
return `${backendName}_${kernelName}`;\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file

```


except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {env} from './environment';\nimport {BackendValues, DataType, TensorLike, TypedArray} from './types';\nimport * as base from './util_base';\nexport * from './util_base';\n\n/**\n * Create typed array for scalar value. Used for storing in `DataStorage`.\n *\n * @param value\n * @param dtype\n * @returns BackendValues\n *\n * @example\n * createScalarValue('string', 'string')\n * createScalarValue(1, 'float32')\n * createScalarValue(1, 'int32')\n * createScalarValue(true, 'bool')\n *\n * @throws Error\n *\n * @doc {heading: 'Util', namespace: 'util'}\n */\nexport function createScalarValue(value: DataType, dtype: DataType): BackendValues {\n  if (dtype === 'string') {\n    return encodeString(value);\n  }\n  return toTypedArray([value], dtype);\n}\n\nfunction noConversionNeeded(a: TensorLike, dtype: DataType): boolean {\n  return (a instanceof Float32Array && dtype === 'float32') ||\n    (a instanceof Int32Array && dtype === 'int32') ||\n    (a instanceof Uint8Array && dtype === 'bool');\n}\n\nexport function toTypedArray(a: TensorLike, dtype: DataType): TypedArray {\n  if (dtype === 'string') {\n    throw new Error('Cannot convert a string[] to a TypedArray');\n  }\n  if (Array.isArray(a)) {\n    a = base.flatten(a);\n  }\n  if (env().getBool('DEBUG')) {\n    base.checkConversionForErrors(a as number[], dtype);\n  }\n  if (noConversionNeeded(a, dtype)) {\n    return a as TypedArray;\n  }\n  if (dtype === null || dtype === 'float32' || dtype === 'complex64') {\n    return new Float32Array(a as number[]);\n  }\n  else if (dtype === 'int32') {\n    return new Int32Array(a as number[]);\n  }\n  else if (dtype === 'bool') {\n    const bool = new Uint8Array((a as number[]).length);\n    for (let i = 0; i < bool.length; ++i) {\n      if (Math.round((a as number[])[i]) !== 0) {\n        bool[i] = 1;\n      }\n    }\n    return bool;\n  }\n  else {\n    throw new Error(`Unknown data type ${dtype}`);\n  }\n}\n\n/**\n * Returns the current high-resolution time in milliseconds relative to an\n * arbitrary time in the past. It works across different platforms (node.js,\n * browsers).\n *\n * @example\n * console.log(tf.util.now());\n *\n * @doc {heading: 'Util', namespace: 'util'}\n */\nexport function now(): number {\n  return env().platform.now();\n}\n\n/**\n * Returns a platform-specific implementation of\n * `fetch` (https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API).\n * If `fetch` is defined on the global object (`window`, `process`, etc.),\n * `tf.util.fetch` returns that function.\n * If not, `tf.util.fetch` returns a platform-specific solution.\n *\n * @example\n * const resource = await\n * tf.util.fetch('https://unpkg.com/@tensorflow/tfjs');\n * // handle response\n *\n * @doc {heading: 'Util'}\n */\nexport function fetch(path: string, requestInits?: RequestInit): Promise<Response> {\n  return env().platform.fetch(path, requestInits);\n}\n\n/**\n * Encodes the provided string into bytes using the provided encoding scheme.\n * @param s The string to encode.\n * @param encoding The encoding scheme. Defaults to utf-8.\n *\n * @doc {heading: 'Util'}\n */\nexport function encodeString(s: string, encoding = 'utf-8'): Uint8Array {\n  encoding = encoding || 'utf-8';\n  return env().platform.encode(s, encoding);\n}\n\n/**\n * Decodes the provided bytes into a string using the provided encoding scheme.\n * @param bytes The bytes to decode.\n * @param encoding The encoding scheme. Defaults to utf-8.\n *\n * @doc {heading: 'Util'}\n */\nexport function decodeString(bytes: Uint8Array, encoding = 'utf-8'): string {\n  encoding = encoding || 'utf-8';\n  return env().platform.decode(bytes, encoding);\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport {BackendTimer, BackendTimingInfo} from './backends/backend';\nimport {env} from './environment';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {DataType, DataTypeMap, TypedArray} from './types';\nimport * as util from './util';\nexport type KernelProfile = {\n  kernelName: string,\n  outputs: Tensor[],\n  inputs: NamedTensorMap,\n  timeMs: Promise<number> | {error:
```

```

string}>,\n  extraInfo: Promise<string>)\n};\n\nexport class Profiler {\n  constructor(private backendTimer: BackendTimer, private logger?: Logger) {\n    if (logger == null) {\n      this.logger = new Logger();\n    }\n  }\n\n  profileKernel(kernelName: string, inputs: NamedTensorMap, f: () => Tensor[]):\n    KernelProfile {\n      let outputs: Tensor[];\n      const holdResultWrapperFn = () => {\n        outputs = f();\n      };\n      let timer: Promise<BackendTimingInfo>;\n      const start = util.now();\n      if (this.backendTimer.timerAvailable()) {\n        timer = this.backendTimer.time(holdResultWrapperFn);\n      } else {\n        holdResultWrapperFn();\n      }\n      outputs.map(output => output.dataSync());\n      timer = Promise.resolve({kernelMs: util.now() - start});\n    }\n    if (env().getBool('CHECK_COMPUTATION_FOR_ERRORS')) {\n      for (let i = 0; i < outputs.length; i++) {\n        const output = outputs[i];\n        // Dangling promise here because we don't want to propagate up\n        // asynchronicity.\n        output.data().then(tensorVals => {\n          checkComputationForErrors(tensorVals, output.dtype, kernelName);\n        });\n      }\n    }\n    const kernelProfile = {\n      kernelName,\n      outputs,\n      inputs,\n      timeMs: timer.then(timing => timing.kernelMs),\n      extraInfo: timer.then(\n        timing => timing.getExtraProfileInfo != null ?\n          timing.getExtraProfileInfo() :\n          "")\n    };\n    return kernelProfile;\n  }\n\n  logKernelProfile(kernelProfile: KernelProfile): void {\n    const {kernelName, outputs, timeMs, inputs, extraInfo} = kernelProfile;\n    outputs.forEach(result => {\n      Promise.all([result.data(), timeMs, extraInfo]).then(valueContainer => {\n        this.logger.logKernelProfile(\n          kernelName, result, valueContainer[0], valueContainer[1], inputs,\n          valueContainer[2]);\n      });\n    });\n  }\n\n  export function checkComputationForErrors<D extends DataType>(\n    vals: DataTypeMap[D], dtype: D, kernelName: string): boolean {\n    if (dtype !== 'float32') {\n      // Only floating point computations will generate NaN values\n      return false;\n    }\n    for (let i = 0; i < vals.length; i++) {\n      const num = vals[i] as number;\n      if (isNaN(num) || !isFinite(num)) {\n        // Throwing custom exception so behavior is testable.\n        console.warn(`Found ${num} in the result of '${kernelName}'`);\n        return true;\n      }\n    }\n    return false;\n  }\n\n  export class Logger {\n    logKernelProfile(\n      name: string, result: Tensor, vals: TypedArray,\n      timeMs: number|{error: string}, inputs: NamedTensorMap,\n      extraInfo?: string) {\n      const time = typeof timeMs === 'number' ?\n        util.rightPad(`${timeMs}ms`, 9) :\n        timeMs['error'];\n      const paddedName =\n        util.rightPad(name, 25);\n      const rank = result.rank;\n      const size = result.size;\n      const shape =\n        util.rightPad(result.shape.toString(), 14);\n      let inputShapesDescription = "";\n      for (const name in inputs) {\n        const input = inputs[name];\n        if (input != null) {\n          // The input might be a non-tensor (e.g HTMLImageElement), in which case\n          // we claim the output shape as input shape.\n          const inputShape = input.shape || result.shape;\n          const inputRank = inputShape.length;\n          inputShapesDescription +=\n            `${name}: ${inputRank}D ${inputRank > 0 ? inputShape : ""}`;\n        }\n      }\n      console.log(\n        `%c${paddedName} \\t%c${time} \\t%c${rank}D ${shape} \\t%c${size} \\t%c${\n          inputShapesDescription} \\t%c${extraInfo}`,\n        'font-weight:bold', 'color:red', 'color:blue', 'color: orange',\n        'color: green', 'color: steelblue');\n    }\n  }\n\n  /**\n   * @license\n   * Copyright 2017 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing, software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   */\n  =====\n\n  *^*\n  import {Tensor} from './tensor';\n  import {NamedTensorMap} from './tensor_types';\n  import * as util from './util';\n\n  export interface TapeNode {\n    id: number;\n    kernelName: string;\n    outputs: Tensor[];\n    inputs: NamedTensorMap;\n    // Optional params, defined only for ops with gradient impl.\n    gradient?: (dys: Tensor[]) => NamedGradientMap;\n    saved?: Tensor[];\n  }\n\n  export type NamedGradientMap = {\n    [inputName: string]: () => Tensor;\n  };\n\n  /**\n   * Computes a list of TapeNodes that connect x to y, filtering everything else\n   * out and preserving the order of the original tape elements.\n   * @param x The input Tensors.\n   * @param y The output Tensor.\n   *^*\n  export function getFilteredNodesXToY(\n    tape:

```

```

TapeNode[], xs: Tensor[], y: Tensor): TapeNode[] {\n // Forward pass to compute all the nodes and Tensors that are
transitively a\n // function of x.\n const tensorsFromX: {[tensorId: number]: boolean} = {};\n const nodesFromX:
{[nodeId: number]: boolean} = {};\n for (let i = 0; i < xs.length; i++) {\n tensorsFromX[xs[i].id] = true;\n }\n\n for (let i = 0; i < tape.length; i++) {\n const node = tape[i];\n const nodeInputs = node.inputs;\n for (const
inputName in nodeInputs) {\n const input = nodeInputs[inputName];\n let anyInputFromX = false;\n for
(let j = 0; j < xs.length; j++) {\n if (tensorsFromX[input.id]) {\n node.outputs.forEach(output =>
tensorsFromX[output.id] = true);\n anyInputFromX = true;\n nodesFromX[node.id] = true;\n
break;\n }\n }\n\n if (anyInputFromX) {\n break;\n }\n }\n\n // Backward pass to find all of
the nodes and Tensors that lead to y.\n const tensorsLeadToY: {[tensorId: number]: boolean} = {};\n
tensorsLeadToY[y.id] = true;\n const nodesToY: {[nodeId: number]: boolean} = {};\n\n for (let i = tape.length - 1;
i >= 0; i--) {\n const node = tape[i];\n const nodeInputs = node.inputs;\n\n // If any of the outputs lead to y,
mark all of the inputs as leading to y.\n for (let j = 0; j < node.outputs.length; j++) {\n if
(tensorsLeadToY[node.outputs[j].id]) {\n for (const inputName in nodeInputs) {\n
tensorsLeadToY[nodeInputs[inputName].id] = true;\n nodesToY[node.id] = true;\n }\n break;\n
}\n }\n\n // Return the paths that come from x and lead to y.\n const filteredTape: TapeNode[] = [];\n for (let
i = 0; i < tape.length; i++) {\n const node = tape[i];\n\n if (nodesFromX[node.id] && nodesToY[node.id]) {\n
// Prune the inputs from the node that aren't a function of x.\n const prunedInputs: {[inputName: string]: Tensor}
= {};\n for (const inputName in node.inputs) {\n const nodeInput = node.inputs[inputName];\n if
(tensorsFromX[nodeInput.id]) {\n prunedInputs[inputName] = nodeInput;\n }\n }\n\n // Copy the
node and overwrite inputsAndArgs to the pruned version.\n const prunedNode = Object.assign({}, node);\n
prunedNode.inputs = prunedInputs;\n prunedNode.outputs = node.outputs;\n\n filteredTape.push(prunedNode);\n }\n }\n\n return filteredTape;\n }\n\n/**\n * Backpropagate gradients through
the filtered TapeNodes.\n * @param tensorAccumulatedGradientMap A map of Tensor to its gradient. This
map\n * is mutated by this method.\n * @param filteredTape The filtered TapeNodes to backprop through.\n
*/\nexport function backpropagateGradients(\n tensorAccumulatedGradientMap: {[tensorId: number]: Tensor},\n
filteredTape: TapeNode[], tidy: (f: Function) => Tensor,\n add: (a: Tensor, b: Tensor) => Tensor) {\n // Walk the
tape backward and keep a map of Tensor to its gradient.\n for (let i = filteredTape.length - 1; i >= 0; i--) {\n const
node = filteredTape[i];\n\n const dys: Tensor[] = [];\n node.outputs.forEach(o => {\n const gradTensor =
tensorAccumulatedGradientMap[o.id];\n if (gradTensor !== null) {\n dys.push(gradTensor);\n } else {\n
// This particular output is not in the back-propagation subgraph, so it\n // does not affect the final output, thus
we put null for its dy.\n dys.push(null);\n }\n });\n\n if (node.gradient === null) {\n throw new Error(\n
`Cannot compute gradient: gradient function not found` +\n `for ${node.kernelName}.`);\n }\n\n //
Backprop dy through this node and accumulate gradients over the inputs.\n const inputGradients =
node.gradient(dys);\n\n for (const inputName in node.inputs) {\n if (!(inputName in inputGradients)) {\n
throw new Error(\n `Cannot backprop through input ${inputName}.` +\n `Available gradients found:
${Object.keys(inputGradients)}.`);\n }\n\n // Call the gradient function.\n const dx = tidy(() =>
inputGradients[inputName]());\n if (dx.dtype !== 'float32') {\n throw new Error(\n `Error in gradient
for op ${\n node.kernelName}. The gradient of input ` +\n ` ${inputName} must have 'float32'
dtype, but has '${dx.dtype}'`);\n }\n\n const x = node.inputs[inputName];\n if (!util.arraysEqual(dx.shape,
x.shape)) {\n throw new Error(\n `Error in gradient for op ${\n node.kernelName}. The gradient
of input ` +\n ` '${inputName}' has shape '${dx.shape}', which does not match ` +\n ` the shape of the
input '${x.shape}'`);\n }\n\n if (tensorAccumulatedGradientMap[x.id] === null) {\n
tensorAccumulatedGradientMap[x.id] = dx;\n } else {\n const curGradient =
tensorAccumulatedGradientMap[x.id];\n tensorAccumulatedGradientMap[x.id] = add(curGradient, dx);\n
curGradient.dispose();\n }\n }\n }\n }\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {DataType, TypedArray} from './types';\nimport {computeStrides, isString, rightPad, sizeFromShape} from './util';\n\n// Maximum number of values before we decide to show ellipsis.\nconst\nFORMAT_LIMIT_NUM_VALS = 20;\n// Number of first and last values to show when displaying a, b,...,y, z.\nconst\nFORMAT_NUM_FIRST_LAST_VALS = 3;\n// Number of significant digits to show.\nconst\nFORMAT_NUM_SIG_DIGITS = 7;\n\nexport function tensorToString(\n  vals: TypedArray|string[], shape: number[], dtype: DataType,\n  verbose: boolean) {\n  const strides = computeStrides(shape);\n  const padPerCol = computeMaxSizePerColumn(vals, shape, dtype, strides);\n  const rank = shape.length;\n  const valsLines = subTensorToString(vals, shape, dtype, strides, padPerCol);\n  const lines = ['Tensor'];\n  if (verbose) {\n    lines.push(` dtype: ${dtype}`);\n    lines.push(` rank: ${rank}`);\n    lines.push(` shape: [${shape}]`);\n    lines.push(` values:`);\n  }\n  lines.push(valsLines.map(l => ' ' + l).join('\\n'));\n  return lines.join('\\n');\n}\n\nfunction computeMaxSizePerColumn(\n  vals: TypedArray|string[], shape: number[], dtype: DataType,\n  strides: number[]): number[] {\n  const n = sizeFromShape(shape);\n  const numCols = strides[strides.length - 1];\n  const padPerCol = new Array(numCols).fill(0);\n  const rank = shape.length;\n  const valuesOrTuples =\n    dtype === 'complex64' ? createComplexTuples(vals) : vals;\n  if (rank > 1) {\n    for (let row = 0; row < n / numCols; row++) {\n      const offset = row * numCols;\n      for (let j = 0; j < numCols; j++) {\n        padPerCol[j] = Math.max(\n          padPerCol[j],\n          valToString(valuesOrTuples[offset + j], 0, dtype).length);\n      }\n    }\n  }\n  return padPerCol;\n}\n\nfunction valToString(\n  val: number|string|[number, number], pad: number, dtype: DataType) {\n  let valStr: string;\n  if (Array.isArray(val)) {\n    valStr = `${parseFloat(val[0].toFixed(FORMAT_NUM_SIG_DIGITS))} + ` +\n      `${parseFloat(val[1].toFixed(FORMAT_NUM_SIG_DIGITS))}j`;\n  } else if (isString(val)) {\n    valStr = `${val}`;\n  } else if (dtype === 'bool') {\n    valStr = boolNumToString(val);\n  } else {\n    valStr = parseFloat(val.toFixed(FORMAT_NUM_SIG_DIGITS)).toString();\n  }\n  return rightPad(valStr, pad);\n}\n\nfunction boolNumToString(v: number): string {\n  return v === 0 ? 'false' : 'true';\n}\n\nfunction subTensorToString(\n  vals: TypedArray|string[], shape: number[], dtype: DataType,\n  strides: number[], padPerCol: number[], isLast = true): string[] {\n  const storagePerElement = dtype === 'complex64' ? 2 : 1;\n  const size = shape[0];\n  const rank = shape.length;\n  if (rank === 0) {\n    if (dtype === 'complex64') {\n      const complexTuple = createComplexTuples(vals);\n      return [valToString(complexTuple[0], 0, dtype)];\n    }\n    if (dtype === 'bool') {\n      return [boolNumToString(vals[0] as number)];\n    }\n    return [vals[0].toString()];\n  }\n  if (rank === 1) {\n    if (size > FORMAT_LIMIT_NUM_VALS) {\n      const firstValsSize =\n        FORMAT_NUM_FIRST_LAST_VALS * storagePerElement;\n      let firstVals =\n        Array.from<number|string|[number, number]>(\n          vals.slice(0, firstValsSize));\n      let lastVals =\n        Array.from<number|string|[number, number]>(\n          vals.slice(\n            (size - FORMAT_NUM_FIRST_LAST_VALS) * storagePerElement,\n            size * storagePerElement));\n      if (dtype === 'complex64') {\n        firstVals = createComplexTuples(firstVals);\n        lastVals = createComplexTuples(lastVals);\n      }\n      return [\n        '[' +\n          firstVals.map((x, i) => valToString(x, padPerCol[i], dtype))\n            .join(', ') +\n          ', ..., ' +\n          lastVals\n            .map(\n              (x, i) => valToString(\n                x, padPerCol[size -\n                  FORMAT_NUM_FIRST_LAST_VALS + i], dtype))\n            .join(', ') +\n          ']' +\n          '\\n'];\n    }\n    const displayVals: Array<number|string|[number, number]> =\n      dtype === 'complex64' ? createComplexTuples(vals) : vals;\n    return [\n      '[' +\n        displayVals.map((x, i) => valToString(x, padPerCol[i], dtype))\n          .join(', ') +\n        ']' +\n        '\\n'];\n  }\n  // The array is rank 2 or more.\n  const subshape = shape.slice(1);\n  const substrides = strides.slice(1);\n  const stride = strides[0] * storagePerElement;\n  const lines: string[] = [];\n  if (size > FORMAT_LIMIT_NUM_VALS) {\n    for (let i = 0; i < FORMAT_NUM_FIRST_LAST_VALS; i++) {\n      const start = i * stride;\n      const end = start + stride;\n      lines.push(...subTensorToString(\n        vals.slice(start, end), subshape, dtype, substrides, padPerCol, false
```

```

/* isLast */);\n } \n lines.push(...);\n for (let i = size - FORMAT_NUM_FIRST_LAST_VALS; i < size; i++)
{\n   const start = i * stride;\n   const end = start + stride;\n   lines.push(...subTensorToString(\n
vals.slice(start, end), subshape, dtype, strides, padPerCol,\n       i === size - 1 /* isLast */));\n } \n } else {\n
for (let i = 0; i < size; i++) {\n   const start = i * stride;\n   const end = start + stride;\n
lines.push(...subTensorToString(\n       vals.slice(start, end), subshape, dtype, strides, padPerCol,\n       i ===
size - 1 /* isLast */));\n } \n } \n const sep = rank === 2 ? ',': ',';\n lines[0] = '[' + lines[0] + sep;\n for (let i = 1; i <
lines.length - 1; i++) {\n   lines[i] = ' ' + lines[i] + sep;\n } \n let newLineSep = '\\n';\n for (let i = 2; i < rank; i++)
{\n   newLineSep += '\\n';\n } \n lines[lines.length - 1] = '\\n ' + lines[lines.length - 1] + ']' + (isLast ? '' :
newLineSep);\n return lines;\n } \n\nfunction createComplexTuples(vals: Array<{}> \n
TypedArray): Array<[number, number]> {\n   const complexTuples: Array<[number, number]> = [];\n   for (let i = 0;
i < vals.length; i += 2) {\n     complexTuples.push([vals[i], vals[i + 1]] as [number, number]);\n   } \n   return
complexTuples;\n } \n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
===== \n
*/\n\nimport {getGlobal} from './global_util';\nimport {tensorToString} from './tensor_format';\nimport {ArrayMap,
BackendValues, DataTypeMap, DataValues, NumericDataType, Rank, ShapeMap, SingleValueMap,
TypedArray} from './types';\nimport * as util from './util';\nimport {computeStrides, toNestedArray} from
'./util';\n\nexport interface TensorData<D extends DataType> {\n   dataId?: DataId;\n   values?:
DataTypeMap[D];\n } \n\n// This interface mimics KernelBackend (in backend.ts), which would create a\n// circular
dependency if imported.\n\nexport interface Backend {} \n\n/**\n * A mutable object, similar to `tf.Tensor`, that
allows users to set values\n * at locations before converting to an immutable `tf.Tensor`. \n * \n * See `tf.buffer` for
creating a tensor buffer.\n * \n * @doc {heading: 'Tensors', subheading: 'Classes'} \n * \n\nexport class TensorBuffer<R
extends Rank, D extends DataType = 'float32'> {\n   size: number;\n   shape: ShapeMap[R];\n   strides: number[];\n
values: DataTypeMap[D];\n\n   constructor(shape: ShapeMap[R], public dtype: D, values?: DataTypeMap[D]) {\n     this.shape = shape.slice() as ShapeMap[R];\n     this.size = util.sizeFromShape(shape);\n     if (values != null) {\n       const n = values.length;\n       util.assert(\n         n === this.size,\n         () => `Length of values '${n}' does not
match the size ` +\n           `inferred by the shape '${this.shape}'.`);\n     } \n     if (dtype === 'complex64') {\n       throw
new Error(\n         `complex64 dtype TensorBuffers are not supported. Please create ` +\n           `a TensorBuffer for
the real and imaginary parts separately and ` +\n           `call tf.complex(real, imag).`);\n     } \n     this.values = values ||
util.getArrayFromDType(dtype, this.size);\n     this.strides = computeStrides(shape);\n   } \n\n   /**\n    * Sets a value in
the buffer at a given location.\n    * \n    * @param value The value to set.\n    * @param locs The location indices.\n
    * \n    * @doc {heading: 'Tensors', subheading: 'Creation'} \n    * \n   set(value: SingleValueMap[D], ...locs: number[]):
void {\n     if (locs.length === 0) {\n       locs = [0];\n     } \n     util.assert(\n       locs.length === this.rank,\n       () =>
`The number of provided coordinates (${locs.length}) must ` +\n         `match the rank (${this.rank})`);\n     const
index = this.locToIndex(locs);\n     this.values[index] = value as number;\n   } \n\n   /**\n    * Returns the value in the
buffer at the provided location.\n    * \n    * @param locs The location indices.\n    * \n    * @doc {heading: 'Tensors',
subheading: 'Creation'} \n    * \n   get(...locs: number[]): SingleValueMap[D] {\n     if (locs.length === 0) {\n       locs =
[0];\n     } \n     let i = 0;\n     for (const loc of locs) {\n       if (loc < 0 || loc >= this.shape[i]) {\n         const msg =
`Requested out of range element at ${locs}. ` +\n           ` Buffer shape=${this.shape}`;\n         throw new
Error(msg);\n       } \n       i++;\n     } \n     let index = locs[locs.length - 1];\n     for (let i = 0; i < locs.length - 1; ++i) {\n
       index += this.strides[i] * locs[i];\n     } \n     return this.values[index] as SingleValueMap[D];\n   } \n\n   locToIndex(locs: number[]): number {\n     if (this.rank === 0) {\n       return 0;\n     } else if (this.rank === 1) {\n
       return locs[0];\n     } \n     let index = locs[locs.length - 1];\n     for (let i = 0; i < locs.length - 1; ++i) {\n       index +=

```

```

this.strides[i] * locs[i];\n  }\n  return index;\n }\n\n indexToLoc(index: number): number[] {\n  if (this.rank ===
0) {\n    return [];\n  } else if (this.rank === 1) {\n    return [index];\n  }\n  const locs: number[] = new
Array(this.shape.length);\n  for (let i = 0; i < locs.length - 1; ++i) {\n    locs[i] = Math.floor(index /
this.strides[i]);\n    index -= locs[i] * this.strides[i];\n  }\n  locs[locs.length - 1] = index;\n  return locs;\n }\n\n get rank() {\n  return this.shape.length;\n }\n\n /**\n  * Creates an immutable `tf.Tensor` object from the buffer.\n  *\n  * @doc {heading: 'Tensors', subheading: 'Creation'}\n  */\n  toTensor(): Tensor<R> {\n    return
trackerFn().makeTensor(this.values, this.shape, this.dtype) as\n    Tensor<R>;\n  }\n}\n\n\nexport interface
TensorTracker {\n  makeTensor(\n    values: DataValues, shape: number[], dtype: DataType,\n    backend?:
Backend): Tensor;\n  makeVariable(\n    initialValue: Tensor, trainable?: boolean, name?: string,\n    dtype?:
DataType): Variable;\n  incRef(a: Tensor, backend: Backend): void;\n  disposeTensor(t: Tensor): void;\n
disposeVariable(v: Variable): void;\n  read(dataId: DataId): Promise<BackendValues>;\n  readSync(dataId: DataId):
BackendValues;\n}\n\n\n/**\n  * The Tensor class calls into this handler to delegate chaining operations.\n  */\n\nexport
interface OpHandler {\n  cast<T extends Tensor>(x: T, dtype: DataType): T;\n  buffer<R extends Rank, D extends
DataType>(\n    shape: ShapeMap[R], dtype: D,\n    values?: DataTypeMap[D]): TensorBuffer<R, D>;\n  print<T
extends Tensor>(x: T, verbose: boolean): void;\n  clone<T extends Tensor>(x: T): T;\n  // TODO(yassogba) bring
reshape back?\n}\n\n\n// For tracking tensor creation and disposal.\nlet trackerFn: () => TensorTracker = null;\n\n//
Used by chaining methods to call into ops.\nlet opHandler: OpHandler = null;\n\n// Used to warn about deprecated
methods.\nlet deprecationWarningFn: (msg: string) => void = null;\n\n// This here so that we can use this method on
dev branches and keep the\n// functionality at master.\n// tslint:disable-next-line:no-unused-
expression\n[deprecationWarningFn];\n\n\n/**\n  * An external consumer can register itself as the tensor tracker. This
way\n  * the Tensor class can notify the tracker for every tensor created and\n  * disposed.\n  */\n\nexport function
setTensorTracker(fn: () => TensorTracker) {\n  trackerFn = fn;\n}\n\n\n/**\n  * An external consumer can register
itself as the op handler. This way the\n  * Tensor class can have chaining methods that call into ops via the op\n  *
handler.\n  */\n\nexport function setOpHandler(handler: OpHandler) {\n  opHandler = handler;\n}\n\n\n/**\n  * Sets the
deprecation warning function to be used by this file. This way the\n  * Tensor class can be a leaf but still use the
environment.\n  */\n\nexport function setDeprecationWarningFn(fn: (msg: string) => void) {\n  deprecationWarningFn
= fn;\n}\n\n\n/**\n  * We wrap data id since we use weak map to avoid memory leaks.\n  * Since we have our own
memory management, we have a reference counter\n  * mapping a tensor to its data, so there is always a pointer
(even if that\n  * data is otherwise garbage collectable).\n  * See https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\_Objects/WeakMap\n  */\n\nexport type DataId = object; // object
instead of {} to force non-primitive.\n\n\n// Declare this namespace to make Tensor class augmentation work in
google3.\n\nexport declare namespace Tensor {\n\n  /**\n   * A `tf.Tensor` object represents an immutable,
multidimensional array of\n   * numbers that has a shape and a data type.\n   */\n  /**\n   * See `tf.tensor` for details on how to
create a `tf.Tensor`.\n   */\n  /**\n   * @doc {heading: 'Tensors', subheading: 'Classes'}\n   */\n  export class Tensor<R extends
Rank = Rank> {\n    /**\n     * Unique id of this tensor. *\n     * readonly id: number;\n     */\n    /**\n     * Id of the bucket holding the
data for this tensor. Multiple arrays can\n     * point to the same bucket (e.g. when calling array.reshape()).\n     */\n    dataId: DataId;\n    /**\n     * The shape of the tensor. *\n     * readonly shape: ShapeMap[R];\n     */\n    /**\n     * Number of elements in the
tensor. *\n     * readonly size: number;\n     */\n    /**\n     * The data type for the array. *\n     * readonly dtype: DataType;\n     */\n    /**\n     * The
rank type for the array (see `Rank` enum). *\n     * readonly rankType: R;\n     */\n    /**\n     * Whether this tensor has been
globally kept. *\n     * kept = false;\n     */\n    /**\n     * The id of the scope this tensor is being tracked in. *\n     * scopeId: number;\n     */\n    /**\n     * Number of elements to skip in each dimension when indexing. See\n     *
https://docs.scipy.org/doc/numpy/reference/generated/numpy.ndarray.strides.html\n     */\n    readonly strides:
number[];\n     *\n     * constructor(shape: ShapeMap[R], dtype: DataType, dataId: DataId, id: number) {\n     *   this.shape =
shape.slice() as ShapeMap[R];\n     *   this.dtype = dtype || 'float32';\n     *   this.size = util.sizeFromShape(shape);\n     *   this.strides = computeStrides(shape);\n     *   this.dataId = dataId;\n     *   this.id = id;\n     *   this.rankType = (this.rank < 5 ?
this.rank.toString() : 'higher') as R;\n     * }\n     *\n     * get rank(): number {\n     *   return this.shape.length;\n     * }\n     *\n     * Returns a promise of `tf.TensorBuffer` that holds the underlying data.\n     */\n     *\n     * @doc {heading: 'Tensors',
subheading: 'Classes'}\n     */\n     * async buffer<D extends DataType = 'float32'>(): Promise<TensorBuffer<R, D>> {\n

```

```

const vals = await this.data<D>();\n  return opHandler.buffer(this.shape, this.dtype as D, vals);\n }\n\n /**\n * Returns a `tf.TensorBuffer` that holds the underlying data.\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n bufferSync<D extends DataType = 'float32'>(): TensorBuffer<R, D> {\n  return opHandler.buffer(this.shape,\n this.dtype as D, this.dataSync());\n }\n\n /**\n * Returns the tensor data as a nested array. The transfer of data is\n done\n * asynchronously.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n async array():\n Promise<ArrayMap[R]> {\n  const vals = await this.data();\n  return toNestedArray(this.shape, vals) as\n ArrayMap[R];\n }\n\n /**\n * Returns the tensor data as a nested array. The transfer of data is done\n * synchronously.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n arraySync(): ArrayMap[R] {\n  return toNestedArray(this.shape, this.dataSync()) as ArrayMap[R];\n }\n\n /**\n * Asynchronously downloads the\n values from the `tf.Tensor`. Returns a\n * promise of `TypedArray` that resolves when the computation has\n finished.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n async data<D extends DataType =\n NumericDataType>(): Promise<DataTypeMap[D]> {\n  this.throwIfDisposed();\n  const data =\n trackerFn().read(this.dataId);\n  if (this.dtype === 'string') {\n    const bytes = await data as Uint8Array[];\n    try\n {\n    return bytes.map(b => util.decodeString(b)) as DataTypeMap[D];\n } catch {\n    throw new Error(\n      'Failed to decode the string bytes into utf-8. '\n      'To get the original bytes, call tensor.bytes().);\n }\n }\n  return data as Promise<DataTypeMap[D]>;\n }\n\n /**\n * Synchronously downloads the values from the\n `tf.Tensor`. This blocks the\n * UI thread until the values are ready, which can cause performance issues.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n dataSync<D extends DataType = NumericDataType>():\n DataTypeMap[D] {\n  this.throwIfDisposed();\n  const data = trackerFn().readSync(this.dataId);\n  if (this.dtype\n === 'string') {\n    try {\n    return (data as Uint8Array[]).map(b => util.decodeString(b)) as\n DataTypeMap[D];\n } catch {\n    throw new Error(\n      'Failed to decode the string bytes into utf-8. '\n      'To get the original bytes, call tensor.bytes().);\n }\n }\n  return data as DataTypeMap[D];\n }\n\n /**\n Returns the underlying bytes of the tensor's data.\n */\n async bytes(): Promise<Uint8Array[]|Uint8Array> {\n  this.throwIfDisposed();\n  const data = await trackerFn().read(this.dataId);\n  if (this.dtype === 'string') {\n  return data as Uint8Array[];\n } else {\n  return new Uint8Array((data as TypedArray).buffer);\n }\n }\n\n /**\n * Disposes `tf.Tensor` from memory.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n dispose(): void {\n  if (this.isDisposed) {\n    return;\n }\n  trackerFn().disposeTensor(this);\n  this.isDisposedInternal = true;\n }\n\n protected isDisposedInternal = false;\n get isDisposed(): boolean {\n  return this.isDisposedInternal;\n }\n\n throwIfDisposed() {\n  if (this.isDisposed) {\n    throw new Error(`Tensor\n is disposed.`);\n }\n }\n\n /**\n * Prints the `tf.Tensor`. See `tf.print` for details.\n *\n * @param verbose\n Whether to print verbose information about the tensor,\n * including dtype and size.\n *\n * @doc {heading:\n 'Tensors', subheading: 'Classes'}\n */\n print(verbose = false): void {\n  return opHandler.print(this, verbose);\n }\n\n /**\n * Returns a copy of the tensor. See `tf.clone` for details.\n *\n * @doc {heading: 'Tensors', subheading:\n 'Classes'}\n */\n clone<T extends Tensor>(this: T): T {\n  this.throwIfDisposed();\n  return\n opHandler.clone(this);\n }\n\n /**\n * Returns a human-readable description of the tensor. Useful for logging.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n */\n toString(verbose = false): string {\n  const vals =\n this.dataSync();\n  return tensorToString(vals, this.shape, this.dtype, verbose);\n }\n\n cast<T extends this>(dtype:\n DataType): T {\n  this.throwIfDisposed();\n  return opHandler.cast(this as T, dtype);\n }\n\n variable(trainable =\n true, name?: string, dtype?: DataType): Variable<R> {\n  this.throwIfDisposed();\n  return\n trackerFn().makeVariable(this, trainable, name, dtype) as\n Variable<R>;\n }\n\n }\n\n Object.defineProperty(Tensor, Symbol.hasInstance, {\n  value: (instance: Tensor) => {\n    // Implementation\n note: we should use properties of the object that will be\n    // defined before the constructor body has finished\n executing (methods).\n    // This is because when this code is transpiled by babel, babel will call\n    //\n classCallCheck before the constructor body is run.\n    // See https://github.com/tensorflow/tfjs/issues/3384 for\n backstory.\n    return !!instance && instance.data != null && instance.dataSync != null &&\n instance.throwIfDisposed != null;\n  }\n });\n\n export function getGlobalTensorClass() {\n  // Use getGlobal so that\n we can augment the Tensor class across package\n // boundaries because the node resolution alg may result in\n different modules\n // being returned for this file depending on the path they are loaded from.\n  return

```

```

getGlobal('Tensor', () => {\n  return Tensor;\n });\n\n// Global side effect. Cache global reference to Tensor
class\ngetGlobalTensorClass();\n\nexport interface NumericTensor<R extends Rank = Rank> extends Tensor<R>
{\n  dtype: NumericDataType;\n  dataSync<D extends DataType = NumericDataType>(): DataTypeMap[D];\n
data<D extends DataType = NumericDataType>(): Promise<DataTypeMap[D]>;\n}\n\nexport interface
StringTensor<R extends Rank = Rank> extends Tensor<R> {\n  dtype: 'string';\n  dataSync<D extends DataType =
'string'>(): DataTypeMap[D];\n  data<D extends DataType = 'string'>(): Promise<DataTypeMap[D]>;\n}\n\n/**
@doclink Tensor *\nexport type Scalar = Tensor<Rank.R0>;\n/** @doclink Tensor *\nexport type Tensor1D =
Tensor<Rank.R1>;\n/** @doclink Tensor *\nexport type Tensor2D = Tensor<Rank.R2>;\n/** @doclink Tensor
*\nexport type Tensor3D = Tensor<Rank.R3>;\n/** @doclink Tensor *\nexport type Tensor4D =
Tensor<Rank.R4>;\n/** @doclink Tensor *\nexport type Tensor5D = Tensor<Rank.R5>;\n/** @doclink Tensor
*\nexport type Tensor6D = Tensor<Rank.R6>;\n\n/**\n * A mutable `tf.Tensor`, useful for persisting state, e.g. for
training.\n *\n * @doc {heading: 'Tensors', subheading: 'Classes'}\n *\nexport class Variable<R extends Rank =
Rank> extends Tensor<R> {\n  name: string;\n\n  constructor(\n    initialValue: Tensor<R>, public trainable:
boolean, name: string,\n    tensorId: number) {\n    super(\n      initialValue.shape, initialValue.dtype,\n      initialValue.dataId, tensorId);\n    this.name = name;\n  }\n\n  /**\n   * Assign a new `tf.Tensor` to this variable. The
new `tf.Tensor` must have\n   * the same shape and dtype as the old `tf.Tensor`.\n   * @param newValue New
tensor to be assigned to this variable.\n   * @doc {heading: 'Tensors', subheading: 'Classes'}\n   *\n  assign(newValue: Tensor<R>): void {\n    if (newValue.dtype !== this.dtype) {\n      throw new Error(\n
`dtype of the new value (${newValue.dtype}) and ` +\n        `previous value (${this.dtype}) must match`);\n    }\n
if (!util.arraysEqual(newValue.shape, this.shape)) {\n      throw new Error(\n        `shape of the new value
(${newValue.shape}) and ` +\n        `previous value (${this.shape}) must match`);\n    }\n    trackerFn().disposeTensor(this);\n    this.dataId = newValue.dataId;\n    trackerFn().incRef(this, null /* backend
*/);\n  }\n\n  dispose(): void {\n    trackerFn().disposeVariable(this);\n    this.isDisposedInternal = true;\n  }\n}\n\nObject.defineProperty(Variable, Symbol.hasInstance, {\n  value: (instance: Variable) => {\n    return
instance instanceof Tensor && instance.assign != null &&\n      instance.assign instanceof Function;\n  }
});\n\n", /**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *\n
=====\n
**\nexport interface ShapeMap {\n  R0: number[];\n  R1: [number];\n  R2: [number,
number];\n  R3: [number, number, number];\n  R4: [number, number, number, number];\n  R5: [number, number,
number, number, number];\n  R6: [number, number, number, number, number, number];\n}\n\n/** @docalias
number[] *\nexport interface ArrayMap {\n  R0: number;\n  R1: number[];\n  R2: number[][];\n  R3:
number[][][];\n  R4: number[][][][];\n  R5: number[][][][][];\n  R6: number[][][][][];\n}\n\nexport interface
DataTypeMap {\n  float32: Float32Array;\n  int32: Int32Array;\n  bool: Uint8Array;\n  complex64: Float32Array;\n
string: string[];\n}\n\nexport interface SingleValueMap {\n  bool: boolean;\n  int32: number;\n  float32: number;\n
complex64: number;\n  string: string;\n}\n\n/** @docalias 'float32'|'int32'|'bool'|'complex64'|'string' *\nexport type
DataType = keyof DataTypeMap;\nexport type NumericDataType = 'float32'|'int32'|'bool'|'complex64';\nexport type
TypedArray = Float32Array|Int32Array|Uint8Array;\n\n/** Tensor data used in tensor creation and user-facing API.
*\nexport type DataValues = DataTypeMap[DataType];\n\n/** The underlying tensor data that gets stored in a
backend. *\nexport type BackendValues = Float32Array|Int32Array|Uint8Array|Uint8Array[];\n\nexport enum
Rank {\n  R0 = 'R0',\n  R1 = 'R1',\n  R2 = 'R2',\n  R3 = 'R3',\n  R4 = 'R4',\n  R5 = 'R5',\n  R6 = 'R6'\n}\n\nexport
type FlatVector = boolean[]|number[]|TypedArray;\nexport type RegularArray<T> =\n
T[]|T[][]|T[][][]|T[][][][]|T[][][][][]|T[][][][][];\n\n// tslint:disable-next-line:no-any\nexport interface
RecursiveArray<T extends any> {\n  [index: number]: T|RecursiveArray<T>;\n}\n\n// Looks for upcasting types.

```



```

Used, for example, in operations with mixed dtype\n// inputs.\nenum UpcastInt32AndMap {\n  'float32' = 'float32',\n  'int32' = 'int32',\n  'bool' = 'int32',\n  'complex64' = 'complex64'\n}\nenum UpcastBoolAndMap {\n  'float32' = 'float32',\n  'int32' = 'int32',\n  'bool' = 'bool',\n  'complex64' = 'complex64'\n}\nenum UpcastFloat32AndMap {\n  'float32' = 'float32',\n  'int32' = 'float32',\n  'bool' = 'float32',\n  'complex64' = 'complex64'\n}\nenum\nUpcastComplex64AndMap {\n  'float32' = 'complex64',\n  'int32' = 'complex64',\n  'bool' = 'complex64',\n  'complex64' = 'complex64'\n}\nconst upcastTypeMap = {\n  'float32': UpcastFloat32AndMap,\n  'int32':\n  UpcastInt32AndMap,\n  'bool': UpcastBoolAndMap,\n  'complex64': UpcastComplex64AndMap\n};\n\nexport\nfunction upcastType(typeA: DataType, typeB: DataType): DataType {\n  if (typeA === 'string' || typeB === 'string')\n  {\n    if (typeA === 'string' && typeB === 'string') {\n      return 'string';\n    }\n    throw new Error(`Can not upcast\n  ${typeA} with ${typeB}`);\n  }\n  return upcastTypeMap[typeA][typeB];\n}\n\n/** Returns the output type after\n  summation. */\nexport function sumOutType(type: DataType): DataType {\n  return upcastType(type,\n  'int32');\n}\n\n/** @docalias TypedArray|Array */\nexport type TensorLike =\n  TypedArray|number|boolean|string|RecursiveArray<number|number[]|TypedArray>|\n  RecursiveArray<boolean>|RecursiveArray<string>|Uint8Array[];\n\nexport type ScalarLike =\n  number|boolean|string|Uint8Array;\n\n/** @docalias TypedArray|Array */\nexport type TensorLike1D =\n  TypedArray|number[]|boolean[]|string[]|Uint8Array[];\n\n/** @docalias TypedArray|Array */\nexport type\n  TensorLike2D = TypedArray|number[]|number[][]|boolean[]|boolean[][]|\n  string[]|string[][]|Uint8Array[]|Uint8Array[][];\n\n/** @docalias TypedArray|Array */\nexport type TensorLike3D =\n  TypedArray|number[]|number[][]|boolean[]|\n  boolean[][]|string[]|string[][]|Uint8Array[]|Uint8Array[][];\n\n/** @docalias TypedArray|Array */\nexport type\n  TensorLike4D = TypedArray|number[]|number[][]|boolean[]|\n  boolean[][]|string[]|string[][]|Uint8Array[]|Uint8Array[][];\n\n/** @docalias TypedArray|Array */\nexport\n  type TensorLike5D =\n  TypedArray|number[]|number[][]|boolean[]|boolean[][]|string[]|\n  string[][]|Uint8Array[]|Uint8Array[][];\n\n/** @docalias TypedArray|Array */\nexport type TensorLike6D\n  =\n  TypedArray|number[]|number[][]|boolean[]|boolean[][]|\n  string[]|string[][]|Uint8Array[]|Uint8Array[][];\n\n/** Type for representing image data in Uint8Array\n  type. */\nexport interface PixelData {\n  width: number;\n  height: number;\n  data: Uint8Array;\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n  2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n  BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n\n*\nimport {Tensor} from './tensor';\nimport {TensorContainer, TensorContainerArray} from\n  './tensor_types';\nimport {upcastType} from './types';\nimport {assert} from './util';\n\nexport function\n  makeTypesMatch<T extends Tensor>(a: T, b: T): [T, T] {\n  if (a.dtype === b.dtype) {\n    return [a, b];\n  }\n  const dtype = upcastType(a.dtype, b.dtype);\n  return [a.cast(dtype), b.cast(dtype)];\n}\n\nexport function\n  assertTypesMatch(a: Tensor, b: Tensor): void {\n  assert((\n    a.dtype === b.dtype,\n    () => `The dtypes of the\n  first(${a.dtype}) and ` +\n    `second(${b.dtype}) input must match`);\n}\n\nexport function\n  isTensorInList(tensor: Tensor, tensorList: Tensor[]): boolean {\n  return tensorList.some(x => x.id ===\n  tensor.id);\n}\n\n/**\n * Extracts any `Tensor`s found within the provided object.\n * @param container an\n  object that may be a `Tensor` or may directly contain\n * `Tensor`s, such as a `Tensor[]` or `{key: Tensor, ...}`. In\n  general it\n * is safe to pass any object here, except that `Promise`s are not\n * supported.\n * @returns An array\n  of `Tensors` found within the passed object. If the\n * argument is simply a `Tensor`, a list containing that `Tensor`\n  is\n * returned. If the object is not a `Tensor` or does not\n * contain `Tensors`, an empty list is returned.\n */\nexport function\n  getTensorsInContainer(result: TensorContainer): Tensor[] {\n  const list: Tensor[] = [];\n  const\n  seen = new Set<{}|void>();\n  walkTensorContainer(result, list, seen);\n  return list;\n}\n\nfunction

```

```
walkTensorContainer(\n container: TensorContainer, list: Tensor[], seen: Set<{}|void>): void {\n if (container ==
null) {\n return;\n }\n if (container instanceof Tensor) {\n list.push(container);\n return;\n }\n if
(!Iterable(container)) {\n return;\n }\n // Iteration over keys works also for arrays.\n const iterable = container
as TensorContainerArray;\n for (const k in iterable) {\n const val = iterable[k];\n if (!seen.has(val)) {\n
seen.add(val);\n walkTensorContainer(val, list, seen);\n }\n }\n}\n\n// tslint:disable-next-line:no-any\nfunction
isIterable(obj: any): boolean {\n return Array.isArray(obj) || typeof obj === 'object';\n}\n\n"/**\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n
*/\n\nimport {BackendTimingInfo, DataMover, KernelBackend} from './backends/backend';\nimport {Environment,
setEnvironmentGlobal} from './environment';\nimport {getGlobalNamespace} from './global_util';\nimport {Add,
Cast, Identity} from './kernel_names';\nimport {getGradient, getKernel, getKernelsForBackend, GradFunc,
NamedAttrMap, TensorInfo} from './kernel_registry';\nimport {KernelProfile, Profiler} from './profiler';\nimport
{backpropagateGradients, getFilteredNodesXToY, TapeNode} from './tape';\nimport {DataId, setTensorTracker,
Tensor, TensorTracker, Variable} from './tensor';\nimport {GradSaveFunc, NamedTensorMap, NamedVariableMap,
TensorContainer} from './tensor_types';\nimport {getTensorsInContainer} from './tensor_util';\nimport
{BackendValues, DataType, DataValues} from './types';\nimport * as util from './util';\nimport
{bytesFromStringArray, makeOnesTypedArray, now, sizeFromShape} from './util';\n\n/**\n * A function that
computes an output. The save function is for saving tensors\n * computed in the forward pass, that we need in the
backward pass.\n */\nexport type ForwardFunc<T> = (backend: KernelBackend, save?: GradSaveFunc) =>
T;\n\n/**\n * @docalias (a: Tensor, b: Tensor, ..., save?: Function) => {\n * value: Tensor,\n * gradFunc: (dy:
Tensor, saved?: NamedTensorMap) => Tensor | Tensor[]\n * }\n */\nexport type CustomGradientFunc<T extends
Tensor> = (\n ...inputs: Array<Tensor|GradSaveFunc>) => {\n value: T;\n gradFunc: (dy: T, saved:
Tensor[]) => Tensor | Tensor[];\n };\n\nexport type MemoryInfo = {\n numTensors: number; numDataBuffers:
number; numBytes: number;\n unreliable?: boolean; reasons: string[];\n}\n\nexport type KernelInfo = {\n name: string;
bytesAdded: number; totalBytesSnapshot: number;\n tensorsAdded: number;\n totalTensorsSnapshot: number;\n
inputShapes: number[][];\n outputShapes: number[][];\n kernelTimeMs: number | {error: string} |
Promise<number|{error: string}>;\n extraInfo: string | Promise<string>;\n}\n\nexport type ProfileInfo = {\n
newBytes: number; newTensors: number; peakBytes: number;\n kernels: KernelInfo[];\n result:
TensorContainer;\n kernelNames: string[];\n}\n\nexport interface TimingInfo extends BackendTimingInfo {\n
wallMs: number;\n}\n\n/**\n * @docalias Function\n */\nexport type ScopeFn<T extends TensorContainer> = () =>
T;\n\ninterface ScopeState {\n track: Tensor[];\n name: string;\n id: number;\n}\n\ninterface
RegisteredKernelInvocation<I extends NamedTensorMap> {\n kernelName: string;\n inputs: I;\n attrs?:
NamedAttrMap;\n}\n\ninterface CustomGradKernelInvocation<T extends Tensor|Tensor[],\n I extends NamedTensorMap> {\n forwardFunc: ForwardFunc<T>;\n backwardsFunc: (dy: T, saved: Tensor[])
=> {\n [P in keyof I]: () => I[P]\n };\n inputs: I;\n attrs?: NamedAttrMap;\n}\n\nfunction
isRegisteredKernelInvocation<T extends Tensor|Tensor[],\n I extends NamedTensorMap>(\n kernelInvocation: RegisteredKernelInvocation<I>|\n CustomGradKernelInvocation<T,
I>):\n kernelInvocation is RegisteredKernelInvocation<I> {\n return (kernelInvocation as
RegisteredKernelInvocation<I>).kernelName != null;\n}\n\n\nclass EngineState {\n // Public since optimizers will
use it.\n registeredVariables: NamedVariableMap = {};\n nextTapeNodeId = 0;\n numBytes = 0;\n numTensors
= 0;\n numStringTensors = 0;\n numDataBuffers = 0;\n activeTape: TapeNode[];\n // Number of nested tf.grad()
statements when computing higher-order\n // gradients. E.g. `1` for first-order gradients and `2` for second-order\n
// gradients. Used to track if the tape should be removed after a backprop.\n gradientDepth = 0;\n // Number of
```

```

nested kernel calls. When kernel depth is greater than 1, we turn
// off the tape.
kernelDepth = 0;
// Keep
Tensors that parallel the tapes.
activeScope: ScopeState;
scopeStack: ScopeState[] = [];
/**
 * Keeps track
of the number of data moves during a kernel execution. We
 * maintain a stack since kernels can call other
kernels, recursively.
 */
numDataMovesStack: number[] = [];
nextScopeId = 0;
tensorInfo = new
WeakMap<DataId, {
  backend: KernelBackend,
  bytes: number,
  dtype: DataType,
  shape: number[]
}>();
profiling = false;
activeProfile: ProfileInfo = {
  newBytes: 0,
  newTensors: 0,
  peakBytes: 0,
  kernels: [],
  result: null,
  get kernelNames():
    string[] {
    return Array.from(new
Set(this.kernels.map(k => k.name)));
  }
};
dispose() {
  for (const variableName in
this.registeredVariables) {
    this.registeredVariables[variableName].dispose();
  }
}
export class
Engine implements TensorTracker, DataMover {
  state: EngineState;
  backendName: string;
  registry: {[id:
string]: KernelBackend} = {};
  registryFactory: {
    [id: string]: {
      factory: () => KernelBackend |
Promise<KernelBackend>,
      priority: number
    }
  } = {};
  private profiler: Profiler;
  private
backendInstance: KernelBackend;
  private pendingBackendInit: Promise<boolean>;
  private
pendingBackendInitId = 0;
  constructor(public ENV: Environment) {
    this.state = new EngineState();
  }
  async ready(): Promise<void> {
    if (this.pendingBackendInit != null) {
      return
this.pendingBackendInit.then(() => {});
    }
    if (this.backendInstance != null) {
      return;
    }
    const
sortedBackends = this.getSortedBackends();
    for (let i = 0; i < sortedBackends.length; i++) {
      const
backendName = sortedBackends[i];
      const success = await this.initializeBackend(backendName).success;
      if (success) {
        await this.setBackend(backendName);
        return;
      }
      throw new Error(
`Could not initialize any backends, all backend initializations ` +
`failed.`);
    }
    get backend():
KernelBackend {
      if (this.pendingBackendInit != null) {
        throw new Error(
`Backend
'${this.backendName}' has not yet been initialized. Make ` +
`sure to await tf.ready() or await
tf.setBackend() before calling ` +
`other methods`);
      }
      if (this.backendInstance == null) {
        const
{name, asyncInit} = this.initializeBackendsAndReturnBest();
        if (asyncInit) {
          throw new Error(
`The highest priority backend '${name}' has not yet been ` +
`initialized. Make sure to await tf.ready() or ` +
`await tf.setBackend() before calling other methods`);
        }
        this.setBackend(name);
      }
      return
this.backendInstance;
    }
    backendNames(): string[] {
      return Object.keys(this.registryFactory);
    }
    findBackend(backendName: string): KernelBackend {
      if (!(backendName in this.registry)) {
        // If the
backend hasn't been initialized but we have a registry entry for
        // it, initialize it and return it.
        if
(backendName in this.registryFactory) {
          const {asyncInit} = this.initializeBackend(backendName);
          if
(asyncInit) {
            // Backend is not ready yet.
            return null;
          }
        } else {
          return null;
        }
      }
      return this.registry[backendName];
    }
    findBackendFactory(backendName: string):
KernelBackend | Promise<KernelBackend> {
      if (!(backendName in this.registryFactory)) {
        return null;
      }
      return this.registryFactory[backendName].factory;
    }
    registerBackend(backendName: string,
factory: () => KernelBackend | Promise<KernelBackend>,
priority = 1): boolean {
      if (backendName in
this.registryFactory) {
        console.warn(
`${backendName} backend was already registered. ` +
`Reusing existing backend factory.`);
        return false;
      }
      this.registryFactory[backendName] = {
        factory,
        priority
      };
      return true;
    }
    async setBackend(backendName: string): Promise<boolean> {
      if
(this.registryFactory[backendName] == null) {
        throw new Error(
`Backend name '${backendName}' not found
in registry`);
      }
      this.backendName = backendName;
      if (this.registry[backendName] == null) {
        this.backendInstance = null;
        const {success, asyncInit} = this.initializeBackend(backendName);
        const
result = asyncInit ? await success : success;
        if (!result) {
          return false;
        }
      }
      this.backendInstance = this.registry[backendName];
      this.setupRegisteredKernels();
      // Reset the profiler.
      this.profiler = new Profiler(this.backendInstance);
      return true;
    }
    private setupRegisteredKernels(): void {
      const kernels = getKernelsForBackend(this.backendName);
      kernels.forEach(kernel => {
        if
(kernel.setupFunc != null) {
          kernel.setupFunc(this.backendInstance);
        }
      });
    }
    private
disposeRegisteredKernels(backendName: string): void {
      const kernels =
getKernelsForBackend(backendName);
      kernels.forEach(kernel => {
        if (kernel.disposeFunc != null) {

```

```

kernel.disposeFunc(this.registry[backendName]);\n    }\n    });\n    }\n\n    /**\n     * Initializes a backend by looking
up the backend name in the factory\n     * registry and calling the factory method. Returns a boolean representing\n     * whether the initialization of the backend succeeded. Throws an error if\n     * there is no backend in the factory
registry.\n     */\n    private initializeBackend(backendName: string):\n        {success: boolean|Promise<boolean>,\n        asyncInit: boolean} {\n        const registryFactoryEntry = this.registryFactory[backendName];\n        if
(registryFactoryEntry == null) {\n            throw new Error(\n                `Cannot initialize backend ${backendName}, no
registration found.`);\n        }\n        try {\n            const backend = registryFactoryEntry.factory();\n            /* Test if the
factory returns a promise.\n            Done in a more liberal way than\n            previous
'Promise.resolve(backend)===backend'\n            as we needed to account for custom Promise\n            implementations
(e.g. Angular) */\n            if (backend && !(backend instanceof KernelBackend) &&\n                typeof backend.then ===
'function') {\n                const promiseId = ++this.pendingBackendInitId;\n                const success =\n                    backend\n                    .then(backendInstance => {\n
                        // Outdated promise. Another backend was set in the meantime.\n
                        if (promiseId < this.pendingBackendInitId) {\n
                            return false;\n
                        }\n
                        this.registry[backendName] = backendInstance;\n
                        this.pendingBackendInit = null;\n
                        return
true;\n                    })\n                    .catch(err => {\n
                        // Outdated promise. Another backend was set in the
meantime.\n
                        if (promiseId < this.pendingBackendInitId) {\n
                            return false;\n
                        }\n
                        this.pendingBackendInit = null;\n
                        console.warn(\n
                            `Initialization of backend
${backendName} failed`);\n
                        console.warn(err.stack || err.message);\n
                        return false;\n
                    });\n                this.pendingBackendInit = success;\n                return {success, asyncInit: true};\n            } else {\n
this.registry[backendName] = backend as KernelBackend;\n                return {success: true, asyncInit: false};\n            }\n        }
catch (err) {\n            console.warn(`Initialization of backend ${backendName} failed`);\n            console.warn(err.stack ||
err.message);\n            return {success: false, asyncInit: false};\n        }\n    }\n\n    removeBackend(backendName: string):\n    void {\n        if (!(backendName in this.registryFactory)) {\n            throw new Error(`${backendName} backend not found
in registry`);\n        }\n        if (this.backendName === backendName && this.pendingBackendInit != null) {\n            //
There is a pending promise of the backend we want to remove. Make it\n            // obsolete.\n            this.pendingBackendInitId++;\n        }\n        if (backendName in this.registry) {\n
this.disposeRegisteredKernels(backendName);\n            this.registry[backendName].dispose();\n            delete
this.registry[backendName];\n        }\n        delete this.registryFactory[backendName];\n        // Unset the backend if it is
active.\n        if (this.backendName === backendName) {\n            this.pendingBackendInit = null;\n            this.backendName
= null;\n            this.backendInstance = null;\n        }\n    }\n\n    private getSortedBackends(): string[] {\n        if
(Object.keys(this.registryFactory).length === 0) {\n            throw new Error('No backend found in registry.);\n        }\n        return Object.keys(this.registryFactory).sort((a: string, b: string) => {\n
            // Highest priority comes first.\n            return
this.registryFactory[b].priority -\n                this.registryFactory[a].priority;\n        });\n    }\n\n    private
initializeBackendsAndReturnBest():\n        {name: string, asyncInit: boolean} {\n        const sortedBackends =
this.getSortedBackends();\n        for (let i = 0; i < sortedBackends.length; i++) {\n            const backendName =
sortedBackends[i];\n            const {success, asyncInit} = this.initializeBackend(backendName);\n            if (asyncInit ||
success) {\n                return {name: backendName, asyncInit};\n            }\n        }\n        throw new Error(\n            `Could not
initialize any backends, all backend initializations ` +\n            `failed.`);\n    }\n\n    moveData(backend: KernelBackend,\n    dataId: DataId) {\n        const info = this.state.tensorInfo.get(dataId);\n        const srcBackend = info.backend;\n        const
values = this.readSync(dataId);\n        const refCount = srcBackend.refCount(dataId);\n        // Delete the tensor from the
old backend and move it to the new\n        // backend.\n        srcBackend.disposeData(dataId, true);\n        info.backend =
backend;\n        backend.move(dataId, values, info.shape, info.dtype, refCount);\n        if
(this.shouldCheckForMemLeaks()) {\n            // Track the number of moves during a kernel execution to correctly\n
// detect memory leaks.\n            this.state.numDataMovesStack[this.state.numDataMovesStack.length - 1]++; \n        }\n    }\n\n    tidy<T extends TensorContainer>(nameOrFn: string|ScopeFn<T>, fn?: ScopeFn<T>):\n        T {\n        let name:
string = null;\n        if (fn == null) {\n            // Called with only 1 argument.\n            if (typeof nameOrFn !== 'function') {\n
                throw new Error('Please provide a function to tidy()');\n            }\n            fn = nameOrFn;\n        } else {\n            // Called with
2 arguments.\n            if (typeof nameOrFn !== 'string' && !(nameOrFn instanceof String)) {\n                throw new Error(\n

```

```

    'When calling with two arguments, the first argument ' +\n
    'to tidy() must be a string');\n
  }\n
  if
  (typeof fn !== 'function') {\n
    throw new Error(\n
      'When calling with two arguments, the 2nd argument '
      +\n
      'to tidy() must be a function');\n
    }\n
  name = nameOrFn as string;\n
  // TODO(nsthorat,smilkov):
  Do operation logging and performance\n
  // profiling.\n
  }\n
  let result: T;\n
  return this.scopedRun(\n
    ()
    => this.startScope(name), () => this.endScope(result), () => {\n
      result = fn();\n
      if (result instanceof
      Promise) {\n
        console.error('Cannot return a Promise inside of tidy.);\n
      }\n
      return result;\n
    });\n
  }\n\n
  private scopedRun<T>(start: () => void, end: () => void, f: () => T): T {\n
  start();\n
  try {\n
  const
  res = f();\n
  end();\n
  return res;\n
  } catch (ex) {\n
  end();\n
  throw ex;\n
  }\n
  }\n\n
  private static
  nextTensorId = 0;\n
  private nextTensorId(): number {\n
  return Engine.nextTensorId++;\n
  }\n\n
  private static
  nextVariableId = 0;\n
  private nextVariableId(): number {\n
  return Engine.nextVariableId++;\n
  }\n\n
  /**\n
  *
  This method is called instead of the public-facing tensor.clone() when\n
  * saving a tensor for backwards pass. It
  makes sure to add the clone\n
  * operation to the tape regardless of being called inside a kernel\n
  * execution.\n
  */\n
  private clone(x: Tensor): Tensor {\n
  const y: Tensor = ENGINE.runKernel(Identity, {x} as {} as
  NamedTensorMap);\n
  const inputs = {x};\n
  const grad = (dy: Tensor) => ({\n
  x: () => {\n
  const dtype =
  'float32';\n
  const gradInputs = {x: dy};\n
  const attrs = {dtype};\n
  return ENGINE.runKernel(\n
    Cast, gradInputs as {} as NamedTensorMap,\n
    // tslint:disable-next-line: no-unnecessary-type-
    assertion\n
    attrs as {} as NamedAttrMap) as Tensor;\n
  }\n
  });\n
  const saved: Tensor[] = [];\n
  this.addTapeNode(this.state.activeScope.name, inputs, [y], grad, saved, {});\n
  return y;\n
  }\n\n
  /**\n
  * Execute
  a kernel with the given name and return the output tensor.\n
  * @param kernelName The name of the kernel to
  execute.\n
  * @param inputs A map of input names to tensors.\n
  * @param attrs A map of attribute names to their
  values. An attribute is a\n
  * primitive (non-tensor) input to the kernel.\n
  * @param inputsToSave A list of
  tensors, inputs to save for the backprop\n
  * computation.\n
  * @param outputsToSave A list of booleans,
  specifying which output to save\n
  * for the backprop computation. These are booleans since the output\n
  * tensors are not visible to the user.\n
  */\n
  runKernel<T extends Tensor|Tensor[]>(\n
  kernelName: string, inputs:
  NamedTensorMap, attrs?: NamedAttrMap): T {\n
  const hasKernel = getKernel(kernelName, this.backendName)
  !== null;\n
  if (!hasKernel) {\n
  throw new Error(`Kernel '${kernelName}' not registered for backend '${\n
  this.backendName}'`);\n
  }\n
  return this.runKernelFunc({kernelName, inputs, attrs});\n
  }\n\n
  private
  shouldCheckForMemLeaks(): boolean {\n
  return this.ENV.getBool('IS_TEST');\n
  }\n\n
  private
  checkKernelForMemLeak(\n
  kernelName: string, numDataIdsBefore: number,\n
  outInfos: TensorInfo[]): void
  {\n
  const numDataIdsAfter = this.backend.numDataIds();\n
  // Count the number of data ids associated with the
  result of the kernel.\n
  let numOutputDataIds = 0;\n
  outInfos.forEach(info => {\n
  // Complex numbers allocate
  3 data ids, one for 'real', one for\n
  // 'imaginary', and one for the container that holds the former two.\n
  numOutputDataIds += (info.dtype === 'complex64' ? 3 : 1);\n
  });\n
  // Account for the number of moves during
  kernel execution. A "data move"\n
  // can happen in the middle of a kernel execution, placing a new (key,value)\n
  // pair in the data storage. Since data moves have net zero effect (we\n
  // always remove the data from the old
  backend), we have to cancel them out\n
  // when detecting memory leaks.\n
  const numMoves =\n
  this.state.numDataMovesStack[this.state.numDataMovesStack.length - 1];\n
  const dataIdsLeaked =\n
  numDataIdsAfter - numDataIdsBefore - numOutputDataIds - numMoves;\n
  if (dataIdsLeaked > 0) {\n
  throw
  new Error(\n
    `Backend '${this.backendName}' has an internal memory leak ` +\n
    `(${dataIdsLeaked}
    data ids) after running '${kernelName}'`);\n
  }\n
  }\n\n
  /**\n
  * Internal helper method to execute a kernel Func\n
  * @param Use `runKernel` to execute kernels from outside of engine.\n
  */\n
  private runKernelFunc<T extends
  Tensor|Tensor[], I extends NamedTensorMap>(\n
  kernelParams: RegisteredKernelInvocation<I>)\n
  CustomGradKernelInvocation<T, I>): T {\n
  let outputs: Tensor[];\n
  let saved: Tensor[] = [];\n
  const isTapeOn
  = this.isTapeOn();\n
  const startingBytecount = this.state.numBytes;\n
  const startingNumTensors =
  this.state.numTensors;\n
  if (this.shouldCheckForMemLeaks()) {\n
  this.state.numDataMovesStack.push(0);\n
  }\n
  let kernelFunc: () => Tensor[];\n
  if (this.backendName == null) {\n
  // backend has not been initialized
  yet (backend initialization is lazy\n
  // can be deferred until an op/ kernel is run).\n
  // The below getter has side
  effects that will try to initialize the\n
  // backend and set properties like this.backendName\n
  // tslint:disable-

```

```

next-line: no-unused-expression\n    this.backend;\n    }\n\n    let out: TensorInfo|TensorInfo[];\n\n    const
kernelOrScopeName = isRegisteredKernelInvocation(kernelParams) ?\n        kernelParams.kernelName :\nthis.state.activeScope != null ? this.state.activeScope.name : '';\n\n    // Create the kernelFunc from either a registered
kernel OR passed in\n    // forward/backward functions (used by custom grad). In this context a\n    // kernelFunc
wraps a kernel implementation with some bookkeeping.\n\n    if (isRegisteredKernelInvocation(kernelParams)) {\n
const {kernelName, inputs, attrs} = kernelParams;\n    if (this.backendName == null) {\n        // backend has not
been initialized yet (backend initialization is lazy\n        // can be deferred until an op/ kernel is run).\n        // The
below getter has side effects that will try to initialize the\n        // backend and set properties like
this.backendName\n        // tslint:disable-next-line: no-unused-expression\n        this.backend;\n    }\n    const
kernel = getKernel(kernelName, this.backendName);\n    util.assert(\n        kernel != null,\n        () => `Cannot
find registered kernel '${kernelName}' for backend '${\n            this.backendName}`);\n\n    kernelFunc = () =>
{\n        const numDataIdsBefore = this.backend.numDataIds();\n        out = kernel.kernelFunc({inputs, attrs,
backend: this.backend});\n        const outInfos = Array.isArray(out) ? out : [out];\n        if
(this.shouldCheckForMemLeaks()) {\n            this.checkKernelForMemLeak(kernelName, numDataIdsBefore,
outInfos);\n        }\n        const outTensors = outInfos.map((outInfo: TensorInfo|Tensor) => {\n            // todo
(yassogba) remove this option (Tensor) when node backend\n            // methods have been modularized and they all
return tensorInfo.\n            // TensorInfos do not have a rank attribute.\n            if ((outInfo as Tensor).rank != null) {\n
return outInfo as Tensor;\n            }\n            const {dataId, shape, dtype} = outInfo as TensorInfo;\n            return
this.makeTensorFromDataId(dataId, shape, dtype);\n        });\n\n        // Save any required inputs and outputs.\n\n
// Do not save unless we are recording to the tape. Otherwise it would\n        // cause a mem leak since there would
be no backprop for these tensors\n        // (which would otherwise dispose them).\n        if (isTapeOn) {\n            const
tensorsToSave =\n                this.getTensorsForGradient(kernelName, inputs, outTensors);\n            saved =
this.saveTensorsForBackwardMode(tensorsToSave);\n        }\n        return outTensors;\n    }; \n    } else {\n
const {forwardFunc} = kernelParams;\n    // Running a customGrad op.\n    const saveFunc: GradSaveFunc =
(tensors) => {\n        // Do not save unless we are recording to the tape. Otherwise it would\n        // cause a mem
leak since we would never run backprop, which disposes\n        // the kept tensors.\n        if (!isTapeOn) {\n
return;\n        }\n        saved = tensors.map(tensor => this.keep(this.clone(tensor)));\n    }; \n\n    kernelFunc = () =>
{\n        const numDataIdsBefore = this.backend.numDataIds();\n        out = this.tidy(() =>
forwardFunc(this.backend, saveFunc));\n        const outs = (Array.isArray(out) ? out : [out]) as Tensor[];\n        if
(this.shouldCheckForMemLeaks()) {\n            // Scope name is used to print a more helpful error message if
needed.\n            this.checkKernelForMemLeak(kernelOrScopeName, numDataIdsBefore, outs);\n        }\n        return
outs;\n    }; \n    }\n\n    /\n    // Run the kernelFunc. Optionally profiling it.\n    /\n    const {inputs, attrs} =
kernelParams;\n    const backwardsFunc = isRegisteredKernelInvocation(kernelParams) ?\n        null :\nkernelParams.backwardsFunc;\n\n    let kernelProfile: KernelProfile;\n    this.scopedRun(\n        // Stop recording to
a tape when running a kernel.\n        () => this.state.kernelDepth++, () => this.state.kernelDepth--, () => {\n            if
(!this.ENV.getBool('DEBUG') && !this.state.profiling) {\n                outputs = kernelFunc();\n            } else {\n
kernelProfile = this.profiler.profileKernel(\n                kernelOrScopeName, inputs, () => kernelFunc());\n            if
(this.ENV.getBool('DEBUG')) {\n                this.profiler.logKernelProfile(kernelProfile);\n            }\n            outputs
= kernelProfile.outputs;\n        }\n    });\n\n    if (isTapeOn) {\n        this.addTapeNode(\n
kernelOrScopeName, inputs, outputs, backwardsFunc, saved, attrs);\n    }\n\n    if (this.state.profiling) {\n
this.state.activeProfile.kernels.push({\n        name: kernelOrScopeName,\n        bytesAdded: this.state.numBytes -
startingBytecount,\n        totalBytesSnapshot: this.state.numBytes,\n        tensorsAdded: this.state.numTensors -
startingNumTensors,\n        totalTensorsSnapshot: this.state.numTensors,\n        inputShapes:
Object.keys(inputs).map(\n            key => inputs[key] != null ? inputs[key].shape : null),\n        outputShapes:
outputs.map(item => item.shape),\n        kernelTimeMs: kernelProfile.timeMs,\n        extraInfo:
kernelProfile.extraInfo\n    });\n    }\n\n    return (Array.isArray(out) ? outputs : outputs[0]) as T;\n    }\n\n    /**\n     *
Saves tensors used in forward mode for use in backward mode.\n     * @param tensors the list of tensors to
save.\n     */\n    private saveTensorsForBackwardMode(tensors: Tensor[]): Tensor[] {\n        const saved =

```

```

tensors.map(tensor => this.keep(this.clone(tensor)));
return saved;
}

/**
 * Returns a list of tensors to
save for a given gradient calculation.
 * @param kernelName name of kernel to look up gradient for.
 * @param inputs a map of input tensors.
 * @param outputs an array of output tensors from forward mode of
kernel.
 */
private getTensorsForGradient(
    kernelName: string, inputs: NamedTensorMap,
    outputs:
Tensor[]): Tensor[] {
    const gradConfig = getGradient(kernelName);
    if (gradConfig != null) {
        const
inputsToSave: string[] = gradConfig.inputsToSave || [];
        const outputsToSave: boolean[] =
gradConfig.outputsToSave || [];
        // If saveAllInputs is true, all inputs will be saved. Otherwise, inputs
//
specified in inputsToSave will be saved.
        let inputTensorsToSave: Tensor[];
        if (gradConfig.saveAllInputs) {
            util.assert(
                Array.isArray(inputs),
                () => 'saveAllInputs is true, expected inputs to be an
array.');
```

```

            inputTensorsToSave = Object.keys(inputs).map((key) => inputs[key]);
        } else {
            inputTensorsToSave = inputsToSave.map((inputName) => inputs[inputName]);
        }
        const
outputTensorsToSave: Tensor[] =
        outputs.filter((_, i) => outputsToSave[i]);
        return
inputTensorsToSave.concat(outputTensorsToSave);
    }
    // We return an empty list rather than throw an error
because the kernel we
    // are looking up may not actually be relevant to backpropping through the
    // overall
function
    // See 'does not error if irrelevant (pruned) ops are missing grads' test
    // in gradients_test.ts
for an example.
return [];
}

/**
 * Internal method used by public APIs for tensor creation. Makes a new
 * tensor with the provided shape, dtype and values. It always
 * creates a new data id and writes the values to the
underlying backend.
 */
makeTensor(
    values: DataValues, shape: number[], dtype: DataType,
backend?: KernelBackend): Tensor {
    if (values == null) {
        throw new Error('Values passed to
engine.makeTensor() are null');
    }
    dtype = dtype || 'float32';
    backend = backend || this.backend;
    let
backendVals = values as BackendValues;
    if (dtype === 'string' && util.isString(values[0])) {
        backendVals
= (values as string[]).map(d => util.encodeString(d));
    }
    const dataId = backend.write(backendVals, shape,
dtype);
    const t = new Tensor(shape, dtype, dataId, this.nextTensorId());
    this.trackTensor(t, backend);
    //
Count bytes for string tensors.
    if (dtype === 'string') {
        const info = this.state.tensorInfo.get(dataId);
        const newBytes = bytesFromStringArray(backendVals as Uint8Array[]);
        this.state.numBytes += newBytes -
info.bytes;
        info.bytes = newBytes;
    }
    return t;
}

/**
 * Internal method used by backends.
Makes a new tensor
 * that is a wrapper around an existing data id. It doesn't create
 * a new data id, only
increments the ref count used in memory tracking.
 */
makeTensorFromDataId(
    dataId: DataId, shape:
number[], dtype: DataType,
backend?: KernelBackend): Tensor {
    dtype = dtype || 'float32';
    const t =
new Tensor(shape, dtype, dataId, this.nextTensorId());
    this.trackTensor(t, backend);
    return t;
}

makeVariable(
    initialValue: Tensor, trainable = true, name?: string,
dtype?: DataType): Variable {
    name = name || this.nextVariableId().toString();
    if (dtype != null && dtype !== initialValue.dtype) {
        initialValue = initialValue.cast(dtype);
    }
    const v = new Variable(initialValue, trainable, name,
this.nextTensorId());
    if (this.state.registeredVariables[v.name] != null) {
        throw new Error(`Variable with
name ${v.name} was already registered`);
    }
    this.state.registeredVariables[v.name] = v;
    this.incRef(v,
this.backend);
    return v;
}

trackTensor(a: Tensor, backend: KernelBackend): void {
    this.state.numTensors++;
    if (a.dtype === 'string') {
        this.state.numStringTensors++;
    }
    // Bytes for
complex numbers are counted by their components. Bytes for
    // string tensors are counted when writing
values.
    let bytes = 0;
    if (a.dtype !== 'complex64' && a.dtype !== 'string') {
        bytes = a.size *
util.bytesPerElement(a.dtype);
    }
    this.state.numBytes += bytes;
    if (!this.state.tensorInfo.has(a.dataId)) {
        this.state.numDataBuffers++;
        this.state.tensorInfo.set(a.dataId, {
            backend: backend ||
this.backend,
            dtype: a.dtype,
            shape: a.shape,
            bytes
});
    }
    if (!(a instanceof
Variable)) {
        this.track(a);
    }
}

// Track the tensor by dataId and increase the refCount for the dataId in
the
// backend.
// TODO(pyu10055): This is currently used by makeVariable method, to increase
// refCount
on the backend for the dataId. It can potentially be replaced with
// Identity op instead of calling backend
directly.
incRef(a: Tensor, backend: KernelBackend): void {
    this.trackTensor(a, backend);
    this.backend.incRef(a.dataId);
}

removeDataId(dataId: DataId, backend: KernelBackend) {
    if
(this.state.tensorInfo.has(dataId) &&
        this.state.tensorInfo.get(dataId).backend === backend) {

```

```

this.state.tensorInfo.delete(dataId);\n    this.state.numDataBuffers--;\n    }\n }\n disposeTensor(a: Tensor): void
{\n if (!this.state.tensorInfo.has(a.dataId)) {\n return;\n }\n const info =
this.state.tensorInfo.get(a.dataId);\n\n this.state.numTensors--;\n if (a.dtype === 'string') {\n
this.state.numStringTensors--;\n    this.state.numBytes -= info.bytes;\n    }\n // Don't count bytes for complex
numbers as they are counted by their\n // components.\n if (a.dtype !== 'complex64' && a.dtype !== 'string') {\n
const bytes = a.size * util.bytesPerElement(a.dtype);\n    this.state.numBytes -= bytes;\n    }\n\n // Remove the
reference to dataId if backend dispose the data successfully\n if (info.backend.disposeData(a.dataId)) {\n
this.removeDataId(a.dataId, info.backend);\n    }\n\n // TODO(nsthorat): Construct an error and save the stack
trace for\n // debugging when in debug mode. Creating a stack trace is too expensive\n // to do unconditionally.\n
}\n\n disposeVariables(): void {\n for (const varName in this.state.registeredVariables) {\n const v =
this.state.registeredVariables[varName];\n    this.disposeVariable(v);\n    }\n }\n\n disposeVariable(v: Variable):
void {\n this.disposeTensor(v);\n if (this.state.registeredVariables[v.name] != null) {\n delete
this.state.registeredVariables[v.name];\n    }\n }\n\n memory(): MemoryInfo {\n const info =
this.backend.memory() as MemoryInfo;\n    info.numTensors = this.state.numTensors;\n    info.numDataBuffers =
this.state.numDataBuffers;\n    info.numBytes = this.state.numBytes;\n    if (this.state.numStringTensors > 0) {\n
info.unreliable = true;\n    if (info.reasons == null) {\n        info.reasons = [];\n    }\n    info.reasons.push(\n
'Memory usage by string tensors is approximate ' +\n        '(2 bytes per character)');\n    }\n    return info;\n }\n\n
async profile(query: () => (TensorContainer | Promise<TensorContainer>)): Promise<ProfileInfo> {\n
this.state.profiling = true;\n\n const startBytes = this.state.numBytes;\n const startNumTensors =
this.state.numTensors;\n\n this.state.activeProfile.kernels = [];\n this.state.activeProfile.result = await
query();\n\n this.state.profiling = false;\n\n this.state.activeProfile.peakBytes = Math.max(\n
...this.state.activeProfile.kernels.map(d => d.totalBytesSnapshot));\n this.state.activeProfile.newBytes =
this.state.numBytes - startBytes;\n this.state.activeProfile.newTensors =\n    this.state.numTensors -
startNumTensors;\n for (const kernel of this.state.activeProfile.kernels) {\n    kernel.kernelTimeMs = await
kernel.kernelTimeMs;\n    kernel.extraInfo = await kernel.extraInfo;\n    }\n return this.state.activeProfile;\n
}\n\n isTapeOn(): boolean {\n return this.state.gradientDepth > 0 && this.state.kernelDepth === 0;\n }\n\n
private addTapeNode(\n    kernelName: string, inputs: NamedTensorMap, outputs: Tensor[],\n    gradientsFunc:
GradFunc, saved: Tensor[], attrs: NamedAttrMap): void {\n    const tapeNode: TapeNode =\n        {id:
this.state.nextTapeNodeId++, kernelName, inputs, outputs, saved};\n\n    const gradConfig =
getGradient(kernelName);\n    if (gradConfig != null) {\n        gradientsFunc = gradConfig.gradFunc;\n    }\n    if
(gradadientsFunc != null) {\n        tapeNode.gradient = (dys: Tensor[]) => {\n            // TODO(smilkov): To optimize
back-prop, pass dys that are not used in\n            // the backprop graph to the user as null instead of zeros\n            dys =
dys.map((dy, i) => {\n                if (dy == null) {\n                    const output = outputs[i];\n                    const vals =
util.makeZerosTypedArray(output.size, output.dtype);\n                    return this.makeTensor(vals, output.shape,
output.dtype);\n                }\n                return dy;\n            });\n            // Grad functions of ops with single outputs expect a dy,
while ops\n            // with multiple outputs expect dys (array of dy).\n            return gradientsFunc(dys.length > 1 ? dys :
dys[0], saved, attrs);\n        }; }\n\n    this.state.activeTape.push(tapeNode);\n    }\n\n keep<T extends
Tensor>(result: T): T {\n    result.kept = true;\n    return result;\n }\n\n private startTape() {\n    if
(this.state.gradientDepth === 0) {\n        this.state.activeTape = [];\n    }\n    this.state.gradientDepth++;\n    }\n\n
private endTape() {\n    this.state.gradientDepth--;\n    }\n\n /**\n * Start a scope. Use this with endScope() to
achieve the same functionality\n * as scope() without the need for a function closure.\n */\n startScope(name?:
string) {\n    const scopeInfo: ScopeState = {\n        track: [],\n        name: 'unnamed scope',\n        id:
this.state.nextScopeId++\n    }; \n    if (name) {\n        scopeInfo.name = name;\n    }\n\n    this.state.scopeStack.push(scopeInfo);\n    this.state.activeScope = scopeInfo;\n    }\n\n /**\n * End a scope. Use
this with startScope() to achieve the same functionality\n * as scope() without the need for a function closure.\n
*/\n endScope(result?: TensorContainer) {\n    const tensorsToTrackInParent = getTensorsInContainer(result);\n    const
tensorsToTrackInParentSet =\n        new Set(tensorsToTrackInParent.map(t => t.id));\n\n    // Dispose the
arrays tracked in this scope.\n    for (let i = 0; i < this.state.activeScope.track.length; i++) {\n        const tensor =

```



```

this.state.activeScope.track[i];\n    if (!tensor.kept && !tensorsToTrackInParentSet.has(tensor.id)) {\n
tensor.dispose();\n    }\n    }\n\n    const oldScope = this.state.scopeStack.pop();\n    this.state.activeScope =\n    this.state.scopeStack.length === 0 ?\n    null :\n    this.state.scopeStack[this.state.scopeStack.length - 1];\n\n    //\n    Track the current result in the parent scope.\n    tensorsToTrackInParent.forEach(tensor => {\n    // Only track the\n    tensor if was allocated in the inner scope and is not\n    // globally kept.\n    if (!tensor.kept && tensor.scopeId\n    === oldScope.id) {\n    this.track(tensor);\n    }\n    });\n    }\n\n    /**\n    * Returns gradients of `f` with respect to\n    each of the `xs`. The gradients\n    * returned are of the same length as `xs`, but some might be null if `f`\n    * was\n    not a function of that `x`. It also takes optional dy to multiply the\n    * gradient, which defaults to `1`.\n    */\n    gradients<T extends Tensor>(\n    f: () => T, xs: Tensor[], dy?: T,\n    allowNoGradients = false): {value: T,\n    grads: Tensor[]} {\n    util.assert(\n    xs.length > 0, () => 'gradients() received an empty list of xs.);\n    if (dy !=\n    null && dy.dtype !== 'float32') {\n    throw new Error(`dy must have 'float32' dtype, but has '${dy.dtype}`);\n    }\n\n    const y = this.scopedRun(\n    () => this.startTape(), () => this.endTape(),\n    () => this.tidy('forward',\n    f));\n\n    util.assert(\n    y instanceof Tensor,\n    () => 'The result y returned by f() must be a tensor.);\n    //\n    Filter out the nodes that don't connect x => y.\n    const filteredTape = getFilteredNodesXToY(this.state.activeTape,\n    xs, y);\n    if (!allowNoGradients && filteredTape.length === 0 && xs.length > 0) {\n    throw new Error(\n    'Cannot compute gradient of y=f(x) with respect to x. Make sure '\n    +\n    'that the f you passed encloses all\n    operations that lead from x '\n    +\n    'to y.);\n    }\n\n    return this.tidy('backward', () => {\n    const\n    accumulatedGradientMap: {[tensorId: number]: Tensor} = {};\n    accumulatedGradientMap[y.id] = (dy == null) ?\n    ones(y.shape) : dy;\n\n    // Backprop gradients through the filtered nodes.\n    backpropagateGradients(\n    accumulatedGradientMap, filteredTape,\n    // Pass the tidy function to avoid circular dep with `tape.ts`.\n    f\n    => this.tidy(f as ScopeFn<Tensor>),\n    // Pass an add function to avoid a circular dep with `tape.ts`.\n    add);\n    const grads = xs.map(x => accumulatedGradientMap[x.id]);\n\n    if (this.state.gradientDepth === 0) {\n    // This means that we are not computing higher-order gradients\n    // and can clean up the tape.\n    this.state.activeTape.forEach(node => {\n    for (const tensor of node.saved) {\n    tensor.dispose();\n    }\n    });\n    this.state.activeTape = null;\n    }\n\n    return {value: y, grads};\n    });\n    }\n\n    customGrad<T\n    extends Tensor>(f: CustomGradientFunc<T>):\n    (...args: Array<Tensor|GradSaveFunc>) => T {\n    util.assert(\n    util.isFunction(f),\n    () => 'The f passed in customGrad(f) must be a function.);\n    return (...inputs:\n    Tensor[]): T => {\n    util.assert(\n    inputs.every(t => t instanceof Tensor),\n    () => 'The args passed in\n    customGrad(f)(x1, x2,...) must all be '\n    +\n    'tensors');\n\n    let res: {\n    value: T,\n    gradFunc: (dy: T,\n    saved: Tensor[]) => Tensor | Tensor[],\n    };\n    const inputMap: NamedTensorMap = {};\n\n    inputs.forEach((input, i) => {\n    inputMap[i] = input;\n    });\n\n    const forwardFunc: ForwardFunc<T> = (\n    _,\n    save) => {\n    res = f(...inputs, save);\n    util.assert(\n    res.value instanceof Tensor,\n    () =>\n    'The function f passed in customGrad(f) must return an '\n    +\n    'object where `obj.value` is a tensor');\n\n    util.assert(\n    util.isFunction(res.gradFunc),\n    () => 'The function f passed in customGrad(f) must return\n    an '\n    +\n    'object where `obj.gradFunc` is a function.);\n    return res.value;\n    };)\n\n    const\n    backwardsFunc = (dy: T, saved: Tensor[]) => {\n    const gradRes = res.gradFunc(dy, saved);\n    const grads:\n    Tensor[] = Array.isArray(gradRes) ? gradRes : [gradRes];\n    util.assert(\n    grads.length ===\n    inputs.length,\n    () => 'The function f passed in customGrad(f) must return an '\n    +\n    'object where\n    `obj.gradFunc` is a function that returns '\n    +\n    'the same number of tensors as inputs passed to f(...).);\n\n    util.assert(\n    grads.every(t => t instanceof Tensor),\n    () => 'The function f passed in customGrad(f)\n    must return an '\n    +\n    'object where `obj.gradFunc` is a function that returns '\n    +\n    'a list of only\n    tensors.);\n\n    const gradMap: {[key: string]: () => Tensor} = {};\n    grads.forEach((grad, i) => {\n    gradMap[i] = () => grad;\n    });\n\n    return gradMap;\n    });\n\n    return this.runKernelFunc({\n    forwardFunc,\n    backwardsFunc,\n    inputs: inputMap,\n    });\n    });\n\n    readSync(dataId: DataId):\n    BackendValues {\n    // Route the read to the correct backend.\n    const info = this.state.tensorInfo.get(dataId);\n    return info.backend.readSync(dataId);\n    }\n\n    read(dataId: DataId): Promise<BackendValues> {\n    // Route the read\n    to the correct backend.\n    const info = this.state.tensorInfo.get(dataId);\n    return info.backend.read(dataId);\n    }\n\n    async time(query: () => void): Promise<TimingInfo> {\n    const start = now();\n    const timingInfo = await

```



```

shape.push(firstElem.length);\n  firstElem = firstElem[0];\n } \n if (Array.isArray(val) &&\n
env().getBool("TENSORLIKE_CHECK_SHAPE_CONSISTENCY")) {\n  deepAssertShapeConsistency(val,\n
shape, []);\n }\n\n return shape;\n}\n\nfunction deepAssertShapeConsistency(\n  val: TensorLike, shape:\n
number[], indices: number[]) {\n  indices = indices || [];\n  if (!(Array.isArray(val)) && !isArrayTypedArray(val)) {\n
assert(\n    shape.length === 0,\n    () => `Element arr[${indices.join(',')}] is a primitive, ` +\n    `but\n
should be an array/TypedArray of ${shape[0]} elements`);\n  return;\n }\n  assert(\n    shape.length > 0,\n    ()\n
=> `Element arr[${indices.join(',')}] should be a primitive, ` +\n    `but is an array of ${val.length}\n
elements`);\n  assert(\n    val.length === shape[0],\n    () => `Element arr[${indices.join(',')}] should have\n
${shape[0]} ` +\n    `elements, but has ${val.length} elements`);\n  const subShape = shape.slice(1);\n  for (let i\n
= 0; i < val.length; ++i) {\n    deepAssertShapeConsistency(val[i], subShape, indices.concat(i));\n  }\n}\n\nfunction\n
assertDType(\n  expectedDtype: DataType|'numeric'|'string_or_numeric',\n  actualDType: DataType, argName:\n
string, functionName: string) {\n  if (expectedDtype === 'string_or_numeric') {\n    return;\n  }\n  if (expectedDtype\n
=== null) {\n    throw new Error(`Expected dtype cannot be null.`);\n  }\n  if (expectedDtype !== 'numeric' &&\n
expectedDtype !== actualDType ||\n    expectedDtype === 'numeric' && actualDtype === 'string') {\n    throw\n
new Error(\n      `Argument '${argName}' passed to '${functionName}' must ` +\n      `be ${expectedDtype}\n
tensor, but got ${actualDType} tensor`);\n  }\n}\n\nexport function convertToTensor<T extends Tensor>(\n  x:\n
T|TensorLike, argName: string, functionName: string,\n  parseAsDtype: DataType|'numeric'|'string_or_numeric'\n
= 'numeric'): T {\n  if (x instanceof Tensor) {\n    assertDType(parseAsDtype, x.dtype, argName, functionName);\n
return x;\n  }\n  let inferredDtype = inferDtype(x);\n  // If the user expects a bool/int/float, use that info to update\n
the\n  // inferredDtype when it is not a string.\n  if (inferredDtype !== 'string' &&\n    ['bool', 'int32',\n
'float32'].indexOf(parseAsDtype) >= 0) {\n    inferredDtype = parseAsDtype as DataType;\n  }\n  assertDType(parseAsDtype, inferredDtype, argName, functionName);\n
\n  if ((x == null) ||\n    (!isArrayTypedArray(x)\n
&& !Array.isArray(x) && typeof x !== 'number' &&\n    typeof x !== 'boolean' && typeof x !== 'string')) {\n
const type = x == null ? 'null' : (x as {}).constructor.name;\n    throw new Error(\n      `Argument '${argName}'\n
passed to '${functionName}' must be a ` +\n      `Tensor or TensorLike, but got '${type}'`);\n  }\n  const\n
inferredShape = inferShape(x, inferredDtype);\n  if (!isArrayTypedArray(x) && !Array.isArray(x)) {\n    x = [x] as\n
number[];\n  }\n  const skipTypedArray = true;\n  const values = inferredDtype !== 'string' ?\n    toTypedArray(x,\n
inferredDtype as DataType) :\n    flatten(x as string[], [], skipTypedArray) as string[];\n  return\n
ENGINE.makeTensor(values, inferredShape, inferredDtype) as T;\n}\n\nexport function convertToTensorArray<T\n
extends Tensor>(\n  arg: Array<T|TensorLike>, argName: string, functionName: string,\n  parseAsDtype:\n
DataType|'numeric'|'string_or_numeric' = 'numeric'): T[] {\n  if (!Array.isArray(arg)) {\n    throw new Error(\n
`Argument ${argName} passed to ${functionName} must be a ` +\n    `Tensor[] or TensorLike[]`);\n  }\n  const\n
tensors = arg as T[];\n  return tensors.map(\n    (t, i) =>\n      convertToTensor(t, `${argName}[${i}]`,\n
functionName, parseAsDtype);\n  )\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in\n
compliance with the License.\n * You may obtain a copy of the License at\n *\n *  

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n
governing permissions and\n * limitations under the License.\n *  

===== \n
*/\nimport {ENGINE} from '../engine';\nimport {isPromise} from '../util';\n\nexport const OP_SCOPE_SUFFIX =\n
'__op';\n\n/**\n * Used for wrapping functions that perform math operations on\n * Tensors. The function will be\n
wrapped in a named scope that cleans all\n * memory usage after the function is done.\n */\nexport function op<T\n
extends Function>(f: {[name: string]: T}): T {\n  const keys = Object.keys(f);\n  if (keys.length !== 1) {\n    throw\n
new Error(\n      `Please provide an object with a single key ` +\n      `(operation name) mapping to a function. Got\n
an object with ` +\n      `${keys.length} keys.`);\n  }\n  let opName = keys[0];\n  const fn = f[opName];\n  \n  //  

Strip the underscore from the end of the function name.\n  if (opName.endsWith('_')) {\n    opName =

```

```

opName.substring(0, opName.length - 1);\n } \n\n // add an __op suffix to distinguish ops from kernels in
tf.profile\n opName = opName + OP_SCOPE_SUFFIX;\n\n // tslint:disable-next-line:no-any\n const f2 = (...args:
any[]) => {\n  ENGINE.startScope(opName);\n  try {\n    const result = fn(...args);\n    if (isPromise(result)) {\n
      console.error('Cannot return a Promise inside of tidy.);\n    }\n    ENGINE.endScope(result);\n    return
result;\n  } catch (ex) {\n    ENGINE.endScope(null);\n    throw ex;\n  }\n }; \n Object.defineProperty(f2,
'name', {value: opName, configurable: true});\n\n // tslint:disable-next-line:no-any\n return f2 as any as
T;\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

===== \n
*\nimport {ENGINE} from '../engine';\nimport {Complex, ComplexInputs} from '../kernel_names';\nimport
{Tensor} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor} from
 '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport * as util from '../util';\n\nimport {op} from
 '../operation';\n\n/**\n * Converts two real numbers to a complex number.\n * Given a tensor `real` representing
the real part of a complex number, and a\n * tensor `imag` representing the imaginary part of a complex number,
this\n * operation returns complex numbers elementwise of the form [r0, i0, r1, i1],\n * where r represents the real
part and i represents the imag part.\n * The input tensors real and imag must have the same shape.\n * ````js\n
* const real = tf.tensor1d([2.25, 3.25]);\n * const imag = tf.tensor1d([4.75, 5.75]);\n * const complex =
tf.complex(real, imag);\n * complex.print();\n * ````\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n
*\nfunction complex_<T extends Tensor>(real: T|TensorLike, imag: T|TensorLike): T {\n  const $real =
convertToTensor(real, 'real', 'complex');\n  const $imag = convertToTensor(imag, 'imag', 'complex');\n
  util.assertShapesMatch(\n    $real.shape, $imag.shape,\n    `real and imag shapes, ${$real.shape} and
${$imag.shape}, ` +\n    `must match in call to tf.complex().`);\n\n  const inputs: ComplexInputs = {real: $real,
imag: $imag};\n  return ENGINE.runKernel(Complex, inputs as { } as NamedTensorMap);\n}\n\nexport const
complex = op({complex_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

===== \n
*\nimport {ENGINE} from '../engine';\nimport {Tensor} from '../tensor';\nimport {TensorLike, TypedArray}
from '../types';\nimport {DataType} from '../types';\nimport {assert, assertNonNegativeIntegerDimensions, flatten,
inferDtype, isArray, sizeFromShape, toTypedArray} from '../util';\n\n/** This is shared code across all tensor
creation methods. *\nexport function makeTensor(\n  values: TensorLike, shape: number[], inferredShape:
number[],\n  dtype?: DataType): Tensor {\n  if (dtype == null) {\n    dtype = inferDtype(values);\n  }\n  if (dtype
=== 'complex64') {\n    throw new Error(\n      `Cannot construct a complex64 tensor directly. ` +\n      `Please use
tf.complex(real, imag).`);\n  }\n  if (!isArray(values) && !Array.isArray(values) &&\n    typeof values !==
'number' && typeof values !== 'boolean' &&\n    typeof values !== 'string') {\n    throw new Error(\n      'values
passed to tensor(values) must be a number/boolean/string or ' +\n      'an array of numbers/booleans/strings, or a
TypedArray');\n  }\n  if (shape != null) {\n    assertNonNegativeIntegerDimensions(shape);\n\n    const providedSize
= sizeFromShape(shape);\n    const inferredSize = sizeFromShape(inferredShape);\n    assert(\n      providedSize
=== inferredSize,\n      () =>\n        `Based on the provided shape, [${shape}], the tensor should have ` +\n
`${providedSize} values but has ${inferredSize}`);\n\n    for (let i = 0; i < inferredShape.length; ++i) {\n      const

```

```

inferred = inferredShape[i];\n    const flatDimsDontMatch = i === inferredShape.length - 1 ?\n        inferred !== sizeFromShape(shape.slice(i)) :\n        true;\n    assert(\n        inferredShape[i] === shape[i] ||\n        !flatDimsDontMatch,\n        () => `Error creating a new Tensor. Inferred shape ` +\n            `(${inferredShape})\n            does not match the provided ` +\n            `shape (${shape}). `);\n    }\n}\n\n if (!isTypedArray(values) &&\n !Array.isArray(values)) {\n    values = [values] as number[];\n }\n\n shape = shape || inferredShape;\n values =\n dtype !== 'string' ?\n    toTypedArray(values, dtype) :\n    flatten(values as string[], [], true) as string[];\n return\n ENGINE.makeTensor(values as TypedArray, shape, dtype);\n}\n\n", /**\n * @license\n * Copyright 2018 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n
=====

```

```

*\n\nimport {Tensor} from './tensor';\nimport {inferShape} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {DataType, Rank, ShapeMap} from './types';\nimport {makeTensor} from './tensor_ops_util';\n\n/**\n * Creates a `tf.Tensor` with the provided values, shape and dtype.\n *`\n * \n *`\n * \n *`\n * \n * Pass an array of values to create a vector.\n * tf.tensor([1, 2, 3, 4]).print();\n * \n * \n * \n *`\n * \n * Pass a nested array of values to make a matrix or a higher\n * dimensional tensor.\n * tf.tensor([[1, 2], [3, 4]]).print();\n * \n * \n * \n *`\n * \n * Pass a flat array and specify a shape yourself.\n * tf.tensor([1, 2, 3, 4], [2, 2]).print();\n * \n * \n * \n *`\n * \n * @param values The values of the tensor. Can be nested array of numbers,\n * or a flat array, or a `TypedArray`. If the values are strings,\n * they will be encoded as utf-8 and kept as `Uint8Array[]`.\n * @param shape The shape of the tensor. Optional. If not provided,\n * it is inferred from `values`.\n * @param dtype The data type.\n * \n * \n * @doc {heading: 'Tensors', subheading: 'Creation'}\n */\n\nexport function tensor<R extends Rank>(\n    values:\n    TensorLike, shape?: ShapeMap[R], dtype?: DataType): Tensor<R> {\n    const inferredShape = inferShape(values, dtype);\n    return makeTensor(values, shape, inferredShape, dtype) as Tensor<R>;\n}\n\n", /**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
=====

```

```

*\n\n/* Type definitions for exporting and importing of models. *\n\n/**\n * A map from Tensor dtype to number of bytes per element of the Tensor.\n */\n\nexport const DTYPE_VALUE_SIZE_MAP: {[dtype: string]: number} =\n{\n    'float32': 4,\n    'float16': 2,\n    'int32': 4,\n    'uint16': 2,\n    'uint8': 1,\n    'bool': 1,\n    'complex64': 8\n};\n\n/**\n * A weight manifest.\n * \n * The weight manifest consists of an ordered list of weight-manifest groups.\n * Each weight-manifest group (\"group\" for short hereafter) consists of a\n * number of weight values stored in a number of paths.\n * See the documentation of `WeightManifestGroupConfig` below for more details.\n */\n\nexport declare type WeightsManifestConfig = WeightsManifestGroupConfig[];\n\n/**\n * A weight-manifest group.\n * \n * Consists of an ordered list of weight values encoded in binary format,\n * stored in an ordered list of paths.\n */\n\nexport declare interface WeightsManifestGroupConfig {\n    /**\n     * An ordered list of paths.\n     * \n     * Paths are intentionally abstract in order to be general. For example, they\n     * can be relative URL paths or relative paths on the file system.\n     */\n    paths: string[];\n\n    /**\n     * Specifications of the weights stored in the paths.\n     */\n    weights: WeightsManifestEntry[];\n\n    /**\n     * Group to which the weight belongs.\n     * \n     * - 'optimizer': Weight from a stateful optimizer.\n     */\n    export type WeightGroup = 'model'|'optimizer';\n\n    /**\n     * An entry in the weight manifest.\n     * \n     * The entry contains specification of a weight.\n     */\n    export declare interface WeightsManifestEntry {\n        /**\n         * Name of the weight, e.g., 'Dense_1/bias'\n         */\n        name: string;\n\n        /**\n         * Shape of the weight.\n

```

```

*\n shape: number[];\n\n /**\n * Data type of the weight.\n *\n dtype:
'float32'|'int32'|'bool'|'string'|'complex64';\n\n /**\n * Type of the weight.\n *\n * Optional.\n *\n * The value
'optimizer' indicates the weight belongs to an optimizer\n * (i.e., used only during model training and not during
inference).\n *\n group?: WeightGroup;\n\n /**\n * Information for dequantization of the weight.\n *\n
quantization?: {\n  scale?: number, // The scaling constant to multiply by.\n  min?: number, // The (possibly
nudged) minimum weight to add.\n  dtype: 'uint16'|'uint8'|'float16' // The dtype of the quantized weights.\n
};\n}\n\n /**\n * Options for saving a model.\n * @namespace io\n *\nexport interface SaveConfig {\n /**\n *
Whether to save only the trainable weights of the model, ignoring the\n * non-trainable ones.\n *\n
trainableOnly?: boolean;\n\n /**\n * Whether the optimizer will be saved (if exists).\n *\n * Default: `false`.\n
*\n includeOptimizer?: boolean;\n}\n\n /**\n * Result of a saving operation.\n *\nexport interface SaveResult {\n
/**\n * Information about the model artifacts saved.\n *\n modelArtifactsInfo: ModelArtifactsInfo;\n\n /**\n *
HTTP responses from the server that handled the model-saving request (if\n * any). This is applicable only to
server-based saving routes.\n *\n responses?: Response[];\n\n /**\n * Error messages and related data (if any).\n
*\n errors?: Array<{}|string>;\n}\n\nexport declare interface ModelArtifactsInfo {\n /**\n * Timestamp for
when the model is saved.\n *\n dateSaved: Date;\n\n /**\n * TODO(cais,yassogba) consider removing
GraphDef as GraphDefs now\n * come in a JSON format and none of our IOHandlers support a non json\n *
format. We could conder replacing this with 'Binary' if we want to\n * allow future handlers to save to non json
formats (though they will\n * probably want more information than 'Binary').\n *\n Type of the model topology\n
*\n * Type of the model topology\n *\n * Possible values:\n * - JSON: JSON config (human-readable, e.g.,
Keras JSON).\n * - GraphDef: TensorFlow\n *
[GraphDef](https://www.tensorflow.org/extend/tool_developers/#graphdef)\n * protocol buffer (binary).\n *\n
modelTopologyType: 'JSON'|'GraphDef';\n\n /**\n * Size of model topology (Keras JSON or GraphDef), in
bytes.\n *\n modelTopologyBytes?: number;\n\n /**\n * Size of weight specification or manifest, in bytes.\n
*\n weightSpecsBytes?: number;\n\n /**\n * Size of weight value data, in bytes.\n *\n weightDataBytes?:
number;\n}\n\n /**\n * Model training configuration. *\nexport declare interface TrainingConfig {\n // TODO(cais):
Tighten the typing once keras spec is available to tfjs-core.\n // See\n // tslint:disable-next-line:max-line-length\n //
https://github.com/tensorflow/tfjs-layers/blob/master/src/keras_format/training_config.ts\n /**\n * Optimizer used for
the model training. *\n optimizer_config: {};\n\n // TODO(cais): Tighten the typing once keras spec is available to
tfjs-core.\n /**\n * Loss function(s) for the model's output(s). *\n loss: string|string[]|{[key: string]: string};\n\n //
TODO(cais): Tighten the typing once keras spec is available to tfjs-core.\n /**\n * Metric function(s) for the model's
output(s). *\n metrics?: string[]|{[key: string]: string};\n\n // TODO(cais): Tighten the typing once keras spec is
available to tfjs-core.\n weighted_metrics?: string[];\n\n // TODO(cais): Tighten the typing once keras spec is
available to tfjs-core.\n sample_weight_mode?: string;\n\n loss_weights?: number[]|{[key: string]:
number};\n}\n\n /**\n * The serialized artifacts of a model, including topology and weights.\n *\n * The
`modelTopology`, `trainingConfig`, `weightSpecs` and `weightData` fields\n * of this interface are optional, in order
to support topology- or weights-only\n * saving and loading.\n *\n * Note this interface is used internally in
IOHandlers. For the file format\n * written to disk as `model.json`, see `ModelJSON`.\n *\nexport declare interface
ModelArtifacts {\n /**\n * Model topology.\n *\n * For Keras-style `tf.Model`s, this is a JSON object.\n * For
TensorFlow-style models (e.g., `SavedModel`), this is the JSON\n * encoding of the `GraphDef` protocol buffer.\n
*\n modelTopology?: {}|ArrayBuffer;\n\n /**\n * Serialized configuration for the model's training.\n *\n
trainingConfig?: TrainingConfig;\n\n /**\n * Weight specifications.\n *\n * This corresponds to the
weightsData below.\n *\n weightSpecs?: WeightsManifestEntry[];\n\n /**\n * Binary buffer for all weight
values concatenated in the order specified\n * by `weightSpecs`.\n *\n weightData?: ArrayBuffer;\n\n /**\n *
Hard-coded format name for models saved from TensorFlow.js or converted\n * by TensorFlow.js Converter.\n *\n
format?: string;\n\n /**\n * What library is responsible for originally generating this artifact.\n *\n * Used
for debugging purposes. E.g., 'TensorFlow.js v1.0.0'.\n *\n generatedBy?: string;\n\n /**\n * What library or
tool is responsible for converting the original model\n * to this format, applicable only if the model is output by a
converter.\n *\n * Used for debugging purposes. E.g., 'TensorFlow.js Converter v1.0.0'.\n *\n * A value of

```

``null`` means the model artifacts are generated without any conversion process (e.g., saved directly from a TensorFlow.js `tf.LayersModel`` instance.)

`convertedBy?: string|null;`

`/** Inputs and outputs signature for saved model.`

`signature?: { };`

`/** User-defined metadata about the model.`

`userDefinedMetadata?: {[key: string]: { }};`

`/** Initializer for the model.`

`modelInitializer?: { };`

`/** The on-disk format of the `model.json` file.`

`TF.js 1.0` always populates the optional fields when writing `model.json`. Prior versions did not provide those fields.

`export declare interface ModelJSON {`

`/** Model topology.`

`topology: { };`

`/** For Keras-style `tf.Model`s, this is a JSON object.`

`/** For TensorFlow-style models (e.g., `SavedModel`), this is the JSON`

`encoding of the `GraphDef` protocol buffer.`

`modelTopology: { };`

`/** Model training configuration.`

`trainingConfig?: TrainingConfig;`

`/** Weights manifest.`

`weightsManifest: { };`

`/** The weights manifest consists of an ordered list of weight-manifest`

`groups. Each weight-manifest group consists of a number of weight values`

`stored in a number of paths. See the documentation of`

``WeightsManifestConfig` for more details.`

`weightsManifest: WeightsManifestConfig;`

`/** Hard-coded format name for models saved from TensorFlow.js or`

`converted by TensorFlow.js Converter.`

`format?: string;`

`/** What library is responsible for originally generating this artifact.`

`generatedBy?: string;`

`/** Used for debugging purposes. E.g., 'TensorFlow.js v1.0.0'.`

`/** What library or tool is responsible for converting the original model`

`to this format, applicable only if the model is output by a converter.`

`converter?: string;`

`/** Used for debugging purposes. E.g., 'TensorFlow.js Converter v1.0.0'.`

`/** A value of `null` means the model artifacts are generated without any`

`conversion process (e.g., saved directly from a TensorFlow.js`

`tf.LayersModel` instance.)`

`convertedBy?: string|null;`

`/** Inputs and outputs signature for saved model.`

`signature?: { };`

`/** User-defined metadata about the model.`

`userDefinedMetadata?: {[key: string]: { }};`

`/** Initializer for the model.`

`modelInitializer?: { };`

`/** Type definition for handlers of loading operations.`

`export type LoadHandler = () => Promise<ModelArtifacts>;`

`/** Type definition for handlers of saving operations.`

`export type SaveHandler = (modelArtifact: ModelArtifacts) =>`

`Promise<SaveResult>;`

`/** Interface for a model import/export handler.`

`The `save` and `load` handlers are both optional, in order to allow handlers`

`that support only saving or loading.`

`// tslint:disable-next-line:interface-name`

`export interface IOHandler {`

`save?: SaveHandler;`

`load?: LoadHandler;`

`}`

`/** An interface for the manager of a model store.`

`A model store is defined as a storage medium on which multiple models can`

`be stored. Each stored model has a unique `path` as its identifier.`

`A `ModelStoreManager` for the store allows actions including`

`- Listing the models stored in the store.`

`- Deleting a model from the store.`

`export interface ModelStoreManager {`

`/** List all models in the model store.`

`@returns A dictionary mapping paths of existing models to their`

`model artifacts info. Model artifacts info include type of the model's`

`topology, byte sizes of the topology, weights, etc.`

`listModels(): Promise<{[path: string]: ModelArtifactsInfo}>;`

`/** Remove a model specified by `path`.`

`@param path`

`@returns ModelArtifactsInfo of the deleted model (if and only if deletion`

`is successful).`

`@throws Error if deletion fails, e.g., if no model exists at `path`.`

`removeModel(path: string): Promise<ModelArtifactsInfo>;`

`/** Callback for the progress of a long-running action such as an`

`HTTP`

`request for a large binary object.`

`fraction` should be a number in the [0, 1] interval, indicating`

`how`

`much of the action has completed.`

`export type OnProgressCallback = (fraction: number) =>`

`void;`

`/** @namespace io`

`export interface LoadOptions {`

`/** RequestInit (options) for HTTP requests.`

`requestInit?: RequestInit;`

`/** For detailed information on the supported fields, see`

`[https://developer.mozilla.org/en-US/docs/Web/API/Request/Request]`

`(`

`https://developer.mozilla.org/en-US/docs/Web/API/Request/Request)`

`requestInit?: RequestInit;`

`/** Progress callback.`

`onProgress?: OnProgressCallback;`

`/** A function used to override the `window.fetch` function.`

`fetchFunc?: Function;`

`/** Strict loading model: whether extraneous weights or missing`

`weights should trigger an `Error`.`

`If `true`, require that the provided weights exactly match those`

`required by the layers. `false` means that both extra weights`

`and missing weights will be silently ignored.`

`strict?: boolean;`

`/** Path prefix for weight files, by default this is calculated from`

the path of the model JSON file. For instance, if the path to the model JSON file is `http://localhost/foo/model.json`, then the default path prefix will be `http://localhost/foo/`. If a weight file has the path value `group1-shard1of2` in the weight manifest, then the weight file will be loaded from `http://localhost/foo/group1-shard1of2` by default. However, if you provide a `weightPathPrefix` value of `http://localhost/foo/alt-weights`, then the weight file will be loaded from the path `http://localhost/foo/alt-weights/group1-shard1of2` instead.

`weightPathPrefix?: string` Whether the module or model is to be loaded from TF Hub. Setting this to `true` allows passing a TF-Hub module URL, omitting the standard model file name and the query parameters. Default: `false`. `fromTFHub?: boolean`

An async function to convert weight file name to URL. The weight file names are stored in `model.json`'s `weightsManifest.paths` field. By default we consider weight files are colocated with the `model.json` file. For example: `model.json` URL: `https://www.google.com/models/1/model.json` `group1-shard1of1.bin` url: `https://www.google.com/models/1/group1-shard1of1.bin` With this func you can convert the weight file name to any URL.

`weightUrlConverter?: (weightFileName: string) => Promise<string>`

Additional options for `Platform.fetch`

```

export interface RequestDetails {
  /** Is this request for a binary file (as opposed to a json file) */
  isBinary?: boolean;
}
"use strict"
exports.byteLength = byteLength
exports.toByteArray = toByteArray
exports.fromByteArray = fromByteArray
var lookup = []
var revLookup = []
var Arr = typeof Uint8Array !== 'undefined' ? Uint8Array : Array
var code = 'ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/'
for (var i = 0, len = code.length; i < len; ++i) {
  lookup[i] = code[i]
  revLookup[code.charCodeAt(i)] = i
}
// Support decoding URL-safe base64 strings, as Node.js does.
// See:
// https://en.wikipedia.org/wiki/Base64#URL_applications
revLookup['-'.charCodeAt(0)] = 62
revLookup['_'.charCodeAt(0)] = 63
function getLens (b64) {
  var len = b64.length
  if (len % 4 > 0) {
    throw new Error('Invalid string. Length must be a multiple of 4')
  }
  // Trim off extra bytes after placeholder bytes are found
  // See: https://github.com/beatgammit/base64-js/issues/42
  var validLen = b64.indexOf('=')
  if (validLen === -1) validLen = len
  var placeHoldersLen = validLen === len ? 0 : 4 - (validLen % 4)
  return [validLen, placeHoldersLen]
}
// base64 is 4/3 + up to two characters of the original data
function byteLength (b64) {
  var lens = getLens(b64)
  var validLen = lens[0]
  var placeHoldersLen = lens[1]
  return ((validLen + placeHoldersLen) * 3 / 4) - placeHoldersLen
}
function _byteLength (b64, validLen, placeHoldersLen) {
  return ((validLen + placeHoldersLen) * 3 / 4) - placeHoldersLen
}
function toByteArray (b64) {
  var tmp
  var lens = getLens(b64)
  var validLen = lens[0]
  var placeHoldersLen = lens[1]
  var arr = new Arr(_byteLength(b64, validLen, placeHoldersLen))
  var curByte = 0
  // if there are placehoders, only get up to the last complete 4 chars
  var len = placeHoldersLen > 0 ? validLen - 4 : validLen
  var i
  for (i = 0; i < len; i += 4) {
    tmp = (revLookup[b64.charCodeAt(i)] << 18) | (revLookup[b64.charCodeAt(i + 1)] << 12) | (revLookup[b64.charCodeAt(i + 2)] << 6) | revLookup[b64.charCodeAt(i + 3)]
    arr[curByte++] = (tmp >> 16) & 0xFF
    arr[curByte++] = (tmp >> 8) & 0xFF
    arr[curByte++] = tmp & 0xFF
  }
  if (placeHoldersLen === 2) {
    tmp = (revLookup[b64.charCodeAt(i)] << 2) | (revLookup[b64.charCodeAt(i + 1)] >> 4)
    arr[curByte++] = tmp & 0xFF
  }
  if (placeHoldersLen === 1) {
    tmp = (revLookup[b64.charCodeAt(i)] << 10) | (revLookup[b64.charCodeAt(i + 1)] << 4) | (revLookup[b64.charCodeAt(i + 2)] >> 2)
    arr[curByte++] = (tmp >> 8) & 0xFF
    arr[curByte++] = tmp & 0xFF
  }
  return arr
}
function tripletToBase64 (num) {
  return lookup[num >> 18 & 0x3F] + lookup[num >> 12 & 0x3F] + lookup[num >> 6 & 0x3F] + lookup[num & 0x3F]
}
function encodeChunk (uint8, start, end) {
  var tmp
  var output = []
  for (var i = start; i < end; i += 3) {
    tmp = ((uint8[i] << 16) & 0xFF0000) + ((uint8[i + 1] << 8) & 0xFF00) + (uint8[i + 2] & 0xFF)
    output.push(tripletToBase64(tmp))
  }
  return output.join("")
}
function fromByteArray (uint8) {
  var tmp
  var len = uint8.length
  var extraBytes = len % 3 // if we have 1 byte left, pad 2 bytes
  var parts = []
  var maxChunkLength = 16383 // must be multiple of 3
  // go through the array every three bytes, we'll deal with trailing stuff later
  for (var i = 0, len2 = len - extraBytes; i < len2; i += maxChunkLength) {
    parts.push(encodeChunk(uint8, i, (i + maxChunkLength) > len2 ? len2 : (i + maxChunkLength)))
  }
}

```

```

// pad the end with zeros, but make sure to not forget the extra bytes\n if (extraBytes === 1) {\n   tmp = uint8[len -
1]\n   parts.push(\n     lookup[tmp >> 2] +\n     lookup[(tmp << 4) & 0x3F] +\n     '='\n   )\n } else if (extraBytes
=== 2) {\n   tmp = (uint8[len - 2] << 8) + uint8[len - 1]\n   parts.push(\n     lookup[tmp >> 10] +\n     lookup[(tmp
>> 4) & 0x3F] +\n     lookup[(tmp << 2) & 0x3F] +\n     '='\n   )\n }\n\n return parts.join("")\n}\n", "exports.read =
function (buffer, offset, isLE, mLen, nBytes) {\n  var e, m\n  var eLen = (nBytes * 8) - mLen - 1\n  var eMax = (1
<< eLen) - 1\n  var eBias = eMax >> 1\n  var nBits = -7\n  var i = isLE ? (nBytes - 1) : 0\n  var d = isLE ? -1 : 1\n
var s = buffer[offset + i]\n  i += d\n  e = s & ((1 << (-nBits)) - 1)\n  s >>= (-nBits)\n  nBits += eLen\n  for (;
nBits > 0; e = (e * 256) + buffer[offset + i], i += d, nBits -= 8) {\n\n  } m = e & ((1 << (-nBits)) - 1)\n  e >>= (-
nBits)\n  nBits += mLen\n  for (; nBits > 0; m = (m * 256) + buffer[offset + i], i += d, nBits -= 8) {\n\n  } if (e ===
0) {\n    e = 1 - eBias\n  } else if (e === eMax) {\n    return m ? NaN : ((s ? -1 : 1) * Infinity)\n  } else {\n    m = m +
Math.pow(2, mLen)\n    e = e - eBias\n  }\n  return (s ? -1 : 1) * m * Math.pow(2, e - mLen)\n}\n\n\nexports.write =
function (buffer, value, offset, isLE, mLen, nBytes) {\n  var e, m, c\n  var eLen = (nBytes * 8) - mLen - 1\n  var
eMax = (1 << eLen) - 1\n  var eBias = eMax >> 1\n  var rt = (mLen === 23 ? Math.pow(2, -24) - Math.pow(2, -77) :
0)\n  var i = isLE ? 0 : (nBytes - 1)\n  var d = isLE ? 1 : -1\n  var s = value < 0 || (value === 0 && 1 / value < 0) ? 1 :
0\n  value = Math.abs(value)\n  if (isNaN(value) || value === Infinity) {\n    m = isNaN(value) ? 1 : 0\n    e =
eMax\n  } else {\n    e = Math.floor(Math.log(value) / Math.LN2)\n    if (value * (c = Math.pow(2, -e)) < 1) {\n      e-
\n      c *= 2\n    }\n    if (e + eBias >= 1) {\n      value += rt / c\n    } else {\n      value += rt * Math.pow(2, 1 -
eBias)\n    }\n    if (value * c >= 2) {\n      e++\n      c /= 2\n    }\n    if (e + eBias >= eMax) {\n      m = 0\n      e =
eMax\n    } else if (e + eBias >= 1) {\n      m = ((value * c) - 1) * Math.pow(2, mLen)\n      e = e + eBias\n    } else
{\n      m = value * Math.pow(2, eBias - 1) * Math.pow(2, mLen)\n      e = 0\n    }\n  }\n  for (; mLen >= 8;
buffer[offset + i] = m & 0xff, i += d, m /= 256, mLen -= 8) {\n\n  } e = (e << mLen) | m\n  eLen += mLen\n  for (;
eLen > 0; buffer[offset + i] = e & 0xff, i += d, e /= 256, eLen -= 8) {\n\n  } buffer[offset + i - d] |= s * 128\n}\n", "var
toString = {}.toString;\n\nmodule.exports = Array.isArray || function (arr) {\n  return toString.call(arr) === '[object
Array]';\n};\n", "/*!\n * The buffer module from node.js, for the browser.\n *!\n * @author Feross Aboukhadijeh
<feross@feross.org> <http://feross.org>\n * @license MIT\n *!\n * eslint-disable no-proto\n *!\n * use strict\n *!\n * nvar
base64 = require('base64-js')\n * nvar ieee754 = require('ieee754')\n * nvar isArray = require('isArray')\n *!\n * nexports.Buffer =
Buffer\n * nexports.SlowBuffer = SlowBuffer\n * nexports.INSPECT_MAX_BYTES = 50\n *!\n *!\n * If
`Buffer.TYPED_ARRAY_SUPPORT`:\n * == true Use Uint8Array implementation (fastest)\n * == false
Use Object implementation (most compatible, even IE6)\n *!\n * Browsers that support typed arrays are IE 10+,
Firefox 4+, Chrome 7+, Safari 5.1+,\n * Opera 11.6+, iOS 4.2+.\n *!\n * Due to various browser bugs, sometimes the
Object implementation will be used even\n * when the browser supports typed arrays.\n *!\n * Note:\n *!\n * -
Firefox 4-29 lacks support for adding new properties to `Uint8Array` instances,\n * See:
https://bugzilla.mozilla.org/show\_bug.cgi?id=695438.\n *!\n * - Chrome 9-10 is missing the
`TypedArray.prototype.subarray` function.\n *!\n * - IE10 has a broken `TypedArray.prototype.subarray` function
which returns arrays of\n * incorrect length in some situations.\n *!\n * We detect these buggy browsers and set
`Buffer.TYPED_ARRAY_SUPPORT` to `false` so they\n * get the Object implementation, which is slower but
behaves correctly.\n *!\n * Buffer.TYPED_ARRAY_SUPPORT = global.TYPED_ARRAY_SUPPORT !==
undefined\n * ? global.TYPED_ARRAY_SUPPORT\n * : typedArraySupport()\n *!\n * Export kMaxLength after
typed array support is determined.\n *!\n * nexports.kMaxLength = kMaxLength()\n *!\n * nfunction typedArraySupport ()
{\n  try {\n    var arr = new Uint8Array(1)\n    arr.__proto__ = {__proto__: Uint8Array.prototype, foo: function () {\n
return 42 }}\n    return arr.foo() === 42 && // typed array instances can be augmented\n      typeof arr.subarray
=== 'function' && // chrome 9-10 lack `subarray`\n      arr.subarray(1, 1).byteLength === 0 // ie10 has broken
`subarray`\n  } catch (e) {\n    return false\n  }\n}\n *!\n * nfunction kMaxLength () {\n  return
Buffer.TYPED_ARRAY_SUPPORT\n * ? 0x7fffffff\n * : 0x3fffffff\n *!\n * nfunction createBuffer (that, length) {\n
if (kMaxLength() < length) {\n  throw new RangeError('Invalid typed array length')\n }\n if
(Buffer.TYPED_ARRAY_SUPPORT) {\n   // Return an augmented `Uint8Array` instance, for best performance\n
that = new Uint8Array(length)\n   that.__proto__ = Buffer.prototype\n } else {\n   // Fallback: Return an object
instance of the Buffer class\n   if (that === null) {\n     that = new Buffer(length)\n   }\n   that.length = length\n

```

```

}\n\n return that\n}\n\n/**\n * The Buffer constructor returns instances of `Uint8Array` that have their\n *
prototype changed to `Buffer.prototype`. Furthermore, `Buffer` is a subclass of\n * `Uint8Array`, so the returned
instances will have all the node `Buffer` methods\n * and the `Uint8Array` methods. Square bracket notation works
as expected -- it\n * returns a single octet.\n *\n * The `Uint8Array` prototype remains unmodified.\n */\n\nfunction
Buffer(arg, encodingOrOffset, length) {\n  if (!Buffer.TYPED_ARRAY_SUPPORT && !(this instanceof Buffer))\n  {\n    return new Buffer(arg, encodingOrOffset, length)\n  }\n\n  // Common case.\n  if (typeof arg === 'number') {\n    if (typeof encodingOrOffset === 'string') {\n      throw new Error(\n        'If encoding is specified then the first
argument must be a string'\n      )\n    }\n    return allocUnsafe(this, arg)\n  }\n  return from(this, arg,
encodingOrOffset, length)\n}\n\nBuffer.poolSize = 8192 // not used by this implementation\n\n// TODO: Legacy,
not needed anymore. Remove in next major version.\nBuffer._augment = function (arr) {\n  arr.__proto__ =
Buffer.prototype\n  return arr\n}\n\nfunction from (that, value, encodingOrOffset, length) {\n  if (typeof value ===
'number') {\n    throw new TypeError('"value" argument must not be a number')\n  }\n\n  if (typeof ArrayBuffer
!== 'undefined' && value instanceof ArrayBuffer) {\n    return fromArrayBuffer(that, value, encodingOrOffset,
length)\n  }\n\n  if (typeof value === 'string') {\n    return fromString(that, value, encodingOrOffset)\n  }\n\n  return
fromObject(that, value)\n}\n\n/**\n * Functionally equivalent to Buffer(arg, encoding) but throws a TypeError\n * if
value is a number.\n * Buffer.from(str[, encoding])\n * Buffer.from(array)\n * Buffer.from(buffer)\n *
Buffer.from(arrayBuffer[, byteOffset[, length]])\n */\n\nBuffer.from = function (value, encodingOrOffset, length) {\n
return from(null, value, encodingOrOffset, length)\n}\n\nif (Buffer.TYPED_ARRAY_SUPPORT) {\n
Buffer.prototype.__proto__ = Uint8Array.prototype\n  Buffer.__proto__ = Uint8Array\n  if (typeof Symbol !==
'undefined' && Symbol.species &&\n    Buffer[Symbol.species] === Buffer) {\n    // Fix subarray() in ES2016.
See: https://github.com/feross/buffer/pull/97\n    Object.defineProperty(Buffer, Symbol.species, {\n      value: null,\n
configurable: true\n    })\n  }\n}\n\nfunction assertSize (size) {\n  if (typeof size !== 'number') {\n    throw new
TypeError('"size" argument must be a number')\n  } else if (size < 0) {\n    throw new RangeError('"size"
argument must not be negative')\n  }\n}\n\nfunction alloc (that, size, fill, encoding) {\n  assertSize(size)\n  if (size
<= 0) {\n    return createBuffer(that, size)\n  }\n  if (fill !== undefined) {\n    // Only pay attention to encoding if it's
a string. This\n    // prevents accidentally sending in a number that would\n    // be interpreted as a start offset.\n
return typeof encoding === 'string'\n      ? createBuffer(that, size).fill(fill, encoding)\n      : createBuffer(that,
size).fill(fill)\n  }\n  return createBuffer(that, size)\n}\n\n/**\n * Creates a new filled Buffer instance.\n * alloc(size[,
fill[, encoding]])\n */\n\nBuffer.alloc = function (size, fill, encoding) {\n  return alloc(null, size, fill,
encoding)\n}\n\nfunction allocUnsafe (that, size) {\n  assertSize(size)\n  that = createBuffer(that, size < 0 ? 0 :
checked(size) | 0)\n  if (!Buffer.TYPED_ARRAY_SUPPORT) {\n    for (var i = 0; i < size; ++i) {\n      that[i] = 0\n
}\n  }\n  return that\n}\n\n/**\n * Equivalent to Buffer(num), by default creates a non-zero-filled Buffer instance.\n
*\n * Buffer.allocUnsafe = function (size) {\n  return allocUnsafe(null, size)\n}\n\n/**\n * Equivalent to
SlowBuffer(num), by default creates a non-zero-filled Buffer instance.\n */\n\nBuffer.allocUnsafeSlow = function
(size) {\n  return allocUnsafe(null, size)\n}\n\nfunction fromString (that, string, encoding) {\n  if (typeof encoding
!== 'string' || encoding === '') {\n    encoding = 'utf8'\n  }\n\n  if (!Buffer.isEncoding(encoding)) {\n    throw new
TypeError('"encoding" must be a valid string encoding')\n  }\n\n  var length = byteLength(string, encoding) | 0\n
that = createBuffer(that, length)\n\n  var actual = that.write(string, encoding)\n\n  if (actual !== length) {\n    //
Writing a hex string, for example, that contains invalid characters will\n    // cause everything after the first invalid
character to be ignored. (e.g.\n    // 'abxcd' will be treated as 'ab')\n    that = that.slice(0, actual)\n  }\n\n  return
that\n}\n\nfunction fromArrayLike (that, array) {\n  var length = array.length < 0 ? 0 : checked(array.length) | 0\n
that = createBuffer(that, length)\n  for (var i = 0; i < length; i += 1) {\n    that[i] = array[i] & 255\n  }\n  return
that\n}\n\nfunction fromArrayBuffer (that, array, byteOffset, length) {\n  array.byteLength // this throws if `array` is
not a valid ArrayBuffer\n\n  if (byteOffset < 0 || array.byteLength < byteOffset) {\n    throw new
RangeError('"offset" is out of bounds')\n  }\n\n  if (array.byteLength < byteOffset + (length || 0)) {\n    throw new
RangeError('"length" is out of bounds')\n  }\n\n  if (byteOffset === undefined && length === undefined) {\n
array = new Uint8Array(array)\n  } else if (length === undefined) {\n    array = new Uint8Array(array, byteOffset)\n
  } else {\n    array = new Uint8Array(array, byteOffset, length)\n  }\n\n  if (Buffer.TYPED_ARRAY_SUPPORT) {\n

```

```

// Return an augmented `Uint8Array` instance, for best performance
that = array
that.__proto__ =
Buffer.prototype
} else {
// Fallback: Return an object instance of the Buffer class
that =
fromArrayLike(that, array)
}
return that
}
function fromObject (that, obj) {
if (Buffer.isBuffer(obj)) {
var len = checked(obj.length) | 0
that = createBuffer(that, len)
if (that.length === 0) {
return that
}
obj.copy(that, 0, 0, len)
return that
}
if (obj) {
if ((typeof ArrayBuffer !== 'undefined' &&
obj.buffer instanceof ArrayBuffer) || 'length' in obj) {
if (typeof obj.length !== 'number' || !isn(obj.length))
return createBuffer(that, 0)
}
return fromArrayLike(that, obj)
}
if (obj.type === 'Buffer'
&& isArray(obj.data)) {
return fromArrayLike(that, obj.data)
}
}
throw new TypeError('First
argument must be a string, Buffer, ArrayBuffer, Array, or array-like object.')
}
function checked (length) {
// Note: cannot use `length < kMaxLength()` here because that fails when
// length is NaN (which is otherwise
coerced to zero.)
if (length >= kMaxLength()) {
throw new RangeError('Attempt to allocate Buffer larger than
maximum ' +
'size: 0x' + kMaxLength().toString(16) + ' bytes')
}
return length |
0
}
function SlowBuffer (length) {
if (+length !== length) { // eslint-disable-line eqeqeq
length = 0
}
return Buffer.alloc(+length)
}
Buffer.isBuffer = function isBuffer (b) {
return !! (b != null &&
b._isBuffer)
}
Buffer.compare = function compare (a, b) {
if (!Buffer.isBuffer(a) || !Buffer.isBuffer(b)) {
throw new TypeError('Arguments must be Buffers')
}
if (a === b) return 0
var x = a.length
var y =
b.length
for (var i = 0, len = Math.min(x, y); i < len; ++i) {
if (a[i] !== b[i]) {
x = a[i]
y = b[i]
break
}
}
if (x < y) return -1
if (y < x) return 1
return 0
}
Buffer.isEncoding = function
isEncoding (encoding) {
switch (String(encoding).toLowerCase()) {
case 'hex':
case 'utf8':
case 'utf-
8':
case 'ascii':
case 'latin1':
case 'binary':
case 'base64':
case 'ucs2':
case 'ucs-2':
case
'utf16le':
case 'utf-16le':
return true
default:
return false
}
}
Buffer.concat = function concat
(list, length) {
if (!isArray(list)) {
throw new TypeError('"list"
argument must be an Array of Buffers')
}
if (list.length === 0) {
return Buffer.alloc(0)
}
var i
if (length === undefined) {
length = 0
for (i = 0; i < list.length; ++i) {
length += list[i].length
}
}
var buffer = Buffer.allocUnsafe(length)
var pos = 0
for (i = 0; i < list.length; ++i) {
var buf = list[i]
if (!Buffer.isBuffer(buf)) {
throw new
TypeError('"list"
argument must be an Array of Buffers')
}
buf.copy(buffer, pos)
pos += buf.length
}
return buffer
}
function byteLength (string, encoding) {
if (Buffer.isBuffer(string)) {
return
string.length
}
if (typeof ArrayBuffer !== 'undefined' &&
typeof ArrayBuffer.isView === 'function' &&
(ArrayBuffer.isView(string) || string instanceof ArrayBuffer)) {
return string.byteLength
}
if (typeof string
!== 'string') {
string = '' + string
}
var len = string.length
if (len === 0) return 0
// Use a for loop to
avoid recursion
var loweredCase = false
for (;;) {
switch (encoding) {
case 'ascii':
case 'latin1':
case 'binary':
return len
case 'utf8':
case 'utf-8':
return
utf8ToBytes(string).length
case 'ucs2':
case 'ucs-2':
case 'utf16le':
case 'utf-16le':
return
len * 2
case 'hex':
return len >>> 1
case 'base64':
return base64ToBytes(string).length
default:
if (loweredCase) return utf8ToBytes(string).length // assume utf8
encoding = (' +
encoding).toLowerCase()
loweredCase = true
}
}
}
Buffer.byteLength = byteLength
function
slowToString (encoding, start, end) {
var loweredCase = false
// No need to verify that `this.length <=
MAX_UINT32` since it's a read-only
// property of a typed array.
// This behaves neither like String nor
Uint8Array in that we set start/end
// to their upper/lower bounds if the value passed is out of range.
//
// undefined is handled specially as per ECMA-262 6th Edition,
// Section 13.3.3.7 Runtime Semantics:
KeyedBindingInitialization.
if (start === undefined || start < 0) {
start = 0
}
// Return early if start >
this.length. Done here to prevent potential uint32
// coercion fail below.
if (start > this.length) {
return ""
}
if (end === undefined || end > this.length) {
end = this.length
}
if (end <= 0) {
return ""
}
// Force coercion to uint32. This will also coerce falsey/NaN values to 0.
end >>>= 0
start >>>= 0
if (end
<= start) {
return ""
}
if (!encoding) encoding = 'utf8'
while (true) {
switch (encoding) {
case
'hex':
return hexSlice(this, start, end)
case 'utf8':
case 'utf-8':
return utf8Slice(this, start,
end)
case 'ascii':
return asciiSlice(this, start, end)
case 'latin1':
case 'binary':
return
latin1Slice(this, start, end)
case 'base64':
return base64Slice(this, start, end)
case 'ucs2':

```

```

case 'ucs-2':\n case 'utf16le':\n case 'utf-16le':\n return utf16leSlice(this, start, end)\n\n default:\n if
(loweredCase) throw new TypeError("Unknown encoding: " + encoding)\n encoding = (encoding +
").toLowerCase()\n loweredCase = true\n }\n }\n}\n\n// The property is used by `Buffer.isBuffer` and `is-
buffer` (in Safari 5-7) to detect\n// Buffer instances.\nBuffer.prototype._isBuffer = true\n\nfunction swap (b, n, m)
{\n var i = b[n]\n b[n] = b[m]\n b[m] = i\n}\n\nBuffer.prototype.swap16 = function swap16 () {\n var len =
this.length\n if (len % 2 !== 0) {\n throw new RangeError("Buffer size must be a multiple of 16-bits")\n }\n for
(var i = 0; i < len; i += 2) {\n swap(this, i, i + 1)\n }\n return this\n}\n\nBuffer.prototype.swap32 = function
swap32 () {\n var len = this.length\n if (len % 4 !== 0) {\n throw new RangeError("Buffer size must be a multiple
of 32-bits")\n }\n for (var i = 0; i < len; i += 4) {\n swap(this, i, i + 3)\n swap(this, i + 1, i + 2)\n }\n return
this\n}\n\nBuffer.prototype.swap64 = function swap64 () {\n var len = this.length\n if (len % 8 !== 0) {\n throw
new RangeError("Buffer size must be a multiple of 64-bits")\n }\n for (var i = 0; i < len; i += 8) {\n swap(this, i,
i + 7)\n swap(this, i + 1, i + 6)\n swap(this, i + 2, i + 5)\n swap(this, i + 3, i + 4)\n }\n return
this\n}\n\nBuffer.prototype.toString = function toString () {\n var length = this.length | 0\n if (length === 0) return
""\n if (arguments.length === 0) return utf8Slice(this, 0, length)\n return slowToString.apply(this,
arguments)\n}\n\nBuffer.prototype.equals = function equals (b) {\n if (!Buffer.isBuffer(b)) throw new
TypeError("Argument must be a Buffer")\n if (this === b) return true\n return Buffer.compare(this, b) ===
0\n}\n\nBuffer.prototype.inspect = function inspect () {\n var str = "\n var max =
exports.INSPECT_MAX_BYTES\n if (this.length > 0) {\n str = this.toString('hex', 0, max).match(/.{2}/g).join('
')\n if (this.length > max) str += ' ... '\n }\n return '<Buffer ' + str + '>'\n}\n\nBuffer.prototype.compare = function
compare (target, start, end, thisStart, thisEnd) {\n if (!Buffer.isBuffer(target)) {\n throw new
TypeError("Argument must be a Buffer")\n }\n\n if (start === undefined) {\n start = 0\n }\n if (end ===
undefined) {\n end = target ? target.length : 0\n }\n if (thisStart === undefined) {\n thisStart = 0\n }\n if
(thisEnd === undefined) {\n thisEnd = this.length\n }\n\n if (start < 0 || end > target.length || thisStart < 0 ||
thisEnd > this.length) {\n throw new RangeError("out of range index")\n }\n\n if (thisStart >= thisEnd && start
>= end) {\n return 0\n }\n if (thisStart >= thisEnd) {\n return -1\n }\n if (start >= end) {\n return 1\n }\n\n start
>>>= 0\n end >>>= 0\n thisStart >>>= 0\n thisEnd >>>= 0\n if (this === target) return 0\n\n var x =
thisEnd - thisStart\n var y = end - start\n var len = Math.min(x, y)\n\n var thisCopy = this.slice(thisStart,
thisEnd)\n var targetCopy = target.slice(start, end)\n\n for (var i = 0; i < len; ++i) {\n if (thisCopy[i] !==
targetCopy[i]) {\n x = thisCopy[i]\n y = targetCopy[i]\n break\n }\n }\n\n if (x < y) return -1\n if (y <
x) return 1\n return 0\n}\n\n// Finds either the first index of `val` in `buffer` at offset >= `byteOffset`,\n// OR the last
index of `val` in `buffer` at offset <= `byteOffset`.\n// Arguments:\n// - buffer - a Buffer to search\n// - val - a
string, Buffer, or number\n// - byteOffset - an index into `buffer`; will be clamped to an int32\n// - encoding - an
optional encoding, relevant if val is a string\n// - dir - true for indexOf, false for lastIndexOf\n\nfunction
bidirectionalIndexOf (buffer, val, byteOffset, encoding, dir) {\n // Empty buffer means no match\n if (buffer.length
=== 0) return -1\n\n // Normalize byteOffset\n if (typeof byteOffset === 'string') {\n encoding = byteOffset\n
byteOffset = 0\n } else if (byteOffset > 0x7fffffff) {\n byteOffset = 0x7fffffff\n } else if (byteOffset < -
0x80000000) {\n byteOffset = -0x80000000\n }\n byteOffset = +byteOffset // Coerce to Number.\n if
(isNaN(byteOffset)) {\n // byteOffset: it's undefined, null, NaN, "foo", etc, search whole buffer\n byteOffset
= dir ? 0 : (buffer.length - 1)\n }\n\n // Normalize byteOffset: negative offsets start from the end of the buffer\n if
(byteOffset < 0) byteOffset = buffer.length + byteOffset\n if (byteOffset >= buffer.length) {\n if (dir) return -1\n
else byteOffset = buffer.length - 1\n } else if (byteOffset < 0) {\n if (dir) byteOffset = 0\n else return -1\n }\n\n // Normalize val\n if (typeof val === 'string') {\n val = Buffer.from(val, encoding)\n }\n\n // Finally, search
either indexOf (if dir is true) or lastIndexOf\n if (Buffer.isBuffer(val)) {\n // Special case: looking for empty
string/buffer always fails\n if (val.length === 0) {\n return -1\n }\n return arrayIndexOf(buffer, val,
byteOffset, encoding, dir)\n } else if (typeof val === 'number') {\n val = val & 0xFF // Search for a byte value [0-
255]\n if (Buffer.TYPED_ARRAY_SUPPORT &&\n typeof Uint8Array.prototype.indexOf === 'function')\n {\n if (dir) {\n
return Uint8Array.prototype.indexOf.call(buffer, val, byteOffset)\n } else {\n return
Uint8Array.prototype.lastIndexOf.call(buffer, val, byteOffset)\n }\n }\n\n return arrayIndexOf(buffer, [ val ],

```

```

byteOffset, encoding, dir)\n }\n\n throw new TypeError('val must be string, number or Buffer')\n}\n\nfunction
arrayIndexOf (arr, val, byteOffset, encoding, dir) {\n  var indexSize = 1\n  var arrLength = arr.length\n  var
valLength = val.length\n\n  if (encoding !== undefined) {\n    encoding = String(encoding).toLowerCase()\n    if
(encoding === 'ucs2' || encoding === 'ucs-2' ||\n      encoding === 'utf16le' || encoding === 'utf-16le') {\n      if
(arr.length < 2 || val.length < 2) {\n        return -1\n      }\n      indexSize = 2\n      arrLength /= 2\n      valLength /=
2\n      byteOffset /= 2\n    }\n  }\n\n  function read (buf, i) {\n    if (indexSize === 1) {\n      return buf[i]\n    } else
{\n      return buf.readUInt16BE(i * indexSize)\n    }\n  }\n\n  var i\n  if (dir) {\n    var foundIndex = -1\n    for (i =
byteOffset; i < arrLength; i++) {\n      if (read(arr, i) === read(val, foundIndex === -1 ? 0 : i - foundIndex)) {\n
        if (foundIndex === -1) foundIndex = i\n          if (i - foundIndex + 1 === valLength) return foundIndex * indexSize\n
        } else {\n          if (foundIndex !== -1) i -= i - foundIndex\n            foundIndex = -1\n          }\n        } else {\n          if
(byteOffset + valLength > arrLength) byteOffset = arrLength - valLength\n          for (i = byteOffset; i >= 0; i--) {\n
            var found = true\n            for (var j = 0; j < valLength; j++) {\n              if (read(arr, i + j) !== read(val, j)) {\n
                found = false\n                break\n              }\n            }\n            if (found) return i\n          }\n        }\n      }\n      return -1\n    }\n  }\n\n  Buffer.prototype.includes =
function includes (val, byteOffset, encoding) {\n    return this.indexOf(val, byteOffset, encoding) !== -
1\n  }\n\n  Buffer.prototype.indexOf = function indexOf (val, byteOffset, encoding) {\n    return
bidirectionalIndexOf(this, val, byteOffset, encoding, true)\n  }\n\n  Buffer.prototype.lastIndexOf = function
lastIndexOf (val, byteOffset, encoding) {\n    return bidirectionalIndexOf(this, val, byteOffset, encoding,
false)\n  }\n\n  function hexWrite (buf, string, offset, length) {\n    offset = Number(offset) || 0\n    var remaining =
buf.length - offset\n    if (!length) {\n      length = remaining\n    } else {\n      length = Number(length)\n      if (length >
remaining) {\n        length = remaining\n      }\n    }\n\n    // must be an even number of digits\n    var strLen =
string.length\n    if (strLen % 2 !== 0) throw new TypeError('Invalid hex string')\n\n    if (length > strLen / 2) {\n
      length = strLen / 2\n    }\n    for (var i = 0; i < length; ++i) {\n      var parsed = parseInt(string.substr(i * 2, 2), 16)\n      if
(isNaN(parsed)) return i\n      buf[offset + i] = parsed\n    }\n    return i\n  }\n\n  function utf8Write (buf, string, offset,
length) {\n    return blitBuffer(utf8ToBytes(string, buf.length - offset), buf, offset, length)\n  }\n\n  function asciiWrite
(buf, string, offset, length) {\n    return blitBuffer(asciiToBytes(string), buf, offset, length)\n  }\n\n  function latin1Write
(buf, string, offset, length) {\n    return asciiWrite(buf, string, offset, length)\n  }\n\n  function base64Write (buf, string,
offset, length) {\n    return blitBuffer(base64ToBytes(string), buf, offset, length)\n  }\n\n  function ucs2Write (buf,
string, offset, length) {\n    return blitBuffer(utf16leToBytes(string, buf.length - offset), buf, offset,
length)\n  }\n\n  Buffer.prototype.write = function write (string, offset, length, encoding) {\n    // Buffer#write(string)\n    if
(offset === undefined) {\n      encoding = 'utf8'\n      length = this.length\n      offset = 0\n      // Buffer#write(string,
encoding)\n    } else if (length === undefined && typeof offset === 'string') {\n      encoding = offset\n      length =
this.length\n      offset = 0\n      // Buffer#write(string, offset[, length][, encoding])\n    } else if (isFinite(offset)) {\n
      offset = offset | 0\n      if (isFinite(length)) {\n        length = length | 0\n        if (encoding === undefined) encoding =
'utf8'\n      } else {\n        encoding = length\n        length = undefined\n      }\n      // legacy write(string, encoding, offset,
length) - remove in v0.13\n    } else {\n      throw new Error('\n      Buffer.write(string, encoding, offset[, length]) is no
longer supported\n    )\n  }\n\n  var remaining = this.length - offset\n  if (length === undefined || length >
remaining) length = remaining\n\n  if ((string.length > 0 && (length < 0 || offset < 0)) || offset > this.length) {\n
    throw new RangeError('Attempt to write outside buffer bounds')\n  }\n\n  if (!encoding) encoding = 'utf8'\n\n  var
loweredCase = false\n  for (;;) {\n    switch (encoding) {\n      case 'hex':\n        return hexWrite(this, string, offset,
length)\n\n      case 'utf8':\n      case 'utf-8':\n        return utf8Write(this, string, offset, length)\n\n      case 'ascii':\n
        return asciiWrite(this, string, offset, length)\n\n      case 'latin1':\n      case 'binary':\n        return latin1Write(this,
string, offset, length)\n\n      case 'base64':\n        // Warning: maxLength not taken into account in base64Write\n        return
base64Write(this, string, offset, length)\n\n      case 'ucs2':\n      case 'ucs-2':\n      case 'utf16le':\n      case 'utf-
16le':\n        return ucs2Write(this, string, offset, length)\n\n      default:\n        if (loweredCase) throw new
TypeError('Unknown encoding: ' + encoding)\n        encoding = (" + encoding).toLowerCase()\n        loweredCase =
true\n      }\n    }\n  }\n\n  Buffer.prototype.toJSON = function toJSON () {\n    return {\n      type: 'Buffer',\n      data:
Array.prototype.slice.call(this._arr || this, 0)\n    }\n  }\n\n  function base64Slice (buf, start, end) {\n    if (start === 0 &&
end === buf.length) {\n      return base64.fromByteArray(buf)\n    } else {\n      return

```

```

base64.fromByteArray(buf.slice(start, end))\n } }\n\nfunction utf8Slice (buf, start, end) {\n end =
Math.min(buf.length, end)\n var res = []\n var i = start\n while (i < end) {\n var firstByte = buf[i]\n var
codePoint = null\n var bytesPerSequence = (firstByte > 0xEF) ? 4\n : (firstByte > 0xDF) ? 3\n : (firstByte >
0xBF) ? 2\n : 1\n\n if (i + bytesPerSequence <= end) {\n var secondByte, thirdByte, fourthByte,
tempCodePoint\n\n switch (bytesPerSequence) {\n case 1:\n if (firstByte < 0x80) {\n codePoint
= firstByte\n }\n break\n case 2:\n secondByte = buf[i + 1]\n if ((secondByte & 0xC0)
=== 0x80) {\n tempCodePoint = (firstByte & 0x1F) << 0x6 | (secondByte & 0x3F)\n if
(tempCodePoint > 0x7F) {\n codePoint = tempCodePoint\n }\n }\n break\n case 3:\n
secondByte = buf[i + 1]\n thirdByte = buf[i + 2]\n if ((secondByte & 0xC0) === 0x80 && (thirdByte
& 0xC0) === 0x80) {\n tempCodePoint = (firstByte & 0xF) << 0xC | (secondByte & 0x3F) << 0x6 |
(thirdByte & 0x3F)\n if (tempCodePoint > 0x7FF && (tempCodePoint < 0xD800 || tempCodePoint >
0xDFFF)) {\n codePoint = tempCodePoint\n }\n }\n break\n case 4:\n
secondByte = buf[i + 1]\n thirdByte = buf[i + 2]\n fourthByte = buf[i + 3]\n if ((secondByte &
0xC0) === 0x80 && (thirdByte & 0xC0) === 0x80 && (fourthByte & 0xC0) === 0x80) {\n tempCodePoint
= (firstByte & 0xF) << 0x12 | (secondByte & 0x3F) << 0xC | (thirdByte & 0x3F) << 0x6 | (fourthByte & 0x3F)\n
if (tempCodePoint > 0xFFFF && tempCodePoint < 0x110000) {\n codePoint = tempCodePoint\n
}\n }\n }\n }\n\n if (codePoint === null) {\n // we did not generate a valid codePoint so insert a\n
// replacement char (U+FFFD) and advance only 1 byte\n codePoint = 0xFFFD\n bytesPerSequence = 1\n }
else if (codePoint > 0xFFFF) {\n // encode to utf16 (surrogate pair dance)\n codePoint -= 0x10000\n
res.push(codePoint >>> 10 & 0x3FF | 0xD800)\n codePoint = 0xDC00 | codePoint & 0x3FF\n }\n\n
res.push(codePoint)\n i += bytesPerSequence\n }\n\n return decodeCodePointsArray(res)\n}\n\n// Based on
http://stackoverflow.com/a/22747272/680742, the browser with\n// the lowest limit is Chrome, with 0x10000
args.\n// We go 1 magnitude less, for safety\nvar MAX_ARGUMENTS_LENGTH = 0x1000\n\nfunction
decodeCodePointsArray (codePoints) {\n var len = codePoints.length\n if (len <=
MAX_ARGUMENTS_LENGTH) {\n return String.fromCharCode.apply(String, codePoints) // avoid extra
slice()\n }\n\n // Decode in chunks to avoid "call stack size exceeded".\n var res = "\n var i = 0\n while (i < len)
{\n res += String.fromCharCode.apply(\n String,\n codePoints.slice(i, i +=
MAX_ARGUMENTS_LENGTH)\n )\n }\n return res\n}\n\nfunction asciiSlice (buf, start, end) {\n var ret = "\n
end = Math.min(buf.length, end)\n\n for (var i = start; i < end; ++i) {\n ret += String.fromCharCode(buf[i] &
0x7F)\n }\n return ret\n}\n\nfunction latin1Slice (buf, start, end) {\n var ret = "\n end = Math.min(buf.length,
end)\n\n for (var i = start; i < end; ++i) {\n ret += String.fromCharCode(buf[i])\n }\n return ret\n}\n\nfunction
hexSlice (buf, start, end) {\n var len = buf.length\n\n if (!start || start < 0) start = 0\n if (!end || end < 0 || end > len)
end = len\n\n var out = "\n for (var i = start; i < end; ++i) {\n out += toHex(buf[i])\n }\n return
out\n}\n\nfunction utf16leSlice (buf, start, end) {\n var bytes = buf.slice(start, end)\n var res = "\n for (var i = 0; i <
bytes.length; i += 2) {\n res += String.fromCharCode(bytes[i] + bytes[i + 1] * 256)\n }\n return
res\n}\n\nBuffer.prototype.slice = function slice (start, end) {\n var len = this.length\n start = ~~start\n end = end
=== undefined ? len : ~~end\n\n if (start < 0) {\n start += len\n if (start < 0) start = 0\n } else if (start > len) {\n
start = len\n }\n\n if (end < 0) {\n end += len\n if (end < 0) end = 0\n } else if (end > len) {\n end = len\n
}\n\n if (end < start) end = start\n\n var newBuf\n if (Buffer.TYPED_ARRAY_SUPPORT) {\n newBuf =
this.subarray(start, end)\n newBuf.__proto__ = Buffer.prototype\n } else {\n var sliceLen = end - start\n
newBuf = new Buffer(sliceLen, undefined)\n for (var i = 0; i < sliceLen; ++i) {\n newBuf[i] = this[i + start]\n
}\n }\n\n return newBuf\n}\n\n/*\n * Need to make sure that buffer isn't trying to write out of bounds.\n
*\n\nfunction checkOffset (offset, ext, length) {\n if ((offset % 1) !== 0 || offset < 0) throw new RangeError('offset is
not uint')\n if (offset + ext > length) throw new RangeError('Trying to access beyond buffer
length')\n }\n\nBuffer.prototype.readUIntLE = function readUIntLE (offset, byteLength, noAssert) {\n offset =
offset | 0\n byteLength = byteLength | 0\n if (!noAssert) checkOffset(offset, byteLength, this.length)\n\n var val =
this[offset]\n var mul = 1\n var i = 0\n while (++i < byteLength && (mul *= 0x100)) {\n val += this[offset + i] *
mul\n }\n\n return val\n}\n\nBuffer.prototype.readUIntBE = function readUIntBE (offset, byteLength, noAssert)

```

```

{\n  offset = offset | 0\n  byteLength = byteLength | 0\n  if (!noAssert) {\n    checkOffset(offset, byteLength,
this.length)\n  }\n\n  var val = this[offset + --byteLength]\n  var mul = 1\n  while (byteLength > 0 && (mul *=
0x100)) {\n    val += this[offset + --byteLength] * mul\n  }\n\n  return val\n}\n\nBuffer.prototype.readUInt8 =
function readUInt8 (offset, noAssert) {\n  if (!noAssert) checkOffset(offset, 1, this.length)\n  return
this[offset]\n}\n\nBuffer.prototype.readUInt16LE = function readUInt16LE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 2, this.length)\n  return this[offset] | (this[offset + 1] <<
8)\n}\n\nBuffer.prototype.readUInt16BE = function readUInt16BE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 2, this.length)\n  return (this[offset] << 8) | this[offset + 1]\n}\n\nBuffer.prototype.readUInt32LE
= function readUInt32LE (offset, noAssert) {\n  if (!noAssert) checkOffset(offset, 4, this.length)\n  return
((this[offset]) |\n    (this[offset + 1] << 8) |\n    (this[offset + 2] << 16)) +\n    (this[offset + 3] *
0x1000000)\n}\n\nBuffer.prototype.readUInt32BE = function readUInt32BE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 4, this.length)\n  return (this[offset] * 0x1000000) +\n    ((this[offset + 1] << 16) |\n    (this[offset + 2] << 8) |\n    this[offset + 3])\n}\n\nBuffer.prototype.readIntLE = function readIntLE (offset,
byteLength, noAssert) {\n  offset = offset | 0\n  byteLength = byteLength | 0\n  if (!noAssert) checkOffset(offset,
byteLength, this.length)\n  var val = this[offset]\n  var mul = 1\n  var i = 0\n  while (++i < byteLength && (mul *=
0x100)) {\n    val += this[offset + i] * mul\n  }\n  mul *= 0x80\n  if (val >= mul) val -= Math.pow(2, 8 *
byteLength)\n  return val\n}\n\nBuffer.prototype.readIntBE = function readIntBE (offset, byteLength, noAssert)
{\n  offset = offset | 0\n  byteLength = byteLength | 0\n  if (!noAssert) checkOffset(offset, byteLength,
this.length)\n  var i = byteLength\n  var mul = 1\n  var val = this[offset + --i]\n  while (i > 0 && (mul *= 0x100))
{\n    val += this[offset + --i] * mul\n  }\n  mul *= 0x80\n  if (val >= mul) val -= Math.pow(2, 8 * byteLength)\n  return
val\n}\n\nBuffer.prototype.readInt8 = function readInt8 (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 1, this.length)\n  if (!(this[offset] & 0x80)) return (this[offset])\n  return ((0xff - this[offset] + 1)
* -1)\n}\n\nBuffer.prototype.readInt16LE = function readInt16LE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 2, this.length)\n  var val = this[offset] | (this[offset + 1] << 8)\n  return (val & 0x8000) ? val |
0xFFFF0000 : val\n}\n\nBuffer.prototype.readInt16BE = function readInt16BE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 2, this.length)\n  var val = this[offset + 1] | (this[offset] << 8)\n  return (val & 0x8000) ? val |
0xFFFF0000 : val\n}\n\nBuffer.prototype.readInt32LE = function readInt32LE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 4, this.length)\n  return (this[offset]) |\n    (this[offset + 1] << 8) |\n    (this[offset + 2] << 16)
|\n    (this[offset + 3] << 24)\n}\n\nBuffer.prototype.readInt32BE = function readInt32BE (offset, noAssert) {\n  if
(!noAssert) checkOffset(offset, 4, this.length)\n  return (this[offset] << 24) |\n    (this[offset + 1] << 16) |\n    (this[offset + 2] << 8) |\n    (this[offset + 3])\n}\n\nBuffer.prototype.readFloatLE = function readFloatLE (offset,
noAssert) {\n  if (!noAssert) checkOffset(offset, 4, this.length)\n  return ieee754.read(this, offset, true, 23,
4)\n}\n\nBuffer.prototype.readFloatBE = function readFloatBE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 4, this.length)\n  return ieee754.read(this, offset, false, 23,
4)\n}\n\nBuffer.prototype.readDoubleLE = function readDoubleLE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 8, this.length)\n  return ieee754.read(this, offset, true, 52,
8)\n}\n\nBuffer.prototype.readDoubleBE = function readDoubleBE (offset, noAssert) {\n  if (!noAssert)
checkOffset(offset, 8, this.length)\n  return ieee754.read(this, offset, false, 52, 8)\n}\n\nfunction checkInt (buf,
value, offset, ext, max, min) {\n  if (!Buffer.isBuffer(buf)) throw new TypeError('"buffer" argument must be a
Buffer instance')\n  if (value > max || value < min) throw new RangeError('"value" argument is out of bounds')\n  if
(offset + ext > buf.length) throw new RangeError('Index out of range')\n}\n\nBuffer.prototype.writeUIntLE =
function writeUIntLE (value, offset, byteLength, noAssert) {\n  value = +value\n  offset = offset | 0\n  byteLength =
byteLength | 0\n  if (!noAssert) {\n    var maxBytes = Math.pow(2, 8 * byteLength) - 1\n    checkInt(this, value,
offset, byteLength, maxBytes, 0)\n  }\n  var mul = 1\n  var i = 0\n  this[offset] = value & 0xFF\n  while (++i <
byteLength && (mul *= 0x100)) {\n    this[offset + i] = (value / mul) & 0xFF\n  }\n  return offset +
byteLength\n}\n\nBuffer.prototype.writeUIntBE = function writeUIntBE (value, offset, byteLength, noAssert) {\n
value = +value\n  offset = offset | 0\n  byteLength = byteLength | 0\n  if (!noAssert) {\n    var maxBytes =
Math.pow(2, 8 * byteLength) - 1\n    checkInt(this, value, offset, byteLength, maxBytes, 0)\n  }\n  var i =

```



```

byteLength - 1\n var mul = 1\n this[offset + i] = value & 0xFF\n while (--i >= 0 && (mul *= 0x100)) {\n
this[offset + i] = (value / mul) & 0xFF\n }\n\n return offset + byteLength\n}\n\nBuffer.prototype.writeUInt8 =
function writeUInt8 (value, offset, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) checkInt(this,
value, offset, 1, 0xff, 0)\n if (!Buffer.TYPED_ARRAY_SUPPORT) value = Math.floor(value)\n this[offset] =
(value & 0xff)\n return offset + 1\n}\n\nfunction objectWriteUInt16 (buf, value, offset, littleEndian) {\n if (value <
0) value = 0xffff + value + 1\n for (var i = 0, j = Math.min(buf.length - offset, 2); i < j; ++i) {\n buf[offset + i] =
(value & (0xff << (8 * (littleEndian ? i : 1 - i)))) >>>\n (littleEndian ? i : 1 - i) * 8\n
}\n}\n\nBuffer.prototype.writeUInt16LE = function writeUInt16LE (value, offset, noAssert) {\n value = +value\n
offset = offset | 0\n if (!noAssert) checkInt(this, value, offset, 2, 0xffff, 0)\n if
(Buffer.TYPED_ARRAY_SUPPORT) {\n this[offset] = (value & 0xff)\n this[offset + 1] = (value >>> 8)\n }
else {\n objectWriteUInt16(this, value, offset, true)\n }\n return offset + 2\n}\n\nBuffer.prototype.writeUInt16BE
= function writeUInt16BE (value, offset, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert)
checkInt(this, value, offset, 2, 0xffff, 0)\n if (Buffer.TYPED_ARRAY_SUPPORT) {\n this[offset] = (value >>>
8)\n this[offset + 1] = (value & 0xff)\n } else {\n objectWriteUInt16(this, value, offset, false)\n }\n return
offset + 2\n}\n\nfunction objectWriteUInt32 (buf, value, offset, littleEndian) {\n if (value < 0) value = 0xffffffff +
value + 1\n for (var i = 0, j = Math.min(buf.length - offset, 4); i < j; ++i) {\n buf[offset + i] = (value >>>
(littleEndian ? i : 3 - i) * 8) & 0xff\n }\n}\n\nBuffer.prototype.writeUInt32LE = function writeUInt32LE (value,
offset, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) checkInt(this, value, offset, 4, 0xffffffff,
0)\n if (Buffer.TYPED_ARRAY_SUPPORT) {\n this[offset + 3] = (value >>> 24)\n this[offset + 2] = (value
>>> 16)\n this[offset + 1] = (value >>> 8)\n this[offset] = (value & 0xff)\n } else {\n objectWriteUInt32(this,
value, offset, true)\n }\n return offset + 4\n}\n\nBuffer.prototype.writeUInt32BE = function writeUInt32BE (value,
offset, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) checkInt(this, value, offset, 4, 0xffffffff,
0)\n if (Buffer.TYPED_ARRAY_SUPPORT) {\n this[offset] = (value >>> 24)\n this[offset + 1] = (value >>>
16)\n this[offset + 2] = (value >>> 8)\n this[offset + 3] = (value & 0xff)\n } else {\n objectWriteUInt32(this,
value, offset, false)\n }\n return offset + 4\n}\n\nBuffer.prototype.writeIntLE = function writeIntLE (value, offset,
byteLength, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) {\n var limit = Math.pow(2, 8 *
byteLength - 1)\n checkInt(this, value, offset, byteLength, limit - 1, -limit)\n }\n\n var i = 0\n var mul = 1\n
var sub = 0\n this[offset] = value & 0xFF\n while (++i < byteLength && (mul *= 0x100)) {\n if (value < 0 &&
sub === 0 && this[offset + i - 1] !== 0) {\n sub = 1\n }\n this[offset + i] = ((value / mul) >> 0) - sub &
0xFF\n }\n\n return offset + byteLength\n}\n\nBuffer.prototype.writeIntBE = function writeIntBE (value, offset,
byteLength, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) {\n var limit = Math.pow(2, 8 *
byteLength - 1)\n checkInt(this, value, offset, byteLength, limit - 1, -limit)\n }\n\n var i = byteLength - 1\n var
mul = 1\n var sub = 0\n this[offset + i] = value & 0xFF\n while (--i >= 0 && (mul *= 0x100)) {\n if (value < 0
&& sub === 0 && this[offset + i + 1] !== 0) {\n sub = 1\n }\n this[offset + i] = ((value / mul) >> 0) - sub &
0xFF\n }\n\n return offset + byteLength\n}\n\nBuffer.prototype.writeInt8 = function writeInt8 (value, offset,
noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) checkInt(this, value, offset, 1, 0x7f, -0x80)\n if
(!Buffer.TYPED_ARRAY_SUPPORT) value = Math.floor(value)\n if (value < 0) value = 0xff + value + 1\n
this[offset] = (value & 0xff)\n return offset + 1\n}\n\nBuffer.prototype.writeInt16LE = function writeInt16LE
(value, offset, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert) checkInt(this, value, offset, 2,
0x7fff, -0x8000)\n if (Buffer.TYPED_ARRAY_SUPPORT) {\n this[offset] = (value & 0xff)\n this[offset + 1] =
(value >>> 8)\n } else {\n objectWriteUInt16(this, value, offset, true)\n }\n return offset +
2\n}\n\nBuffer.prototype.writeInt16BE = function writeInt16BE (value, offset, noAssert) {\n value = +value\n
offset = offset | 0\n if (!noAssert) checkInt(this, value, offset, 2, 0x7fff, -0x8000)\n if
(Buffer.TYPED_ARRAY_SUPPORT) {\n this[offset] = (value >>> 8)\n this[offset + 1] = (value & 0xff)\n }
else {\n objectWriteUInt16(this, value, offset, false)\n }\n return offset + 2\n}\n\nBuffer.prototype.writeInt32LE
= function writeInt32LE (value, offset, noAssert) {\n value = +value\n offset = offset | 0\n if (!noAssert)
checkInt(this, value, offset, 4, 0x7fffffff, -0x80000000)\n if (Buffer.TYPED_ARRAY_SUPPORT) {\n
this[offset] = (value & 0xff)\n this[offset + 1] = (value >>> 8)\n this[offset + 2] = (value >>> 16)\n this[offset

```

```

+ 3] = (value >>> 24)\n } else {\n   objectWriteUInt32(this, value, offset, true)\n }\n return offset +
4\n}\n\nBuffer.prototype.writeInt32BE = function writeInt32BE (value, offset, noAssert) {\n  value = +value\n  offset = offset | 0\n  if (!noAssert) checkInt(this, value, offset, 4, 0x7fffffff, -0x80000000)\n  if (value < 0) value =
0xffffffff + value + 1\n  if (Buffer.TYPED_ARRAY_SUPPORT) {\n    this[offset] = (value >>> 24)\n    this[offset
+ 1] = (value >>> 16)\n    this[offset + 2] = (value >>> 8)\n    this[offset + 3] = (value & 0xff)\n  } else {\n    objectWriteUInt32(this, value, offset, false)\n  }\n  return offset + 4\n}\n\nfunction checkIEEE754 (buf, value,
offset, ext, max, min) {\n  if (offset + ext > buf.length) throw new RangeError('Index out of range')\n  if (offset < 0)
throw new RangeError('Index out of range')\n}\n\nfunction writeFloat (buf, value, offset, littleEndian, noAssert) {\n
if (!noAssert) {\n  checkIEEE754(buf, value, offset, 4, 3.4028234663852886e+38, -3.4028234663852886e+38)\n}
\n  ieee754.write(buf, value, offset, littleEndian, 23, 4)\n  return offset + 4\n}\n\nBuffer.prototype.writeFloatLE =
function writeFloatLE (value, offset, noAssert) {\n  return writeFloat(this, value, offset, true,
noAssert)\n}\n\nBuffer.prototype.writeFloatBE = function writeFloatBE (value, offset, noAssert) {\n  return
writeFloat(this, value, offset, false, noAssert)\n}\n\nfunction writeDouble (buf, value, offset, littleEndian, noAssert)
{\n  if (!noAssert) {\n    checkIEEE754(buf, value, offset, 8, 1.7976931348623157E+308, -
1.7976931348623157E+308)\n  }\n  ieee754.write(buf, value, offset, littleEndian, 52, 8)\n  return offset +
8\n}\n\nBuffer.prototype.writeDoubleLE = function writeDoubleLE (value, offset, noAssert) {\n  return
writeDouble(this, value, offset, true, noAssert)\n}\n\nBuffer.prototype.writeDoubleBE = function writeDoubleBE
(value, offset, noAssert) {\n  return writeDouble(this, value, offset, false, noAssert)\n}\n\n// copy(targetBuffer,
targetStart=0, sourceStart=0, sourceEnd=buffer.length)\nBuffer.prototype.copy = function copy (target, targetStart,
start, end) {\n  if (!start) start = 0\n  if (!end && end !== 0) end = this.length\n  if (targetStart >= target.length)
targetStart = target.length\n  if (!targetStart) targetStart = 0\n  if (end > 0 && end < start) end = start\n\n  // Copy 0
bytes; we're done\n  if (end === start) return 0\n  if (target.length === 0 || this.length === 0) return 0\n\n  // Fatal
error conditions\n  if (targetStart < 0) {\n    throw new RangeError('targetStart out of bounds')\n  }\n  if (start < 0 ||
start >= this.length) throw new RangeError('sourceStart out of bounds')\n  if (end < 0) throw new
RangeError('sourceEnd out of bounds')\n\n  // Are we oob?\n  if (end > this.length) end = this.length\n  if
(target.length - targetStart < end - start) {\n    end = target.length - targetStart + start\n  }\n\n  var len = end - start\n
var i\n\n  if (this === target && start < targetStart && targetStart < end) {\n    // descending copy from end\n    for (i
= len - 1; i >= 0; --i) {\n      target[i + targetStart] = this[i + start]\n    }\n  } else if (len < 1000 ||
!Buffer.TYPED_ARRAY_SUPPORT) {\n    // ascending copy from start\n    for (i = 0; i < len; ++i) {\n      target[i +
targetStart] = this[i + start]\n    }\n  } else {\n    Uint8Array.prototype.set.call(\n      target,\n      this.subarray(start,
start + len),\n      targetStart\n    )\n\n    return len\n  }\n\n  // Usage:\n  // buffer.fill(number[, offset[, end]])\n  //
buffer.fill(buffer[, offset[, end]])\n  // buffer.fill(string[, offset[, end]][, encoding])\nBuffer.prototype.fill = function
fill (val, start, end, encoding) {\n  // Handle string cases:\n  if (typeof val === 'string') {\n    if (typeof start ===
'string') {\n      encoding = start\n      start = 0\n      end = this.length\n    } else if (typeof end === 'string') {\n
      encoding = end\n      end = this.length\n    }\n    if (val.length === 1) {\n      var code = val.charCodeAt(0)\n      if
(code < 256) {\n        val = code\n      }\n    }\n    if (encoding !== undefined && typeof encoding !== 'string') {\n
      throw new TypeError('encoding must be a string')\n    }\n    if (typeof encoding === 'string' &&
!Buffer.isEncoding(encoding)) {\n      throw new TypeError('Unknown encoding: ' + encoding)\n    }\n  } else if
(typeof val === 'number') {\n    val = val & 255\n  }\n\n  // Invalid ranges are not set to a default, so can range check
early.\n  if (start < 0 || this.length < start || this.length < end) {\n    throw new RangeError('Out of range index')\n}
\n  if (end <= start) {\n    return this\n  }\n\n  start = start >>> 0\n  end = end === undefined ? this.length : end
>>> 0\n  if (!val) val = 0\n  var i\n  if (typeof val === 'number') {\n    for (i = start; i < end; ++i) {\n      this[i] =
val\n    }\n  } else {\n    var bytes = Buffer.isBuffer(val) ? val : utf8ToBytes(new Buffer(val,
encoding).toString())\n    var len = bytes.length\n    for (i = 0; i < end - start; ++i) {\n      this[i + start] = bytes[i %
len]\n    }\n  }\n\n  return this\n}\n\n// HELPER FUNCTIONS\n// =====\n\nvar
INVALID_BASE64_RE = /^[^+\\0-9A-Za-z-_]/g\nfunction base64clean (str) {\n  // Node strips out invalid
characters like \\n and \\t from the string, base64-js does not\n  str = stringtrim(str).replace(INVALID_BASE64_RE,
'')\n  // Node converts strings with length < 2 to '\\n' if (str.length < 2) return '\\n' // Node allows for non-padded

```

```

base64 strings (missing trailing ===), base64-js does not
while (str.length % 4 !== 0) {
  str = str + '='
}
return str
}
function stringtrim (str) {
  if (str.trim) return str.trim()
  return str.replace(/^\s+|\s+$/g,
)
}
function toHex (n) {
  if (n < 16) return '0' + n.toString(16)
  return n.toString(16)
}
function utf8ToBytes (string, units) {
  units = units || Infinity
  var codePoint
  var length = string.length
  var leadSurrogate = null
  var bytes = []
  for (var i = 0; i < length; ++i) {
    codePoint = string.charCodeAt(i)
    // is surrogate component
    if (codePoint > 0xD7FF && codePoint < 0xE000) {
      // last char was a lead
      if (!leadSurrogate) {
        // no lead yet
        if (codePoint > 0xDBFF) {
          // unexpected trail
          if ((units -= 3) > -1) bytes.push(0xEF, 0xBF, 0xBD)
          continue
        } else if (i + 1 === length) {
          // unpaired lead
          if ((units -= 3) > -1) bytes.push(0xEF, 0xBF, 0xBD)
          continue
        }
        // valid lead
        leadSurrogate = codePoint
        continue
      }
      // 2 leads in a row
      if (codePoint < 0xDC00) {
        if ((units -= 3) > -1) bytes.push(0xEF, 0xBF, 0xBD)
        leadSurrogate = codePoint
        continue
      }
      // valid surrogate pair
      codePoint = (leadSurrogate - 0xD800 << 10 | codePoint - 0xDC00) + 0x10000
    } else if (leadSurrogate) {
      // valid bmp char, but last char was a lead
      if ((units -= 3) > -1) bytes.push(0xEF, 0xBF, 0xBD)
    }
    leadSurrogate = null
    // encode utf8
    if (codePoint < 0x80) {
      if ((units -= 1) < 0) break
      bytes.push(codePoint)
    } else if (codePoint < 0x800) {
      if ((units -= 2) < 0) break
      bytes.push(
        codePoint >> 0x6 | 0xC0,
        codePoint & 0x3F | 0x80
      )
    } else if (codePoint < 0x10000) {
      if ((units -= 3) < 0) break
      bytes.push(
        codePoint >> 0xC | 0xE0,
        codePoint >> 0x6 & 0x3F | 0x80,
        codePoint & 0x3F | 0x80
      )
    } else if (codePoint < 0x110000) {
      if ((units -= 4) < 0) break
      bytes.push(
        codePoint >> 0x12 | 0xF0,
        codePoint >> 0xC & 0x3F | 0x80,
        codePoint >> 0x6 & 0x3F | 0x80,
        codePoint & 0x3F | 0x80
      )
    } else {
      throw new Error('Invalid code point')
    }
  }
  return bytes
}
function asciiToBytes (str) {
  var byteArray = []
  for (var i = 0; i < str.length; ++i) {
    // Node's code seems to be doing this and not & 0x7F..
    byteArray.push(str.charCodeAt(i) & 0xFF)
  }
  return byteArray
}
function utf16leToBytes (str, units) {
  var c, hi, lo
  var byteArray = []
  for (var i = 0; i < str.length; ++i) {
    if ((units -= 2) < 0) break
    c = str.charCodeAt(i)
    hi = c >> 8
    lo = c % 256
    byteArray.push(lo)
    byteArray.push(hi)
  }
  return byteArray
}
function base64ToBytes (str) {
  return base64.toByteArray(base64clean(str))
}
function blitBuffer (src, dst, offset, length) {
  for (var i = 0; i < length; ++i) {
    if ((i + offset) >= dst.length || (i >= src.length)) break
    dst[i + offset] = src[i]
  }
  return i
}
function isnan (val) {
  return val !== val // eslint-disable-line no-self-compare
}
}
/**
 * @license
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the
 * "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the
 * License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or
 * agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for
 * the specific language governing permissions and
 * limitations under the License.

```

```

=====
import {complex} from '../ops/complex';
import {tensor} from '../ops/tensor';
import {NamedTensor,
NamedTensorMap} from './tensor_types';
import {TypedArray} from './types';
import {sizeFromShape} from
 './util';
import {DTYPE_VALUE_SIZE_MAP, ModelArtifacts, ModelArtifactsInfo, WeightGroup,
WeightsManifestEntry} from './types';
/** Number of bytes reserved for the length of the string. (32bit integer).
const NUM_BYTES_STRING_LENGTH = 4;
**
 * Encode a map from names to weight values as an
 * ArrayBuffer, along with an
 * `Array` of `WeightsManifestEntry` as specification of the encoded weights.
 * This function does not perform sharding.
 * This function is the reverse of `decodeWeights`.
 * @param tensors A map ("dict") from names to tensors.
 * @param group Group to which the weights belong (optional).
 * @returns A `Promise` of
 * - A flat `ArrayBuffer` with all the binary values of the `Tensor`s
 * concatenated.
 * - An `Array` of `WeightManifestEntry`s, carrying information including
 * tensor names,
 * `dtype`s and shapes.
 * @throws Error: on unsupported tensor `dtype`.
export async function
encodeWeights(
  tensors: NamedTensorMap|NamedTensor[], group?: WeightGroup):
  Promise<{data:
  ArrayBuffer, specs: WeightsManifestEntry[]}> {
  // TODO(adarob, cais): Support quantization.
  const specs:

```

```

WeightsManifestEntry[] = [];
const dataPromises: Array<Promise<TypedArray>> = [];
const names: string[] = Array.isArray(tensors) ? tensors.map(tensor => tensor.name) : Object.keys(tensors);
for (let i = 0; i < names.length; ++i) {
  const name = names[i];
  const t = Array.isArray(tensors) ? tensors[i].tensor : tensors[name];
  if (t.dtype !== 'float32' && t.dtype !== 'int32' && t.dtype !== 'bool' && t.dtype !== 'string' && t.dtype !== 'complex64') {
    throw new Error(`Unsupported dtype in weight '${name}': ${t.dtype}`);
  }
  const spec: WeightsManifestEntry = {name, shape: t.shape, dtype: t.dtype};
  if (t.dtype === 'string') {
    const utf8bytes = new Promise<TypedArray>(async resolve => {
      const vals = await t.bytes() as Uint8Array;
      const totalNumBytes = vals.reduce((p, c) => p + c.length, 0) + NUM_BYTES_STRING_LENGTH * vals.length;
      const bytes = new Uint8Array(totalNumBytes);
      let offset = 0;
      for (let i = 0; i < vals.length; i++) {
        const val = vals[i];
        const bytesOfLength = new Uint8Array(new Uint32Array([val.length]).buffer);
        bytes.set(bytesOfLength, offset);
        offset += NUM_BYTES_STRING_LENGTH;
        bytes.set(val, offset);
        offset += val.length;
      }
      resolve(bytes);
    });
    dataPromises.push(utf8bytes);
  } else {
    dataPromises.push(t.data());
  }
  if (group != null) {
    spec.group = group;
  }
  specs.push(spec);
}
const tensorValues = await Promise.all(dataPromises);
return {data: concatenateTypedArrays(tensorValues), specs};
}

/**
 * Decode flat ArrayBuffer as weights.
 * This function does not handle sharding.
 * This function is the reverse of `encodeWeights`.
 * @param buffer A flat ArrayBuffer carrying the binary values of the tensors
 * concatenated in the order specified in `specs`.
 * @param specs Specifications of the names, dtypes and shapes of the tensors
 * whose value are encoded by `buffer`.
 * @return A map from tensor name to tensor value, with the names corresponding
 * to names in `specs`.
 * @throws Error, if any of the tensors has unsupported dtype.
 */
export function decodeWeights(
  buffer: ArrayBuffer, specs: WeightsManifestEntry[]): NamedTensorMap {
  // TODO(adarob, cais): Support quantization.
  const out: NamedTensorMap = {};
  let float16Decode: (buffer: Uint16Array) => Float32Array | undefined;
  let offset = 0;
  for (const spec of specs) {
    const name = spec.name;
    const dtype = spec.dtype;
    const shape = spec.shape;
    const size = sizeFromShape(shape);
    let values: TypedArray|string[]|Uint8Array[];
    if ('quantization' in spec) {
      const quantization = spec.quantization;
      if (quantization.dtype === 'uint8' || quantization.dtype === 'uint16') {
        if (!('min' in quantization && 'scale' in quantization)) {
          throw new Error(`Weight ${spec.name} with quantization ${quantization.dtype} doesn't have corresponding metadata min and scale.`);
        }
      } else if (quantization.dtype === 'float16') {
        if (dtype !== 'float32') {
          throw new Error(`Weight ${spec.name} is quantized with ${quantization.dtype} which only supports weights of type float32 not ${dtype}.`);
        }
      } else {
        throw new Error(`Weight ${spec.name} has unknown quantization dtype ${quantization.dtype}. Supported quantization dtypes are: 'uint8', 'uint16', and 'float16'.`);
      }
      const quantizationSizeFactor = DTYPE_VALUE_SIZE_MAP[quantization.dtype];
      const byteBuffer = buffer.slice(offset, offset + size * quantizationSizeFactor);
      const quantizedArray = (quantization.dtype === 'uint8') ? new Uint8Array(byteBuffer) : new Uint16Array(byteBuffer);
      if (dtype === 'float32') {
        if (quantization.dtype === 'uint8' || quantization.dtype === 'uint16') {
          values = new Float32Array(quantizedArray.length);
          for (let i = 0; i < quantizedArray.length; i++) {
            const v = quantizedArray[i];
            values[i] = v * quantization.scale + quantization.min;
          }
        } else if (quantization.dtype === 'float16') {
          if (float16Decode === undefined) {
            float16Decode = getFloat16Decoder();
          }
          values = float16Decode(quantizedArray as Uint16Array);
        } else {
          throw new Error(`Unsupported quantization type ${quantization.dtype} for weight type float32.`);
        }
      } else if (dtype === 'int32') {
        if (quantization.dtype !== 'uint8' && quantization.dtype !== 'uint16') {
          throw new Error(`Unsupported quantization type ${quantization.dtype} for weight type int32.`);
        }
        values = new Int32Array(quantizedArray.length);
        for (let i = 0; i < quantizedArray.length; i++) {
          const v = quantizedArray[i];
          values[i] = Math.round(v * quantization.scale + quantization.min);
        }
      } else {
        throw new Error(`Unsupported dtype in weight '${name}': ${dtype}`);
      }
      offset += size * quantizationSizeFactor;
    } else if (dtype === 'string') {

```

```

const size = sizeFromShape(spec.shape);\n    values = [];\n    for (let i = 0; i < size; i++) {\n        const byteLength
= new Uint32Array(\n            buffer.slice(offset, offset + NUM_BYTES_STRING_LENGTH))[0];\n        offset +=
NUM_BYTES_STRING_LENGTH;\n        const bytes = new Uint8Array(buffer.slice(offset, offset +
byteLength));\n        (values as Uint8Array[]).push(bytes);\n        offset += byteLength;\n    }\n } else {\n    const
dtypeFactor = DTYPE_VALUE_SIZE_MAP[dtype];\n    const byteBuffer = buffer.slice(offset, offset + size *
dtypeFactor);\n\n    if (dtype === 'float32') {\n        values = new Float32Array(byteBuffer);\n    } else if (dtype
=== 'int32') {\n        values = new Int32Array(byteBuffer);\n    } else if (dtype === 'bool') {\n        values = new
Uint8Array(byteBuffer);\n    } else if (dtype === 'complex64') {\n        values = new Float32Array(byteBuffer);\n
        const real = new Float32Array(values.length / 2);\n        const image = new Float32Array(values.length / 2);\n
        for (let i = 0; i < real.length; i++) {\n            real[i] = values[i * 2];\n            image[i] = values[i * 2 + 1];\n        }\n
        const realTensor = tensor(real, shape, 'float32');\n        const imageTensor = tensor(image, shape, 'float32');\n
        out[name] = complex(realTensor, imageTensor);\n        realTensor.dispose();\n        imageTensor.dispose();\n    }
    else {\n        throw new Error(`Unsupported dtype in weight '${name}': ${dtype}`);\n    }\n    offset += size *
dtypeFactor;\n }\n\n if (dtype !== 'complex64') {\n    out[name] = tensor(values, shape, dtype);\n }\n }\n\n return out;\n}\n\n/**\n * Concatenate TypedArrays into an ArrayBuffer.\n */\n\nexport function
concatenateTypedArrays(xs: TypedArray[]): ArrayBuffer {\n    // TODO(adarob, cais): Support quantization.\n    if (xs
=== null) {\n        throw new Error(`Invalid input value: ${JSON.stringify(xs)}`);\n    }\n\n    let totalByteLength = 0;\n\n    // `normalizedXs` is here for this reason: a `TypedArray`s `buffer`\n    // can have a different byte length from that of
the `TypedArray` itself,\n    // for example, when the `TypedArray` is created from an offset in an\n    // `ArrayBuffer`.\n    `normlializedXs` holds `TypedArray`s whose `buffer`s match\n    // the `TypedArray` in byte length. If an element of
`xs` does not show\n    // this property, a new `TypedArray` that satisfy this property will be\n    // constructed and
pushed into `normalizedXs`.\n    const normalizedXs: TypedArray[] = [];\n    xs.forEach((x: TypedArray) => {\n        totalByteLength += x.byteLength;\n        // tslint:disable:no-any\n        normalizedXs.push(\n            x.byteLength ===
x.buffer.byteLength ? x : \n                new (x.constructor as any)(x);\n            if (!(x as any instanceof
Float32Array || x as any instanceof Int32Array ||\n                x as any instanceof Uint8Array)) {\n                throw new
Error(`Unsupported TypedArray subtype: ${x.constructor.name}`);\n            }\n            // tslint:enable:no-any\n        });\n\n    const
y = new Uint8Array(totalByteLength);\n    let offset = 0;\n    normalizedXs.forEach((x: TypedArray) => {\n        y.set(new Uint8Array(x.buffer), offset);\n        offset += x.byteLength;\n    });\n\n    return y.buffer;\n}\n\n// Use Buffer
on Node.js instead of Blob/atob/btoa\nconst useNodeBuffer = typeof Buffer !== 'undefined' &&\n    (typeof Blob
=== 'undefined' || typeof atob === 'undefined' ||\n        typeof btoa === 'undefined');\n\n/**\n * Calculate the byte
length of a JavaScript string.\n */\n\n/**\n * Note that a JavaScript string can contain wide characters, therefore the\n */
length of the string is not necessarily equal to the byte length.\n */\n\n/**\n * @param str Input string.\n */\n\n/**\n * @returns Byte
length.\n */\n\nexport function stringByteLength(str: string): number {\n    if (useNodeBuffer) {\n        return
Buffer.byteLength(str);\n    }\n    return new Blob([str]).size;\n}\n\n/**\n * Encode an ArrayBuffer as a base64
encoded string.\n */\n\n/**\n * @param buffer `ArrayBuffer` to be converted.\n */\n\n/**\n * @returns A string that base64-encodes
`buffer`.\n */\n\nexport function arrayBufferToBase64String(buffer: ArrayBuffer): string {\n    if (useNodeBuffer) {\n
        return Buffer.from(buffer).toString('base64');\n    }\n    const buf = new Uint8Array(buffer);\n    let s = '';\n    for (let i = 0,
l = buf.length; i < l; i++) {\n        s += String.fromCharCode(buf[i]);\n    }\n    return btoa(s);\n}\n\n/**\n * Decode a
base64 string as an ArrayBuffer.\n */\n\n/**\n * @param str Base64 string.\n */\n\n/**\n * @returns Decoded `ArrayBuffer`.\n
*/\n\nexport function base64StringToArrayBuffer(str: string): ArrayBuffer {\n    if (useNodeBuffer) {\n        const buf =
Buffer.from(str, 'base64');\n        return buf.buffer.slice(buf.byteOffset, buf.byteOffset + buf.byteLength);\n    }\n    const
s = atob(str);\n    const buffer = new Uint8Array(s.length);\n    for (let i = 0; i < s.length; ++i) {\n        buffer.set([s.charCodeAt(i)], i);\n    }\n    return buffer.buffer;\n}\n\n/**\n * Concatenate a number of ArrayBuffers
into one.\n */\n\n/**\n * @param buffers A number of array buffers to concatenate.\n */\n\n/**\n * @returns Result of concatenating
`buffers` in order.\n */\n\nexport function concatenateArrayBuffers(buffers: ArrayBuffer[]): ArrayBuffer {\n    if
(buffers.length === 1) {\n        return buffers[0];\n    }\n\n    let totalByteLength = 0;\n    buffers.forEach((buffer:
ArrayBuffer) => {\n        totalByteLength += buffer.byteLength;\n    });\n\n    const temp = new
Uint8Array(totalByteLength);\n    let offset = 0;\n    buffers.forEach((buffer: ArrayBuffer) => {\n        temp.set(new

```

```

Uint8Array(buffer), offset);\n  offset += buffer.byteLength;\n });\n return temp.buffer;\n}\n\n/**\n * Get the
basename of a path.\n *\n * Behaves in a way analogous to Linux's basename command.\n *\n * @param path\n
*/\nexport function basename(path: string): string {\n  const SEPARATOR = '/';\n  path = path.trim();\n  while
(path.endsWith(SEPARATOR)) {\n    path = path.slice(0, path.length - 1);\n  }\n\n  const items =
path.split(SEPARATOR);\n  return items[items.length - 1];\n}\n\n/**\n * Populate ModelArtifactsInfo fields for a
model with JSON topology.\n *\n * @param modelArtifacts\n *\n * @returns A ModelArtifactsInfo object.\n */\nexport
function getModelArtifactsInfoForJSON(modelArtifacts: ModelArtifacts):\n  ModelArtifactsInfo {\n  if
(modelArtifacts.modelTopology instanceof ArrayBuffer) {\n    throw new Error('Expected JSON model topology,
received ArrayBuffer.);\n  }\n\n  return {\n    dateSaved: new Date(),\n    modelTopologyType: 'JSON',\n
modelTopologyBytes: modelArtifacts.modelTopology == null ?\n      0 :\n    stringByteLength(JSON.stringify(modelArtifacts.modelTopology)),\n    weightSpecsBytes:
modelArtifacts.weightSpecs == null ?\n      0 :\n    stringByteLength(JSON.stringify(modelArtifacts.weightSpecs)),\n    weightDataBytes: modelArtifacts.weightData
== null ?\n      0 :\n    modelArtifacts.weightData.byteLength,\n  };\n}\n\n/**\n * Computes mantisa table for
casting Float16 to Float32\n *\n * See http://www.fox-toolkit.org/ftp/fasthalffloatconversion.pdf\n *\n * @returns
Uint32Array, 2048 mantissa lookup values.\n */\nfunction computeFloat16MantisaTable(): Uint32Array {\n  const
convertMantissa = (i: number): number => {\n    let m = i << 13;\n    let e = 0;\n\n    while ((m & 0x00800000) ===
0) {\n      e -= 0x00800000;\n      m <<= 1;\n    }\n    m &= ~0x00800000;\n    e += 0x38800000;\n\n    return m | e;\n
};\n\n  const mantisaTable = new Uint32Array(2048);\n  mantisaTable[0] = 0;\n  for (let i = 1; i < 1024; i++) {\n
mantisaTable[i] = convertMantissa(i);\n  }\n  for (let i = 1024; i < 2048; i++) {\n    mantisaTable[i] = 0x38000000 +
((i - 1024) << 13);\n  }\n\n  return mantisaTable;\n}\n\n/**\n * Computes exponent table for casting Float16 to
Float32\n *\n * See http://www.fox-toolkit.org/ftp/fasthalffloatconversion.pdf\n *\n * @returns Uint32Array, 64
exponent lookup values.\n */\nfunction computeFloat16ExponentTable(): Uint32Array {\n  const exponentTable =
new Uint32Array(64);\n  exponentTable[0] = 0;\n  exponentTable[31] = 0x47800000;\n  exponentTable[32] =
0x80000000;\n  exponentTable[63] = 0xc7800000;\n  for (let i = 1; i < 31; i++) {\n    exponentTable[i] = i << 23;\n
  }\n  for (let i = 33; i < 63; i++) {\n    exponentTable[i] = 0x80000000 + ((i - 32) << 23);\n  }\n\n  return
exponentTable;\n}\n\n/**\n * Computes offset table for casting Float16 to Float32\n *\n * See http://www.fox-
toolkit.org/ftp/fasthalffloatconversion.pdf\n *\n * @returns Uint32Array, 6d offset values.\n */\nfunction
computeFloat16OffsetTable(): Uint32Array {\n  const offsetTable = new Uint32Array(64);\n\n  for (let i = 0; i < 64;
i++) {\n    offsetTable[i] = 1024;\n  }\n  offsetTable[0] = offsetTable[32] = 0;\n\n  return offsetTable;\n}\n\n/**\n *
Retrieve a Float16 decoder which will decode a ByteArray of Float16 values\n * to a Float32Array.\n *\n * @returns Function (buffer: Uint16Array) => Float32Array which decodes\n *
the Uint16Array of Float16
bytes to a Float32Array.\n */\nexport function getFloat16Decoder(): (buffer: Uint16Array) => Float32Array {\n  //
Algorithm is based off of\n // http://www.fox-toolkit.org/ftp/fasthalffloatconversion.pdf\n\n // Cache lookup
tables\n  const mantisaTable = computeFloat16MantisaTable();\n  const exponentTable =
computeFloat16ExponentTable();\n  const offsetTable = computeFloat16OffsetTable();\n\n  return (quantizedArray:
Uint16Array) => {\n    const buffer = new ArrayBuffer(4 * quantizedArray.length);\n    const bufferUint32View =
new Uint32Array(buffer);\n    for (let index = 0; index < quantizedArray.length; index++) {\n      const float16Bits =
quantizedArray[index];\n      const float32Bits =\n        mantisaTable[offsetTable[float16Bits >> 10]] + (float16Bits
& 0x3fff) +\n        exponentTable[float16Bits >> 10];\n      bufferUint32View[index] = float32Bits;\n    }\n    return
new Float32Array(buffer);\n  };\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====

```

```

*\n\nimport {IOHandler, LoadOptions} from './types';\n\nexport type IORouter = (url: string|string[], loadOptions?:
LoadOptions) =>\n IOHandler;\n\nexport class IORouterRegistry {\n // Singleton instance.\n private static
instance: IORouterRegistry;\n private saveRouters: IORouter[];\n private loadRouters: IORouter[];\n\n private
constructor() {\n this.saveRouters = [];\n this.loadRouters = [];\n }\n\n private static getInstance():
IORouterRegistry {\n if (IORouterRegistry.instance === null) {\n IORouterRegistry.instance = new
IORouterRegistry();\n }\n return IORouterRegistry.instance;\n }\n\n /**\n * Register a save-handler router.\n
*\n * @param saveRouter A function that maps a URL-like string onto an instance\n * of `IOHandler` with the
`save` method defined or `null`.\n */\n static registerSaveRouter(saveRouter: IORouter) {\n
IORouterRegistry.getInstance().saveRouters.push(saveRouter);\n }\n\n /**\n * Register a load-handler router.\n
*\n * @param loadRouter A function that maps a URL-like string onto an instance\n * of `IOHandler` with the
`load` method defined or `null`.\n */\n static registerLoadRouter(loadRouter: IORouter) {\n
IORouterRegistry.getInstance().loadRouters.push(loadRouter);\n }\n\n /**\n * Look up IOHandler for saving,
given a URL-like string.\n *\n * @param url\n * @returns If only one match is found, an instance of IOHandler
with the\n * `save` method defined. If no match is found, `null`.\n * @throws Error, if more than one match is
found.\n */\n static getSaveHandlers(url: string|string[]): IOHandler[] {\n return
IORouterRegistry.getHandlers(url, 'save');\n }\n\n /**\n * Look up IOHandler for loading, given a URL-like
string.\n *\n * @param url\n * @param loadOptions Optional, custom load options.\n * @returns All valid
handlers for `url`, given the currently registered\n * handler routers.\n */\n static getLoadHandlers(url:
string|string[], loadOptions?: LoadOptions):\n IOHandler[] {\n return IORouterRegistry.getHandlers(url, 'load',
loadOptions);\n }\n\n private static getHandlers(\n url: string|string[], handlerType: 'save'|'load',\n
loadOptions?: LoadOptions): IOHandler[] {\n const validHandlers: IOHandler[] = [];\n const routers =
handlerType === 'load' ?\n IORouterRegistry.getInstance().loadRouters :\n
IORouterRegistry.getInstance().saveRouters;\n routers.forEach(router => {\n const handler = router(url,
loadOptions);\n if (handler !== null) {\n validHandlers.push(handler);\n }\n });\n return
validHandlers;\n }\n\n\nexport const registerSaveRouter = (loadRouter: IORouter) =>\n
IORouterRegistry.registerSaveRouter(loadRouter);\n\nexport const registerLoadRouter = (loadRouter: IORouter)
=>\n IORouterRegistry.registerLoadRouter(loadRouter);\n\nexport const getSaveHandlers = (url: string|string[])
=>\n IORouterRegistry.getSaveHandlers(url);\n\nexport const getLoadHandlers = (\n url: string|string[],
loadOptions?: LoadOptions) =>\n IORouterRegistry.getLoadHandlers(url, loadOptions);\n\n"/**\n * @license\n
* Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n\n*\n\nimport './flags';\n\nimport {env} from './environment';\n\nimport {getModelArtifactsInfoForJSON} from
'/io_utils';\n\nimport {IORouter, IORouterRegistry} from './router_registry';\n\nimport {IOHandler, ModelArtifacts,
ModelArtifactsInfo, ModelStoreManager, SaveResult} from './types';\n\nconst DATABASE_NAME =
'tensorflowjs';\nconst DATABASE_VERSION = 1;\n\n// Model data and ModelArtifactsInfo (metadata) are stored
in two separate\n// stores for efficient access of the list of stored models and their metadata.\n// 1. The object store
for model data: topology, weights and weight manifests.\nconst MODEL_STORE_NAME = 'models_store';\n// 2.
The object store for ModelArtifactsInfo, including meta-information such\n// as the type of topology (JSON vs
binary), byte size of the topology, byte\n// size of the weights, etc.\nconst INFO_STORE_NAME =
'model_info_store';\n\n/**\n * Delete the entire database for tensorflow.js, including the models store.\n */\n\nexport
async function deleteDatabase(): Promise<void> {\n const idbFactory = getIndexedDBFactory();\n\n return new
Promise<void>((resolve, reject) => {\n const deleteRequest =
idbFactory.deleteDatabase(DATABASE_NAME);\n deleteRequest.onsuccess = () => resolve();\n

```

```

deleteRequest.onerror = error => reject(error);\n });\n\nfunction getIndexedDBFactory(): IDBFactory {\n if
(!env().getBool('IS_BROWSER')) {\n // TODO(cais): Add more info about what IOHandler subtypes are
available.\n // Maybe point to a doc page on the web and/or automatically determine\n // the available
IOHandlers and print them in the error message.\n throw new Error(\n 'Failed to obtain IndexedDB factory
because the current environment' +\n ' is not a web browser.);\n }\n // tslint:disable-next-line:no-any\n const
theWindow: any = typeof window === 'undefined' ? self : window;\n const factory = theWindow.indexedDB ||
theWindow.mozIndexedDB ||\n theWindow.webkitIndexedDB || theWindow.msIndexedDB ||\n
theWindow.shimIndexedDB;\n if (factory == null) {\n throw new Error(\n 'The current browser does not
appear to support IndexedDB.);\n }\n return factory;\n}\n\nfunction setUpDatabase(openRequest: IDBRequest)
{\n const db = openRequest.result as IDBDatabase;\n db.createObjectStore(MODEL_STORE_NAME, {keyPath:
'modelPath'});\n db.createObjectStore(INFO_STORE_NAME, {keyPath: 'modelPath'});\n}\n\n/**\n * IOHandler
subclass: Browser IndexedDB.\n *\n * See the doc string of `browserIndexedDB` for more details.\n */\nexport class
BrowserIndexedDB implements IOHandler {\n protected readonly indexedDB: IDBFactory;\n protected readonly
modelPath: string;\n\n static readonly URL_SCHEME = 'indexeddb://';\n\n constructor(modelPath: string) {\n
this.indexedDB = getIndexedDBFactory();\n\n if (modelPath == null || !modelPath) {\n throw new Error(\n
'For IndexedDB, modelPath must not be null, undefined or empty.);\n }\n this.modelPath = modelPath;\n }\n\n
async save(modelArtifacts: ModelArtifacts): Promise<SaveResult> {\n // TODO(cais): Support saving GraphDef
models.\n if (modelArtifacts.modelTopology instanceof ArrayBuffer) {\n throw new Error(\n
'BrowserLocalStorage.save() does not support saving model topology ' +\n ' in binary formats yet.);\n }\n\n
return this.databaseAction(this.modelPath, modelArtifacts) as\n Promise<SaveResult>;\n }\n\n async load():
Promise<ModelArtifacts> {\n return this.databaseAction(this.modelPath) as Promise<ModelArtifacts>;\n }\n\n
/**\n * Perform database action to put model artifacts into or read model artifacts\n * from IndexedDB object
store.\n *\n * Whether the action is put or get depends on whether `modelArtifacts` is\n * specified. If it is
specified, the action will be put; otherwise the action\n * will be get.\n *\n * @param modelPath A unique string
path for the model.\n * @param modelArtifacts If specified, it will be the model artifacts to be\n * stored in
IndexedDB.\n * @returns A `Promise` of `SaveResult`, if the action is put, or a `Promise`\n * of
`ModelArtifacts`, if the action is get.\n */\n private databaseAction(modelPath: string, modelArtifacts?:
ModelArtifacts):\n Promise<ModelArtifacts|SaveResult> {\n return new
Promise<ModelArtifacts|SaveResult>((resolve, reject) => {\n const openRequest =
this.indexedDB.open(DATABASE_NAME, DATABASE_VERSION);\n openRequest.onupgradeneeded = () =>
setUpDatabase(openRequest);\n openRequest.onsuccess = () => {\n const db = openRequest.result;\n\n
if (modelArtifacts == null) {\n // Read model out from object store.\n const modelTx =
db.transaction(MODEL_STORE_NAME, 'readonly');\n const modelStore =
modelTx.objectStore(MODEL_STORE_NAME);\n const getRequest = modelStore.get(this.modelPath);\n
getRequest.onsuccess = () => {\n if (getRequest.result == null) {\n db.close();\n return
reject(new Error(\n `Cannot find model with path '${this.modelPath}'` +\n ` in
IndexedDB.`));\n } else {\n resolve(getRequest.result.modelArtifacts);\n }\n }\n\n
getRequest.onerror = error => {\n db.close();\n return reject(getRequest.error);\n }\n\n
modelTx.oncomplete = () => db.close();\n } else {\n // Put model into object store.\n const
modelArtifactsInfo: ModelArtifactsInfo =\n getModelArtifactsInfoForJSON(modelArtifacts);\n //
First, put ModelArtifactsInfo into info store.\n const infoTx = db.transaction(INFO_STORE_NAME,
'readwrite');\n let infoStore = infoTx.objectStore(INFO_STORE_NAME);\n const putInfoRequest =\n
infoStore.put({modelPath: this.modelPath, modelArtifactsInfo});\n let modelTx: IDBTransaction;\n
putInfoRequest.onsuccess = () => {\n // Second, put model data into model store.\n modelTx =
db.transaction(MODEL_STORE_NAME, 'readwrite');\n const modelStore =
modelTx.objectStore(MODEL_STORE_NAME);\n const putModelRequest = modelStore.put({\n
modelPath: this.modelPath,\n modelArtifacts,\n modelArtifactsInfo\n });\n\n
putModelRequest.onsuccess = () => resolve({modelArtifactsInfo});\n putModelRequest.onerror = error =>

```



```

{\n      // If the put-model request fails, roll back the info entry as\n      // well.\n      infoStore =
infoTx.objectStore(INFO_STORE_NAME);\n      const deleteInfoRequest =
infoStore.delete(this.modelPath);\n      deleteInfoRequest.onsuccess = () => {\n      db.close();\n      return reject(putModelRequest.error);\n      };\n      deleteInfoRequest.onerror = error => {\n
db.close();\n      return reject(putModelRequest.error);\n      };\n      };\n      };\n
putInfoRequest.onerror = error => {\n      db.close();\n      return reject(putInfoRequest.error);\n      };\n
  infoTx.oncomplete = () => {\n      if (modelTx == null) {\n      db.close();\n      } else {\n
modelTx.oncomplete = () => db.close();\n      }\n      };\n      };\n      };\n      openRequest.onerror = error =>
reject(openRequest.error);\n  });\n}\n}\n\nexport const indexedDBRouter: IORouter = (url: string|string[]) => {\n
if (!env().getBool('IS_BROWSER')) {\n  return null;\n } else {\n  if (!Array.isArray(url) &&
url.startsWith(BrowserIndexedDB.URL_SCHEME)) {\n    return
browserIndexedDB(url.slice(BrowserIndexedDB.URL_SCHEME.length));\n  } else {\n    return null;\n  }\n
}\n};\n\nIORouterRegistry.registerSaveRouter(indexedDBRouter);\nIORouterRegistry.registerLoadRouter(indexedDB
Router);\n\n/**\n * Creates a browser IndexedDB IOHandler for saving and loading models.\n *\n * ```\njs\n * const
model = tf.sequential();\n * model.add(\n *   tf.layers.dense({ units: 1, inputShape: [100], activation: 'sigmoid' }));\n *
*\n * const saveResult = await model.save('indexeddb://MyModel');\n * console.log(saveResult);\n * ```\n *\n *
@param modelPath A unique identifier for the model to be saved. Must be a\n *   non-empty string.\n * @returns
An instance of `BrowserIndexedDB` (subclass of `IOHandler`),\n *   which can be used with, e.g.,
`tf.Model.save`.\n */\nexport function browserIndexedDB(modelPath: string): IOHandler {\n  return new
BrowserIndexedDB(modelPath);\n}\n\nfunction maybeStripScheme(key: string) {\n  return
key.startsWith(BrowserIndexedDB.URL_SCHEME) ?\n    key.slice(BrowserIndexedDB.URL_SCHEME.length)
:\n    key;\n}\n\nexport class BrowserIndexedDBManager implements ModelStoreManager {\n  private
indexedDB: IDBFactory;\n\n  constructor() {\n    this.indexedDB = getIndexedDBFactory();\n  }\n\n  async
listModels(): Promise<[[path: string]: ModelArtifactsInfo]> {\n    return new Promise<[[path: string]:
ModelArtifactsInfo]>(\n      (resolve, reject) => {\n        const openRequest =\n        this.indexedDB.open(DATABASE_NAME, DATABASE_VERSION);\n        openRequest.onupgradeneeded = ()
=> setUpDatabase(openRequest);\n\n        openRequest.onsuccess = () => {\n          const db =
openRequest.result;\n          const tx = db.transaction(INFO_STORE_NAME, 'readonly');\n          const store =
tx.objectStore(INFO_STORE_NAME);\n          // tslint:disable:max-line-length\n          // Need to cast `store` as
`any` here because TypeScript's DOM\n          // library does not have the `getAll()` method even though the\n
          // method is supported in the latest version of most mainstream\n          // browsers;\n          //
https://developer.mozilla.org/en-US/docs/Web/API/IDBObjectStore/getAll\n          // tslint:enable:max-line-
length\n          // tslint:disable-next-line:no-any\n          const getAllInfoRequest = (store as any).getAll() as
IDBRequest;\n          getAllInfoRequest.onsuccess = () => {\n            const out: [[path: string]:
ModelArtifactsInfo] = {};\n            for (const item of getAllInfoRequest.result) {\n              out[item.modelPath]
= item.modelArtifactsInfo;\n            }\n            resolve(out);\n          };\n          getAllInfoRequest.onerror =
error => {\n            db.close();\n            return reject(getAllInfoRequest.error);\n          };\n          tx.oncomplete
= () => db.close();\n          };\n          openRequest.onerror = error => reject(openRequest.error);\n        });\n      }\n    )\n  }\n\n  async removeModel(path: string): Promise<ModelArtifactsInfo> {\n    path = maybeStripScheme(path);\n    return
new Promise<ModelArtifactsInfo>((resolve, reject) => {\n      const openRequest =
this.indexedDB.open(DATABASE_NAME, DATABASE_VERSION);\n      openRequest.onupgradeneeded = () =>
setUpDatabase(openRequest);\n      openRequest.onsuccess = () => {\n        const db = openRequest.result;\n
        const infoTx = db.transaction(INFO_STORE_NAME, 'readwrite');\n        const infoStore =
infoTx.objectStore(INFO_STORE_NAME);\n        const getInfoRequest = infoStore.get(path);\n        let modelTx:
IDBTransaction;\n        getInfoRequest.onsuccess = () => {\n          if (getInfoRequest.result == null) {\n
            db.close();\n            return reject(new Error(\n              `Cannot find model with path '${path}'` +\n              `in
IndexedDB.`));\n          } else {\n            // First, delete the entry in the info store.\n            const deleteInfoRequest =
infoStore.delete(path);\n            const deleteModelData = () => {\n              // Second, delete the entry in the model

```

```

store.\n      modelTx = db.transaction(MODEL_STORE_NAME, 'readwrite');\n      const modelStore =
modelTx.objectStore(MODEL_STORE_NAME);\n      const deleteModelRequest = modelStore.delete(path);\n      deleteModelRequest.onsuccess = () =>\n      resolve(getInfoRequest.result.modelArtifactsInfo);\n      deleteModelRequest.onerror = error =>\n      reject(getInfoRequest.error);\n      };\n      // Proceed
with deleting model data regardless of whether deletion\n      // of info data succeeds or not.\n      deleteInfoRequest.onsuccess = deleteModelData;\n      deleteInfoRequest.onerror = error => {\n
deleteModelData();\n      db.close();\n      return reject(getInfoRequest.error);\n      };\n      }\n};\n      getInfoRequest.onerror = error => {\n      db.close();\n      return reject(getInfoRequest.error);\n
};\n\n      infoTx.oncomplete = () => {\n      if (modelTx === null) {\n      db.close();\n      } else {\n
modelTx.oncomplete = () => db.close();\n      }\n      };\n      };\n      openRequest.onerror = error =>
reject(openRequest.error);\n      };\n      }\n\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport './flags';\nimport {env} from './environment';\nimport {assert} from './util';\nimport
{arrayBufferToBase64String, base64StringToArrayBuffer, getModelArtifactsInfoForJSON} from
'/io_utils';\nimport {IORouter, IORouterRegistry} from './router_registry';\nimport {IOHandler, ModelArtifacts,
ModelArtifactsInfo, ModelStoreManager, SaveResult} from './types';\n\nconst PATH_SEPARATOR = '/';\nconst
PATH_PREFIX = 'tensorflowjs_models';\nconst INFO_SUFFIX = 'info';\nconst MODEL_TOPOLOGY_SUFFIX =
'model_topology';\nconst WEIGHT_SPECS_SUFFIX = 'weight_specs';\nconst WEIGHT_DATA_SUFFIX =
'weight_data';\nconst MODEL_METADATA_SUFFIX = 'model_metadata';\n\n/**\n * Purge all tensorflow.js-
saved model artifacts from local storage.\n *\n * @returns Paths of the models purged.\n */\nexport function
purgeLocalStorageArtifacts(): string[] {\n  if (!env().getBool('IS_BROWSER') || typeof window === 'undefined' ||\n
typeof window.localStorage === 'undefined') {\n    throw new Error(\n      'purgeLocalStorageModels() cannot
proceed because local storage is ' +\n      'unavailable in the current environment.);\n  }\n  const LS =
window.localStorage;\n  const purgedModelPaths: string[] = [];\n  for (let i = 0; i < LS.length; ++i) {\n    const key =
LS.key(i);\n    const prefix = PATH_PREFIX + PATH_SEPARATOR;\n    if (key.startsWith(prefix) && key.length
> prefix.length) {\n      LS.removeItem(key);\n      const modelName = getModelPathFromKey(key);\n      if
(purgedModelPaths.indexOf(modelName) === -1) {\n        purgedModelPaths.push(modelName);\n      }\n    }\n  }\n  return purgedModelPaths;\n}\n\nfunction getModelKeys(path: string): {\n  info: string,\n  topology: string,\n  weightSpecs: string,\n  weightData: string,\n  modelMetadata: string\n} {\n  return {\n    info: [PATH_PREFIX,
path, INFO_SUFFIX].join(PATH_SEPARATOR),\n    topology: [PATH_PREFIX, path,
MODEL_TOPOLOGY_SUFFIX].join(PATH_SEPARATOR),\n    weightSpecs: [PATH_PREFIX, path,
WEIGHT_SPECS_SUFFIX].join(PATH_SEPARATOR),\n    weightData: [PATH_PREFIX, path,
WEIGHT_DATA_SUFFIX].join(PATH_SEPARATOR),\n    modelMetadata:\n      [PATH_PREFIX, path,
MODEL_METADATA_SUFFIX].join(PATH_SEPARATOR)\n  };\n}\n\n/**\n * Get model path from a local-
storage key.\n *\n * E.g., 'tensorflowjs_models/my/model/1/info' --> 'my/model/1'\n *\n * @param key\n */\nfunction getModelPathFromKey(key: string) {\n  const items = key.split(PATH_SEPARATOR);\n  if
(items.length < 3) {\n    throw new Error(`Invalid key format: ${key}`);\n  }\n  return items.slice(1, items.length -
1).join(PATH_SEPARATOR);\n}\n\nfunction maybeStripScheme(key: string) {\n  return
key.startsWith(BrowserLocalStorage.URL_SCHEME) ?\n
key.slice(BrowserLocalStorage.URL_SCHEME.length) :\n  key;\n}\n\ndeclare type LocalStorageKeys = {\n
info: string,\n  topology: string,\n  weightSpecs: string,\n  weightData: string,\n  modelMetadata: string\n};\n\n/**\n * IOHandler subclass: Browser Local Storage.\n *\n * See the doc string to `browserLocalStorage` for more

```

```

details.\n */\nexport class BrowserLocalStorage implements IOHandler {\n  protected readonly LS: Storage;\n  protected readonly modelPath: string;\n  protected readonly keys: LocalStorageKeys;\n\n  static readonly\n  URL_SCHEME = 'localStorage://';\n\n  constructor(modelPath: string) {\n    if (!env().getBool('IS_BROWSER') ||\n    typeof window === 'undefined' ||\n    typeof window.localStorage === 'undefined') {\n      // TODO(cais): Add\n      more info about what IOHandler subtypes are\n      // available.\n      // Maybe point to a doc page on the web\n      and/or automatically determine\n      // the available IOHandlers and print them in the error message.\n      throw\n      new Error(\n        'The current environment does not support local storage.);\n    }\n    this.LS =\n    window.localStorage;\n\n    if (modelPath == null || !modelPath) {\n      throw new Error(\n        'For local storage,\n        modelPath must not be null, undefined or empty.);\n    }\n    this.modelPath = modelPath;\n    this.keys =\n    getModelKeys(this.modelPath);\n  }\n\n  /**\n   * Save model artifacts to browser local storage.\n   *\n   * See the\n   * documentation to `browserLocalStorage` for details on the saved\n   * artifacts.\n   *\n   * @param modelArtifacts\n   * The model artifacts to be stored.\n   * @returns An instance of SaveResult.\n   */\n  async save(modelArtifacts:\n  ModelArtifacts): Promise<SaveResult> {\n    if (modelArtifacts.modelTopology instanceof ArrayBuffer) {\n      throw new Error(\n        'BrowserLocalStorage.save() does not support saving model topology '\n        '+\n        'in binary\n        formats yet.);\n    } else {\n      const topology = JSON.stringify(modelArtifacts.modelTopology);\n      const\n      weightSpecs = JSON.stringify(modelArtifacts.weightSpecs);\n\n      const modelArtifactsInfo: ModelArtifactsInfo\n      =\n      getModelArtifactsInfoForJSON(modelArtifacts);\n\n      try {\n        this.LS.setItem(this.keys.info,\n        JSON.stringify(modelArtifactsInfo));\n        this.LS.setItem(this.keys.topology, topology);\n        this.LS.setItem(this.keys.weightSpecs, weightSpecs);\n        this.LS.setItem(\n          this.keys.weightData,\n          arrayBufferToBase64String(modelArtifacts.weightData));\n        const result: ModelArtifacts = {\n          format:\n          modelArtifacts.format,\n          generatedBy: modelArtifacts.generatedBy,\n          convertedBy:\n          modelArtifacts.convertedBy\n        };\n        if (modelArtifacts.signature != null) {\n          result.signature =\n          modelArtifacts.signature;\n        }\n        if (modelArtifacts.userDefinedMetadata != null) {\n          result.userDefinedMetadata = modelArtifacts.userDefinedMetadata;\n        }\n        if\n        (modelArtifacts.modelInitializer != null) {\n          result.modelInitializer = modelArtifacts.modelInitializer;\n        }\n        this.LS.setItem(this.keys.modelMetadata, JSON.stringify(result));\n        return {modelArtifactsInfo};\n      } catch (err) {\n        // If saving failed, clean up all items saved so far.\n        this.LS.removeItem(this.keys.info);\n        this.LS.removeItem(this.keys.topology);\n        this.LS.removeItem(this.keys.weightSpecs);\n        this.LS.removeItem(this.keys.weightData);\n        this.LS.removeItem(this.keys.modelMetadata);\n\n        throw new\n        Error(\n          `Failed to save model '${this.modelPath}' to local storage: `+\n          `size quota being exceeded is\n          a possible cause of this failure: `+\n          `modelTopologyBytes=${modelArtifactsInfo.modelTopologyBytes}, `+\n          `weightSpecsBytes=${modelArtifactsInfo.weightSpecsBytes}, `+\n          `weightDataBytes=${modelArtifactsInfo.weightDataBytes}.);\n      }\n    }\n\n    /**\n     * Load a model from\n     * local storage.\n     *\n     * See the documentation to `browserLocalStorage` for details on the saved\n     * artifacts.\n     *\n     * @returns The loaded model (if loading succeeds).\n     */\n    async load(): Promise<ModelArtifacts> {\n      const info =\n      JSON.parse(this.LS.getItem(this.keys.info)) as ModelArtifactsInfo;\n      if (info == null) {\n        throw new Error(\n          `In local storage, there is no model with name '${this.modelPath}');\n        }\n        if\n        (info.modelTopologyType !== 'JSON') {\n          throw new Error(\n            'BrowserLocalStorage does not support\n            loading non-JSON model '\n            '+\n            'topology yet.);\n        }\n        const out: ModelArtifacts = {};\n\n        // Load\n        topology.\n        const topology = JSON.parse(this.LS.getItem(this.keys.topology));\n        if (topology == null) {\n          throw new Error(\n            `In local storage, the topology of model '${this.modelPath}' `+\n            `is missing.);\n        }\n        out.modelTopology = topology;\n\n        // Load weight specs.\n        const weightSpecs =\n        JSON.parse(this.LS.getItem(this.keys.weightSpecs));\n        if (weightSpecs == null) {\n          throw new Error(\n            `In local storage, the weight specs of model '${this.modelPath}' `+\n            `are missing.);\n        }\n        out.weightSpecs = weightSpecs;\n\n        // Load meta-data fields.\n        const metadataString =\n        this.LS.getItem(this.keys.modelMetadata);\n        if (metadataString != null) {\n          const metadata =\n          JSON.parse(metadataString) as ModelArtifacts;\n          out.format = metadata['format'];\n          out.generatedBy =\n          metadata['generatedBy'];\n          out.convertedBy = metadata['convertedBy'];\n          if (metadata['signature'] != null) {\n

```

```

    out.signature = metadata['signature'];\n    }\n    if (metadata['userDefinedMetadata'] != null) {\n
out.userDefinedMetadata = metadata['userDefinedMetadata'];\n    }\n    if (metadata['modelInitializer'] != null) {\n
    out.modelInitializer = metadata['modelInitializer'];\n    }\n    }\n    // Load weight data.\n    const
weightDataBase64 = this.LS.getItem(this.keys.weightData);\n    if (weightDataBase64 == null) {\n        throw new
Error(\n        `In local storage, the binary weight values of model ` +\n        `${this.modelPath}` are missing.`);\n
}\n    out.weightData = base64StringToArrayBuffer(weightDataBase64);\n    return out;\n    }\n}\n\nexport const
localStorageRouter: IORouter = (url: string|string[]) => {\n    if (!env().getBool('IS_BROWSER')) {\n        return null;\n
}\n    else {\n        if (!Array.isArray(url) && url.startsWith(BrowserLocalStorage.URL_SCHEME)) {\n            return
browserLocalStorage(\n                url.slice(BrowserLocalStorage.URL_SCHEME.length));\n        } else {\n            return
null;\n        }\n    }\n}\n\nIORouterRegistry.registerSaveRouter(localStorageRouter);\nIORouterRegistry.registerLoadRouter(localStor
ageRouter);\n\n/**\n * Factory function for local storage IOHandler.\n * This `IOHandler` supports both `save`
and `load`.\n *\n * For each model's saved artifacts, four items are saved to local storage.\n * -
`${PATH_SEPARATOR}/${modelPath}/info`: Contains meta-info about the\n * model, such as date saved, type
of the topology, size in bytes, etc.\n * - `${PATH_SEPARATOR}/${modelPath}/topology`: Model topology. For
Keras-\n * style models, this is a stringized JSON.\n * -
`${PATH_SEPARATOR}/${modelPath}/weight_specs`: Weight specs of the\n * model, can be used to decode
the saved binary weight values (see\n * item below).\n * -
`${PATH_SEPARATOR}/${modelPath}/weight_data`: Concatenated binary\n * weight values, stored as a
base64-encoded string.\n *\n * Saving may throw an `Error` if the total size of the artifacts exceed the\n * browser-
specific quota.\n *\n * @param modelPath A unique identifier for the model to be saved. Must be a\n * non-empty
string.\n *\n * @returns An instance of `IOHandler`, which can be used with, e.g.,\n * `tf.Model.save`.\n */\nexport
function browserLocalStorage(modelPath: string): IOHandler {\n    return new
BrowserLocalStorage(modelPath);\n}\n\nexport class BrowserLocalStorageManager implements
ModelStoreManager {\n    private readonly LS: Storage;\n\n    constructor() {\n        assert(\n
env().getBool('IS_BROWSER'),\n        () => 'Current environment is not a web browser');\n        assert(\n            typeof
window === 'undefined' ||\n            typeof window.localStorage !== 'undefined',\n            () => 'Current browser does
not appear to support localStorage');\n        this.LS = window.localStorage;\n    }\n\n    async listModels():
Promise<{{path: string}: ModelArtifactsInfo}> {\n        const out: {{path: string}: ModelArtifactsInfo} = {};\n        const
prefix = PATH_PREFIX + PATH_SEPARATOR;\n        const suffix = PATH_SEPARATOR + INFO_SUFFIX;\n        for (let i = 0; i < this.LS.length; ++i) {\n            const key = this.LS.key(i);\n            if (key.startsWith(prefix) &&
key.endsWith(suffix)) {\n                const modelPath = getModelPathFromKey(key);\n                out[modelPath] =
JSON.parse(this.LS.getItem(key)) as ModelArtifactsInfo;\n            }\n        }\n        return out;\n    }\n\n    async
removeModel(path: string): Promise<ModelArtifactsInfo> {\n        path = maybeStripScheme(path);\n        const keys =
getModelKeys(path);\n        if (this.LS.getItem(keys.info) == null) {\n            throw new Error(`Cannot find model at path
`${path}``);\n        }\n        const info = JSON.parse(this.LS.getItem(keys.info)) as ModelArtifactsInfo;\n        this.LS.removeItem(keys.info);\n        this.LS.removeItem(keys.topology);\n
        this.LS.removeItem(keys.weightSpecs);\n        this.LS.removeItem(keys.weightData);\n        return info;\n    }\n}\n\n"/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n
*/\n\n/**\n * Classes and functions for model management across multiple storage mediums.\n *\n * Supported
client actions:\n * - Listing models on all registered storage mediums.\n * - Remove model by URL from any
registered storage mediums, by using URL\n * string.\n * - Moving or copying model from one path to another in

```

```

the same medium or from\n * one medium to another, by using URL strings.\n *\n\nimport {assert} from
'./util';\n\nimport {IORouterRegistry} from './router_registry';\n\nimport {ModelArtifactsInfo, ModelStoreManager}
from './types';\n\nconst URL_SCHEME_SUFFIX = '://';\n\nexport class ModelStoreManagerRegistry {\n //
Singleton instance.\n private static instance: ModelStoreManagerRegistry;\n\n private managers: {[scheme: string]:
ModelStoreManager};\n\n private constructor() {\n this.managers = {};\n }\n\n private static getInstance():
ModelStoreManagerRegistry {\n if (ModelStoreManagerRegistry.instance == null) {\n
ModelStoreManagerRegistry.instance = new ModelStoreManagerRegistry();\n }\n return
ModelStoreManagerRegistry.instance;\n }\n\n /**\n * Register a save-handler router.\n *\n * @param
saveRouter A function that maps a URL-like string onto an instance\n * of `IOHandler` with the `save` method
defined or `null`.\n *\n * @static registerManager(scheme: string, manager: ModelStoreManager) {\n assert(scheme
!= null, () => 'scheme must not be undefined or null.');
```

```

if (scheme.endsWith(URL_SCHEME_SUFFIX)) {\n
scheme = scheme.slice(0, scheme.indexOf(URL_SCHEME_SUFFIX));\n }\n assert(scheme.length > 0, () =>
'scheme must not be an empty string.');
```

```

const registry = ModelStoreManagerRegistry.getInstance();\n assert(\n
registry.managers[scheme] == null,\n () => `A model store manager is already registered for scheme '${\n
scheme}'.`);\n registry.managers[scheme] = manager;\n }\n\n static getManager(scheme: string):
ModelStoreManager {\n const manager = this.getInstance().managers[scheme];\n if (manager == null) {\n
throw new Error(`Cannot find model manager for scheme '${scheme}'`);\n }\n return manager;\n }\n\n static
getSchemes(): string[] {\n return Object.keys(this.getInstance().managers);\n }\n\n /**\n * Helper method for
parsing a URL string into a scheme and a path.\n *\n * @param url E.g., 'localStorage://my-model'\n *\n * @returns A
dictionary with two fields: scheme and path.\n *\n * Scheme: e.g., 'localStorage' in the example above.\n *\n * Path: e.g.,
'my-model' in the example above.\n *\n * @function parseURL(url: string): {scheme: string, path: string} {\n if
(url.indexOf(URL_SCHEME_SUFFIX) === -1) {\n throw new Error(\n `The url string provided does not
contain a scheme. ` +\n `Supported schemes are: ` +\n
`${ModelStoreManagerRegistry.getSchemes().join(',')}`);\n }\n return {\n scheme:
url.split(URL_SCHEME_SUFFIX)[0],\n path: url.split(URL_SCHEME_SUFFIX)[1],\n };}\n\n\nasync function
cloneModelInternal(\n sourceURL: string, destURL: string,\n deleteSource = false):
Promise<ModelArtifactsInfo> {\n assert(\n sourceURL !== destURL,\n () => `Old path and new path are the
same: '${sourceURL}'`);\n\n const loadHandlers = IORouterRegistry.getLoadHandlers(sourceURL);\n assert(\n
loadHandlers.length > 0,\n () => `Copying failed because no load handler is found for source URL ${\n
sourceURL}.`);\n assert(\n loadHandlers.length < 2,\n () => `Copying failed because more than one
(${loadHandlers.length}) ` +\n `load handlers for source URL ${sourceURL}.`);\n const loadHandler =
loadHandlers[0];\n\n const saveHandlers = IORouterRegistry.getSaveHandlers(destURL);\n assert(\n
saveHandlers.length > 0,\n () => `Copying failed because no save handler is found for destination ` +\n
`URL ${destURL}.`);\n assert(\n saveHandlers.length < 2,\n () => `Copying failed because more than one
(${loadHandlers.length}) ` +\n `save handlers for destination URL ${destURL}.`);\n const saveHandler =
saveHandlers[0];\n\n const sourceScheme = parseURL(sourceURL).scheme;\n const sourcePath =
parseURL(sourceURL).path;\n const sameMedium = sourceScheme === parseURL(sourceURL).scheme;\n\n const modelArtifacts = await loadHandler.load();\n\n // If moving within the same storage medium, remove the old
model as soon as\n // the loading is done. Without doing this, it is possible that the combined\n // size of the two
models will cause the cloning to fail.\n if (deleteSource && sameMedium) {\n await
ModelStoreManagerRegistry.getManager(sourceScheme)\n .removeModel(sourcePath);\n }\n\n const
saveResult = await saveHandler.save(modelArtifacts);\n\n // If moving between mediums, the deletion is done after
the save succeeds.\n // This guards against the case in which saving to the destination medium\n // fails.\n if
(deleteSource && !sameMedium) {\n await ModelStoreManagerRegistry.getManager(sourceScheme)\n
.removeModel(sourcePath);\n }\n\n return saveResult.modelArtifactsInfo;\n }\n\n /**\n * List all models stored in
registered storage mediums.\n *\n * For a web browser environment, the registered mediums are Local Storage
and\n * IndexedDB.\n *\n * @js\n * // First create and save a model.\n * const model = tf.sequential();\n *
model.add(tf.layers.dense(\n * {units: 1, inputShape: [10], activation: 'sigmoid'}));\n * await
```

```

model.save('localstorage://demo/management/model1');\n *\n * // Then list existing models.\n *
console.log(JSON.stringify(await tf.io.listModels()));\n *\n * // Delete the model.\n * await
tf.io.removeModel('localstorage://demo/management/model1');\n *\n * // List models again.\n *
console.log(JSON.stringify(await tf.io.listModels()));\n *```\n *\n * @returns A `Promise` of a dictionary mapping
URLs of existing models to\n * their model artifacts info. URLs include medium-specific schemes, e.g.,\n *
'indexeddb://my/model/1'. Model artifacts info include type of the\n * model's topology, byte sizes of the topology,
weights, etc.\n *\n * @doc {\n *   heading: 'Models',\n *   subheading: 'Management',\n *   namespace: 'io',\n *   ignoreCI: true\n * }\n * \nasync function listModels(): Promise<{[url: string]: ModelArtifactsInfo}> {\n   const
schemes = ModelStoreManagerRegistry.getSchemes();\n   const out: {[url: string]: ModelArtifactsInfo} = {};\n   for
(const scheme of schemes) {\n     const schemeOut =\n       await
ModelStoreManagerRegistry.getManager(scheme).listModels();\n     for (const path in schemeOut) {\n       const url =
scheme + URL_SCHEME_SUFFIX + path;\n       out[url] = schemeOut[path];\n     }\n   }\n   return out;\n }\n\n**\n *
Remove a model specified by URL from a registered storage medium.\n *\n * ```\n *\n * // First create and save a
model.\n *\n * const model = tf.sequential();\n * model.add(tf.layers.dense(\n *   {units: 1, inputShape: [10],
activation: 'sigmoid'}));\n * await model.save('localstorage://demo/management/model1');\n *\n * // Then list
existing models.\n * console.log(JSON.stringify(await tf.io.listModels()));\n *\n * // Delete the model.\n * await
tf.io.removeModel('localstorage://demo/management/model1');\n *\n * // List models again.\n *
console.log(JSON.stringify(await tf.io.listModels()));\n *```\n *\n * @param url A URL to a stored model, with a
scheme prefix, e.g.,\n * 'localstorage://my-model-1', 'indexeddb://my/model/2'.\n *\n * @returns ModelArtifactsInfo of
the deleted model (if and only if deletion\n * is successful).\n *\n * @throws Error if deletion fails, e.g., if no model
exists at `path`.\n *\n * @doc {\n *   heading: 'Models',\n *   subheading: 'Management',\n *   namespace: 'io',\n *   ignoreCI: true\n * }\n * \nasync function removeModel(url: string): Promise<ModelArtifactsInfo> {\n   const
schemeAndPath = parseURL(url);\n   const manager =
ModelStoreManagerRegistry.getManager(schemeAndPath.scheme);\n   return
manager.removeModel(schemeAndPath.path);\n }\n\n**\n * Copy a model from one URL to another.\n *\n * This
function supports:\n *\n * 1. Copying within a storage medium, e.g.,\n *   `tf.io.copyModel('localstorage://model-1',
'localstorage://model-2')`\n * 2. Copying between two storage mediums, e.g.,\n *
`tf.io.copyModel('localstorage://model-1', 'indexeddb://model-1')`\n *\n * ```\n *\n * // First create and save a model.\n *
const model = tf.sequential();\n * model.add(tf.layers.dense(\n *   {units: 1, inputShape: [10], activation:
'sigmoid'}));\n * await model.save('localstorage://demo/management/model1');\n *\n * // Then list existing
models.\n * console.log(JSON.stringify(await tf.io.listModels()));\n *\n * // Copy the model, from Local Storage to
IndexedDB.\n * await tf.io.copyModel(\n *   'localstorage://demo/management/model1',\n *   'indexeddb://demo/management/model1');\n *\n * // List models again.\n * console.log(JSON.stringify(await
tf.io.listModels()));\n *\n * // Remove both models.\n * await
tf.io.removeModel('localstorage://demo/management/model1');\n * await
tf.io.removeModel('indexeddb://demo/management/model1');\n *```\n *\n * @param sourceURL Source URL of copying.\n *
@param destURL Destination URL of copying.\n * @returns ModelArtifactsInfo of the copied model
(if and only if copying\n * is successful).\n *\n * @throws Error if copying fails, e.g., if no model exists at
`sourceURL`, or\n * if `oldPath` and `newPath` are identical.\n *\n * @doc {\n *   heading: 'Models',\n *
subheading: 'Management',\n *   namespace: 'io',\n *   ignoreCI: true\n * }\n * \nasync function copyModel(\n
sourceURL: string, destURL: string): Promise<ModelArtifactsInfo> {\n   const deleteSource = false;\n   return
cloneModelInternal(sourceURL, destURL, deleteSource);\n }\n\n**\n * Move a model from one URL to another.\n *
This function supports:\n *\n * 1. Moving within a storage medium, e.g.,\n *
`tf.io.moveModel('localstorage://model-1', 'localstorage://model-2')`\n * 2. Moving between two storage mediums,
e.g.,\n *   `tf.io.moveModel('localstorage://model-1', 'indexeddb://model-1')`\n *\n * ```\n *\n * // First create and save
a model.\n * const model = tf.sequential();\n * model.add(tf.layers.dense(\n *   {units: 1, inputShape: [10],
activation: 'sigmoid'}));\n * await model.save('localstorage://demo/management/model1');\n *\n * // Then list
existing models.\n * console.log(JSON.stringify(await tf.io.listModels()));\n *\n * // Move the model, from Local

```



```

return systemFetch;\n}\n\nexport class PlatformNode implements Platform {\n  private textEncoder: TextEncoder;\n  // tslint:disable-next-line:no-any\n  util: any;\n\n  constructor() {\n    // tslint:disable-next-line:no-require-imports\n    this.util = require('util');\n    // According to the spec, the built-in encoder can do only UTF-8 encoding.\n    // https://developer.mozilla.org/en-US/docs/Web/API/TextEncoder/TextEncoder\n    this.textEncoder = new\n    this.util.TextEncoder();\n  }\n\n  fetch(path: string, requestInits?: RequestInit): Promise<Response> {\n    if\n    (env().global.fetch != null) {\n      return env().global.fetch(path, requestInits);\n    }\n\n    if (systemFetch == null)\n    {\n      systemFetch = getNodeFetch.importFetch();\n    }\n    return systemFetch(path, requestInits);\n  }\n\n  now():\n  number {\n    const time = process.hrtime();\n    return time[0] * 1000 + time[1] / 1000000;\n  }\n\n  encode(text:\n  string, encoding: string): Uint8Array {\n    if (encoding !== 'utf-8' && encoding !== 'utf8') {\n      throw new\n      Error(\n        `Node built-in encoder only supports utf-8, but got ${encoding}`);\n    }\n    return\n    this.textEncoder.encode(text);\n  }\n\n  decode(bytes: Uint8Array, encoding: string): string {\n    if (bytes.length ===\n    0) {\n      return '';\n    }\n    return new this.util.TextDecoder(encoding).decode(bytes);\n  }\n}\n\nif\n(env().get('IS_NODE')) {\n  env().setPlatform('node', new PlatformNode());\n}\n\n"/**\n * @license\n * Copyright\n 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {TensorBuffer} from './tensor';\nimport {DataType, DataTypeMap, Rank, ShapeMap} from\n './types';\nimport * as util from './util';\n\n/**\n * Creates an empty `tf.TensorBuffer` with the specified `shape` and\n `dtype`.\n * The values are stored in CPU as `TypedArray`. Fill the buffer using\n * `buffer.set()`, or by\n  modifying directly `buffer.values`.\n * When done, call `buffer.toTensor()` to get an immutable `tf.Tensor`\n  with\n * those values.\n * ```\n * // Create a buffer and set values at particular indices.\n * const buffer =\n  tf.buffer([2, 2]);\n * buffer.set(3, 0, 0);\n * buffer.set(5, 1, 0);\n * // Convert the buffer back to a tensor.\n *\n  buffer.toTensor().print();\n * ```\n * @param shape An array of integers defining the output tensor shape.\n * @param dtype The dtype of the buffer. Defaults to 'float32'.\n * @param values The values of the buffer as\n `TypedArray`. Defaults to\n * zeros.\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n */\n\nexport\n  function buffer<R extends Rank, D extends DataType = 'float32'>(\n    shape: ShapeMap[R], dtype: D = 'float32' as\n  D,\n    values?: DataTypeMap[D]): TensorBuffer<R, D> {\n    dtype = dtype || 'float32' as D;\n    util.assertNonNegativeIntegerDimensions(shape);\n    return new TensorBuffer<R, D>(shape, dtype,\n  values);\n  }\n\n"/**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the\n  Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n  License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n  on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n  implied.\n * See the License for the specific language governing permissions and\n  limitations under the\n  License.\n */

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {Cast, CastAttrs, CastInputs} from './kernel_names';\nimport\n {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from\n './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {DataType, TensorLike} from\n './types';\nimport * as util from './util';\nimport {op} from './operation';\n\n/**\n * Casts a `tf.Tensor` to a new\n  dtype.\n * ```\n * const x = tf.tensor1d([1.5, 2.5, 3]);\n * tf.cast(x, 'int32').print();\n * ```\n * @param x The\n  input tensor to be casted.\n * @param dtype The dtype to cast the input tensor to.\n * @doc {heading: 'Tensors',\n  subheading: 'Transformations'}\n */\n\nfunction cast_<T extends Tensor>(x: T|TensorLike, dtype: DataType): T {\n  const $x = convertToTensor(x, 'x', 'cast');\n\n  // Sanity checks.\n  if (!util.isValidDtype(dtype)) {\n    throw new

```



```
Error(`Failed to cast to unknown dtype ${dtype}`);\n }\n if (dtype === 'string' && $x.dtype !== 'string' ||\n dtype !== 'string' && $x.dtype === 'string') {\n throw new Error('Only strings can be casted to strings');\n }\n\n const inputs: CastInputs = {x: $x};\n const attrs: CastAttrs = {dtype};\n\n return ENGINE.runKernel(\n Cast,\n inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n\n\nexport const cast = op({cast_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n */

```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Identity, IdentityInputs} from './kernel_names';\nimport\n {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n\n*\n * Creates a\n new tensor with the same values and shape as the specified\n * tensor.\n *\n * ``js\n * const x = tf.tensor([1, 2]);\n *\n * x.clone().print();\n *\n * @param x The tensor to clone.\n *\n * @doc {heading: 'Tensors', subheading:\n 'Creation'}\n *\n\nfunction clone_<T extends Tensor>(x: T|TensorLike): T {\n const $x = convertToTensor(x, 'x',\n 'clone', 'string_or_numeric');\n const inputs: IdentityInputs = {x: $x};\n\n // Note this op is called tf.identity in\n python. Hence the kernel name used\n // here.\n return ENGINE.runKernel(Identity, inputs as {} as\n NamedTensorMap);\n\n\n\nexport const clone = op({clone_});\n", "/*\n * @license\n * Copyright 2020 Google Inc.\n All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n */

```

```
=====\n\n*\n\nimport {Tensor} from './tensor';\n\n\n*\n * Prints information about the `tf.Tensor` including its data.\n *\n *\n * ``js\n * const verbose = true;\n * tf.tensor2d([1, 2, 3, 4], [2, 2]).print(verbose);\n *\n * @param x The tensor to\n be printed.\n * @param verbose Whether to print verbose information about the `Tensor`,\n * including dtype and\n size.\n *\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\n\nexport function print_<T extends Tensor>(x: T,\n verbose = false): void {\n console.log(x.toString(verbose));\n\n\n", "/*\n * @license\n * Copyright 2020 Google\n Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n */

```

```
=====\n\n*\n\n// Required side effectful code for tfjs-core\n\n// Set up Engine and ENV\nimport {getOrMakeEngine} from\n './engine';\ngetOrMakeEngine();\n\n// Register backend-agnostic flags.\nimport './flags';\n\n// Register\n platforms\nimport './platforms/platform_browser';\nimport './platforms/platform_node';\n\n// Set up\n OpHandler\nimport {buffer} from './ops/buffer';\nimport {cast} from './ops/cast';\nimport {clone} from\n './ops/clone';\nimport {print} from './ops/print';\nimport {OpHandler, setOpHandler} from './tensor';\n\nconst\n opHandler: OpHandler = {\n buffer,\n cast,\n clone,\n print\n};\nsetOpHandler(opHandler);\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable

```

law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\n * IOHandlers related to files, such as browser-triggered file downloads,\n * user-selected files in browser.\n *\nimport './flags';\nimport {env} from './environment';\nimport {basename, concatenateArrayBuffers, getModelArtifactsInfoForJSON} from './io_utils';\nimport {IORouter, IORouterRegistry} from './router_registry';\nimport {IOHandler, ModelArtifacts, ModelJSON, SaveResult, WeightsManifestConfig, WeightsManifestEntry} from './types';\n\nconst DEFAULT_FILE_NAME_PREFIX = 'model';\nconst DEFAULT_JSON_EXTENSION_NAME = '.json';\nconst DEFAULT_WEIGHT_DATA_EXTENSION_NAME = '.weights.bin';\n\nfunction defer<T>(f: () => T): Promise<T> {\n  return new Promise(resolve => setTimeout(resolve)).then(f);\n}\n\nexport class BrowserDownloads implements IOHandler {\n  private readonly modelTopologyFileName: string;\n  private readonly weightDataFileName: string;\n  private readonly jsonAnchor: HTMLAnchorElement;\n  private readonly weightDataAnchor: HTMLAnchorElement;\n\n  static readonly URL_SCHEME = 'downloads://';\n\n  constructor(fileNamePrefix?: string) {\n    if (!env().getBool('IS_BROWSER')) {\n      // TODO(cais): Provide info on what IOHandlers are available under the\n      // current environment.\n      throw new Error(\n        'browserDownloads() cannot proceed because the current\n        environment ' +\n        'is not a browser.);\n    }\n\n    if (fileNamePrefix.startsWith(BrowserDownloads.URL_SCHEME)) {\n      fileNamePrefix =\n        fileNamePrefix.slice(BrowserDownloads.URL_SCHEME.length);\n    }\n\n    if (fileNamePrefix == null ||\n        fileNamePrefix.length === 0) {\n      fileNamePrefix = DEFAULT_FILE_NAME_PREFIX;\n    }\n\n    this.modelTopologyFileName = fileNamePrefix + DEFAULT_JSON_EXTENSION_NAME;\n    this.weightDataFileName =\n      fileNamePrefix + DEFAULT_WEIGHT_DATA_EXTENSION_NAME;\n  }\n\n  async save(modelArtifacts: ModelArtifacts): Promise<SaveResult> {\n    if (typeof (document) === 'undefined') {\n      throw new Error(\n        'Browser downloads are not supported in ' +\n        'this environment since `document`\n        is not present');\n    }\n\n    const weightsURL = window.URL.createObjectURL(new Blob(\n      [modelArtifacts.weightData], {type: 'application/octet-stream'}));\n\n    if (modelArtifacts.modelTopology\n        instanceof ArrayBuffer) {\n      throw new Error(\n        'BrowserDownloads.save() does not support saving model\n        topology ' +\n        'in binary formats yet.);\n    } else {\n      const weightsManifest: WeightsManifestConfig = [{\n        paths: ['./' + this.weightDataFileName],\n        weights: modelArtifacts.weightSpecs\n      }];\n      const modelTopologyAndWeightManifest: ModelJSON = {\n        modelTopology: modelArtifacts.modelTopology,\n        format: modelArtifacts.format,\n        generatedBy: modelArtifacts.generatedBy,\n        convertedBy:\n          modelArtifacts.convertedBy,\n        weightsManifest\n      };\n      if (modelArtifacts.signature != null) {\n        modelTopologyAndWeightManifest.signature = modelArtifacts.signature;\n      }\n      if (modelArtifacts.userDefinedMetadata != null) {\n        modelTopologyAndWeightManifest.userDefinedMetadata =\n          modelArtifacts.userDefinedMetadata;\n      }\n      if (modelArtifacts.modelInitializer != null) {\n        modelTopologyAndWeightManifest.modelInitializer =\n          modelArtifacts.modelInitializer;\n      }\n      const modelTopologyAndWeightManifestURL =\n        window.URL.createObjectURL(new Blob(\n          [JSON.stringify(modelTopologyAndWeightManifest)],\n          {type: 'application/json'}));\n\n      // If anchor\n      elements are not provided, create them without attaching them\n      // to parents, so that the downloaded file names\n      can be controlled.\n      const jsonAnchor = this.jsonAnchor == null ? document.createElement('a') :\n        this.jsonAnchor;\n      jsonAnchor.download = this.modelTopologyFileName;\n      jsonAnchor.href\n      = modelTopologyAndWeightManifestURL;\n      // Trigger downloads by evoking a click event on the download\n      anchors.\n      // When multiple downloads are started synchronously, Firefox will only\n      // save the last one.\n      await defer(() => jsonAnchor.dispatchEvent(new MouseEvent('click')));\n      if (modelArtifacts.weightData !=\n          null) {\n        const weightDataAnchor = this.weightDataAnchor == null ?\n          document.createElement('a') :\n          this.weightDataAnchor;\n        weightDataAnchor.download = this.weightDataFileName;\n        weightDataAnchor.href = weightsURL;\n        await defer(\n          () => weightDataAnchor.dispatchEvent(new
```

```

MouseEvent('click'));\n    }\n    return {modelArtifactsInfo:
getModelArtifactsInfoForJSON(modelArtifacts)};\n    }\n}\n\n\nclass BrowserFiles implements IOHandler {\n
private readonly files: File[];\n\n constructor(files: File[]) {\n    if (files == null || files.length < 1) {\n        throw new
Error(\n        `When calling browserFiles, at least 1 file is required, ` +\n        `but received ${files}`);\n    }\n
this.files = files;\n }\n\n async load(): Promise<ModelArtifacts> {\n    const jsonFile = this.files[0];\n    const
weightFiles = this.files.slice(1);\n\n    return new Promise<ModelArtifacts>((resolve, reject) => {\n        const
jsonReader = new FileReader();\n        jsonReader.onload = (event: Event) => {\n            // tslint:disable-next-line:no-
any\n            const modelJSON = JSON.parse((event.target as any).result) as ModelJSON;\n            const modelTopology
= modelJSON.modelTopology;\n            if (modelTopology == null) {\n                reject(new Error(\n
`modelTopology field is missing from file ${jsonFile.name}`));\n                return;\n            }\n            if
(weightFiles.length === 0) {\n                resolve({modelTopology});\n            }\n            const weightsManifest =
modelJSON.weightsManifest;\n            if (weightsManifest == null) {\n                reject(new Error(\n
`weightManifest field is missing from file ${jsonFile.name}`));\n                return;\n            }\n            let pathToFile:
{[path: string]: File};\n            try {\n                pathToFile =\n
this.checkManifestAndWeightFiles(weightsManifest, weightFiles);\n            } catch (err) {\n                reject(err);\n
return;\n            }\n            const weightSpecs: WeightsManifestEntry[] = [];\n            const paths: string[] = [];\n
const perFileBuffers: ArrayBuffer[] = [];\n            weightsManifest.forEach(weightsGroup => {\n
weightsGroup.paths.forEach(path => {\n                paths.push(path);\n                perFileBuffers.push(null);\n            });\n
weightSpecs.push(...weightsGroup.weights);\n            });\n            weightsManifest.forEach(weightsGroup => {\n
weightsGroup.paths.forEach(path => {\n                const weightFileReader = new FileReader();\n
weightFileReader.onload = (event: Event) => {\n                    // tslint:disable-next-line:no-any\n                    const
weightData = (event.target as any).result as ArrayBuffer;\n                    const index = paths.indexOf(path);\n
perFileBuffers[index] = weightData;\n                    if (perFileBuffers.indexOf(null) === -1) {\n                        const result:
ModelArtifacts = {\n                            modelTopology,\n                            weightSpecs,\n                            weightData:\n
concatenateArrayBuffers(perFileBuffers),\n                            format: modelJSON.format,\n                            generatedBy:\n
modelJSON.generatedBy,\n                            convertedBy: modelJSON.convertedBy\n                        };\n                        if
(modelJSON.signature != null) {\n                            result.signature = modelJSON.signature;\n                        }\n                        if
(modelJSON.userDefinedMetadata != null) {\n                            result.userDefinedMetadata =\n
modelJSON.userDefinedMetadata;\n                        }\n                        if (modelJSON.modelInitializer != null) {\n
result.modelInitializer = modelJSON.modelInitializer;\n                        }\n                        resolve(result);\n                    }\n
};\n                weightFileReader.onerror = error =>\n                    reject(`Failed to weights data from file of path
'${path}'.`);\n                weightFileReader.readAsArrayBuffer(pathToFile[path]);\n            });\n            });\n            }\n
jsonReader.onerror = error => reject(\n            `Failed to read model topology and weights manifest JSON ` +\n
`from file '${jsonFile.name}'. BrowserFiles supports loading ` +\n            `Keras-style tf.Model artifacts only.`);\n
jsonReader.readAsText(jsonFile);\n            });\n        }\n\n        /**\n         * Check the compatibility between weights manifest and
weight files.\n         */\n        private checkManifestAndWeightFiles(\n            manifest: WeightsManifestConfig, files: File[]):
{[path: string]: File} {\n            const basenames: string[] = [];\n            const fileNames = files.map(file =>\n
basename(file.name));\n            const pathToFile: {[path: string]: File} = {};\n            for (const group of manifest) {\n
group.paths.forEach(path => {\n                const pathBasename = basename(path);\n                if
(basenames.indexOf(pathBasename) !== -1) {\n                    throw new Error(\n                    `Duplicate file basename found in
weights manifest: ` +\n                    ` '${pathBasename}'`);\n                }\n                basenames.push(pathBasename);\n                if
(fileNames.indexOf(pathBasename) === -1) {\n                    throw new Error(\n                    `Weight file with basename
'${pathBasename}' is not provided.`);\n                } else {\n                    pathToFile[path] =\n
files[fileNames.indexOf(pathBasename)];\n                }\n            });\n            }\n            if (basenames.length !== files.length) {\n
throw new Error(\n            `Mismatch in the number of files in weights manifest ` +\n            ` (${basenames.length})\n
and the number of weight files provided ` +\n            ` (${files.length}).`);\n            }\n            return pathToFile;\n
        }\n\n    }\n\n    export const browserDownloadsRouter: IORouter = (url: string|string[]) => {\n        if
(!env().getBool('IS_BROWSER')) {\n            return null;\n        } else {\n            if (!Array.isArray(url) &&

```

```

url.startsWith(BrowserDownloads.URL_SCHEME)) {\n    return
browserDownloads(url.slice(BrowserDownloads.URL_SCHEME.length));\n } else {\n    return null;\n }\n
}\n};\n\nIORouterRegistry.registerSaveRouter(browserDownloadsRouter);\n\n/**\n * Creates an IOHandler that
triggers file downloads from the browser.\n *\n * The returned `IOHandler` instance can be used as model exporting
methods such\n * as `tf.Model.save` and supports only saving.\n *\n * ```js\n * const model = tf.sequential();\n *
model.add(tf.layers.dense({units: 1, inputShape: [10], activation: 'sigmoid'}));\n * const saveResult = await
model.save('downloads://mymodel');\n * // This will trigger downloading of two files:\n * // 'mymodel.json' and
'mymodel.weights.bin'.\n * console.log(saveResult);\n * ```\n *\n * @param fileNamePrefix Prefix name of the files
to be downloaded. For use with\n * `tf.Model`, `fileNamePrefix` should follow either of the following two\n *
formats:\n * 1. `null` or `undefined`, in which case the default file\n * names will be used:\n * - 'model.json'
for the JSON file containing the model topology and\n * weights manifest.\n * - 'model.weights.bin' for the
binary file containing the binary weight\n * values.\n * 2. A single string or an Array of a single string, as the
file name prefix.\n * For example, if `foo` is provided, the downloaded JSON\n * file and binary weights file
will be named 'foo.json' and\n * 'foo.weights.bin', respectively.\n *\n * @param config Additional configuration for
triggering downloads.\n * @returns An instance of `BrowserDownloads` `IOHandler`.\n *\n * @doc {\n * heading:
'Models',\n * subheading: 'Loading',\n * namespace: 'io',\n * ignoreCI: true\n * }\n */\nexport function
browserDownloads(fileNamePrefix = 'model'): IOHandler {\n    return new
BrowserDownloads(fileNamePrefix);\n}\n\n/**\n * Creates an IOHandler that loads model artifacts from user-
selected files.\n *\n * This method can be used for loading from files such as user-selected files\n * in the browser.\n
*\n * When used in conjunction with `tf.loadLayersModel`, an instance of\n * `tf.LayersModel` (Keras-style) can be
constructed from the loaded artifacts.\n *\n * ```js\n * // Note: This code snippet won't run properly without the
actual file input\n * // elements in the HTML DOM.\n * // Suppose there are two HTML file input (<input
type="file" ...>)\n * // elements.\n * const uploadJSONInput = document.getElementById('upload-json');\n * const
uploadWeightsInput = document.getElementById('upload-weights');\n * const model = await
tf.loadLayersModel(tf.io.browserFiles([\n *   uploadJSONInput.files[0], uploadWeightsInput.files[0]]);\n * ```\n
*\n * @param files `File`s to load from. Currently, this function supports only\n * loading from files that contain
Keras-style models (i.e., `tf.Model`s), for\n * which an `Array` of `File`s is expected (in that order):\n * - A JSON
file containing the model topology and weight manifest.\n * - Optionally, One or more binary files containing the
binary weights.\n * These files must have names that match the paths in the `weightsManifest`\n * contained by
the aforementioned JSON file, or errors will be thrown\n * during loading. These weights files have the same
format as the ones\n * generated by `tensorflowjs_converter` that comes with the `tensorflowjs`\n * Python PIP
package. If no weights files are provided, only the model\n * topology will be loaded from the JSON file above.\n
*\n * @returns An instance of `Files` `IOHandler`.\n *\n * @doc {\n * heading: 'Models',\n * subheading:
'Loading',\n * namespace: 'io',\n * ignoreCI: true\n * }\n */\nexport function browserFiles(files: File[]): IOHandler
{\n    return new BrowserFiles(files);\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====
\n
*/\n\nimport {assert} from './util';\n\nimport {OnProgressCallback} from './types';\n\n/**\n * Monitor Promise.all
progress, fire onProgress callback function.\n *\n * @param promises Promise list going to be monitored\n *\n *
@param onProgress Callback function. Fired when a promise resolved.\n * @param startFraction Optional fraction
start. Default to 0.\n * @param endFraction Optional fraction end. Default to 1.\n */\nexport function
monitorPromisesProgress(\n    promises: Array<Promise<{}>>, onProgress: OnProgressCallback,\n    startFraction?: number, endFraction?: number) {\n    checkPromises(promises);\n    startFraction = startFraction ==

```

```

null ? 0 : startFraction;\n endFraction = endFraction == null ? 1 : endFraction;\n checkFraction(startFraction,
endFraction);\n let resolvedPromise = 0;\n\n const registerMonitor = (promise: Promise<{}>) => {\n
promise.then(value => {\n    const fraction = startFraction +\n        ++resolvedPromise / promises.length *
(endFraction - startFraction);\n    // pass fraction as parameter to callback function.\n    onProgress(fraction);\n
return value;\n });\n return promise;\n };\n\n function checkPromises(promises: Array<Promise<{}|void>>):
void {\n    assert(\n        promises != null && Array.isArray(promises) && promises.length > 0,\n        () =>
'promises must be a none empty array');\n }\n\n function checkFraction(startFraction: number, endFraction:
number): void {\n    assert(\n        startFraction >= 0 && startFraction <= 1,\n        () => `Progress fraction must be
in range [0, 1], but ` +\n            `got startFraction ${startFraction}`);\n    assert(\n        endFraction >= 0 &&
endFraction <= 1,\n        () => `Progress fraction must be in range [0, 1], but ` +\n            `got endFraction
${endFraction}`);\n    assert(\n        endFraction >= startFraction,\n        () => `startFraction must be no more than
endFraction, but ` +\n            `got startFraction ${startFraction} and endFraction ` +\n            `${endFraction}`);\n
}\n\n return Promise.all(promises.map(registerMonitor));\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {env} from './environment';\n\nimport {NamedTensorMap} from './tensor_types';\n\nimport * as util
from './util';\n\nimport {decodeWeights} from './io_utils';\n\nimport {monitorPromisesProgress} from
'/progress';\n\nimport {DTYPE_VALUE_SIZE_MAP, LoadOptions, WeightsManifestConfig,
WeightsManifestEntry} from './types';\n\n/**\n * Reads binary weights data from a number of URLs.\n * \n *
@param fetchURLs URLs to send the HTTP requests at, using `fetch` calls.\n * @param requestOptions
RequestInit (options) for the HTTP requests.\n * @param fetchFunc Optional overriding value for the
`window.fetch` function.\n * @param onProgress Optional, progress callback function, fired periodically\n *
before the load is completed.\n * @returns A `Promise` of an Array of `ArrayBuffer`. The Array has the same\n *
length as `fetchURLs`.\n */\n\nexport async function loadWeightsAsArrayBuffer(\n    fetchURLs: string[],
loadOptions?: LoadOptions): Promise<ArrayBuffer[]> {\n    if (loadOptions == null) {\n        loadOptions = {};\n    }\n\n    const fetchFunc = loadOptions.fetchFunc == null ? env().platform.fetch : \n
loadOptions.fetchFunc;\n\n    // Create the requests for all of the weights in parallel.\n    const requests =
fetchURLs.map(\n        fetchURL =>\n            fetchFunc(fetchURL, loadOptions.requestInit, {isBinary: true});\n    );\n\n    const fetchStartFraction = 0;\n    const fetchEndFraction = 0.5;\n\n    const responses = loadOptions.onProgress == null
?\n        await Promise.all(requests) : \n        await monitorPromisesProgress(\n            requests, loadOptions.onProgress,
fetchStartFraction,\n            fetchEndFraction);\n\n    const bufferPromises = responses.map(response =>
response.arrayBuffer());\n\n    const bufferStartFraction = 0.5;\n    const bufferEndFraction = 1;\n\n    const buffers =
loadOptions.onProgress == null ? \n        await Promise.all(bufferPromises) : \n        await monitorPromisesProgress(\n
            bufferPromises, loadOptions.onProgress, bufferStartFraction,\n            bufferEndFraction);\n\n    return
buffers;\n}\n\n/**\n * Reads a weights manifest JSON configuration, fetches the weights and\n * returns them as
`Tensor`s.\n * \n * @param manifest The weights manifest JSON.\n * @param filePathPrefix The path prefix for
filenames given in the manifest.\n * Defaults to the empty string.\n * @param weightNames The names of the
weights to be fetched.\n */\n\nexport async function loadWeights(\n    manifest: WeightsManifestConfig,
filePathPrefix = "",\n    weightNames?: string[],\n    requestInit?: RequestInit): Promise<NamedTensorMap> {\n    //
TODO(nsthorat): Groups are currently fetched atomically. If you need a\n // single weight from a group, the whole
group will be fetched. At a future\n // date, we should support fetching only the individual shards within a\n //
group that are needed to reconstruct the requested weight.\n // TODO(cais): Use `decodeWeights` for
implementation.\n\n    const fetchWeights = (fetchUrls: string[]) =>\n        loadWeightsAsArrayBuffer(fetchUrls,

```

```

{requestInit});\n const loadWeights = weightsLoaderFactory(fetchWeights);\n\n return loadWeights(manifest,
filePathPrefix, weightNames);\n}\n\n/**\n * Creates a function, which reads a weights manifest JSON
configuration,\n * fetches the weight files using the specified function and returns them as\n * `Tensor`s.\n *\n * `js`\n * // example for creating a nodejs weight loader, which reads the weight files\n * // from disk using
fs.readFileSync\n *\n * import * as fs from 'fs'\n *\n * const fetchWeightsFromDisk = (filePaths: string[]) =>\n * filePaths.map(filePath => fs.readFileSync(filePath).buffer)\n *\n * const loadWeights =
tf.io.weightsLoaderFactory(fetchWeightsFromDisk)\n *\n * const manifest = JSON.parse(\n *
fs.readFileSync('./my_model-weights_manifest').toString())\n *\n * const weightMap = await
loadWeights(manifest, './')\n * ``\n * @param fetchWeightsFunction The function used for fetching the weight
files.\n * @returns Weight loading function.\n */\n\nexport function weightsLoaderFactory(\n
fetchWeightsFunction: (fetchUrls: string[]) => Promise<ArrayBuffer[]>):\n (manifest: WeightsManifestConfig,
filePathPrefix?: string,\n weightNames?: string[]) => Promise<NamedTensorMap> {\n return async(\n
manifest: WeightsManifestConfig, filePathPrefix = ",\n weightNames?: string[]):\n
Promise<NamedTensorMap> => {\n // Collect all the groups, weights, and their relative offsets to be\n //
fetched.\n const groupIndicesToFetchMap = manifest.map(() => false);\n const groupWeightsToFetch: {\n
[group: number]: Array<{\n manifestEntry: WeightsManifestEntry; groupOffset: number;\n sizeBytes:
number;\n }>\n } = {};\n const weightsFound =\n weightNames != null ? weightNames.map(() => false)
: [];\n const allManifestWeightNames: string[] = [];\n manifest.forEach((manifestGroupConfig, groupIndex) =>
{\n let groupOffset = 0;\n manifestGroupConfig.weights.forEach(weightsEntry => {\n const rawDtype =
('quantization' in weightsEntry) ?\n weightsEntry.quantization.dtype :\n weightsEntry.dtype;\n\n const weightsBytes = DTYPE_VALUE_SIZE_MAP[rawDtype] *\n
util.sizeFromShape(weightsEntry.shape);\n\n const enqueueWeightsForFetchingFn = () => {\n
groupIndicesToFetchMap[groupIndex] = true;\n if (groupWeightsToFetch[groupIndex] == null) {\n
groupWeightsToFetch[groupIndex] = [];\n }\n\n groupWeightsToFetch[groupIndex].push({\n
manifestEntry: weightsEntry,\n groupOffset,\n sizeBytes: weightsBytes\n });\n });\n\n if
(weightNames != null) {\n weightNames.forEach((weightName, weightIndex) => {\n if (weightName
=== weightsEntry.name) {\n enqueueWeightsForFetchingFn();\n weightsFound[weightIndex] =
true;\n }\n });\n } else {\n enqueueWeightsForFetchingFn();\n }\n\n allManifestWeightNames.push(weightsEntry.name);\n groupOffset += weightsBytes;\n });\n });\n\n if
(!weightsFound.every(found => found)) {\n const weightsNotFound = weightNames.filter( (_, i) =>
!weightsFound[i]);\n throw new Error(\n `Could not find weights in manifest with names: ` +\n
`${weightsNotFound.join(', ')}. \n` +\n `Manifest JSON has weights with names: ` +\n
`${allManifestWeightNames.join(', ')}.`);\n }\n\n // Convert the one-hot boolean groupId => shouldFetch map to
a list of group\n // IDs.\n const groupIndicesToFetch =\n groupIndicesToFetchMap.reduce((accumulator,
shouldFetch, i) => {\n if (shouldFetch) {\n accumulator.push(i);\n }\n return accumulator;\n
}, []);\n\n const fetchUrls: string[] = [];\n groupIndicesToFetch.forEach(i => {\n
manifest[i].paths.forEach(filepath => {\n const fetchUrl = filePathPrefix +\n
(!filePathPrefix.endsWith('/') ? '/' : '') + filepath;\n fetchUrls.push(fetchUrl);\n });\n });\n const buffers =
await fetchWeightsFunction(fetchUrls);\n\n const weightsTensorMap: NamedTensorMap = {};\n let
bufferIndexOffset = 0;\n groupIndicesToFetch.forEach(i => {\n const numBuffers =
manifest[i].paths.length;\n let groupBytes = 0;\n for (let i = 0; i < numBuffers; i++) {\n groupBytes +=
buffers[bufferIndexOffset + i].byteLength;\n }\n\n // Create a buffer for the whole group.\n const
groupBuffer = new ArrayBuffer(groupBytes);\n const groupByteBuffer = new Uint8Array(groupBuffer);\n
groupByteBufferOffset = 0;\n for (let i = 0; i < numBuffers; i++) {\n const buffer = new
Uint8Array(buffers[bufferIndexOffset + i]);\n groupByteBuffer.set(buffer, groupByteBufferOffset);\n
groupByteBufferOffset += buffer.byteLength;\n }\n\n const weightsEntries = groupWeightsToFetch[i];\n
weightsEntries.forEach(weightsEntry => {\n const byteBuffer = groupByteBuffer.slice(\n
weightsEntry.groupOffset,\n weightsEntry.groupOffset + weightsEntry.sizeBytes);\n const

```

```

nameToTensorMap =\n        decodeWeights(byteBuffer, [weightsEntry.manifestEntry]);\n    for (const name in
nameToTensorMap) {\n        weightsTensorMap[name] = nameToTensorMap[name];\n    }\n    });\n\n
bufferIndexOffset += numBuffers;\n    });\n\n    return weightsTensorMap;\n    };\n\n", /*\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\n/*\n * IOHandler implementations based on HTTP requests in the web browser.\n * Uses
[fetch`](https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API).\n *\n\nimport {env} from
'./environment';\n\nimport {assert} from './util';\n\nimport {concatenateArrayBuffers,
getModelArtifactsInfoForJSON} from './io_utils';\n\nimport {IORouter, IORouterRegistry} from
'/router_registry';\n\nimport {IOHandler, LoadOptions, ModelArtifacts, ModelJSON, OnProgressCallback,
SaveResult, WeightsManifestConfig, WeightsManifestEntry} from './types';\n\nimport {loadWeightsAsArrayBuffer}
from './weights_loader';\n\nconst OCTET_STREAM_MIME_TYPE = 'application/octet-stream';\nconst
JSON_TYPE = 'application/json';\n\nexport class HTTPRequest implements IOHandler {\n    protected readonly path:
string;\n    protected readonly requestInit: RequestInit;\n\n    private readonly fetch: Function;\n    private readonly
weightUrlConverter: (weightName: string) => Promise<string>;\n\n    readonly DEFAULT_METHOD = 'POST';\n\n    static
readonly URL_SCHEME_REGEX = /^https?:\\|\\|/;\n\n    private readonly weightPathPrefix: string;\n    private
readonly onProgress: OnProgressCallback;\n\n    constructor(path: string, loadOptions?: LoadOptions) {\n    if
(loadOptions == null) {\n        loadOptions = {};\n    }\n    this.weightPathPrefix = loadOptions.weightPathPrefix;\n
this.onProgress = loadOptions.onProgress;\n    this.weightUrlConverter = loadOptions.weightUrlConverter;\n\n    if
(loadOptions.fetchFunc != null) {\n        assert(\n            typeof loadOptions.fetchFunc === 'function',\n            () =>
'Must pass a function that matches the signature of ' +\n                `fetch` (see ' +\n
'https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API)`);\n        this.fetch = loadOptions.fetchFunc;\n    }
else {\n        this.fetch = env().platform.fetch;\n    }\n\n    assert(\n        path != null && path.length > 0,\n        () =>
'URL path for http must not be null, undefined or ' +\n            `empty.`);\n\n    if (Array.isArray(path)) {\n
assert(\n        path.length === 2,\n        () => 'URL paths for http must have a length of 2, ' +\n            `actual
length is ${path.length}.`);\n    }\n    this.path = path;\n\n    if (loadOptions.requestInit != null &&\n
loadOptions.requestInit.body != null) {\n        throw new Error(\n            `requestInit is expected to have no pre-
existing body, but has one.`);\n    }\n    this.requestInit = loadOptions.requestInit || {};\n\n    async
save(modelArtifacts: ModelArtifacts): Promise<SaveResult> {\n    if (modelArtifacts.modelTopology instanceof
ArrayBuffer) {\n        throw new Error(\n            `BrowserHTTPRequest.save() does not support saving model topology
' +\n                `in binary formats yet.`);\n    }\n\n    const init = Object.assign({method: this.DEFAULT_METHOD},
this.requestInit);\n    init.body = new FormData();\n\n    const weightsManifest: WeightsManifestConfig = [{\n
paths: ['./model.weights.bin'],\n    weights: modelArtifacts.weightSpecs,\n    }];\n    const
modelTopologyAndWeightManifest: ModelJSON = {\n    modelTopology: modelArtifacts.modelTopology,\n
format: modelArtifacts.format,\n    generatedBy: modelArtifacts.generatedBy,\n    convertedBy:
modelArtifacts.convertedBy,\n    weightsManifest\n    };\n    if (modelArtifacts.signature != null) {\n
modelTopologyAndWeightManifest.signature = modelArtifacts.signature;\n    }\n    if
(modelArtifacts.userDefinedMetadata != null) {\n        modelTopologyAndWeightManifest.userDefinedMetadata =\n
modelArtifacts.userDefinedMetadata;\n    }\n    if (modelArtifacts.modelInitializer != null) {\n
modelTopologyAndWeightManifest.modelInitializer =\n        modelArtifacts.modelInitializer;\n    }\n\n    init.body.append(\n        `model.json`,\n        new Blob(\n
[JSON.stringify(modelTopologyAndWeightManifest)],\n            {type: JSON_TYPE}),\n        `model.json`);\n\n    if
(modelArtifacts.weightData != null) {\n        init.body.append(\n            `model.weights.bin`,\n            new

```

```

Blob([modelArtifacts.weightData], {type: OCTET_STREAM_MIME_TYPE}),\n      'model.weights.bin');\n
}\n\n  const response = await this.fetch(this.path, init);\n  if (response.ok) {\n    return {\n      modelArtifactsInfo: getModelArtifactsInfoForJSON(modelArtifacts),\n      responses: [response],\n    }; \n  } else {\n    throw new Error(\n      `BrowserHTTPRequest.save() failed due to HTTP response status ` +\n      `${response.status}`);\n  }\n}\n\n /**\n * Load model artifacts via HTTP request(s).\n * See the documentation to `tf.io.http` for details on the saved\n * artifacts.\n * @returns The loaded model artifacts (if loading succeeds).\n * @async\n * @load(): Promise<ModelArtifacts>\n */\nconst modelConfigRequest = await this.fetch(this.path, this.requestInit);\nif (!modelConfigRequest.ok) {\n  throw new Error(\n    `Request to ${this.path} failed with status code ` +\n    `${modelConfigRequest.status}. Please verify this URL points to ` +\n    `the model JSON of the model to load.`);\n}\nlet modelConfig: ModelJSON;\ntry {\n  modelConfig = await modelConfigRequest.json();\n} catch (e) {\n  let message = `Failed to parse model JSON of response from ${this.path}`;\n  // TODO(nsthorat): Remove this after some time when we're comfortable that\n  // .pb files are mostly gone.\n  if (this.path.endsWith('.pb')) {\n    message += ' Your path contains a .pb file extension. '\n    'Support for .pb models have been removed in TensorFlow.js 1.0 '\n    'in favor of .json models. You can re-convert your Python '\n    'TensorFlow model using the TensorFlow.js 1.0 conversion scripts '\n    'or you can convert your.pb models with the `pb2json` '\n    'NPM script in the tensorflow/tfjs-converter repository.';\n  } else {\n    message += ' Please make sure the server is serving valid '\n    'JSON for this request.';\n  }\n  throw new Error(message);\n}\nconst modelTopology = modelConfig.modelTopology;\nconst weightsManifest = modelConfig.weightsManifest;\nconst generatedBy = modelConfig.generatedBy;\nconst convertedBy = modelConfig.convertedBy;\nconst format = modelConfig.format;\nconst signature = modelConfig.signature;\nconst userDefinedMetadata = modelConfig.userDefinedMetadata;\n// We do not allow both modelTopology and weightsManifest to be missing.\nif (modelTopology == null && weightsManifest == null) {\n  throw new Error(\n    `The JSON from HTTP path ${this.path} contains neither model ` +\n    `topology or manifest for weights.`);\n}\nlet weightSpecs: WeightsManifestEntry[];\nlet weightData: ArrayBuffer;\nif (weightsManifest != null) {\n  const results = await this.loadWeights(weightsManifest);\n  [weightSpecs, weightData] = results;\n}\nconst artifacts: ModelArtifacts = {\n  modelTopology,\n  weightSpecs,\n  weightData,\n  generatedBy,\n  convertedBy,\n  format,\n};\nif (signature != null) {\n  artifacts.signature = signature;\n}\nif (userDefinedMetadata != null) {\n  artifacts.userDefinedMetadata = userDefinedMetadata;\n}\nconst initializer = modelConfig.modelInitializer;\nif (initializer) {\n  artifacts.modelInitializer = initializer;\n}\nreturn artifacts;\n}\n\nprivate async loadWeights(weightsManifest: WeightsManifestConfig): Promise<[WeightsManifestEntry[], ArrayBuffer]> {\n  const weightPath = Array.isArray(this.path) ? this.path[1] : this.path;\n  const [prefix, suffix] = parseUrl(weightPath);\n  const pathPrefix = this.weightPathPrefix || prefix;\n  const weightSpecs = [];\n  for (const entry of weightsManifest) {\n    weightSpecs.push(...entry.weights);\n  }\n  const fetchURLs: string[] = [];\n  const urlPromises: Array<Promise<string>> = [];\n  for (const weightsGroup of weightsManifest) {\n    for (const path of weightsGroup.paths) {\n      if (this.weightUrlConverter != null) {\n        urlPromises.push(this.weightUrlConverter(path));\n      } else {\n        fetchURLs.push(pathPrefix + path + suffix);\n      }\n    }\n  }\n  if (this.weightUrlConverter) {\n    fetchURLs.push(...await Promise.all(urlPromises));\n  }\n  const buffers = await loadWeightsAsArrayBuffer(fetchURLs, {\n    requestInit: this.requestInit,\n    fetchFunc: this.fetch,\n    onProgress: this.onProgress\n  });\n  return [weightSpecs, concatenateArrayBuffers(buffers)];\n}\n\n /**\n * Extract the prefix and suffix of the url, where the prefix is the path before\n * the last file, and suffix is the search params after the last file.\n * @param url\n * @returns {string, string}\n */\nconst url = 'http://tfhub.dev/model/1/tensorflowjs_model.pb?tfjs-format=file'\nconst [prefix, suffix] = parseUrl(url)\n// prefix = 'http://tfhub.dev/model/1/'\n// suffix = '?tfjs-format=file'\n\n @param url the model url to be parsed.\n\n\nexport function parseUrl(url: string): [string, string] {\n  const lastSlash = url.lastIndexOf('/');\n  const lastSearchParam = url.lastIndexOf('?');\n  const prefix = url.substring(0, lastSlash);\n  const suffix =\n    lastSearchParam > lastSlash ? url.substring(lastSearchParam) : '';\n  return [prefix + '/', suffix];\n}\n\nexport function

```



```

isHTTPSscheme(url: string): boolean {\n return url.match(HTTPRequest.URL_SCHEME_REGEX) !=
null;\n}\n\nexport const httpRouter: IORouter =\n (url: string, loadOptions?: LoadOptions) => {\n if (typeof
fetch === 'undefined' &&\n (loadOptions === null || loadOptions.fetchFunc === null)) {\n // `http` uses
`fetch` or `node-fetch`, if one wants to use it in\n // an environment that is not the browser or node they have to
setup a\n // global fetch polyfill.\n return null;\n } else {\n let isHTTP = true;\n if
(Array.isArray(url)) {\n isHTTP = url.every(urlItem => isHTTPSscheme(urlItem));\n } else {\n
isHTTP = isHTTPSscheme(url);\n }\n if (isHTTP) {\n return http(url, loadOptions);\n }\n }\n
return null;\n
};\n\nIORouterRegistry.registerSaveRouter(httpRouter);\nIORouterRegistry.registerLoadRouter(httpRouter);\n\n/**\n * Creates an IOHandler subtype that sends model artifacts to HTTP server.\n * An HTTP request of the
`multipart/form-data` mime type will be sent to the\n * `path` URL. The form data includes artifacts that represent
the topology\n * and/or weights of the model. In the case of Keras-style `tf.Model`, two\n * blobs (files) exist in
form-data:\n * - A JSON file consisting of `modelTopology` and `weightsManifest`.\n * - A binary weights file
consisting of the concatenated weight values.\n * These files are in the same format as the one generated by\n *
[tfjs_converter](https://js.tensorflow.org/tutorials/import-keras.html).\n *\n * The following code snippet
exemplifies the client-side code that uses this\n * function:\n *\n * ```js\n * const model = tf.sequential();\n *
model.add(\n * tf.layers.dense({units: 1, inputShape: [100], activation: 'sigmoid'}));\n *\n * const saveResult =
await model.save(tf.io.http(\n * 'http://model-server:5000/upload', {requestInit: {method: 'PUT'}}));\n *\n *
console.log(saveResult);\n * ```\n *\n * If the default `POST` method is to be used, without any custom parameters\n *
such as headers, you can simply pass an HTTP or HTTPS URL to `model.save`:\n *\n * ```js\n * const saveResult
= await model.save('http://model-server:5000/upload');\n * ```\n *\n * The following GitHub Gist\n *
https://gist.github.com/dsmilkov/1b6046fd6132d7408d5257b0976f7864\n * implements a server based on
[flask](https://github.com/pallets/flask) that\n * can receive the request. Upon receiving the model artifacts via the
request,\n * this particular server reconstructs instances of [Keras\n * Models](https://keras.io/models/model/) in
memory.\n *\n * @param path A URL path to the model.\n * Can be an absolute HTTP path (e.g.,\n *
'http://localhost:8000/model-upload') or a relative path (e.g.,\n * './model-upload').\n *\n * @param requestInit
Request configurations to be used when sending\n * HTTP request to server using `fetch`. It can contain fields
such as\n * `method`, `credentials`, `headers`, `mode`, etc. See\n * https://developer.mozilla.org/en-
US/docs/Web/API/Request/Request\n * for more information. `requestInit` must not have a body, because the\n *
body will be set by TensorFlow.js. File blobs representing the model\n * topology (filename: 'model.json') and the
weights of the model (filename:\n * 'model.weights.bin') will be appended to the body. If `requestInit` has a\n *
`body`, an Error will be thrown.\n *\n * @param loadOptions Optional configuration for the loading. It includes the\n *
following fields:\n * - weightPathPrefix Optional, this specifies the path prefix for weight\n * files, by default
this is calculated from the path param.\n * - fetchFunc Optional, custom `fetch` function. E.g., in Node.js,\n * the
`fetch` from node-fetch can be used here.\n * - onProgress Optional, progress callback function, fired
periodically\n * before the load is completed.\n *\n * @returns An instance of `IOHandler`.\n *\n * @doc {\n *
heading: 'Models',\n * subheading: 'Loading',\n * namespace: 'io',\n * ignoreCI: true\n * }\n *\n * }\n\nexport function
http(path: string, loadOptions?: LoadOptions): IOHandler {\n return new HTTPRequest(path,
loadOptions);\n}\n\n/**\n * Deprecated. Use `tf.io.http`.\n *\n * @param path\n *\n * @param loadOptions\n *\n * }\n\nexport
function browserHTTPRequest(\n path: string, loadOptions?: LoadOptions): IOHandler {\n return http(path,
loadOptions);\n}\n\n",/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====

```

```

*/\n\n/**\n * IOHandlers that pass through the in-memory ModelArtifacts format.\n */\n\nimport {IOHandler,
ModelArtifacts, SaveResult, TrainingConfig, WeightsManifestEntry} from './types';\n\nclass PassthroughLoader
implements IOHandler {\n  constructor(private readonly modelArtifacts?: ModelArtifacts) {}\n\n  async load():
Promise<ModelArtifacts> {\n    return this.modelArtifacts;\n  }\n}\n\nclass PassthroughSaver implements
IOHandler {\n  constructor(\n    private readonly saveHandler:\n      (artifacts: ModelArtifacts) =>
Promise<SaveResult>) {}\n\n  async save(modelArtifacts: ModelArtifacts) {\n    return
this.saveHandler(modelArtifacts);\n  }\n}\n\n/**\n * Creates an IOHandler that loads model artifacts from
memory.\n */\n * When used in conjunction with `tf.loadLayersModel`, an instance of\n * `tf.LayersModel` (Keras-
style) can be constructed from the loaded artifacts.\n */\n * ```js\n * const model = await
tf.loadLayersModel(tf.io.fromMemory(\n *   modelTopology, weightSpecs, weightData));\n * ```\n */\n * @param
modelArtifacts a object containing model topology (i.e., parsed from\n * the JSON format).\n * @param
weightSpecs An array of `WeightsManifestEntry` objects describing the\n * names, shapes, types, and quantization
of the weight data.\n * @param weightData A single `ArrayBuffer` containing the weight data,\n * concatenated in
the order described by the weightSpecs.\n * @param trainingConfig Model training configuration. Optional.\n */\n *
@return A passthrough `IOHandler` that simply loads the provided data.\n */\n\nexport function fromMemory(\n
modelArtifacts: {}|ModelArtifacts, weightSpecs?: WeightsManifestEntry[],\n weightData?: ArrayBuffer,
trainingConfig?: TrainingConfig): IOHandler {\n  if (arguments.length === 1) {\n    const isModelArtifacts =\n
(modelArtifacts as ModelArtifacts).modelTopology != null ||\n    (modelArtifacts as ModelArtifacts).weightSpecs
!= null;\n    if (isModelArtifacts) {\n      return new PassthroughLoader(modelArtifacts as ModelArtifacts);\n    } else
{\n      // Legacy support: with only modelTopology.\n      // TODO(cais): Remove this deprecated API.\n      console.warn(\n        'Please call tf.io.fromMemory() with only one argument. ' +\n        'The argument should be
of type ModelArtifacts. ' +\n        'The multi-argument signature of tf.io.fromMemory() has been ' +\n        'deprecated and will be removed in a future release.);\n      return new PassthroughLoader({\n        modelTopology:\n
modelArtifacts as {} });\n    }\n  } else {\n    // Legacy support.\n    // TODO(cais): Remove this deprecated API.\n    console.warn(\n      'Please call tf.io.fromMemory() with only one argument. ' +\n      'The argument should be of
type ModelArtifacts. ' +\n      'The multi-argument signature of tf.io.fromMemory() has been ' +\n      'deprecated
and will be removed in a future release.);\n    return new PassthroughLoader({\n      modelTopology: modelArtifacts
as {},\n      weightSpecs,\n      weightData,\n      trainingConfig\n    });\n  }\n}\n\n/**\n * Creates an IOHandler that
passes saved model artifacts to a callback.\n */\n * ```js\n * function handleSave(artifacts) {\n *   // ... do something
with the artifacts ...\n *   return {modelArtifactsInfo: {...}, ...};\n * }\n */\n * const saveResult =
model.save(tf.io.withSaveHandler(handleSave));\n * ```\n */\n * @param saveHandler A function that accepts a
`ModelArtifacts` and returns a\n * `SaveResult`.\n */\n\nexport function withSaveHandler(\n  saveHandler:\n
(artifacts: ModelArtifacts) =>\n  Promise<SaveResult>): IOHandler {\n  return new
PassthroughSaver(saveHandler);\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n */\n *
http://www.apache.org/licenses/LICENSE-2.0\n */\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */\n\n
=====
*/\n\n// Importing local_storage and indexed_db is necessary for the routers to be\n// registered.\n\nimport
'./indexed_db';\n\nimport './local_storage';\n\nimport {browserFiles} from './browser_files';\n\nimport
{browserHTTPRequest, http, isHTTPScheme} from './http';\n\nimport {concatenateArrayBuffers, decodeWeights,
encodeWeights, getModelArtifactsInfoForJSON} from './io_utils';\n\nimport {fromMemory, withSaveHandler} from
'./passthrough';\n\nimport {getLoadHandlers, getSaveHandlers, registerLoadRouter, registerSaveRouter} from
'./router_registry';\n\nimport {IOHandler, LoadHandler, LoadOptions, ModelArtifacts, ModelArtifactsInfo,
ModelJSON, ModelStoreManager, OnProgressCallback, RequestDetails, SaveConfig, SaveHandler, SaveResult,

```

```

WeightGroup, WeightsManifestConfig, WeightsManifestEntry } from './types';\nimport {loadWeights,
weightsLoaderFactory } from './weights_loader';\n\nexport {copyModel, listModels, moveModel, removeModel}
from './model_management';\n\nexport {\n browserFiles,\n browserHTTPRequest,\n concatenateArrayBuffers,\n decodeWeights,\n encodeWeights,\n fromMemory,\n getLoadHandlers,\n getModelArtifactsInfoForJSON,\n getSaveHandlers,\n http,\n IOHandler,\n isHTTPScheme,\n LoadHandler,\n LoadOptions,\n loadWeights,\n ModelArtifacts,\n ModelArtifactsInfo,\n ModelJSON,\n ModelStoreManager,\n OnProgressCallback,\n registerLoadRouter,\n registerSaveRouter,\n RequestDetails,\n SaveConfig,\n SaveHandler,\n SaveResult,\n WeightGroup,\n weightsLoaderFactory,\n WeightsManifestConfig,\n WeightsManifestEntry,\n withSaveHandler\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs} from
'./kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
{NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport
{convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from
'./operation';\n\n/**\n * Computes the dot product of two matrices, A * B. These must be matrices.\n *\n * ``js\n
const a = tf.tensor2d([1, 2], [1, 2]);\n * const b = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n *\n * a.matMul(b).print(); // or
tf.matMul(a, b)\n * ``\n * @param a First matrix in dot product operation.\n * @param b Second matrix in dot
product operation.\n * @param transposeA If true, `a` is transposed before multiplication.\n * @param transposeB If
true, `b` is transposed before multiplication.\n *\n * @doc {heading: 'Operations', subheading: 'Matrices'}\n
*\nfunction matMul_<T extends Tensor>(\n  a: Tensor|TensorLike, b: Tensor|TensorLike, transposeA = false,\n
transposeB = false): T {\n  let $a = convertToTensor(a, 'a', 'matMul');\n  let $b = convertToTensor(b, 'b',
'matMul');\n  [$a, $b] = makeTypesMatch($a, $b);\n\n  const inputs: BatchMatMulInputs = {a: $a, b: $b};\n  const
attrs: BatchMatMulAttrs = {transposeA, transposeB};\n\n  return ENGINE.runKernel(\n    BatchMatMul, inputs as
{\n    } as NamedTensorMap, attrs as {\n    } as NamedAttrMap);\n  }\n\n\nexport const matMul = op({matMul_});\n"/**\n
* @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {OneHot, OneHotAttrs, OneHotInputs} from
'./kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
{NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Creates a one-hot `tf.Tensor`. The
locations represented by `indices` take\n * value `onValue` (defaults to 1), while all other locations take value\n *
`offValue` (defaults to 0). If `indices` is rank `R`, the output has rank\n * `R+1` with the last axis of size `depth`.\n
*\n * ``js\n * tf.oneHot(tf.tensor1d([0, 1], 'int32'), 3).print();\n * ``\n *\n * @param indices `tf.Tensor` of indices
with dtype `int32`.\n * @param depth The depth of the one hot dimension.\n * @param onValue A number used to
fill in the output when the index matches\n * the location.\n * @param offValue A number used to fill in the output
when the index does\n * not match the location.\n *\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n
*\nfunction oneHot_(\n  indices: Tensor|TensorLike, depth: number, onValue = 1,\n  offValue = 0): Tensor {\n

```

```

if (depth < 2) {\n  throw new Error(`Error in oneHot: depth must be >=2, but it is ${depth}`);\n }
const $indices = convertToTensor(indices, 'indices', 'oneHot', 'int32');\n\n const inputs: OneHotInputs = {indices: $indices};\n const attrs: OneHotAttrs = {depth, onValue, offValue};\n\n return ENGINE.runKernel(\n  OneHot, inputs as unknown as NamedTensorMap,\n  attrs as unknown as NamedAttrMap);\n}\n\nexport const oneHot = op({oneHot_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Transpose, TransposeAttrs, TransposeInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\n\n/**\n * Transposes the `tf.Tensor`. Permutes the dimensions according to `perm`. The returned `tf.Tensor`'s dimension `i` will correspond to the input dimension `perm[i]`. If `perm` is not given, it is set to `[n-1...0]`, where `n` is the rank of the input `tf.Tensor`. Hence by default, this operation performs a regular matrix transpose on 2-D input `tf.Tensor`s.\n *\n * const a = tf.tensor2d([1, 2, 3, 4, 5, 6], [2, 3]);\n *\n * a.transpose().print(); // or\n * tf.transpose(a)\n *\n * @param x The tensor to transpose.\n * @param perm The permutation of the dimensions of a.\n *\n * @doc {heading: 'Operations', subheading: 'Matrices'}\n */\nfunction transpose_<T extends Tensor>(x: T|TensorLike, perm?: number[]): T {\n  const $x = convertToTensor(x, 'x', 'transpose');\n\n  if (perm == null) {\n    perm = $x.shape.map((s, i) => i).reverse();\n  }\n\n  util.assert(\n    $x.rank === perm.length,\n    () => `Error in transpose: rank of input ${$x.rank} ` +\n      `must match length of perm ${perm}`);\n\n  perm.forEach(axis => {\n    util.assert(\n      axis >= 0 && axis < $x.rank,\n      () => `All entries in 'perm' must be between 0 and ${$x.rank - 1} ` +\n        `but got ${perm}`);\n  });\n\n  if ($x.rank <= 1) {\n    return $x.clone();\n  }\n\n  const inputs: TransposeInputs = {x: $x};\n  const attrs: TransposeAttrs = {perm};\n\n  return ENGINE.runKernel(\n    Transpose, inputs as { } as NamedTensorMap, attrs as { } as NamedAttrMap);\n}\n\nexport const transpose = op({transpose_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Tensor1D, Tensor2D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {cast} from './cast';\nimport {matMul} from './mat_mul';\nimport {oneHot} from './one_hot';\nimport {op} from './operation';\nimport {transpose} from './transpose';\n\n/**\n * Computes the confusion matrix from true labels and predicted labels.\n *\n * const labels = tf.tensor1d([0, 1, 2, 1, 0], 'int32');\n * const predictions = tf.tensor1d([0, 2, 2, 1, 0], 'int32');\n * const numClasses = 3;\n * const out = tf.math.confusionMatrix(labels, predictions, numClasses);\n * out.print();\n *\n * // Expected output matrix:\n * // [[2, 0, 0],\n * // [0, 1, 1],\n * // [0, 0, 1]]\n *\n * @param labels The target labels, assumed to be 0-based integers for the classes. The shape is `[numExamples]`, where `numExamples` is the number of examples included.\n * @param predictions The predicted classes, assumed to be 0-based integers for the classes. Must have the same shape as `labels`.\n * @param numClasses Number of all classes, as an integer. Its value must be larger than the largest element in `labels` and `predictions`.\n *

```

```

@returns The confusion matrix as a int32-type 2D tensor. The value at `row` and column `c` is the number of
times examples of actual class `r` were predicted as class `c`.
@doc {heading: 'Operations', subheading: 'Evaluation'}
export function confusionMatrix_(labels: Tensor1D|TensorLike, predictions:
Tensor1D|TensorLike, numClasses: number): Tensor2D {
  const $labels = convertToTensor(labels, 'labels',
'confusionMatrix');
  const $predictions = convertToTensor(predictions, 'predictions', 'confusionMatrix');
  util.assert(numClasses == null || numClasses > 0 && Number.isInteger(numClasses), () => `If provided,
numClasses must be a positive integer, but got ${numClasses}`);
  util.assert($labels.rank ===
1, () => `Expected the rank of labels to be 1, but got ${$labels.rank}`);
  util.assert($predictions.rank
=== 1, () => `Expected the rank of predictions to be 1, but got ${$predictions.rank}`);
  util.assert($labels.shape[0] === $predictions.shape[0], () => `Mismatch in the number of examples:
${$labels.shape[0]} vs. ${$predictions.shape[0]}`);
  util.assert($labels and $predictions should have the same
number of elements.`, () => `Labels and predictions should have the same
number of elements.`);
  util.assert(numClasses > 0 && Number.isInteger(numClasses), () =>
`numClasses is required to be a positive integer, but got ${numClasses}`);
  // TODO(cais): In the
future, if oneHot supports tensors inputs for `numClasses`, `confusionMatrix` can make `numClasses`
optional.
  const oneHotLabels = oneHot(cast($labels, 'int32'), numClasses) as Tensor2D;
  const oneHotPredictions = oneHot(cast($predictions, 'int32'), numClasses) as Tensor2D;
  const oneHotLabelsT: Tensor2D = transpose(oneHotLabels);
  const product: Tensor2D = matMul(oneHotLabelsT, oneHotPredictions);
  return cast(product, 'int32');
}
export const confusionMatrix = op({confusionMatrix_});
"/**
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the
 * "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the
 * License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or
 * agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for
 * the specific language governing permissions and
 * limitations under the License.
 */
=====
*/
export { confusionMatrix } from
'./ops/confusion_matrix';
"/**
 * Copyright 2018 Google LLC. All
 * Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this
 * file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
 * OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
 * governing permissions and
 * limitations under the License.
 */
=====
import { Tensor3D } from './tensor';
import { inferShape } from './tensor_util_env';
import { TensorLike3D }
from './types';
import { DataType } from './types';
import { assertNonNull } from './util';
import { makeTensor }
from './tensor_ops_util';
/**
 * Creates rank-3 `tf.Tensor` with the provided values, shape and dtype.
 * The
 * same functionality can be achieved with `tf.tensor`, but in general
 * we recommend using `tf.tensor3d` as it makes
 * the code more readable.
 * Pass a nested array.
 * tf.tensor3d([[[[1], [2]], [[3], [4]]]).print();
 * Pass a flat array and specify a shape.
 * tf.tensor3d([1, 2, 3, 4], [2, 2, 1]).print();
 */
@param values The values of the tensor. Can be nested array of numbers,
or a flat array, or a `TypedArray`.
@param shape The shape of the tensor. If not provided, it is inferred from
`values`.
@param dtype The
data type.
@doc {heading: 'Tensors', subheading: 'Creation'}
export function tensor3d(values:
TensorLike3D, shape?: [number, number, number],
dtype?: DataType): Tensor3D {
  assertNonNull(values);
  if (shape != null && shape.length != 3) {
    throw new Error('tensor3d() requires shape to have three numbers');
  }
  const inferredShape = inferShape(values, dtype);
  if (inferredShape.length != 3 && inferredShape.length !=
1) {
    throw new Error(`tensor3d() requires values to be number[][][] or flat/TypedArray`);
  }
  if
(inferredShape.length === 1 && shape == null) {
    throw new Error(`tensor3d() requires shape to be

```

provided when `values` are a flat array');
return makeTensor(values, shape, inferredShape, dtype) as
Tensor3D;"/>
/*
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the
 * Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the
 * License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed
 * on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
 * implied.
 * See the License for the specific language governing permissions and
 * limitations under the
 * License.
 */

```
=====
*/
import {ENGINE} from '../engine';
import {FromPixels, FromPixelsAttrs, FromPixelsInputs} from
../kernel_names';
import {getKernel, NamedAttrMap} from '../kernel_registry';
import {Tensor, Tensor2D,
Tensor3D} from './tensor';
import {NamedTensorMap} from './tensor_types';
import {convertToTensor} from
../tensor_util_env';
import {PixelData, TensorLike} from './types';
import {cast} from './cast';
import {op}
from './operation';
import {tensor3d} from './tensor3d';
let fromPixels2DContext:
CanvasRenderingContext2D;
/**
 * Creates a `tf.Tensor` from an image.
 * @js
 * const image = new
ImageData(1, 1);
 * image.data[0] = 100;
 * image.data[1] = 150;
 * image.data[2] = 200;
 * image.data[3] =
255;
 * tf.browser.fromPixels(image).print();
 * @param pixels The input image to construct the
tensor from. The
 * supported image types are all 4-channel. You can also pass in an image
 * object with
following attributes:
 * {data: Uint8Array; width: number; height: number}
 * @param numChannels The
number of channels of the output tensor. A
 * numChannels value less than 4 allows you to ignore channels.
Defaults to
 * 3 (ignores alpha channel of input image).
 * @doc {heading: 'Browser', namespace: 'browser',
ignoreCI: true}
function fromPixels_(
  pixels:
PixelData|ImageData|HTMLImageElement|HTMLCanvasElement|
HTMLVideoElement|ImageBitmap,
  numChannels = 3): Tensor3D {
  // Sanity checks.
  if (numChannels > 4) {
    throw new Error('Cannot
construct Tensor with more than 4 channels from pixels.');
```

```

(isImageData || isPixelData) {\n  vals = (pixels as PixelData | ImageData).data;\n } else if (isImage || isVideo ||
isImageBitmap) {\n  if (fromPixels2DContext == null) {\n    fromPixels2DContext =
document.createElement('canvas').getContext('2d');\n  }\n  fromPixels2DContext.canvas.width = width;\n
fromPixels2DContext.canvas.height = height;\n  fromPixels2DContext.drawImage(\n    pixels as
HTMLVideoElement, 0, 0, width, height);\n  vals = fromPixels2DContext.getImageData(0, 0, width,
height).data;\n }\n let values: Int32Array;\n if (numChannels === 4) {\n  values = new Int32Array(vals);\n } else
{\n  const numPixels = width * height;\n  values = new Int32Array(numPixels * numChannels);\n  for (let i = 0;
i < numPixels; i++) {\n    for (let channel = 0; channel < numChannels; ++channel) {\n      values[i *
numChannels + channel] = vals[i * 4 + channel];\n    }\n  }\n }\n const outShape: [number, number, number] =
[height, width, numChannels];\n return tensor3d(values, outShape, 'int32');\n}\n\n/**\n * Draws a `tf.Tensor` of
pixel values to a byte array or optionally a\n * canvas.\n * When the dtype of the input is 'float32', we assume
values in the range\n * [0-1]. Otherwise, when input is 'int32', we assume values in the range\n * [0-255].\n *
Returns a promise that resolves when the canvas has been drawn to.\n *\n * @param img A rank-2 or rank-3 tensor.
If rank-2, draws grayscale. If\n * rank-3, must have depth of 1, 3 or 4. When depth of 1, draws\n * grayscale.
When depth of 3, we draw with the first three components of\n * the depth dimension corresponding to r, g, b and
alpha = 1. When depth of\n * 4, all four components of the depth dimension correspond to r, g, b, a.\n *\n * @param
canvas The canvas to draw to.\n *\n * @doc {heading: 'Browser', namespace: 'browser'}\n */\n\nexport async function
toPixels(\n  img: Tensor2D|Tensor3D|TensorLike,\n  canvas?: HTMLCanvasElement):
Promise<Uint8ClampedArray> {\n  let $img = convertToTensor(img, 'img', 'toPixels');\n  if (!(img instanceof
Tensor)) {\n    // Assume int32 if user passed a native array.\n    const originalImgTensor = $img;\n    $img =
cast(originalImgTensor, 'int32');\n    originalImgTensor.dispose();\n  }\n  if ($img.rank !== 2 && $img.rank !== 3)
{\n    throw new Error(\n      `toPixels only supports rank 2 or 3 tensors, got rank ${$img.rank}`);\n  }\n  const
[height, width] = $img.shape.slice(0, 2);\n  const depth = $img.rank === 2 ? 1 : $img.shape[2];\n  if (depth > 4 ||
depth === 2) {\n    throw new Error(\n      `toPixels only supports depth of size ` +\n      `1, 3 or 4 but got
${depth}`);\n  }\n  if ($img.dtype !== 'float32' && $img.dtype !== 'int32') {\n    throw new Error(\n
`Unsupported type for toPixels: ${$img.dtype}` +\n      ` Please use float32 or int32 tensors.`);\n  }\n  const data
= await $img.data();\n  const multiplier = $img.dtype === 'float32' ? 255 : 1;\n  const bytes = new
Uint8ClampedArray(width * height * 4);\n  for (let i = 0; i < height * width; ++i) {\n    const rgba = [0, 0, 0,
255];\n    for (let d = 0; d < depth; d++) {\n      const value = data[i * depth + d];\n      if ($img.dtype ===
'float32') {\n        if (value < 0 || value > 1) {\n          throw new Error(\n            `Tensor values for a float32 Tensor
must be in the ` +\n            `range [0 - 1] but encountered ${value}`);\n        }\n      } else if ($img.dtype ===
'int32') {\n        if (value < 0 || value > 255) {\n          throw new Error(\n            `Tensor values for a int32 Tensor
must be in the ` +\n            `range [0 - 255] but encountered ${value}`);\n        }\n      }\n      if (depth === 1) {\n
        rgba[0] = value * multiplier;\n        rgba[1] = value * multiplier;\n        rgba[2] = value * multiplier;\n      } else
{\n        rgba[d] = value * multiplier;\n      }\n      const j = i * 4;\n      bytes[j + 0] = Math.round(rgba[0]);\n
      bytes[j + 1] = Math.round(rgba[1]);\n      bytes[j + 2] = Math.round(rgba[2]);\n      bytes[j + 3] =
Math.round(rgba[3]);\n    }\n    if (canvas != null) {\n      canvas.width = width;\n      canvas.height = height;\n      const
ctx = canvas.getContext('2d');\n      const imageData = new ImageData(bytes, width, height);\n      ctx.putImageData(imageData, 0, 0);\n    }\n    if ($img !== img) {\n      $img.dispose();\n    }\n    return bytes;\n  }\n}\n\nexport
const fromPixels = op({fromPixels_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====*\n\nimport {TensorInfo} from './kernel_registry';\nimport {computeStrides, sizeFromShape} from './util';\n\n**\n

```

```

* Validate gather nd inputs.\n *\n * @param tensor The tensor contains the source values.\n * @param indices The
tensor contains the indices to slice the source.\n *\n * @returns [resultShape, numUpdates, sliceSize, strides]\n
*\nexport function prepareAndValidate(tensor: TensorInfo, indices: TensorInfo):\n  [number[], number, number,
number[]] {\n  const tensorRank = tensor.shape.length;\n  const indicesRank = indices.shape.length;\n  if
(tensorRank < 1) {\n    throw new Error(\n      'tf.gatherND() expects the input to be rank 1 or higher,' +\n      ` but
the rank was ${tensorRank}.`);\n  }\n  if (indicesRank < 1) {\n    throw new Error(\n      'tf.gatherND() expects the
indices to be rank 1 or higher,' +\n      ` but the rank was ${indicesRank}.`);\n  }\n  if (indices.dtype !== 'int32') {\n
throw new Error(\n    'tf.gatherND() expects the indices to be int32 type,' +\n    ` but the dtype was
${indices.dtype}.`);\n  }\n  if (indices.shape[indicesRank - 1] > tensorRank) {\n    throw new Error(\n      'index
innermost dimension length must be <= tensor rank; saw: ' +\n      `${indices.shape[indicesRank - 1]} vs.
${tensorRank}`);\n  }\n  if (sizeFromShape(tensor.shape) === 0) {\n    throw new Error(\n      'Requested more
than 0 entries, but input is empty.' +\n      ` Input shape: ${tensor.shape}.`);\n  }\n  const indicesShape =
indices.shape;\n  const sliceRank = indicesShape[indicesShape.length - 1];\n  // The result shape is\n  //
indices.shape[:-1] + params.shape[indices.shape[-1]:]\n  let nResult = 1;\n  for (let i = 0; i < indicesShape.length - 1;
++i) {\n    nResult *= indicesShape[i];\n  }\n  const inputShape = tensor.shape;\n  const resultShape =
indicesShape.slice();\n  resultShape.pop();\n  let sliceSize = 1;\n  for (let i = sliceRank; i < tensorRank; ++i) {\n
sliceSize *= inputShape[i];\n  } resultShape.push(inputShape[i]);\n  }\n  const strides =\n  [...computeStrides(tensor.shape).map(stride => stride / sliceSize),\n    1].slice(0, sliceRank);\n  }\n  return
[resultShape, nResult, sliceSize, strides];\n  }\n  },"/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport {TensorInfo} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {computeStrides,
sizeFromShape} from './util';\n/**\n * Check whether updates.shape = indices.shape[:batchDim] +\n *
shape[sliceDim:]\n *\n * @param x The input tensor.\n *\nexport function validateUpdateShape(\n  shape:
number[], indices: Tensor, updates: Tensor) {\n  const sliceDim = (indices.rank > 1) ? indices.shape[indices.rank -
1] : 1;\n  const batchDim = (indices.rank > 1) ? indices.rank - 1 : 1;\n  const shapeError = 'Must have
updates.shape = indices.shape[:batchDim] + ' +\n    `shape[sliceDim:], got updates.shape: ${updates.shape}` +\n
`, indices.shape: ${indices.shape}, shape: ${shape}` +\n    `, sliceDim: ${sliceDim}, and batchDim:
${batchDim}.`;\n  if (updates.rank < batchDim) {\n    throw new Error(shapeError + ` update.rank <
${batchDim}.`);\n  }\n  if (shape.length < sliceDim + (updates.rank - batchDim)) {\n    throw new Error(\n
shapeError +\n    ` Output shape length < ${sliceDim + (updates.rank - batchDim)}`);\n  }\n  if (updates.rank !==
batchDim + shape.length - sliceDim) {\n    throw new Error(\n      shapeError + ` update.rank != ${batchDim +
shape.length - sliceDim}`);\n  }\n  for (let d = 0; d < batchDim; ++d) {\n    if (updates.shape[d] !== indices.shape[d]) {\n
throw new Error(\n      shapeError +\n      ` updates.shape[${d}] (${updates.shape[d]}) !=
indices.shape[${d}] (${indices.shape[d]}.`);\n    }\n  }\n  for (let d = 0; d < updates.rank - batchDim;
++d) {\n    if (updates.shape[d + batchDim] !== shape[d + sliceDim]) {\n    throw new Error(\n      shapeError
+\n      ` updates.shape[${d + batchDim}] (${updates.shape[d + batchDim]}) != shape[${d +
batchDim}] (${shape[d + batchDim]}.`);\n    }\n  }\n  }\n}\nexport interface ScatterShapeInfo {\n
sliceRank: number;\n numUpdates: number;\n sliceSize: number;\n strides: number[];\n outputSize:
number;\n}\n/**\n * Validate scatter nd inputs.\n *\n * @param update The tensor contains the update values.\n *
@param indices The tensor contains the indices for the update values.\n * @param shape The shape of the output
tensor.\n *\nexport function validateInput(\n  updates: Tensor, indices: Tensor, shape: number[]) {\n  if
(indices.rank < 1) {\n    throw new Error(\n      'tf.scatterND() expects the indices to be rank 1 or higher,' +\n
`

```



```

but the rank was ${indices.rank}.`);\n }\n if (updates.rank < 1) {\n   throw new Error(`tf.scatterND() expects
the updates to be rank 1 or higher,` +\n   `but the rank was ${updates.rank}.`);\n }\n if (indices.dtype !==
'int32') {\n   throw new Error(`The dtype of 'indices' should be int32, but got dtype: ${\n   indices.dtype}`);\n
}\n if (shape.length < 1) {\n   throw new Error(`\n   `Output rank must be greater or equal to 1, but got shape:
${shape}`);\n }\n\n if (shape.length === 0) {\n   if (indices.size === 0) {\n     throw new Error(`Indices specified
for empty output. indices shape: ${\n   indices.shape}`);\n   }\n   if (updates.size === 0) {\n     throw new
Error(`Updates specified for empty output. updates shape: ${\n   updates.shape}`);\n   }\n }\n\n validateUpdateShape(shape, indices, updates);\n}\n\n/**\n * Calculate the shape information for the output.\n *\n * @param update The tensor contains the update values.\n * @param indices The tensor contains the indices for the
update values.\n * @param shape The shape of the output tensor.\n *\n * @returns ScatterShapeInfo\n */\n\nexport
function calculateShapes(\n  updates: TensorInfo, indices: TensorInfo,\n  shape: number[]): ScatterShapeInfo {\n
  // Calculate the number of dimensions in indices\n  const indicesRank = indices.shape.length;\n  const sliceRank =
(indicesRank > 1) ? indices.shape[indicesRank - 1] : 1;\n\n  // Calculate the number of elements that make up each
slice of our updated\n  // tensor. This allows us to work with flattened tensors and copy over whole\n  // slices at a
time.\n  const totalNd = shape.length;\n\n  let sliceSize = 1;\n  for (let i = sliceRank; i < totalNd; ++i) {\n    sliceSize
*= shape[i];\n  }\n\n  const safeSliceDim = (sliceRank < 1) ? 1 : sliceRank;\n  const numUpdates =
sizeFromShape(indices.shape) / safeSliceDim;\n\n  const strides = [...computeStrides(shape.slice(0, sliceRank)),
1];\n  const outputSize = sizeFromShape(shape);\n  return {sliceRank, numUpdates, sliceSize, strides,
outputSize};\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */

```

```

=====\n
*/\n\nimport {TensorInfo} from './kernel_registry';\nimport * as util from './util';\n\nexport type SliceInfo = {\n
  nonStrided: boolean,\n  $begin: number[],\n  $end: number[],\n  $strides: number[],\n  size: number[],\n  newShape:
number[],\n  outShape: number[]\n};\n\nexport function assertParamsValid(\n  input: TensorInfo, begin: number[],
size: number[]): void {\n  const inputRank = input.shape.length;\n  util.assert(\n    inputRank === begin.length,\n
() => `Error in slice${inputRank}D: Length of begin ${begin} must ` +\n    `match the rank of the array
(${inputRank}).`);\n  util.assert(\n    inputRank === size.length,\n    () => `Error in slice${inputRank}D: Length
of size ${size} must ` +\n    `match the rank of the array (${inputRank}).`);\n\n  for (let i = 0; i < inputRank;\n
++i) {\n    util.assert(\n      begin[i] + size[i] <= input.shape[i],\n      () => `Error in slice${inputRank}D:\n
begin[${i}] + size[${i}] ` +\n      `(${begin[i] + size[i]}) would overflow input.shape[${i}] (${input.shape[i]})`);\n
  }\n}\n\n/**\n * Converts a binary mask to an array of axes. Used in stridedSlice().\n *\n * @nexport
function maskToAxes(mask: number): number[] {\n  const axes = [];\n  let axis = 0;\n  while (mask > 0) {\n    if
(mask & 1) {\n      axes.push(axis);\n    }\n    mask /= 2;\n    axis++;\n  }\n  return axes;\n}\n\n/**\n * Computes the
output shape given the strided slice params.\n *\n * @nexport function computeOutShape(\n  begin: number[], end:
number[], strides: number[]): number[] {\n  const size = [];\n  for (let axis = 0; axis < begin.length; axis++) {\n
size[axis] = Math.ceil((end[axis] - begin[axis]) / strides[axis]);\n  }\n  return size;\n}\n\n// Creates full selection at
the elided dimensions. If the dimension matches\n// the ellipsis mask, override the current stride value. Otherwise,
insert.\n\nexport function stridesWithElidedDims(\n  strides: number[], ellipsisInsertionIndex: number,\n  numElidedAxes: number,\n  inputShape: number[]): number[] {\n  const newStrides = [...strides];\n  for (let i =
newStrides.length; i < inputShape.length; i++) {\n    newStrides.push(1);\n  }\n  for (let i = 0; i < numElidedAxes;\n
i++) {\n    if (i === 0) {\n      newStrides[ellipsisInsertionIndex] = 1;\n    } else {\n      newStrides.splice(\n
ellipsisInsertionIndex, 0 /* num elements to delete */,\n      1 /* element to add */);\n      newStrides.pop();\n    }\n
  }\n  return newStrides;\n}\n\nfunction unnormalizeAxis(\n  ellipsisInsertionIndex: number, numElidedAxes:

```

```

number,\n  normalizedAxis: number): number {\n  if (normalizedAxis <= ellipsisInsertionIndex) {\n  return
normalizedAxis;\n  }\n  return normalizedAxis - (numElidedAxes - 1);\n}\n\nfunction
getElidedAxes(numElidedAxes: number, ellipsisInsertionIndex: number) {\n  const elidedAxes = [];\n  for (let i = 0;
i < numElidedAxes; i++) {\n  elidedAxes.push(ellipsisInsertionIndex + i);\n  }\n  return elidedAxes;\n}\n\n//
Normalize the start, end and strides.\nexport function getNormalizedAxes(\n  inputShape: number[], ellipsisAxes:
number[], numInterpolatedAxes: number,\n  begin: number[], end: number[], strides: number[], beginMask:
number,\n  endMask: number,\n  ellipsisMask: number): {begin: number[], end: number[], strides: number[]} {\n
const inputRank = inputShape.length;\n  let normalizedBegin = new Array(inputRank),\n  normalizedEnd = new
Array(inputRank),\n  normalizedStrides = new Array(inputRank);\n  if (ellipsisAxes.length &&
numInterpolatedAxes > 0) {\n  const fullIndex = ellipsisAxes[0];\n  // The ellipsis applies to the masked index
as well as any dimensions\n  // that are interpolated.\n  const numElidedAxes = numInterpolatedAxes + 1;\n
normalizedBegin = startIndicesWithElidedDims(\n  beginMask, fullIndex, numElidedAxes, begin,
inputShape);\n  normalizedEnd = stopIndicesWithElidedDims(\n  endMask, fullIndex, numElidedAxes, end,
inputShape);\n  normalizedStrides =\n  stridesWithElidedDims(strides, fullIndex, numElidedAxes,
inputShape);\n  } else {\n  for (let axis = 0; axis < inputRank; axis++) {\n  normalizedBegin[axis] =
startForAxis(\n  beginMask, begin, strides, inputShape, axis, ellipsisMask);\n  normalizedEnd[axis] =\n
stopForAxis(endMask, end, strides, inputShape, axis, ellipsisMask);\n  normalizedStrides[axis] =
stridesForAxis(strides, axis, ellipsisMask);\n  }\n  }\n  return {\n  begin: normalizedBegin,\n  end:
normalizedEnd,\n  strides: normalizedStrides\n  };\n}\n\n// Creates full selection at the elided dimensions. If the
dimension matches\n// the ellipsis mask, override the current start value. Otherwise, insert.\nexport function
startIndicesWithElidedDims(\n  beginMask: number, ellipsisInsertionIndex: number, numElidedAxes: number,\n
originalBegin: number[], inputShape: number[]): number[] {\n  const newIndices = [...inputShape];\n  const
elidedAxes = getElidedAxes(numElidedAxes, ellipsisInsertionIndex);\n  for (let axis = 0; axis <
newIndices.length; axis++) {\n  if (elidedAxes.indexOf(axis) > -1) {\n  newIndices[axis] = 0;\n  } else {\n
const originalAxis =\n  unnormalizeAxis(ellipsisInsertionIndex, numElidedAxes, axis);\n  let originalValue
= originalBegin[originalAxis];\n  if (beginMask & 1 << originalAxis) {\n  originalValue = 0;\n  }\n  newIndices[axis] = originalValue;\n  }\n  }\n  return newIndices;\n}\n\n// Creates full selection at the elided
dimensions. If the dimension matches\n// the ellipsis mask, override the current stop value. Otherwise,
insert.\nexport function stopIndicesWithElidedDims(\n  endMask: number, ellipsisInsertionIndex: number,
numElidedAxes: number,\n  originalEnd: number[], inputShape: number[]): number[] {\n  const newIndices =
[...inputShape];\n  const elidedAxes = getElidedAxes(numElidedAxes, ellipsisInsertionIndex);\n  for (let axis = 0;
axis < newIndices.length; axis++) {\n  if (elidedAxes.indexOf(axis) > -1) {\n  newIndices[axis] =
Number.MAX_SAFE_INTEGER;\n  } else {\n  const originalAxis =\n  unnormalizeAxis(ellipsisInsertionIndex, numElidedAxes, axis);\n  let originalValue =
originalEnd[originalAxis];\n  if (endMask & 1 << originalAxis) {\n  originalValue =
Number.MAX_SAFE_INTEGER;\n  }\n  newIndices[axis] = originalValue;\n  }\n  }\n  for (let i = 0; i <
newIndices.length; i++) {\n  // Handle negative indices\n  const axisSize = inputShape[i];\n  if (newIndices[i] <
0) {\n  newIndices[i] += axisSize;\n  }\n  newIndices[i] = util.clamp(0, newIndices[i], inputShape[i]);\n  }\n
return newIndices;\n}\n\nexport function stridesForAxis(\n  strides: number[], axis: number, ellipsisMask:
number): number {\n  let stride = strides[axis];\n  if (ellipsisMask & (1 << axis) || stride == null) {\n  stride = 1;\n
}\n  return stride;\n}\n\nexport function startForAxis(\n  beginMask: number, startIndices: number[], strides:
number[],\n  inputShape: number[], axis: number, ellipsisMask: number): number {\n  // Begin with the specified
index\n  let start = startIndices[axis];\n  const stride = strides[axis] || 1;\n  // Check the axis bit from right of
masked axes, or the begin index is not set\n  // for the axis.\n  if (beginMask & 1 << axis || ellipsisMask & 1 << axis
|| start == null) {\n  if (stride > 0) {\n  // Forward iteration - use the first element. These values will get\n  //
clamped below (Note: We could have set them to 0 and axis_size-1, but\n  // use lowest() and max() to maintain
symmetry with StopForAxis())\n  start = Number.MIN_SAFE_INTEGER;\n  } else {\n  // Backward iteration
- use the last element.\n  start = Number.MAX_SAFE_INTEGER;\n  }\n  }\n  // Handle negative indices\n

```

```

const axisSize = inputShape[axis];\n if (start < 0) {\n   start += axisSize;\n }\n\n // Clamping\n start =\n util.clamp(0, start, axisSize - 1);\n\n return start;\n}\n\n\nexport function stopForAxis(\n  endMask: number,\n  stopIndices: number[],\n  strides: number[],\n  inputShape: number[],\n  axis: number,\n  ellipsisMask: number): number {\n  // Begin with the specified index\n  let stop = stopIndices[axis];\n  const stride = strides[axis] || 1;\n  // Check the axis bit from right of masked axes, or if the stop index is not\n  // set for this axis.\n  if (endMask & (1 << axis) ||\n  ellipsisMask & (1 << axis) || stop === null) {\n    if (stride > 0) {\n      // Forward iteration - use the last element.\n      These values will get\n      // clamped below\n      stop = Number.MAX_SAFE_INTEGER;\n    } else {\n      // Backward iteration - use the first element.\n      stop = Number.MIN_SAFE_INTEGER;\n    }\n  }\n\n  // Handle negative indices\n  const axisSize = inputShape[axis];\n  if (stop < 0) {\n    stop += axisSize;\n  }\n\n  // Clamping\n  // Because the end index points one past the last element, we need slightly\n  // different clamping ranges depending on the direction.\n  if (stride > 0) {\n    // Forward iteration\n    stop = util.clamp(0, stop, axisSize);\n  } else {\n    // Backward iteration\n    stop = util.clamp(-1, stop, axisSize - 1);\n  }\n\n  return stop;\n}\n\n\n/**\n * Returns true if the slice occupies a continuous set of elements in the\n * 'flat' space.\n */\nexport function isSliceContinuous(\n  shape: number[],\n  begin: number[],\n  size: number[]) {\n  // Index of the first axis that has size > 1.\n  let firstNonOneAxis = size.length;\n  for (let i = 0; i < size.length; i++) {\n    if (size[i] > 1) {\n      firstNonOneAxis = i;\n      break;\n    }\n  }\n\n  for (let i = firstNonOneAxis + 1; i < size.length; i++) {\n    if (begin[i] > 0 || size[i] !== shape[i]) {\n      return false;\n    }\n  }\n\n  return true;\n}\n\n\nexport function computeFlatOffset(begin: number[], strides: number[]): number {\n  let flatOffset = begin.length > 0 ? begin[begin.length - 1] : 1;\n  for (let i = 0; i < begin.length - 1; i++) {\n    flatOffset += begin[i] * strides[i];\n  }\n\n  return flatOffset;\n}\n\n\nexport function parseSliceParams(\n  x: TensorInfo,\n  begin: number|number[],\n  size?: number|number[]) {\n  // The following logic allows for more ergonomic calls.\n  let begin_: number[];\n  const xRank = x.shape.length;\n  if (typeof begin === 'number') {\n    begin_ = [begin, ...new Array(xRank - 1).fill(0)];\n  } else if (begin.length < xRank) {\n    begin_ = begin.concat(new Array(xRank - begin.length).fill(0));\n  } else {\n    begin_ = begin.slice();\n  }\n\n  begin_.forEach(d => {\n    util.assert(\n      d !== -1, () => 'slice() does not support negative begin indexing.);\n  });\n\n  let size_: number[];\n  if (size === null) {\n    size_ = new Array(xRank).fill(-1);\n  } else if (typeof size === 'number') {\n    size_ = [size, ...new Array(xRank - 1).fill(-1)];\n  } else if (size.length < xRank) {\n    size_ = size.concat(new Array(xRank - size.length).fill(-1));\n  } else {\n    size_ = size;\n  }\n\n  size_ = size_.map((d, i) => {\n    if (d >= 0) {\n      return d;\n    } else {\n      util.assert(\n        d === -1, () => `Negative size values should be exactly -1 but got ` +\n        ` ${d} for the slice() size at index ${i}.`);\n      return x.shape[i] -\n        begin_[i];\n    }\n  });\n\n  return [begin_, size_];\n}\n\n\nexport function sliceInfo(\n  xShape: number[],\n  begin: number[],\n  end: number[],\n  strides: number[],\n  beginMask: number,\n  endMask: number,\n  ellipsisMask: number,\n  newAxisMask: number,\n  shrinkAxisMask: number): SliceInfo {\n  // make a copy because it may be modified further down.\n  let $begin = begin.slice();\n  let $end = end.slice();\n  let $strides = strides;\n\n  if (strides === null) {\n    $strides = new Array($begin.length);\n  }\n\n  const ellipsisAxes = maskToAxes(ellipsisMask);\n  if (ellipsisAxes.length > 1) {\n    throw new Error('Multiple ellipses in slice is not allowed.);\n  }\n\n  if (ellipsisMask !== 0 && newAxisMask !== 0) {\n    throw new Error(\n      'Using both ellipsisMask and newAxisMask is not yet supported.);\n  }\n\n  if (ellipsisMask !== 0 && shrinkAxisMask !== 0) {\n    throw new Error(\n      'Using both ellipsisMask and shrinkAxisMask is not yet supported.);\n  }\n\n  const numInterpolatedAxes = xShape.length -\n    $begin.length;\n\n  // Expand the dims of x based on the newAxisMask.\n  const expandAxes = maskToAxes(newAxisMask);\n  const newShape = xShape.slice();\n  expandAxes.forEach(axis => {\n    $begin[axis] = 0;\n    $end[axis] = 1;\n    newShape.splice(axis, 0, 1);\n  });\n\n  const {\n    begin: normalizedBegin,\n    end: normalizedEnd,\n    strides: normalizedStrides\n  } =\n    getNormalizedAxes(\n      newShape,\n      ellipsisAxes,\n      numInterpolatedAxes,\n      $begin,\n      $end,\n      $strides,\n      beginMask,\n      endMask,\n      ellipsisMask);\n\n  $begin = normalizedBegin;\n  $end = normalizedEnd;\n  $strides = normalizedStrides;\n\n  const shrinkAxes = maskToAxes(shrinkAxisMask);\n  // Adjust the ends based on the shrink mask.\n  shrinkAxes.forEach(axis => {\n    $end[axis] = $begin[axis] + 1;\n    $strides[axis] = 1;\n  });\n\n  // Figure out the output shape.\n  const size = computeOutShape($begin, $end, $strides);\n  // Remove the axes based on shrinkMask.\n  const outShape = size.filter((_, axis) => shrinkAxes.indexOf(axis) === -1);\n\n  const nonStrided =

```

```
$strides.every(v => v === 1);\n\n return {nonStrided, $begin, $end, $strides, size, newShape,
outShape};\n}\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*/\n\nimport {assert} from './util';\n\n/**\n * Types to support JSON-esque data structures internally.\n *\n * Internally ConfigDict's use camelCase keys and values where the\n * values are class names to be instantiated. On
the python side, these\n * will be snake_case. Internally we allow Enums into the values for better\n * type safety,
but these need to be converted to raw primitives (usually\n * strings) for round-tripping with python.\n *\n * toConfig returns the TS-friendly representation. model.toJSON() returns\n * the pythonic version as that's the
portable format. If you need to\n * python-ify a non-model level toConfig output, you'll need to use a\n *
convertTsToPythonic from serialization_utils in -Layers.\n *\n */\n\nexport declare type ConfigDictValue =\nboolean | number | string | null | ConfigDictArray | ConfigDict;\n\nexport declare interface ConfigDict {\n [key:
string]: ConfigDictValue;\n}\n\nexport declare interface ConfigDictArray extends Array<ConfigDictValue>
{\n}\n\n/**\n * Type to represent the class-type of Serializable objects.\n *\n * Ie the class prototype with access to
the constructor and any\n * static members/methods. Instance methods are not listed here.\n *\n * Source for this
idea: https://stackoverflow.com/a/43607255\n */\n\nexport declare type SerializableConstructor<T extends
Serializable> = {\n // tslint:disable-next-line:no-any\n new (...args: any[]): T; className: string; fromConfig:
FromConfigMethod<T>;\n};\n\nexport declare type FromConfigMethod<T extends Serializable> =\n (cls:
SerializableConstructor<T>, config: ConfigDict) => T;\n\n/**\n * Serializable defines the serialization contract.\n
*\n * TFJS requires serializable classes to return their className when asked\n * to avoid issues with
minification.\n *\n */\n\nexport abstract class Serializable {\n /**\n * Return the class name for this class to use in
serialization contexts.\n *\n * Generally speaking this will be the same thing that constructor.name\n * would
have returned. However, the class name needs to be robust\n * against minification for serialization/deserialization
to work properly.\n *\n * There's also places such as initializers.VarianceScaling, where\n * implementation
details between different languages led to different\n * class hierarchies and a non-leaf node is used for
serialization purposes.\n *\n */\n getClassName(): string {\n return (this.constructor as
SerializableConstructor<Serializable>).className;\n }\n\n /**\n * Return all the non-weight state needed
to serialize this object.\n *\n */\n abstract getConfig(): ConfigDict;\n\n /**\n * Creates an instance of T from a
ConfigDict.\n *\n * This works for most descendants of serializable. A few need to\n * provide special
handling.\n *\n */\n @param cls A Constructor for the class to instantiate.\n * @param config The Configuration for the
object.\n *\n */\n /** @nocollapse */\n static fromConfig<T extends Serializable>(\n cls:
SerializableConstructor<T>, config: ConfigDict): T {\n return new cls(config);\n }\n}\n\n/**\n * Maps string
keys to class constructors.\n *\n * Used during (de)serialization from the cross-language JSON format, which\n *
requires the class name in the serialization format matches the class\n * names as used in Python, should it exist.\n
*\n */\n\nexport class SerializationMap {\n private static instance: SerializationMap;\n private classNameMap: {\n
[className: string]:\n [SerializableConstructor<Serializable>, FromConfigMethod<Serializable>]\n };\n\n private constructor() {\n this.classNameMap = {};\n }\n\n /**\n * Returns the singleton instance of the map.\n
*\n */\n static getMap(): SerializationMap {\n if (SerializationMap.instance == null) {\n
SerializationMap.instance
= new SerializationMap();\n }\n return SerializationMap.instance;\n }\n\n /**\n * Registers the class as
serializable.\n *\n */\n static register<T extends Serializable>(cls: SerializableConstructor<T>) {\n
SerializationMap.getMap().classNameMap[cls.className] =\n [cls, cls.fromConfig];\n }\n}\n\n/**\n * Register a class with the serialization map of TensorFlow.js.\n *\n * This is often used for registering custom
Layers, so they can be\n * serialized and deserialized.\n *\n * Example:\n *\n * ```\n js\n * class MyCustomLayer
```

```

extends tf.layers.Layer {\n * static className = 'MyCustomLayer';\n *\n * constructor(config) {\n *
super(config);\n * }\n * }\n * tf.serialization.registerClass(MyCustomLayer);\n *
```\n *\n * @param cls The class
to be registered. It must have a public static member\n * called `className` defined and the value must be a non-
empty string.\n *\n * @doc {heading: 'Models', subheading: 'Serialization', ignoreCI: true}\n */\nexport function
registerClass<T extends Serializable>(\n cls: SerializableConstructor<T>) {\n assert(\n cls.className !=
null,\n () => `Class being registered does not have the static className ` +\n `property defined.`);\n
assert(\n typeof cls.className === 'string',\n () => `className is required to be a string, but got type ` +\n
typeof cls.className);\n assert(\n cls.className.length > 0,\n () => `Class being registered has an empty-
string as its className, ` +\n `which is disallowed.`);\n\n SerializationMap.register(cls);\n }\n },"/*\n *
@license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {inferShape} from './tensor_util_env';\nimport {RecursiveArray,
TensorLike, TypedArray} from './types';\nimport {arraysEqual, encodeString, flatten, isString, isTypedArray} from
 './util';\n\nconst TEST_EPSILON_FLOAT32 = 1e-3;\n\nexport const TEST_EPSILON_FLOAT16 = 1e-1;\n\n\nexport
function expectArraysClose(\n actual: TypedArray|number|RecursiveArray<number>,\n expected:
TypedArray|number|RecursiveArray<number>, epsilon?: number) {\n if (epsilon == null) {\n epsilon =
testEpsilon();\n }\n return expectArraysPredicate(\n actual, expected, (a, b) => areClose(a as number, b as
number, epsilon));\n }\n\n\nexport function testEpsilon() {\n return ENGINE.backend.floatPrecision() === 32 ?
TEST_EPSILON_FLOAT32 :\n TEST_EPSILON_FLOAT16;\n }\n\n\nfunction
expectArraysPredicate(\n actual: TensorLike, expected: TensorLike,\n predicate: (a: {}, b: {}) => boolean) {\n
let checkClassType = true;\n if (isTypedArray(actual) || isTypedArray(expected)) {\n checkClassType = false;\n
}\n if (isTypedArray(actual) && isTypedArray(expected)) {\n checkClassType = true;\n }\n if (checkClassType)
{\n const aType = actual.constructor.name;\n const bType = expected.constructor.name;\n\n if (aType !==
bType) {\n throw new Error(\n `Arrays are of different type. Actual: ${aType}. ` +\n `Expected:
${bType}`);\n }\n }\n\n if (Array.isArray(actual) && Array.isArray(expected)) {\n const actualShape =
inferShape(actual);\n const expectedShape = inferShape(expected);\n if (!arraysEqual(actualShape,
expectedShape)) {\n throw new Error(\n `Arrays have different shapes. ` +\n `Actual:
[${actualShape}]. Expected: [${expectedShape}]`);\n }\n }\n\n const actualFlat =\n isTypedArray(actual) ?
actual : flatten(actual as RecursiveArray<number>);\n const expectedFlat = isTypedArray(expected) ?\n
expected :\n flatten(expected as RecursiveArray<number>);\n\n if (actualFlat.length !== expectedFlat.length)
{\n throw new Error(\n `Arrays have different lengths actual: ${actualFlat.length} vs ` +\n `expected:
${expectedFlat.length}.`\n ` +\n `Actual: ${actualFlat}.\n ` +\n `Expected: ${expectedFlat}.`);\n }\n\n for
(let i = 0; i < expectedFlat.length; ++i) {\n const a = actualFlat[i];\n const e = expectedFlat[i];\n\n if
(!predicate(a, e)) {\n throw new Error(\n `Arrays differ: actual[${i}] = ${a}, expected[${i}] = ${e}.\n ` +\n
`Actual: ${actualFlat}.\n ` +\n `Expected: ${expectedFlat}.`);\n }\n }\n }\n\n\nexport interface DoneFn
{\n (): void;\n fail: (message?: Error|string) => void;\n }\n\n\nexport function expectPromiseToFail(fn: () =>
Promise<{}>, done: DoneFn): void {\n fn().then(() => done.fail(), () => done());\n }\n\n\nexport function
expectArraysEqual(actual: TensorLike, expected: TensorLike) {\n const exp = typeof expected === 'string' || typeof
expected === 'number' ||\n typeof expected === 'boolean' ?\n [expected] as number[] :\n expected as
number[];\n if (isString(actual) || isString((actual as string[])[0]) ||\n isString(expected) || isString((expected
as string[])[0])) {\n // tslint:disable-next-line: triple-equals\n return expectArraysPredicate(actual, exp, (a, b) => a
== b);\n }\n return expectArraysPredicate(\n actual, expected, (a, b) => areClose(a as number, b as number,
0));\n }\n\n\nexport function expectNumbersClose(a: number, e: number, epsilon?: number) {\n if (epsilon == null)

```

```

{\n epsilon = testEpsilon();\n }\n if (!areClose(a, e, epsilon)) {\n throw new Error(`Numbers differ: actual ===
${a}, expected === ${e}`);\n }\n}\n\nfunction areClose(a: number, e: number, epsilon: number): boolean {\n if
(!isFinite(a) && !isFinite(e)) {\n return true;\n }\n if (isNaN(a) || isNaN(e) || Math.abs(a - e) > epsilon) {\n
return false;\n }\n return true;\n}\n\nexport function expectValuesInRange(\n actual: TypedArray|number[], low:
number, high: number) {\n for (let i = 0; i < actual.length; i++) {\n if (actual[i] < low || actual[i] > high) {\n
throw new Error(`\n `Value out of range: ${actual[i]} low: ${low}, high: ${high}`);\n }\n }\n }\n}\n\nexport
function expectArrayBuffersEqual(\n actual: ArrayBuffer, expected: ArrayBuffer) {\n // Safari & Jasmine don't
like comparing ArrayBuffers directly. Wrapping in\n // a Float32Array solves this issue.\n expect(new
Float32Array(actual)).toEqual(new Float32Array(expected));\n }\n}\n\n** Encodes strings into utf-8 bytes. *\nexport
function encodeStrings(a: RecursiveArray<{}>:\n RecursiveArray<Uint8Array> {\n for (let i = 0; i < (a as
Array<{}>).length; i++) {\n const val = a[i];\n if (Array.isArray(val)) {\n encodeStrings(val);\n } else {\n
a[i] = encodeString(val as string);\n }\n }\n return a as RecursiveArray<Uint8Array>;\n }\n}\n\n", "** @license See
the LICENSE file. *\n\n// This code is auto-generated, do not modify this file!\nconst version = '3.1.0';\nexport
{version};\n", "**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {KernelBackend} from './backends/backend';\nimport {ENGINE, Engine, MemoryInfo, ProfileInfo,
ScopeFn, TimingInfo} from './engine';\nimport {env} from './environment';\nimport {Platform} from
 './platforms/platform';\nimport {setDeprecationWarningFn, Tensor} from './tensor';\nimport {TensorContainer}
from './tensor_types';\nimport {getTensorsInContainer} from './tensor_util';\n\n**\n * Enables production mode
which disables correctness checks in favor of\n * performance.\n * \n * @doc {heading: 'Environment'}\n *\nexport
function enableProdMode(): void {\n env().set('PROD', true);\n }\n}\n\n**\n * Enables debug mode which will log
information about all executed kernels:\n * the elapsed time of the kernel execution, as well as the rank, shape, and\n
* size of the output tensor.\n * \n * Debug mode will significantly slow down your application as it will\n *
download the result of every operation to the CPU. This should not be used in\n * production. Debug mode does not
affect the timing information of the kernel\n * execution as we do not measure download time in the kernel
execution time.\n * \n * See also: `tf.profile`, `tf.memory`.\n * \n * @doc {heading: 'Environment'}\n *\nexport
function enableDebugMode(): void {\n env().set('DEBUG', true);\n }\n}\n\n** Globally disables deprecation warnings
*\nexport function disableDeprecationWarnings(): void {\n
env().set('DEPRECATION_WARNINGS_ENABLED', false);\n console.warn(`TensorFlow.js deprecation
warnings have been disabled.`);\n }\n}\n\n** Warn users about deprecated functionality. *\nexport function
deprecationWarn(msg: string) {\n if (env().getBool('DEPRECATION_WARNINGS_ENABLED')) {\n
console.warn(\n msg + ' You can disable deprecation warnings with '+\n
'tf.disableDeprecationWarnings().');\n }\n \nsetDeprecationWarningFn(deprecationWarn);\n }\n}\n\n** Dispose all
variables kept in backend engine.\n * \n * @doc {heading: 'Environment'}\n *\nexport function disposeVariables():
void {\n ENGINE.disposeVariables();\n }\n}\n\n**\n * It returns the global engine that keeps track of all tensors and
backends.\n * \n * @doc {heading: 'Environment'}\n *\nexport function engine(): Engine {\n return
ENGINE;\n }\n}\n\n**\n * Returns memory info at the current time in the program. The result is an\n * object with the
following properties:\n * \n * - `numBytes`: Number of bytes allocated (undisposed) at this time.\n * - `numTensors`:
Number of unique tensors allocated.\n * - `numDataBuffers`: Number of unique data buffers allocated\n *
(undisposed) at this time, which is the number of tensors\n * (e.g. `a.reshape(newShape)` makes a new Tensor that
shares the same\n * data buffer with `a`).\n * - `unreliable`: True if the memory usage is unreliable. See `reasons`
when\n * `unreliable` is true.\n * - `reasons`: `string[]`, reasons why the memory is unreliable, present if\n *

```

```

`unreliable` is true.\n * WebGL Properties:\n * - `numBytesInGPU`: Number of bytes allocated (undisposed) in
the GPU only at\n * this time.\n * @doc {heading: 'Performance', subheading: 'Memory'}\n */\nexport
function memory(): MemoryInfo {\n return ENGINE.memory();\n}\n\n/**\n * Executes the provided function `f()`
and returns a promise that resolves\n * with information about the function's memory use:\n * - `newBytes`: the
number of new bytes allocated\n * - `newTensors`: the number of new tensors created\n * - `peakBytes`: the peak
number of bytes allocated\n * - `kernels`: an array of objects for each kernel involved that reports\n * their input and
output shapes, number of bytes used, and number of new\n * tensors created.\n * - `kernelNames`: an array of
unique strings with just the names of the\n * kernels in the `kernels` array.\n * ```js\n * const profile = await
tf.profile() => {\n * const x = tf.tensor1d([1, 2, 3]);\n * let x2 = x.square();\n * x2.dispose();\n * x2 =
x.square();\n * x2.dispose();\n * return x;\n * });\n * console.log(`newBytes: ${profile.newBytes}`);\n *
console.log(`newTensors: ${profile.newTensors}`);\n * console.log(`byte usage over all kernels:
${profile.kernels.map(k =>\n * k.totalBytesSnapshot)`);\n * ```\n * }\n * @doc {heading: 'Performance',
subheading: 'Profile'}\n */\nexport function profile(f: () => (TensorContainer | Promise<TensorContainer>)):\n
Promise<ProfileInfo> {\n return ENGINE.profile(f);\n}\n\n/**\n * Executes the provided function `fn` and after it
is executed, cleans up all\n * intermediate tensors allocated by `fn` except those returned by `fn`. \n * `fn` must not
return a Promise (async functions not allowed). The returned\n * result can be a complex object.\n * Using this
method helps avoid memory leaks. In general, wrap calls to\n * operations in `tf.tidy` for automatic memory
cleanup.\n * NOTE: Variables do *not* get cleaned up when inside a tidy(). If you want to\n * dispose variables,
please use `tf.disposeVariables` or call dispose()\n * directly on variables.\n * ```js\n * // y = 2 ^ 2 + 1\n * const
y = tf.tidy(() => {\n * // a, b, and one will be cleaned up when the tidy ends.\n * const one = tf.scalar(1);\n *
const a = tf.scalar(2);\n * const b = a.square();\n * console.log(`numTensors (in tidy): ` +
tf.memory().numTensors);\n * // The value returned inside the tidy function will return\n * // through the tidy,
in this case to the variable y.\n * return b.add(one);\n * });\n * console.log(`numTensors (outside tidy): ` +
tf.memory().numTensors);\n * y.print();\n * ```\n * }\n * @param nameOrFn The name of the closure, or the function
to execute.\n * If a name is provided, the 2nd argument should be the function.\n * If debug mode is on, the
timing and the memory usage of the function\n * will be tracked and displayed on the console using the provided
name.\n * @param fn The function to execute.\n * @doc {heading: 'Performance', subheading: 'Memory'}\n */\nexport
function tidy<T extends TensorContainer>(\n nameOrFn: string|ScopeFn<T>, fn?: ScopeFn<T>): T {\n
return ENGINE.tidy(nameOrFn, fn);\n}\n\n/**\n * Disposes any `tf.Tensor`'s found within the provided object.\n *
@param container an object that may be a `tf.Tensor` or may directly\n * contain `tf.Tensor`'s, such as a
`Tensor[]` or `{key: Tensor, ...}`. If\n * the object is not a `tf.Tensor` or does not contain `Tensors`, nothing\n *
happens. In general it is safe to pass any object here, except that\n * `Promise`'s are not supported.\n * @doc
{heading: 'Performance', subheading: 'Memory'}\n */\nexport function dispose(container: TensorContainer) {\n
const tensors = getTensorsInContainer(container);\n tensors.forEach(tensor => tensor.dispose());\n}\n\n/**\n *
Keeps a `tf.Tensor` generated inside a `tf.tidy` from being disposed\n * automatically.\n * ```js\n * let b;\n *
const y = tf.tidy(() => {\n * const one = tf.scalar(1);\n * const a = tf.scalar(2);\n * // b will not be cleaned up
by the tidy. a and one will be cleaned up\n * // when the tidy ends.\n * b = tf.keep(a.square());\n * console.log(`numTensors (in tidy): ` +
tf.memory().numTensors);\n * // The value returned inside the tidy
function will return\n * // through the tidy, in this case to the variable y.\n * return b.add(one);\n * });\n *
console.log(`numTensors (outside tidy): ` + tf.memory().numTensors);\n * console.log(`y: `);\n * y.print();\n *
console.log(`b: `);\n * b.print();\n * ```\n * }\n * @param result The tensor to keep from being disposed.\n *
@param {heading: 'Performance', subheading: 'Memory'}\n */\nexport function keep<T extends Tensor>(result: T): T {\n
return ENGINE.keep(result);\n}\n\n/**\n * Executes `f()` and returns a promise that resolves with timing\n *
information.\n * The result is an object with the following properties:\n * - `wallMs`: Wall execution time.\n *
- `kernelMs`: Kernel execution time, ignoring data transfer. If using the\n * WebGL backend and the query timer
extension is not available, this will\n * return an error object.\n * - On `WebGL` The following additional properties
exist:\n * - `uploadWaitMs`: CPU blocking time on texture uploads.\n * - `downloadWaitMs`: CPU blocking time
on texture downloads (readPixels).\n * ```js\n * const x = tf.randomNormal([20, 20]);\n * const time = await

```

```

tf.time(() => x.matMul(x));\n *\n * console.log(`kernelMs: ${time.kernelMs}, wallTimeMs: ${time.wallMs}`);\n *
``\n *\n * @param f The function to execute and time.\n *\n * @doc {heading: 'Performance', subheading:
'Timing'}\n *\n * \nexport function time(f: () => void): Promise<TimingInfo> {\n return ENGINE.time(f);\n}\n\n/**\n * Sets the backend (cpu, webgl, wasm, etc) responsible for creating tensors and\n * executing operations on those tensors. Returns a promise that resolves\n * to a boolean if the backend initialization was successful.\n *\n * Note this disposes the current backend, if any, as well as any tensors\n * associated with it. A new backend is initialized, even if it is of the\n * same type as the previous one.\n *\n * @param backendName The name of the backend. Currently supports\n * `webgl|cpu` in the browser, `tensorflow` under node.js\n * (requires tfjs-node), and `wasm` (requires tfjs-backend-wasm).\n *\n * @doc {heading: 'Backends'}\n *\n * \nexport function setBackend(backendName: string): Promise<boolean> {\n return ENGINE.setBackend(backendName);\n}\n\n/**\n * Returns a promise that resolves when the currently selected backend (or the\n * highest priority one) has initialized. Await this promise when you are using\n * a backend that has async initialization.\n *\n * @doc {heading: 'Backends'}\n *\n * \nexport function ready(): Promise<void> {\n return ENGINE.ready();\n}\n\n/**\n * Returns the current backend name (cpu, webgl, etc). The backend is\n * responsible for creating tensors and executing operations on those tensors.\n *\n * @doc {heading: 'Backends'}\n *\n * \nexport function getBackend(): string {\n return ENGINE.backendName;\n}\n\n/**\n * Removes a backend and the registered factory.\n *\n * @doc {heading: 'Backends'}\n *\n * \nexport function removeBackend(name: string): void {\n ENGINE.removeBackend(name);\n}\n\n/**\n * Finds the backend registered under the provided name. Returns null if the\n * name is not in the registry, or the registration hasn't finished yet.\n *\n * \nexport function findBackend(name: string): KernelBackend {\n return ENGINE.findBackend(name);\n}\n\n/**\n * Finds the backend factory registered under the provided name. Returns a\n * function that produces a new backend when called. Returns null if the\n * name is not in the registry.\n *\n * \nexport function findBackendFactory(name: string): () =>\n KernelBackend | Promise<KernelBackend> {\n return ENGINE.findBackendFactory(name);\n}\n\n/**\n * Registers a global backend. The registration should happen when importing\n * a module file (e.g. when importing `backend_webgl.ts`), and is used for\n * modular builds (e.g. custom tfjs bundle with only webgl support).\n *\n * @param factory The backend factory function. When called, it should\n * return a backend instance, or a promise of an instance.\n *\n * @param priority The priority of the backend (higher = more important).\n * In case multiple backends are registered, the priority is used to find\n * the best backend. Defaults to 1.\n *\n * @return False if there is already a registered backend under this name, true\n * if not.\n *\n * @doc {heading: 'Backends'}\n *\n * \nexport function registerBackend(\n name: string, factory: () => KernelBackend | Promise<KernelBackend>,\n priority = 1): boolean {\n return ENGINE.registerBackend(name, factory, priority);\n}\n\n/**\n * Gets the current backend. If no backends have been initialized, this will\n * attempt to initialize the best backend. Will throw an error if the\n * highest\n * priority backend has async initialization, in which case, you should call\n * `await tf.ready()` before running other code.\n *\n * @doc {heading: 'Backends'}\n *\n * \nexport function backend(): KernelBackend {\n return ENGINE.backend;\n}\n\n/**\n * Sets the global platform.\n *\n * @param platformName The name of this platform.\n *\n * @param platform A platform implementation.\n *\n * \nexport function setPlatform(platformName: string, platform: Platform) {\n env().setPlatform(platformName, platform);\n}\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n *
=====
\n
*\nimport {ENGINE} from '../engine';\nimport {Add, AddInputs} from '../kernel_names';\nimport {Tensor} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {makeTypesMatch} from '../tensor_util';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport {op} from '../operation';\n\n/**\n * Adds two `tf.Tensor`s element-wise, A + B. Supports broadcasting.\n *\n *\n */

```



```

```js\n * const a = tf.tensor1d([1, 2, 3, 4]);\n * const b = tf.tensor1d([10, 20, 30, 40]);\n *\n * a.add(b).print(); // or
tf.add(a, b)\n * ```\n *\n * ```js\n * // Broadcast add a with b.\n * const a = tf.scalar(5);\n * const b = tf.tensor1d([10,
20, 30, 40]);\n *\n * a.add(b).print(); // or tf.add(a, b)\n * ```\n *\n * @param a The first `tf.Tensor` to add.\n * @param
b The second `tf.Tensor` to add. Must have the same type as `a`.\n *\n * @doc {heading: 'Operations', subheading:
'Arithmetic'}\n *\n * \nfunction add_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n let $a =
convertToTensor(a, 'a', 'add');\n let $b = convertToTensor(b, 'b', 'add');\n [$a, $b] = makeTypesMatch($a, $b);\n\n
const inputs: AddInputs = {a: $a, b: $b};\n\n return ENGINE.runKernel(Add, inputs as { } as
NamedTensorMap);\n}\n\n\nexport const add = op({ add_ });\n", "/*\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {FloorDiv, FloorDivInputs} from './kernel_names';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from
'./tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport
{op} from './operation';\n\n/*\n * Divides two `tf.Tensor`s element-wise, A / B. Supports broadcasting.\n * The
result is rounded with floor function.\n *\n *\n * ```js\n * const a = tf.tensor1d([1, 4, 9, 16]);\n * const b =
tf.tensor1d([1, 2, 3, 4]);\n *\n * a.floorDiv(b).print(); // or tf.div(a, b)\n * ```\n *\n * ```js\n * // Broadcast div a with
b.\n * const a = tf.tensor1d([2, 4, 6, 8]);\n * const b = tf.scalar(2);\n *\n * a.floorDiv(b).print(); // or tf.floorDiv(a,
b)\n * ```\n *\n * @param a The first tensor as the numerator.\n * @param b The second tensor as the denominator.
Must have the same dtype as\n * `a`.\n *\n * @doc {heading: 'Operations', subheading: 'Arithmetic'}\n *\n * \nfunction
floorDiv_<T extends Tensor>(\n  a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n let $a = convertToTensor(a,
'a', 'floorDiv');\n let $b = convertToTensor(b, 'b', 'floorDiv');\n [$a, $b] = makeTypesMatch($a, $b);\n\n const
inputs: FloorDivInputs = {a: $a, b: $b};\n\n return ENGINE.runKernel(FloorDiv, inputs as { } as
NamedTensorMap);\n}\n\n\nexport const floorDiv = op({ floorDiv_ });\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {RealDiv, RealDivInputs} from './kernel_names';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from
'./tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport
{floorDiv} from './floorDiv';\nimport {op} from './operation';\n\n/*\n * Divides two `tf.Tensor`s element-wise, A /
B. Supports broadcasting.\n *\n *\n * ```js\n * const a = tf.tensor1d([1, 4, 9, 16]);\n * const b = tf.tensor1d([1, 2, 3, 4]);\n
*\n * a.div(b).print(); // or tf.div(a, b)\n * ```\n *\n * ```js\n * // Broadcast div a with b.\n * const a = tf.tensor1d([2,
4, 6, 8]);\n * const b = tf.scalar(2);\n *\n * a.div(b).print(); // or tf.div(a, b)\n * ```\n *\n * @param a The first tensor
as the numerator.\n * @param b The second tensor as the denominator. Must have the same dtype as\n * `a`.\n *\n *
@doc {heading: 'Operations', subheading: 'Arithmetic'}\n *\n * \nfunction div_<T extends Tensor>(a:
Tensor|TensorLike, b: Tensor|TensorLike): T {\n let $a = convertToTensor(a, 'a', 'div');\n let $b =
convertToTensor(b, 'b', 'div');\n [$a, $b] = makeTypesMatch($a, $b);\n\n if ($a.dtype === 'int32' && $b.dtype ===
'int32') {\n return floorDiv($a, $b);\n }\n\n const inputs: RealDivInputs = {a: $a, b: $b};\n const attrs = { }; \n\n //
tslint:disable-next-line: no-unnecessary-type-assertion\n return ENGINE.runKernel(RealDiv, inputs as { } as

```

NamedTensorMap, attrs) as T;\n\n\nexport const div = op({div_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Multiply, MultiplyInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/*\n * Multiplies two `tf.Tensor`s element-wise, A * B. Supports broadcasting.\n * We also expose `tf.mulStrict` which has the same signature as this op and\n * asserts that `a` and `b` are the same shape (does not broadcast).\n * \n * const a = tf.tensor1d([1, 2, 3, 4]);\n * const b = tf.tensor1d([2, 3, 4, 5]);\n * a.mul(b).print(); // or tf.mul(a, b)\n * \n * // Broadcast mul a with b.\n * const a = tf.tensor1d([1, 2, 3, 4]);\n * const b = tf.scalar(5);\n * a.mul(b).print(); // or tf.mul(a, b)\n * \n * @param a The first tensor to multiply.\n * @param b The second tensor to multiply. Must have the same dtype as `a`.\n * @doc {heading: 'Operations', subheading: 'Arithmetic'}\n */\nfunction mul_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a = convertToTensor(a, 'a', 'mul');\n  let $b = convertToTensor(b, 'b', 'mul');\n  [$a, $b] = makeTypesMatch($a, $b);\n  const inputs: MultiplyInputs = {a: $a, b: $b};\n  return ENGINE.runKernel(Multiply, inputs as { } as NamedTensorMap);\n}\n\nexport const mul = op({mul_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Abs, AbsInputs, ComplexAbs, ComplexAbsInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/*\n * Computes absolute value element-wise: `abs(x)`\n * \n * const x = tf.tensor1d([-1, 2, -3, 4]);\n * x.abs().print(); // or tf.abs(x)\n * \n * @param x The input `tf.Tensor`.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction abs_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'abs');\n  if ($x.dtype === 'complex64') {\n    const inputs: ComplexAbsInputs = {x: $x};\n    return ENGINE.runKernel(ComplexAbs, inputs as { } as NamedTensorMap);\n  } else {\n    const inputs: AbsInputs = {x: $x};\n    return ENGINE.runKernel(Abs, inputs as { } as NamedTensorMap);\n  }\n}\n\nexport const abs = op({abs_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Acos, AcosInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
```

```

./tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes\n acos of the input `tf.Tensor` element-wise: `acos(x)`\n *\n * `js`\n * const x = tf.tensor1d([0, 1, -1, .7]);\n *\n * x.acos().print(); // or tf.acos(x)\n *\n * @param x The input tensor.\n * @doc {heading: 'Operations',\n subheading: 'Basic math'}\n */\nfunction acos_<T extends Tensor>(x: T|TensorLike): T {\n  const $x =\n  convertToTensor(x, 'x', 'acos');\n  const inputs: AcosInputs = {x: $x};\n  return ENGINE.runKernel(Acos, inputs\n  as { } as NamedTensorMap);\n}\n\nexport const acos = op({acos_});\n", "/**\n * @license\n * Copyright 2018 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Acosh, AcoshInputs} from './kernel_names';\nimport {Tensor}\n from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes\n the inverse hyperbolic cos of the input `tf.Tensor` element-wise:\n *\n * `acosh(x)`\n *\n * `js`\n * const x =\n tf.tensor1d([10, 1, 3, 5.7]);\n *\n * x.acosh().print(); // or tf.acosh(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction acosh_<T extends Tensor>(x:\n T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'acosh');\n  const inputs: AcoshInputs = {x: $x};\n  return\n ENGINE.runKernel(Acosh, inputs as { } as NamedTensorMap);\n}\n\nexport const acosh = op({acosh_});\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {AddN, AddNInputs} from './kernel_names';\nimport {Tensor}\n from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from\n './operation';\n\n/**\n * Adds a list of `tf.Tensor`'s element-wise, each with the same shape and dtype.\n *\n * `js`\n * const a = tf.tensor1d([1, 2]);\n * const b = tf.tensor1d([3, 4]);\n * const c = tf.tensor1d([5, 6]);\n *\n * tf.addN([a,\n b, c]).print();\n *\n * @param tensors A list of tensors with the same shape and dtype.\n * @doc {heading:\n 'Operations', subheading: 'Arithmetic'}\n */\nfunction addN_<T extends Tensor>(tensors: Array<T|TensorLike>): T\n {\n  util.assert(\n    Array.isArray(tensors),\n    () => 'The argument passed to tf.addN() must be a list of\n tensors');\n  util.assert(\n    tensors.length >= 1,\n    () => `Must pass at least one tensor to tf.addN(), but got ` +\n    `${tensors.length}`);\n  const $tensors =\n    tensors.map((t, i) => convertToTensor(t, `tensors${i}`,\n 'addN'));\n  const firstTensor = $tensors[0];\n  $tensors.forEach(t => {\n    if (t.dtype !== firstTensor.dtype) {\n      throw new Error(\n        'All tensors passed to tf.addN() must have the same dtype');\n    }\n  });\n  $tensors.forEach(t => {\n    if (!util.arraysEqual(t.shape, firstTensor.shape)) {\n      throw new Error(\n        'All\n tensors passed to tf.addN() must have the same shape');\n    }\n  });\n  const inputs: AddNInputs = $tensors;\n  return\n ENGINE.runKernel(AddN, inputs as { } as NamedTensorMap);\n}\n\nexport const addN =\n op({addN_});\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or

```

implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {All, AllAttrs, AllInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes the logical and of elements across dimensions of a\n * `tf.Tensor`.\n *\n * Reduces the input along the dimensions given in `axes`. Unless `keepDims`\n * is true, the rank of the `tf.Tensor` is reduced by 1 for each entry in\n * `axes`. If `keepDims` is true, the reduced dimensions are retained with\n * length 1. If `axes` has no entries, all dimensions are reduced, and an\n * `tf.Tensor` with a single element is returned.\n *\n * `const x = tf.tensor1d([1, 1, 1], 'bool');\n * x.all().print(); // or tf.all(x)\n *\n * `const x = tf.tensor2d([1, 1, 0, 0], [2, 2], 'bool');\n * const axis = 1;\n * x.all(axis).print(); // or tf.all(x, axis)\n *\n * @param x The input tensor. Must be of dtype bool.\n * @param axis The dimension(s) to reduce. By default it reduces\n * all dimensions.\n * @param keepDims If true, retains reduced dimensions with size 1.\n *\n * @doc {heading: 'Operations', subheading: 'Reduction'}\n */\nfunction all_<T extends Tensor>(\n  x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {\n  const $x = convertToTensor(x, 'x', 'all', 'bool');\n  const inputs: AllInputs = {x: $x};\n  const attrs: AllAttrs = {axis, keepDims};\n  return ENGINE.runKernel(\n    All, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const all = op({all_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Any, AnyAttrs, AnyInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes the logical or of elements across dimensions of a\n * `tf.Tensor`.\n *\n * Reduces the input along the dimensions given in `axes`. Unless `keepDims`\n * is true, the rank of the `tf.Tensor` is reduced by 1 for each entry in\n * `axes`. If `keepDims` is true, the reduced dimensions are retained with\n * length 1. If `axes` has no entries, all dimensions are reduced, and an\n * `tf.Tensor` with a single element is returned.\n *\n * `const x = tf.tensor1d([1, 1, 1], 'bool');\n * x.any().print(); // or tf.any(x)\n *\n * `const x = tf.tensor2d([1, 1, 0, 0], [2, 2], 'bool');\n * const axis = 1;\n * x.any(axis).print(); // or tf.any(x, axis)\n *\n * @param x The input tensor. Must be of dtype bool.\n * @param axis The dimension(s) to reduce. By default it reduces\n * all dimensions.\n * @param keepDims If true, retains reduced dimensions with size 1.\n *\n * @doc {heading: 'Operations', subheading: 'Reduction'}\n */\nfunction any_<T extends Tensor>(\n  x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {\n  const $x = convertToTensor(x, 'x', 'any', 'bool');\n  const inputs: AnyInputs = {x: $x};\n  const attrs: AnyAttrs = {axis, keepDims};\n  return ENGINE.runKernel(\n    Any, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\n// tslint:disable-next-line:variable-name\nexport const any = op({any_});\n\n"/**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {ArgMax, ArgMaxAttrs, ArgMaxInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
 {TensorLike} from './types';\n\nimport {op} from './operation';\n\n**\n * Returns the indices of the maximum
 values along an `axis`.\n * The result has the same shape as `input` with the dimension along `axis`\n *
 removed.\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const x = tf.tensor1d([1, 2, 3]);\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const x = tf.tensor2d([1, 2, 4, 3], [2, 2]);\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const axis = 1;\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 x.argmax(axis).print(); // or
 tf.argmax(x, axis)\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 @param x The input tensor.\n * @param axis The dimension to reduce. Defaults to 0 (outer-most dimension).\n
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 @doc {heading: 'Operations', subheading: 'Reduction'}\n *\n *\n\nfunction argMax_<T extends Tensor>(x: Tensor|TensorLike, axis = 0): T {\n
 const $x = convertToTensor(x, 'x', 'argMax');\n\n const inputs: ArgMaxInputs = {x: $x};\n const attrs: ArgMaxAttrs = {axis};\n\n
 return ENGINE.runKernel(\n ArgMax, inputs as { } as NamedTensorMap, attrs as { } as NamedAttrMap);\n\n}\n\nexport const argMax =
 op({argMax_});\n", "/**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n * Licensed under the
 Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
 License.\n * You may obtain a copy of the License at\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 http://www.apache.org/licenses/LICENSE-2.0\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
 on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
 License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {ArgMin, ArgMinAttrs, ArgMinInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
 {TensorLike} from './types';\n\nimport {op} from './operation';\n\n**\n * Returns the indices of the minimum
 values along an `axis`.\n * The result has the same shape as `input` with the dimension along `axis`\n *
 removed.\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const x = tf.tensor1d([1, 2, 3]);\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const x = tf.tensor2d([1, 2, 4, 3], [2, 2]);\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const axis = 1;\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 x.argMin(axis).print(); // or
 tf.argMin(x, axis)\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 @param x The input tensor.\n * @param axis The dimension to reduce. Defaults to 0 (outer-most dimension).\n
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 @doc {heading: 'Operations', subheading: 'Reduction'}\n *\n *\n\nfunction argMin_<T extends Tensor>(x: Tensor|TensorLike, axis = 0): T {\n
 const $x = convertToTensor(x, 'x', 'argMin');\n\n const inputs: ArgMinInputs = {x: $x};\n const attrs: ArgMinAttrs = {axis};\n\n
 return ENGINE.runKernel(\n ArgMin, inputs as { } as NamedTensorMap, attrs as { } as NamedAttrMap);\n\n}\n\nexport const argMin =
 op({argMin_});\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
 Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
 License.\n * You may obtain a copy of the License at\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 http://www.apache.org/licenses/LICENSE-2.0\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
 on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
 License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {Asin, AsinInputs} from './kernel_names';\nimport {Tensor}
 from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n**\n * Computes
 asin of the input `tf.Tensor` element-wise: `asin(x)`\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 const x = tf.tensor1d([0, 1, -1, .7]);\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 x.asin().print(); // or
 tf.asin(x)\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 @param x The input tensor.\n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n * \n *
 @doc {heading: 'Operations', subheading: 'Basic math'}\n *\n *\n\nfunction asin_<T extends Tensor>(x: T|TensorLike): T {\n
 const $x = convertToTensor(x, 'x', 'asin');\n\n const inputs: AsinInputs = {x: $x};\n\n return ENGINE.runKernel(Asin, inputs as { } as
 NamedTensorMap);\n\n}\n\nexport const asin = op({asin_});\n", "/**\n * @license\n * Copyright 2018 Google LLC. All

```

Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Asinh, AsinhInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes inverse hyperbolic sin of the input `tf.Tensor` element-wise:\n * `asinh(x)`\n *\n * `js`\n * const x = tf.tensor1d([0, 1, -1, .7]);\n *\n * x.asinh().print(); // or tf.asinh(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction asinh_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'asinh');\n\n  const inputs: AsinhInputs = {x: $x};\n\n  return ENGINE.runKernel(Asinh, inputs as { } as NamedTensorMap);\n}\n\nexport const asinh = op({ asinh_ });\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Atan, AtanInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes atan of the input `tf.Tensor` element-wise: `atan(x)`\n *\n * `js`\n * const x = tf.tensor1d([0, 1, -1, .7]);\n *\n * x.atan().print(); // or tf.atan(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction atan_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'atan');\n\n  const inputs: AtanInputs = {x: $x};\n\n  return ENGINE.runKernel(Atan, inputs as { } as NamedTensorMap);\n}\n\nexport const atan = op({ atan_ });\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Atan2, Atan2Inputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes arctangent of `tf.Tensor`s a / b element-wise: `atan2(a, b)`.\n * Supports broadcasting.\n *\n * `js`\n * const a = tf.tensor1d([1.0, 1.0, -1.0, .7]);\n * const b = tf.tensor1d([2.0, 13.0, 3.5, .21]);\n *\n * tf.atan2(a, b).print()\n *\n * @param a The first tensor.\n * @param b The second tensor.\n * Must have the same dtype as `a`.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction atan2_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a = convertToTensor(a, 'a', 'atan2');\n  let $b = convertToTensor(b, 'b', 'atan2');\n  [$a, $b] = makeTypesMatch($a, $b);\n\n  const inputs: Atan2Inputs = {a: $a, b: $b};\n\n  return ENGINE.runKernel(Atan2, inputs as { } as NamedTensorMap);\n}\n\nexport const atan2 = op({ atan2_ });\n"/**\n * @license\n * Copyright 2018 Google
```

LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Atanh, AtanhInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes inverse hyperbolic tan of the input `tf.Tensor` element-wise:\n * `atanh(x)`\n * `js`\n * const x = tf.tensor1d([0, .1, -.1, .7]);\n * x.atanh().print(); // or tf.atanh(x)\n * @param x The input tensor.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction atanh<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'atanh');\n  const inputs: AtanhInputs = {x: $x};\n  return ENGINE.runKernel(Atanh, inputs as {} as NamedTensorMap);\n}\n\nexport const atanh = op({atanh_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nntype PadType = 'SAME'|'VALID'|'NUMBER'|'EXPLICIT';\n\n// For NHWC should be in the following form:\n// [[0, 0], [pad_top,pad_bottom], [pad_left, pad_right], [0, 0]]\n// For NCHW should be in the following form:\n// [[0, 0], [0, 0], [pad_top,pad_bottom], [pad_left, pad_right]]\n// Reference:\nhttps://www.tensorflow.org/api_docs/python/tf/nn/conv2d\n\nexport type ExplicitPadding =\n  [[number, number], [number, number], [number, number], [number, number]];\n\nexport type PadInfo = {\n  top: number,\n  left: number,\n  right: number,\n  bottom: number,\n  type: PadType\n};\n\nexport type PadInfo3D = {\n  top: number,\n  left: number,\n  right: number,\n  bottom: number,\n  front: number,\n  back: number,\n  type: PadType\n};\n\n/**\n * Information about the forward pass of a convolution/pooling operation.\n * It includes input and output shape, strides, filter size and padding\n * information.\n */\nexport type Conv2DInfo = {\n  batchSize: number,\n  inHeight: number,\n  inWidth: number,\n  inChannels: number,\n  outHeight: number,\n  outWidth: number,\n  outChannels: number,\n  dataFormat: 'channelsFirst'|'channelsLast',\n  strideHeight: number,\n  strideWidth: number,\n  dilationHeight: number,\n  dilationWidth: number,\n  filterHeight: number,\n  filterWidth: number,\n  effectiveFilterHeight: number,\n  effectiveFilterWidth: number,\n  padInfo: PadInfo,\n  inShape: [number, number, number, number],\n  outShape: [number, number, number, number],\n  filterShape: [number, number, number, number]\n};\n\n/**\n * @param inputShape Input tensor shape is of the following dimensions:\n * `[batch, height, width, inChannels]`.\n * @param filterShape The filter shape is of the following dimensions:\n * `[filterHeight, filterWidth, depth]`.\n * @param strides The strides of the sliding window for each dimension of the\n * input tensor: `[strideHeight, strideWidth]`.\n * If `strides` is a single number,\n * then `strideHeight == strideWidth`.\n * @param pad The type of padding algorithm.\n * - `same` and stride 1: output will be of same size as input,\n * regardless of filter size.\n * - `valid`: output will be smaller than input if filter is larger\n * than 1*1x1.\n * - For more info, see this guide:\n * [https://www.tensorflow.org/api_guides/python/nn#Convolution]\n */\n\n/**\n * @param dataFormat The data format of the input and output data.\n * Defaults to 'NHWC'.\n * @param dilations The dilation rates: `[dilationHeight, dilationWidth]`.\n * Defaults to `[1, 1]`. If `dilations` is a single number, then\n * `dilationHeight == dilationWidth`.\n */\nexport function computeDilation2DInfo(\n  inputShape: [number, number, number,
```

```

number],\n  filterShape: [number, number, number], strides: number|[number, number],\n  pad:
'same'|'valid'|number, dataFormat: 'NHWC' = 'NHWC',\n  dilations: number|[number, number]) {\n //
`computerConv2DInfo` require filterShape to be in the dimension of:\n // `[filterHeight, filterWidth, depth,
outDepth]`, dilation2d doesn't have\n // outDepth, it should have the same depth as the input.\n // Input shape:
[batch, height, width, inChannels]\n  const inputChannels = inputShape[3];\n  const $filterShape =\n  [...filterShape, inputChannels] as [number, number, number, number];\n  const $dataFormat =
convertConv2DDataFormat(dataFormat);\n\n  return computeConv2DInfo(\n    inputShape, $filterShape, strides,
dilations, pad,\n    null /* roundingMode */, null /* depthWise */, $dataFormat);\n\n}\n\nexport function
computePool2DInfo(\n  inShape: [number, number, number, number],\n  filterSize: [number, number]|number,\n  strides: number|[number, number],\n  dilations: number|[number, number], pad: 'same'|'valid'|number,\n  roundingMode?: 'floor'|'round'|'ceil',\n  dataFormat: 'channelsFirst'|'channelsLast' = 'channelsLast'): Conv2DInfo {\n
const [filterHeight, filterWidth] = parseTupleParam(filterSize);\n\n  let filterShape: [number, number, number,
number];\n  if (dataFormat === 'channelsLast') {\n    filterShape = [filterHeight, filterWidth, inShape[3],
inShape[3]];\n  } else if (dataFormat === 'channelsFirst') {\n    filterShape = [filterHeight, filterWidth, inShape[1],
inShape[1]];\n  } else {\n    throw new Error(`Unknown dataFormat ${dataFormat}`);\n  }\n\n  return
computeConv2DInfo(\n    inShape, filterShape, strides, dilations, pad, roundingMode, false,\n    dataFormat);\n}\n\n/**\n * Computes the information for a forward pass of a pooling3D operation.\n */\nexport
function computePool3DInfo(\n  inShape: [number, number, number, number, number],\n  filterSize:
number|[number, number, number],\n  strides: number|[number, number, number],\n  dilations: number|[number,
number, number], pad: 'same'|'valid'|number,\n  roundingMode?: 'floor'|'round'|'ceil',\n  dataFormat:
'NDHWC'|'NCDHW' = 'NDHWC'): Conv3DInfo {\n  const [filterDepth, filterHeight, filterWidth] =
parse3TupleParam(filterSize);\n\n  let filterShape: [number, number, number, number, number];\n  let $dataFormat:
'channelsFirst'|'channelsLast';\n  if (dataFormat === 'NDHWC') {\n    $dataFormat = 'channelsLast';\n    filterShape
=\n    [filterDepth, filterHeight, filterWidth, inShape[4], inShape[4]];\n  } else if (dataFormat === 'NCDHW') {\n
$dataFormat = 'channelsFirst';\n    filterShape =\n    [filterDepth, filterHeight, filterWidth, inShape[1],
inShape[1]];\n  } else {\n    throw new Error(`Unknown dataFormat ${dataFormat}`);\n  }\n\n  return
computeConv3DInfo(\n    inShape, filterShape, strides, dilations, pad, false, $dataFormat,\n    roundingMode);\n}\n\n/**\n * Computes the information for a forward pass of a convolution/pooling\n *
operation.\n */\nexport function computeConv2DInfo(\n  inShape: [number, number, number, number],\n  filterShape: [number, number, number, number],\n  strides: number|[number, number], dilations: number|[number,
number],\n  pad: 'same'|'valid'|number|ExplicitPadding,\n  roundingMode?: 'floor'|'round'|'ceil', depthwise =
false,\n  dataFormat: 'channelsFirst'|'channelsLast' = 'channelsLast'): Conv2DInfo {\n  let [batchSize, inHeight,
inWidth, inChannels] = [-1, -1, -1, -1];\n  if (dataFormat === 'channelsLast') {\n    [batchSize, inHeight, inWidth,
inChannels] = inShape;\n  } else if (dataFormat === 'channelsFirst') {\n    [batchSize, inChannels, inHeight,
inWidth] = inShape;\n  } else {\n    throw new Error(`Unknown dataFormat ${dataFormat}`);\n  }\n\n  const
[filterHeight, filterWidth, , filterChannels] = filterShape;\n  const [strideHeight, strideWidth] =
parseTupleParam(strides);\n  const [dilationHeight, dilationWidth] = parseTupleParam(dilations);\n\n  const
effectiveFilterHeight =\n    getEffectiveFilterSize(filterHeight, dilationHeight);\n  const effectiveFilterWidth =\n    getEffectiveFilterSize(filterWidth, dilationWidth);\n  const {padInfo, outHeight, outWidth} = getPadAndOutInfo(\n
    pad, inHeight, inWidth, strideHeight, strideWidth, effectiveFilterHeight,\n    effectiveFilterWidth,
roundingMode, dataFormat);\n\n  const outChannels = depthwise ? filterChannels * inChannels : filterChannels;\n\n
let outShape: [number, number, number, number];\n  if (dataFormat === 'channelsFirst') {\n    outShape =
[batchSize, outChannels, outHeight, outWidth];\n  } else if (dataFormat === 'channelsLast') {\n    outShape =
[batchSize, outHeight, outWidth, outChannels];\n  }\n\n  return {\n    batchSize,\n    dataFormat,\n    inHeight,\n
inWidth,\n    inChannels,\n    outHeight,\n    outWidth,\n    outChannels,\n    padInfo,\n    strideHeight,\n
strideWidth,\n    filterHeight,\n    filterWidth,\n    effectiveFilterHeight,\n    effectiveFilterWidth,\n
dilationHeight,\n    dilationWidth,\n    inShape,\n    outShape,\n    filterShape\n  };}\n\n/**\n * Information about
the forward pass of a 3D convolution/pooling operation.\n * It includes input and output shape, strides, filter size

```



```

and padding\n * information.\n */\nexport type Conv3DInfo = {\n  batchSize: number,\n  inDepth: number,\n  inHeight: number,\n  inWidth: number,\n  inChannels: number,\n  outDepth: number,\n  outHeight: number,\n  outWidth: number,\n  outChannels: number,\n  dataFormat: 'channelsFirst'|'channelsLast',\n  strideDepth: number,\n  strideHeight: number,\n  strideWidth: number,\n  dilationDepth: number,\n  dilationHeight: number,\n  dilationWidth: number,\n  filterDepth: number,\n  filterHeight: number,\n  filterWidth: number,\n  effectiveFilterDepth: number,\n  effectiveFilterHeight: number,\n  effectiveFilterWidth: number,\n  padInfo: PadInfo3D,\n  inShape: [number, number, number, number, number],\n  outShape: [number, number, number, number, number],\n  filterShape: [number, number, number, number, number]};\n\n/**\n * Computes the information for a forward pass of a 3D convolution/pooling\n * operation.\n */\nexport function computeConv3DInfo(\n  inShape: [number, number, number, number, number],\n  filterShape: [number, number, number, number, number],\n  strides: number|[number, number, number],\n  dilations: number|[number, number, number],\n  pad: 'same'|'valid'|number,\n  depthwise = false,\n  dataFormat: 'channelsFirst'|'channelsLast' = 'channelsLast',\n  roundingMode?: 'floor'|'round'|'ceil'): Conv3DInfo {\n  let [batchSize, inDepth, inHeight, inWidth, inChannels] =\n    [-1, -1, -1, -1, -1];\n  if (dataFormat === 'channelsLast') {\n    [batchSize, inDepth, inHeight, inWidth, inChannels] = inShape;\n  } else if (dataFormat === 'channelsFirst') {\n    [batchSize, inChannels, inDepth, inHeight, inWidth] = inShape;\n  } else {\n    throw new Error(`Unknown dataFormat ${dataFormat}`);\n  }\n  const [filterDepth, filterHeight, filterWidth, , filterChannels] =\n    filterShape;\n  const [strideDepth, strideHeight, strideWidth] = parse3TupleParam(strides);\n  const [dilationDepth, dilationHeight, dilationWidth] =\n    parse3TupleParam(dilations);\n  const effectiveFilterDepth =\n    getEffectiveFilterSize(filterDepth, dilationDepth);\n  const effectiveFilterHeight =\n    getEffectiveFilterSize(filterHeight, dilationHeight);\n  const effectiveFilterWidth =\n    getEffectiveFilterSize(filterWidth, dilationWidth);\n  const {padInfo, outDepth, outHeight, outWidth} =\n    get3DPadAndOutInfo(\n      pad, inDepth, inHeight, inWidth, strideDepth, strideHeight, strideWidth,\n      effectiveFilterDepth, effectiveFilterHeight, effectiveFilterWidth,\n      roundingMode);\n  const outChannels =\n    depthwise ? filterChannels * inChannels : filterChannels;\n  let outShape: [number, number, number, number, number];\n  if (dataFormat === 'channelsFirst') {\n    outShape = [batchSize, outChannels, outDepth, outHeight, outWidth];\n  } else if (dataFormat === 'channelsLast') {\n    outShape = [batchSize, outDepth, outHeight, outWidth, outChannels];\n  }\n  return {\n    batchSize,\n    dataFormat,\n    inDepth,\n    inHeight,\n    inWidth,\n    inChannels,\n    outDepth,\n    outHeight,\n    outWidth,\n    outChannels,\n    padInfo,\n    strideDepth,\n    strideHeight,\n    strideWidth,\n    filterDepth,\n    filterHeight,\n    filterWidth,\n    effectiveFilterDepth,\n    effectiveFilterHeight,\n    effectiveFilterWidth,\n    dilationDepth,\n    dilationHeight,\n    dilationWidth,\n    inShape,\n    outShape,\n    filterShape\n  };\n}\n\nfunction computeOutputShape2D(\n  inShape: [number, number],\n  fieldSize: number,\n  stride: number,\n  zeroPad?: number,\n  roundingMode?: 'floor'|'round'|'ceil'): [number, number] {\n  if (zeroPad == null) {\n    zeroPad = computeDefaultPad(inShape, fieldSize, stride);\n  }\n  const inputRows = inShape[0];\n  const inputCols = inShape[1];\n  const outputRows =\n    round((inputRows - fieldSize + 2 * zeroPad) / stride + 1, roundingMode);\n  const outputCols =\n    round((inputCols - fieldSize + 2 * zeroPad) / stride + 1, roundingMode);\n  return [outputRows, outputCols];\n}\n\nfunction computeOutputShape4D(\n  inShape: [number, number, number, number],\n  fieldSize: number,\n  outChannels: number,\n  stride: number,\n  zeroPad?: number,\n  roundingMode?: 'floor'|'round'|'ceil'): [number, number, number, number] {\n  if (zeroPad == null) {\n    zeroPad = computeDefaultPad(inShape, fieldSize, stride);\n  }\n  const inputDepth = inShape[0];\n  const inputRows = inShape[1];\n  const inputCols = inShape[2];\n  const outputDepths =\n    round((inputDepth - fieldSize + 2 * zeroPad) / stride + 1, roundingMode);\n  const outputRows =\n    round((inputRows - fieldSize + 2 * zeroPad) / stride + 1, roundingMode);\n  const outputCols =\n    round((inputCols - fieldSize + 2 * zeroPad) / stride + 1, roundingMode);\n  return [outputDepths, outputRows, outputCols, outChannels];\n}\n\nexport function computeDefaultPad(\n  inputShape: [number, number]|[number, number, number, number],\n  fieldSize: number,\n  stride: number,\n  dilation = 1): number {\n  const effectiveFieldSize =\n    getEffectiveFilterSize(fieldSize, dilation);\n  return Math.floor(\n    (inputShape[0] * (stride - 1) - stride + effectiveFieldSize) / 2);\n}\n\nfunction parseTupleParam(param: number|number[]): [number, number, number] {\n

```

```

if (typeof param === 'number') {\n  return [param, param, param];\n } \n if (param.length === 2) {\n  return
[param[0], param[1], 1];\n } \n return param as [number, number, number];\n }\n\nfunction
parse3TupleParam(param: number|[number, number, number]):\n [number, number, number] {\n  return typeof
param === 'number' ? [param, param, param] : param;\n }\n\n/* See
https://www.tensorflow.org/api\_docs/python/tf/nn/atrous\_conv2d\n * Atrous convolution is equivalent to standard
convolution with upsampled\n * filters with effective_filter_height =\n * filter_height + (filter_height - 1) * (dilation
- 1)\n * and effective_filter_width =\n * filter_width + (filter_width - 1) * (dilation - 1),\n * produced by inserting
dilation - 1 zeros along consecutive elements across\n * the filters' spatial dimensions.\n * When there is a dilation,
this converts a filter dimension to the\n * effective filter dimension, so it can be used in a standard convolution.\n
*\nfunction getEffectiveFilterSize(filterSize: number, dilation: number) {\n  if (dilation <= 1) {\n  return
filterSize;\n } \n return filterSize + (filterSize - 1) * (dilation - 1);\n }\n\nfunction getPadAndOutInfo(\n  pad:
'same'|'valid'|number|ExplicitPadding, inHeight: number,\n  inWidth: number, strideHeight: number, strideWidth:
number,\n  filterHeight: number, filterWidth: number,\n  roundingMode: 'floor'|'round'|'ceil',\n  dataFormat:
'channelsFirst'|\n  'channelsLast'): {padInfo: PadInfo, outHeight: number, outWidth: number} {\n  let padInfo:
PadInfo;\n  let outHeight: number;\n  let outWidth: number;\n\n  if (typeof pad === 'number') {\n  const padType =
(pad === 0) ? 'VALID' : 'NUMBER';\n  padInfo = {top: pad, bottom: pad, left: pad, right: pad, type: padType};\n
const outShape = computeOutputShape2D(\n    [inHeight, inWidth], filterHeight, strideHeight, pad,\n
roundingMode);\n  outHeight = outShape[0];\n  outWidth = outShape[1];\n } else if (pad === 'same') {\n
outHeight = Math.ceil(inHeight / strideHeight);\n  outWidth = Math.ceil(inWidth / strideWidth);\n  const
padAlongHeight =\n    Math.max(0, (outHeight - 1) * strideHeight + filterHeight - inHeight);\n  const
padAlongWidth =\n    Math.max(0, (outWidth - 1) * strideWidth + filterWidth - inWidth);\n  const top =
Math.floor(padAlongHeight / 2);\n  const bottom = padAlongHeight - top;\n  const left =
Math.floor(padAlongWidth / 2);\n  const right = padAlongWidth - left;\n  padInfo = {top, bottom, left, right, type:
'SAME'};\n } else if (pad === 'valid') {\n  padInfo = {top: 0, bottom: 0, left: 0, right: 0, type: 'VALID'};\n
outHeight = Math.ceil((inHeight - filterHeight + 1) / strideHeight);\n  outWidth = Math.ceil((inWidth - filterWidth
+ 1) / strideWidth);\n } else if (typeof pad === 'object') {\n  const top = dataFormat === 'channelsLast' ? pad[1][0]
: pad[2][0];\n  const bottom = dataFormat === 'channelsLast' ? pad[1][1] : pad[2][1];\n  const left = dataFormat
=== 'channelsLast' ? pad[2][0] : pad[3][0];\n  const right = dataFormat === 'channelsLast' ? pad[2][1] :
pad[3][1];\n  const padType = (top === 0 && bottom === 0 && left === 0 && right === 0) ?\n    'VALID' :\n    'EXPLICIT';\n  padInfo = {top, bottom, left, right, type: padType};\n  outHeight = round(\n    (inHeight -
filterHeight + top + bottom) / strideHeight + 1,\n    roundingMode);\n  outWidth = round(\n    (inWidth -
filterWidth + left + right) / strideWidth + 1, roundingMode);\n } else {\n  throw Error(`Unknown padding
parameter: ${pad}`);\n } \n return {padInfo, outHeight, outWidth};\n }\n\nfunction get3DPadAndOutInfo(\n  pad:
'same'|'valid'|number, inDepth: number, inHeight: number,\n  inWidth: number, strideDepth: number, strideHeight:
number,\n  strideWidth: number, filterDepth: number, filterHeight: number,\n  filterWidth: number,\n
roundingMode?: 'floor'|'round'|'ceil'): {\n  padInfo: PadInfo3D,\n  outDepth: number,\n  outHeight: number,\n
outWidth: number\n } {\n  let padInfo: PadInfo3D;\n  let outDepth: number;\n  let outHeight: number;\n  let
outWidth: number;\n\n  if (typeof pad === 'number') {\n  const padType = (pad === 0) ? 'VALID' : 'NUMBER';\n
padInfo = {\n    top: pad,\n    bottom: pad,\n    left: pad,\n    right: pad,\n    front: pad,\n    back: pad,\n
type: padType\n  };\n  const outShape = computeOutputShape4D(\n    [inDepth, inHeight, inWidth, 1],\n
filterDepth, 1, strideDepth, pad,\n    roundingMode);\n  outDepth = outShape[0];\n  outHeight = outShape[1];\n
outWidth = outShape[2];\n } else if (pad === 'same') {\n  outDepth = Math.ceil(inDepth / strideDepth);\n
outHeight = Math.ceil(inHeight / strideHeight);\n  outWidth = Math.ceil(inWidth / strideWidth);\n  const
padAlongDepth = (outDepth - 1) * strideDepth + filterDepth - inDepth;\n  const padAlongHeight =\n
(outHeight - 1) * strideHeight + filterHeight - inHeight;\n  const padAlongWidth = (outWidth - 1) * strideWidth +
filterWidth - inWidth;\n  const front = Math.floor(padAlongDepth / 2);\n  const back = padAlongDepth - front;\n
const top = Math.floor(padAlongHeight / 2);\n  const bottom = padAlongHeight - top;\n  const left =
Math.floor(padAlongWidth / 2);\n  const right = padAlongWidth - left;\n\n  padInfo = {top, bottom, left, right,

```

```

front, back, type: 'SAME');\n } else if (pad === 'valid') {\n  padInfo = {\n    top: 0,\n    bottom: 0,\n    left: 0,\n    right: 0,\n    front: 0,\n    back: 0,\n    type: 'VALID'\n  };\n  outDepth = Math.ceil((inDepth - filterDepth + 1) / strideDepth);\n  outHeight = Math.ceil((inHeight - filterHeight + 1) / strideHeight);\n  outWidth = Math.ceil((inWidth - filterWidth + 1) / strideWidth);\n } else {\n  throw Error(`Unknown padding parameter: ${pad}`);\n }\n return {padInfo, outDepth, outHeight, outWidth};\n}\n\n/**\n * Rounds a value depending on the rounding mode\n * @param value\n * @param roundingMode A string from: 'ceil', 'round', 'floor'. If none is\n * provided, it will default to truncate.\n */\nfunction round(value: number, roundingMode?: 'floor'|'round'|'ceil') {\n  if (!roundingMode) {\n    return Math.trunc(value);\n  }\n  switch (roundingMode) {\n    case 'round':\n      // used for Caffe Conv\n      return Math.round(value);\n    case 'ceil':\n      // used for Caffe Pool\n      return Math.ceil(value);\n    case 'floor':\n      return Math.floor(value);\n    default:\n      throw new Error(`Unknown roundingMode ${roundingMode}`);\n  }\n}\n\nexport function tupleValuesAreOne(param: number|number[]): boolean {\n  const [dimA, dimB, dimC] = parseTupleParam(param);\n  return dimA === 1 && dimB === 1 && dimC === 1;\n}\n\nexport function eitherStridesOrDilationsAreOne(\n  strides: number|number[], dilations: number|number[]): boolean {\n  return tupleValuesAreOne(strides) || tupleValuesAreOne(dilations);\n}\n\n/**\n * Convert Conv2D dataFormat from 'NHWC'|'NCHW' to\n * 'channelsLast'|'channelsFirst'\n * @param dataFormat in 'NHWC'|'NCHW' mode\n * @return dataFormat in 'channelsLast'|'channelsFirst' mode\n * @throws unknown dataFormat\n */\nexport function convertConv2DDataFormat(dataFormat: 'NHWC'|'NCHW'):\n  'channelsLast'|'channelsFirst' {\n  if (dataFormat === 'NHWC') {\n    return 'channelsLast';\n  } else if (dataFormat === 'NCHW') {\n    return 'channelsFirst';\n  } else {\n    throw new Error(`Unknown dataFormat ${dataFormat}`);\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\n*/\n\nimport {ENGINE} from './engine';\nimport {Reshape, ReshapeAttrs, ReshapeInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {Rank, ShapeMap, TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Reshapes a `tf.Tensor` to a given shape.\n * Given an input tensor, returns a new tensor with the same values as the\n * input tensor with shape `shape`.\n * If one component of shape is the special value -1, the size of that\n * dimension is computed so that the total size remains constant. In\n * particular, a shape of [-1] flattens into 1-D. At most one component\n * of shape can be -1.\n * If shape is 1-D or higher, then the operation returns a tensor with shape\n * shape filled with the values of tensor. In this case, the number of\n * elements implied by shape must be the same as the number of elements in\n * tensor.\n */\nconst x = tf.tensor1d([1, 2, 3, 4]);\n x.reshape([2, 2]).print();\n\n/**\n * @param x The input tensor to be reshaped.\n * @param shape An array of integers defining the output tensor shape.\n * @doc {heading: 'Tensors', subheading: 'Transformations'}\n */\nfunction reshape<R> extends Rank>(\n  x: Tensor|TensorLike, shape: ShapeMap[R]): Tensor<R> {\n  const $x = convertToTensor(x, 'x', 'reshape', 'string_or_numeric');\n  const inputs: ReshapeInputs = {x: $x};\n  const attrs: ReshapeAttrs = {shape};\n  return ENGINE.runKernel(\n    Reshape, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const reshape = op({reshape_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

```

governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {AvgPool, AvgPoolAttrs, AvgPoolInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from\n './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {cast} from\n './cast';\nimport * as conv_util from './conv_util';\nimport {op} from './operation';\nimport {reshape} from\n './reshape';\n\n/**\n * Computes the 2D average pooling of an image.\n * @param x The input tensor, of rank 4\n or rank 3 of shape\n *   [batch, height, width, inChannels]. If rank 3, batch of 1 is assumed.\n * @param filterSize The filter size: [filterHeight, filterWidth]. If\n *   filterSize is a single number, then filterHeight ==\n filterWidth.\n * @param strides The strides of the pooling: [strideHeight, strideWidth]. If\n *   strides is a\n single number, then strideHeight == strideWidth.\n * @param pad The type of padding algorithm:\n *   - 'same' and stride 1: output will be of same size as input,\n *   regardless of filter size.\n *   - 'valid': output will be\n smaller than input if filter is larger\n *   than 1x1.\n *   - For more info, see this guide:\n *   [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *   https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dimRoundingMode A string from:\n 'ceil', 'round', 'floor'. If none is\n *   provided, it will default to truncate.\n */\nfunction avgPool<T> extends\n Tensor3D|Tensor4D>(\n  x: T|TensorLike, filterSize: [number, number]|number,\n  strides: [number,\n number]|number, pad: 'valid'|'same'|number,\n  dimRoundingMode?: 'floor'|'round'|'ceil'): T {\n  const $x =\n convertToTensor(x, 'x', 'avgPool', 'float32');\n  const dilations = 1;\n  util.assert(\n conv_util.eitherStridesOrDilationsAreOne(strides, dilations),\n    () => 'Error in avgPool: Either strides or dilations\n must be 1. ' +\n    `Got strides ${strides} and dilations ${dilations}`);\n  let x4D = $x as Tensor4D;\n  let\n reshapedTo4D = false;\n  if ($x.rank === 3) {\n    reshapedTo4D = true;\n    x4D = reshape($x, [1, $x.shape[0],\n $x.shape[1], $x.shape[2]]);\n  }\n  util.assert(\n    x4D.rank === 4,\n    () => `Error in avgPool: x must be rank 4\n but got rank ${x4D.rank}.`);\n  if (dimRoundingMode != null) {\n    util.assert(\n      util.isInt(pad as number),\n      () => `Error in avgPool: pad must be an integer when using, ` +\n      `dimRoundingMode\n ${dimRoundingMode} but got pad ${pad}.`);\n  }\n  const inputs: AvgPoolInputs = {x: x4D};\n  const attrs:\n AvgPoolAttrs = {filterSize, strides, pad, dimRoundingMode};\n  // tslint:disable-next-line: no-unnecessary-type-\n assertion\n  let res = ENGINE.runKernel(\n    AvgPool, inputs as {} as NamedTensorMap,\n    attrs\n as {} as NamedAttrMap) as T;\n  res = cast(res, $x.dtype);\n  if (reshapedTo4D) {\n    return reshape(res,\n [res.shape[1], res.shape[2], res.shape[3]]) as T;\n  }\n  return res;\n}\n\nexport const avgPool =\n op({avgPool_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under\n the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n */\n\n=====\n\n
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {AvgPool3D, AvgPool3DAttrs, AvgPool3DInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor4D, Tensor5D} from\n './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {cast} from\n './cast';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes the 3D average\n pooling.\n * @param x const x = tf.tensor5d([1, 2, 3, 4, 5, 6, 7, 8], [1, 2, 2, 2, 1]);\n * const result = tf.avgPool3d(x,\n 2, 1, 'valid');\n * result.print();\n * @param x The input tensor, of rank 5 or rank 4 of shape\n *   [batch,\n depth, height, width, inChannels].\n * @param filterSize The filter size:\n *   [filterDepth, filterHeight,\n filterWidth].\n *   If filterSize is a single number,\n *   then filterDepth == filterHeight == filterWidth.\n */\n
```

@param strides The strides of the pooling:\n * ` [strideDepth, strideHeight, strideWidth]`.\n * If `strides` is a single number,\n * then `strideDepth == strideHeight == strideWidth`.\n * @param pad The type of padding algorithm.\n * - `same` and stride 1: output will be of same size as input,\n * regardless of filter size.\n * - `valid`: output will be smaller than input if filter is larger\n * than 1*1x1.\n * - For more info, see this guide:\n * https://www.tensorflow.org/api_guides/python/nn#Convolution\n * [https://www.tensorflow.org/api_guides/python/nn#Convolution]\n * @param dimRoundingMode A string from: 'ceil', 'round', 'floor'. If none is\n * provided, it will default to truncate.\n * @param dataType An optional string from: \"NDHWC\", \"NCDHW\". Defaults to\n * \"NDHWC\". Specify the data format of the input and output data. With the\n * default format \"NDHWC\", the data is stored in the order of: [batch,\n * depth, height, width, channels]. Only \"NDHWC\" is currently supported.\n * @doc {heading: 'Operations', subheading: 'Convolution'}\n * @function avgPool3d<T extends Tensor4D|Tensor5D>(x: T|TensorLike, filterSize: [number, number, number]|number, strides: [number, number, number]|number, pad: 'valid'|'same'|number, dimRoundingMode?: 'floor'|'round'|'ceil', dataType: 'NDHWC'|'NCDHW' = 'NDHWC'): T {\n * const \$x = convertToTensor(x, 'x', 'avgPool3d', 'float32');\n * let x5D = \$x as Tensor5D;\n * let reshapedTo5D = false;\n * if (\$x.rank === 4) {\n * reshapedTo5D = true;\n * x5D = reshape(\$x, [1, \$x.shape[0], \$x.shape[1], \$x.shape[2], \$x.shape[3]]);\n * }\n * util.assert(x5D.rank === 5, () => `Error in avgPool3d: x must be rank 5 but got rank \${x5D.rank}.`);\n * util.assert(dataFormat === 'NDHWC', () => `Error in avgPool3d: Only NDHWC is currently supported, ` +\n * `but got dataType of \${dataType}`);\n * if (dimRoundingMode != null) {\n * util.assert(util.isInt(pad as number), () => `Error in avgPool3d: pad must be an integer when using, ` +\n * `dimRoundingMode \${dimRoundingMode} but got pad \${pad}.`);\n * }\n * const inputs:\n * AvgPool3DInputs = {x: x5D};\n * const attrs:\n * AvgPool3DAttrs = {filterSize, strides, pad, dimRoundingMode, dataType};\n * // tslint:disable-next-line: no-unnecessary-type-assertion\n * let res = ENGINE.runKernel(\n * AvgPool3D, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap) as T;\n * res = cast(res, x5D.dtype);\n * if (reshapedTo5D) {\n * return reshape(res, [res.shape[1], res.shape[2], res.shape[3], res.shape[4]]) as\n * T;\n * }\n * return res;\n * }\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n * =====\n * @import {ENGINE} from '../engine';\n * import {Concat, ConcatAttrs, ConcatInputs} from '../kernel_names';\n * import {NamedAttrMap} from '../kernel_registry';\n * import {Tensor} from '../tensor';\n * import {NamedTensorMap} from '../tensor_types';\n * import {convertToTensorArray} from '../tensor_util_env';\n * import {TensorLike} from '../types';\n * import {assert} from '../util';\n * import {clone} from './clone';\n * import {op} from './operation';\n * Concatenates a list of `tf.Tensor`s along a given axis.\n * The tensors ranks and types must match, and their sizes must match in all\n * dimensions except `axis`.\n * Also available are stricter rank-specific methods that assert that\n * tensors are of the given rank:\n * - `tf.concat1d`\n * - `tf.concat2d`\n * - `tf.concat3d`\n * - `tf.concat4d`\n * Except `tf.concat1d` (which does not have axis param), all methods have\n * same signature as this method.\n * ```js\n * const a = tf.tensor1d([1, 2]);\n * const b = tf.tensor1d([3, 4]);\n * a.concat(b).print(); // or a.concat(b)\n * ```\n * ```js\n * const a = tf.tensor1d([1, 2]);\n * const b = tf.tensor1d([3, 4]);\n * const c = tf.tensor1d([5, 6]);\n * tf.concat([a, b, c]).print();\n * ```\n * ```js\n * const a = tf.tensor2d([[1, 2], [10, 20]]);\n * const b = tf.tensor2d([[3, 4], [30, 40]]);\n * const axis = 1;\n * tf.concat([a, b], axis).print();\n * ```\n * @param tensors A list of tensors to concatenate.\n * @param axis The axis to concatenate along. Defaults to 0 (the first dim).\n * @doc {heading: 'Tensors', subheading: 'Slicing and Joining'}\n * @function concat<T extends Tensor>(tensors: Array<T|TensorLike>, axis = 0): T {\n * assert(tensors.length >= 1, () => `Pass at least one tensor to concat`);\n * const \$tensors =\n * convertToTensorArray(tensors, 'tensors', 'concat',

```
'string_or_numeric');\n\n if ($tensors[0].dtype === 'complex64') {\n  $tensors.forEach(tensor => {\n   if (tensor.dtype !== 'complex64') {\n    throw new Error('Cannot concatenate complex64 tensors with a tensor\n with dtype ${tensor.dtype}. `');\n   }\n  });\n }\n\n if ($tensors.length === 1) {\n  return clone($tensors[0]);\n }\n\n const inputs: ConcatInputs = $tensors;\n const attr: ConcatAttrs = {axis};\n\n return ENGINE.runKernel(\n  Concat, inputs as {} as NamedTensorMap, attr as {} as NamedAttrMap);\n}\n\nexport const concat =\n  op({concat_});\n";\n\n**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Sigmoid, SigmoidInputs} from './kernel_names';\nimport\n {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n**\n * Computes\n sigmoid element-wise,  $1 / (1 + \exp(-x))$ \n *\n `js\n * const x = tf.tensor1d([0, -1, 2, -3]);\n *\n * x.sigmoid().print(); // or tf.sigmoid(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations',\n subheading: 'Basic math'}\n *\nfunction sigmoid_<T extends Tensor>(x: T|TensorLike): T {\n  const $x =\n  convertToTensor(x, 'x', 'sigmoid');\n\n  const inputs: SigmoidInputs = {x: $x};\n\n  return\n  ENGINE.runKernel(Sigmoid, inputs as {} as NamedTensorMap);\n}\n\nexport const sigmoid =\n  op({sigmoid_});\n";\n\n**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Slice, SliceAttrs, SliceInputs} from './kernel_names';\nimport\n {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from\n './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {Rank, TensorLike} from\n './types';\nimport {op} from './operation';\n\n**\n * Extracts a slice from a `tf.Tensor` starting at coordinates\n `begin`\n * and is of size `size`.\n *\n * Also available are stricter rank-specific methods with the same signature\n * as this method that assert that `x` is of the given rank:\n * - `tf.slice1d`\n * - `tf.slice2d`\n * - `tf.slice3d`\n * -\n * `tf.slice4d`\n *\n `js\n * const x = tf.tensor1d([1, 2, 3, 4]);\n *\n * x.slice([1, [2]]).print();\n *\n *\n * `js\n * const x = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n *\n * x.slice([1, 0], [1, 2]).print();\n *\n *\n * @param x The input\n `tf.Tensor` to slice from.\n *\n * @param begin The coordinates to start the slice from. The length can be\n * less\n than the rank of x - the rest of the axes will have implicit 0 as\n * start. Can also be a single number, in which case\n it specifies the\n * first axis.\n *\n * @param size The size of the slice. The length can be less than the rank of\n * x\n - the rest of the axes will have implicit -1. A value of -1 requests\n * the rest of the dimensions in the axis. Can\n also be a single number,\n * in which case it specifies the size of the first axis.\n *\n * @doc {heading: 'Tensors',\n subheading: 'Slicing and Joining'}\n *\nfunction slice_<R extends Rank, T extends Tensor<R>>(x:\n T|TensorLike, begin: number|number[], size?: number|number[]): T {\n  const $x = convertToTensor(x, 'x', 'slice',\n 'string_or_numeric');\n\n  if ($x.rank === 0) {\n    throw new Error('Slicing scalar is not possible');\n  }\n\n  const\n  inputs: SliceInputs = {x: $x};\n  const attrs: SliceAttrs = {begin, size};\n\n  return ENGINE.runKernel(\n  Slice,\n  inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const slice = op({slice_});\n";\n\n**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
```

2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport {ENGINE} from './engine';\nimport {Tanh, TanhInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes hyperbolic tangent of the input `tf.Tensor` element-wise:  $\tanh(x)$ \n * const x = tf.tensor1d([0, 1, -1, 70]);\n * x.tanh().print(); // or tf.tanh(x)\n * @param x The input tensor.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n * \nfunction tanh_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'tanh');\n  const inputs: TanhInputs = {x: $x};\n  return ENGINE.runKernel(Tanh, inputs as { } as NamedTensorMap);\n}\n\nexport const tanh = op({tanh_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \nhttp://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n * \n
```

```
=====
*\n\nimport {Scalar, Tensor1D, Tensor2D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {add} from './add';\nimport {concat} from './concat';\nimport {matMul} from './mat_mul';\nimport {mul} from './mul';\nimport {op} from './operation';\nimport {sigmoid} from './sigmoid';\nimport {slice} from './slice';\nimport {tanh} from './tanh';\n\n/**\n * Computes the next state and output of a BasicLSTMCell.\n * Returns  $[newC, newH]$ .\n * Derived from tf.contrib.rnn.BasicLSTMCell.\n * @param forgetBias Forget bias for the cell.\n * @param lstmKernel The weights for the cell.\n * @param lstmBias The bias for the cell.\n * @param data The input to the cell.\n * @param c Previous cell state.\n * @param h Previous cell output.\n * @doc {heading: 'Operations', subheading: 'RNN'}\n * \nfunction basicLSTMCell_(\n  forgetBias: Scalar|TensorLike, lstmKernel: Tensor2D|TensorLike,\n  lstmBias: Tensor1D|TensorLike, data: Tensor2D|TensorLike,\n  c: Tensor2D|TensorLike, h: Tensor2D|TensorLike): [Tensor2D, Tensor2D] {\n  const $forgetBias =\n    convertToTensor(forgetBias, 'forgetBias', 'basicLSTMCell');\n  const $lstmKernel =\n    convertToTensor(lstmKernel, 'lstmKernel', 'basicLSTMCell');\n  const $lstmBias = convertToTensor(lstmBias, 'lstmBias', 'basicLSTMCell');\n  const $data = convertToTensor(data, 'data', 'basicLSTMCell');\n  const $c = convertToTensor(c, 'c', 'basicLSTMCell');\n  const $h = convertToTensor(h, 'h', 'basicLSTMCell');\n  const combined = concat([$data, $h], 1);\n  const weighted = matMul(combined, $lstmKernel);\n  const res: Tensor2D = add(weighted, $lstmBias);\n  // i = input_gate, j = new_input, f = forget_gate, o = output_gate\n  const batchSize = res.shape[0];\n  const sliceCols = res.shape[1] / 4;\n  const sliceSize: [number, number] = [batchSize, sliceCols];\n  const i = slice(res, [0, 0], sliceSize);\n  const j = slice(res, [0, sliceCols], sliceSize);\n  const f = slice(res, [0, sliceCols * 2], sliceSize);\n  const o = slice(res, [0, sliceCols * 3], sliceSize);\n  const newC: Tensor2D =\n    add(mul(sigmoid(i), tanh(j)), mul($c, sigmoid(add($forgetBias, f)) as Tensor2D));\n  const newH: Tensor2D = mul(tanh(newC), sigmoid(o));\n  return [newC, newH];\n}\n\nexport const basicLSTMCell = op({basicLSTMCell_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \nhttp://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
```

governing permissions and limitations under the License.

```
=====
*\nimport {ENGINE} from './engine';\nimport {BatchToSpaceND, BatchToSpaceNDAttrs,
BatchToSpaceNDInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {op} from
 './operation';\n\n/**\n * This operation reshapes the `batch` dimension 0 into `M + 1` dimensions of shape
`blockShape + [batch]`, interleaves these blocks back into the grid defined by the spatial dimensions `[1, ..., M]`,
to obtain a result with the same rank as the input. The spatial dimensions of this intermediate result are then
optionally cropped according to `crops` to produce the output. This is the reverse of `tf.spaceToBatchND`. See
below for a precise description.\n\n * `js` const x = tf.tensor4d([1, 2, 3, 4], [4, 1, 1, 1]);\n * const
blockShape = [2, 2];\n * const crops = [[0, 0], [0, 0]];\n * x.batchToSpaceND(blockShape, crops).print();\n\n *
@param x A `tf.Tensor`. N-D with `x.shape` = `[batch] + spatialShape + remainingShape`, where
spatialShape has `M` dimensions.\n * @param blockShape A 1-D array. Must have shape `[M]`, all values must
be  $\geq 1$ .\n * @param crops A 2-D array. Must have shape `[M, 2]`, all values must be  $\geq 0$ .
`crops[i] = [cropStart, cropEnd]` specifies the amount to crop from input dimension  $i + 1$ , which corresponds to spatial
dimension  $i$ . It is required that  $cropStart[i] + cropEnd[i] \leq blockShape[i] * inputShape[i + 1]$ . This
operation is equivalent to the following steps:\n\n * 1. Reshape `x` to `reshaped` of shape: `[blockShape[0], ...,
blockShape[M-1], batch / prod(blockShape), x.shape[1], ..., x.shape[N-1]]`\n\n * 2. Permute dimensions of
`reshaped` to produce `permuted` of shape `[batch / prod(blockShape), x.shape[1], blockShape[0], ...,
x.shape[M], blockShape[M-1], x.shape[M+1], ..., x.shape[N-1]]`\n\n * 3. Reshape `permuted` to produce
`reshapedPermuted` of shape `[batch / prod(blockShape), x.shape[1] * blockShape[0], ..., x.shape[M] *
blockShape[M-1], x.shape[M+1], ..., x.shape[N-1]]`\n\n * 4. Crop the start and end of dimensions `[1, ..., M]` of
`reshapedPermuted` according to `crops` to produce the output of shape: `[batch / prod(blockShape), x.shape[1] *
blockShape[0] - crops[0,0] - crops[0,1], ..., x.shape[M] * blockShape[M-1] -
crops[M-1,0] - crops[M-1,1], x.shape[M+1], ..., x.shape[N-1]]`\n\n * @doc {heading: 'Tensors', subheading:
'Transformations'}\n\n * \nfunction batchToSpaceND<T extends Tensor>(\n   x: T | TensorLike, blockShape:
number[], crops: number[][]): T {\n   const $x = convertToTensor(x, 'x', 'batchToSpaceND');\n   const prod =
blockShape.reduce((a, b) => a * b);\n\n   util.assert(\n     $x.rank >= 1 + blockShape.length,\n     () => `input rank is
${$x.rank} but should be > than blockShape.length ${\n       blockShape.length}`);\n\n   util.assert(\n
crops.length === blockShape.length,\n     () => `crops.length is ${\n       crops.length} but should be equal to
blockShape.length ${\n       blockShape.length}`);\n\n   util.assert(\n     $x.shape[0] % prod === 0,\n     () =>
`input tensor batch is ${\n       $x.shape[0]} but is not divisible by the product of ` +\n       `the elements of
blockShape ${blockShape.join(' * ')} === ${prod}`);\n\n   const inputs: BatchToSpaceNDInputs = {x: $x};\n   const
attrs: BatchToSpaceNDAttrs = {blockShape, crops};\n\n   return ENGINE.runKernel(\n     BatchToSpaceND, inputs
as { } as NamedTensorMap,\n     attrs as { } as NamedAttrMap);\n }\n\nexport const batchToSpaceND =
op({batchToSpaceND_});\n\n", /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
```

```
*\nimport {Tensor, Tensor4D} from './tensor';\nimport {Rank} from './types';\nimport {reshape} from
 './reshape';\n\nexport function xAs4D<R extends Rank>(x: Tensor<R>) {\n let x4D: Tensor4D;\n if (x.rank === 0
|| x.rank === 1) {\n   x4D = reshape(x, [1, 1, 1, x.size]);\n } else if (x.rank === 2) {\n   x4D = reshape(x, [1, 1,
x.shape[0], x.shape[1]]);\n } else if (x.rank === 3) {\n   x4D = reshape(x, [1, x.shape[0], x.shape[1], x.shape[2]]);\n
}
```


} else {\n x4D = x as Tensor4D;\n }\n\n return x4D;\n}\n"/**\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
<http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {FusedBatchNorm, FusedBatchNormAttrs,  
FusedBatchNormInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor, Tensor1D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {Rank, TensorLike} from './types';\nimport * as util from './util';\nimport {xAs4D} from './batchnorm_util';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Batch normalization.\n *\n * As described in\n *\n * [http://arxiv.org/abs/1502.03167](http://arxiv.org/abs/1502.03167).\n *\n * Mean, variance, scale, and offset can be  
of two shapes:\n * - The same shape as the input.\n * - In the common case, the depth dimension is the last  
dimension of x, so\n * the values would be an `tf.Tensor1D` of shape [depth].\n *\n * Also available are stricter  
rank-specific methods with the same signature\n * as this method that assert that parameters passed are of given  
rank\n * - `tf.batchNorm2d`\n * - `tf.batchNorm3d`\n * - `tf.batchNorm4d`\n *\n * @param x The input  
Tensor.\n * @param mean A mean Tensor.\n * @param variance A variance Tensor.\n * @param offset An offset  
Tensor.\n * @param scale A scale Tensor.\n * @param varianceEpsilon A small float number to avoid dividing by  
0.\n *\n * @doc {heading: 'Operations', subheading: 'Normalization'}\n */\nfunction batchNorm<R> extends  
Rank>(\n x: Tensor<R>|TensorLike, mean: Tensor<R>|Tensor1D|TensorLike,\n variance:  
Tensor<R>|Tensor1D|TensorLike,\n offset?: Tensor<R>|Tensor1D|TensorLike,\n scale?:  
Tensor<R>|Tensor1D|TensorLike,\n varianceEpsilon?: number): Tensor<R> {\n if (varianceEpsilon == null) {\n varianceEpsilon = 0.001;\n }\n const $x = convertToTensor(x, 'x', 'batchNorm');\n const $mean =  
convertToTensor(mean, 'mean', 'batchNorm');\n const $variance = convertToTensor(variance, 'variance',  
'batchNorm');\n let $scale: Tensor<R>|Tensor1D;\n if (scale != null) {\n $scale = convertToTensor(scale, 'scale',  
'batchNorm');\n }\n let $offset: Tensor<R>|Tensor1D;\n if (offset != null) {\n $offset = convertToTensor(offset,  
'offset', 'batchNorm');\n }\n\n util.assert(\n $mean.rank === $variance.rank,\n () => 'Batch normalization  
gradient requires mean and variance to have ' +\n 'equal ranks.);\n util.assert(\n $offset == null ||  
$mean.rank === $offset.rank,\n () => 'Batch normalization gradient requires mean and offset to have ' +\n 'equal ranks.);\n util.assert(\n $scale == null || $mean.rank === $scale.rank,\n () => 'Batch normalization  
gradient requires mean and scale to have ' +\n 'equal ranks.);\n\n const x4D: Tensor4D = xAs4D($x);\n\n const inputs: FusedBatchNormInputs = {\n x: x4D,\n scale: $scale,\n offset: $offset,\n mean: $mean,\n variance: $variance\n };\n\n const attrs: FusedBatchNormAttrs = {varianceEpsilon};\n\n // tslint:disable-next-line:  
no-unnecessary-type-assertion\n const res = ENGINE.runKernel(\n FusedBatchNorm, inputs as {} as  
NamedTensorMap,\n attrs as {} as NamedAttrMap) as Tensor<R>;\n\n return reshape(res,  
$x.shape);\n}\n\nexport const batchNorm = op({batchNorm});\n"/**\n * @license\n * Copyright 2020 Google  
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not  
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Tensor1D, Tensor2D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {batchNorm} from './batchnorm';\nimport
```

```
{op} from './operation';\n\n/**\n * Batch normalization, strictly for 2D. For the more relaxed version, see\n *\n * tf.batchNorm`.\n *\n * @param x The input Tensor.\n * @param mean A mean Tensor.\n * @param variance A variance Tensor.\n * @param offset An offset Tensor.\n * @param scale A scale Tensor.\n * @param varianceEpsilon A small float number to avoid dividing by 0.\n */\nfunction batchNorm2d_(\n  x:\n  Tensor2D|TensorLike, mean: Tensor2D|Tensor1D|TensorLike,\n  variance: Tensor2D|Tensor1D|TensorLike,\n  offset?: Tensor2D|Tensor1D|TensorLike, scale?: Tensor2D|Tensor1D|TensorLike,\n  varianceEpsilon?: number):\n  Tensor2D {\n  const $x = convertToTensor(x, 'x', 'batchNorm');\n  const $mean = convertToTensor(mean, 'mean',\n  'batchNorm');\n  const $variance = convertToTensor(variance, 'variance', 'batchNorm');\n  let $scale:\n  Tensor2D|Tensor1D;\n  if (scale != null) {\n    $scale = convertToTensor(scale, 'scale', 'batchNorm');\n  }\n  let\n  $offset: Tensor2D|Tensor1D;\n  if (offset != null) {\n    $offset = convertToTensor(offset, 'offset', 'batchNorm');\n  }\n  util.assert(\n    $x.rank === 2,\n    () => `Error in batchNorm2D: x must be rank 2 but got rank ` +\n    `${$x.rank}.`);\n  util.assert(\n    $mean.rank === 2 || $mean.rank === 1,\n    () => `Error in batchNorm2D: mean\n  must be rank 2 or rank 1 but ` +\n    `got rank ${$mean.rank}.`);\n  util.assert(\n    $variance.rank === 2 ||\n  $variance.rank === 1,\n    () => `Error in batchNorm2D: variance must be rank 2 or rank 1 ` +\n    `but got rank\n  ${$variance.rank}.`);\n  if ($scale != null) {\n    util.assert(\n      $scale.rank === 2 || $scale.rank === 1,\n      () =>\n      `Error in batchNorm2D: scale must be rank 2 or rank 1 ` +\n      `but got rank\n      ${$scale.rank}.`);\n  }\n  if ($offset\n  != null) {\n    util.assert(\n      $offset.rank === 2 || $offset.rank === 1,\n      () => `Error in batchNorm2D: offset\n  must be rank 2 or rank 1 ` +\n      `but got rank\n      ${$offset.rank}.`);\n  }\n  return batchNorm($x, $mean,\n  $variance, $offset, $scale, varianceEpsilon);\n}\n\n\nexport const batchNorm2d = op({batchNorm2d_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\nimport {Tensor1D, Tensor3D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport\n{TensorLike} from './types';\nimport * as util from './util';\n\nimport {batchNorm} from './batchnorm';\nimport\n{op} from './operation';\n\n/**\n * Batch normalization, strictly for 3D. For the more relaxed version, see\n *\n * tf.batchNorm`.\n *\n * @param x The input Tensor.\n * @param mean A mean Tensor.\n * @param variance A variance Tensor.\n * @param offset An offset Tensor.\n * @param scale A scale Tensor.\n * @param varianceEpsilon A small float number to avoid dividing by 0.\n */\nfunction batchNorm3d_(\n  x:\n  Tensor3D|TensorLike, mean: Tensor3D|Tensor1D|TensorLike,\n  variance: Tensor3D|Tensor1D|TensorLike,\n  offset?: Tensor3D|Tensor1D|TensorLike, scale?: Tensor3D|Tensor1D|TensorLike,\n  varianceEpsilon?: number):\n  Tensor3D {\n  const $x = convertToTensor(x, 'x', 'batchNorm');\n  const $mean = convertToTensor(mean, 'mean',\n  'batchNorm');\n  const $variance = convertToTensor(variance, 'variance', 'batchNorm');\n  let $scale:\n  Tensor3D|Tensor1D;\n  if (scale != null) {\n    $scale = convertToTensor(scale, 'scale', 'batchNorm');\n  }\n  let\n  $offset: Tensor3D|Tensor1D;\n  if (offset != null) {\n    $offset = convertToTensor(offset, 'offset', 'batchNorm');\n  }\n  util.assert(\n    $x.rank === 3,\n    () => `Error in batchNorm3D: x must be rank 3 but got rank ` +\n    `${$x.rank}.`);\n  util.assert(\n    $mean.rank === 3 || $mean.rank === 1,\n    () => `Error in batchNorm3D: mean\n  must be rank 3 or rank 1 but ` +\n    `got rank\n  ${$mean.rank}.`);\n  util.assert(\n    $variance.rank === 3 ||\n  $variance.rank === 1,\n    () => `Error in batchNorm3D: variance must be rank 3 or rank 1 ` +\n    `but got rank\n  ${$variance.rank}.`);\n  if ($scale != null) {\n    util.assert(\n      $scale.rank === 3 || $scale.rank === 1,\n      () =>\n      `Error in batchNorm3D: scale must be rank 3 or rank 1 ` +\n      `but got rank\n      ${$scale.rank}.`);\n  }\n  if ($offset\n  != null) {\n    util.assert(\n      $offset.rank === 3 || $offset.rank === 1,\n      () => `Error in batchNorm3D: offset\n  must be rank 3 or rank 1 ` +\n      `but got rank\n      ${$offset.rank}.`);\n  }\n  return batchNorm($x, $mean,\n  $variance, $offset, $scale, varianceEpsilon);\n}\n\n\nexport const batchNorm3d = op({batchNorm3d_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
```

2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
* \nimport {Tensor1D, Tensor4D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {batchNorm} from './batchnorm';\nimport {op} from './operation';\n\n/**\n * Batch normalization, strictly for 4D. For the more relaxed version, see\n * `tf.batchNorm`.\n *\n * @param x The input Tensor.\n * @param mean A mean Tensor.\n * @param variance A variance Tensor.\n * @param offset An offset Tensor.\n * @param scale A scale Tensor.\n * @param varianceEpsilon A small float number to avoid dividing by 0.\n */\nfunction batchNorm4d(\n  x:\n  Tensor4D|TensorLike, mean: Tensor4D|Tensor1D|TensorLike,\n  variance: Tensor4D|Tensor1D|TensorLike,\n  offset?: Tensor4D|Tensor1D|TensorLike, scale?: Tensor4D|Tensor1D|TensorLike,\n  varianceEpsilon?: number):\n  Tensor4D {\n  const $x = convertToTensor(x, 'x', 'batchNorm');\n  const $mean = convertToTensor(mean, 'mean',\n  'batchNorm');\n  const $variance = convertToTensor(variance, 'variance', 'batchNorm');\n  let $scale:\n  Tensor4D|Tensor1D;\n  if (scale != null) {\n    $scale = convertToTensor(scale, 'scale', 'batchNorm');\n  }\n  let\n  $offset: Tensor4D|Tensor1D;\n  if (offset != null) {\n    $offset = convertToTensor(offset, 'offset', 'batchNorm');\n  }\n  util.assert(\n    $x.rank === 4,\n    () => `Error in batchNorm4D: x must be rank 4 but got rank ` +\n    `${$x.rank}.`);\n  util.assert(\n    $mean.rank === 4 || $mean.rank === 1,\n    () => `Error in batchNorm4D: mean\n  must be rank 4 or rank 1 but ` +\n    `got rank ${$mean.rank}.`);\n  util.assert(\n    $variance.rank === 4 ||\n  $variance.rank === 1,\n    () => `Error in batchNorm4D: variance must be rank 4 or rank 1 ` +\n    `but got rank\n  ${$variance.rank}.`);\n  if ($scale != null) {\n    util.assert(\n      $scale.rank === 4 || $scale.rank === 1,\n      () =>\n    `Error in batchNorm4D: scale must be rank 4 or rank 1 ` +\n    `but got rank ${$scale.rank}.`);\n  }\n  if ($offset\n  != null) {\n    util.assert(\n      $offset.rank === 4 || $offset.rank === 1,\n      () => `Error in batchNorm4D: offset\n  must be rank 4 or rank 1 ` +\n    `but got rank ${$offset.rank}.`);\n  }\n  return batchNorm($x, $mean,\n  $variance, $offset, $scale, varianceEpsilon);\n}\n\nexport const batchNorm4d = op({batchNorm4d});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language governing permissions and\n * limitations under the License.\n */\n
```

```
=====
* \nimport {ENGINE} from './engine';\nimport {Bincount, BincountAttrs, BincountInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor1D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\n\n/**\n * Outputs a\n  vector with length `size` and the same dtype as `weights`.\n *\n * If `weights` are empty, then index `i` stores the\n  number of times the value\n * `i` is counted in `x`. If `weights` are non-empty, then index `i` stores the\n * sum of\n  the value in `weights` at each index where the corresponding value in\n * `x` is `i`.\n *\n * Values in `x` outside of\n  the range [0, size) are ignored.\n *\n * @param x The input int tensor, rank 1.\n * @param weights The weights\n  tensor, must have the same shape as x, or a\n * length-0 Tensor, in which case it acts as all weights equal to 1.\n * @param size Non-negative integer.\n */\n@doc {heading: 'Operations', subheading: 'Reduction'}\nfunction\n  bincount_<T> extends Tensor1D>(\n  x: T|TensorLike, weights: T|TensorLike, size: number): T {\n  const $x =\n  convertToTensor(x, 'x', 'bincount');\n  const $weights = convertToTensor(weights, 'weights', 'bincount');\n  util.assert(\n    $x.dtype === 'int32',\n    () => `Error in bincount: input ` +\n    `dtype must be int32, but got\n    ${$x.dtype}.`);\n  util.assert(size >= 0, () => `size must be non-negative, but got\n  ${size}.`);\n  util.assert(\n
```

```

$weights.size === $x.size || $weights.size === 0,\n  () => `Error in bincount: weights must have the same size as
input or `+\n  `0-length, but got input shape: ${$x.shape}, weights shape: `+\n  `${$weights.shape}.`);\n\n
const inputs: BincountInputs = {x: $x, weights: $weights};\n  const attrs: BincountAttrs = {size};\n\n  return
ENGINE.runKernel(\n  Bincount, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n)\n\nexport
const bincount = op({bincount_});\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {Tile, TileAttrs, TileInputs} from '../kernel_names';\nimport
{NamedAttrMap} from '../kernel_registry';\nimport {Tensor} from '../tensor';\nimport {NamedTensorMap} from
 '../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {Rank, ShapeMap, TensorLike}
from '../types';\n\nimport {clone} from './clone';\nimport {op} from './operation';\nimport {reshape} from
 './reshape';\n\n/**\n * Broadcast an array to a compatible shape NumPy-style.\n *\n * The tensor's shape is
compared to the broadcast shape from end to beginning.\n *\n * Ones are prepended to the tensor's shape until it
has the
same length as\n * the broadcast shape. If input.shape[i]==shape[i], the (i+1)-th axis is\n * already broadcast-
compatible. If input.shape[i]==1 and shape[i]==N, then\n * the input tensor is tiled N times along that axis (using
tf.tile).\n *\n * @param input The tensor that is to be broadcasted.\n * @param shape The input is to be broadcast to
this shape.\n *\n * @doc {heading: 'Tensors', subheading: 'Transformations'}\n *\nfunction broadcastTo_<R
extends Rank>(\n  x: Tensor|TensorLike, shape: ShapeMap[R]): Tensor<R> {\n  let input = convertToTensor(x,
'broadcastTo', 'x');\n  const xShape = input.shape;\n\n  if (shape.some(d => !(d > 0) || d % 1 !== 0)) {\n    throw new
Error(`broadcastTo(): Invalid broadcast shape [${shape}]`);\n  }\n\n  if (shape.length < input.rank) {\n    throw new
Error(`broadcastTo(): shape.length=${shape.length} < input.rank=${\n    input.rank}`);\n  }\n\n  if (shape.length
> input.rank) {\n    const newShape = input.shape.slice();\n    while (newShape.length < shape.length) {\n
newShape.unshift(1);\n    }\n    input = reshape(input, newShape);\n  }\n\n  const inputShape = input.shape;\n  const
reps: number[] = Array.from(shape);\n  for (let i = shape.length - 1; i >= 0; i--) {\n    if (inputShape[i] === shape[i])
{\n      reps[i] = 1;\n    } else if (input.shape[i] !== 1) {\n      throw new Error(\n      `broadcastTo(): [${xShape}]
cannot be broadcast to [${shape}]`);\n    }\n  }\n\n  const axes = reps.map((n, i) => n > 1 ? i - 1).filter(i => i >=
0);\n\n  if (axes.length === 0) {\n    return clone(input) as Tensor<R>;\n  }\n\n  // TODO call broadcastTo kernel
directly once backends implement broadcastTo\n  const inputs: TileInputs = {x: input};\n  const attrs: TileAttrs =
{reps};\n  return ENGINE.runKernel(\n    Tile, inputs as {} as NamedTensorMap, attrs as unknown as
NamedAttrMap);\n)\n\nexport const broadcastTo = op({broadcastTo_});\n"/**\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {Ceil, CeilInputs} from '../kernel_names';\nimport {Tensor} from
 '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor} from
 '../tensor_util_env';\nimport {TensorLike} from '../types';\n\nimport {op} from './operation';\n\n/**\n * Computes
ceiling of input `tf.Tensor` element-wise: `ceil(x)`\n *\n * ``j``s\n *\n * const x = tf.tensor1d([1.6, 1.1, -3.3]);\n *\n *
x.ceil().print(); // or tf.ceil(x)\n *\n * @param x The input Tensor.\n *\n * @doc {heading: 'Operations',
subheading: 'Basic math'}\n *\nfunction ceil_<T extends Tensor>(x: T|TensorLike): T {\n  const $x =

```

```

convertToTensor(x, 'x', 'ceil');\n\n const inputs: CeilInputs = {x: $x};\n return ENGINE.runKernel(Ceil, inputs as
{ } as NamedTensorMap);\n}\nexport const ceil = op({ceil_});\n", "/*\n * @license\n * Copyright 2018 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
{NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\n\n**\n * Clips
values element-wise. max(min(x, clipValueMax), clipValueMin)\n *\n * ``js\n * const x = tf.tensor1d([-1, 2, -3,
4]);\n *\n * x.clipByValue(-2, 3).print(); // or tf.clipByValue(x, -2, 3)\n * ``\n * @param x The input tensor.\n *
@param clipValueMin Lower-bound of range to be clipped to.\n * @param clipValueMax Upper-bound of range to
be clipped to.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n *\nfunction clipByValue<T
extends Tensor>(\n  x: T|TensorLike, clipValueMin: number, clipValueMax: number): T {\n  const $x =
convertToTensor(x, 'x', 'clipByValue');\n  util.assert(\n    (clipValueMin <= clipValueMax),\n    () => `Error in
clip: min (${clipValueMin}) must be ` +\n      `less than or equal to max (${clipValueMax}).`);\n\n  const inputs:
ClipByValueInputs = {x: $x};\n  const attrs: ClipByValueAttrs = {clipValueMin, clipValueMax};\n\n  return
ENGINE.runKernel(\n    ClipByValue, inputs as { } as NamedTensorMap, attrs as { } as
NamedAttrMap);\n}\n\nexport const clipByValue = op({clipByValue_});\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Tensor1D} from './tensor';\nimport {TensorLike} from './types';\nimport {concat} from
 './concat';\nimport {op} from './operation';\n\n**\n * Concatenates a list of tf.Tensor1D`s along an axis. See
`concat` for details.\n *\n * For example, if:\n * A: shape(3) = |r1, g1, b1|\n * B: shape(2) = |r2, g2|\n * C =
tf.concat1d([A, B]) == |r1, g1, b1, r2, g2|\n *\n * @param tensors A list of tf.Tensor`s to concatenate.\n * @return
The concatenated array.\n *\nfunction concat1d_(tensors: Array<Tensor1D|TensorLike>): Tensor1D {\n  return
concat(tensors, 0 /* axis */);\n}\n\nexport const concat1d = op({concat1d_});\n", "/*\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Tensor2D} from './tensor';\nimport {TensorLike} from './types';\nimport {concat} from
 './concat';\nimport {op} from './operation';\n\n**\n * Concatenates a list of tf.Tensor2D`s along an axis. See
`concat` for details.\n *\n * For example, if:\n * A: shape(2, 3) = | r1, g1, b1 |\n * | r2, g2, b2 |\n * B:
shape(2, 3) = | r3, g3, b3 |\n * | r4, g4, b4 |\n *\n * C = tf.concat2d([A, B], axis)\n *\n * if axis = 0:\n * C:
shape(4, 3) = | r1, g1, b1 |\n * | r2, g2, b2 |\n * | r3, g3, b3 |\n * | r4, g4, b4 |\n *\n * if

```

```

axis = 1:\n * C = shape(2, 6) = | r1, g1, b1, r3, g3, b3 |\n *          | r2, g2, b2, r4, g4, b4 |\n *\n * @param
tensors A list of `tf.Tensor`s to concatenate.\n * @param axis The axis to concatenate along.\n * @return The
concatenated array.\n */\nfunction concat2d_(\n  tensors: Array<Tensor2D|TensorLike>, axis: number): Tensor2D
{\n  return concat(tensors, axis);\n}\n\nexport const concat2d = op({concat2d_});\n", "/*\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Tensor3D} from './tensor';\nimport {TensorLike} from './types';\nimport {concat} from
'./concat';\nimport {op} from './operation';\n\n/**\n * Concatenates a list of `tf.Tensor3D`s along an axis.\n * See
`concat` for details.\n *\n * For example, if:\n * A: shape(2, 1, 3) = | r1, g1, b1 |\n *          | r2, g2, b2 |\n *\n * B: shape(2, 1, 3) = | r3, g3, b3 |\n *          | r4, g4, b4 |\n *\n * C = tf.concat3d([A, B], axis)\n *\n * if axis =
0:\n * C: shape(4, 1, 3) = | r1, g1, b1 |\n *          | r2, g2, b2 |\n *          | r3, g3, b3 |\n *          | r4,
g4, b4 |\n *\n * if axis = 1:\n * C: shape(2, 2, 3) = | r1, g1, b1, r3, g3, b3 |\n *          | r2, g2, b2, r4, g4, b4 |\n
*\n * if axis = 2:\n * C = shape(2, 1, 6) = | r1, g1, b1, r3, g3, b3 |\n *          | r2, g2, b2, r4, g4, b4 |\n *\n
*\n * @param tensors A list of `tf.Tensor`s to concatenate.\n * @param axis The axis to concate along.\n * @return The
concatenated array.\n */\nfunction concat3d_(\n  tensors: Array<Tensor3D|TensorLike>, axis: number): Tensor3D
{\n  return concat(tensors, axis);\n}\n\nexport const concat3d = op({concat3d_});\n", "/*\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Tensor4D} from './tensor';\nimport {TensorLike} from './types';\nimport {concat} from
'./concat';\nimport {op} from './operation';\n\n/**\n * Concatenates a list of `tf.Tensor4D`s along an axis.\n * See
`concat` for details.\n *\n * @param tensors A list of `tf.Tensor`s to concatenate.\n * @param axis The axis to
concate along.\n * @return The concatenated array.\n */\nfunction concat4d_(\n  tensors:
Array<Tensor4D|TensorLike>, axis: number): Tensor4D {\n  return concat(tensors, axis);\n}\n\nexport const
concat4d = op({concat4d_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `AS IS` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {Conv2D, Conv2DAttrs, Conv2DInputs} from
'./kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from
'./tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
'./tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport * as conv_util
from './conv_util';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes a 2D
convolution over the input x.\n *\n * @param x The input tensor, of rank 4 or rank 3, of shape\n *   `[batch, height,
width, inChannels]`. If rank 3, batch of 1 is\n *   assumed.\n * @param filter The filter, rank 4, of shape\n *

```

```

`[filterHeight, filterWidth, inDepth, outDepth]`. \n * @param strides The strides of the convolution: `[strideHeight, \n
* strideWidth]`. \n * @param pad The type of padding algorithm. \n * - `same` and stride 1: output will be of same
size as input, \n * regardless of filter size. \n * - `valid`: output will be smaller than input if filter is larger \n
* than 1x1. \n * - For more info, see this guide: \n *
[https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dataFormat: An optional string from:
`"NHWC"`, `"NCHW"`. Defaults to \n * `"NHWC"`. Specify the data format of the input and output data. With
the \n * default format `"NHWC"`, the data is stored in the order of: [batch, \n * height, width, channels]. \n
* @param dilations The dilation rates: `[dilationHeight, dilationWidth]` \n * in which we sample input values across
the height and width dimensions \n * in atrous convolution. Defaults to `[1, 1]`. If `dilations` is a single \n
* number, then `dilationHeight == dilationWidth`. If it is greater than \n * 1, then all values of `strides` must be 1. \n
* @param dimRoundingMode A string from: 'ceil', 'round', 'floor'. If none is \n * provided, it will default to
truncate. \n * \n * @doc {heading: 'Operations', subheading: 'Convolution'} \n * \n function conv2d<T extends
Tensor3D|Tensor4D>(\n x: T|TensorLike, filter: Tensor4D|TensorLike, \n strides: [number, number]|number, \n
pad: 'valid'|'same'|number|conv_util.ExplicitPadding, \n dataFormat: 'NHWC'|'NCHW' = 'NHWC', \n dilations:
[number, number]|number = [1, 1], \n dimRoundingMode?: 'floor'|'round'|'ceil'): T {\n const $x =
convertToTensor(x, 'x', 'conv2d'); \n const $filter = convertToTensor(filter, 'filter', 'conv2d'); \n let x4D = $x as
Tensor4D; \n let reshapedTo4D = false; \n if ($x.rank === 3) {\n reshapedTo4D = true; \n x4D = reshape($x,
[1, $x.shape[0], $x.shape[1], $x.shape[2]]); \n } \n util.assert(\n x4D.rank === 4, \n () => `Error in conv2d:
input must be rank 4, but got rank ${x4D.rank}.`); \n util.assert(\n $filter.rank === 4, \n () => `Error in
conv2d: filter must be rank 4, but got rank ` + \n ` ${$filter.rank}.`); \n if (dimRoundingMode != null) {\n
util.assert(\n util.isInt(pad as number), \n () => `Error in conv2d: pad must be an integer when using, ` + \n
` dimRoundingMode ${dimRoundingMode} but got pad ${pad}.`); \n } \n \n const inDepth = dataFormat ===
'NHWC' ? x4D.shape[3] : x4D.shape[1]; \n util.assert(\n inDepth === $filter.shape[2], \n () => `Error in
conv2d: depth of input (${inDepth}) must match ` + \n ` input depth for filter ${$filter.shape[2]}.`); \n
util.assert(\n conv_util.eitherStridesOrDilationsAreOne(strides, dilations), \n () => `Error in conv2D: Either
strides or dilations must be 1.` + \n ` Got strides ${strides} and dilations '${dilations}'`); \n \n const inputs:
Conv2DInputs = {x: x4D, filter: $filter}; \n const attrs: \n Conv2DAttrs = {strides, pad, dataFormat, dilations,
dimRoundingMode}; \n \n // tslint:disable-next-line: no-unnecessary-type-assertion \n const res =
ENGINE.runKernel(\n Conv2D, inputs as {} as NamedTensorMap, \n attrs as {} as
NamedAttrMap) as T; \n \n if (reshapedTo4D) {\n return reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as
T; \n } \n return res; \n } \n \n export const conv2d = op({conv2d_}); \n " , / ** \n * @license \n * Copyright 2020 Google
LLC. All Rights Reserved. \n * Licensed under the Apache License, Version 2.0 (the "License"); \n * you may not
use this file except in compliance with the License. \n * You may obtain a copy of the License at \n * \n *
http://www.apache.org/licenses/LICENSE-2.0 \n * \n * Unless required by applicable law or agreed to in writing,
software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language
governing permissions and \n * limitations under the License. \n *
===== \n
* \n import {Tensor2D, Tensor3D, Tensor4D} from './tensor'; \n import {convertToTensor} from
'./tensor_util_env'; \n import {TensorLike} from './types'; \n import * as util from './util'; \n import {conv2d} from
'./conv2d'; \n import * as conv_util from './conv_util'; \n import {op} from './operation'; \n import {reshape} from
'./reshape'; \n / ** \n * Computes a 1D convolution over the input x. \n * \n * @param x The input tensor, of rank 3 or
rank 2, of shape \n * `[batch, width, inChannels]`. If rank 2, batch of 1 is assumed. \n * \n * @param filter The filter,
rank 3, of shape \n * `[filterWidth, inDepth, outDepth]`. \n * \n * @param stride The number of entries by which the
filter is moved right at \n * each step. \n * \n * @param pad The type of padding algorithm. \n * - `same` and stride 1:
output will be of same size as input, \n * regardless of filter size. \n * - `valid`: output will be smaller than input
if filter is larger \n * than 1x1. \n * - For more info, see this guide: \n *

```

```

[https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dataFormat An optional string from
\'NWC\', \'NCW\'. Defaults to \'NWC\',\n * the data is stored in the order of [batch, in_width, in_channels].
Only\n * \'NWC\' is currently supported.\n * @param dilation The dilation rate in which we sample input values
in\n * atrous convolution. Defaults to `1`. If it is greater than 1, then\n * stride must be `1`.\n * @param
dimRoundingMode A string from: 'ceil', 'round', 'floor'. If none is\n * provided, it will default to truncate.\n *\n *
@doc {heading: 'Operations', subheading: 'Convolution'}\n *\nfunction conv1d_<T extends
Tensor2D|Tensor3D>(\n x: T|TensorLike, filter: Tensor3D|TensorLike, stride: number,\n pad:
'valid'|'same'|number|conv_util.ExplicitPadding,\n dataFormat: 'NWC'|'NCW' = 'NWC', dilation = 1,\n
dimRoundingMode?: 'floor'|'round'|'ceil'): T {\n const $x = convertToTensor(x, 'x', 'conv1d');\n const $filter =
convertToTensor(filter, 'filter', 'conv1d');\n\n let x3D = $x as Tensor3D;\n let reshapedTo3D = false;\n if ($x.rank
=== 2) {\n reshapedTo3D = true;\n x3D = reshape($x, [1, $x.shape[0], $x.shape[1]]);\n }\n\n util.assert(\n
x3D.rank === 3,\n () => `Error in conv1d: input must be rank 3, but got rank ${x3D.rank}.`);\n util.assert(\n
$filter.rank === 3,\n () => `Error in conv1d: filter must be rank 3, but got rank ` +\n ` ${$filter.rank}.`);\n if
(dimRoundingMode != null) {\n util.assert(\n util.isInt(pad as number),\n () => `Error in conv1d: pad
must be an integer when using, ` +\n ` dimRoundingMode ${dimRoundingMode} but got pad ${pad}.`);\n
}\n\n util.assert(\n x3D.shape[2] === $filter.shape[1],\n () => `Error in conv1d: depth of input
(${x3D.shape[2]}) must match ` +\n ` input depth for filter ${$filter.shape[1]}.`);\n util.assert(\n
conv_util.eitherStridesOrDilationsAreOne(stride, dilation),\n () => `Error in conv1D: Either stride or dilation
must be 1.` +\n ` Got stride ${stride} and dilation '${dilation}'`);\n util.assert(\n dataFormat === 'NWC',\n
() => `Error in conv1d: got dataFormat of ${\n dataFormat} but only NWC is currently supported.`);\n\n
const filter4D = reshape(\n $filter, [1, $filter.shape[0], $filter.shape[1], $filter.shape[2]]);\n const input4D =
reshape(x3D, [x3D.shape[0], 1, x3D.shape[1], x3D.shape[2]]);\n const strides: [number, number] = [1, stride];\n
const dilations: [number, number] = [1, dilation];\n\n const conv2dDataFormat = 'NHWC';\n\n const res =
conv2d(\n (input4D as Tensor4D), (filter4D as Tensor4D), strides, pad,\n conv2dDataFormat, dilations,
dimRoundingMode);\n\n if (reshapedTo3D) {\n return reshape(res, [res.shape[2], res.shape[3]]) as T;\n }\n\n
return reshape(res, [res.shape[0], res.shape[2], res.shape[3]]) as T;\n}\n\n\nexport const conv1d =
op({conv1d_});\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\nimport {ENGINE} from './engine';\nimport {Conv2DBackpropInput, Conv2DBackpropInputAttrs,
Conv2DBackpropInputInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport
{Tensor3D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport * as util from
'./util';\nimport * as conv_util from './conv_util';\nimport {op} from './operation';\nimport {reshape} from
'./reshape';\n\n/**\n * Computes the derivative of the input of a 2D convolution.\n *\n * @param xShape The shape
of the input: [batch, height, width, inDepth].\n * If length of 3, batch of 1 is assumed.\n * @param dy The derivative
of the output, of rank 4 or rank 3 of shape\n * [batch, outHeight, outWidth, outDepth]. If rank 3, batch of 1 is\n *
assumed.\n * @param filter The filter, rank 4, of shape\n * [filterHeight, filterWidth, inDepth, outDepth].\n *
@param strides The strides of the convolution: [strideHeight,\n * strideWidth].\n * @param pad The type of
padding algorithm used:\n * - `same` and stride 1: output will be of same size as input,\n * regardless of filter
size.\n * - `valid`: output will be smaller than input if filter is larger\n * than 1x1.\n * @param dataFormat: An
optional string from: 'NHWC', 'NCHW'. Defaults to\n * 'NHWC'. Specify the data format of the input and
output data. With the\n * default format 'NHWC', the data is stored in the order of: [batch,\n * height, width,

```



```

channels].\n * @param dimRoundingMode A string from: 'ceil', 'round', 'floor'. If none is\n * provided, it will
default to truncate.\n */\nfunction conv2DBackpropInput_<T extends Tensor3D|Tensor4D>(\n  xShape: [number,
number, number, number]|[number, number, number], dy: T,\n  filter: Tensor4D, strides: [number,
number]|[number,\n  pad: 'valid'|'same'|number|conv_util.ExplicitPadding,\n  dataFormat: 'NHWC'|'NCHW' =
'NHWC',\n  dimRoundingMode?: 'floor'|'round'|'ceil'): T {\n  util.assert(\n    xShape.length === dy.rank,\n    ()
=> `Length of inShape ` +\n      `${xShape.length}` and rank of dy (${dy.rank}) must match`);\n\n  let xShape4D
= xShape as [number, number, number, number];\n  let dy4D = dy as Tensor4D;\n  let reshapedTo4D = false;\n  if
(dy.rank === 3) {\n    reshapedTo4D = true;\n    dy4D = reshape(dy, [1, dy.shape[0], dy.shape[1], dy.shape[2]]);\n
xShape4D = [1, xShape[0], xShape[1], xShape[2]];\n  }\n\n  util.assert(\n    xShape4D.length === 4,\n    () =>\n    `Error in conv2dDerInput: inShape must be length 4, but got length ` +\n      `${xShape4D.length}`);\n
util.assert(\n    dy4D.rank === 4,\n    () => `Error in conv2dDerInput: dy must be rank 4, but got ` +\n      `rank
${dy4D.rank}`);\n  util.assert(\n    filter.rank === 4,\n    () => `Error in conv2dDerInput: filter must be rank 4, but
got ` +\n      `rank ${filter.rank}`);\n  const inDepth = dataFormat === 'NHWC' ? xShape4D[3] : xShape4D[1];\n
const outDepth = dataFormat === 'NHWC' ? dy4D.shape[3] : dy4D.shape[1];\n  util.assert(\n    inDepth ===
filter.shape[2],\n    () => `Error in conv2dDerInput: depth of input (${inDepth}) must ` +\n      `match input
depth for filter ${filter.shape[2]}`);\n  util.assert(\n    outDepth === filter.shape[3],\n    () => `Error in
conv2dDerInput: depth of output (${outDepth}) must ` +\n      `match output depth for filter
${filter.shape[3]}`);\n  if (dimRoundingMode != null) {\n    util.assert(\n      util.isInt(pad as number),\n      () =>
`Error in conv2dDerInput: pad must be an integer when using, ` +\n      `dimRoundingMode
${dimRoundingMode} but got pad ${pad}`);\n  }\n\n  const inputs: Conv2DBackpropInputInputs = {dy: dy4D,
filter};\n\n  const attrs: Conv2DBackpropInputAttrs = {\n    strides, pad, dataFormat, dimRoundingMode,\n    inputShape: xShape4D};\n\n  // tslint:disable-next-line: no-unnecessary-type-assertion\n  const res =
ENGINE.runKernel(\n    Conv2DBackpropInput, inputs as {} as NamedTensorMap,\n    attrs as {}
as NamedAttrMap) as T;\n\n  if (reshapedTo4D) {\n    return reshape(res, [res.shape[1], res.shape[2], res.shape[3]])
as T;\n  }\n  return res;\n}\n\nexport const conv2DBackpropInput = op({conv2DBackpropInput_});\n\n"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport {Tensor3D, Tensor4D} from '../tensor';\nimport {convertToTensor} from '../tensor_util_env';\nimport
{TensorLike} from '../types';\nimport {conv2DBackpropInput} from './conv2d_backprop_input';\nimport {op}
from './operation';\n\n/**\n * Computes the transposed 2D convolution of an image, also known as a\n *
deconvolution.\n * @param x The input image, of rank 4 or rank 3, of shape\n * `[batch, height, width,
inDepth]`. If rank 3, batch of 1 is assumed.\n * @param filter The filter, rank 4, of shape\n * `[filterHeight,
filterWidth, outDepth, inDepth]`. \n * `inDepth` must match `inDepth` in `x`.\n * @param outputShape Output
shape, of rank 4 or rank 3:\n * `[batch, height, width, outDepth]`. If rank 3, batch of 1 is assumed.\n * @param
strides The strides of the original convolution:\n * `[strideHeight, strideWidth]`.\n * @param pad The type of
padding algorithm used in the non-transpose version\n * of the op.\n * @param dimRoundingMode A string from:
'ceil', 'round', 'floor'. If none is\n * provided, it will default to truncate.\n */\n * @doc {heading: 'Operations',
subheading: 'Convolution'}\n */\nfunction conv2dTranspose_<T extends Tensor3D|Tensor4D>(\n  x:\n  T|TensorLike, filter: Tensor4D|TensorLike,\n  outputShape: [number, number, number, number]|[number, number,
number],\n  strides: [number, number]|number, pad: 'valid'|'same'|number,\n  dimRoundingMode?:
'floor'|'round'|'ceil'): T {\n  const $x = convertToTensor(x, 'x', 'conv2dTranspose');\n  const $filter =
convertToTensor(filter, 'filter', 'conv2dTranspose');\n\n  return conv2DBackpropInput(\n    outputShape, $x, $filter,
strides, pad, 'NHWC', dimRoundingMode);\n}\n\nexport const conv2dTranspose =

```

op({conv2dTranspose_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Conv3D, Conv3DAttrs, Conv3DInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor4D, Tensor5D} from\n './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport\n {eitherStridesOrDilationsAreOne} from './conv_util';\nimport {op} from './operation';\nimport {reshape} from\n './reshape';\n\n/**\n * Computes a 3D convolution over the input x.\n * @param x The input tensor, of rank 5 or\n * rank 4, of shape\n *   [batch, depth, height, width, channels]. If rank 4,\n *   batch of 1 is assumed.\n * @param filter The filter, rank 5, of shape\n *   [filterDepth, filterHeight, filterWidth, inChannels, outChannels].\n * inChannels must match between input and filter.\n * @param strides The strides of the convolution: [strideDepth,\n * strideHeight,\n * strideWidth].\n * @param pad The type of padding algorithm. - `same` and stride 1: output\n * will be of same size as input,\n *   regardless of filter size. - `valid`: output will be smaller than input if filter\n * is larger\n *   than 1x1.\n * - For more info, see this guide:\n * [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n * https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dataFormat: An optional string from:\n * \"NDHWC\", \"NCDHW\". Defaults to\n *   \"NDHWC\". Specify the data format of the input and output data.\n * With the\n *   default format \"NDHWC\", the data is stored in the order of: [batch,\n *   depth, height, width,\n *   channels]. Only \"NDHWC\" is currently supported.\n * @param dilations The dilation rates: [dilationDepth,\n * dilationHeight,\n * dilationWidth] in which we sample input values across the height\n *   and width\n * dimensions in atrous convolution. Defaults to [1, 1, 1].\n * If `dilations` is a single number, then\n *   `dilationDepth == dilationHeight == dilationWidth`. If it is greater\n *   than 1, then all values of `strides` must be\n * 1.\n * @doc {heading: 'Operations', subheading: 'Convolution'}\n */\nfunction conv3d<T> extends\n Tensor4D|Tensor5D<(\n x: T|TensorLike, filter: Tensor5D|TensorLike,\n strides: [number, number,\n number]|number, pad: 'valid'|'same',\n dataFormat: 'NDHWC'|'NCDHW' = 'NDHWC',\n dilations: [number,\n number, number]|number = [1, 1, 1]): T {\n const $x = convertToTensor(x, 'x', 'conv3d');\n const $filter =\n convertToTensor(filter, 'filter', 'conv3d');\n let x5D = $x as Tensor5D;\n let reshapedTo5D = false;\n if\n ($x.rank === 4) {\n reshapedTo5D = true;\n x5D = reshape($x, [1, $x.shape[0], $x.shape[1], $x.shape[2],\n $x.shape[3]]);\n }\n util.assert(\n x5D.rank === 5,\n () => `Error in conv3d: input must be rank 5, but got\n rank ${x5D.rank}.`);\n util.assert(\n $filter.rank === 5,\n () => `Error in conv3d: filter must be rank 5, but got\n rank ` +\n ` ${$filter.rank}.`);\n util.assert(\n x5D.shape[4] === $filter.shape[3],\n () => `Error in\n conv3d: depth of input (${x5D.shape[4]}) must match ` +\n ` input depth for filter ${$filter.shape[3]}.`);\n util.assert(\n eitherStridesOrDilationsAreOne(strides, dilations),\n () => `Error in conv3D: Either strides or\n dilations must be 1. ` +\n ` Got strides ${strides} and dilations '${dilations}'`);\n util.assert(\n dataFormat\n === 'NDHWC',\n () => `Error in conv3d: got dataFormat of ${\n dataFormat} but only NDHWC is\n currently supported.`);\n const inputs: Conv3DInputs = {x: x5D, filter: $filter};\n const attrs: Conv3DAttrs =\n {strides, pad, dataFormat, dilations};\n // tslint:disable-next-line: no-unnecessary-type-assertion\n const res =\n ENGINE.runKernel(\n Conv3D, inputs as { } as NamedTensorMap,\n attrs as { } as\n NamedAttrMap) as T;\n if (reshapedTo5D) {\n return reshape(\n res, [res.shape[1], res.shape[2],\n res.shape[3], res.shape[4]]) as\n T; }\n return res; }\n\nexport const conv3d = op({conv3d_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
```

copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
* \nimport {ENGINE} from './engine';\nimport {Conv3DBackpropInputV2, Conv3DBackpropInputV2Attrs,  
Conv3DBackpropInputV2Inputs} from './kernel_names';\nimport {NamedAttrMap} from  
 './kernel_registry';\nimport {Tensor4D, Tensor5D} from './tensor';\nimport {NamedTensorMap} from  
 './tensor_types';\nimport * as util from './util';\n\nimport {op} from './operation';\nimport {reshape} from  
 './reshape';\n\n/**\n * Computes the derivative of the input of a 3D convolution.\n * @param xShape The shape  
 of the input: [batch, depth, height, width, in_channels]. If length of 4, batch of 1 is assumed.\n * @param dy The  
 derivative of the output, of rank 5 or rank 4 of shape [batch, outDepth, outHeight, outWidth, in_channels].  
 If rank 4, batch of 1 is assumed.\n * @param filter The filter, rank 5, of shape [filterDepth, filterHeight,  
 filterWidth, inDepth, outDepth].\n * @param strides The strides of the convolution: [strideDepth, strideHeight,  
 strideWidth].\n * @param pad The type of padding algorithm used: - `same` and stride 1: output will be of  
 same size as input, regardless of filter size. - `valid`: output will be smaller than input if filter is  
 larger than 1x1.\n */\nfunction conv3DBackpropInput_<T extends Tensor4D|Tensor5D>(xShape: [\n number, number, number, number, number][number, number, number, number],\n dy: T, filter: Tensor5D,  
 strides: [number, number, number]number, pad: 'valid'|'same'): T {\n util.assert(xShape.length ===\n dy.rank, () => `Length of inShape ` +\n `(${xShape.length}) and rank of dy (${dy.rank}) must  
 match`);\n let xShape5D = xShape as [number, number, number, number, number];\n let dy5D = dy as  
 Tensor5D;\n let reshapedTo5D = false;\n if (dy.rank === 4) {\n reshapedTo5D = true;\n dy5D = reshape(dy, [1,  
 dy.shape[0], dy.shape[1], dy.shape[2], dy.shape[3]]);\n xShape5D = [1, xShape[0], xShape[1], xShape[2],  
 xShape[3]];\n }\n const inDepth = xShape5D[4];\n const outDepth = dy5D.shape[4];\n util.assert(xShape5D.length === 5, () => `Error in conv3dDerInput: inShape must be length 5, but got length ` +\n `(${xShape5D.length})`);\n util.assert(dy5D.rank === 5, () => `Error in conv3dDerInput: dy must be  
 rank 5, but got ` +\n `rank ${dy5D.rank}`);\n util.assert(filter.rank === 5, () => `Error in  
 conv3dDerInput: filter must be rank 5, but got ` +\n `rank ${filter.rank}`);\n util.assert(inDepth ===  
 filter.shape[3], () => `Error in conv3dDerInput: depth of input (${inDepth}) must ` +\n `match input  
 depth for filter ${filter.shape[3]}`);\n util.assert(outDepth === filter.shape[4], () => `Error in  
 conv3dDerInput: depth of output (${outDepth}) must ` +\n `match output depth for filter  
 ${filter.shape[4]}`);\n const inputs: Conv3DBackpropInputV2Inputs = {dy: dy5D, filter};\n const attrs: Conv3DBackpropInputV2Attrs = {pad, strides, inputShape: xShape5D};\n // tslint:disable-next-line: no-unnecessary-type-assertion\n const res = ENGINE.runKernel(Conv3DBackpropInputV2, inputs as {}  
 as NamedTensorMap, attrs as {} as NamedAttrMap) as T;\n if (reshapedTo5D) {\n return  
 reshape(res, [res.shape[1], res.shape[2], res.shape[3], res.shape[4]]) as T;\n }\n return  
 res;\n}\n\nexport const conv3DBackpropInput = op({conv3DBackpropInput_});\n\n/**\n * @license\n * Copyright  
 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at  
 http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
 software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES  
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
 governing permissions and limitations under the License.\n */\n=====  
* \nimport {Tensor4D, Tensor5D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport  
 {TensorLike} from './types';\nimport {conv3DBackpropInput} from './conv3d_backprop_input';\nimport {op}  
 from './operation';\n\n/**\n * Computes the transposed 3D convolution of a volume, also known as a  
 deconvolution.\n * @param x The input image, of rank 5 or rank 4, of shape [batch, depth, height, width,
```

```

inDepth`. If rank 4, batch of 1 is assumed.
 * @param filter The filter, rank 4, of shape
 * `[depth, filterHeight, filterWidth, outDepth]`.
 * `inDepth` must match `inDepth` in `x`.
 * @param outputShape Output shape, of rank 5 or rank 4:
 * `[batch, depth, height, width, outDepth]`. If rank 3, batch of 1 is
 * assumed.
 * @param strides The strides of the original convolution:
 * `[strideDepth, strideHeight, strideWidth]`.
 * @param pad The type of padding algorithm used in the non-transpose version
 * of the op.
 * @doc {heading: 'Operations', subheading: 'Convolution'}
 * \nfunction conv3dTranspose_<T extends
Tensor4D|Tensor5D>(
  x: T|TensorLike, filter: Tensor5D|TensorLike,
  outputShape: [number, number, number, number,
  number],
  strides: [number, number, number, number],
  pad: 'valid'|'same'): T {
  const $x = convertToTensor(x, 'x', 'conv3dTranspose');
  const $filter = convertToTensor(filter, 'filter', 'conv3dTranspose');
  return conv3DBackpropInput(outputShape, $x, $filter,
  strides, pad);
}
\n\nexport const conv3dTranspose = op({conv3dTranspose_});
\n"/**
 * @license
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.

```

```

=====
\n
 * \n\nimport {ENGINE} from './engine';
import {Cos, CosInputs} from './kernel_names';
import {Tensor} from './tensor';
import {NamedTensorMap} from './tensor_types';
import {convertToTensor} from './tensor_util_env';
import {TensorLike} from './types';
\n\nimport {op} from './operation';
\n\n/**
 * Computes cos of the input `tf.Tensor` element-wise: `cos(x)`
 * \n * ``js
 * \n * const x = tf.tensor1d([0, Math.PI / 2, Math.PI * 3 / 4]);
 * \n * x.cos().print(); // or tf.cos(x)
 * \n * @param x The input tensor.
 * \n * @doc {heading: 'Operations', subheading: 'Basic math'}
 * \nfunction cos_<T extends Tensor>(x: T|TensorLike): T {
  const $x = convertToTensor(x, 'x', 'cos');
  const inputs: CosInputs = {x: $x};
  return ENGINE.runKernel(Cos, inputs as { } as NamedTensorMap);
}
\n\nexport const cos = op({cos_});
\n"/**
 * @license
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.

```

```

=====
\n
 * \n\nimport {ENGINE} from './engine';
import {Cosh, CoshInputs} from './kernel_names';
import {Tensor} from './tensor';
import {NamedTensorMap} from './tensor_types';
import {convertToTensor} from './tensor_util_env';
import {TensorLike} from './types';
\n\nimport {op} from './operation';
\n\n/**
 * Computes hyperbolic cos of the input `tf.Tensor` element-wise: `cosh(x)`
 * \n * ``js
 * \n * const x = tf.tensor1d([0, 1, -1, .7]);
 * \n * x.cosh().print(); // or tf.cosh(x)
 * \n * @param x The input tensor.
 * \n * @doc {heading: 'Operations', subheading: 'Basic math'}
 * \nfunction cosh_<T extends Tensor>(x: T|TensorLike): T {
  const $x = convertToTensor(x, 'x', 'cosh');
  const inputs: CoshInputs = {x: $x};
  return ENGINE.runKernel(Cosh, inputs as { } as NamedTensorMap);
}
\n\nexport const cosh = op({cosh_});
\n"/**
 * @license
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.

```

```

=====
\n

```

```

*\n\nimport {ENGINE} from './engine';\nimport {Cumsum, CumsumAttrs, CumsumInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
 {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes the cumulative sum of a
 `tf.Tensor` along `axis`\n * \n * ```\n * const x = tf.tensor([1, 2, 3, 4]);\n * x.cumsum().print();\n * ```\n * ```\n * const x = tf.tensor([[1, 2], [3, 4]]);\n * x.cumsum().print();\n * ```\n * \n * @param x The input tensor to be
 summed.\n * @param axis The axis along which to sum. Optional. Defaults to 0.\n * @param exclusive Whether to
 perform exclusive cumulative sum. Optional.\n * Defaults to false. If set to true then the sum of each tensor
 entry\n * does not include its own value, but only the values previous to it\n * along the specified axis.\n *
 @param reverse Whether to sum in the opposite direction. Optional.\n * Defaults to false.\n * \n * @doc
 {heading: 'Operations', subheading: 'Scan'}\n */\nfunction cumsum_

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {DenseBincount, DenseBincountAttrs, DenseBincountInputs}
 from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor1D, Tensor2D} from
 './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from
 './operation';\n\n/**\n * Outputs a vector with length `size` and the same dtype as `weights`\n * \n * If `weights`
 are empty, then index `i` stores the number of times the value\n * `i` is counted in `x`. If `weights` are non-empty, then
 index `i` stores the\n * sum of the value in `weights` at each index where the corresponding value in\n * `x` is `i`.\n *
 \n * Values in `x` outside of the range [0, size) are ignored.\n * \n * @param x The input int tensor, rank 1 or rank
 2.\n * @param weights The weights tensor, must have the same shape as x, or a\n * length-0 Tensor, in which
 case it acts as all weights equal to 1.\n * @param size Non-negative integer.\n * @param binaryOutput Optional.
 Whether the kernel should count the appearance\n * or number of occurrences. Defaults to False.\n * \n * @doc
 {heading: 'Operations', subheading: 'Reduction'}\n */\nfunction denseBincount_

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor4D} from './tensor';\nimport\n {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport\n {TensorLike4D} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\n\n/**\n * Rearranges data from depth into blocks of spatial data. More specifically,\n * this op outputs a copy of the input\n * tensor where values from the `depth`\n * dimension are moved in spatial blocks to the `height` and `width`\n * dimensions.\n * The attr `blockSize` indicates the input block size and how the data is\n * moved.\n * - Chunks\n * of data of size `blockSize * blockSize` from depth are rearranged\n * into non-overlapping blocks of size `blockSize\n * x blockSize`\n * - The width the output tensor is `inputWidth * blockSize`, whereas the\n * height is\n * `inputHeight * blockSize`\n * - The Y, X coordinates within each block of the output image are determined\n * by the high order component of the input channel index\n * - The depth of the input tensor must be divisible by\n * `blockSize * blockSize`\n * The `dataFormat` attr specifies the layout of the input and output tensors\n * with the following options: \"NHWC\": [ `batch, height, width, channels` ]\n * \"NCHW\": [ `batch, channels,\n * height, width` ]\n * `const x = tf.tensor4d([1, 2, 3, 4], [1, 1, 1, 4]);`\n * `const blockSize = 2;`\n * `const\n * dataFormat = \"NHWC\";`\n * `tf.depthToSpace(x, blockSize, dataFormat).print();`\n * `@param x` The\n * input tensor of rank 4\n * `@param blockSize` An `int` that is  $\geq 2$ . The size of the spatial block\n * `@param\n * dataFormat` An optional string from: \"NHWC\", \"NCHW\". Defaults to \"NHWC\"\n * `@doc {heading:\n * 'Tensors', subheading: 'Transformations'}`\n *\nfunction depthToSpace_(\n  x: Tensor4D|TensorLike4D,\n  blockSize: number,\n  dataFormat: 'NHWC'|'NCHW' = 'NHWC'): Tensor4D {\n  const $x = convertToTensor(x, 'x',\n 'depthToSpace') as Tensor4D;\n\n  const inputHeight = (dataFormat === 'NHWC') ? $x.shape[1] : $x.shape[2];\n  const inputWidth = (dataFormat === 'NHWC') ? $x.shape[2] : $x.shape[3];\n  const inputDepth = (dataFormat ===\n 'NHWC') ? $x.shape[3] : $x.shape[1];\n\n  util.assert(\n    inputHeight * blockSize >= 0,\n    () => `Negative\n dimension size caused by overflow when multiplying\n    ${inputHeight} and ${blockSize} for depthToSpace with\n input shape\n    ${$x.shape}`);\n\n  util.assert(\n    inputWidth * blockSize >= 0,\n    () => `Negative dimension\n size caused by overflow when multiplying\n    ${inputWidth} and ${blockSize} for depthToSpace with input\n shape\n    ${$x.shape}`);\n\n  util.assert(\n    (inputDepth % (blockSize * blockSize)) === 0,\n    () =>\n `Dimension size must be evenly divisible by ${\n    blockSize * blockSize} but is ${\n    inputDepth} for\n depthToSpace with input shape ${$x.shape}`);\n\n  const inputs: DepthToSpaceInputs = {x: $x};\n  const attrs:\n DepthToSpaceAttrs = {blockSize, dataFormat};\n\n  return ENGINE.runKernel(\n    DepthToSpace, inputs as {\n as NamedTensorMap,\n    attrs as {\n as NamedAttrMap});\n}\n\nexport const depthToSpace =\n op({depthToSpace_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */\n\n=====\n\nimport {ENGINE} from './engine';\nimport {DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,\n DepthwiseConv2dNativeInputs} from './kernel_names';\nimport {NamedAttrMap} from\n './kernel_registry';\nimport {Tensor3D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from\n './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport\n * as util from './util';\n\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Depthwise\n * 2D convolution.\n * Given a 4D `input` array and a `filter` array of shape\n * `[filterHeight, filterWidth,
```

```

inChannels, channelMultiplier]` containing\n * `inChannels` convolutional filters of depth 1, this op applies a\n *
different filter to each input channel (expanding from 1 channel to\n * `channelMultiplier` channels for each), then
concatenates the results\n * together. The output has `inChannels * channelMultiplier` channels.\n * See\n *
[https://www.tensorflow.org/api_docs/python/tf/nn/depthwise_conv2d](\n *
https://www.tensorflow.org/api_docs/python/tf/nn/depthwise_conv2d)\n * for more details.\n *\n * @param x The
input tensor, of rank 4 or rank 3, of shape\n * `[batch, height, width, inChannels]`. If rank 3, batch of 1 is\n *
assumed.\n * @param filter The filter tensor, rank 4, of shape\n * `[filterHeight, filterWidth, inChannels,
channelMultiplier]`.\n * @param strides The strides of the convolution: `[strideHeight,\n * strideWidth]`. If strides
is a single number, then `strideHeight ==\n * strideWidth`.\n * @param pad The type of padding algorithm.\n * -
`same` and stride 1: output will be of same size as input,\n * regardless of filter size.\n * - `valid`: output will
be smaller than input if filter is larger\n * than 1x1.\n * - For more info, see this guide:\n *
[https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dilations The dilation rates:
`[dilationHeight, dilationWidth]`\n * in which we sample input values across the height and width dimensions\n *
in atrous convolution. Defaults to `[1, 1]`. If `rate` is a single\n * number, then `dilationHeight ==
dilationWidth`. If it is greater than\n * 1, then all values of `strides` must be 1.\n * @param dataFormat: An
optional string from: `\"NHWC\"`, `\"NCHW\"`. Defaults to\n * `\"NHWC\"`. Specify the data format of the input and
output data. With the\n * default format `\"NHWC\"`, the data is stored in the order of: [batch,\n * height, width,
channels]. Only `\"NHWC\"` is currently supported.\n * @param dimRoundingMode A string from: 'ceil', 'round',
'floor'. If none is\n * provided, it will default to truncate.\n *\n * @doc {heading: 'Operations', subheading:
'Convolution'}\n *\nfunction depthwiseConv2d<T extends Tensor3D|Tensor4D>(\n x: T|TensorLike, filter:
Tensor4D|TensorLike,\n strides: [number, number][number, pad: 'valid'|'same'|number,\n dataFormat:
'NHWC'|'NCHW' = 'NHWC',\n dilations: [number, number][number = [1, 1],\n dimRoundingMode?:
'floor'|'round'|'ceil']): T {\n const $x = convertToTensor(x, 'x', 'depthwiseConv2d');\n const $filter =
convertToTensor(filter, 'filter', 'depthwiseConv2d');\n let x4D = $x as Tensor4D;\n let reshapedTo4D = false;\n
if ($x.rank === 3) {\n reshapedTo4D = true;\n x4D = reshape($x, [1, $x.shape[0], $x.shape[1], $x.shape[2]]);\n
}\n util.assert(\n x4D.rank === 4,\n () => `Error in depthwiseConv2d: input must be rank 4, but got ` +\n
`rank ${x4D.rank}.`);\n util.assert(\n $filter.rank === 4,\n () => `Error in depthwiseConv2d: filter must be
rank 4, but got rank ` +\n
`${$filter.rank}.`);\n util.assert(\n x4D.shape[3] === $filter.shape[2],\n () =>
`Error in depthwiseConv2d: number of input channels ` +\n
`${x4D.shape[3]} must match the inChannels
dimension in ` +\n
`${filter ${$filter.shape[2]}}`);\n\n if (dimRoundingMode != null) {\n util.assert(\n
util.isInt(pad as number),\n () => `Error in depthwiseConv2d: pad must be an integer when using, ` +\n
`dimRoundingMode ${dimRoundingMode} but got pad ${pad}.`);\n }\n\n const inputs:
DepthwiseConv2dNativeInputs = {x: x4D, filter: $filter};\n const attrs: DepthwiseConv2dNativeAttrs =\n
{strides, pad, dataFormat, dilations, dimRoundingMode};\n\n // tslint:disable-next-line: no-unnecessary-type-
assertion\n const res = ENGINE.runKernel(\n DepthwiseConv2dNative, inputs as {} as
NamedTensorMap,\n attrs as {} as NamedAttrMap) as T;\n\n if (reshapedTo4D) {\n return reshape(res,
[res.shape[1], res.shape[2], res.shape[3]]) as T;\n }\n\n return res;\n }\n\nexport const depthwiseConv2d =
op({depthwiseConv2d_});\n", "*/\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the `\"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `\"AS IS\"` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {Diag, DiagInputs} from './kernel_names';\nimport {Tensor}
from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from

```

```

./tensor_util_env';\n\nimport {op} from './operation';\n\n/**\n * Returns a diagonal tensor with a given diagonal values.\n *\n * Given a diagonal, this operation returns a tensor with the diagonal and\n * everything else padded with zeros.\n *\n * Assume the input has dimensions `[D1,..., Dk]`, then the output is a tensor\n * of rank 2k with dimensions `[D1,..., Dk, D1,..., Dk]`\n *\n * `js`\n * const x = tf.tensor1d([1, 2, 3, 4]);\n *\n * tf.diag(x).print()\n *\n * `js`\n * const x = tf.tensor1d([1, 2, 3, 4, 5, 6, 6, 8], [4, 2]);\n *\n * tf.diag(x).print()\n *\n * @param x The input tensor.\n */\nfunction diag_(x: Tensor): Tensor {\n  const $x = convertToTensor(x, 'x', 'diag');\n\n  const inputs: DiagInputs = {x: $x};\n\n  return ENGINE.runKernel(Diag, inputs as {} as NamedTensorMap);\n}\n\nexport const diag = op({diag_});\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Dilation2D, Dilation2DAttrs, Dilation2DInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes the grayscale dilation over the input `x`.\n *\n * @param x The input tensor, rank 3 or rank 4 of shape\n *   `[batch, height, width, inChannels]`. If rank 3, batch of 1 is assumed.\n * @param filter The filter tensor, rank 3, of shape\n *   `[filterHeight, filterWidth, depth]`.\n * @param strides The strides of the sliding window for each dimension of the\n *   input tensor: `[strideHeight, strideWidth]`.\n *   If `strides` is a single number,\n *   then `strideHeight == strideWidth`.\n * @param pad The type of padding algorithm.\n *   - `same` and stride 1: output will be of same size as input,\n *   regardless of filter size.\n *   - `valid`: output will be smaller than input if filter is larger\n *   than 1*1x1.\n *   - For more info, see this guide:\n *   [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *   https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dataFormat Specify the data format of the input and output data.\n *   Defaults to 'NHWC'. Only 'NHWC' is currently supported. With the\n *   default format "NHWC", the data is stored in the order of: [batch,\n *   height, width, channels].\n * @param dilations The dilation rates: `[dilationHeight, dilationWidth]`\n *   in which we sample input values across the height and width dimensions\n *   for atrous morphological dilation. Defaults to `[1, 1]`. If `dilations`\n *   is a single number, then `dilationHeight == dilationWidth`. If it is\n *   greater than 1, then all values of `strides` must be 1.\n */\n * @doc {heading: 'Operations', subheading: 'Convolution'}\n */\nfunction dilation2d_<T extends Tensor3D|Tensor4D>(\n  x: T|TensorLike, filter: Tensor3D|TensorLike,\n  strides: [number, number]|number, pad: 'valid'|'same',\n  dilations: [number, number]|number = [1, 1],\n  dataFormat: 'NHWC' = 'NHWC'): T {\n  const $x = convertToTensor(x, 'x', 'dilation2d');\n  const $filter = convertToTensor(filter, 'filter', 'dilation2d');\n\n  util.assert(\n    $x.rank === 3 || $x.rank === 4,\n    () => `Error in dilation2d: input must be rank 3 or 4, but got rank ` +\n    `${$x.rank}`);\n  util.assert(\n    $filter.rank === 3,\n    () => `Error in dilation2d: filter must be rank 3, but got rank ` +\n    `${$filter.rank}`);\n  util.assert(\n    dataFormat === 'NHWC',\n    () => `Error in dilation2d: Only NHWC is currently supported, ` +\n    `but got dataFormat of ${dataFormat}`);\n\n  let x4D = $x as Tensor4D;\n  let reshapedTo4D = false;\n\n  if ($x.rank === 3) {\n    x4D = reshape($x, [1, $x.shape[0], $x.shape[1], $x.shape[2]]);\n    reshapedTo4D = true;\n  }\n\n  const inputs: Dilation2DInputs = {x: x4D, filter: $filter};\n  const attrs: Dilation2DAttrs = {strides, pad, dilations};\n\n  // tslint:disable-next-line: no-unnecessary-type-assertion\n  const res = ENGINE.runKernel(\n    Dilation2D, inputs as {} as NamedTensorMap,\n    attrs as {} as NamedAttrMap) as T;\n\n  if (reshapedTo4D) {\n    return reshape(res, [res.shape[1], res.shape[2], res.shape[3]])\n    as T;\n  }\n\n  return res;\n}\n\nexport const dilation2d = op({dilation2d_});\n",/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the

```


"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*/\n\n/**\n * Returns the dimensions in the input shape that are broadcasted to\n * produce the provided output shape.\n * The returned dimensions are 0-indexed and sorted. An example:\n * inShape = [4, 1, 3]\n * outShape = [5, 4, 3, 3]\n * result = [1]. Dimension 1 (2nd dimension of input) gets broadcasted 1 => 3.\n */\nexport function getBroadcastDims(\n  inShape: number[], outShape: number[]): number[] {\n  const inRank = inShape.length;\n  const dims: number[] = [];\n  for (let i = 0; i < inRank; i++) {\n    const dim = inRank - 1 - i;\n    const a = inShape[dim] || 1;\n    const b = outShape[outShape.length - 1 - i] || 1;\n    if (b > 1 && a === 1) {\n      dims.unshift(dim);\n    }\n  }\n  return dims;\n}\n\n/**\n * Returns the axes in the output space that should be reduced to produce\n * the input space.\n */\nexport function getReductionAxes(\n  inShape: number[], outShape: number[]): number[] {\n  const result: number[] = [];\n  for (let i = 0; i < outShape.length; i++) {\n    const inDim = inShape[inShape.length - i - 1];\n    const outAxis = outShape.length - i - 1;\n    const outDim = outShape[outAxis];\n    if (inDim === null || (inDim === 1 && outDim > 1)) {\n      result.unshift(outAxis);\n    }\n  }\n  return result;\n}\n\nexport function assertAndGetBroadcastShape(\n  shapeA: number[], shapeB: number[]): number[] {\n  const result: number[] = [];\n  const l = Math.max(shapeA.length, shapeB.length);\n  for (let i = 0; i < l; i++) {\n    let a = shapeA[shapeA.length - i - 1];\n    if (a === null) {\n      a = 1;\n    }\n    let b = shapeB[shapeB.length - i - 1];\n    if (b === null) {\n      b = 1;\n    }\n    if (a === 1) {\n      result.unshift(b);\n    } else if (b === 1) {\n      result.unshift(a);\n    } else if (a !== b) {\n      const errMsg = `Operands could not be broadcast together with shapes ` +\n        `${shapeA} and ${shapeB}`;\n      throw Error(errMsg);\n    } else {\n      result.unshift(a);\n    }\n  }\n  return result;\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*/\n\nimport {ENGINE} from './engine';\nimport {Equal, EqualInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth value of (a == b) element-wise. Supports broadcasting.\n */\nexport function equal<T>(\n  a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a = convertToTensor(a, 'a', 'equal');\n  let $b = convertToTensor(b, 'b', 'equal');\n  [$a, $b] = makeTypesMatch($a, $b);\n  assertAndGetBroadcastShape($a.shape, $b.shape);\n  const inputs: EqualInputs = {a: $a, b: $b};\n  return ENGINE.runKernel(Equal, inputs as { } as NamedTensorMap);\n}\n\nexport const equal = op({equal});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

License.\n *

```
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Select, SelectInputs} from './kernel_names';\nimport {Tensor}
from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assert, assertShapesMatch} from
 './util';\nimport {broadcastTo} from './broadcast_to';\nimport {assertAndGetBroadcastShape} from
 './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the elements, either `a` or `b` depending on the
`condition`.\n * If the condition is true, select from `a`, otherwise select from `b`.\n * ```\n * const cond =
tf.tensor1d([false, false, true], 'bool');\n * const a = tf.tensor1d([1, 2, 3]);\n * const b = tf.tensor1d([-1, -2, -3]);\n *\n * a.where(cond, b).print();\n * ```\n * @param condition The input condition. Must be of dtype bool.\n *
@param a If `condition` is rank 1, `a` may have a higher rank but\n * its first dimension must match the size of
`condition`.\n * @param b A tensor with the same dtype as `a` and with shape that is\n * compatible with `a`.\n *
@return A tensor with same dtype as `a` and `b`, and shape that is\n * broadcastable from `a` and `b`.\n *\n *
@doc {heading: 'Operations', subheading: 'Logical'}\n *\nfunction where_<T extends Tensor>(\n condition:
Tensor|TensorLike, a: T|TensorLike, b: T|TensorLike): T {\n const $a = convertToTensor(a, 'a', 'where');\n const $b
= convertToTensor(b, 'b', 'where');\n const $condition = convertToTensor(condition, 'condition', 'where', 'bool');\n
// TODO: move this logic to forward function when the broadcastTo op is\n // implemented in WASM.\n // Find
the broadcastable shape for $a and $b.\n const broadcastShape = assertAndGetBroadcastShape($a.shape,
$b.shape);\n const $broadcastedA = broadcastTo($a, broadcastShape);\n const $broadcastedB = broadcastTo($b,
broadcastShape);\n if ($condition.rank === 1) {\n // If condition rank is 1, then the first dimension must match the
size of\n // condition.\n assert(\n $condition.shape[0] === $a.shape[0],\n () => 'The first dimension of
`a` must match the size of `condition`.');\n }\n if ($condition.rank !== 1) {\n // A must have the same shape as
condition.\n assertShapesMatch(\n $condition.shape, $broadcastedB.shape, 'Error in where: ');
}\n\n const
inputs: SelectInputs = {\n condition: $condition,\n t: $broadcastedA,\n e: $broadcastedB\n };
return
ENGINE.runKernel(Select, inputs as unknown as NamedTensorMap);\n}\n\nexport const where =
op({where_});\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {ZerosLike, ZerosLikeInputs} from './kernel_names';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Creates a
`tf.Tensor` with all elements set to 0 with the same shape as the\n * given tensor.\n * ```\n * const x =
tf.tensor([1, 2]);\n * tf.zerosLike(x).print();\n * ```\n * @param x The tensor of required shape.\n *\n *
@doc {heading: 'Tensors', subheading: 'Creation'}\n *\nfunction zerosLike_<T extends Tensor>(x: T|TensorLike): T {\n
const $x = convertToTensor(x, 'x', 'zerosLike');\n const inputs: ZerosLikeInputs = {x: $x};\n return
ENGINE.runKernel(ZerosLike, inputs as { } as NamedTensorMap);\n}\n\nexport const zerosLike =
op({zerosLike_});\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```

=====
*/
import {Tensor} from './tensor';
import {makeTypesMatch} from './tensor_util';
import {convertToTensor}
from './tensor_util_env';
import {TensorLike} from './types';
import {div} from './div';
import {equal} from
 './equal';
import {op} from './operation';
import {where} from './where';
import {zerosLike} from
 './zeros_like';
/**
 * Divides two `tf.Tensor`s element-wise, A / B. Supports broadcasting. Return 0 if
 * denominator is 0.
 */
const a = tf.tensor1d([1, 4, 9, 16]);
const b = tf.tensor1d([1, 2, 3, 4]);
const c = tf.tensor1d([0, 0, 0, 0]);
a.divNoNan(b).print(); // or tf.divNoNan(a, b)
a.divNoNan(c).print();
// or tf.divNoNan(a, c)
// Broadcast div a with b.
const a = tf.tensor1d([2, 4, 6, 8]);
const b = tf.scalar(2);
const c = tf.scalar(0);
a.divNoNan(b).print(); // or tf.divNoNan(a, b)
a.divNoNan(c).print(); // or tf.divNoNan(a, c)
@param a The first tensor as the numerator.
@param b The second tensor as the denominator. Must have the same dtype as `a`.
@doc {heading:
'Operations', subheading: 'Arithmetic'}
function divNoNan<T extends Tensor>(
  a: Tensor|TensorLike, b:
Tensor|TensorLike): T {
  // TODO: Make this into its own kernel.
  let $a = convertToTensor(a, 'a', 'div');
  let $b = convertToTensor(b, 'b', 'div');
  [$a, $b] = makeTypesMatch($a, $b);
  const divResult = div($a, $b);
  const zeros = zerosLike(divResult);
  const bEqualsZero = equal($b, zeros);
  return where(bEqualsZero, zeros,
divResult) as T;
}
export const divNoNan = op({divNoNan});
*/
Copyright 2020
Google LLC. All Rights Reserved.
Licensed under the Apache License, Version 2.0 (the "License");
you
may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing,
software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language
governing permissions and
limitations under the License.
=====
*/
import {Tensor,} from './tensor';
import {convertToTensor} from './tensor_util_env';
import {TensorLike}
from './types';
import * as util from './util';
import {matMul} from './mat_mul';
import {op} from
 './operation';
import {reshape} from './reshape';
/**
 * Computes the dot product of two matrices and/or
 * vectors, `t1` and `t2`.
 */
const a = tf.tensor1d([1, 2]);
const b = tf.tensor2d([[1, 2], [3, 4]]);
const c = tf.tensor2d([[1, 2, 3], [4, 5, 6]]);
a.dot(b).print(); // or tf.dot(a, b)
b.dot(a).print();
b.dot(c).print();
@param t1 The first tensor in the dot operation.
@param t2 The second tensor in the
dot operation.
@doc {heading: 'Operations', subheading: 'Matrices'}
function dot_(t1:
Tensor|TensorLike, t2: Tensor|TensorLike): Tensor {
  const $t1 = convertToTensor(t1, 't1', 'dot');
  const $t2 =
convertToTensor(t2, 't2', 'dot');
  util.assert(
    ($t1.rank === 1 || $t1.rank === 2) && ($t2.rank === 1 ||
$t2.rank === 2),
    () => `Error in dot: inputs must all be rank 1 or 2, but got ranks ` +
`${$t1.rank} and
${$t2.rank}.`);
  const t1Inner = ($t1.rank === 1 ? $t1.size : $t1.shape[1]);
  const t2Inner = ($t2.rank === 1 ?
$t2.size : $t2.shape[0]);
  util.assert(
    t1Inner === t2Inner,
    () => `Error in dot: inner dimensions of
inputs must match, but got ` +
`${t1Inner} and ${t2Inner}.`);
  if ($t1.rank === 1 && $t2.rank === 1) {
    const t12D = reshape($t1, [1, -1]);
    const t22D = reshape($t2, [-1, 1]);
    const t1t2 = matMul(t12D, t22D);
    return reshape(t1t2, []);
  } else if ($t1.rank === 1 && $t2.rank === 2) {
    const t12D = reshape($t1, [1, -1]);
    const t22D = reshape($t2, [$t2.shape[0], $t2.shape[1]]);
    const t1t2 = matMul(t12D, t22D);
    return
reshape(t1t2, [t1t2.size]);
  } else if ($t1.rank === 2 && $t2.rank === 1) {
    const t22D = reshape($t2, [-1, 1]);
    const t1t2 = matMul($t1, t22D);
    return reshape(t1t2, [t1t2.size]);
  } else {
    const t22D = reshape($t2,
[$t2.shape[0], $t2.shape[1]]);
    const t1t2 = matMul($t1, t22D);
    return t1t2;
  }
}
export const dot =
op({dot_});
*/
Copyright 2020 Google LLC. All Rights Reserved.
Licensed under the
Apache License, Version 2.0 (the "License");
you
may not use this file except in compliance with the
License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing,
software
distributed under the License is distributed
on an "AS IS" BASIS,
WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or
implied.
See the License for the specific language governing permissions and
limitations under the

```

License.\n *

```
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Elu, EluInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes exponential linear element-wise:  $x > 0 ? e^x - 1 : 0$ .\n *\n * const x = tf.tensor1d([-1, 1, -3, 2]);\n *\n * x.elu().print(); // or tf.elu(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction elu_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'elu');\n\n  const inputs: EluInputs = {x: $x};\n  return ENGINE.runKernel(Elu, inputs as { } as NamedTensorMap);\n}\n\nexport const elu = op({elu_});\n",/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Erf, ErfInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {cast} from './cast';\nimport {op} from './operation';\n\n/**\n * Computes gauss error function of the input `tf.Tensor` element-wise:\n *  $erf(x)$ \n *\n * const x = tf.tensor1d([0, .1, -.1, .7]);\n *\n * x.erf().print(); // or tf.erf(x);\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction erf_<T extends Tensor>(x: T|TensorLike): T {\n  let $x = convertToTensor(x, 'x', 'erf');\n  util.assert($x.dtype === 'int32' || $x.dtype === 'float32',\n    () => 'Input dtype must be `int32` or `float32`.');\n\n  if ($x.dtype === 'int32') {\n    $x = cast($x, 'float32');\n  }\n\n  const inputs: ErfInputs = {x: $x};\n  return ENGINE.runKernel(Erf, inputs as { } as NamedTensorMap);\n}\n\nexport const erf = op({erf_});\n",/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Exp, ExpInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes exponential of the input `tf.Tensor` element-wise:  $e^x$ \n *\n * const x = tf.tensor1d([1, 2, -3]);\n *\n * x.exp().print(); // or tf.exp(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction exp_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'exp');\n\n  const inputs: ExpInputs = {x: $x};\n  return ENGINE.runKernel(Exp, inputs as { } as NamedTensorMap);\n}\n\nexport const exp = op({exp_});\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
 {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\n\n/**\n * Returns a
 `tf.Tensor` that has expanded rank, by inserting a dimension\n * into the tensor's shape.\n * \n * `js` \n * const x =
 tf.tensor1d([1, 2, 3, 4]);\n * const axis = 1;\n * x.expandDims(axis).print();\n * \n * @param x The input
 tensor whose dimensions to be expanded.\n * @param axis The dimension index at which to insert shape of `1`.
 Defaults\n * to 0 (the first dimension).\n * \n * @doc {heading: 'Tensors', subheading: 'Transformations'}\n
*\nfunction expandDims<T extends Tensor>(x: Tensor|TensorLike, axis = 0): T {\n const $x =
 convertToTensor(x, 'x', 'expandDims', 'string_or_numeric');\n\n util.assert(axis <= $x.rank, () => 'Axis must be <=
 rank of the tensor');\n\n const inputs: ExpandDimsInputs = {input: $x};\n const attrs: ExpandDimsAttrs = {dim:
 axis};\n\n return ENGINE.runKernel(\n ExpandDims, inputs as {} as NamedTensorMap, attrs as {} as
 NamedAttrMap);\n}\n\nexport const expandDims = op({expandDims_});\n\n"/**\n * @license\n * Copyright 2018
 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
 may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
 http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {ExpM1, ExpM1Inputs} from './kernel_names';\nimport {Tensor}
 from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes
 exponential of the input `tf.Tensor` minus one element-wise.\n * \n * `e ^ x - 1`\n * \n * `js` \n * const x =
 tf.tensor1d([1, 2, -3]);\n * x.expM1().print(); // or tf.expM1(x)\n * \n * @param x The input tensor.\n * \n *
 @doc {heading: 'Operations', subheading: 'Basic math'}\n *\nfunction expM1<T extends Tensor>(x: T|TensorLike): T {\n const $x =
 convertToTensor(x, 'x', 'expM1');\n\n const inputs: ExpM1Inputs = {x: $x};\n return ENGINE.runKernel(ExpM1,
 inputs as {} as NamedTensorMap);\n}\n\nexport const expM1 = op({expM1_});\n\n"/**\n * @license\n * Copyright
 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
 you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
 http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {Tile, TileAttrs, TileInputs} from './kernel_names';\nimport
 {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from
 './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport
 * as util from './util';\n\nimport {op} from './operation';\n\n/**\n * Construct a tensor by repeating it the number of
 times given by reps.\n * \n * This operation creates a new tensor by replicating `input` `reps`\n * times. The output
 tensor's i'th dimension has `input.shape[i] *` \n * `reps[i]` elements, and the values of `input` are replicated\n *
 `reps[i]` times along the i'th dimension. For example, tiling\n * `[a, b, c, d]` by `[2]` produces `[a, b, c, d, a, b, c,
 d]`.\n * \n * `js` \n * const a = tf.tensor1d([1, 2]);\n * a.tile([2]).print(); // or a.tile([2])\n * \n * \n * \n *
 const a = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n * a.tile([1, 2]).print(); // or a.tile([1, 2])\n * \n * \n * \n *
 @param x The tensor to tile.\n * @param reps Determines the number of replications per dimension.\n * \n * @doc {heading:
 'Tensors', subheading: 'Slicing and Joining'}\n *\nfunction tile<T extends Tensor>(x: T|TensorLike, reps:
 number[]): T {\n const $x = convertToTensor(x, 'x', 'tile', 'string_or_numeric');\n\n util.assert(\n $x.rank ===

```

```

reps.length,\n    () => `Error in transpose: rank of input ${$x.rank}` +\n        `must match length of reps`
${reps}.`);\n\n const inputs: TileInputs = {x: $x};\n const attrs: TileAttrs = {reps};\n\n return
ENGINE.runKernel(\n    Tile, inputs as unknown as NamedTensorMap,\n    attrs as unknown as
NamedAttrMap);\n\n\nexport const tile = op({tile_});\n", "/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {Tensor2D} from './tensor';\nimport {DataType} from './types';\nimport {buffer} from
'/buffer';\nimport {expandDims} from './expand_dims';\nimport {op} from './operation';\nimport {reshape} from
'/reshape';\nimport {tile} from './tile';\n\n/**\n * Create an identity matrix.\n * \n * @param numRows Number of
rows.\n * @param numColumns Number of columns. Defaults to `numRows`.\n * @param batchSize If provided,
will add the batch shape to the beginning\n * of the shape of the returned `tf.Tensor` by repeating the identity\n *
matrix.\n * @param dtype Data type.\n * @returns Identity matrix of the specified size and data type, possibly\n *
with batch repetition if `batchShape` is specified.\n * \n * @doc {heading: 'Tensors', subheading: 'Creation'}\n
*\nfunction eye_(\n    numRows: number, numColumns?: number,\n    batchSize?:\n    [\n        number\n
    ]\n    | [number, number]\n    | [number, number, number]\n    | [number, number, number, number],\n    dtype: DataType =
'float32'): Tensor2D {\n    if (numColumns == null) {\n        numColumns = numRows;\n    }\n    const buff =
buffer([numRows, numColumns], dtype);\n    const n = numRows <= numColumns ? numRows : numColumns;\n    for (let i = 0; i < n; ++i) {\n        buff.set(1, i, i);\n    }\n    const out: Tensor2D = reshape(buff.toTensor(), [numRows,
numColumns]);\n    if (batchShape == null) {\n        return out;\n    } else {\n        if (batchShape.length === 1) {\n            return
tile(expandDims(out, 0), [batchShape[0], 1, 1]) as Tensor2D;\n        } else if (batchShape.length === 2) {\n            //
tslint:disable-next-line:no-unnecessary-type-assertion\n            return tile(\n                expandDims(expandDims(out, 0),
0),\n                [batchShape[0], batchShape[1], 1, 1]) as Tensor2D;\n        } else if (batchShape.length === 3) {\n            //
tslint:disable-next-line:no-unnecessary-type-assertion\n            return tile(expandDims(expandDims(expandDims(out,
0), 0), 0), [\n                batchSize[0], batchSize[1], batchSize[2], 1, 1\n            ]) as Tensor2D;\n        } else {\n            throw new Error(\n                `eye() currently supports only 1D and 2D` +\n                `// tslint:disable-next-line:no-any`\n                `batchShapes, but received ${batchShape as any}.length` +\n                `D`);\n        }\n    }\n\n\nexport const eye =
op({eye_});\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {ENGINE} from './engine';\nimport {Fill, FillAttrs} from './kernel_names';\nimport {NamedAttrMap}
from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {DataType, Rank, ShapeMap} from
 './types';\n\n/**\n * Creates a `tf.Tensor` filled with a scalar value.\n * \n * `js`\n * `tf.fill([2, 2], 4).print();`\n * \n * \n * @param shape An array of integers defining the output tensor shape.\n * @param value The scalar value to fill
the tensor with.\n * @param dtype The type of an element in the resulting tensor. Defaults to\n * `float`.\n * \n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\nfunction fill<R extends Rank>(\n    shape: ShapeMap[R],
value: number|string, dtype?: DataType): Tensor<R> {\n    const attrs: FillAttrs = {shape, value, dtype};\n\n    return
ENGINE.runKernel(Fill, {}, attrs as {} as NamedAttrMap);\n\n\nexport {fill};\n", "/**\n * @license\n * Copyright
2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *

```

you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * <http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Floor, FloorInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes floor of input `tf.Tensor` element-wise: `floor(x)`.\n *\n * `js`\n * const x = tf.tensor1d([.6, 1.1, -3.3]);\n *\n * x.floor().print(); // or tf.floor(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction floor<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'floor');\n\n  const inputs: FloorInputs = {x: $x};\n  return ENGINE.runKernel(Floor, inputs as { } as NamedTensorMap);\n}\n\nexport const floor = op({floor_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {ENGINE} from './engine';\nimport {GatherV2, GatherV2Attrs, GatherV2Inputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Gather slices from tensor `x`'s axis `axis` according to `indices`.\n *\n * `js`\n * const x = tf.tensor1d([1, 2, 3, 4]);\n * const indices = tf.tensor1d([1, 3, 3], 'int32');\n *\n * x.gather(indices).print();\n *\n * `js`\n * const x = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n * const indices = tf.tensor1d([1, 1, 0], 'int32');\n *\n * x.gather(indices).print();\n *\n * @param x The input tensor whose slices to be gathered.\n * @param indices The indices of the values to extract.\n * @param axis The axis over which to select values. Defaults to 0.\n * @param batchDims Optional. The number of batch dimensions. It must be less\n * than or equal to rank(indices). Defaults to 0.\n * The output tensor will have shape of\n * `x.shape[:axis] + indices.shape[batchDims:] + x.shape[axis + 1:]`\n *\n * @doc {heading: 'Tensors', subheading: 'Slicing and Joining'}\n */\nfunction gather<T extends Tensor>(x: T|TensorLike, indices: Tensor|TensorLike, axis = 0, batchDims = 0): T {\n  const $x = convertToTensor(x, 'x', 'gather');\n  const $indices = convertToTensor(indices, 'indices', 'gather', 'int32');\n\n  const inputs: GatherV2Inputs = {x: $x, indices: $indices};\n  const attrs: GatherV2Attrs = {axis, batchDims};\n\n  return ENGINE.runKernel(GatherV2, inputs as { } as NamedTensorMap, attrs as { } as NamedAttrMap);\n}\n\nexport const gather = op({gather_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Greater, GreaterInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth
```

```

value of (a > b) element-wise. Supports broadcasting.
\n * ``js\n * const a = tf.tensor1d([1, 2, 3]);\n * const b =
tf.tensor1d([2, 2, 2]);\n * a.greater(b).print();\n * ``\n * \n * @param a The first input tensor.\n * @param b The
second input tensor. Must have the same dtype as `a`.\n * \n * @doc {heading: 'Operations', subheading: 'Logical'}\n
*\nfunction greater_<T extends Tensor>(\n  a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a =
convertToTensor(a, 'a', 'greater');\n  let $b = convertToTensor(b, 'b', 'greater');\n  [$a, $b] = makeTypesMatch($a,
$b);\n  \n  assertAndGetBroadcastShape($a.shape, $b.shape);\n  \n  const inputs: GreaterInputs = {a: $a, b: $b};\n  \n
return ENGINE.runKernel(Greater, inputs as { } as NamedTensorMap);\n  \n}\n\nexport const greater =
op({greater_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {GreaterEqual, GreaterEqualInputs} from
'./kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport
{makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from
'./operation';\n\n/*\n * Returns the truth value of (a >= b) element-wise. Supports broadcasting.\n * ``js\n *
const a = tf.tensor1d([1, 2, 3]);\n * const b = tf.tensor1d([2, 2, 2]);\n * a.greaterEqual(b).print();\n * ``\n * \n *
@param a The first input tensor.\n * @param b The second input tensor. Must have the same dtype as `a`.\n * \n *
@doc {heading: 'Operations', subheading: 'Logical'}\n *\nfunction greaterEqual_<T extends Tensor>(\n  a:
Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a = convertToTensor(a, 'a', 'greaterEqual');\n  let $b =
convertToTensor(b, 'b', 'greaterEqual');\n  [$a, $b] = makeTypesMatch($a, $b);\n  \n  assertAndGetBroadcastShape($a.shape, $b.shape);\n  \n  const inputs: GreaterEqualInputs = {a: $a, b: $b};\n  \n  return
ENGINE.runKernel(GreaterEqual, inputs as { } as NamedTensorMap);\n  \n}\n\nexport const greaterEqual =
op({greaterEqual_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Imag, ImagInputs} from './kernel_names';\nimport {Tensor}
from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
'./tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/*\n * Returns the
imaginary part of a complex (or real) tensor.\n * \n * Given a tensor input, this operation returns a tensor of type float
that is\n * the imaginary part of each element in input considered as a complex number.\n * If input is real, a tensor
of all zeros is returned.\n * ``js\n * const x = tf.complex([-2.25, 3.25], [4.75, 5.75]);\n * tf.imag(x).print();\n *
``\n * \n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\nfunction imag_<T extends Tensor>(input:
T|TensorLike): T {\n  const $input = convertToTensor(input, 'input', 'imag');\n  \n  const inputs: ImagInputs = {input:
$input};\n  \n  return ENGINE.runKernel(Imag, inputs as { } as NamedTensorMap);\n  \n}\n\nexport const imag =
op({imag_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed

```


on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport {ENGINE} from './engine';\nimport {IsFinite, IsFiniteInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Returns which elements of x are finite.\n */\nconst x = tf.tensor1d([NaN, Infinity, -Infinity, 0, 1]);\n x.isFinite().print(); // or tf.isNaN(x)\n\n @param x The input Tensor.\n\n @doc {heading: 'Operations', subheading: 'Basic math'}\n\nfunction isFinite_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'isFinite');\n\n  const inputs: IsFiniteInputs = {x: $x};\n\n  return ENGINE.runKernel(IsFinite, inputs as {} as NamedTensorMap);\n}\n\nexport const isFinite = op({isFinite_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n */\n * http://www.apache.org/licenses/LICENSE-2.0\n */\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n=====
```

```
=====
*\n\nimport {ENGINE} from './engine';\nimport {IsInf, IsInfInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Returns which elements of x are Infinity or -Infinity.\n */\nconst x = tf.tensor1d([NaN, Infinity, -Infinity, 0, 1]);\n x.isInf().print(); // or tf.isNaN(x)\n\n @param x The input Tensor.\n\n @doc {heading: 'Operations', subheading: 'Basic math'}\n\nfunction isInf_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'isInf');\n\n  const inputs: IsInfInputs = {x: $x};\n\n  return ENGINE.runKernel(IsInf, inputs as {} as NamedTensorMap);\n}\n\nexport const isInf = op({isInf_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n */\n * http://www.apache.org/licenses/LICENSE-2.0\n */\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n=====
```

```
=====
*\n\nimport {ENGINE} from './engine';\nimport {IsNaN, IsNaNInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Returns which elements of x are NaN.\n */\nconst x = tf.tensor1d([NaN, Infinity, -Infinity, 0, 1]);\n x.isNaN().print(); // or tf.isNaN(x)\n\n @param x The input Tensor.\n\n @doc {heading: 'Operations', subheading: 'Basic math'}\n\nfunction isNaN_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'isNaN');\n\n  const inputs: IsNaNInputs = {x: $x};\n\n  return ENGINE.runKernel(IsNaN, inputs as {} as NamedTensorMap);\n}\n\nexport const isNaN = op({isNaN_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n */\n * http://www.apache.org/licenses/LICENSE-2.0\n */\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
```

governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {LeakyRelu, LeakyReluAttrs, LeakyReluInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport\n {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport\n {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes leaky rectified linear element-\n wise.\n *\n * See\n * [http://web.stanford.edu/~awni/papers/relu_hybrid_icml2013_final.pdf](\n * http://web.stanford.edu/~awni/papers/relu_hybrid_icml2013_final.pdf)\n *\n * ``js\n * const x = tf.tensor1d([-1, 2, -\n 3, 4]);\n *\n * x.leakyRelu(0.1).print(); // or tf.leakyRelu(x, 0.1)\n *\n * @param x The input tensor.\n * @param\n alpha The scaling factor for negative values, defaults to 0.2.\n *\n * @doc {heading: 'Operations', subheading: 'Basic\n math'}\n *\n\nfunction leakyRelu_<T extends Tensor>(x: T|TensorLike, alpha = 0.2): T {\n const $x =\n convertToTensor(x, 'x', 'leakyRelu');\n\n const inputs: LeakyReluInputs = {x: $x};\n const attrs: LeakyReluAttrs =\n {alpha};\n\n return ENGINE.runKernel(\n   LeakyRelu, inputs as {} as NamedTensorMap, attrs as {} as\n   NamedAttrMap);\n}\n\nexport const leakyRelu = op({leakyRelu_});\n\n", /**\n *\n * @license\n * Copyright 2020\n Google LLC. All Rights Reserved.\n *\n * Licensed under the Apache License, Version 2.0 (the "License");\n *\n * you\n may not use this file except in compliance with the License.\n *\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n *\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n\n
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Less, LessInputs} from './kernel_names';\nimport {Tensor} from\n './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from\n './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport\n {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth\n value of (a < b) element-wise. Supports broadcasting.\n *\n * ``js\n * const a = tf.tensor1d([1, 2, 3]);\n *\n * const b =\n tf.tensor1d([2, 2, 2]);\n *\n * a.less(b).print();\n *\n * @param a The first input tensor.\n * @param b The second\n input tensor. Must have the same dtype as `a`.\n *\n * @doc {heading: 'Operations', subheading: 'Logical'}\n *\n\nfunction less_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n let $a =\n convertToTensor(a, 'a', 'less');\n let $b = convertToTensor(b, 'b', 'less');\n [$a, $b] = makeTypesMatch($a, $b);\n\n assertAndGetBroadcastShape($a.shape, $b.shape);\n\n const inputs: LessInputs = {a: $a, b: $b};\n\n return\n ENGINE.runKernel(Less, inputs as {} as NamedTensorMap);\n}\n\nexport const less = op({less_});\n\n", /**\n *\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n *\n * you may not use this file except in compliance with the License.\n *\n * You may obtain a\n copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n *\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *\n\n
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {LessEqual, LessEqualInputs} from './kernel_names';\nimport\n {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from\n './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport\n {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth\n value of (a <= b) element-wise. Supports broadcasting.\n *\n * ``js\n * const a = tf.tensor1d([1, 2, 3]);\n *\n * const b =\n tf.tensor1d([2, 2, 2]);\n *\n * a.lessEqual(b).print();\n *\n * @param a The first input tensor.\n * @param b\n The second input tensor. Must have the same dtype as `a`.\n *\n * @doc {heading: 'Operations', subheading:\n 'Logical'}\n *\n\nfunction lessEqual_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n let $a =\n convertToTensor(a, 'a', 'lessEqual');\n let $b = convertToTensor(b, 'b', 'lessEqual');\n [$a, $b] =
```

```

makeTypesMatch($a, $b);\n\n assertAndGetBroadcastShape($a.shape, $b.shape);\n\n const inputs:
LessEqualInputs = {a: $a, b: $b};\n\n return ENGINE.runKernel(LessEqual, inputs as { } as
NamedTensorMap);\n\n\nexport const lessEqual = op({lessEqual_});\n\n", "/*\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {ENGINE} from './engine';\nimport {LinSpace, LinSpaceAttrs} from './kernel_names';\nimport
{NamedAttrMap} from './kernel_registry';\nimport {Tensor1D} from './tensor';\n\n/*\n * Return an evenly spaced
sequence of numbers over the given interval.\n * \n * ``js\n * tf.linspace(0, 9, 10).print();\n * ``\n * @param start
The start value of the sequence.\n * @param stop The end value of the sequence.\n * @param num The number of
values to generate.\n * \n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\nexport function linspace(start:
number, stop: number, num: number): Tensor1D {\n  if (num <= 0) {\n    throw new Error("The number of values
should be positive.");\n  }\n\n  const attrs: LinSpaceAttrs = {start, stop, num};\n  return
ENGINE.runKernel(LinSpace, { }, attrs as { } as NamedAttrMap);\n\n}\n\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {ENGINE} from './engine';\nimport {LRN, LRNAttrs, LRNInputs} from './kernel_names';\nimport
{NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from './tensor';\nimport
{NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\nimport {reshape}
from './reshape';\n\n/*\n * Normalizes the activation of a local neighborhood across or within\n * channels.\n * \n *
@param x The input tensor. The 4-D input tensor is treated as a 3-D array\n *   of 1D vectors (along the last
dimension), and each vector is\n *   normalized independently.\n * @param depthRadius The number of adjacent
channels in the 1D normalization\n *   window.\n * @param bias A constant bias term for the basis.\n * @param
alpha A scale factor, usually positive.\n * @param beta An exponent.\n * \n * @doc {heading: 'Operations',
subheading: 'Normalization'}\n *\nfunction localResponseNormalization_<T extends Tensor3D|Tensor4D>(\n  x:
T|TensorLike, depthRadius = 5, bias = 1, alpha = 1, beta = 0.5): T {\n  const $x = convertToTensor(x, 'x',
'localResponseNormalization');\n  util.assert(\n    $x.rank === 4 || $x.rank === 3,\n    () => `Error in
localResponseNormalization: x must be rank 3 or 4 but got\n      rank ${$x.rank}.`);\n  util.assert(\n
util.isInt(depthRadius),\n    () => `Error in localResponseNormalization: depthRadius must be an ` +\n
`integer but got depthRadius ${depthRadius}.`);\n\n  let x4D = $x as Tensor4D;\n  let reshapedTo4D = false;\n  if
($x.rank === 3) {\n    reshapedTo4D = true;\n    x4D = reshape($x, [1, $x.shape[0], $x.shape[1], $x.shape[2]]);\n
  }\n\n  const inputs: LRNInputs = {x: x4D};\n\n  const attrs: LRNAttrs = {depthRadius, bias, alpha, beta};\n\n  //
tslint:disable-next-line: no-unnecessary-type-assertion\n  const res = ENGINE.runKernel(\n    LRN, inputs
as { } as NamedTensorMap,\n    attrs as { } as NamedAttrMap) as T;\n\n  if (reshapedTo4D) {\n    return
reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as T;\n  } else {\n    return res;\n  }\n\n}\n\nexport const
localResponseNormalization = op({localResponseNormalization_});\n\n", "/*\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *

```

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n *\n\nimport {ENGINE} from './engine';\nimport {Log, LogInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes natural logarithm of the input `tf.Tensor` element-wise: `ln(x)`\n *  
js\n * const x = tf.tensor1d([1, 2, Math.E]);\n * x.log().print(); // or tf.log(x)\n *  
@param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction log<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'log');\n  const inputs: LogInputs = {x: $x};\n  return ENGINE.runKernel(Log, inputs as { } as NamedTensorMap);\n}\n\nexport const log = op({log_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
```

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n *\n\nimport {ENGINE} from './engine';\nimport {Log1p, Log1pInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes natural logarithm of the input `tf.Tensor` plus one\n * element-wise: `ln(1 + x)`\n *  
js\n * const x = tf.tensor1d([1, 2, Math.E - 1]);\n * x.log1p().print(); // or tf.log1p(x)\n *  
@param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction log1p<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'log1p');\n  const inputs: Log1pInputs = {x: $x};\n  return ENGINE.runKernel(Log1p, inputs as { } as NamedTensorMap);\n}\n\nexport const log1p = op({log1p_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n *\n\nimport {CustomGradientFunc, ENGINE} from './engine';\nimport {Scalar, Tensor, Variable} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor, convertToTensorArray} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\n/**\n * Provided `f(x)`, returns another function `g(x, dy?)`, which gives the\n * gradient of `f(x)` with respect to `x`. If `dy` is provided, the gradient of `f(x).mul(dy).sum()` with respect to\n * `x` is computed instead. `f(x)` must take a single tensor `x` and return a\n * single tensor `y`. If `f()` takes multiple inputs, use `tf.grads` instead.\n *  
js\n * // f(x) = x ^ 2\n * const f = x => x.square();\n * // f(x) = 2x\n * const g = tf.grad(f);\n * const x = tf.tensor1d([2, 3]);\n * g(x).print();\n *  
js\n * // f(x) = x ^ 3\n * const f = x => x.pow(tf.scalar(3, 'int32'));\n * // f'(x) = 3x ^ 2\n * const g = tf.grad(f);\n * // f''(x) = 6x\n * const gg = tf.grad(g);\n * const x = tf.tensor1d([2, 3]);\n * gg(x).print();\n *  
@param f The function f(x), to compute gradient for.\n *\n * @doc {heading: 'Training', subheading: 'Gradients'}\n */\nfunction grad(f: (x: Tensor) => Tensor): (\n  x: TensorLike|Tensor, dy?:\n  TensorLike|Tensor) => Tensor {\n  util.assert(\n    util.isFunction(f), () => \"The f passed in grad(f) must be a function\");\n  return (x: TensorLike|Tensor, dy?: TensorLike|Tensor): Tensor => {\n    // x can be of any dtype, thus
```

```

null as the last argument.\n  const $x = convertToTensor(x, 'x', 'tf.grad', 'string_or_numeric');\n  const $dy: Tensor
=>\n    (dy != null) ? convertToTensor(dy, 'dy', 'tf.grad') : null;\n  return ENGINE.tidy(() => {\n    const {value,
grads} = ENGINE.gradients(() => f($x), [$x], $dy);\n    if ($dy != null) {\n      util.assertShapesMatch(\n
value.shape, $dy.shape,\n        'The shape of dy passed in grad(f)(x, dy) must match the shape ' +\n
'returned by f(x)');\n    }\n    checkGrads(grads);\n    return grads[0];\n  });\n  };\n\n  /**\n   * Provided `f(x1,
x2,...)`, returns another function `g([x1, x2,...], dy?)`,\n   * which gives an array of gradients of `f()` with respect to
each input.\n   * [ `x1`, `x2`, ...].\n   * If `dy` is passed when calling `g()`, the gradient of `f(x1,...).mul(dy).sum()`
with respect to each input is computed instead.\n   * The provided `f` must take one or more tensors and return a
single tensor.\n   * `y`. If `f()` takes a single input, we recommend using `tf.grad` instead.\n   * ```js\n   * // f(a, b) = a
* b\n   * const f = (a, b) => a.mul(b);\n   * // df / da = b, df / db = a\n   * const g = tf.grads(f);\n   * const a =
tf.tensor1d([2, 3]);\n   * const b = tf.tensor1d([-2, -3]);\n   * const [da, db] = g([a, b]);\n   * console.log('da');\n   *
da.print();\n   * console.log('db');\n   * db.print();\n   * ```\n   * @param f The function `f(x1, x2,...)` to compute
gradients for.\n   * @doc {heading: 'Training', subheading: 'Gradients'}\n   * ^\n   * function grads(f: (...args: Tensor[])
=> Tensor): (\n   *   args: Array<Tensor|TensorLike>, dy?: Tensor|TensorLike) => Tensor[] {\n   *     util.assert(\n
util.isFunction(f), () => 'The f passed in grads(f) must be a function');\n   *     return (args: Array<Tensor|TensorLike>,
dy?: Tensor|TensorLike): Tensor[] => {\n   *       util.assert(\n   *         Array.isArray(args),\n   *         () => 'The args passed in
grads(f)(args) must be an array ' +\n   *           'of `Tensor`s or `TensorLike`s');\n   *       // args can be of any dtype, thus null
as the last argument.\n   *       const $args =\n   *         convertToTensorArray(args, 'args', 'tf.grads', 'string_or_numeric');\n
const $dy: Tensor =\n   *       (dy != null) ? convertToTensor(dy, 'dy', 'tf.grads') : null;\n   *       return ENGINE.tidy(() =>
{\n   *         const {value, grads} = ENGINE.gradients(() => f(...$args), $args, $dy);\n   *         if ($dy != null) {\n
util.assertShapesMatch(\n   *           value.shape, $dy.shape,\n   *           'The shape of dy passed in grads(f)([x1,...], dy)
must ' +\n   *             'match the shape returned by f([x1,...])');\n   *         }\n   *         checkGrads(grads);\n   *         return
grads;\n   *       });\n   *     };\n   *   };\n   *   /**\n   * Like `tf.grad`, but also returns the value of `f()`. Useful when
`f()`\n   * returns a metric you want to show.\n   * The result is a rich object with the following properties:\n   * - grad: The
gradient of `f(x)` w.r.t\n   * `x` (result of `tf.grad`).\n   * - value: The value returned by `f(x)`.\n   * ```js\n   * // f(x) = x ^ 2\n   * const f = x =>
x.square();\n   * // f'(x) = 2x\n   * const g = tf.valueAndGrad(f);\n   * const x = tf.tensor1d([2, 3]);\n   * const {value,
grad} = g(x);\n   * console.log('value');\n   * value.print();\n   * console.log('grad');\n   * grad.print();\n   * ```\n   * ^\n   *
@doc {heading: 'Training', subheading: 'Gradients'}\n   * ^\n   * function valueAndGrad<I extends Tensor, O extends\n   * Tensor>(f: (x: I) => O): (\n   *   x: I, dy?: O) => {\n   *     value: O;\n   *     grad: I;\n   *   } {\n   *     util.assert(\n   *       util.isFunction(f),\n
() => 'The f passed in valueAndGrad(f) must be a function');\n   *     return (x: I, dy?: O) => {\n   *       util.assert(\n   *         x
instanceof Tensor,\n   *         () => 'The x passed in valueAndGrad(f)(x) must be a tensor');\n   *       util.assert(\n   *         dy ==
null || dy instanceof Tensor,\n   *         () => 'The dy passed in valueAndGrad(f)(x, dy) must be a tensor');\n   *       const
{grads, value} = ENGINE.gradients(() => f(x), [x], dy);\n   *       checkGrads(grads);\n   *       return {grad: grads[0] as I,
value};\n   *     };\n   *   };\n   *   /**\n   * Like `tf.grads`, but returns also the value of `f()`. Useful when `f()`\n   * returns
a metric you want to show.\n   * The result is a rich object with the following properties:\n   * - grads: The gradients of
`f(x)`\n   * w.r.t each input (result of `tf.grads`).\n   * - value: The value returned by `f(x)`.\n   * ```js\n   * // f(a, b) = a * b\n   *
const f = (a, b) => a.mul(b);\n   * // df/da = b, df/db = a\n   * const g = tf.valueAndGrads(f);\n   * const a =
tf.tensor1d([2, 3]);\n   * const b = tf.tensor1d([-2, -3]);\n   * const {value, grads} = g([a, b]);\n   * const [da, db] =
grads;\n   * console.log('value');\n   * value.print();\n   * console.log('da');\n   * da.print();\n   * console.log('db');\n   *
db.print();\n   * ```\n   * ^\n   * @doc {heading: 'Training', subheading: 'Gradients'}\n   * ^\n   * function valueAndGrads<O
extends Tensor>(f: (...args: Tensor[]) => O): (\n   *   args: Tensor[], dy?: O) => {\n   *     grads: Tensor[];\n   *     value: O;\n   *   }
{\n   *     util.assert(\n   *       util.isFunction(f),\n   *       () => 'The f passed in valueAndGrads(f) must be a function');\n   *     return
(args: Tensor[], dy?: O) => {\n   *       util.assert(\n   *         Array.isArray(args) && args.every(arg => arg instanceof
Tensor),\n   *         () => 'The args passed in valueAndGrads(f)(args) must be array of ' +\n   *           'tensors');\n   *       util.assert(\n
   *         dy == null || dy instanceof Tensor,\n   *         () => 'The dy passed in valueAndGrads(f)(args, dy) must
be a tensor');\n   *       const res = ENGINE.gradients(() => f(...args), args, dy);\n   *       if (dy != null) {\n
util.assertShapesMatch(\n   *         res.value.shape, dy.shape,\n   *         'The shape of dy passed in
valueAndGrads(f)([x1,...], dy) must ' +\n   *           'match the shape returned by f([x1,...])');\n   *       }\n   *     };\n   *   }

```

```

checkGrads(res.grads);
return res;
}

/** Computes and returns the gradient of f(x) with respect to
the list of trainable variables provided by `varList`. If no list is provided, it defaults to all trainable
variables.
*/
const a = tf.variable(tf.tensor1d([3, 4]));
const b = tf.variable(tf.tensor1d([5, 6]));
const x = tf.tensor1d([1, 2]);
// f(a, b) = a * x ^ 2 + b * x
const f = () =>
a.mul(x.square()).add(b.mul(x)).sum();
// df/da = x ^ 2, df/db = x
const {value, grads} =
tf.variableGrads(f);
Object.keys(grads).forEach(varName => grads[varName].print());

@param f The function to execute. f() should return a scalar.
@param varList The list of variables to compute
the gradients with respect to. Defaults to all trainable variables.
@returns An object with the following
keys and values:
- `value`: The value of the function `f`.
- `grads`: A map from the names of the variables
to the gradients.
If the `varList` argument is provided explicitly and contains a subset of non-trainable
variables, this map in the return value will contain keys that map the names of the non-trainable
variables to `null`.
@doc {heading: 'Training', subheading: 'Gradients'}
function variableGrads(f: () => Scalar,
varList?: Variable[]): {value: Scalar, grads: NamedTensorMap} {
  util.assert(!util.isFunction(f), () => 'The f passed in variableGrads(f) must be a function');
  util.assert(!varList || !Array.isArray(varList) || varList.every(v => v instanceof Variable), () => 'The varList passed in
variableGrads(f, varList) must be an array of variables');
  const specifiedVarList = varList != null;
  if (!specifiedVarList) {
    // Get all of the trainable variables.
    varList = [];
    for (const varName in
ENGINE.registeredVariables) {
      varList.push(ENGINE.registeredVariables[varName]);
    }
  }
  const
specifiedNonTrainable: Variable[] = specifiedVarList ? varList.filter(variable => !variable.trainable) : null;
  // Prune non-trainable variables.
  const originalVarCount = varList.length;
  varList = varList.filter(variable =>
variable.trainable);
  util.assert(varList.length > 0, () => `variableGrads() expects at least one of the input
variables to be trainable, but none of the ${originalVarCount} variables is trainable.`);
  const allowNoGradients = true;
  const {value, grads} = ENGINE.gradients(f, varList, null, allowNoGradients);
  util.assert(grads.some(g => g != null), () => 'Cannot find a connection between any variable and the result
of the loss function y=f(x). Please make sure the operations that use variables are inside the
function f passed to minimize().');
  util.assert(value.rank === 0, () => `The f passed in variableGrads(f)
must return a scalar, but it returned a rank-${value.rank} tensor`);
  const namedGrads:
NamedTensorMap = {};
  varList.forEach((v, i) => {
    if (grads[i] != null) {
      namedGrads[v.name] =
grads[i];
    }
  });
  if (specifiedNonTrainable != null) {
    // If varList is explicitly provided and contains non-
trainable values, add them to the returned gradients with `null` values.
    specifiedNonTrainable.forEach(v
=> namedGrads[v.name] = null);
  }
  return {value, grads: namedGrads};
}

/** Overrides the gradient
computation of a function `f`.
Takes a function `f(...inputs, save) => {value: Tensor, gradFunc: (dy,
saved) => Tensor[]}` and returns another function `g(...inputs)` which takes the same inputs as `f`. When
called, `g` returns `f().value`. In backward mode, custom gradients with respect to each input of `f` are computed
using `f().gradFunc`. The `save` function passed to `f` should be used for saving tensors needed in the
gradient. And the `saved` passed to the `gradFunc` is a `NamedTensorMap`, which contains those saved
tensor.
*/
const customOp = tf.customGrad((x, save) => {
  // Save x to make sure it's available
later for the gradient.
  save([x]);
  // Override gradient of our custom x ^ 2 op to be dy * abs(x)
  return {
    value: x.square(),
    // Note `saved.x` which points to the `x` we saved earlier.
    gradFunc: (dy,
saved) => [dy.mul(saved[0].abs())];
  };
});
const x = tf.tensor1d([-1, -2, 3]);
const dx = tf.grad(x
=> customOp(x));
console.log(`f(x):`);
customOp(x).print();
console.log(`f'(x):`);
dx(x).print();

@param f The function to evaluate in forward mode, which should return {value: Tensor,
gradFunc: (dy, saved) => Tensor[]}, where `gradFunc` returns the custom gradients of `f` with respect to its
inputs.
@doc {heading: 'Training', subheading: 'Gradients'}
function customGrad<T extends
Tensor>(f: CustomGradientFunc<T>): (...args: Tensor[]) => T {
  return
ENGINE.customGrad(f);
}

function checkGrads(grads: Tensor[]) {
  const numNullGradients = grads.filter(g
=> g == null).length;
  if (numNullGradients > 0) {
    throw new Error(`Cannot compute gradient of
y=f(x) with respect to x. Make sure that the f you passed encloses all operations that lead from x to y.`);
  }
}

```

```
} \n\n\nexport {\n customGrad,\n variableGrads,\n valueAndGrad,\n valueAndGrads,\n grad,\n grads,\n};\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n*\n\nimport {ENGINE} from '../engine';\nimport {Neg, NegInputs} from '../kernel_names';\nimport {Tensor} from\n '../tensor';\nimport {NamedTensorMap} from\n '../tensor_types';\nimport {convertToTensor} from\n '../tensor_util_env';\nimport {TensorLike} from\n '../types';\nimport {op} from\n './operation';\n\n/**\n * Computes  $-1$ \n *  $x$  element-wise.\n *\n * ```js\n * const x = tf.tensor2d([1, 2, -2, 0], [2, 2]);\n * x.neg().print(); // or tf.neg(x)\n * ```\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\n\nfunction neg_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'neg');\n  const\n  inputs: NegInputs = {x: $x};\n  return ENGINE.runKernel(Neg, inputs as {} as NamedTensorMap);\n}\n\nexport\n const neg = op({neg_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed\n under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n*\n\nimport {ENGINE} from '../engine';\nimport {Softplus, SoftplusInputs} from\n '../kernel_names';\nimport {Tensor} from\n '../tensor';\nimport {NamedTensorMap} from\n '../tensor_types';\nimport {convertToTensor} from\n '../tensor_util_env';\nimport {TensorLike} from\n '../types';\nimport {op} from\n './operation';\n\n/**\n * Computes\n softplus of the input `tf.Tensor` element-wise:  $\\log(\\exp(x) + 1)$ \n *\n * ```js\n * const x = tf.tensor1d([0, 1, -1,\n * .7]);\n * x.softplus().print(); // or tf.softplus(x)\n * ```\n *\n * @param x The input tensor.\n *\n * @doc {heading:\n 'Operations', subheading: 'Basic math'}\n */\n\nfunction softplus_<T extends Tensor>(x: T|TensorLike): T {\n  const\n  $x = convertToTensor(x, 'x', 'softplus');\n  const\n  inputs: SoftplusInputs = {x: $x};\n  return\n  ENGINE.runKernel(Softplus, inputs as {} as NamedTensorMap);\n}\n\nexport const softplus =\n op({softplus_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under\n the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n*\n\nimport {customGrad} from\n '../gradients';\nimport {Tensor} from\n '../tensor';\nimport {convertToTensor} from\n '../tensor_util_env';\nimport {TensorLike} from\n '../types';\nimport {mul} from\n './mul';\nimport {neg} from\n './neg';\nimport {op} from\n './operation';\nimport {sigmoid} from\n './sigmoid';\nimport {softplus} from\n './softplus';\n\n/**\n * Computes log sigmoid of the input `tf.Tensor` element-wise:\n *  $\\log\\text{Sigmoid}(x)$ . For\n numerical stability, we use  $-\\text{tf.softplus}(-x)$ \n *\n * ```js\n * const x = tf.tensor1d([0, 1, -1, .7]);\n * x.logSigmoid().print(); // or tf.logSigmoid(x)\n * ```\n *\n * @param x The input tensor.\n *\n * @doc {heading:\n 'Operations', subheading: 'Basic math'}\n */\n\nfunction logSigmoid_<T extends Tensor>(x: T|TensorLike): T {\n  const\n  $x = convertToTensor(x, 'x', 'logSigmoid');\n  // Use a custom gradient to maintain previous
```

```

implementation.\n // There is no LogSigmoid kernel in TF so we can't use engine.runKernel\n // directly\n const
customOp = customGrad((x: Tensor) => {\n // TODO(yassogba) we can remove the chained softplus call here
only\n // after backends have modularized softplus at which point we can call\n // engine runKernel(..., Softplus,
...) directly.\n const value = neg(softplus(neg(x)));;\n\n const gradFunc = (dy: T) => {\n const derX = mul(dy,
sigmoid(neg(x)));;\n return derX;\n };;\n return {value, gradFunc};;\n });;\n\n return customOp($x) as
T;\n}\n\nexport const logSigmoid = op({logSigmoid_});;\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
\n
*\n\nimport {ENGINE} from '../engine';\nimport {Max, MaxAttrs, MaxInputs} from './kernel_names';\nimport
{NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from
'./tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from
'./types';\n\nimport {op} from './operation';;\n\n/*\n * Computes the maximum of elements across dimensions of a
`tf.Tensor`.\n *\n * Reduces the input along the dimensions given in `axes`. Unless `keepDims`\n * is true, the rank
of the `tf.Tensor` is reduced by 1 for each entry in\n * `axes`. If `keepDims` is true, the reduced dimensions are
retained with\n * length 1. If `axes` has no entries, all dimensions are reduced, and an\n * `tf.Tensor` with a single
element is returned.\n *\n * ```js\n * const x = tf.tensor1d([1, 2, 3]);\n * x.max().print(); // or tf.max(x)\n * ```\n
*\n * ```js\n * const x = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n * const axis = 1;\n * x.max(axis).print(); // or tf.max(x,
axis)\n * ```\n *\n * @param x The input tensor.\n * @param axis The dimension(s) to reduce. By default it
reduces\n * all dimensions.\n * @param keepDims If true, retains reduced dimensions with size 1.\n *\n * @doc
{heading: 'Operations', subheading: 'Reduction'}\n *\nfunction max_<T extends Tensor>(\n x:
Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {\n const $x = convertToTensor(x, 'x',
'max');;\n\n const inputs: MaxInputs = {x: $x};;\n const attrs: MaxAttrs = {reductionIndices: axis, keepDims};;\n\n
return ENGINE.runKernel(\n Max, inputs as {} as NamedTensorMap, attrs as {} as
NamedAttrMap);\n}\n\nexport const max = op({max_});;\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
\n
*\n\nimport {ENGINE} from '../engine';\nimport {Sub, SubInputs} from './kernel_names';\nimport {Tensor} from
'./tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from
'./tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport
{op} from './operation';;\n\n/*\n * Subtracts two `tf.Tensor`s element-wise, A - B. Supports broadcasting.\n *\n *
```js\n * const a = tf.tensor1d([10, 20, 30, 40]);\n * const b = tf.tensor1d([1, 2, 3, 4]);\n * a.sub(b).print(); // or
tf.sub(a, b)\n * ```\n *\n * // Broadcast subtract a with b.\n * const a = tf.tensor1d([10, 20, 30, 40]);\n * const
b = tf.scalar(5);\n * a.sub(b).print(); // or tf.sub(a, b)\n * ```\n *\n * @param a The first `tf.Tensor` to subtract
from.\n * @param b The second `tf.Tensor` to be subtracted. Must have the same dtype as\n * `a`.\n *\n * @doc
{heading: 'Operations', subheading: 'Arithmetic'}\n *\nfunction sub_<T extends Tensor>(a: Tensor|TensorLike, b:
Tensor|TensorLike): T {\n let $a = convertToTensor(a, 'a', 'sub');;\n let $b = convertToTensor(b, 'b', 'sub');;\n [$a,
$b] = makeTypesMatch($a, $b);\n\n const inputs: SubInputs = {a: $a, b: $b};;\n\n return ENGINE.runKernel(Sub,
inputs as {} as NamedTensorMap);\n}\n\nexport const sub = op({sub_});;\n\n", "/*\n * @license\n * Copyright 2018

```



Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n *\\nimport {ENGINE} from './engine';\\nimport {Sum, SumAttrs, SumInputs} from './kernel_names';\\nimport {NamedAttrMap} from './kernel_registry';\\nimport {Tensor} from './tensor';\\nimport {NamedTensorMap} from './tensor_types';\\nimport {convertToTensor} from './tensor_util_env';\\nimport {TensorLike} from './types';\\nimport {cast} from './cast';\\nimport {op} from './operation';\\n\\n/**\\n * Computes the sum of elements across dimensions of a `tf.Tensor`.\\n *\\n * Reduces the input along the dimensions given in `axes`. Unless `keepDims`\\n * is true, the rank of the `tf.Tensor` is reduced by 1 for each entry in `axes`. If `keepDims` is true, the reduced dimensions are retained with length 1. If axes has no entries, all dimensions are reduced, and a `tf.Tensor` with a single element is returned.\\n *\\n * ```js\\n * const x = tf.tensor1d([1, 2, 3]);\\n * x.sum().print();\\n * // or tf.sum(x)\\n * ```\\n * \\n * const x = tf.tensor2d([1, 2, 3, 4], [2, 2]);\\n * const axis = 1;\\n * x.sum(axis).print(); // or tf.sum(x, axis)\\n * ```\\n * \\n * @param x The input tensor to compute the sum over. If the dtype is `bool` it will be converted to `int32` and the output dtype will be `int32`.\\n * @param axis The dimension(s) to reduce. By default it reduces all dimensions.\\n * @param keepDims If true, retains reduced dimensions with size 1.\\n * @doc {heading: 'Operations', subheading: 'Reduction'}\\n */\\nfunction sum_<T extends Tensor>(x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {\\n let $x = convertToTensor(x, 'x', 'sum');\\n if ($x.dtype === 'bool') {\\n $x = cast($x, 'int32');\\n }\\n const inputs: SumInputs = {x: $x};\\n const attrs: SumAttrs = {axis, keepDims};\\n return ENGINE.runKernel(\\n Sum, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\\n}\\n\\nexport const sum = op({sum_});\\n", "/**\\n * @license\\n * Copyright 2020 Google Inc. All Rights Reserved.\\n * Licensed under the Apache License, Version 2.0 (the \"License\");\\n * you may not use this file except in compliance with the License.\\n * You may obtain a copy of the License at\\n * http://www.apache.org/licenses/LICENSE-2.0\\n * Unless required by applicable law or agreed to in writing, software\\n * distributed under the License is distributed on an \"AS IS\" BASIS,\\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\\n * See the License for the specific language governing permissions and\\n * limitations under the License.\\n *
```

```
=====\n\n *\\nimport {customGrad} from './gradients';\\nimport {Tensor} from './tensor';\\nimport {GradSaveFunc} from './tensor_types';\\nimport {convertToTensor} from './tensor_util_env';\\nimport {TensorLike} from './types';\\nimport {cast} from './cast';\\nimport {exp} from './exp';\\nimport {log} from './log';\\nimport {max} from './max';\\nimport {mul} from './mul';\\nimport {op} from './operation';\\nimport {sub} from './sub';\\nimport {sum} from './sum';\\n\\n/**\\n * Computes the log softmax.\\n *\\n * ```js\\n * const a = tf.tensor1d([1, 2, 3]);\\n * a.logSoftmax().print(); // or tf.logSoftmax(a)\\n * ```\\n * \\n * const a = tf.tensor2d([2, 4, 6, 1, 2, 3], [2, 3]);\\n * a.logSoftmax().print(); // or tf.logSoftmax(a)\\n * ```\\n * \\n * @param logits The logits array.\\n * @param axis The dimension softmax would be performed on. Defaults to -1 which indicates the last dimension.\\n * \\n * @doc {heading: 'Operations', subheading: 'Normalization'}\\n */\\nfunction logSoftmax_<T extends Tensor>(logits: T|TensorLike, axis = -1): T {\\n const $logits = convertToTensor(logits, 'logits', 'logSoftmax');\\n if (axis === -1) {\\n axis = $logits.rank - 1;\\n }\\n if (axis !== $logits.rank - 1) {\\n throw Error(\\n `Log Softmax along a non-last dimension is not yet supported. ` +\\n `Logits was rank ${$logits.rank} and axis was ${axis}`);\\n }\\n // const forward: ForwardFunc<Tensor> = (backend, save) => {\\n // const keepDims = true;\\n // const xMax = max(logits, axis, true);\\n // const shifted = sub(logits, xMax);\\n // const value = sub(cast(shifted, 'float32'), log(sum(exp(shifted), axis, keepDims)));\\n // save([value]);\\n // return value;\\n // };\\n // Use a custom gradient for numerical stability.\\n const customOp = customGrad((logits: Tensor, save: GradSaveFunc) => {\\n const keepDims = true;\\n const xMax = max(logits, axis, true);\\n const shifted =
```

```
sub(logits, xMax);\n const value =\n sub(cast(shifted, 'float32'), log(sum(exp(shifted), axis, keepDims));\n save([value]);\n\n const gradFunc = (dy: Tensor, saved: Tensor[]) => {\n const [value] = saved;\n const keepDims = true;\n const softmax = exp(value);\n return sub(dy, mul(sum(dy, axis, keepDims), softmax));\n };\n return {value, gradFunc};\n});\n\nreturn customOp($logits) as T;\n\n// TODO Use Engine.runKernel when CPU/WebGL/WASM backends implement this.\n// const inputs: LogSoftmaxInputs = {logits: $logits};\n// const attrs: LogSoftmaxAttrs = {axis};\n// return ENGINE.runKernel(\n// LogSoftmax, inputs as {} as NamedTensorMap,\n// attrs as {} as NamedAttrMap);\n\n\nexport const logSoftmax = op({logSoftmax_});\n","**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport * as util from './util';\n\n/**\n * Returns true if the axis specifies the inner most dimensions of the\n * array.\n */\nexport function axesAreInnerMostDims(axes: number[], rank: number): boolean {\n for (let i = 0; i < axes.length; ++i) {\n if (axes[axes.length - i - 1] !== rank - 1 - i) {\n return false;\n }\n }\n return true;\n}\n\nexport function combineLocations(\n outputLoc: number[], reduceLoc: number[], axes: number[]):\n number[] {\n const rank = outputLoc.length + reduceLoc.length;\n const loc = [];\n let outIdx = 0;\n let reduceIdx = 0;\n for (let dim = 0; dim < rank; dim++) {\n if (axes.indexOf(dim) === -1) {\n loc.push(outputLoc[outIdx++]);\n } else {\n loc.push(reduceLoc[reduceIdx++]);\n }\n }\n return loc;\n}\n\nexport function computeOutAndReduceShapes(\n aShape: number[], axes: number[]): [number[],\n number[]] {\n const outShape = [];\n const rank = aShape.length;\n for (let dim = 0; dim < rank; dim++) {\n if (axes.indexOf(dim) === -1) {\n outShape.push(aShape[dim]);\n }\n }\n const reduceShape = axes.map(dim => aShape[dim]);\n return [outShape, reduceShape];\n}\n\nexport function expandShapeToKeepDim(\n shape: number[], axes: number[]): number[] {\n const reduceSubShape = axes.map(x => 1);\n return combineLocations(shape, reduceSubShape, axes);\n}\n\nexport function assertAxesAreInnerMostDims(\n msg: string, axes: number[], rank: number): void {\n util.assert(\n axesAreInnerMostDims(axes, rank),\n () => `${msg} supports only inner-most axes for now. ` +\n `Got axes ${axes} and rank-${rank} input.`);\n}\n\n/**\n * Returns the axes permutation to be used with `tf.transpose`, if such\n * permutation is necessary. Otherwise it returns null. This method is used by\n * operations that operate only on inner-most axes.\n */\nexport function getAxesPermutation(axes: number[], rank: number): number[]|\n null {\n if (axesAreInnerMostDims(axes, rank)) {\n return null;\n }\n const result: number[] = [];\n for (let i = 0; i < rank; ++i) {\n if (axes.indexOf(i) === -1) {\n result.push(i);\n }\n }\n axes.forEach(axis => result.push(axis));\n return result;\n}\n\n/**\n * Returns the axes permutation that undoes the original permutation.\n */\nexport function getUndoAxesPermutation(axes: number[]): number[] {\n return axes.map((axis, i) => [i, axis]).sort((a, b) => a[1] - b[1]).\n map(x => x[0]);\n}\n\nexport function getInnerMostAxes(numAxes: number, rank: number):\n number[] {\n const res: number[] = [];\n for (let i = rank - numAxes; i < rank; ++i) {\n res.push(i);\n }\n return res;\n}\n\n","**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {parseAxisParam} from './util';\nimport {add} from './add';\nimport
```

```

{expandShapeToKeepDim} from './axis_util';\nimport {exp} from './exp';\nimport {log} from './log';\nimport {max}
from './max';\nimport {op} from './operation';\nimport {reshape} from './reshape';\nimport {sub} from
'/sub';\nimport {sum} from './sum';\n\n/**\n * Computes the log(sum(exp(elements across the reduction
dimensions)).\n *\n * Reduces the input along the dimensions given in `axis`. Unless `keepDims`\n * is true, the
rank of the array is reduced by 1 for each entry in `axis`.\n *\n * If `keepDims` is true, the reduced dimensions are
retained with length 1.\n *\n * If `axis` has no entries, all dimensions are reduced, and an array with a\n * single element
is returned.\n *\n * ```js\n * const x = tf.tensor1d([1, 2, 3]);\n * x.logSumExp().print(); // or tf.logSumExp(x)\n *
```\n *\n * ```js\n * const x = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n * const axis = 1;\n * x.logSumExp(axis).print(); //
or tf.logSumExp(a, axis)\n * ```\n * @param x The input tensor.\n * @param axis The dimension(s) to reduce. If
null (the default),\n * reduces all dimensions.\n * @param keepDims If true, retains reduced dimensions with
length\n * of 1. Defaults to false.\n * @doc {heading: 'Operations', subheading: 'Reduction'}\n *\nfunction
logSumExp_<T extends Tensor>(\n  x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {\n
const $x = convertToTensor(x, 'x', 'logSumExp');\n\n  const axes = parseAxisParam(axis, $x.shape);\n  const xMax
= max($x, axes, true /* keepDims */);\n  const a = sub($x, xMax);\n  const b = exp(a);\n  const c = sum(b, axes);\n
const d = log(c);\n  const res = add(reshape(xMax, d.shape), d);\n\n  if (keepDims) {\n    const newShape =
expandShapeToKeepDim(res.shape, axes);\n    return reshape(res, newShape) as T;\n  }\n  return res as
T;\n}\n\nexport const logSumExp = op({logSumExp_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {LogicalAnd, LogicalAndInputs} from './kernel_names';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {assertAndGetBroadcastShape} from
'/broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth value of `a AND b` element-wise.
Supports broadcasting.\n *\n * ```js\n * const a = tf.tensor1d([false, false, true, true], 'bool');\n * const b =
tf.tensor1d([false, true, false, true], 'bool');\n * a.logicalAnd(b).print();\n * ```\n *\n * @param a The first input
tensor. Must be of dtype bool.\n * @param b The second input tensor. Must be of dtype bool.\n *\n * @doc
{heading: 'Operations', subheading: 'Logical'}\n *\nfunction logicalAnd_<T extends Tensor>(\n  a:
Tensor|TensorLike, b: Tensor|TensorLike): T {\n  const $a = convertToTensor(a, 'a', 'logicalAnd', 'bool');\n  const $b
= convertToTensor(b, 'b', 'logicalAnd', 'bool');\n  assertAndGetBroadcastShape($a.shape, $b.shape);\n\n  const
inputs: LogicalAndInputs = {a: $a, b: $b};\n\n  return ENGINE.runKernel(LogicalAnd, inputs as { } as
NamedTensorMap);\n}\n\nexport const logicalAnd = op({logicalAnd_});\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {LogicalNot, LogicalNotInputs} from './kernel_names';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Returns the
truth value of `NOT x` element-wise.\n *\n * ```js\n * const a = tf.tensor1d([false, true], 'bool');\n *\n *
a.logicalNot().print();\n * ```\n *\n * @param x The input tensor. Must be of dtype 'bool'. \n *\n * @doc
{heading:

```

```
'Operations', subheading: 'Logical')\n *\nfunction logicalNot_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'logicalNot', 'bool');\n  const inputs: LogicalNotInputs = {x: $x};\n  return ENGINE.runKernel(LogicalNot, inputs as {} as NamedTensorMap);\n}\n\nexport const logicalNot = op({logicalNot_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {LogicalOr, LogicalOrInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth value of `a OR b` element-wise. Supports broadcasting.\n *\n * ```js\n * const a = tf.tensor1d([false, false, true, true], 'bool');\n * const b = tf.tensor1d([false, true, false, true], 'bool');\n * a.logicalOr(b).print();\n * ```\n * @param a The first input tensor. Must be of dtype bool.\n * @param b The second input tensor. Must be of dtype bool.\n * @doc {heading: 'Operations', subheading: 'Logical'}\n *\nfunction logicalOr_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  const $a = convertToTensor(a, 'a', 'logicalOr', 'bool');\n  const $b = convertToTensor(b, 'b', 'logicalOr', 'bool');\n  assertAndGetBroadcastShape($a.shape, $b.shape);\n  const inputs: LogicalOrInputs = {a: $a, b: $b};\n  return ENGINE.runKernel(LogicalOr, inputs as {} as NamedTensorMap);\n}\n\nexport const logicalOr = op({logicalOr_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assertAndGetBroadcastShape} from './broadcast_util';\nimport {logicalAnd} from './logical_and';\nimport {logicalNot} from './logical_not';\nimport {logicalOr} from './logical_or';\nimport {op} from './operation';\n\n/**\n * Returns the truth value of `a XOR b` element-wise. Supports broadcasting.\n *\n * ```js\n * const a = tf.tensor1d([false, false, true, true], 'bool');\n * const b = tf.tensor1d([false, true, false, true], 'bool');\n * a.logicalXor(b).print();\n * ```\n * @param a The first input tensor. Must be of dtype bool.\n * @param b The second input tensor. Must be of dtype bool.\n * @doc {heading: 'Operations', subheading: 'Logical'}\n *\nfunction logicalXor_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  const $a = convertToTensor(a, 'a', 'logicalXor', 'bool');\n  const $b = convertToTensor(b, 'b', 'logicalXor', 'bool');\n  assertAndGetBroadcastShape($a.shape, $b.shape);\n  // x ^ y = (x | y) & ~(x & y)\n  return logicalAnd(logicalOr(a, b), logicalNot(logicalAnd(a, b)));\n}\n\nexport const logicalXor = op({logicalXor_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {MaxPool, MaxPoolAttrs, MaxPoolInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from
 './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport * as conv_util
 from './conv_util';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes the 2D
 max pooling of an image.\n * @param x The input tensor, of rank 4 or rank 3 of shape\n *   `[batch, height,
 width, inChannels]`. If rank 3, batch of 1 is assumed.\n * @param filterSize The filter size: `[filterHeight,
 filterWidth]`. If\n *   `filterSize` is a single number, then `filterHeight == filterWidth`.\n * @param strides The
 strides of the pooling: `[strideHeight, strideWidth]`. If\n *   `strides` is a single number, then `strideHeight ==
 strideWidth`.\n * @param dilations The dilation rates: `[dilationHeight, dilationWidth]`\n *   in which we sample
 input values across the height and width dimensions\n *   in dilated pooling. Defaults to `[1, 1]`. If `dilations` is a
 single\n *   number, then `dilationHeight == dilationWidth`. If it is greater than\n *   1, then all values of `strides`
 must be 1.\n * @param pad The type of padding algorithm.\n *   - `same` and stride 1: output will be of same size
 as input,\n *   regardless of filter size.\n *   - `valid`: output will be smaller than input if filter is larger\n *
 than 1x1.\n *   - For more info, see this guide:\n *
 [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
 https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dimRoundingMode A string from:
 'ceil', 'round', 'floor'. If none is\n *   provided, it will default to truncate.\n *\nfunction maxPool_<T> extends
 Tensor3D|Tensor4D>(\n  x: T|TensorLike, filterSize: [number, number]|number,\n  strides: [number,
 number]|number, pad: 'valid'|'same'|number,\n  dimRoundingMode?: 'floor'|'round'|'ceil'): T {\n  const $x =
 convertToTensor(x, 'x', 'maxPool');\n  const dilations = 1;\n  let x4D = $x as Tensor4D;\n  let reshapedTo4D =
 false;\n  if ($x.rank === 3) {\n    reshapedTo4D = true;\n    x4D = reshape($x, [1, $x.shape[0], $x.shape[1],
 $x.shape[2]]);\n  }\n  util.assert(\n    x4D.rank === 4,\n    () => `Error in maxPool: input must be rank 4 but got
 rank ${x4D.rank}.`);\n  util.assert(\n    conv_util.eitherStridesOrDilationsAreOne(strides, dilations),\n    () =>
 `Error in maxPool: Either strides or dilations must be 1. ` +\n    `Got strides ${strides} and dilations
 ${dilations}`);\n  if (dimRoundingMode != null) {\n    util.assert(\n      util.isInt(pad as number),\n      () =>
 `Error in maxPool: pad must be an integer when using, ` +\n      `dimRoundingMode ${dimRoundingMode} but
 got pad ${pad}.`);\n  }\n  const inputs: MaxPoolInputs = {x: x4D};\n  const attrs: MaxPoolAttrs = {filterSize,
 strides, pad, dimRoundingMode};\n  // tslint:disable-next-line: no-unnecessary-type-assertion\n  const res =
 ENGINE.runKernel(\n    MaxPool, inputs as {} as NamedTensorMap,\n    attrs as {} as
 NamedAttrMap) as T;\n  if (reshapedTo4D) {\n    return reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as
 T;\n  }\n  return res;\n}\n\nexport const maxPool = op({maxPool_});\n\n"/**\n * @license\n * Copyright 2020
 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
 may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
 http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *
=====

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {MaxPool3D, MaxPool3DAttrs, MaxPool3DInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor4D, Tensor5D} from
 './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from
 './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes the 3D max pooling.\n * @param x The input
 tensor, of rank 5 or rank 4 of shape\n *   `[batch, depth, height, width, inChannels]`.\n * @param filterSize The
 filter size:\n *   `[filterDepth, filterHeight, filterWidth]`. If

```

`filterSize` is a single number, then filterDepth == filterHeight == filterWidth`.`

`@param strides` The strides of the pooling: `[strideDepth, strideHeight, strideWidth]`. If `strides` is a single number,` then `strideDepth == strideHeight == strideWidth`.`

`@param pad` The type of padding algorithm. - `same` and stride 1: output will be of same size as input,` regardless of filter size. - `valid`: output will be smaller than input if filter is larger` than `1*1x1`.` - For more info, see this guide: https://www.tensorflow.org/api_guides/python/nn#Convolution

`@param dimRoundingMode` A string from: `'ceil', 'round', 'floor'.` If none is provided, it will default to `truncate`.`

`@param dataFormat` An optional string from: `"NDHWC", "NCDHW"`. Defaults to `"NDHWC"`. Specify the data format of the input and output data. With the default format `"NDHWC"`, the data is stored in the order of: `[batch, depth, height, width, channels]`. Only `"NDHWC"` is currently supported.

`@doc {heading: 'Operations', subheading: 'Convolution'}`

```

def maxPool3d<T extends Tensor4D|Tensor5D>(x: T|TensorLike, filterSize: [number, number, number], number = [1, 1, 1], strides: [number, number, number], number, pad: 'valid'|'same'|number, dimRoundingMode?: 'floor'|'round'|'ceil', dataFormat: 'NDHWC'|'NCDHW' = 'NDHWC'): T {
  const $x = convertToTensor(x, 'x', 'maxPool3d');
  let x5D = $x as Tensor5D;
  let reshapedTo5D = false;
  if ($x.rank === 4) {
    reshapedTo5D = true;
    x5D = reshape($x, [1, $x.shape[0], $x.shape[1], $x.shape[2], $x.shape[3]]);
  }
  util.assert(x5D.rank === 5, () => `Error in maxPool3d: x must be rank 5 but got rank ${x5D.rank}.`);
  util.assert(dataFormat === 'NDHWC', () => `Error in maxPool3d: Only NDHWC is currently supported, ` + `but got dataFormat of ${dataFormat}`);
  if (dimRoundingMode != null) {
    util.assert(util.isInt(pad as number), () => `Error in maxPool3d: pad must be an integer when using, ` + `dimRoundingMode ${dimRoundingMode} but got pad ${pad}.`);
  }
  const inputs: MaxPool3DInputs = {x: x5D};
  const attrs: MaxPool3DAttrs = {filterSize, strides, pad, dimRoundingMode, dataFormat};
  // tslint:disable-next-line: no-unnecessary-type-assertion
  const res = ENGINE.runKernel(MaxPool3D, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap) as T;
  if (reshapedTo5D) {
    return reshape(res, [res.shape[1], res.shape[2], res.shape[3], res.shape[4]]) as T;
  }
  return res;
}
export const maxPool3d = op({maxPool3d});

```

`Copyright 2018 Google LLC. All Rights Reserved. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0 Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.`

```

import {ENGINE} from '../engine';
import {MaxPoolWithArgmax, MaxPoolWithArgmaxAttrs, MaxPoolWithArgmaxInputs} from '../kernel_names';
import {NamedAttrMap} from '../kernel_registry';
import {Tensor, Tensor4D} from './tensor';
import {NamedTensorMap} from './tensor_types';
import {convertToTensor} from './tensor_util_env';
import {TensorLike} from './types';
import {op} from './operation';

/** Computes the 2D max pooling of an image with Argmax index. The indices in argmax are flattened, so that a maximum value at position [b, y, x, c] becomes flattened index: (y * width + x) * channels + c` if include_batch_in_index is False; ((b * height + y) * width + x) * channels + c` if include_batch_in_index is True. The indices returned are always in [0, height) x [0, width)` before flattening. @param x The input tensor, of rank 4 or rank 3 of shape [batch, height, width, inChannels]. If rank 3, batch of 1 is assumed. @param filterSize The filter size: [filterHeight, filterWidth]. If filterSize` is a single number, then filterHeight == filterWidth`. @param strides The strides of the pooling: [strideHeight, strideWidth]. If strides` is a single number, then strideHeight == strideWidth`. @param dataFormat An optional string from: "NDHWC", "NCDHW". Defaults to "NDHWC". Specify the data format of the input and output data. With the default format "NDHWC", the data is stored in the

```

```

order of: [batch,\n *   depth, height, width, channels]. Only \"NDHWC\" is currently supported.\n * @param pad
The type of padding algorithm.\n *   - `same` and stride 1: output will be of same size as input,\n *   regardless of
filter size.\n *   - `valid`: output will be smaller than input if filter is larger\n *   than 1x1.\n *   - For more info,
see this guide:\n *   [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param includeBatchIndex Defaults to False.
Whether to include batch\n *   dimension in flattened index of argmax.\n * \n * @doc {heading: 'Operations',
subheading: 'Convolution'}\n * \nfunction maxPoolWithArgmax_<T extends Tensor4D>(\n   x: T|TensorLike,
filterSize: [number, number]|number,\n   strides: [number, number]|number, pad: 'valid'|'same'|number,\n
includeBatchInIndex = false): NamedTensorMap {\n   const $x = convertToTensor(x, 'x',
'maxPoolWithArgmax');\n   \n   const inputs: MaxPoolWithArgmaxInputs = {x: $x};\n   const attrs:\n
MaxPoolWithArgmaxAttrs = {filterSize, strides, pad, includeBatchInIndex};\n   \n // tslint:disable-next-line: no-
unnecessary-type-assertion\n   const result = ENGINE.runKernel(\n
MaxPoolWithArgmax, inputs as {
as NamedTensorMap,\n
attrs as { } as NamedAttrMap) as Tensor[];\n   \n   return {result: result[0],
indexes: result[1]};\n   \n}\n\nexport const maxPoolWithArgmax = op({maxPoolWithArgmax_});\n\n"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
*\n\nimport {ENGINE} from '../engine';\nimport {Maximum, MaximumInputs} from '../kernel_names';\nimport
{Tensor} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {makeTypesMatch} from
'../tensor_util';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from '../types';\n\nimport
{assertAndGetBroadcastShape} from './broadcast_util';\nimport {cast} from './cast';\nimport {op} from
'./operation';\n\n/**\n * Returns the max of a and b (a > b ? a : b) element-wise.\n * Supports broadcasting.\n * \n *
We also expose `tf.maximumStrict` which has the same signature as this op and\n * asserts that `a` and `b` are the
same shape (does not broadcast).\n * \n * ```js\n * const a = tf.tensor1d([1, 4, 3, 16]);\n * const b = tf.tensor1d([1, 2,
9, 4]);\n * \n * a.maximum(b).print(); // or tf.maximum(a, b)\n * \n * ```\n * \n * // Broadcast maximum a with
b.\n * const a = tf.tensor1d([2, 4, 6, 8]);\n * const b = tf.scalar(5);\n * \n * a.maximum(b).print(); // or tf.maximum(a,
b)\n * \n * ```\n * \n * @param a The first tensor.\n * @param b The second tensor. Must have the same type as `a`.\n *
\n * @doc {heading: 'Operations', subheading: 'Arithmetic'}\n * \nfunction maximum_<T extends Tensor>(\n   a:
Tensor|TensorLike, b: Tensor|TensorLike): T {\n   let $a = convertToTensor(a, 'a', 'maximum');\n   let $b =
convertToTensor(b, 'b', 'maximum');\n   [$a, $b] = makeTypesMatch($a, $b);\n   \n   if ($a.dtype === 'bool') {\n
$a = cast($a, 'int32');\n   $b = cast($b, 'int32');\n   }\n   \n   assertAndGetBroadcastShape($a.shape, $b.shape);\n   \n
const
inputs: MaximumInputs = {a: $a, b: $b};\n   \n   return ENGINE.runKernel(Maximum, inputs as { } as
NamedTensorMap);\n   \n}\n\nexport const maximum = op({maximum_});\n\n"/**\n * @license\n * Copyright 2020
Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
\n
*\n\nimport {ENGINE} from '../engine';\nimport {Mean, MeanAttrs, MeanInputs} from '../kernel_names';\nimport
{NamedAttrMap} from '../kernel_registry';\nimport {Tensor} from '../tensor';\nimport {NamedTensorMap} from
'../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from
'../types';\n\nimport {op} from './operation';\n\n/**\n * Computes the mean of elements across dimensions of a

```

```

`tf.Tensor`.  

`tf.Tensor` along the dimensions given in `axis`. Unless `keepDims` is true, the rank of the  

`tf.Tensor` is reduced by 1 for each entry in `axis`. If `keepDims` is true, the reduced dimensions are retained  

with length 1. If `axis` has no entries, all dimensions are reduced, and a `tf.Tensor` with a single element is  

returned.  

js const x = tf.tensor1d([1, 2, 3]); x.mean().print(); // or tf.mean(a) js const x =  

tf.tensor2d([1, 2, 3, 4], [2, 2]); const axis = 1; x.mean(axis).print(); // or tf.mean(x,  

axis)  

@param x The input tensor.  

@param axis The dimension(s) to reduce. By default it reduces all dimensions.  

@param keepDims If true, retains reduced dimensions with size 1.  

@doc {heading: 'Operations', subheading: 'Reduction'}  

function mean_<T extends Tensor>(x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {  

  const $x = convertToTensor(x, 'x', 'mean');  

  const inputs: MeanInputs = {x: $x};  

  const attrs: MeanAttrs = {axis, keepDims};  

  return ENGINE.runKernel(Mean, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);  

}  

export const mean = op({mean_});  

"/**  

 * Copyright 2020 Google Inc. All Rights Reserved.  

 * Licensed under the Apache License, Version 2.0 (the "License");  

 * you may not use this file except in compliance with the License.  

 * You may obtain a copy of the License at  

 * http://www.apache.org/licenses/LICENSE-2.0  

 * Unless required by applicable law or agreed to in writing,  

 * software distributed under the License is distributed on an "AS IS" BASIS,  

 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  

 * See the License for the specific language governing permissions and  

 * limitations under the License.

```

```

=====
*/  

import {ENGINE} from './engine';  

import {Min, MinAttrs, MinInputs} from './kernel_names';  

import {NamedAttrMap} from './kernel_registry';  

import {Tensor} from './tensor';  

import {NamedTensorMap} from './tensor_types';  

import {convertToTensor} from './tensor_util_env';  

import {TensorLike} from './types';  

import {op} from './operation';  

/**  

 * Computes the minimum value from the input.  

 * Reduces the input along the dimensions given in `axes`. Unless `keepDims` is true, the rank of the array is  

reduced by 1 for each entry in `axes`. If `keepDims` is true, the reduced dimensions are retained with length 1.  

 * If `axes` has no entries, all dimensions are reduced, and an array with a single element is returned.  

js const x = tf.tensor1d([1, 2, 3]); x.min().print(); // or tf.min(x) js const x =  

tf.tensor2d([1, 2, 3, 4], [2, 2]); const axis = 1; x.min(axis).print(); // or tf.min(x, axis)  

@param x The input Tensor.  

@param axis The dimension(s) to reduce. By default it reduces all dimensions.  

@param keepDims If true, retains reduced dimensions with size 1.  

@doc {heading: 'Operations', subheading: 'Reduction'}  

function min_<T extends Tensor>(x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {  

  const $x = convertToTensor(x, 'x', 'min');  

  const inputs: MinInputs = {x: $x};  

  const attrs: MinAttrs = {axis, keepDims};  

  // tslint:disable-next-line: no-unnecessary-type-assertion  

  return ENGINE.runKernel(Min, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap) as T;  

}  

export const min = op({min_});  

"/**  

 * Copyright 2020 Google LLC. All Rights Reserved.  

 * Licensed under the Apache License, Version 2.0 (the "License");  

 * you may not use this file except in compliance with the License.  

 * You may obtain a copy of the License at  

 * http://www.apache.org/licenses/LICENSE-2.0  

 * Unless required by applicable law or agreed to in writing,  

 * software distributed under the License is distributed on an "AS IS" BASIS,  

 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  

 * See the License for the specific language governing permissions and  

 * limitations under the License.

```

```

=====
*/  

import {ENGINE} from './engine';  

import {Minimum, MinimumInputs} from './kernel_names';  

import {Tensor} from './tensor';  

import {NamedTensorMap} from './tensor_types';  

import {makeTypesMatch} from './tensor_util';  

import {convertToTensor} from './tensor_util_env';  

import {TensorLike} from './types';  

import {assertAndGetBroadcastShape} from './broadcast_util';  

import {cast} from './cast';  

import {op} from './operation';  

/**  

 * Returns the min of a and b (a < b ? a : b) element-wise.  

 * Supports broadcasting.  

 * We also expose `minimumStrict` which has the same signature as this op and asserts that `a` and `b` are the

```


software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Mod, ModInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Returns the mod of a and b element-wise.\n *  $\text{floor}(x / y) * y + \text{mod}(x, y) = x$ \n * Supports broadcasting.\n * We also expose `tf.modStrict` which has the same signature as this op and\n * asserts that `a` and `b` are the same shape (does not broadcast).\n * js\n * const a = tf.tensor1d([1, 4, 3, 16]);\n * const b = tf.tensor1d([1, 2, 9, 4]);\n * a.mod(b).print(); // or tf.mod(a, b)\n * js\n * // Broadcast a mod b.\n * const a = tf.tensor1d([2, 4, 6, 8]);\n * const b = tf.scalar(5);\n * a.mod(b).print(); // or tf.mod(a, b)\n * js\n * @param a The first tensor.\n * @param b The second tensor. Must have the same type as `a`.\n * @doc {heading: 'Operations', subheading: 'Arithmetic'}\n */\nfunction mod_<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a = convertToTensor(a, 'a', 'mod');\n  let $b = convertToTensor(b, 'b', 'mod');\n  [$a, $b] = makeTypesMatch($a, $b);\n  const inputs: ModInputs = {a: $a, b: $b};\n  return ENGINE.runKernel(Mod, inputs as { }) as NamedTensorMap;\n}\n\nexport const mod = op({mod_});\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport {ENGINE} from './engine';\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes square of `x` element-wise:  $x^2$ \n * js\n * const x = tf.tensor1d([1, 2, Math.sqrt(2), -1]);\n * x.square().print(); // or tf.square(x)\n * js\n * @param x The input Tensor.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction square_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'square');\n  const attrs = {};\n  return ENGINE.runKernel('Square', {x: $x, attrs});\n}\n\nexport const square = op({square_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {parseAxisParam} from './util';\n\nimport {expandShapeToKeepDim} from './axis_util';\nimport {cast} from './cast';\nimport {mean} from './mean';\nimport {op} from './operation';\nimport {reshape} from './reshape';\nimport {square} from './square';\nimport {sub} from './sub';\n\n/**\n * Calculates the mean and variance of `x`. The mean and variance are\n * calculated by aggregating the contents of `x` across `axes`.\n * If `x` is 1-D and `axes = [0]` this is just the mean and variance of a vector.\n * @param x The input tensor.\n * @param axis The dimension(s) along with to compute mean and variance. By default it reduces all dimensions.\n * @param keepDims If true, the moments have the same dimensionality as the input.\n * @return An object with two keys: `mean` and `variance`.\n * @doc {heading: 'Operations', subheading:
```

```
'Normalization')\n *\nfunction moments_(\n  x: Tensor|TensorLike, axis: number|number[] = null,\n  keepDims = false): {mean: Tensor, variance: Tensor} {\n  x = convertToTensor(x, 'x', 'moments');\n  const axes =\n  parseAxisParam(axis, x.shape);\n  const xMean = mean(x, axes, keepDims);\n  let keepDimsShape =\n  xMean.shape;\n  if (!keepDims) {\n    keepDimsShape = expandShapeToKeepDim(xMean.shape, axes);\n  }\n  const devSquared =\n  square(sub(cast(x, 'float32'), reshape(xMean, keepDimsShape)));\n  const variance =\n  mean(devSquared, axes, keepDims);\n  return {mean: xMean, variance};\n}\n\nexport const moments =\n  op({moments_});\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under\n the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n\n*\nimport {Tensor2D} from './tensor';\nimport {convertToTensor, convertToTensorArray} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * @docalias\n (data: Tensor2D, c: Tensor2D, h: Tensor2D): [Tensor2D, Tensor2D]\n *\nexport type LSTMCellFunc = {\n (data:\n Tensor2D, c: Tensor2D, h: Tensor2D): [Tensor2D, Tensor2D];\n};\n\n/**\n * Computes the next states and outputs\n of a stack of LSTMCells.\n *\n * Each cell output is used as input to the next cell.\n *\n * Returns `[cellState,\n cellOutput]`.\n *\n * Derived from tf.contrib.rnn.MultiRNNCell.\n *\n * @param lstmCells Array of LSTMCell\n functions.\n * @param data The input to the cell.\n * @param c Array of previous cell states.\n * @param h Array\n of previous cell outputs.\n *\n * @doc {heading: 'Operations', subheading: 'RNN'}\n *\nfunction multiRNNCell_(\n  lstmCells: LSTMCellFunc[], data: Tensor2D|TensorLike,\n  c: Array<Tensor2D|TensorLike>,\n  h:\n Array<Tensor2D|TensorLike>): [Tensor2D[], Tensor2D[]] {\n  const $data = convertToTensor(data, 'data',\n 'multiRNNCell');\n  const $c = convertToTensorArray(c, 'c', 'multiRNNCell');\n  const $h =\n  convertToTensorArray(h, 'h', 'multiRNNCell');\n  let input = $data;\n  const newStates = [];\n  for (let i = 0; i <\n lstmCells.length; i++) {\n    const output = lstmCells[i](input, $c[i], $h[i]);\n    newStates.push(output[0]);\n    newStates.push(output[1]);\n    input = output[1];\n  }\n  const newC: Tensor2D[] = [];\n  const newH: Tensor2D[] =\n  [];\n  for (let i = 0; i < newStates.length; i += 2) {\n    newC.push(newStates[i]);\n    newH.push(newStates[i + 1]);\n  }\n  return [newC, newH];\n}\n\nexport const multiRNNCell = op({multiRNNCell_});\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {ENGINE} from './engine';\nimport {Multinomial, MultinomialAttrs, MultinomialInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor1D, Tensor2D} from\n './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\nimport {reshape} from\n './reshape';\n\n/**\n * Creates a `tf.Tensor` with values drawn from a multinomial distribution.\n *\n * ``js\n * const\n probs = tf.tensor([.75, .25]);\n * tf.multinomial(probs, 3).print();\n * ``\n *\n * @param logits 1D array with\n unnormalized log-probabilities, or\n * 2D array of shape `[batchSize, numOutcomes]`. See the `normalized`\n * parameter.\n * @param numSamples Number of samples to draw for each row slice.\n * @param seed The seed\n number.\n * @param normalized Whether the provided `logits` are normalized true\n * probabilities (sum to 1).\n Defaults to false.\n * @return 1D array of shape `[numSamples]`, or 2D array of shape\n * `[batchSize,\n numSamples]`, depending on the rank of the input.\n *\n * @doc {heading: 'Tensors', subheading: 'Random'}\n
```

```

*\nfunction multinomial_(\n  logits: Tensor1D|Tensor2D|TensorLike, numSamples: number, seed?: number,\n  normalized = false): Tensor1D|Tensor2D {\n  const $logits = convertToTensor(logits, 'logits', 'multinomial');\n  const numOutcomes = $logits.size;\n  const origRank = $logits.rank;\n  if (numOutcomes < 2) {\n    throw new\n    Error(\n      `Error in multinomial: you need at least 2 outcomes, but got ` +\n      `${numOutcomes}.`);\n  }\n  if\n  (origRank > 2) {\n    throw new Error(`Rank of probabilities must be 1 or 2, but is ${origRank}`);\n  }\n  //\n  TODO(lina128): Investigate correct seed behavior. The code seems not allow\n  // setting see to 0.\n  seed = seed ||\n  Math.random();\n  // The kernel only accepts (and returns) rank 2 tensors.\n  const logits2D: Tensor2D =\n  origRank === 1 ? reshape($logits, [1, -1]) : $logits as Tensor2D;\n  \n  const inputs: MultinomialInputs = {logits:\n  logits2D};\n  const attrs: MultinomialAttrs = {numSamples, seed, normalized};\n  // tslint:disable-next-line: no-\n  unnecessary-type-assertion\n  const res = ENGINE.runKernel(\n    Multinomial, inputs as {} as\n  NamedTensorMap,\n    attrs as {} as NamedAttrMap) as Tensor2D;\n  // tslint:disable-next-line:no-\n  unnecessary-type-assertion\n  return origRank === 1 ? reshape(res, [res.size]) as Tensor1D : res;\n}\n\n\nexport const\n  multinomial = op({multinomial_});\n\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in\n  compliance with the License.\n * You may obtain a copy of the License at\n * \n *  

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *  

=====\n\n*\nimport {ENGINE} from './engine';\nimport {NotEqual, NotEqualInputs} from './kernel_names';\nimport\n  {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from\n  './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport\n  {assertAndGetBroadcastShape} from './broadcast_util';\nimport {op} from './operation';\n\n/**\n * Returns the truth\n  value of (a != b) element-wise. Supports broadcasting.\n * \n * ```\n * const a = tf.tensor1d([1, 2, 3]);\n * const b =\n  tf.tensor1d([0, 2, 3]);\n * \n * a.notEqual(b).print();\n * ```\n * @param a The first input tensor.\n * @param b The\n  second input tensor. Must have the same dtype as `a`.\n * @doc {heading: 'Operations', subheading: 'Logical'}\n\n*\nfunction notEqual<T extends Tensor>(\n  a: Tensor|TensorLike, b: Tensor|TensorLike): T {\n  let $a =\n  convertToTensor(a, 'a', 'notEqual');\n  let $b = convertToTensor(b, 'b', 'notEqual');\n  [$a, $b] =\n  makeTypesMatch($a, $b);\n  \n  assertAndGetBroadcastShape($a.shape, $b.shape);\n  \n  const inputs: NotEqualInputs\n  = {a: $a, b: $b};\n  \n  return ENGINE.runKernel(NotEqual, inputs as {} as NamedTensorMap);\n}\n\n\nexport const\n  notEqual = op({notEqual_});\n\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in\n  compliance with the License.\n * You may obtain a copy of the License at\n * \n *  

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *  

=====\n\n*\nimport {ENGINE} from './engine';\nimport {Tensor} from './tensor';\nimport {DataType, Rank, ShapeMap}\n  from './types';\nimport {makeZerosTypedArray, sizeFromShape} from './util';\nimport {complex} from\n  './complex';\n\n/**\n * Creates a `tf.Tensor` with all elements set to 0.\n * \n * ```\n * tf.zeros([2, 2]).print();\n * ```\n * @param shape An array of integers defining the output tensor shape.\n * @param dtype The type of an\n  element in the resulting tensor. Can\n * be 'float32', 'int32' or 'bool'. Defaults to 'float'.  

*\n * @doc {heading:\n  'Tensors', subheading: 'Creation'}\n\n*\nexport function zeros<R extends Rank>(\n  shape: ShapeMap[R], dtype:\n  DataType = 'float32'): Tensor<R> {\n  if (dtype === 'complex64') {\n    const real = zeros(shape, 'float32');\n    const\n    imag = zeros(shape, 'float32');\n    return complex(real, imag);\n  }\n  \n  const values =\n  makeZerosTypedArray(sizeFromShape(shape), dtype);\n  return ENGINE.makeTensor(values, shape, dtype) as

```

Tensor<R>;\n}\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Tensor} from './tensor';\nimport {DataType, Rank, ShapeMap} from './types';\nimport {makeOnesTypedArray, sizeFromShape} from './util';\nimport {complex} from './complex';\nimport {zeros} from './zeros';\n\n/**\n * Creates a `tf.Tensor` with all elements set to 1.\n *```\n * tf.ones([2, 2]).print();\n *```\n * @param shape An array of integers defining the output tensor shape.\n * @param dtype The type of an element in the resulting tensor. Defaults to\n *   'float'.\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n */\nexport function ones<R extends Rank>(\n  shape: ShapeMap[R], dtype: DataType = 'float32'): Tensor<R> {\n  if (dtype === 'complex64') {\n    const real = ones(shape, 'float32');\n    const imag = zeros(shape, 'float32');\n    return complex(real, imag);\n  }\n  const values =\n    makeOnesTypedArray(sizeFromShape(shape), dtype);\n  return ENGINE.makeTensor(values, shape, dtype) as\n  Tensor<R>;\n}\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

Tensor<R>;\n}\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {OnesLike, OnesLikeInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Creates a `tf.Tensor` with all elements set to 1 with the same shape as the\n * given tensor.\n *```\n * const x =\n *   tf.tensor([1, 2]);\n *   tf.onesLike(x).print();\n *```\n * @param x A tensor.\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n */\nexport function onesLike_<T extends Tensor>(x: T|TensorLike): T {\n  const $x =\n    convertToTensor(x, 'x', 'onesLike');\n  const inputs: OnesLikeInputs = {x: $x};\n  return\n    ENGINE.runKernel(OnesLike, inputs as { } as NamedTensorMap);\n}\n\nexport const onesLike =\n  op({onesLike_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

Tensor<R>;\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Tensor1D, Tensor2D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {matMul} from './mat_mul';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes the outer product of two vectors, `v1` and `v2`.\n *```\n * const a = tf.tensor1d([1, 2, 3]);\n * const b = tf.tensor1d([3, 4, 5]);\n *\n * tf.outerProduct(a, b).print();\n *```\n * @param v1 The first vector in the outer product operation.\n * @param v2 The second vector in the outer product operation.\n * @doc {heading: 'Operations', subheading: 'Matrices'}\n */\nexport function outerProduct_(\n  v1: Tensor1D|TensorLike, v2: Tensor1D|TensorLike): Tensor2D {\n  const $v1 =
```

```

convertToTensor(v1, 'v1', 'outerProduct');\n const $v2 = convertToTensor(v2, 'v2', 'outerProduct');\n\n util.assert(\n
  $v1.rank === 1 && $v2.rank === 1,\n    () => `Error in outerProduct: inputs must be rank 1, but got ranks ` +\n
  `${$v1.rank} and `${$v2.rank}`);\n\n const v12D = reshape($v1, [-1, 1]);\n const v22D = reshape($v2, [1, -\n
  1]);\n return matMul(v12D, v22D);\n}\n\nexport const outerProduct = op({ outerProduct_});\n", "/*\n * @license\n
 * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n
  \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n
  License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n
  agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n
  the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {PadV2, PadV2Attrs, PadV2Inputs} from\n
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport\n
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport\n
 {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Pads a `tf.Tensor` with a given value and\n
  paddings.\n * This operation implements `CONSTANT` mode. For `REFLECT` and `SYMMETRIC`,\n * refer\n
  to `tf.mirrorPad`.\n * Also available are stricter rank-specific methods with the same signature\n * as this method\n
  that assert that `paddings` is of given length.\n * - `tf.pad1d`\n * - `tf.pad2d`\n * - `tf.pad3d`\n * - `tf.pad4d`\n
  *\n * ``js\n * const x = tf.tensor1d([1, 2, 3, 4]);\n * x.pad([[1, 2]]).print();\n * ``\n * @param x The tensor to pad.\n
  * @param paddings An array of length `R` (the rank of the tensor), where\n * each element is a length-2 tuple of\n
  ints `[padBefore, padAfter]`,\n * specifying how much to pad along each dimension of the tensor.\n * @param\n
  constantValue The pad value to use. Defaults to 0.\n * @doc {heading: 'Tensors', subheading:\n
  'Transformations'}\n *\nfunction pad_<T extends Tensor>(\n  x: T|TensorLike, paddings: Array<[number,\n
  number]>, constantValue = 0): T {\n  const $x = convertToTensor(x, 'x', 'pad');\n  if ($x.rank === 0) {\n    throw\n
    new Error('pad(scalar) is not defined. Pass non-scalar to pad');\n  }\n  const attrs: PadV2Attrs = {paddings,\n
  constantValue};\n  const inputs: PadV2Inputs = {x: $x};\n  return ENGINE.runKernel(\n    PadV2, inputs as\n
  unknown as NamedTensorMap,\n    attrs as unknown as NamedAttrMap);\n}\n\nexport const pad =\n
op({pad_});\n", "/*\n * @license\n
 * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n
  Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n
  License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless\n
  required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n
  on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n
  implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n
  License.\n *

```

```

=====\n
*\n\nimport {Tensor1D} from './tensor';\nimport {TensorLike} from './types';\nimport {assert} from './util';\nimport\n
 {op} from './operation';\nimport {pad} from './pad';\n\n/**\n * Pads a `tf.Tensor1D` with a given value and\n
  paddings. See `pad` for details.\n *\nfunction pad1d_(\n  x: Tensor1D|TensorLike, paddings: [number, number],\n
  constantValue = 0): Tensor1D {\n  assert(\n    paddings.length === 2,\n    () => 'Invalid number of paddings.\n
  Must be length of 2.);\n  return pad(x, [paddings], constantValue);\n}\n\nexport const pad1d =\n
op({pad1d_});\n", "/*\n * @license\n
 * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n
  Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n
  License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless\n
  required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n
  on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n
  implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n
  License.\n *

```

```

=====\n

```

```
*\nimport {Tensor2D} from './tensor';\nimport {TensorLike} from './types';\nimport {assert} from './util';\nimport {op} from './operation';\nimport {pad} from './pad';\n\n/**\n * Pads a `tf.Tensor2D` with a given value and paddings. See `pad` for details.\n *\nfunction pad2d_(\n  x: Tensor2D|TensorLike, paddings: [[number, number], [number, number]],\n  constantValue = 0): Tensor2D {\n  assert(\n    paddings.length === 2 &&\n    paddings[0].length === 2 &&\n    paddings[1].length === 2,\n    () => 'Invalid number of paddings. Must be length of 2 each.);\n  return pad(x, paddings, constantValue);\n}\n\nexport const pad2d = op({pad2d_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\nimport {Tensor3D} from './tensor';\nimport {TensorLike} from './types';\nimport {assert} from './util';\nimport {op} from './operation';\nimport {pad} from './pad';\n\n/**\n * Pads a `tf.Tensor3D` with a given value and paddings. See `pad` for details.\n *\nfunction pad3d_(\n  x: Tensor3D|TensorLike,\n  paddings: [[number, number], [number, number], [number, number]],\n  constantValue = 0): Tensor3D {\n  assert(\n    paddings.length === 3 &&\n    paddings[0].length === 2 &&\n    paddings[1].length === 2 &&\n    paddings[2].length === 2,\n    () => 'Invalid number of paddings. Must be length of 2 each.);\n  return pad(x, paddings, constantValue);\n}\n\nexport const pad3d = op({pad3d_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\nimport {Tensor4D} from './tensor';\nimport {TensorLike} from './types';\nimport {assert} from './util';\nimport {op} from './operation';\nimport {pad} from './pad';\n\n/**\n * Pads a `tf.Tensor4D` with a given value and paddings. See `pad` for details.\n *\nfunction pad4d_(\n  x: Tensor4D|TensorLike,\n  paddings: [\n    [number, number], [number, number], [number, number], [number, number]\n  ],\n  constantValue = 0): Tensor4D {\n  assert(\n    paddings.length === 4 &&\n    paddings[0].length === 2 &&\n    paddings[1].length === 2 &&\n    paddings[2].length === 2 &&\n    paddings[3].length === 2,\n    () => 'Invalid number of paddings. Must be length of 2 each.);\n  return pad(x, paddings, constantValue);\n}\n\nexport const pad4d = op({pad4d_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\nimport {ENGINE} from './engine';\nimport {SpaceToBatchND, SpaceToBatchNDAttrs, SpaceToBatchNDInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\n\n/**\n * This operation divides "spatial" dimensions `[1, ..., M]` of the input into a grid of blocks of shape `blockShape`, and interleaves these blocks with the "batch" dimension (0) such that in the
```

output, the spatial dimensions `[1, ..., M]` correspond to the position within the grid, and the batch dimension combines both the position within a spatial block and the original batch position. Prior to division into blocks, the spatial dimensions of the input are optionally zero padded according to `padding`. See below for a precise description.

```

const x = tf.tensor4d([1, 2, 3, 4], [1, 2, 2, 1]);
const blockSize = [2, 2];
const padding = [[0, 0], [0, 0]];
x.spaceToBatchND(blockSize, padding).print();

```

`x` is a `tf.Tensor`. N-D with `x.shape = [batch] + spatialShape + remainingShape`, where `spatialShape` has `M` dimensions. `blockSize` is a 1-D array. Must have shape `[M]`, all values must be `>= 1`. `padding` is a 2-D array. Must have shape `[M, 2]`, all values must be `>= 0`. `padding[i] = [padStart, padEnd]` specifies the amount to zero-pad from input dimension `i + 1`, which corresponds to spatial dimension `i`. It is required that `(inputShape[i + 1] + padStart + padEnd) % blockSize[i] === 0`. This operation is equivalent to the following steps:

1. Zero-pad the start and end of dimensions `[1, ..., M]` of the input according to `padding` to produce `padded` of shape `paddedShape`.
2. Reshape `padded` to `reshapedPadded` of shape: `[batch] + [paddedShape[1] / blockSize[0], blockSize[0], ..., paddedShape[M] / blockSize[M-1], blockSize[M-1]] + remainingShape`.
3. Permute dimensions of `reshapedPadded` to produce `permutedReshapedPadded` of shape: `blockSize + [batch] + [paddedShape[1] / blockSize[0], ..., paddedShape[M] / blockSize[M-1]] + remainingShape`.
4. Reshape `permutedReshapedPadded` to flatten `blockSize` into the batch dimension, producing an output tensor of shape: `[batch * prod(blockSize)] + [paddedShape[1] / blockSize[0], ..., paddedShape[M] / blockSize[M-1]] + remainingShape`.

`spaceToBatchND` extends `Tensor`

```

function spaceToBatchND<T extends Tensor>(x: T | TensorLike, blockSize: number[], padding: number[][]): T {
  const $x = convertToTensor(x, 'x', 'spaceToBatchND');
  util.assert($x.rank >= 1 + blockSize.length, () => `input rank ${$x.rank} should be > than [blockSize]`);
  util.assert(padding.length === blockSize.length, () => `padding.shape[0] ${padding.length} must be equal to [blockSize]`);
  util.assert($x.shape.reduce((a, b, i) => {
    if (i > 0 && i <= blockSize.length) {
      return a && ((b + padding[i - 1][0] + padding[i - 1][1]) % blockSize[i - 1] === 0);
    }
    return a;
  }, true), () => `input spatial dimensions ${$x.shape.slice(1)} with padding ${padding.toString()} must be divisible by blockShapes [${blockSize.toString()}]`);
  const inputs: SpaceToBatchNDInputs = {x: $x};
  const attrs: SpaceToBatchNDAttrs = {blockSize, padding};
  return ENGINE.runKernel(spaceToBatchND, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);
}
export const spaceToBatchND = op({spaceToBatchND_});

```

Copyright 2018 Google LLC. All Rights Reserved. Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0>. Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```

import {Tensor3D, Tensor4D} from './tensor';
import {convertToTensor} from './tensor_util_env';
import {TensorLike} from './types';
import * as util from './util';
import {avgPool} from './avg_pool';
import {batchToSpaceND} from './batch_to_space_nd';
import * as conv_util from './conv_util';
import {maxPool} from './max_pool';
import {op} from './operation';
import {reshape} from './reshape';
import {spaceToBatchND} from './space_to_batch_nd';

```

`spaceToBatchND` Performs an N-D pooling operation

- `input`: The input tensor, of rank 4 or rank 3 of shape `[batch, height, width, inChannels]`. If rank 3, batch of 1 is assumed.
- `blockSize`: The filter size: `[filterHeight, filterWidth]`. If `blockSize` is a single number, then `filterHeight === filterWidth`.
- `paddingType`: The type of pooling, either 'max' or 'avg'.
- `padding`: The type of padding algorithm: `'same'` and stride 1: output will be of same size as input, regardless of filter size. `'valid'`: output will be smaller than input if filter is larger than `1x1`.

For more info, see this


```

guide:\n * [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dilations The dilation rates:
`[dilationHeight, dilationWidth]`\n * in which we sample input values across the height and width dimensions\n *
in dilated pooling. Defaults to `[1, 1]`. If `dilationRate` is a single\n * number, then `dilationHeight ==
dilationWidth`. If it is greater than\n * 1, then all values of `strides` must be 1.\n * @param strides The strides of
the pooling: `[strideHeight, strideWidth]`. If\n * `strides` is a single number, then `strideHeight == strideWidth`.\n
*\n * @doc {heading: 'Operations', subheading: 'Convolution'}\n *\nfunction pool_<T extends
Tensor3D|Tensor4D>(\n input: T|TensorLike, windowShape: [number, number]|number,\n poolingType:
'avg'|'max', pad: 'valid'|'same'|number,\n dilations?: [number, number]|number, strides?: [number, number]|number)
{\n if (dilations == null) {\n dilations = [1, 1];\n }\n if (strides == null) {\n strides = 1;\n }\n if (pad === 0)
{\n pad = 'valid';\n }\n\n const $x = convertToTensor(input, 'x', 'maxPool');\n let x4D = $x as Tensor4D;\n let
reshapedTo4D = false;\n\n if ($x.rank === 3) {\n reshapedTo4D = true;\n x4D = reshape($x, [1, $x.shape[0],
$x.shape[1], $x.shape[2]]);\n }\n\n util.assert(\n conv_util.eitherStridesOrDilationsAreOne(strides, dilations),\n
() => 'Error in pool: Either strides or dilations must be 1. ' +\n `Got strides ${strides} and dilations
`${dilations}``);\n\n const convInfo = conv_util.computePool2DInfo(\n x4D.shape, windowShape, strides,
dilations, pad);\n const dilation: [number, number] = [\n [convInfo.dilationHeight, convInfo.dilationWidth];\n\n //
The following implementation does batchToSpace(pool(spaceToBatch(x)))\n // whenever dilation > 1 since the TF
kernels do not support dilation > 1.\n // tslint:disable-next-line:max-line-length\n //
https://github.com/tensorflow/tensorflow/blob/50f6bb67dc98c9b74630b6047aae7a4f8a40fd02/tensorflow/python/op
s/nn_ops.py#L1037\n\n let basePadding: number[][];\n if (pad === 'same') {\n basePadding =
withSpaceToBatchBasePaddings(\n [convInfo.filterHeight, convInfo.filterWidth], dilation);\n } else {\n
basePadding = [[0, 0], [0, 0]];\n }\n\n const isDilationOne = dilation[0] === 1 && dilation[1] === 1;\n const
[adjustedPadding, adjustedCrops] = requiredSpaceToBatchPaddings(\n [convInfo.inHeight, convInfo.inWidth],
dilation, basePadding);\n const convertedPad = isDilationOne ? pad : 'valid';\n const convertedX =\n isDilationOne ? x4D : spaceToBatchND(x4D, dilation, adjustedPadding);\n\n const forwardOp = poolingType ===
'avg' ?\n () => avgPool(convertedX, windowShape, strides, convertedPad) :\n () => maxPool(convertedX,
windowShape, strides, convertedPad);\n const y = forwardOp();\n\n const res = isDilationOne ? y :
batchToSpaceND(y, dilation, adjustedCrops);\n\n if (reshapedTo4D) {\n return reshape(res, [res.shape[1],
res.shape[2], res.shape[3]]) as T;\n }\n\n return res as T;\n}\n\n// Helper function to compute crops and paddings
for pool with dilation > 1.\n// tslint:disable-next-line:max-line-length\n//
https://github.com/tensorflow/tensorflow/blob/50f6bb67dc98c9b74630b6047aae7a4f8a40fd02/tensorflow/python/op
s/array_ops.py#L2184\nfunction requiredSpaceToBatchPaddings(\n inputShape: [number, number], blockShape:
[number, number],\n basePadding: number[][]) {\n const padStart = basePadding.map(b => b[0]);\n const
origPadEnd = basePadding.map(b => b[1]);\n const fullInputShape = inputShape.concat(padStart, origPadEnd);\n
const padEndExtra = blockShape.map((b, i) => (b - fullInputShape[i] % b) % b);\n const padEnd =
origPadEnd.map((s, i) => s + padEndExtra[i]);\n const paddings = blockShape.map(_, i) => [padStart[i],
padEnd[i]]);\n const crops = blockShape.map(_, i) => [0, padEndExtra[i]]);\n return [paddings, crops];\n}\n\n//
Helper function to compute base paddings for pool with dilation > 1.\n// tslint:disable-next-line:max-line-length\n//
https://github.com/tensorflow/tensorflow/blob/50f6bb67dc98c9b74630b6047aae7a4f8a40fd02/tensorflow/python/op
s/nn_ops.py#L524\nfunction withSpaceToBatchBasePaddings(\n filterShape: [number, number], dilation:
[number, number]) {\n // Spatial dimensions of the filters and the upsampled filters in which we\n // introduce (rate
- 1) zeros between consecutive filter values.\n const dilatedFilterShape = filterShape.map((s, i) => {\n return s +
(s - 1) * (dilation[i] - 1);\n });\n const padExtraShape = dilatedFilterShape.map(s => s - 1);\n\n // When padding is
odd, we pad more at end, following the same\n // convention as conv2d.\n const padExtraStart =
padExtraShape.map(s => Math.floor(s / 2));\n const padExtraEnd = padExtraShape.map((s, i) => s -
padExtraStart[i]);\n return padExtraShape.map(_, i) => {\n return [padExtraStart[i], padExtraEnd[i]];\n
});\n}\n\n\nexport const pool = op({pool_});\n"}/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file

```

except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * <http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Pow, PowInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes the power of one `tf.Tensor` to another. Supports broadcasting.\n *\n * Given a `tf.Tensor` x and a `tf.Tensor` y, this operation computes x^y for\n * corresponding elements in x and y. The result's dtype will be the upcasted\n * type of the `base` and `exp` dtypes.\n *\n * ```js\n * const a = tf.tensor([[2, 3], [4, 5]])\n * const b = tf.tensor([[1, 2], [3, 0]])\n * a.pow(b).print(); // or tf.pow(a, b)\n * ```\n *\n * ```js\n * const a = tf.tensor([[1, 2], [3, 4]])\n * const b = tf.tensor(2)\n * a.pow(b).print(); // or tf.pow(a, b)\n * ```\n * We also expose `powStrict` which has the same signature as this op and\n * asserts that `base` and `exp` are the same shape (does not broadcast).\n *\n * @param base The base `tf.Tensor` to pow element-wise.\n * @param exp The exponent `tf.Tensor` to pow element-wise.\n * @doc {heading: 'Operations', subheading: 'Arithmetic'}\n */\nfunction pow<T extends Tensor>(base: Tensor|TensorLike, exp: Tensor|TensorLike): T {\n  let $base = convertToTensor(base, 'base', 'pow');\n  let $exp = convertToTensor(exp, 'exp', 'pow');\n  [$base, $exp] = makeTypesMatch($base, $exp);\n\n  const inputs: PowInputs = {a: $base, b: $exp};\n\n  return ENGINE.runKernel(Pow, inputs as { } as NamedTensorMap);\n}\n\nexport const pow = op({pow_});\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Prelu, PreluInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes leaky rectified linear element-wise with parametric alphas.\n *\n *  $x < 0 ? \\alpha * x : f(x) = x$ \n *\n * ```js\n * const x = tf.tensor1d([-1, 2, -3, 4]);\n * const alpha = tf.scalar(0.1);\n * x.prelu(alpha).print(); // or tf.prelu(x, alpha)\n * ```\n *\n * @param x The input tensor.\n * @param alpha Scaling factor for negative values.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction prelu<T extends Tensor>(x: T|TensorLike, alpha: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'prelu');\n  const $alpha = convertToTensor(alpha, 'alpha', 'prelu');\n\n  const inputs: PreluInputs = {x: $x, alpha: $alpha};\n  return ENGINE.runKernel(Prelu, inputs as { } as NamedTensorMap);\n}\n\nexport const prelu = op({prelu_});\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Prod, ProdAttrs, ProdInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from
```

```

'./tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from
'./types';\n\nimport {cast} from './cast';\nimport {op} from './operation';\n\n/**\n * Computes the product of
elements across dimensions of a `tf.Tensor`.\n *\n * Reduces the input along the dimensions given in `axes`. Unless
`keepDims`\n * is true, the rank of the `tf.Tensor` is reduced by 1 for each entry in\n * `axes`. If `keepDims` is true,
the reduced dimensions are retained with\n * length 1. If `axes` has no entries, all dimensions are reduced, and a\n *
`tf.Tensor` with a single element is returned.\n *\n * ```js\n * const x = tf.tensor1d([1, 2, 3]);\n *\n * x.prod().print();
// or tf.prod(x)\n * ```\n *\n * ```js\n * const x = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n *\n * const axis = 1;\n *
x.prod(axis).print(); // or tf.prod(x, axis)\n * ```\n *\n * @param x The input tensor to compute the product over. If
the dtype is `bool`\n * it will be converted to `int32` and the output dtype will be `int32`.\n *\n * @param axis The
dimension(s) to reduce. By default it reduces\n * all dimensions.\n *\n * @param keepDims If true, retains reduced
dimensions with size 1.\n *\n * @doc {heading: 'Operations', subheading: 'Reduction'}\n *\n\nfunction prod_<T
extends Tensor>(\n  x: Tensor|TensorLike, axis: number|number[] = null, keepDims = false): T {\n  let $x =
convertToTensor(x, 'x', 'prod');\n\n  if ($x.dtype === 'bool') {\n    // bool is not an allowed type for the underlying
kernel.\n    $x = cast($x, 'int32');\n  }\n\n  const inputs: ProdInputs = {x: $x};\n  const attrs: ProdAttrs = {axis,
keepDims};\n\n  return ENGINE.runKernel(\n    Prod, inputs as { } as NamedTensorMap, attrs as { } as
NamedAttrMap);\n}\n\nexport const prod = op({prod_});\n\n"/**\n *\n * @license\n *\n * Copyright 2020 Google LLC.
All Rights Reserved.\n *\n * Licensed under the Apache License, Version 2.0 (the "License");\n *\n * you may not use this
file except in compliance with the License.\n *\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n *\n * distributed under the License is distributed on an "AS IS" BASIS,\n *\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n *\n * See the License for the specific language
governing permissions and\n *\n * limitations under the License.\n *\n *
=====\n *\n\nimport {ENGINE} from './engine';\nimport {Tensor} from './tensor';\nimport {DataType, Rank, ShapeMap}
from './types';\nimport {sizeFromShape} from './util';\nimport {op} from './operation';\n\n/**\n *\n * Creates a
`tf.Tensor` with values sampled from a random number generator\n *\n * function defined by the user.\n *\n * @param
shape An array of integers defining the output tensor shape.\n *\n * @param randFunction A random number generator
function which is called\n *\n * for each element in the output tensor.\n *\n * @param dtype The data type of the output
tensor. Defaults to 'float32'.\n *\n\nfunction rand_<R extends Rank>(\n  shape: ShapeMap[R], randFunction: () =>
number,\n  dtype?: DataType): Tensor<R> {\n  const size = sizeFromShape(shape);\n  let values = null;\n  if (dtype
=== null || dtype === 'float32') {\n    values = new Float32Array(size);\n  } else if (dtype === 'int32') {\n    values =
new Int32Array(size);\n  } else if (dtype === 'bool') {\n    values = new Uint8Array(size);\n  } else {\n    throw new
Error(`Unknown data type ${dtype}`);\n  }\n\n  for (let i = 0; i < size; i++) {\n    values[i] = randFunction();\n  }\n\n  return ENGINE.makeTensor(values, shape, dtype) as Tensor<R>;\n}\n\nexport const rand = op({rand_});\n\n"/**\n *\n * A
port of an algorithm by Johannes Baagøe <baagoe@baagoe.com>, 2010\n\nhttp://baagoe.com/en/RandomMusings/javascript/\n\nhttps://github.com/nquinlan/better-random-numbers-for-javascript-mirror\n\nOriginal work is under MIT license -\n\nCopyright (C) 2010 by Johannes Baagøe
<baagoe@baagoe.org>\n\nPermission is hereby granted, free of charge, to any person obtaining a copy\n\nof this
software and associated documentation files (the "Software"), to deal\n\nin the Software without restriction,
including without limitation the rights\n\n to use, copy, modify, merge, publish, distribute, sublicense, and/or sell\n\n
copies of the Software, and to permit persons to whom the Software is\n\n furnished to do so, subject to the
following conditions:\n\n\nThe above copyright notice and this permission notice shall be included in\n\n all
copies or substantial portions of the Software.\n\n\nTHE SOFTWARE IS PROVIDED "AS IS", WITHOUT
WARRANTY OF ANY KIND, EXPRESS OR\n\n IMPLIED, INCLUDING BUT NOT LIMITED TO THE
WARRANTIES OF MERCHANTABILITY,\n\n FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE\n\n AUTHORS OR COPYRIGHT HOLDERS BE LIABLE
FOR ANY CLAIM, DAMAGES OR OTHER\n\n LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM,\n\n OUT OF OR IN CONNECTION WITH THE SOFTWARE OR

```

```

THE USE OR OTHER DEALINGS IN THE SOFTWARE.
(function(global, module, define)
{
function Alea(seed) {
  var me = this, mash = Mash();
  me.next = function() {
    var t = 2091639 * me.s0
    + me.c * 2.3283064365386963e-10; // 2^-32
    me.s0 = me.s1;
    me.s1 = me.s2;
    return me.s2 = t - (me.c = t |
0);
  };
  // Apply the seeding algorithm from Baagoe.
  me.c = 1;
  me.s0 = mash(' ');
  me.s1 = mash(' ');
  me.s2 = mash(' ');
  me.s0 -= mash(seed);
  if (me.s0 < 0) { me.s0 += 1; }
  me.s1 -= mash(seed);
  if (me.s1 < 0)
{ me.s1 += 1; }
  me.s2 -= mash(seed);
  if (me.s2 < 0) { me.s2 += 1; }
  mash = null;
}

function copy(f, t)
{
  t.c = f.c;
  t.s0 = f.s0;
  t.s1 = f.s1;
  t.s2 = f.s2;
  return t;
}

function impl(seed, opts) {
  var xg = new
  Alea(seed),
  state = opts && opts.state,
  prng = xg.next;
  prng.int32 = function() { return (xg.next() *
0x100000000) | 0; }
  prng.double = function() {
    return prng() + (prng() * 0x200000 | 0) *
1.1102230246251565e-16; // 2^-53
  };
  prng.quick = prng;
  if (state) {
    if (typeof(state) == 'object')
copy(state, xg);
    prng.state = function() { return copy(xg, {}); }
  }
  return prng;
}

function Mash() {
  var n = 0xefc8249d;
  var mash = function(data) {
    data = data.toString();
    for (var i = 0; i < data.length;
i++) {
      n += data.charCodeAt(i);
      var h = 0.02519603282416938 * n;
      n = h >>> 0;
      h -= n;
      h *= n;
      n = h >>> 0;
      h -= n;
      n += h * 0x100000000; // 2^32
    }
    return (n >>> 0) *
2.3283064365386963e-10; // 2^-32
  };
  return mash;
}

if (module && module.exports) {
  module.exports = impl;
} else if (define && define.amd) {
  define(function() { return impl; });
} else {
  this.alea = impl;
}

(function(this, (typeof module) == 'object' && module, // present in node.js
(typeof define) == 'function' && define // present with an AMD loader
, "A Javascript implementaion of the
\"xor128\" prng algorithm by George Marsaglia. See
http://www.jstatsoft.org/v08/i14/paper
(function(global, module, define)
{
function XorGen(seed) {
  var me = this, strseed = "";
  me.x = 0;
  me.y = 0;
  me.z = 0;
  me.w = 0;
  // Set up generator function.
  me.next = function() {
    var t = me.x ^ (me.x << 11);
    me.x = me.y;
    me.y = me.z;
    me.z = me.w;
    return me.w ^= (me.w >>> 19) ^ t ^ (t >>> 8);
  };
  if (seed ===
(seed | 0)) {
    // Integer seed.
    me.x = seed;
  } else {
    // String seed.
    strseed += seed;
  }
  // Mix in
string seed, then discard an initial batch of 64 values.
  for (var k = 0; k < strseed.length + 64; k++) {
    me.x ^=
strseed.charCodeAt(k) | 0;
    me.next();
  }
}

function copy(f, t)
{
  t.x = f.x;
  t.y = f.y;
  t.z = f.z;
  t.w = f.w;
  return t;
}

function impl(seed, opts) {
  var xg = new XorGen(seed),
  state = opts && opts.state,
  prng = function() { return (xg.next() >>> 0) / 0x100000000; };
  prng.double = function() {
    do {
      var top =
xg.next() >>> 11,
      bot = (xg.next() >>> 0) / 0x100000000,
      result = (top + bot) / (1 << 21);
    } while
(result === 0);
    return result;
  };
  prng.int32 = xg.next;
  prng.quick = prng;
  if (state) {
    if (typeof(state)
== 'object') copy(state, xg);
    prng.state = function() { return copy(xg, {}); }
  }
  return prng;
}

if (module
&& module.exports) {
  module.exports = impl;
} else if (define && define.amd) {
  define(function() { return
impl; });
} else {
  this.xor128 = impl;
}

(function(this, (typeof module) == 'object' && module, // present in
node.js
(typeof define) == 'function' && define // present with an AMD loader
, "A Javascript
implementaion of the \"xorwow\" prng algorithm by George Marsaglia. See
http://www.jstatsoft.org/v08/i14/paper
(function(global, module, define)
{
function XorGen(seed) {
  var me =
this, strseed = "";
  // Set up generator function.
  me.next = function() {
    var t = (me.x ^ (me.x >>> 2));
    me.x = me.y;
    me.y = me.z;
    me.z = me.w;
    me.w = me.v;
    return (me.d = (me.d + 362437 | 0)) + (me.v =
(me.v ^ (me.v << 4)) ^ (t ^ (t << 1))) | 0);
  };
  me.x = 0;
  me.y = 0;
  me.z = 0;
  me.w = 0;
  me.v = 0;
  if (seed === (seed | 0)) {
    // Integer seed.
    me.x = seed;
  } else {
    // String seed.
    strseed += seed;
  }
  // Mix in
string seed, then discard an initial batch of 64 values.
  for (var k = 0; k < strseed.length + 64; k++) {
    me.x ^=
strseed.charCodeAt(k) | 0;
    if (k == strseed.length) {
      me.d = me.x << 10 ^ me.x >>> 4;
    }
    me.next();
  }
}

function copy(f, t)
{
  t.x = f.x;
  t.y = f.y;
  t.z = f.z;
  t.w = f.w;
  t.v = f.v;
  t.d = f.d;
  return t;
}

function impl(seed, opts) {
  var xg = new XorGen(seed),
  state = opts && opts.state,
  prng = function() { return (xg.next() >>> 0) / 0x100000000; };
  prng.double = function() {
    do {
      var top =
xg.next() >>> 11,
      bot = (xg.next() >>> 0) / 0x100000000,
      result = (top + bot) / (1 << 21);
    } while
(result === 0);
    return result;
  };
  prng.int32 = xg.next;
  prng.quick = prng;
  if (state) {
    if (typeof(state)
== 'object') copy(state, xg);
    prng.state = function() { return copy(xg, {}); }
  }
  return prng;
}

if (module
&& module.exports) {
  module.exports = impl;
} else if (define && define.amd) {
  define(function() { return
impl; });
} else {
  this.xorwow = impl;
}

```

```

impl; });\n} else {\n this.xorwow = impl;\n}\n})(\n this,\n (typeof module) === 'object' && module, // present
in node.js\n (typeof define) === 'function' && define // present with an AMD loader\n);\n\n", "// A Javascript
implementaion of the \"xorshift7\" algorithm by\n// François Panneton and Pierre L'ecuyer:\n\n\"On the Xorshift
Random Number Generators\""\n\n
http://saluc.engr.uconn.edu/refs/crypto/rng/panneton05onthexorshift.pdf\n\n(function(global, module, define)
{\n\nfunction XorGen(seed) {\n var me = this;\n\n // Set up generator function.\n me.next = function() {\n //
Update xor generator.\n var X = me.x, i = me.i, t, v, w;\n t = X[i]; t ^= (t >>> 7); v = t ^ (t <<< 24);\n t = X[(i +
1) & 7]; v ^= t ^ (t >>> 10);\n t = X[(i + 3) & 7]; v ^= t ^ (t >>> 3);\n t = X[(i + 4) & 7]; v ^= t ^ (t <<< 7);\n t =
X[(i + 7) & 7]; t = t ^ (t <<< 13); v ^= t ^ (t <<< 9);\n X[i] = v;\n me.i = (i + 1) & 7;\n return v;\n };\n\n function
init(me, seed) {\n var j, w, X = [];\n\n if (seed === (seed | 0)) {\n // Seed state array using a 32-bit integer.\n
w = X[0] = seed;\n } else {\n // Seed state using a string.\n seed = \" + seed;\n for (j = 0; j < seed.length;
++j) {\n X[j & 7] = (X[j & 7] <<< 15) ^\n (seed.charCodeAt(j) + X[(j + 1) & 7] <<< 13);\n }\n }\n //
Enforce an array length of 8, not all zeroes.\n while (X.length < 8) X.push(0);\n for (j = 0; j < 8 && X[j] === 0;
++j);\n if (j == 8) w = X[7] = -1; else w = X[j];\n\n me.x = X;\n me.i = 0;\n\n // Discard an initial 256
values.\n for (j = 256; j > 0; --j) {\n me.next();\n }\n }\n\n init(me, seed);\n}\n\nfunction copy(f, t) {\n t.x =
f.x.slice();\n t.i = f.i;\n return t;\n}\n\nfunction impl(seed, opts) {\n if (seed == null) seed = +(new Date);\n var xg
= new XorGen(seed),\n state = opts && opts.state,\n prng = function() { return (xg.next() >>> 0) /
0x100000000; };\n prng.double = function() {\n do {\n var top = xg.next() >>> 11,\n bot = (xg.next()
>>> 0) / 0x100000000,\n result = (top + bot) / (1 <<< 21);\n } while (result === 0);\n return result;\n };\n
prng.int32 = xg.next;\n prng.quick = prng;\n if (state) {\n if (state.x) copy(state, xg);\n prng.state = function() {
return copy(xg, {}); }\n }\n return prng;\n}\n\nif (module && module.exports) {\n module.exports = impl;\n} else
if (define && define.amd) {\n define(function() { return impl; });\n}\n}\n\n this,\n (typeof module) === 'object' && module, // present in node.js\n (typeof define) === 'function' && define //
present with an AMD loader\n);\n\n", "// A Javascript implementaion of Richard Brent's Xorgens xor4096
algorithm.\n\n// This fast non-cryptographic random number generator is designed for\n// use in Monte-Carlo
algorithms. It combines a long-period xorshift\n// generator with a Weyl generator, and it passes all common
batteries\n// of stastical tests for randomness while consuming only a few nanoseconds\n// for each prng generated.
For background on the generator, see Brent's\n// paper: \"Some long-period random number generators using shifts
and xors.\""\n\n// http://arxiv.org/pdf/1004.3115v1.pdf\n\n// Usage:\n\n// var xor4096 = require('xor4096');\n\n//
random = xor4096(1); // Seed with int32 or string.\n\n// assert.equal(random(), 0.1520436450538547);\n\n// (0, 1) range, 53 bits.\n\n// assert.equal(random.int32(), 1806534897); // signed int32, 32 bits.\n\n// For nonzero
numeric keys, this impelementation provides a sequence\n// identical to that by Brent's xorgens 3 implementaion in
C. This\n// implementation also provides for initalizing the generator with\n// string seeds, or for saving and
restoring the state of the generator.\n\n// On Chrome, this prng benchmarks about 2.1 times slower than\n//
Javascript's built-in Math.random().\n\n(function(global, module, define) {\n\nfunction XorGen(seed) {\n var me =
this;\n\n // Set up generator function.\n me.next = function() {\n var w = me.w,\n X = me.X, i = me.i, t, v;\n\n // Update Weyl generator.\n me.w = w = (w + 0x61c88647) | 0;\n // Update xor generator.\n v = X[(i + 34) &
127];\n t = X[i = ((i + 1) & 127)];\n v ^= v <<< 13;\n t ^= t <<< 17;\n v ^= v >>> 15;\n t ^= t >>> 12;\n\n //
Update Xor generator array state.\n v = X[i] = v ^ t;\n me.i = i;\n\n // Result is the combination.\n return (v +
(w ^ (w >>> 16))) | 0;\n };\n\n function init(me, seed) {\n var t, v, i, j, w, X = [], limit = 128;\n if (seed ===
(seed | 0)) {\n // Numeric seeds initialize v, which is used to generates X.\n v = seed;\n seed = null;\n }
else {\n // String seeds are mixed into v and X one character at a time.\n seed = seed + '\\0';\n v = 0;\n
limit = Math.max(limit, seed.length);\n }\n\n // Initialize circular array and weyl value.\n for (i = 0, j = -32; j <
limit; ++j) {\n // Put the unicode characters into the array, and shuffle them.\n if (seed) v ^=
seed.charCodeAt((j + 32) % seed.length);\n\n // After 32 shuffles, take v as the starting w value.\n if (j === 0) w
= v;\n v ^= v <<< 10;\n v ^= v >>> 15;\n v ^= v <<< 4;\n v ^= v >>> 13;\n if (j >= 0) {\n w = (w +
0x61c88647) | 0; // Weyl.\n t = (X[j & 127] ^= (v + w)); // Combine xor and weyl to init array.\n i = (0
=== t) ? i + 1 : 0; // Count zeroes.\n }\n }\n\n // We have detected all zeroes; make the key nonzero.\n if (i

```

```

>= 128) {\n    X[(seed && seed.length || 0) & 127] = -1;\n    }\n    // Run the generator 512 times to further mix the
state before using it.\n    // Factoring this as a function slows the main generator, so it is just\n    // unrolled here.
The weyl generator is not advanced while warming up.\n    i = 127;\n    for (j = 4 * 128; j > 0; --j) {\n        v = X[(i +
34) & 127];\n        t = X[i = ((i + 1) & 127)];\n        v ^= v << 13;\n        t ^= t << 17;\n        v ^= v >>> 15;\n        t ^= t
>>> 12;\n        X[i] = v ^ t;\n    }\n    // Storing state as object members is faster than using closure variables.\n
me.w = w;\n    me.X = X;\n    me.i = i;\n    }\n\n    init(me, seed);\n\n    \nfunction copy(f, t) {\n    t.i = f.i;\n    t.w = f.w;\n
t.X = f.X.slice();\n    return t;\n};\n\n    \nfunction impl(seed, opts) {\n    if (seed == null) seed = +(new Date);\n    var xg =
new XorGen(seed),\n        state = opts && opts.state,\n        prng = function() { return (xg.next() >>> 0) /
0x100000000; };\n    prng.double = function() {\n        do {\n            var top = xg.next() >>> 11,\n                bot = (xg.next()
>>> 0) / 0x100000000,\n                result = (top + bot) / (1 << 21);\n        } while (result === 0);\n        return result;\n    };\n
prng.int32 = xg.next;\n    prng.quick = prng;\n    if (state) {\n        if (state.X) copy(state, xg);\n        prng.state = function() {
return copy(xg, {}); }\n    }\n    return prng;\n}\n\n    \nif (module && module.exports) {\n    module.exports = impl;\n} else
if (define && define.amd) {\n    define(function() { return impl; });\n} else {\n    this.xor4096 = impl;\n}\n\n    }\n\n    // window object or global\n    (typeof module) == 'object' && module, // present in node.js\n
(typeof define) == 'function' && define // present with an AMD loader\n\n\n    }," A Javascript implementaion of the
\"Tyche-i\" prng algorithm by\n    // Samuel Neves and Filipe Araujo.\n    // See https://eden.dei.uc.pt/~sneves/pubs/2011-
snfa2.pdf\n\n    \nfunction(global, module, define) {\n\n    \nfunction XorGen(seed) {\n        var me = this, strseed = \";\n\n        // Set
up generator function.\n        me.next = function() {\n            var b = me.b, c = me.c, d = me.d, a = me.a;\n            b = (b << 25) ^
(b >>> 7) ^ c;\n            c = (c - d) | 0;\n            d = (d << 24) ^ (d >>> 8) ^ a;\n            a = (a - b) | 0;\n            me.b = b = (b << 20) ^ (b
>>> 12) ^ c;\n            me.c = c = (c - d) | 0;\n            me.d = (d << 16) ^ (c >>> 16) ^ a;\n            return me.a = (a - b) | 0;\n        };\n\n        /* The following is non-inverted tyche, which has better internal\n        * bit diffusion, but which is about 25% slower
than tyche-i in JS.\n        me.next = function() {\n            var a = me.a, b = me.b, c = me.c, d = me.d;\n            a = (me.a + me.b | 0)
>>> 0;\n            d = me.d ^ a; d = d << 16 ^ d >>> 16;\n            c = me.c + d | 0;\n            b = me.b ^ c; b = b << 12 ^ d >>> 20;\n
me.a = a = a + b | 0;\n            d = d ^ a; me.d = d = d << 8 ^ d >>> 24;\n            me.c = c = c + d | 0;\n            b = b ^ c;\n            return
me.b = (b << 7 ^ b >>> 25);\n        }\n        *\n\n        me.a = 0;\n        me.b = 0;\n        me.c = 2654435769 | 0;\n        me.d =
1367130551;\n\n        if (seed === Math.floor(seed)) {\n            // Integer seed.\n            me.a = (seed / 0x100000000) | 0;\n            me.b
= seed | 0;\n        } else {\n            // String seed.\n            strseed += seed;\n        }\n\n        // Mix in string seed, then discard an initial
batch of 64 values.\n        for (var k = 0; k < strseed.length + 20; k++) {\n            me.b ^= strseed.charCodeAtAt(k) | 0;\n
me.next();\n        }\n\n    }\n\n    \nfunction copy(f, t) {\n        t.a = f.a;\n        t.b = f.b;\n        t.c = f.c;\n        t.d = f.d;\n        return t;\n};\n\n    \nfunction
impl(seed, opts) {\n        var xg = new XorGen(seed),\n            state = opts && opts.state,\n            prng = function() { return
(xg.next() >>> 0) / 0x100000000; };\n        prng.double = function() {\n            do {\n                var top = xg.next() >>> 11,\n                    bot = (xg.next() >>> 0) / 0x100000000,\n                    result = (top + bot) / (1 << 21);\n            } while (result === 0);\n            return
result;\n        };\n        prng.int32 = xg.next;\n        prng.quick = prng;\n        if (state) {\n            if (typeof(state) == 'object') copy(state,
xg);\n            prng.state = function() { return copy(xg, {}); }\n        }\n        return prng;\n}\n\n    \nif (module && module.exports)
{\n        module.exports = impl;\n} else if (define && define.amd) {\n        define(function() { return impl; });\n} else {\n        this.tychei = impl;\n}\n\n    }\n\n    }\n\n    (typeof module) == 'object' && module, // present in node.js\n
(typeof define) == 'function' && define // present with an AMD loader\n\n\n    },"/*\n    Copyright 2014 David
Bau.\n\n    Permission is hereby granted, free of charge, to any person obtaining\n    a copy of this software and
associated documentation files (the\n    \"Software\"), to deal in the Software without restriction, including\n    without
limitation the rights to use, copy, modify, merge, publish,\n    distribute, sublicense, and/or sell copies of the Software,
and to\n    permit persons to whom the Software is furnished to do so, subject to\n    the following conditions:\n\n    The
above copyright notice and this permission notice shall be\n    included in all copies or substantial portions of the
Software.\n\n    THE SOFTWARE IS PROVIDED \"AS IS\", WITHOUT WARRANTY OF ANY KIND,\n    EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF\n    MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.\n\n    IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY\n    CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT,\n    TORT OR OTHERWISE, ARISING FROM, OUT
OF OR IN CONNECTION WITH THE\n    SOFTWARE OR THE USE OR OTHER DEALINGS IN THE

```

```

SOFTWARE.\n\n*/\n\n(function (pool, math) {\n\n// The following constants are related to IEEE 754
limits.\n\nvar global = this,\n    width = 256,    // each RC4 output is 0 <= x < 256\n    chunks = 6,    // at least
six RC4 outputs for each double\n    digits = 52,    // there are 52 significant digits in a double\n    rngname =
'random', // rngname: name for Math.random and Math.seedrandom\n    startdenom = math.pow(width, chunks),\n    significance = math.pow(2, digits),\n    overflow = significance * 2,\n    mask = width - 1,\n    nodecrypto;    //
node.js crypto module, initialized at the bottom.\n\n\n// seedrandom()\n\n// This is the seedrandom function
described above.\n\n\nfunction seedrandom(seed, options, callback) {\n    var key = [];\n    options = (options == true) ?
{ entropy: true } : (options || {});\n    // Flatten the seed string or build one from local entropy if needed.\n    var
shortseed = mixkey(flatten((options.entropy ? [seed, toString(pool)] : (seed == null) ? autoseed() : seed, 3),
key));\n    // Use the seed to initialize an ARC4 generator.\n    var arc4 = new ARC4(key);\n    // This function returns
a random double in [0, 1) that contains\n    // randomness in every bit of the mantissa of the IEEE 754 value.\n    var
prng = function() {\n        var n = arc4.g(chunks),    // Start with a numerator n < 2 ^ 48\n            d = startdenom,\n            // and denominator d = 2 ^ 48.\n            x = 0;    // and no 'extra last byte'.\n        while (n <
significance) {\n            // Fill up all significant digits by\n            n = (n + x) * width;    // shifting numerator and\n
d *= width;    // denominator and generating a\n            x = arc4.g(1);    // new least-significant-
byte.\n        }\n        while (n >= overflow) {\n            // To avoid rounding up, before adding\n            n /= 2;    //
last byte, shift everything\n            d /= 2;    // right using integer math until\n            x >>>= 1;\n            // we have exactly the desired bits.\n        }\n        return (n + x) / d;\n    };\n    prng.int32 = function() { return arc4.g(4) | 0; }\n    prng.quick = function() { return arc4.g(4) / 0x100000000; }\n    prng.double = prng;\n    // Mix the randomness into accumulated entropy.\n    mixkey(toString(arc4.S), pool);\n\n    // Calling convention: what to return as a function of prng, seed, is_math.\n    return (options.pass || callback ||\n    function(prng, seed, is_math_call, state) {\n        if (state) {\n            // Load the arc4 state from the given state if it has
an S array.\n            if (state.S) { copy(state, arc4); }\n            // Only provide the .state method if requested via
options.state.\n            prng.state = function() { return copy(arc4, {}); }\n        }\n        // If called as a method of
Math (Math.seedrandom()), mutate\n        // Math.random because that is how seedrandom.js has worked since
v1.0.\n        if (is_math_call) { math[rngname] = prng; return seed; }\n        // Otherwise, it is a newer calling
convention, so return the\n        // prng directly.\n        else return prng;\n    })\n    (\n        prng,\n        shortseed,\n        'global' in
options ? options.global : (this == math),\n        options.state);\n    }\n\n    math['seed' + rngname] = seedrandom;\n\n\n\n//
ARC4\n\n\n// An ARC4 implementation. The constructor takes a key in the form of\n\n// an array of at most (width)
integers that should be 0 <= x < (width).\n\n\n// The g(count) method returns a pseudorandom integer that
concatenates\n\n// the next (count) outputs from ARC4. Its return value is a number x\n\n// that is in the range 0 <= x <
(width ^ count).\n\n\nfunction ARC4(key) {\n    var t, keylen = key.length,\n        me = this, i = 0, j = me.i = me.j = 0, s
= me.S = [];\n    // The empty key [] is treated as [0].\n    if (!keylen) { key = [keylen++]; }\n    // Set up S using the
standard key scheduling algorithm.\n    while (i < width) {\n        s[i] = i++; }\n    for (i = 0; i < width; i++) {\n        s[i] =
s[j = mask & (j + key[i % keylen]) + (t = s[i])];\n        s[j] = t; }\n    // The "g" method returns the next (count)
outputs as one number.\n    (me.g = function(count) {\n        // Using instance members instead of closure state nearly
doubles speed.\n        var t, r = 0,\n            i = me.i, j = me.j, s = me.S;\n        while (count--) {\n            t = s[i = mask & (i +
1)];\n            r = r * width + s[mask & ((s[i] = s[j = mask & (j + t)]) + (s[j] = t))];\n        }\n        me.i = i; me.j = j;\n        return
r;\n    })\n    // For robust unpredictability, the function call below automatically\n    // discards an initial batch of values.
This is called RC4-drop[256].\n    // See http://google.com/search?q=rsa+fluhrer+response&btnI\n
})(width);\n\n\n\n// copy()\n\n// Copies internal state of ARC4 to or from a plain object.\n\n\nfunction copy(f, t) {\n    t.i = f.i;\n    t.j = f.j;\n    t.S = f.S.slice();\n    return t;\n};\n\n\n// flatten()\n\n// Converts an object tree to nested arrays of
strings.\n\n\nfunction flatten(obj, depth) {\n    var result = [], typ = (typeof obj), prop;\n    if (depth && typ == 'object')
{\n        for (prop in obj) {\n            try { result.push(flatten(obj[prop], depth - 1)); } catch (e) { }\n        }\n    }\n    return
(result.length ? result : typ == 'string' ? obj : obj + '\\0');\n}\n\n\n// mixkey()\n\n// Mixes a string seed into a key that
is an array of integers, and\n\n// returns a shortened string seed that is equivalent to the result key.\n\n\nfunction
mixkey(seed, key) {\n    var stringseed = seed + "", smear, j = 0;\n    while (j < stringseed.length) {\n        key[mask & j]
= \n        mask & ((smear ^= key[mask & j] * 19) + stringseed.charCodeAt(j++));\n    }\n    return

```



```

private mean: number;\n private stdDev: number;\n private nextVal: number;\n private dtype?: keyof
RandNormalDataTypes;\n private truncated?: boolean;\n private upper?: number;\n private lower?: number;\n
private random: seedrandom.prng;\n\n constructor(\n   mean: number, stdDeviation: number, dtype?: keyof
RandNormalDataTypes,\n   truncated?: boolean, seed?: number) {\n   this.mean = mean;\n   this.stdDev =
stdDeviation;\n   this.dtype = dtype;\n   this.nextVal = NaN;\n   this.truncated = truncated;\n   if (this.truncated)
{\n   this.upper = this.mean + this.stdDev * 2;\n   this.lower = this.mean - this.stdDev * 2;\n   }\n   const
seedValue = seed ? seed : Math.random();\n   this.random = seedrandom.alea(seedValue.toString());\n   }\n\n /**
Returns next sample from a Gaussian distribution. */\n public nextValue(): number {\n   if (!isNaN(this.nextVal))
{\n   const value = this.nextVal;\n   this.nextVal = NaN;\n   return value;\n   }\n\n   let resultX: number,
resultY: number;\n   let isValid = false;\n   while (!isValid) {\n   let v1: number, v2: number, s: number;\n   do
{\n   v1 = 2 * this.random() - 1;\n   v2 = 2 * this.random() - 1;\n   s = v1 * v1 + v2 * v2;\n   } while (s >=
1 || s === 0);\n\n   const mul = Math.sqrt(-2.0 * Math.log(s) / s);\n   resultX = this.mean + this.stdDev * v1 *
mul;\n   resultY = this.mean + this.stdDev * v2 * mul;\n\n   if (!this.truncated || this.isValidTruncated(resultX))
{\n   isValid = true;\n   }\n   }\n\n   if (!this.truncated || this.isValidTruncated(resultY)) {\n   this.nextVal =
this.convertValue(resultY);\n   }\n   return this.convertValue(resultX);\n   }\n\n /** Handles proper rounding for
non-floating-point numbers. */\n private convertValue(value: number): number {\n   if (this.dtype == null ||
this.dtype === 'float32') {\n   return value;\n   }\n   return Math.round(value);\n   }\n\n /** Returns true if less
than 2-standard-deviations from the mean. */\n private isValidTruncated(value: number): boolean {\n   return value
<= this.upper && value >= this.lower;\n   }\n}\n\n// Marsaglia, George, and Wai Wan Tsang. 2000. \"A Simple
Method for Generating\n// Gamma Variables.\"\n\nexport class RandGamma implements RandomGamma {\n private
alpha: number;\n private beta: number;\n private d: number;\n private c: number;\n private dtype?: keyof
RandGammaDataTypes;\n private randu: seedrandom.prng;\n private randn: MPRandGauss;\n\n constructor(\n
alpha: number, beta: number, dtype: keyof RandGammaDataTypes,\n   seed?: number) {\n   this.alpha = alpha;\n
this.beta = 1 / beta; // convert rate to scale parameter\n   this.dtype = dtype;\n\n   const seedValue = seed ? seed :
Math.random();\n   this.randu = seedrandom.alea(seedValue.toString());\n   this.randn = new MPRandGauss(0, 1,
dtype, false, this.randu());\n\n   if (alpha < 1) {\n   this.d = alpha + (2 / 3);\n   } else {\n   this.d = alpha - (1 /
3);\n   }\n   this.c = 1 / Math.sqrt(9 * this.d);\n   }\n\n /** Returns next sample from a gamma distribution. */\n
public nextValue(): number {\n   let x2: number, v0: number, v1: number, x: number, u: number, v: number;\n
while (true) {\n   do {\n   x = this.randn.nextValue();\n   v = 1 + (this.c * x);\n   } while (v <= 0);\n   v *=
v * v;\n   x2 = x * x;\n   v0 = 1 - (0.331 * x2 * x2);\n   v1 = (0.5 * x2) + (this.d * (1 - v + Math.log(v)));\n   u
= this.randu();\n   if (u < v0 || Math.log(u) < v1) {\n   break;\n   }\n   }\n   v = (1 / this.beta) * this.d * v;\n
if (this.alpha < 1) {\n   v *= Math.pow(this.randu(), 1 / this.alpha);\n   }\n   return this.convertValue(v);\n   }\n
\n /** Handles proper rounding for non-floating-point numbers. */\n private convertValue(value: number): number {\n
if (this.dtype === 'float32') {\n   return value;\n   }\n   return Math.round(value);\n   }\n}\n\nexport class
UniformRandom implements RandomBase {\n private min: number;\n private range: number;\n private random:
seedrandom.prng;\n private dtype?: keyof RandNormalDataTypes;\n\n constructor(\n   min = 0, max = 1, dtype?:
keyof RandNormalDataTypes,\n   seed?: string|number) {\n   this.min = min;\n   this.range = max - min;\n
this.dtype = dtype;\n   if (seed == null) {\n   seed = Math.random();\n   }\n   if (typeof seed === 'number') {\n
seed = seed.toString();\n   }\n\n   if (!this.canReturnFloat() && this.range <= 1) {\n   throw new Error(\n
`The difference between ${min} - ${max} <= 1 and dtype is not float`);\n   }\n   this.random =
seedrandom.alea(seed);\n   }\n\n /** Handles proper rounding for non floating point numbers. */\n private
canReturnFloat = () => (this.dtype == null || this.dtype === 'float32');\n\n private convertValue(value:
number): number {\n   if (this.canReturnFloat()) {\n   return value;\n   }\n   return Math.round(value);\n   }\n\n
nextValue() {\n   return this.convertValue(this.min + this.range * this.random());\n   }\n}\n\nexport function
jarqueBeraNormalityTest(values: TypedArray|number[]) {\n //
https://en.wikipedia.org/wiki/Jarque%E2%80%93Bera\_test\n   const n = values.length;\n   const s =
skewness(values);\n   const k = kurtosis(values);\n   const jb = n / 6 * (Math.pow(s, 2) + 0.25 * Math.pow(k - 3, 2));\n
// JB test requires 2-degrees of freedom from Chi-Square @ 0.95;\n //

```

```

http://www.itl.nist.gov/div898/handbook/eda/section3/eda3674.htm\n const CHI_SQUARE_2DEG = 5.991;\n if
(jb > CHI_SQUARE_2DEG) {\n  throw new Error(`Invalid p-value for JB: ${jb}`);\n }\n}\n\nexport function
expectArrayInMeanStdRange(\n  actual: TypedArray|number[], expectedMean: number, expectedStdDev:
number,\n  epsilon?: number) {\n  if (epsilon == null) {\n    epsilon = testEpsilon();\n  }\n  const actualMean =
mean(actual);\n  expectNumbersClose(actualMean, expectedMean, epsilon);\n  expectNumbersClose(\n
standardDeviation(actual, actualMean), expectedStdDev, epsilon);\n}\n\nfunction mean(values:
TypedArray|number[]) {\n  let sum = 0;\n  for (let i = 0; i < values.length; i++) {\n    sum += values[i];\n  }\n  return
sum / values.length;\n}\n\nfunction standardDeviation(values: TypedArray|number[], mean: number) {\n  let
squareDiffSum = 0;\n  for (let i = 0; i < values.length; i++) {\n    const diff = values[i] - mean;\n    squareDiffSum
+= diff * diff;\n  }\n  return Math.sqrt(squareDiffSum / values.length);\n}\n\nfunction kurtosis(values:
TypedArray|number[]) {\n  // https://en.wikipedia.org/wiki/Kurtosis\n  const valuesMean = mean(values);\n  const n
= values.length;\n  let sum2 = 0;\n  let sum4 = 0;\n  for (let i = 0; i < n; i++) {\n    const v = values[i] -
valuesMean;\n    sum2 += Math.pow(v, 2);\n    sum4 += Math.pow(v, 4);\n  }\n  return (1 / n) * sum4 / Math.pow((1
/ n) * sum2, 2);\n}\n\nfunction skewness(values: TypedArray|number[]) {\n  //
https://en.wikipedia.org/wiki/Skewness\n  const valuesMean = mean(values);\n  const n = values.length;\n  let sum2
= 0;\n  let sum3 = 0;\n  for (let i = 0; i < n; i++) {\n    const v = values[i] - valuesMean;\n    sum2 += Math.pow(v,
2);\n    sum3 += Math.pow(v, 3);\n  }\n  return (1 / n) * sum3 / Math.pow((1 / (n - 1)) * sum2, 3 / 2);\n}\n\n", "/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Tensor} from './tensor';\nimport {Rank, ShapeMap} from './types';\nimport {buffer} from
'/buffer';\nimport {op} from './operation';\nimport {RandGamma} from './rand_util';\n\n/**\n * Creates a `tf.Tensor`
with values sampled from a gamma distribution.\n *\n * ```js\n * tf.randomGamma([2, 2], 1).print();\n * ```\n *\n *
@param shape An array of integers defining the output tensor shape.\n * @param alpha The shape parameter of the
gamma distribution.\n * @param beta The inverse scale parameter of the gamma distribution. Defaults\n * to 1.\n *
@param dtype The data type of the output. Defaults to float32.\n * @param seed The seed for the random number
generator.\n *\n * @doc {heading: 'Tensors', subheading: 'Random'}\n *\nfunction randomGamma<R extends
Rank>(\n  shape: ShapeMap[R], alpha: number, beta = 1,\n  dtype: 'float32'|'int32' = 'float32', seed?: number):
Tensor<R>\n  {\n    if (beta == null) {\n      beta = 1;\n    }\n    if (dtype == null) {\n      dtype = 'float32';\n    }\n    if (dtype !==
'float32' && dtype !== 'int32') {\n      throw new Error(`Unsupported data type ${dtype}`);\n    }\n    const rgamma =
new RandGamma(alpha, beta, dtype, seed);\n    const res = buffer(shape, dtype);\n    for (let i = 0; i < res.values.length;
i++) {\n      res.values[i] = rgamma.nextValue();\n    }\n    return res.toTensor();\n  }\n}\n\nexport const randomGamma =
op({randomGamma_});\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {Tensor} from './tensor';\nimport {DataType, Rank, ShapeMap} from './types';\nimport {buffer}
from './buffer';\nimport {op} from './operation';\nimport {MPRandGauss} from './rand_util';\n\n/**\n * Creates a
`tf.Tensor` with values sampled from a normal distribution.\n *\n * ```js\n * tf.randomNormal([2, 2]).print();\n *
```*\n *\n * @param shape An array of integers defining the output tensor shape.\n * @param mean The mean of the

```

```

normal distribution.\n * @param stdDev The standard deviation of the normal distribution.\n * @param dtype The
data type of the output.\n * @param seed The seed for the random number generator.\n *\n * @doc {heading:
'Tensors', subheading: 'Random'}\n *\nfunction randomNormal_<R extends Rank>(\n shape: ShapeMap[R], mean
= 0, stdDev = 1, dtype?: 'float32'|'int32',\n seed?: number): Tensor<R> {\n if (dtype != null && (dtype as
DataType) === 'bool') {\n throw new Error(`Unsupported data type ${dtype}`);\n }\n const randGauss =\n new MPRandGauss(mean, stdDev, dtype, false /* truncated */, seed);\n const res = buffer(shape, dtype);\n for (let i
= 0; i < res.values.length; i++) {\n res.values[i] = randGauss.nextValue();\n }\n return
res.toTensor();\n}\n\nexport const randomNormal = op({randomNormal_});\n", "/*\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Tensor} from './tensor';\nimport {DataType, Rank, ShapeMap} from './types';\n\nimport {buffer}
from './buffer';\nimport {op} from './operation';\nimport {UniformRandom} from './rand_util';\n\n/**\n * Creates a
`tf.Tensor` with values sampled from a uniform distribution.\n *\n * The generated values follow a uniform
distribution in the range [minval,\n * maxval). The lower bound minval is included in the range, while the upper\n *
bound maxval is excluded.\n *\n * ```js\n * tf.randomUniform([2, 2]).print();\n * ```\n *\n * @param shape An array
of integers defining the output tensor shape.\n * @param minval The lower bound on the range of random values to
generate.\n * Defaults to 0.\n * @param maxval The upper bound on the range of random values to generate.\n *
Defaults to 1.\n * @param dtype The data type of the output tensor. Defaults to 'float32'.\n *\n * @doc {heading:
'Tensors', subheading: 'Random'}\n *\nfunction randomUniform_<R extends Rank>(\n shape: ShapeMap[R],
minval = 0, maxval = 1, dtype: DataType = 'float32',\n seed?: number|string): Tensor<R> {\n const res =
buffer(shape, dtype);\n const random = new UniformRandom(minval, maxval, null, seed);\n for (let i = 0; i <
res.values.length; i++) {\n res.values[i] = random.nextValue();\n }\n return res.toTensor();\n}\n\nexport const
randomUniform = op({randomUniform_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Range, RangeAttrs} from './kernel_names';\nimport
{NamedAttrMap} from './kernel_registry';\nimport {TensorID} from './tensor';\n\n/**\n * Creates a new
`tf.TensorID` filled with the numbers in the range provided.\n *\n * The tensor is a is half-open interval meaning it
includes start, but\n * excludes stop. Decrementing ranges and negative step values are also\n * supported.\n *\n *
```js\n * tf.range(0, 9, 2).print();\n * ```\n *\n * @param start An integer start value\n * @param stop An
integer stop value\n * @param step An integer increment (will default to 1 or -1)\n * @param dtype The data type
of the output tensor. Defaults to 'float32'.\n *\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\nfunction range(\n  start: number, stop: number, step = 1,\n  dtype: 'float32'|'int32' = 'float32'): TensorID {\n  if
(step === 0) {\n    throw new Error(`Cannot have a step of zero`);\n  }\n  const attrs: RangeAttrs = {start, stop,
step, dtype};\n  return ENGINE.runKernel(Range, { /* inputs */, attrs as {} as NamedAttrMap);\n}\n\n", "/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable

```

law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Real, RealInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Returns the real part of a complex (or real) tensor.\n *\n * Given a tensor input, this operation returns a tensor of type float that is\n * the real part of each element in input considered as a complex number.\n *\n * If the input is real, it simply makes a clone.\n *\n * ```\n * const x = tf.complex([-2.25, 3.25], [4.75, 5.75]);\n * tf.real(x).print();\n * ```\n *\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\n * @function real_<T extends Tensor>(input: T|TensorLike): T\n *\n * const $input = convertToTensor(input, 'input', 'real');\n *\n * const inputs: RealInputs = {input: $input};\n *\n * return ENGINE.runKernel(Real, inputs as { } as NamedTensorMap);\n *\n * export const real = op({real_});\n *```\n *\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Reciprocal, ReciprocalInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes reciprocal of x element-wise: `1 / x`\n *\n * ```\n * const x = tf.tensor1d([0, 1, 2]);\n * x.reciprocal().print(); // or tf.reciprocal(x)\n * ```\n *\n * @param x The input tensor.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n *\n * @function reciprocal_<T extends Tensor>(x: T|TensorLike): T\n *\n * const $x = convertToTensor(x, 'x', 'reciprocal');\n *\n * const inputs: ReciprocalInputs = {x: $x};\n *\n * return ENGINE.runKernel(Reciprocal, inputs as { } as NamedTensorMap);\n *\n * export const reciprocal = op({reciprocal_});\n *```\n *\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {Relu, ReluInputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes rectified linear element-wise: `max(x, 0)`\n *\n * ```\n * const x = tf.tensor1d([-1, 2, -3, 4]);\n * x.relu().print(); // or tf.relu(x)\n * ```\n *\n * @param x The input tensor. If the dtype is `bool`, the output dtype will be\n * `int32`.\n *\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n *\n * @function relu_<T extends Tensor>(x: T|TensorLike): T\n *\n * const $x = convertToTensor(x, 'x', 'relu');\n *\n * const inputs: ReluInputs = {x: $x};\n *\n * return ENGINE.runKernel(Relu, inputs as { } as NamedTensorMap);\n *\n * export const relu = op({relu_});\n *```\n *\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
```

implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Relu6, Relu6Inputs} from './kernel_names';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes rectified linear 6 element-wise:  $\min(\max(x, 0), 6)$ \n *  $\text{const } x = \text{tf.tensor1d}([-1, 2, -3, 8]);$ \n *  $x.\text{relu6}().\text{print}();$  // or  $\text{tf.relu6}(x)$ \n * @param x The input tensor. If the dtype is 'bool', the output dtype will be\n * int32.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction relu6_<T extends Tensor>(x: T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'relu6');\n  const inputs: Relu6Inputs = {x: $x};\n  return ENGINE.runKernel(Relu6, inputs as { } as NamedTensorMap);\n}\n\nexport const relu6 = op({relu6_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Reverse, ReverseAttrs, ReverseInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Reverses a `tf.Tensor` along a specified axis.\n * Also available are stricter rank-specific methods that assert that `x` is\n * of the given rank:\n * -  $\text{tf.reverse1d}$ \n * -  $\text{tf.reverse2d}$ \n * -  $\text{tf.reverse3d}$ \n * -  $\text{tf.reverse4d}$ \n * Except  $\text{tf.reverse1d}$  (which does not have axis param), all methods have\n * same signature as this method.\n *  $\text{const } x = \text{tf.tensor1d}([1, 2, 3, 4]);$ \n *  $x.\text{reverse}().\text{print}();$ \n *  $\text{const } x = \text{tf.tensor2d}([1, 2, 3, 4], [2, 2]);$ \n *  $\text{const } axis = 1;$ \n *  $x.\text{reverse}(axis).\text{print}();$ \n * @param x The input tensor to be reversed.\n * @param axis The set of dimensions to reverse. Must be in the\n * range  $[-\text{rank}(x), \text{rank}(x)]$ . Defaults to all axes.\n * @doc {heading: 'Tensors', subheading: 'Slicing and Joining'}\n */\nfunction reverse_<T extends Tensor>(x: T|TensorLike, axis?: number|number[]): T {\n  const $x = convertToTensor(x, 'x', 'reverse');\n  const inputs: ReverseInputs = {x: $x};\n  const attrs: ReverseAttrs = {dims: axis};\n  return ENGINE.runKernel(Reverse, inputs as { } as NamedTensorMap, attrs as { } as NamedAttrMap);\n}\n\nexport const reverse = op({reverse_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {Tensor1D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\nimport {reverse} from './reverse';\n\n/**\n * Reverses a `tf.Tensor1D`.\n * @param x The input tensor.\n */\nfunction reverse1d_(x: Tensor1D|TensorLike): Tensor1D {\n  const $x = convertToTensor(x, 'x', 'reverse');\n  util.assert($x.rank === 1, () => `Error in reverse1D: x must be rank 1 but got rank ${$x.rank}.`);\n  return reverse($x, 0);\n}\n\nexport const reverse1d = op({reverse1d_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
```

compliance with the License.\n * You may obtain a copy of the License at\n *\n * <http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Tensor2D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport\n{TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\nimport {reverse} from\n './reverse';\n\n/**\n * Reverses a `tf.Tensor2D` along a specified axis.\n *\n * @param x The input tensor.\n *\n * @param axis The set of dimensions to reverse. Must be in the\n *   range [-rank(x), rank(x)]. Defaults to all axes.\n *\n * @function reverse2d(x: Tensor2D|TensorLike, axis?: number|number[]): Tensor2D {\n const $x =\n convertToTensor(x, 'x', 'reverse');\n util.assert(\n   $x.rank === 2,\n   () => `Error in reverse2D: x must be rank 2\n but got rank ${$x.rank}.`);\n return reverse($x, axis);\n}\n\nexport const reverse2d = op({reverse2d});\n\n"/**\n *\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n*\n\nimport {Tensor3D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport\n{TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\nimport {reverse} from\n './reverse';\n\n/**\n * Reverses a `tf.Tensor3D` along a specified axis.\n *\n * @param x The input tensor.\n *\n * @param axis The set of dimensions to reverse. Must be in the\n *   range [-rank(x), rank(x)]. Defaults to all axes.\n *\n * @function reverse3d(x: Tensor3D|TensorLike, axis?: number|number[]): Tensor3D {\n const $x =\n convertToTensor(x, 'x', 'reverse');\n util.assert(\n   $x.rank === 3,\n   () => `Error in reverse3D: x must be rank 3\n but got rank ${$x.rank}.`);\n return reverse($x, axis);\n}\n\nexport const reverse3d = op({reverse3d});\n\n"/**\n *\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n*\n\nimport {Tensor4D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport\n{TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\nimport {reverse} from\n './reverse';\n\n/**\n * Reverses a `tf.Tensor4D` along a specified axis.\n *\n * @param x The input tensor.\n *\n * @param axis The set of dimensions to reverse. Must be in the\n *   range [-rank(x), rank(x)]. Defaults to all axes.\n *\n * @function reverse4d(x: Tensor4D|TensorLike, axis?: number|number[]): Tensor4D {\n const $x =\n convertToTensor(x, 'x', 'reverse');\n util.assert(\n   $x.rank === 4,\n   () => `Error in reverse4D: x must be rank 4\n but got rank ${$x.rank}.`);\n return reverse($x, axis);\n}\n\nexport const reverse4d = op({reverse4d});\n\n"/**\n *\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```

*\n\nimport {ENGINE} from './engine';\nimport {Round, RoundInputs} from './kernel_names';\nimport {Tensor}
from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes
round of input `tf.Tensor` element-wise: `round(x)`.\n * It implements banker's rounding.\n * \n * `js`\n * const x =
tf.tensor1d([.6, 1.1, -3.3]);\n * x.round().print(); // or tf.round(x)\n * \n * @param x The input tensor.\n * \n *
@doc {heading: 'Operations', subheading: 'Basic math'}\n *\nfunction round_<T extends Tensor>(x:
T|TensorLike): T {\n  const $x = convertToTensor(x, 'x', 'round');\n  const inputs: RoundInputs = {x: $x};\n  \n  return
ENGINE.runKernel(Round, inputs as { } as NamedTensorMap);\n  \n}\n\nexport const round = op({round_});\n", "/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Rsqrt, RsqrtInputs} from './kernel_names';\nimport {Tensor}
from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes
reciprocal of square root of the input `tf.Tensor` element-wise:\n * `y = 1 / sqrt(x)`.\n * \n * `js`\n * const x =
tf.tensor1d([1, 2, 4, -1]);\n * x.rsqrt().print(); // or tf.rsqrt(x)\n * \n * @param x The input tensor.\n * \n *
@doc {heading: 'Operations', subheading: 'Basic math'}\n *\nfunction rsqrt_<T extends Tensor>(x: T|TensorLike):
T {\n  const $x = convertToTensor(x, 'x', 'rsqrt');\n  \n  const inputs: RsqrtInputs = {x: $x};\n  \n  return
ENGINE.runKernel(Rsqrt, inputs as { } as NamedTensorMap);\n  \n}\n\nexport const rsqrt = op({rsqrt_});\n", "/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Scalar} from './tensor';\nimport {DataType} from './types';\nimport {isTypedArray} from
 './util';\nimport {makeTensor} from './tensor_ops_util';\n\n/**\n * Creates rank-0 `tf.Tensor` (scalar) with the
provided value and dtype.\n * \n * The same functionality can be achieved with `tf.tensor`, but in general\n * we
recommend using `tf.scalar` as it makes the code more readable.\n * \n * `js`\n * tf.scalar(3.14).print();\n * \n *
@param value The value of the scalar.\n * @param dtype The data type.\n * \n * @doc {heading: 'Tensors',
subheading: 'Creation'}\n *\nexport function scalar(\n  value: number|boolean|string|Uint8Array, dtype?:
DataType): Scalar {\n  if (((isTypedArray(value) && dtype !== 'string') || Array.isArray(value)) &&\n    dtype !==
'complex64') {\n    throw new Error(\n      'Error creating a new Scalar: value must be a primitive ' +\n      '\n      (number|boolean|string)');\n  }\n  if (dtype === 'string' && isTypedArray(value) &&\n    !(value instanceof
Uint8Array)) {\n    throw new Error(\n      'When making a scalar from encoded string, ' +\n      '\n      the value must be
`Uint8Array`.');\n  }\n  const shape: number[] = [];\n  const inferredShape: number[] = [];\n  return
makeTensor(value, shape, inferredShape, dtype) as Scalar;\n  \n}, "/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from './engine';\nimport {Selu, SeluInputs} from './kernel_names';\nimport {Tensor} from
 './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Computes
 scaled exponential linear element-wise.\n *  $x < 0 ? \text{scale} * \alpha * (\exp(x) - 1) : x$ \n * tf.tensor1d([-1, 2, -3, 4]);\n * x.selu().print(); // or tf.selu(x)\n * @param x The input tensor.\n *
 @doc {heading: 'Operations', subheading: 'Basic math'}\n *\nfunction selu<T extends Tensor>(x: T|TensorLike):
 T {\n  const $x = convertToTensor(x, 'x', 'selu');\n\n  const inputs: SeluInputs = {x: $x};\n\n  return
 ENGINE.runKernel(Selu, inputs as { } as NamedTensorMap);\n\n  export const selu = op({selu_});\n"}/**\n *
 @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *
=====

```

```

=====
*\n\nimport {Tensor3D, Tensor4D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport
 {TensorLike} from './types';\nimport * as util from './util';\n\nimport {conv2d} from './conv2d';\nimport
 {depthwiseConv2d} from './depthwise_conv2d';\nimport {op} from './operation';\nimport {reshape} from
 './reshape';\n\n/**\n * 2-D convolution with separable filters.\n * Performs a depthwise convolution that acts
 separately on channels followed\n * by a pointwise convolution that mixes channels. Note that this is\n *
 separability between dimensions [1, 2] and 3, not spatial separability\n * between dimensions 1 and 2.\n * See\n *
 \[https://www.tensorflow.org/api\_docs/python/tf/nn/separable\_conv2d\]\n *
 https://www.tensorflow.org/api\_docs/python/tf/nn/separable\_conv2d\n * for more details.\n * @param x The
 input tensor, of rank 4 or rank 3, of shape\n * [batch, height, width, inChannels]. If rank 3, batch of 1 is\n *
 assumed.\n * @param depthwiseFilter The depthwise filter tensor, rank 4, of shape\n * [filterHeight, filterWidth,
 inChannels, channelMultiplier]. This is\n * the filter used in the first step.\n * @param pointwiseFilter The
 pointwise filter tensor, rank 4, of shape\n * [1, 1, inChannels * channelMultiplier, outChannels]. This is\n *
 the filter used in the second step.\n * @param strides The strides of the convolution: [strideHeight,\n *
 strideWidth]. If strides is a single number, then strideHeight ==\n * strideWidth. \n * @param pad The type of
 padding algorithm.\n * - 'same' and stride 1: output will be of same size as input,\n * regardless of filter size.\n *
 - 'valid': output will be smaller than input if filter is larger\n * than 1x1.\n * - For more info, see this
 guide:\n * \[https://www.tensorflow.org/api\_guides/python/nn#Convolution\]\n *
 https://www.tensorflow.org/api\_guides/python/nn#Convolution)\n * @param dilations The dilation rates:
 [dilationHeight, dilationWidth]\n * in which we sample input values across the height and width dimensions\n *
 in atrous convolution. Defaults to [1, 1]. If 'rate' is a single\n * number, then dilationHeight ==
 dilationWidth. If it is greater than\n * 1, then all values of 'strides' must be 1.\n * @param dataFormat: An
 optional string from: 'NHWC', 'NCHW'. Defaults to\n * 'NHWC'. Specify the data format of the input and
 output data. With the\n * default format 'NHWC', the data is stored in the order of: [batch,\n * height, width,
 channels]. Only 'NHWC' is currently supported.\n * @doc {heading: 'Operations', subheading:
 'Convolution'}\n *\nfunction separableConv2d<T extends Tensor3D|Tensor4D>(\n  x: T|TensorLike,\n  depthwiseFilter: Tensor4D|TensorLike,\n  pointwiseFilter: Tensor4D|TensorLike, strides: [number,\n  number]|number,\n  pad: 'valid'|'same', dilation: [number, number]|number = [1, 1],\n  dataFormat:
 'NHWC'|'NCHW' = 'NHWC'): T {\n  const $x = convertToTensor(x, 'x', 'separableConv2d');\n  const
 $depthwiseFilter =\n    convertToTensor(depthwiseFilter, 'depthwiseFilter', 'separableConv2d');\n  const
 $pointwiseFilter =\n    convertToTensor(pointwiseFilter, 'pointwiseFilter', 'separableConv2d');\n  let x4D = $x as
 Tensor4D;\n  let reshapedTo4D = false;\n  if ($x.rank === 3) {\n    reshapedTo4D = true;\n    x4D = reshape($x, [1,\n    $x.shape[0], $x.shape[1], $x.shape[2]]);\n  }\n  if (dataFormat === 'NCHW') {\n    throw new Error(\n
=====

```



```

'separableConv2d currently does not support dataFormat NCHW; only ' +\n      'NHWC is supported');\n } \n\n
util.assert(\n      x4D.rank === 4,\n      () => `Error in separableConv2d: input must be rank 4, but got ` +\n
`rank ${x4D.rank}.`);\n util.assert(\n      $depthwiseFilter.rank === 4,\n      () => `Error in separableConv2d:
depthwise filter must be rank 4, but ` +\n      `got rank ${$depthwiseFilter.rank}.`);\n util.assert(\n
$pointwiseFilter.rank === 4,\n      () => `Error in separableConv2d: pointwise filter must be rank 4, but ` +\n
`got rank ${$depthwiseFilter.rank}.`);\n util.assert(\n      $pointwiseFilter.shape[0] === 1,\n      () => \n      `Error
in separableConv2d: the first dimension of pointwise filter ` +\n      ` must be 1, but got
${$pointwiseFilter.shape[0].`);\n util.assert(\n      $pointwiseFilter.shape[1] === 1,\n      () => `Error in
separableConv2d: the second dimension of pointwise ` +\n      ` filter must be 1, but got
${$pointwiseFilter.shape[1].`);\n\n const inChannels = $depthwiseFilter.shape[2];\n const channelMultiplier =
$depthwiseFilter.shape[3];\n util.assert(\n      $pointwiseFilter.shape[2] === inChannels * channelMultiplier,\n      ()
=> \n      `Error in separableConv2d: the third dimension of pointwise filter ` +\n      ` must be ${inChannels *
channelMultiplier}, ` +\n      ` but got ${$pointwiseFilter.shape[2].`);\n\n const depthwise = depthwiseConv2d(\n
      x4D, $depthwiseFilter, strides, pad, dataFormat, dilation);\n const pointwiseStride = 1;\n const res = \n
conv2d(depthwise, $pointwiseFilter, pointwiseStride, 'valid', dataFormat);\n\n if (reshapedTo4D) {\n      return
reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as T;\n } \n return res as T;\n }\n\n\nexport const
separableConv2d = op({separableConv2d_});\n"/**\n * @license\n * Copyright 2020 Google Inc. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport {Tensor, TensorBuffer} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\n\n/**\n * Computes the difference between two lists of
numbers.\n * \n * Given a Tensor `x` and a Tensor `y`, this operation returns a Tensor `out` \n * that represents all
values that are in `x` but not in `y`. The returned\n * Tensor `out` is sorted in the same order that the numbers appear
in `x`\n * (duplicates are preserved). This operation also returns a Tensor indices that\n * represents the position of
each out element in `x`. In other words:\n * \n * `out[i] = x[idxx[i]]` for i in [0, 1, ..., out.length - 1]\n * \n * ```js\n *
const x = [1, 2, 3, 4, 5, 6];\n * const y = [1, 3, 5];\n * \n * const [out, indices] = await tf.setdiff1dAsync(x, y);\n *
out.print(); // [2, 4, 6]\n * indices.print(); // [1, 3, 5]\n * \n * @param x 1-D Tensor. Values to keep.\n *
@param y 1-D Tensor. Must have the same type as x. Values to exclude in the\n *      output.\n * @returns Promise
of Tensor tuple [out, indices].\n * out: Tensor with the same type as x.\n * indices: A Tensor of type int32.\n * \n *
@doc {heading: 'Tensors', subheading: 'Transformations'}\n */\n\nasyc function setdiff1dAsync_ (\n      x:
Tensor|TensorLike, y: Tensor|TensorLike): Promise<[Tensor, Tensor]> {\n      const $x = convertToTensor(x, 'x',
'setdiff1d');\n      const $y = convertToTensor(y, 'y', 'setdiff1d');\n\n      util.assert(\n          $x.dtype === $y.dtype,\n          () =>
`x and y should have the same dtype, but got x (${x.dtype}) and y (${y.dtype}).`);\n\n      util.assert(\n          $x.rank === 1, () => `x should be 1D tensor, but got x (${x.shape}).`);\n      util.assert(\n          $y.rank === 1, () => `y
should be 1D tensor, but got y (${y.shape}).`);\n\n      const xVals = await $x.data();\n      const yVals = await
$y.data();\n      const ySet = new Set(yVals);\n\n      let outputSize = 0;\n      for (let i = 0; i < xVals.length; i++) {\n          if
(!ySet.has(xVals[i])) {\n              outputSize++;\n          }\n      }\n\n      const buffer = new TensorBuffer([outputSize],
$x.dtype);\n      const indices = new TensorBuffer([outputSize], 'int32');\n      for (let i = 0, p = 0; i < xVals.length; i++)
{\n          if (!ySet.has(xVals[i])) {\n              buffer.values[p] = xVals[i];\n              indices.values[p] = i;\n              p++;\n          }\n      }\n      return [buffer.toTensor(), indices.toTensor()];\n }\n\nexport const setdiff1dAsync = setdiff1dAsync_;\n"/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable

```



```

=====
*\n\nimport {Tensor1D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\nimport {slice} from
 './slice';\n\n/**\n * Extracts a 1D slice from 1D array starting at coordinates `begin` and is\n * of length `size`. See
 `slice` for details.\n *\nfunction slice1d_(\n  x: Tensor1D|TensorLike, begin: number, size: number): Tensor1D {\n
const $x = convertToTensor(x, 'x', 'slice1d');\n  util.assert(\n    $x.rank === 1,\n    () =>\n      `slice1d expects a
rank-1 tensor, but got a rank-${$x.rank} tensor`);\n  return slice($x, [begin], [size]);\n}\n\nexport const slice1d =
op({slice1d_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {Tensor2D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\nimport {slice} from
 './slice';\n\n/**\n * Extracts a 2D slice from a 2D array starting at coordinates `begin` and\n * is of size `size`. See
 `slice` for details.\n *\nfunction slice2d_(\n  x: Tensor2D|TensorLike, begin: [number, number],\n  size: [number,
number]): Tensor2D {\n  const $x = convertToTensor(x, 'x', 'slice2d');\n  util.assert(\n    $x.rank === 2,\n    ()
=>\n      `slice2d expects a rank-2 tensor, but got a rank-${$x.rank} tensor`);\n  return slice($x, begin,
size);\n}\n\nexport const slice2d = op({slice2d_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {Tensor3D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\nimport {slice} from
 './slice';\n\n/**\n * Extracts a 3D slice from a 3D array starting at coordinates `begin` and\n * is of size `size`. See
 `slice` for details.\n *\nfunction slice3d_(\n  x: Tensor3D|TensorLike, begin: [number, number, number],\n  size:
[number, number, number]): Tensor3D {\n  const $x = convertToTensor(x, 'x', 'slice3d');\n  util.assert(\n    $x.rank
=== 3,\n    () =>\n      `slice3d expects a rank-3 tensor, but got a rank-${$x.rank} tensor`);\n  return slice($x,
begin, size);\n}\n\nexport const slice3d = op({slice3d_});\n", "/*\n * @license\n * Copyright 2018 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {Tensor4D} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\nimport {slice} from
 './slice';\n\n/**\n * Extracts a 4D slice from a 4D array starting at coordinates `begin` and\n * is of size `size`. See
 `slice` for details.\n *\nfunction slice4d_(\n  x: Tensor4D|TensorLike, begin: [number, number, number,
number],\n  size: [number, number, number, number]): Tensor4D {\n  const $x = convertToTensor(x, 'x',

```

```
'slice4d');\n util.assert(\n    $x.rank === 4,\n    () =>\n        `slice4d expects a rank-4 tensor, but got a rank-  
${$x.rank} tensor`);\n return slice($x, begin, size);\n}\n\nexport const slice4d = op({ slice4d_ });\n", "/*\n *  
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *  
=====
```

```
\n\n*/\n\nimport {ENGINE} from '../engine';\nimport {Softmax, SoftmaxAttrs, SoftmaxInputs} from  
../kernel_names';\nimport {NamedAttrMap} from '../kernel_registry';\nimport {Tensor} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from '../types';\n\nimport {op} from '../operation';\n\n/**\n * Computes the softmax normalized vector  
given the logits.\n * @param {TensorLike} logits The logits array.\n * @param {number} dim The dimension softmax would be performed on.  
Defaults to -1 which indicates the last dimension.\n * @doc {heading: 'Operations', subheading:  
'Normalization'}\n */\nfunction softmax<T extends Tensor>(logits: T | TensorLike, dim = -1): T {\n  const $logits =  
convertToTensor(logits, 'logits', 'softmax', 'float32');\n  if (dim === -1) {\n    dim = $logits.rank - 1;\n  }\n  if (dim  
!=== $logits.rank - 1) {\n    throw Error(`Softmax along a non-last dimension is not yet supported. ` +  
`Logits was rank ${$logits.rank} and dim was ${dim}`);\n  }\n  const inputs: SoftmaxInputs = {logits: $logits};\n  const attrs: SoftmaxAttrs = {dim};\n  return ENGINE.runKernel(Softmax, inputs as {} as  
NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const softmax = op({ softmax_ });\n", "/*\n *  
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *  
=====
```

```
\n\n*/\n\nimport {ENGINE} from '../engine';\nimport {FFT, FFTInputs} from '../kernel_names';\nimport {Tensor} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {assert} from '../util';\nimport {op} from '../operation';\n\n/**\n * Fast Fourier transform.\n * Computes the 1-dimensional discrete Fourier  
transform over the inner-most  
dimension of input.\n * @param {TensorLike} input The complex input to compute an fft over.\n * @doc {heading: 'Operations', subheading:  
'Spectral', namespace: 'spectral'}\n */\nfunction fft_(input: Tensor): Tensor {\n  assert(\n    input.dtype ===  
'complex64',\n    () => `The dtype for tf.spectral.fft() must be complex64 ` +  
`but got ${input.dtype}.`);\n  const inputs: FFTInputs = {input};\n  return ENGINE.runKernel(FFT, inputs as {} as  
NamedTensorMap);\n}\n\nexport const fft = op({ fft_ });\n", "/*\n *  
@license\n * Copyright 2020 Google LLC. All  
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this  
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *  
=====
```

```
\n\n*/\n\nimport {ENGINE} from '../engine';\nimport {IFFT, IFFTInputs} from '../kernel_names';\nimport {Tensor}
```


`numOrSizeSplits` is a number, splits `x` along dimension `axis` into `numOrSizeSplits` smaller tensors.
 Requires that `numOrSizeSplits` evenly divides `x.shape[axis]`.
 If `numOrSizeSplits` is a number array, splits `x` into `numOrSizeSplits.length` pieces. The shape of the `i`-th piece has the same size as `x` except along dimension `axis` where the size is `numOrSizeSplits[i]`.
`const x = tf.tensor2d([1, 2, 3, 4, 5, 6, 7, 8], [2, 4]);`
`const [a, b] = tf.split(x, 2, 1);`
`a.print();`
`b.print();`
`const [c, d, e] = tf.split(x, [1, 2, 1], 1);`
`c.print();`
`d.print();`
`e.print();`
`@param x` The input tensor to split.
`@param numOrSizeSplits` Either an integer indicating the number of splits along the axis or an array of integers containing the sizes of each output tensor along the axis. If a number then it must evenly divide `x.shape[axis]`; otherwise the sum of sizes must match `x.shape[axis]`.
 Can contain one `-1` indicating that dimension is to be inferred.
`@param axis` The dimension along which to split. Defaults to `0` (the first dimension).
`@doc {heading: 'Tensors', subheading: 'Slicing and Joining'}`
`function split_<T extends Tensor>(x: Tensor|TensorLike, numOrSizeSplits: number[]|number, axis = 0): T[]`
`{`
 `const $x = convertToTensor(x, 'x', 'split');`
 `const inputs: SplitVInputs = {x: $x};`
 `const attr: SplitVAttrs = {numOrSizeSplits, axis};`
 `return ENGINE.runKernel(SplitV, inputs as {} as NamedTensorMap, attr as {} as NamedAttrMap) as T[];`
`}`
`export const split = op({split_});`
 Copyright 2018 Google LLC. All Rights Reserved.
 Licensed under the Apache License, Version 2.0 (the "License");
 you may not use this file except in compliance with the License.
 You may obtain a copy of the License at
<http://www.apache.org/licenses/LICENSE-2.0>
 Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 See the License for the specific language governing permissions and limitations under the License.

```

=====
import {Tensor} from './tensor';
import {assert} from './util';
import {complex} from './complex';
import {concat} from './concat';
import {imag} from './imag';
import {op} from './operation';
import {real} from './real';
import {reshape} from './reshape';
import {slice} from './slice';
import {split} from './split';
import {zeros} from './zeros';
import {zerosLike} from './zeros_like';
import {fft} from './fft';

/**
 * Real value input fast Fourier transform.
 * Computes the 1-dimensional discrete Fourier transform over the inner-most dimension of the real input.
 * const real = tf.tensor1d([1, 2, 3]);
 * real.rfft().print();
 * @param input The real value input to compute an rfft over.
 * @doc {heading: 'Operations', subheading: 'Spectral', namespace: 'spectral'}
 * function rfft_(input: Tensor, fftLength?: number): Tensor {
 *   assert(input.dtype === 'float32', () => `The dtype for rfft() must be real value but got ${input.dtype}`);
 *   let innerDimensionSize = input.shape[input.shape.length - 1];
 *   const batch = input.size / innerDimensionSize;
 *   let adjustedInput: Tensor;
 *   if (fftLength != null && fftLength < innerDimensionSize) {
 *     // Need to crop
 *     const begin = input.shape.map(v => 0);
 *     const size = input.shape.map(v => v);
 *     size[input.shape.length - 1] = fftLength;
 *     adjustedInput = slice(input, begin, size);
 *     innerDimensionSize = fftLength;
 *   } else if (fftLength != null && fftLength > innerDimensionSize) {
 *     // Need to pad with zeros
 *     const zerosShape = input.shape.map(v => v);
 *     zerosShape[input.shape.length - 1] = fftLength - innerDimensionSize;
 *     adjustedInput = concat([input, zeros(zerosShape)], input.shape.length - 1);
 *     innerDimensionSize = fftLength;
 *   } else {
 *     adjustedInput = input;
 *   }
 *   // Complement the input with zero imaginary numbers.
 *   const zerosInput = zerosLike(adjustedInput);
 *   const complexInput = reshape(complex(adjustedInput, zerosInput), [batch, innerDimensionSize]);
 *   const ret = fft(complexInput);
 *   // Exclude complex conjugations. These conjugations are put symmetrically.
 *   const half = Math.floor(innerDimensionSize / 2) + 1;
 *   const realValues = real(ret);
 *   const imagValues = imag(ret);
 *   const realComplexConjugate = split(realValues, [half, innerDimensionSize - half], realValues.shape.length - 1);
 *   const imagComplexConjugate = split(imagValues, [half, innerDimensionSize - half], imagValues.shape.length - 1);
 *   const outputShape = adjustedInput.shape.slice();
 *   outputShape[adjustedInput.shape.length - 1] = half;
 *   return reshape(complex(realComplexConjugate[0], imagComplexConjugate[0]), outputShape);
 * }
 * export const rfft = op({rfft_});
  
```

Copyright 2018 Google LLC. All Rights Reserved.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
<http://www.apache.org/licenses/LICENSE-2.0>
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

```
=====  
import {ENGINE} from '../engine';  
import {Sqrt, SqrtInputs} from '../kernel_names';  
import {Tensor} from '../tensor';  
import {NamedTensorMap} from '../tensor_types';  
import {convertToTensor} from '../tensor_util_env';  
import {TensorLike} from '../types';  
import {op} from '../operation';  
  
/**  
 * Computes square root of the input `tf.Tensor` element-wise:  
 *  $y = \sqrt{x}$   
 * const x = tf.tensor1d([1, 2, 4, -1]);  
 * x.sqrt().print(); // or tf.sqrt(x)  
 * @param x The input tensor.  
 * @doc {heading: 'Operations', subheading: 'Basic math'}  
 */  
function sqrt<T extends Tensor>(x: T|TensorLike): T {  
  const $x = convertToTensor(x, 'x', 'sqrt');  
  const inputs: SqrtInputs = {x: $x};  
  return ENGINE.runKernel(Sqrt, inputs as NamedTensorMap);  
}  
export const sqrt = op({sqrt});  
=====  
Copyright 2020 Google LLC. All Rights Reserved.  
Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at  
http://www.apache.org/licenses/LICENSE-2.0  
Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.
```

```
=====  
import {ENGINE} from '../engine';  
import {SquaredDifference, SquaredDifferenceInputs} from '../kernel_names';  
import {Tensor} from '../tensor';  
import {NamedTensorMap} from '../tensor_types';  
import {makeTypesMatch} from '../tensor_util';  
import {convertToTensor} from '../tensor_util_env';  
import {TensorLike} from '../types';  
import {assertAndGetBroadcastShape} from '../broadcast_util';  
import {op} from '../operation';  
  
/**  
 * Returns  $(a - b) * (a - b)$  element-wise.  
 * Supports broadcasting.  
 * const a = tf.tensor1d([1, 4, 3, 16]);  
 * const b = tf.tensor1d([1, 2, 9, 4]);  
 * a.squaredDifference(b).print(); // or  
 * tf.squaredDifference(a, b)  
 * const a = tf.tensor1d([2, 4, 6, 8]);  
 * const b = tf.scalar(5);  
 * a.squaredDifference(b).print(); // or  
 * tf.squaredDifference(a, b)  
 * @param a The first tensor.  
 * @param b The second tensor. Must have the same type as `a`.  
 * @doc {heading: 'Operations', subheading: 'Arithmetic'}  
 */  
function squaredDifference<T extends Tensor>(a: Tensor|TensorLike, b: Tensor|TensorLike): T {  
  let $a = convertToTensor(a, 'a', 'squaredDifference');  
  let $b = convertToTensor(b, 'b', 'squaredDifference');  
  [$a, $b] = makeTypesMatch($a, $b);  
  assertAndGetBroadcastShape($a.shape, $b.shape);  
  const inputs: SquaredDifferenceInputs = {a: $a, b: $b};  
  const attrs = {};  
  return ENGINE.runKernel(SquaredDifference, inputs as unknown as NamedTensorMap, attrs);  
}  
export const squaredDifference = op({squaredDifference});  
=====  
Copyright 2020 Google LLC. All Rights Reserved.  
Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at  
http://www.apache.org/licenses/LICENSE-2.0  
Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.
```

```
=====  
import {Tensor} from '../tensor';  
import {convertToTensor} from '../tensor_util_env';  
import {TensorLike} from '../types';  
import {squeezeShape} from '../util';  
import {op} from '../operation';  
import {reshape} from '../reshape';  
  
/**  
 * Removes dimensions of size 1 from the shape of a `tf.Tensor`.  
 * const x =  
 */
```

```
tf.tensor([1, 2, 3, 4], [1, 1, 4]);\n * x.squeeze().print();\n * ```\n * @param x The input tensor to be squeezed.\n * @param axis An optional list of numbers. If specified, only\n * squeezes the dimensions listed. The dimension index starts at 0. It\n * is an error to squeeze a dimension that is not 1.\n * @doc {heading: 'Tensors', subheading: 'Transformations'}\n */\nfunction squeeze_<T extends Tensor>(x: Tensor|TensorLike, axis?: number[]): T {\n  const $x = convertToTensor(x, 'x', 'squeeze');\n  return reshape($x, squeezeShape($x.shape, axis).newShape) as T;\n}\n\nexport const squeeze = op({squeeze_});\n", "*/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport {ENGINE} from './engine';\nimport {Pack, PackAttrs, PackInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensorArray} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from './util';\nimport {op} from './operation';\n\n/**\n * Stacks a list of rank-`R` `tf.Tensor`s into one rank-`(R+1)` `tf.Tensor`.\n * \n * const a = tf.tensor1d([1, 2]);\n * const b = tf.tensor1d([3, 4]);\n * const c = tf.tensor1d([5, 6]);\n * tf.stack([a, b, c]).print();\n * ```\n * @param tensors A list of tensor objects with the same shape and dtype.\n * @param axis The axis to stack along. Defaults to 0 (the first dim).\n * @doc {heading: 'Tensors', subheading: 'Slicing and Joining'}\n */\nfunction stack_<T extends Tensor>(\n  tensors: Array<T|TensorLike>, axis = 0): Tensor {\n  const $tensors =\n    convertToTensorArray(tensors, 'tensors', 'stack', 'string_or_numeric');\n  util.assert(\n    $tensors.length >= 1, () => 'Pass at least one tensor to tf.stack');\n  if ($tensors.length > 0) {\n    util.assert(\n      axis <= $tensors[0].rank, () => 'Axis must be <= rank of the tensor');\n  }\n  const inputs: PackInputs = $tensors;\n  const attrs: PackAttrs = {axis};\n  return ENGINE.runKernel(\n    Pack, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const stack = op({stack_});\n", "*/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport {ENGINE} from './engine';\nimport {Step, StepAttrs, StepInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes step of the input `tf.Tensor` element-wise: `x > 0 ? 1 : alpha * x`.\n * \n * const x = tf.tensor1d([0, 2, -1, -3]);\n * x.step(.5).print(); // or tf.step(x, .5)\n * ```\n * @param x The input tensor.\n * @param alpha The gradient when input is negative.\n * @doc {heading: 'Operations', subheading: 'Basic math'}\n */\nfunction step_<T extends Tensor>(x: T|TensorLike, alpha = 0.0): T {\n  const $x = convertToTensor(x, 'x', 'step');\n  const inputs: StepInputs = {x: $x};\n  const attrs: StepAttrs = {alpha};\n  return ENGINE.runKernel(\n    Step, inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const step = op({step_});\n", "*/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
```


OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {StridedSlice, StridedSliceAttrs, StridedSliceInputs} from\n './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport\n {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport\n {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Extracts a strided slice of a tensor.\n *\n * Roughly speaking, this op extracts a slice of size (end-begin)/stride from\n * the given input tensor (x). Starting at\n * the location specified by begin the\n * slice continues by adding stride to the index until all dimensions are not\n * less than end. Note that a stride can be negative, which causes a reverse\n * slice.\n *\n *`js\n * const t =\n tf.tensor3d([1, 1, 1, 2, 2, 2, 3, 3, 3, 4, 4, 4, 5, 5, 5, 6, 6, 6],\n * [3, 2, 3]);\n * t.stridedSlice([1, 0, 0], [2, 1, 3], [1, 1,\n 1]).print() // [[[3, 3, 3]]]\n * t.stridedSlice([1, 0, 0], [2, 2, 3], [1, 1, 1]).print() // [[[3, 3, 3],\n * [4, 4, 4]]]\n * t.stridedSlice([1, -1, 0], [2, -3, 3], [1, -1, 1]).print() // [[[4, 4, 4],\n * [3, 3, 3]]]\n *\n * @param x The tensor to stride slice.\n * @param begin The coordinates to start\n the slice from.\n * @param end: The coordinates to end the slice at.\n * @param strides: The size of the slice.\n * @param beginMask: If the ith bit of beginMask is set, begin[i] is ignored\n * and the fullest possible range in\n that dimension is used instead.\n * @param endMask: If the ith bit of endMask is set, end[i] is ignored\n * and\n the fullest possible range in that dimension is used instead.\n * @param shrinkAxisMask: a bitmask where bit i\n implies that\n * the ith specification should shrink the dimensionality. begin and end must\n * imply a slice of size 1\n in the dimension.\n *\n * @doc {heading: 'Operations', subheading: 'Slicing and Joining'}\n */\nfunction\n stridedSlice_(\n x: Tensor|TensorLike, begin: number[], end: number[], strides?: number[],\n beginMask = 0,\n endMask = 0, ellipsisMask = 0, newAxisMask = 0,\n shrinkAxisMask = 0): Tensor {\n const $x =\n convertToTensor(x, 'x', 'stridedSlice');\n\n const inputs: StridedSliceInputs = {x: $x};\n const attrs:\n StridedSliceAttrs = {\n begin,\n end,\n strides,\n beginMask,\n endMask,\n ellipsisMask,\n newAxisMask,\n shrinkAxisMask\n };\n\n return ENGINE.runKernel(\n StridedSlice, inputs as { } as\n NamedTensorMap,\n attrs as { } as NamedAttrMap);\n}\n\nexport const stridedSlice =\n op({stridedSlice_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed\n under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *\n
```

```
=====\n\n*\n\nimport {ENGINE} from './engine';\nimport {Tan, TanInputs} from './kernel_names';\nimport {Tensor} from\n './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from\n './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Computes\n tan of the input `tf.Tensor` element-wise, `tan(x)`\n *\n *`js\n * const x = tf.tensor1d([0, Math.PI / 2, Math.PI * 3 / 4]);\n * x.tan().print(); // or tf.tan(x)\n *\n * @param x The input tensor.\n *\n * @doc {heading:\n 'Operations', subheading: 'Basic math'}\n */\nfunction tan_<T extends Tensor>(x: T|TensorLike): T {\n const $x =\n convertToTensor(x, 'x', 'tan');\n\n const inputs: TanInputs = {x: $x};\n\n return ENGINE.runKernel(Tan, inputs as\n { } as NamedTensorMap);\n}\n\nexport const tan = op({tan_});\n\n"/**\n * @license\n * Copyright 2018 Google LLC.\n All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```

=====
*\n\nimport {Tensor1D} from './tensor';\nimport {inferShape} from './tensor_util_env';\nimport {TensorLike1D}
from './types';\nimport {DataType} from './types';\nimport {assertNonNull} from './util';\nimport {makeTensor}
from './tensor_ops_util';\n\n/**\n * Creates rank-1 `tf.Tensor` with the provided values, shape and dtype.\n *\n * The
same functionality can be achieved with `tf.tensor`, but in general\n * we recommend using `tf.tensor1d` as it makes
the code more readable.\n *\n * ```js\n * tf.tensor1d([1, 2, 3]).print();\n * ```\n *\n * @param values The values of
the tensor. Can be array of numbers,\n *   or a `TypedArray`.\n * @param dtype The data type.\n *\n * @doc
{heading: 'Tensors', subheading: 'Creation'}\n *\nexport function tensor1d(values: TensorLike1D, dtype?:
DataType): Tensor1D {\n  assertNonNull(values);\n  const inferredShape = inferShape(values, dtype);\n  if
(inferredShape.length !== 1) {\n    throw new Error('tensor1d() requires values to be a flat/TypedArray');\n  }\n
const shape: number[] = null;\n  return makeTensor(values, shape, inferredShape, dtype) as Tensor1D;\n}\n\n",/**\n
 * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {Tensor2D} from './tensor';\nimport {inferShape} from './tensor_util_env';\nimport {TensorLike2D}
from './types';\nimport {DataType} from './types';\nimport {assertNonNull} from './util';\nimport {makeTensor}
from './tensor_ops_util';\n\n/**\n * Creates rank-2 `tf.Tensor` with the provided values, shape and dtype.\n *\n * The
same functionality can be achieved with `tf.tensor`, but in general\n * we recommend using `tf.tensor2d` as it makes
the code more readable.\n *\n * ```js\n * // Pass a nested array.\n * tf.tensor2d([[1, 2], [3, 4]]).print();\n * ```\n *
```js\n * // Pass a flat array and specify a shape.\n * tf.tensor2d([1, 2, 3, 4], [2, 2]).print();\n * ```\n *\n * @param
values The values of the tensor. Can be nested array of numbers,\n * or a flat array, or a `TypedArray`.\n *
@param shape The shape of the tensor. If not provided, it is inferred from\n * `values`.\n * @param dtype The
data type.\n *\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n *\nexport function tensor2d(\n values:
TensorLike2D, shape?: [number, number],\n dtype?: DataType): Tensor2D {\n assertNonNull(values);\n if
(shape !== null && shape.length !== 2) {\n throw new Error('tensor2d() requires shape to have two numbers');\n
 }\n const inferredShape = inferShape(values, dtype);\n if (inferredShape.length !== 2 && inferredShape.length !===
1) {\n throw new Error(\n 'tensor2d() requires values to be number[][] or flat/TypedArray');\n }\n if
(inferredShape.length === 1 && shape === null) {\n throw new Error(\n 'tensor2d() requires shape to be
provided when `values` +\n `are a flat/TypedArray');\n }\n return makeTensor(values, shape, inferredShape,
dtype) as Tensor2D;\n}\n\n",/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {Tensor4D} from './tensor';\nimport {inferShape} from './tensor_util_env';\nimport {TensorLike4D}
from './types';\nimport {DataType} from './types';\nimport {assertNonNull} from './util';\nimport {makeTensor}
from './tensor_ops_util';\n\n/**\n * Creates rank-4 `tf.Tensor` with the provided values, shape and dtype.\n *\n * The
same functionality can be achieved with `tf.tensor`, but in general\n * we recommend using `tf.tensor4d` as it makes
the code more readable.\n *\n * ```js\n * // Pass a nested array.\n * tf.tensor4d([[[[1], [2]], [[3], [4]]]]).print();\n *
```js\n * // Pass a flat array and specify a shape.\n * tf.tensor4d([1, 2, 3, 4], [1, 2, 2, 1]).print();\n * ```\n *\n *
@param values The values of the tensor. Can be nested array of numbers,\n *   or a flat array, or a `TypedArray`.\n *

```

```

* @param shape The shape of the tensor. Optional. If not provided,\n * it is inferred from `values`.\n * @param
dtype The data type.\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n * ^\nexport function tensor4d(\n
values: TensorLike4D, shape?: [number, number, number, number],\n dtype?: DataType): Tensor4D {\n
assertNonNull(values);\n if (shape != null && shape.length !== 4) {\n throw new Error('tensor4d() requires shape
to have four numbers');\n }\n const inferredShape = inferShape(values, dtype);\n if (inferredShape.length !== 4
&& inferredShape.length !== 1) {\n throw new Error(\n 'tensor4d() requires values to be number[][][] or
flat/TypedArray');\n }\n if (inferredShape.length === 1 && shape == null) {\n throw new Error(\n
'tensor4d() requires shape to be provided when `values` '+\n 'are a flat array');\n }\n return makeTensor(values,
shape, inferredShape, dtype) as Tensor4D;\n }\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Tensor5D} from './tensor';\nimport {inferShape} from './tensor_util_env';\nimport {TensorLike5D}
from './types';\nimport {DataType} from './types';\nimport {assertNonNull} from './util';\nimport {makeTensor}
from './tensor_ops_util';\n\n/**\n * Creates rank-5 `tf.Tensor` with the provided values, shape and dtype.\n * \n * The
same functionality can be achieved with `tf.tensor`, but in general\n * we recommend using `tf.tensor5d` as it makes
the code more readable.\n * \n * ```js\n * // Pass a nested array.\n *
tf.tensor5d([[[[[1],[2]],[3],[4]],[[5],[6]],[7],[8]]]]).print();\n * ```\n * // Pass a flat array and specify a
shape.\n * tf.tensor5d([1, 2, 3, 4, 5, 6, 7, 8], [1, 2, 2, 2, 1]).print();\n * ```\n * \n * @param values The values of the
tensor. Can be nested array of numbers,\n * or a flat array, or a `TypedArray`.\n * @param shape The shape of the
tensor. Optional. If not provided,\n * it is inferred from `values`.\n * @param dtype The data type.\n * @doc
{heading: 'Tensors', subheading: 'Creation'}\n * ^\nexport function tensor5d(\n values: TensorLike5D, shape?:
[number, number, number, number, number],\n dtype?: DataType): Tensor5D {\n assertNonNull(values);\n if
(shape != null && shape.length !== 5) {\n throw new Error('tensor5d() requires shape to have five numbers');\n
}\n const inferredShape = inferShape(values, dtype);\n if (inferredShape.length !== 5 && inferredShape.length !==
1) {\n throw new Error(\n 'tensor5d() requires values to be '+\n 'number[][][] or flat/TypedArray');\n
}\n if (inferredShape.length === 1 && shape == null) {\n throw new Error(\n 'tensor5d() requires shape to be
provided when `values` '+\n 'are a flat array');\n }\n return makeTensor(values, shape, inferredShape, dtype) as
Tensor5D;\n }\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {Tensor6D} from './tensor';\nimport {inferShape} from './tensor_util_env';\nimport {TensorLike6D}
from './types';\nimport {DataType} from './types';\nimport {assertNonNull} from './util';\nimport {makeTensor}
from './tensor_ops_util';\n\n/**\n * Creates rank-6 `tf.Tensor` with the provided values, shape and dtype.\n * \n * The
same functionality can be achieved with `tf.tensor`, but in general\n * we recommend using `tf.tensor6d` as it makes
the code more readable.\n * \n * ```js\n * // Pass a nested array.\n *
tf.tensor6d([[[[[[1],[2]],[3],[4]],[[5],[6]],[7],[8]]]]]).print();\n * ```\n * // Pass a flat array and specify a
shape.\n * tf.tensor6d([1, 2, 3, 4, 5, 6, 7, 8], [1, 1, 2, 2, 2, 1]).print();\n * ```\n * \n * @param values The values of the
tensor. Can be nested array of numbers,\n * or a flat array, or a `TypedArray`.\n * @param shape The shape of the

```

```

tensor. Optional. If not provided,\n * it is inferred from `values`.\n * @param dtype The data type.\n *\n * @doc
{heading: 'Tensors', subheading: 'Creation'}\n *
\nexport function tensor6d(\n  values: TensorLike6D,\n  shape?:
[number, number, number, number, number, number],\n  dtype?: DataType): Tensor6D {\n
assertNonNull(values);\n if (shape != null && shape.length !== 6) {\n  throw new Error('tensor6d() requires shape
to have six numbers');\n }\n const inferredShape = inferShape(values, dtype);\n if (inferredShape.length !== 6 &&
inferredShape.length !== 1) {\n  throw new Error(\n    'tensor6d() requires values to be number[][][][][] or '+\n
'flat/TypedArray');\n }\n if (inferredShape.length === 1 && shape == null) {\n  throw new Error(\n
'tensor6d() requires shape to be provided when `values` '+\n    'are a flat array');\n }\n shape = shape ||\n
inferredShape as [number, number, number, number, number, number];\n return makeTensor(values, shape,
inferredShape, dtype) as Tensor6D;\n }\n\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
\n
*\n\nimport {ENGINE} from '../engine';\nimport {TopK, TopKAttrs, TopKInputs} from '../kernel_names';\nimport
{NamedAttrMap} from '../kernel_registry';\nimport {Tensor} from '../tensor';\nimport {NamedTensorMap} from
 '../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from
 '../types';\n\nimport {op} from './operation';\n\n/**\n * Finds the values and indices of the `k` largest entries along
the last\n * dimension.\n * If the input is a vector (rank=1), finds the k largest entries in the vector\n * and
outputs their values and indices as vectors. Thus values[j] is the j-th\n * largest entry in input, and its index is
indices[j].\n * For higher rank inputs, computes the top k entries along the last dimension.\n *\n * If two elements
are equal, the lower-index element appears first.\n *\n * `js\n * const a = tf.tensor2d([[1, 5], [4, 3]]);\n * const
{values, indices} = tf.topk(a);\n * values.print();\n * indices.print();\n * ``\n * @param x 1-D or higher `tf.Tensor`
with last dimension being at least `k`.\n * @param k Number of top elements to look for along the last dimension.\n
*\n * @param sorted If true, the resulting `k` elements will be sorted by the\n * values in descending order.\n *\n
*\n * @doc {heading: 'Operations', subheading: 'Evaluation'}\n *\nfunction topk<T extends Tensor>(\n  x:
T|TensorLike, k = 1, sorted = true): {values: T, indices: T} {\n  const $x = convertToTensor(x, 'x', 'topk');\n  if
($x.rank === 0) {\n    throw new Error('topk() expects the input to be of rank 1 or higher');\n  }\n  const lastDim =
$x.shape[$x.shape.length - 1];\n  if (k > lastDim) {\n    throw new Error(\n      `k` passed to topk() must be <= the
last dimension (${lastDim})` +\n      `but got ${k}`);\n  }\n  const inputs: TopKInputs = {x: $x};\n  const attrs:
TopKAttrs = {k, sorted};\n  const [values, indices] = ENGINE.runKernel(\n    TopK, inputs as {} as
NamedTensorMap, attrs as {} as NamedAttrMap);\n  return {values, indices} as {values: T, indices:
T};\n }\n\n\nexport const topk = op({topk_});\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
\n
*\n\nimport {Tensor} from '../tensor';\nimport {DataType, Rank, ShapeMap} from '../types';\n\nimport {buffer}
from './buffer';\nimport {op} from './operation';\nimport {MPRandGauss} from './rand_util';\n\n/**\n * Creates a
`tf.Tensor` with values sampled from a truncated normal\n * distribution.\n *\n * `js\n * tf.truncatedNormal([2,
2]).print();\n * ``\n *\n * The generated values follow a normal distribution with specified mean and\n * standard
deviation, except that values whose magnitude is more than 2\n * standard deviations from the mean are dropped

```

and re-picked.\n * @param shape An array of integers defining the output tensor shape.\n * @param mean The mean of the normal distribution.\n * @param stdDev The standard deviation of the normal distribution.\n * @param dtype The data type of the output tensor.\n * @param seed The seed for the random number generator.\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n */\nfunction truncatedNormal_<R extends Rank>(\n shape: ShapeMap[R], mean = 0, stdDev = 1, dtype?: 'float32'|'int32',\n seed?: number): Tensor<R> {\n if (dtype != null && (dtype as DataType) === 'bool') {\n throw new Error(`Unsupported data type \$ { dtype }`);\n }\n const randGauss =\n new MPRandGauss(mean, stdDev, dtype, true /* truncated */, seed);\n const res = buffer(shape, dtype);\n for (let i = 0; i < res.values.length; i++) {\n res.values[i] = randGauss.nextValue();\n }\n return res.toTensor();\n}\n\nexport const truncatedNormal = op({truncatedNormal_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

=====
*\n\nimport {ENGINE} from '../engine';\nimport {Unique, UniqueAttrs, UniqueInputs} from\n '../kernel_names';\nimport {NamedAttrMap} from '../kernel_registry';\nimport {Tensor, Tensor1D} from\n '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor} from\n '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport {assert} from '../util';\nimport {op} from\n '../operation';\n\n/*\n * Finds unique elements along an axis of a tensor.\n * It returns a tensor `values`\n * containing all of the unique elements along the\n * `axis` of the given tensor `x` in the same order that they occur\n * along the\n * `axis` in `x`; `x` does not need to be sorted. It also returns a tensor\n * `indices` the same size as the\n * number of the elements in `x` along the `axis`\n * dimension. It contains the index in the unique output `values`.\n *\n * ``js\n * // A 1-D tensor\n * const a = tf.tensor1d([1, 1, 2, 4, 4, 4, 7, 8, 8]);\n * const {values, indices} =\n * tf.unique(a);\n * values.print(); // [1, 2, 4, 7, 8, ]\n * indices.print(); // [0, 0, 1, 2, 2, 2, 3, 4, 4]\n *\n * ``\n *\n * // A 2-D tensor with axis=0\n * // 'a' is: [[1, 0, 0],\n * // [1, 0, 0],\n * // [2, 0, 0]]\n * const a =\n * tf.tensor2d([[1, 0, 0], [1, 0, 0], [2, 0, 0]]);\n * const {values, indices} = tf.unique(a, 0);\n * values.print(); // [[1, 0,\n * // [2, 0, 0]]\n * indices.print(); // [0, 0, 1]\n *\n * ``\n *\n * // A 2-D tensor with axis=1\n * // 'a' is: [[1, 0, 0],\n * // [1, 0, 0],\n * // [2, 0, 0]]\n * const a = tf.tensor2d([[1, 0, 0], [1, 0, 0], [2, 0,\n * // [1, 0],\n * // [1, 0],\n * // [2, 0]]);\n * const {values, indices} = tf.unique(a, 1);\n * values.print(); // [[1, 0],\n * // [1, 0],\n * // [2, 0]]\n * indices.print(); // [0, 1, 1]\n *\n * @param x A tensor (int32, string, bool).\n * @param axis The axis of the tensor to find the unique elements.\n * @returns [uniqueElements, indices] (see above for details)\n *\n * @doc {heading: 'Operations', subheading: 'Evaluation'}\n */\nfunction unique_<T extends Tensor>(\n x:\n T|TensorLike, axis = 0): {values: T, indices: Tensor1D} {\n const $x = convertToTensor(x, 'x', 'unique',\n 'string_or_numeric');\n assert($x.rank > 0, () => 'The input tensor must be at least 1D');\n\n const inputs:\n UniqueInputs = {x: $x};\n const attrs: UniqueAttrs = {axis};\n const [values, indices] = ENGINE.runKernel(\n Unique, inputs as { } as NamedTensorMap,\n attrs as { } as NamedAttrMap) as [T,\n Tensor1D];\n return {values, indices};\n}\n\nexport const unique = op({unique_});\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {ENGINE} from '../engine';\nimport {UnsortedSegmentSum, UnsortedSegmentSumAttrs,\n UnsortedSegmentSumInputs} from '../kernel_names';\nimport {NamedAttrMap} from '../kernel_registry';\nimport
```

```

{Tensor, Tensor1D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport
{convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assert, isInt} from
 './util';\n\nimport {op} from './operation';\n\n/**\n * Computes the sum along segments of a `tf.Tensor`.\n *\n * `js`\n * const x = tf.tensor1d([1, 2, 3, 4]);\n * const segmentIds = tf.tensor1d([1, 2, 0, 1], 'int32');\n * const
 numSegments = 3;\n *\n * x.unsortedSegmentSum(segmentIds, numSegments).print()\n * //or
 tf.unsortedSegmentSum(x, segmentIds, numSegments)\n * ```\n * @param x The `tf.Tensor` that will be summed
 along its segments.\n * @param segmentIds A `tf.Tensor1D` whose rank is equal to the rank of `x`'s\n * dimension
 along the `axis`. Maps each element of `x` to a segment.\n * @param numSegments The number of distinct
 `segmentIds`.\n *\n * @doc {heading: 'Operations', subheading: 'Segment'}\n */\nfunction
unsortedSegmentSum<T extends Tensor>(\n  x: T|TensorLike, segmentIds: Tensor1D|TensorLike, numSegments:
 number): T {\n  const $x = convertToTensor(x, 'x', 'unsortedSegmentSum');\n  const $segmentIds =\n  convertToTensor(segmentIds, 'segmentIds', 'unsortedSegmentSum', 'int32');\n  assert(isInt(numSegments), () =>
 'numSegments must be of dtype int');\n  const inputs: UnsortedSegmentSumInputs = {x: $x, segmentIds:
 $segmentIds};\n  const attrs: UnsortedSegmentSumAttrs = {numSegments};\n  return ENGINE.runKernel(\n
 UnsortedSegmentSum, inputs as {} as NamedTensorMap,\n  attrs as {} as NamedAttrMap);\n}\n\nexport const
unsortedSegmentSum = op({unsortedSegmentSum});\n", "/**\n * @license\n * Copyright 2020 Google LLC. All
 Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
 file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Unpack, UnpackAttrs, UnpackInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport
 {TensorLike} from './types';\nimport * as util from './util';\n\nimport {op} from './operation';\n\n/**\n * Unstacks a
 `tf.Tensor` of rank-`R` into a list of rank-`(R-1)` `tf.Tensor`s.\n *\n * `js`\n * const a = tf.tensor2d([1, 2, 3, 4], [2,
 2]);\n *\n * tf.unstack(a).forEach(tensor => tensor.print());\n * ```\n *\n * @param x A tensor object.\n * @param
 axis The axis to unstack along. Defaults to 0 (the first dim).\n *\n * @doc {heading: 'Tensors', subheading: 'Slicing
 and Joining'}\n */\nfunction unstack_(x: Tensor|TensorLike, axis = 0): Tensor[] {\n  const $x = convertToTensor(x,
 'x', 'unstack', 'string_or_numeric');\n  util.assert(\n    axis >= -$x.shape.length && axis < $x.shape.length,\n    ()
 =>\n      `Axis = ${axis} is not in [-${$x.shape.length}, ${$x.shape.length}]`);\n  const inputs: UnpackInputs =
 {value: $x};\n  const attrs: UnpackAttrs = {axis};\n  return ENGINE.runKernel(\n    Unpack, inputs as {} as
 NamedTensorMap, attrs as {} as NamedAttrMap);\n}\n\nexport const unstack = op({unstack_});\n", "/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from './engine';\nimport {Tensor, Variable} from './tensor';\nimport {DataType, Rank}
 from './types';\n\n/**\n * Creates a new variable with the provided initial value.\n *\n * `js`\n * const x =
 tf.variable(tf.tensor([1, 2, 3]));\n * x.assign(tf.tensor([4, 5, 6]));\n *\n * x.print();\n * ```\n *\n * @param initialValue
 Initial value for the tensor.\n * @param trainable If true, optimizers are allowed to update it.\n * @param name
 Name of the variable. Defaults to a unique id.\n * @param dtype If set, initialValue will be converted to the given
 type.\n *\n * @doc {heading: 'Tensors', subheading: 'Creation'}\n */\nexport function variable<R extends Rank>(\n

```

initialValue: Tensor<R>, trainable = true, name?: string, dtype?: DataType): Variable<R> {\n return
ENGINE.makeVariable(initialValue, trainable, name, dtype) as\n Variable<R>;\n}\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\n** An implementation of the Where kernel shared between cpu and WebGL *\n\nimport {buffer} from\n './ops/buffer';\nimport {Tensor2D} from './tensor';\nimport {TypedArray} from './types';\n\nexport function\n whereImpl(condShape: number[], condVals: TypedArray): Tensor2D {\n const indices = [];\n for (let i = 0; i <\n condVals.length; i++) {\n if (condVals[i]) {\n indices.push(i);\n }\n }\n\n const inBuffer =\n buffer(condShape, 'int32');\n const out = buffer([indices.length, condShape.length], 'int32');\n for (let i = 0; i <\n indices.length; i++) {\n const loc = inBuffer.indexToLoc(indices[i]);\n const offset = i * condShape.length;\n out.values.set(loc, offset);\n }\n return out.toTensor() as Tensor2D;\n}\n", "/*\n * @license\n * Copyright 2020  
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you  
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {whereImpl} from './backends/where_impl';\nimport {Tensor, Tensor2D} from './tensor';\nimport\n {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\n\n** Returns the  
coordinates of true elements of condition.\n * The coordinates are returned in a 2-D tensor where the first  
dimension (rows)\n * represents the number of true elements, and the second dimension (columns)\n * represents the  
coordinates of the true elements. Keep in mind, the shape of\n * the output tensor can vary depending on how many  
true values there are in\n * input. Indices are output in row-major order. The resulting tensor has the\n * shape  
`[numTrueElems, condition.rank]`.\n * This is analogous to calling the python `tf.where(cond)` without an x or  
y.\n * ``js\n * const cond = tf.tensor1d([false, false, true], 'bool');\n * const result = await  
tf.whereAsync(cond);\n * result.print();\n * ``\n * @doc {heading: 'Operations', subheading: 'Logical'}\n\n** Async function whereAsync(condition: Tensor|TensorLike): Promise<Tensor2D> {\n const $condition =\n convertToTensor(condition, 'condition', 'whereAsync', 'bool');\n const vals = await $condition.data();\n const res =\n whereImpl($condition.shape, vals);\n if (condition !== $condition) {\n $condition.dispose();\n }\n return  
res;\n}\n\nexport const whereAsync = whereAsync_;\n", "/*\n * @license\n * Copyright 2018 Google LLC. All  
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this  
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike}\n from './types';\nimport * as util from './util';\nimport {gather} from './gather';\nimport {reshape} from\n './reshape';\nimport {squeeze} from './squeeze';\nimport {whereAsync} from './where_async';\n\n** Apply  
boolean mask to tensor.\n * ``js\n * const tensor = tf.tensor2d([1, 2, 3, 4, 5, 6], [3, 2]);\n * const mask =\n tf.tensor1d([1, 0, 1], 'bool');\n * const result = await tf.booleanMaskAsync(tensor, mask);\n * result.print();\n * ``
```

```

*\n * @param tensor N-D tensor.\n * @param mask K-D boolean tensor, K <= N and K must be known statically.\n
 * @param axis A 0-D int Tensor representing the axis in tensor to mask from.\n * By default, axis is 0 which will
mask from the first dimension.\n * Otherwise K + axis <= N.\n *\n * @doc {heading: 'Tensors', subheading:
'Slicing and Joining'}\n */\nasync function booleanMaskAsync_(\n  tensor: Tensor|TensorLike, mask:
Tensor|TensorLike, \n  axis?: number): Promise<Tensor> {\n  const $tensor = convertToTensor(tensor, 'tensor',
'boolMask');\n  const $mask = convertToTensor(mask, 'mask', 'boolMask', 'bool');\n\n  const axisFrom = axis == null
? 0 : axis;\n  const maskDim = $mask.rank;\n  const tensorShape = $tensor.shape;\n\n  util.assert(maskDim > 0, ()
=> 'mask cannot be scalar');\n  util.assertShapesMatch(\n    tensorShape.slice(axisFrom, axisFrom + maskDim),
$mask.shape, \n    `mask's shape must match the first K dimensions of tensor's shape,`);\n\n  let leadingSize = 1;\n
for (let i = axisFrom; i < axisFrom + maskDim; i++) {\n    leadingSize *= tensorShape[i];\n  }\n  const
targetTensorShape = \n    tensorShape.slice(0, axisFrom)\n    .concat([leadingSize, tensorShape.slice(axisFrom
+ maskDim)]);\n  const reshapedTensor = reshape($tensor, targetTensorShape);\n  const reshapedMask =
reshape($mask, [-1]);\n  const positivePositions = await whereAsync(reshapedMask);\n  const indices =
squeeze(positivePositions, [1]);\n\n  const res = gather(reshapedTensor, indices, axisFrom);\n\n  // Ensure no
memory leak.\n  if (tensor !== $tensor) {\n    $tensor.dispose();\n  }\n  if (mask !== $mask) {\n    $mask.dispose();\n
  }\n  indices.dispose();\n  reshapedTensor.dispose();\n  reshapedMask.dispose();\n  positivePositions.dispose();\n\n
return res;\n}\n\nexport const booleanMaskAsync = booleanMaskAsync_;\n", "/**\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { Tensor } from './tensor';\nimport { convertToTensor } from './tensor_util_env';\nimport { TensorLike }
from './types';\nimport { parseAxisParam } from './util';\nimport { abs } from './abs';\nimport * as axis_util from
 './axis_util';\nimport { max } from './max';\nimport { min } from './min';\nimport { op } from './operation';\nimport
 { pow } from './pow';\nimport { reshape } from './reshape';\nimport { scalar } from './scalar';\nimport { sqrt } from
 './sqrt';\nimport { square } from './square';\nimport { sum } from './sum';\n\n/**\n * Computes the norm of scalar,
vectors, and matrices.\n * This function can compute several different vector norms (the 1-norm, the\n * Euclidean
or 2-norm, the inf-norm, and in general the p-norm for p > 0)\n * and matrix norms (Frobenius, 1-norm, and inf-
norm).\n *\n * `js\n * const x = tf.tensor1d([1, 2, 3, 4]);\n * x.norm().print(); // or tf.norm(x)\n * `)\n *\n *
@param x The input array.\n * @param ord Optional. Order of the norm. Supported norm types are\n * following:\n
*\n * | ord | norm for matrices | norm for vectors\n * |-----|-----|-----|\n
 * |'euclidean'|Frobenius norm |2-norm\n * |'fro' |Frobenius norm|t |Infinity
|max(sum(abs(x), axis=1)) |max(abs(x))\n * |-Infinity |min(sum(abs(x), axis=1)) |min(abs(x))\n * |1
|max(sum(abs(x), axis=0)) |sum(abs(x))\n * |2 | |sum(abs(x)^2)^1/2*\n *\n * @param axis
Optional. If axis is null (the default), the input is\n * considered a vector and a single vector norm is computed over
the entire\n * set of values in the Tensor, i.e. norm(x, ord) is equivalent\n * to norm(x.reshape([-1]), ord). If axis is a
integer, the input\n * is considered a batch of vectors, and axis determines the axis in x\n * over which to compute
vector norms. If axis is a 2-tuple of integer it is\n * considered a batch of matrices and axis determines the axes in
NDArray\n * over which to compute a matrix norm.\n * @param keepDims Optional. If true, the norm have the
same dimensionality\n * as the input.\n *\n * @doc {heading: 'Operations', subheading: 'Matrices'}\n */\nfunction
norm_(\n  x: Tensor|TensorLike, ord: number|'euclidean'|'fro' = 'euclidean', \n  axis: number|number[] = null,
keepDims = false): Tensor {\n  x = convertToTensor(x, 'x', 'norm');\n  const norm = normImpl(x, ord, axis);\n  let
keepDimsShape = norm.shape;\n  if (keepDims) {\n    const axes = parseAxisParam(axis, x.shape);\n\n    keepDimsShape =
axis_util.expandShapeToKeepDim(norm.shape, axes);\n  }\n  return reshape(norm,
keepDimsShape);\n}\n\nfunction normImpl(\n  x: Tensor, p: number|string, axis: number|number[] = null): Tensor

```



```

{\n if (x.rank === 0) {\n   return abs(x);\n }\n\n // consider vector when no axis is specified\n if (x.rank !== 1 &&\n axis === null) {\n   return normImpl(reshape(x, [-1]), p, axis);\n }\n\n // vector\n if (x.rank === 1 || typeof axis\n === 'number' ||\n   Array.isArray(axis) && axis.length === 1) {\n   if (p === 1) {\n     return sum(abs(x), axis);\n   }\n   if (p === Infinity) {\n     return max(abs(x), axis);\n   }\n   if (p === -Infinity) {\n     return min(abs(x),\n axis);\n   }\n   if (p === 'euclidean' || p === 2) {\n     // norm(x, 2) = sum(abs(xi) ^ 2) ^ 1/2\n     return\n sqrt(sum(pow(abs(x), scalar(2, 'int32')), axis));\n   }\n\n   throw new Error(`Error in norm: invalid ord value:\n ${p}`);\n }\n\n // matrix (assumption axis[0] < axis[1])\n if (Array.isArray(axis) && axis.length === 2) {\n   if (p\n === 1) {\n     return max(sum(abs(x), axis[0]), axis[1] - 1);\n   }\n   if (p === Infinity) {\n     return\n max(sum(abs(x), axis[1]), axis[0]);\n   }\n   if (p === -Infinity) {\n     return min(sum(abs(x), axis[1]), axis[0]);\n   }\n   if (p === 'fro' || p === 'euclidean') {\n     // norm(x) = sqrt(sum(pow(x, 2)))\n     return sqrt(sum(square(x),\n axis));\n   }\n\n   throw new Error(`Error in norm: invalid ord value: ${p}`);\n }\n\n throw new Error(`Error in\n norm: invalid axis: ${axis}`);\n}\n\nexport const norm = op({norm_});\n", "/**\n * @license\n * Copyright 2018\n Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you\n may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Scalar, Tensor} from './tensor';\nimport {assertTypesMatch} from './tensor_util';\nimport\n {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport * as util from\n './util';\n\nimport {add} from './add';\nimport {div} from './div';\nimport {mul} from './mul';\nimport {op} from\n './operation';\nimport {pow} from './pow';\nimport {scalar} from './scalar';\nimport {sub} from './sub';\n\n/**\n * Compute the moving average of a variable.\n * Without zeroDebias, the moving average operation is defined\n by:\n *  $v += \delta$  where\n *  $\delta = (1 - \text{decay}) * (x - v)$ \n * With zeroDebias (default), the  $\delta$  term\n is scaled to debias the\n * effect of the (assumed) zero-initialization of  $v$ .\n *  $\delta /= (1 - \text{decay} ^ \text{step})$ \n * For more details on the zero-debiasing algorithm, see:\n * https://arxiv.org/abs/1412.6980\n * Note that this\n function is completely stateless and does not keep track of\n * step count. The step count needs to be maintained by\n the caller and passed\n * in as `step`.\n * @param v The current moving average value.\n * @param x New\n input value, must have the same shape and dtype as  $v$ .\n * @param decay The decay factor. Typical values are\n 0.95 and 0.99.\n * @param step Step count.\n * @param zeroDebias: Whether zeroDebias is to be performed\n (default: `true`).\n * @returns The new moving average value.\n * @doc {heading: 'Operations', subheading:\n 'Moving Average'}\n *\nfunction movingAverage_<T extends Tensor>(\n  v: T|TensorLike, x: T|TensorLike,\n decay: number|Scalar,\n  step?: number|Scalar, zeroDebias = true): T {\n  const $v = convertToTensor(v, 'v',\n 'movingAverage');\n  const $x = convertToTensor(x, 'x', 'movingAverage');\n  const $decay =\n convertToTensor(decay, 'decay', 'movingAverage');\n\n  assertTypesMatch($v, $x);\n  util.assert(\n util.arraysEqual($v.shape, $x.shape), () => 'Shape mismatch in v and x');\n\n  const one = scalar(1);\n  const\n oneMinusDecay = sub(one, $decay);\n\n  let update = mul(sub($x, $v), oneMinusDecay);\n  if (zeroDebias) {\n    util.assert(\n      step != null, () => 'When using zeroDebias: true, step is required.);\n    const $step =\n convertToTensor(step, 'step', 'movingAverage');\n    update = div(update, sub(one, pow($decay, $step))); \n  }\n  return add($v, update);\n}\n\nexport const movingAverage = op({movingAverage_});\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n

```

```

*/\n\nimport {ENGINE} from './engine';\nimport {ScatterNd, ScatterNdAttrs, ScatterNdInputs} from
 './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport
 {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {Rank,
 ShapeMap, TensorLike} from './types';\n\nimport {op} from './operation';\nimport * as scatter_nd_util from
 './scatter_nd_util';\n\n/**\n * Creates a new tensor by applying sparse updates to individual\n * values or slices
 within a zero tensor of the given shape tensor according to\n * indices. This operator is the inverse of the
 `tf.gatherND` operator which\n * extracts values or slices from a given tensor.\n * \n * `js\n * const indices =
 tf.tensor2d([[4, 3, 1, 7], [4, 1], 'int32']);\n * const updates = tf.tensor1d([9, 10, 11, 12]);\n * const shape = [8];\n *
 tf.scatterND(indices, updates, shape).print() //[[0, 11, 0, 10, 9, 0, 0, 12]\n * \n * @param indices The tensor
 contains the indices into the output tensor.\n * @param updates The tensor contains the value for the indices.\n *
 @param shape: The shape of the output tensor.\n * @doc {heading: 'Operations', subheading: 'Slicing and
 Joining'}\n */\nfunction scatterND<R extends Rank>(\n  indices: Tensor|TensorLike, updates:
 Tensor|TensorLike,\n  shape: ShapeMap[R]): Tensor<R> {\n  const $indices = convertToTensor(indices, 'indices',
 'scatterND', 'int32');\n  const $updates = convertToTensor(updates, 'updates', 'scatterND');\n
  scatter_nd_util.validateInput($updates, $indices, shape);\n\n  const inputs: ScatterNdInputs = {indices: $indices,
 updates: $updates};\n  const attrs: ScatterNdAttrs = {shape};\n\n  // tslint:disable-next-line: no-unnecessary-type-
assertion\n  return ENGINE.runKernel(\n    ScatterNd, inputs as {} as NamedTensorMap,\n    attrs as {}
 as NamedAttrMap) as Tensor<R>;\n}\n\nexport const scatterND = op({scatterND});\n\n", "/*\n * @license\n *
 Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
 \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
 License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
 agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *
\n\n=====\n\n*/\nimport {Tensor} from './tensor';\n\n/**\n * Validate sparseToDense inputs.\n * \n * @param sparseIndices A 0-
D, 1-D, or 2-D Tensor of type int32.\n * sparseIndices[i] contains the complete index where sparseValues[i] will
 be\n * placed.\n * @param sparseValues A 0-D or 1-D Tensor. Values\n * corresponding to each row of
 sparseIndices, or a scalar value to be used for\n * all sparse indices.\n * @param outputShape number[]. Shape of
 the dense output tensor.\n * @param validateIndices boolean. indice validation is not supported, error\n * will be
 thrown if it is set.\n */\nexport function validateInput(\n  sparseIndices: Tensor, sparseValues: Tensor,\n
  outputShape: number[],\n  defaultValues: Tensor) {\n  if (sparseIndices.dtype !== 'int32') {\n    throw new Error(\n
      'tf.sparseToDense() expects the indices to be int32 type,' +\n      ` but the dtype was ${sparseIndices.dtype}.`);\n
  }\n  if (sparseIndices.rank > 2) {\n    throw new Error(\n      'sparseIndices should be a scalar, vector, or matrix,' +\n
      ` but got shape ${sparseIndices.shape}.`);\n  }\n\n  const numElems = sparseIndices.rank > 0 ?
 sparseIndices.shape[0] : 1;\n  const numDims = sparseIndices.rank > 1 ? sparseIndices.shape[1] : 1;\n\n  if
 (outputShape.length !== numDims) {\n    throw new Error(\n      'outputShape has incorrect number of elements:,'\n
      +\n      ` ${outputShape.length}, should be: ${numDims}.`);\n  }\n\n  const numValues = sparseValues.size;\n  if
 (!(sparseValues.rank === 0 ||\n    sparseValues.rank === 1 && numValues === numElems)) {\n    throw new
 Error(\n      'sparseValues has incorrect shape ' +\n      ` ${sparseValues.shape}, should be [] or
 [${numElems}]`);\n  }\n\n  if (sparseValues.dtype !== defaultValues.dtype) {\n    throw new
 Error('sparseValues.dtype must match defaultValues.dtype');\n  }\n}\n\n", "/*\n * @license\n *
 Copyright 2018
 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
 may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
 http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *

```

```

=====
*/\n\nimport {ENGINE} from './engine';\nimport {SparseToDense, SparseToDenseAttrs, SparseToDenseInputs}
from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport * as sparse_to_dense from
 './ops/sparse_to_dense_util';\nimport {Scalar, Tensor} from './tensor';\nimport {NamedTensorMap} from
 './tensor_types';\nimport {convertToTensor} from './tensor_util_env';\nimport {Rank, ScalarLike, ShapeMap,
TensorLike} from './types';\n\nimport {op} from './operation';\n\n/**\n * Converts a sparse representation into a
dense tensor.\n * Builds an array dense with shape outputShape such that:\n * // If sparseIndices is scalar\n *
dense[i] = (i == sparseIndices ? sparseValues : defaultValue)\n * // If sparseIndices is a vector, then for each i\n *
dense[sparseIndices[i]] = sparseValues[i]\n * // If sparseIndices is an n by d matrix, then for each i in [0, n)\n *
dense[sparseIndices[i][0], ..., sparseIndices[i][d-1]] = sparseValues[i]\n * All other values in dense are set to
defaultValue. If sparseValues is a\n * scalar, all sparse indices are set to this single value.\n * If indices are
repeated the final value is summed over all values for those\n * indices.\n * ```\n * const indices =
tf.tensor1d([4, 5, 6, 1, 2, 3], 'int32');\n * const values = tf.tensor1d([10, 11, 12, 13, 14, 15], 'float32');\n * const shape
= [8];\n * tf.sparseToDense(indices, values, shape).print();\n * ```\n * @param sparseIndices A 0-D, 1-D, or 2-D
Tensor of type int32.\n * sparseIndices[i] contains the complete index where sparseValues[i] will be\n * placed.\n *
@param sparseValues A 0-D or 1-D Tensor. Values\n * corresponding to each row of sparseIndices, or a scalar
value to be used for\n * all sparse indices.\n * @param outputShape Shape of the dense output tensor. the type is
inferred.\n * @param defaultValue Scalar. Value to set for indices not specified in\n * sparseIndices. Defaults to
zero.\n * @doc {heading: 'Operations', subheading: 'Normalization'}\n */\nfunction sparseToDense<R extends
Rank>(\n  sparseIndices: Tensor|TensorLike, sparseValues: Tensor|TensorLike,\n  outputShape: ShapeMap[R],\n  defaultValue: Scalar|ScalarLike = 0): Tensor<R> {\n  const $sparseIndices =\n    convertToTensor(sparseIndices,\n  'sparseIndices', 'sparseToDense', 'int32');\n  const $sparseValues =\n    convertToTensor(sparseValues,\n  'sparseValues', 'sparseToDense');\n  const $defaultValue = convertToTensor(\n    defaultValue, 'defaultValue',\n  'sparseToDense', $sparseValues.dtype);\n\n  sparse_to_dense.validateInput(\n    $sparseIndices, $sparseValues,\n  outputShape, $defaultValue);\n\n  const inputs: SparseToDenseInputs = {\n    sparseIndices: $sparseIndices,\n  sparseValues: $sparseValues,\n    defaultValue: $defaultValue\n  };\n\n  const attrs: SparseToDenseAttrs =
{outputShape};\n\n  return ENGINE.runKernel(\n    SparseToDense, inputs as {} as NamedTensorMap,\n  attrs as {} as NamedAttrMap);\n}\n\nexport const sparseToDense = op({sparseToDense_});\n\n"/**\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */
=====

```

```

=====
*/\n\nimport {ENGINE} from './engine';\nimport {GatherNd, GatherNdInputs} from './kernel_names';\nimport
{Tensor} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {convertToTensor} from
 './tensor_util_env';\nimport {TensorLike} from './types';\nimport {op} from './operation';\n\n/**\n * Gather slices
from input tensor into a Tensor with shape specified by\n * `indices`. \n * `indices` is an K-dimensional integer
tensor, best thought of as a\n * (K-1)-dimensional tensor of indices into input, where each element defines a\n * slice
of input:\n * output[\\(i_0, ..., i_{K-2}\\)] = input[indices[\\(i_0, ..., i_{K-2}\\)]]\n * Whereas in `tf.gather`,
`indices` defines slices into the first dimension of\n * input, in `tf.gatherND`, `indices` defines slices into the first N
dimensions\n * of input, where N = indices.shape[-1].\n * The last dimension of indices can be at most the rank
of input:\n * indices.shape[-1] <= input.rank\n * The last dimension of `indices` corresponds to elements\n * (if
indices.shape[-1] == input.rank) or slices\n * (if indices.shape[-1] < input.rank) along dimension indices.shape[-1]
of\n * input.\n * The output tensor has shape\n * indices.shape[:-1] + input.shape[indices.shape[-1]:]\n * Note
that on CPU, if an out of bound index is found, an error is returned. On\n * GPU, if an out of bound index is found,
a 0 is stored in the corresponding\n * output value.\n * ```\n * const indices = tf.tensor2d([0, 1, 1, 0], [2,2],
=====

```

```

'int32');\n * const input = tf.tensor2d([9, 10, 11, 12], [2, 2]);\n * tf.gatherND(input, indices).print() // [10, 11]\n *
``\n *\n * @param x The tensor from which to gather values.\n * @param indices Index tensor, must be of type
int32.\n *\n * @doc {heading: 'Operations', subheading: 'Slicing and Joining'}\n *\nfunction gatherND_(x:
Tensor|TensorLike, indices: Tensor|TensorLike): Tensor {\n  const $indices = convertToTensor(indices, 'indices',
'gatherND', 'int32');\n  const $x = convertToTensor(x, 'x', 'gatherND');\n\n  const inputs: GatherNdInputs = {params:
$x, indices: $indices};\n\n  return ENGINE.runKernel(GatherNd, inputs as {} as NamedTensorMap);\n}\n\n\nexport
const gatherND = op({gatherND_});\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
\n
*\n\nimport {Tensor} from './tensor';\nimport * as util from './util';\n\n/**\n * Normalize noise shape based on
provided tensor and noise shape.\n *\n * @param x Tensor.\n * @param noiseShape The shape for the randomly
generated keep/drop flags, as\n * an array of numbers. Optional.\n * @returns Normalized noise shape.\n
*\nexport function getNoiseShape(x: Tensor, noiseShape?: number[]): number[] {\n  if (noiseShape == null) {\n
return x.shape.slice();\n  }\n  if (util.arraysEqual(x.shape, noiseShape)) {\n    return noiseShape;\n  }\n  if
(x.shape.length === noiseShape.length) {\n    const newDimension: number[] = [];\n    for (let i = 0; i <
x.shape.length; i++) {\n      if (noiseShape[i] == null && x.shape[i] != null) {\n
newDimension.push(x.shape[i]);\n      } else {\n        newDimension.push(noiseShape[i]);\n      }\n    }\n    return
newDimension;\n  }\n  return noiseShape;\n}\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
\n
*\n\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike}
from './types';\nimport * as util from './util';\n\nimport {add} from './add';\nimport {div} from './div';\nimport
{getNoiseShape} from './dropout_util';\nimport {floor} from './floor';\nimport {mul} from './mul';\nimport {op}
from './operation';\nimport {randomUniform} from './random_uniform';\n\n/**\n * Computes dropout.\n *\n * `js`\n
*\n * const x = tf.tensor1d([1, 2, 2, 1]);\n * const rate = 0.75;\n * const output = tf.dropout(x, rate);\n * output.print();\n
*\n *\n * @param x A floating point Tensor or TensorLike.\n * @param rate A float in the range [0, 1). The
probability that each element\n * of x is discarded.\n * @param noiseShape An array of numbers of type int32,
representing the\n * shape for randomly generated keep/drop flags. If the noiseShape has null\n * value, it will be
automatically replaced with the x's relative dimension\n * size. Optional.\n * @param seed Used to create random
seeds. Optional.\n * @returns A Tensor of the same shape of x.\n *\n * @doc {heading: 'Operations', subheading:
'Dropout'}\n *\nfunction dropout_(\n  x: Tensor|TensorLike, rate: number, noiseShape?: number[],\n  seed?:
number|string): Tensor {\n  const $x = convertToTensor(x, 'x', 'dropout');\n\n  util.assert(\n    $x.dtype ===
'float32',\n    () => `x has to be a floating point tensor since it's going to be ` +\n    `scaled, but got a
${$x.dtype} tensor instead.`);\n  util.assert(\n    rate >= 0 && rate < 1,\n    () => `rate must be a float in the range
[0, 1), but got ${rate}.`);\n\n  if (rate === 0) {\n    return x instanceof Tensor ? $x.clone() : $x;\n  }\n\n  const
$noiseShape = getNoiseShape($x, noiseShape);\n  const keepProb = 1 - rate;\n  const multiplier = div(\n    floor(add(randomUniform($noiseShape, 0, 1, 'float32', seed),
keepProb)),\n    keepProb);\n\n  return mul($x,
multiplier);\n}\n\n\nexport const dropout = op({dropout_});\n"/**\n * @license\n * Copyright 2019 Google LLC.

```

All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Tensor1D} from './tensor';\nimport {tensor1d} from './tensor1d';\n\nexport function enclosingPowerOfTwo(value: number) {\n  // Return 2**N for integer N such that 2**N >= value.\n  return Math.floor(Math.pow(2, Math.ceil(Math.log(value) / Math.log(2.0))));\n}\n\nexport function cosineWindow(\n  windowLength: number, a: number, b: number): Tensor1D {\n  const even = 1 - windowLength % 2;\n  const newValues = new Float32Array(windowLength);\n  for (let i = 0; i < windowLength; ++i) {\n    const cosArg = (2.0 * Math.PI * i) / (windowLength + even - 1);\n    newValues[i] = a - b * Math.cos(cosArg);\n  }\n  return tensor1d(newValues, 'float32');\n}\n\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Tensor} from './tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from './types';\nimport {assert, assertShapesMatch, getTypedArrayFromDType} from './util';\nimport {tensor} from './tensor';\n\n/**\n * Returns whether the targets are in the top K predictions.\n * \n * `predictions` is a 2-D or higher Tensor with last dimension being at least `k`.\n * `targets` is a 1-D or higher Tensor.\n * `k` is an optional Number of top elements to look at for computing precision,\n * default to 1.\n * \n * @param predictions 2-D or higher Tensor\n * @param targets 1-D or higher Tensor\n * @param k Optional Number of top elements to look at for computing precision,\n * default to 1.\n * @doc {heading: 'Operations', subheading: 'Evaluation'}\n *\n * @async function inTopKAsync<T extends Tensor, U extends Tensor>(\n *   predictions: T|TensorLike, targets: U|TensorLike, k = 1): Promise<U> {\n *     const $predictions = convertToTensor(predictions, 'predictions', 'inTopK');\n *     const $targets = convertToTensor(targets, 'targets', 'inTopK');\n *     assert(\n *       $predictions.rank > 1,\n *       () => 'inTopK() expects the predictions to be of rank 2 or higher, '\n *         + $predictions.rank + `but got ${$predictions.rank}`);\n *     assert(\n *       $predictions.rank - 1 === $targets.rank,\n *       () => `predictions rank should be 1 larger than ` +\n *         $targets.rank + `but got predictions rank ` +\n *         `${$predictions.rank} and targets rank ${$targets.rank}`);\n *     assertShapesMatch(\n *       $predictions.shape.slice(0, $predictions.shape.length - 1),\n *       $targets.shape,\n *       `predictions's shape should be align with the targets' shape, '\n *         + $predictions.shape.slice(0, $predictions.shape.length - 1) +\n *         'except the last dimension.`);\n *     const lastDim = $predictions.shape[$predictions.shape.length - 1];\n *     assert(\n *       k > 0 && k <= lastDim,\n *       () => `k` passed to inTopK() must be > 0 && <= the predictions last ` +\n *         `dimension (${lastDim}), but got ${k}`);\n *     const predictionsVals = await $predictions.data();\n *     const targetsVals = await $targets.data();\n *     // Reshape predictionsVals into a 2d tensor [batch, lastDim]\n *     // and look up topK along lastDim.\n *     const [batch, size] = [predictionsVals.length / lastDim, lastDim];\n *     const precision = getTypedArrayFromDType('bool', batch);\n *     for (let b = 0; b < batch; b++) {\n *       const offset = b * size;\n *       const vals = predictionsVals.subarray(offset, offset + size);\n *       const valAndInd: Array<{value: number, index: number}> = [];\n *       for (let i = 0; i < vals.length; i++) {\n *         valAndInd.push({value: vals[i], index: i});\n *       }\n *       valAndInd.sort((a, b) => b.value - a.value);\n *       precision[b] = 0;\n *       for (let i = 0; i < k; i++) {\n *         if (valAndInd[i].index === targetsVals[b]) {\n *           precision[b] = 1;\n *           break;\n *         }\n *       }\n *     }\n *     if (predictions !== $predictions) {\n *       $predictions.dispose();\n *     }\n *     if (targets !== $targets) {\n *       $targets.dispose();\n *     }\n *     // Output precision has the same shape as targets.\n *     return tensor(precision, $targets.shape, 'bool') as U;\n *   }\n *\n * @export
```

const inTopKAsync = inTopKAsync_;\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {ENGINE} from './engine';\nimport {Conv2DBackpropFilter, Conv2DBackpropFilterAttrs, Conv2DBackpropFilterInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport * as util from './util';\nimport * as conv_util from './conv_util';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes the derivative of the filter of a 2D convolution.\n *\n * @param x The input tensor, of rank 4 or rank 3 of shape\n *   [batch, height, width, inChannels]. If rank 3, batch of 1 is assumed.\n * @param dy The dy image, of rank 4 or rank 3, of shape\n *   [batch, height, width, outDepth]. If rank 3, batch of 1 is assumed.\n * @param filterShape The shape of the filter, length 4,\n *   [filterHeight, filterWidth, inDepth, outDepth].\n * @param strides The strides of the convolution: [strideHeight,\n *   strideWidth].\n * @param pad A string from: 'same', 'valid'. The type of padding algorithm\n *   used in the forward prop of the op.\n * @param dataFormat: An optional string from: 'NHWC', 'NCHW'. Defaults to\n *   'NHWC'. Specify the data format of the input and output data. With the\n *   default format 'NHWC', the data is stored in the order of: [batch,\n *   height, width, channels].\n * @param dimRoundingMode A string from: 'ceil', 'round', 'floor'. If none is\n *   provided, it will default to truncate.\n */\nfunction conv2DBackpropFilter_<T extends Tensor3D|Tensor4D>(\n  x: T, dy: T, filterShape: [number, number, number, number],\n  strides: [number, number]number, pad: 'valid'|'same'|number|conv_util.ExplicitPadding,\n  dataFormat: 'NHWC'|'NCHW' = 'NHWC',\n  dimRoundingMode?: 'floor'|'round'|'ceil'): Tensor4D {\n  let x4D = x as Tensor4D;\n  if (x.rank === 3) {\n    x4D = reshape(x, [1, x.shape[0], x.shape[1], x.shape[2]]);\n  }\n  let dy4D = dy as Tensor4D;\n  if (dy.rank === 3) {\n    dy4D = reshape(dy, [1, dy.shape[0], dy.shape[1], dy.shape[2]]);\n  }\n  util.assert(\n    x4D.rank === 4,\n    () => `Error in conv2dDerFilter: input must be rank 4, but got shape ` +\n      `${x4D.shape}`);\n  util.assert(\n    dy4D.rank === 4,\n    () => `Error in conv2dDerFilter: dy must be rank 4, but got shape ` +\n      `${dy4D.shape}`);\n  util.assert(\n    filterShape.length === 4,\n    () => `Error in conv2dDerFilter: filterShape must be length 4, but got ` +\n      `${filterShape}`);\n  const inDepth = dataFormat === 'NHWC' ? x4D.shape[3] : x4D.shape[1];\n  const outDepth = dataFormat === 'NHWC' ? dy4D.shape[3] : dy4D.shape[1];\n  util.assert(\n    inDepth === filterShape[2],\n    () => `Error in conv2dDerFilter: depth of input ${inDepth}) must ` +\n      `match input depth in filter (${filterShape[2]});`);\n  util.assert(\n    outDepth === filterShape[3],\n    () => `Error in conv2dDerFilter: depth of dy (${outDepth}) must ` +\n      `match output depth for filter (${filterShape[3]});`);\n  if (dimRoundingMode != null) {\n    util.assert(\n      util.isInt(pad as number),\n      () => `Error in conv2dDerFilter: pad must be an integer when using, ` +\n        `${dimRoundingMode} but got pad ${pad}`);\n  }\n  const inputs: Conv2DBackpropFilterInputs = {x: x4D, dy: dy4D};\n  const attrs: Conv2DBackpropFilterAttrs = {\n    strides, pad, dataFormat, dimRoundingMode, filterShape};\n  // tslint:disable-next-line: no-unnecessary-type-assertion\n  return ENGINE.runKernel(\n    Conv2DBackpropFilter, inputs as {} as NamedTensorMap,\n    attrs as {} as NamedAttrMap) as Tensor4D;\n}\n\nexport const conv2DBackpropFilter = op({conv2DBackpropFilter_});\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {Tensor} from './tensor';\n\nimport * as broadcast_util from './broadcast_util';\nimport {elu} from './elu';\nimport {Activation} from './fused_types';\nimport {leakyRelu} from './leaky_relu';\nimport {mul} from './mul';\nimport {prelu} from './prelu';\nimport {relu} from './relu';\nimport {relu6} from './relu6';\nimport {reshape} from './reshape';\nimport {step} from './step';\nimport {sum} from './sum';\n\n// Returns gradient for fused activation.\nexport function getFusedDyActivation(\n  dy: Tensor, y: Tensor, activation: Activation): Tensor {\n  (activation === null || activation === 'linear') {\n    return dy;\n  }\n  if (activation === 'relu') {\n    return mul(dy, step(y));\n  }\n  throw new Error(`Cannot compute gradient for fused activation ${activation}.`);\n}\n\n// Returns gradient for fused bias.\nexport function getFusedBiasGradient(\n  bias: Tensor, dyActivation: Tensor): Tensor {\n  let res = dyActivation;\n  const reduceAxes = broadcast_util.getReductionAxes(bias.shape, dyActivation.shape);\n  if (reduceAxes.length > 0) {\n    res = sum(res, reduceAxes);\n  }\n  return reshape(res, bias.shape);\n}\n\nexport function applyActivation(\n  x: Tensor, activation: Activation, preluActivationWeights?: Tensor,\n  leakyreluAlpha?: number): Tensor {\n  if (activation === 'linear') {\n    return x;\n  } else if (activation === 'relu') {\n    return relu(x);\n  } else if (activation === 'elu') {\n    return elu(x);\n  } else if (activation === 'relu6') {\n    return relu6(x);\n  } else if (activation === 'prelu') {\n    return prelu(x, preluActivationWeights);\n  } else if (activation === 'leakyrelu') {\n    return leakyRelu(x, leakyreluAlpha);\n  }\n  throw new Error(`Unknown fused activation ${activation}.`);\n}\n\n// Whether we should call fused ops.\nexport const shouldFuse = (gradientDepth: number, activation: Activation) => {\n  const gradientMode = gradientDepth > 0;\n  return !gradientMode || activation === 'linear';\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====
*\n\nimport {ENGINE} from './../engine';\nimport {customGrad} from './../gradients';\nimport {FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs} from './../kernel_names';\nimport {NamedAttrMap} from './../kernel_registry';\nimport {Tensor, Tensor3D, Tensor4D} from './../tensor';\nimport {GradSaveFunc, NamedTensorMap} from './../tensor_types';\nimport {makeTypesMatch} from './../tensor_util';\nimport {convertToTensor} from './../tensor_util_env';\nimport {TensorLike} from './../types';\nimport * as util from './../util';\nimport {add} from './add';\nimport * as broadcast_util from './broadcast_util';\nimport {conv2d as unfusedConv2d} from './conv2d';\nimport {conv2DBackpropFilter} from './conv2d_backprop_filter';\nimport {conv2DBackpropInput} from './conv2d_backprop_input';\nimport * as conv_util from './conv_util';\nimport {Activation} from './fused_types';\nimport {applyActivation, getFusedBiasGradient, getFusedDyActivation, shouldFuse} from './fused_util';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes a 2D convolution over the input x, optionally fused with adding a\n * bias and applying an activation.\n *\n * @param inputDepth The depth of the input tensor, must be 2.\n * @param inShape The shape of the input tensor, must be [2, 2, 2, inputDepth].\n * @param outputDepth The depth of the output tensor, must be 2.\n * @param fSize The size of the filter, must be 1.\n * @param pad The padding of the filter, must be 0.\n * @param strides The strides of the filter, must be 1.\n * @param x The input tensor, of rank 4 or rank 3, of shape [batch, height, width, inChannels]. If rank 3, batch of 1 is assumed.\n * @param filter The filter, rank 4, of shape [filterHeight, filterWidth, inDepth, outDepth].\n * @param strides The strides of the convolution: [strideHeight, strideWidth].\n * @param pad The type of padding algorithm. - 'same' and stride 1: output will be of same size as input, regardless of filter size. - 'valid' output will be smaller than input if filter is larger than 1x1. - For more info, see this guide: [https://www.tensorflow.org/api_guides/python/nn#Convolution]\n */\n

```

https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dataFormat An optional string from: \"NHWC\", \"NCHW\". Defaults to\n * \"NHWC\". Specify the data format of the input and output data. With the\n * default format \"NHWC\", the data is stored in the order of: [batch,\n * height, width, channels]. Only \"NHWC\" is currently supported.\n * @param dilations The dilation rates: `[dilationHeight, dilationWidth]`\n * in which we sample input values across the height and width dimensions\n * in atrous convolution. Defaults to `[1, 1]`. If `dilations` is a single\n * number, then `dilationHeight == dilationWidth`. If it is greater than\n * 1, then all values of `strides` must be 1.\n * @param dimRoundingMode A string from: 'ceil', 'round', 'floor'. If none is\n * provided, it will default to truncate.\n * @param bias Tensor to be added to the result.\n * @param activation Name of activation kernel (defaults to `linear`) to be\n * applied\n * after biasAdd.\n * @param preluActivationWeights Tensor of prelu weights to be applied as part\n * of a `prelu` activation, typically the same shape as `x`.\n * @param leakyreluAlpha Optional. Alpha to be applied as part of a `leakyrelu`\n * activation.\n */\nfunction fusedConv2d<T extends Tensor3D|Tensor4D>({\n x,\n filter,\n strides,\n pad,\n dataFormat = 'NHWC',\n dilations = [1, 1],\n dimRoundingMode,\n bias,\n activation = 'linear',\n preluActivationWeights,\n leakyreluAlpha\n}: {\n x: T|TensorLike,\n filter: Tensor4D|TensorLike,\n strides: [number, number]|number,\n pad: 'valid'|'same'|number|conv_util.ExplicitPadding,\n dataFormat?: 'NHWC'|'NCHW',\n dilations?: [number, number]|number,\n dimRoundingMode?: 'floor'|'round'|'ceil',\n bias?: Tensor|TensorLike,\n activation?: Activation,\n preluActivationWeights?: Tensor,\n leakyreluAlpha?: number\n}): T {\n activation = activation || 'linear';\n if (shouldFuse(ENGINE.state.gradientDepth, activation) === false) {\n let result = unfusedConv2d(\n x, filter, strides, pad, dataFormat, dilations, dimRoundingMode);\n if (bias != null) {\n result = add(result, bias);\n }\n return applyActivation(\n result, activation, preluActivationWeights, leakyreluAlpha) as T;\n }\n const \$x = convertToTensor(x, 'x', 'conv2d');\n const \$filter = convertToTensor(filter, 'filter', 'conv2d');\n let x4D = \$x as Tensor4D;\n let reshapedTo4D = false;\n if (\$x.rank === 3) {\n reshapedTo4D = true;\n x4D = reshape(\$x, [1, \$x.shape[0], \$x.shape[1], \$x.shape[2]]);\n }\n util.assert(\n x4D.rank === 4,\n () => `Error in fused conv2d: input must be rank 4, but got rank ` +\n `\${x4D.rank}.`);\n util.assert(\n \$filter.rank === 4,\n () => `Error in fused conv2d: filter must be rank 4, but got rank ` +\n `\${\$filter.rank}.`);\n if (dimRoundingMode != null) {\n util.assert(\n util.isInt(pad as number),\n () => `Error in fused conv2d: pad must be an integer when using, ` +\n `dimRoundingMode \${dimRoundingMode} but got pad \${pad}.`);\n }\n util.assert(\n x4D.shape[3] === \$filter.shape[2],\n () => `Error in conv2d: depth of input (\${x4D.shape[3]}) must match ` +\n `input depth for filter \${\$filter.shape[2]}.`);\n util.assert(\n conv_util.eitherStridesOrDilationsAreOne(strides, dilations),\n () => `Error in conv2D: Either strides or dilations must be 1.` +\n `Got strides \${strides} and dilations \${dilations}`);\n util.assert(\n dataFormat === 'NHWC',\n () => `Error in conv2d: got dataFormat of \${\n dataFormat} but only NHWC is currently supported.`);\n const convInfo = conv_util.computeConv2DInfo(\n x4D.shape, \$filter.shape, strides, dilations, pad, dimRoundingMode);\n let \$bias: Tensor;\n if (bias != null) {\n \$bias = convertToTensor(bias, 'bias', 'fused conv2d');\n [\$bias] = makeTypesMatch(\$bias, \$x);\n broadcast_util.assertAndGetBroadcastShape(convInfo.outShape, \$bias.shape);\n }\n let \$preluActivationWeights: Tensor;\n if (preluActivationWeights != null) {\n \$preluActivationWeights = convertToTensor(\n preluActivationWeights, 'prelu weights', 'fused conv2d');\n }\n const grad = (dy: Tensor4D, saved: Tensor[]) => {\n const [\$filter, x4D, y, \$bias] =\n saved as [Tensor4D, Tensor4D, Tensor4D, Tensor];\n const dyActivation = getFusedDyActivation(dy, y, activation) as Tensor4D;\n util.assert(\n conv_util.tupleValuesAreOne(dilations),\n () => `Error in gradient of fused conv2D: ` +\n `dilation rates greater than 1 ` +\n `are not yet supported in gradients. Got dilations \${dilations}`);\n const xDer =\n conv2DBackpropInput(x4D.shape, dyActivation, \$filter, strides, pad);\n const filterDer =\n conv2DBackpropFilter(x4D, dyActivation, \$filter.shape, strides, pad);\n const der: Tensor[] = [xDer, filterDer];\n if (\$bias != null) {\n const biasDer = getFusedBiasGradient(\$bias, dyActivation);\n der.push(biasDer);\n }\n return der;\n };\n const inputs: FusedConv2DInputs = {\n x: x4D,\n filter: \$filter,\n bias: \$bias,\n preluActivationWeights: \$preluActivationWeights\n };\n const attrs: FusedConv2DAttrs = {\n strides,\n pad,\n dataFormat,\n dilations,\n dimRoundingMode,\n activation,\n


```

leakyreluAlpha\n };\n\n // Depending on the the params passed in we will have different number of\n // inputs and thus a a different number of elements in the gradient.\n if (bias == null) {\n   const customOp =\n   customGrad((x4D: Tensor4D, filter: Tensor4D, save: GradSaveFunc) => {\n     let res: Tensor4D|Tensor3D =\n     // tslint:disable-next-line: no-unnecessary-type-assertion\n     ENGINE.runKernel(\n     FusedConv2D, inputs as {} as NamedTensorMap,\n     attrs as {} as NamedAttrMap);\n     save([filter, x4D, res]);\n     if (reshapedTo4D) {\n     // tslint:disable-next-line: no-unnecessary-type-assertion\n     res = reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as\n     Tensor3D;\n     }\n     return {value: res, gradFunc: grad};\n   });\n   return customOp(x4D, $filter) as T;\n } else {\n   const customOpWithBias = customGrad(\n     (x4D: Tensor4D, filter: Tensor4D, bias: Tensor, save: GradSaveFunc) => {\n     let res: Tensor4D|Tensor3D = ENGINE.runKernel(\n     FusedConv2D, inputs as {} as NamedTensorMap,\n     attrs as {} as NamedAttrMap);\n     save([filter, x4D, res, bias]);\n     if (reshapedTo4D) {\n     // tslint:disable-next-line: no-unnecessary-type-assertion\n     res = reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as\n     Tensor3D;\n     }\n     return {value: res, gradFunc: grad};\n   });\n   return customOpWithBias(x4D, $filter, $bias) as T;\n } }\n\nexport const conv2d = op({fusedConv2d_});\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {DepthwiseConv2dNativeBackpropFilter, DepthwiseConv2dNativeBackpropFilterAttrs, DepthwiseConv2dNativeBackpropFilterInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {op} from './operation';\nimport {reshape} from './reshape';\n\nfunction depthwiseConv2dNativeBackpropFilter_<T extends Tensor3D|Tensor4D>(\n  x: T, dy: T, filterShape: [number, number, number, number],\n  strides: [number, number]|number, pad: 'valid'|'same'|number,\n  dilations: [number, number]|number = [1, 1],\n  dimRoundingMode?: 'floor'|'round'|'ceil'):\n  Tensor4D {\n  let x4D = x as Tensor4D;\n  if (x.rank === 3) {\n    x4D = reshape(x, [1, x.shape[0], x.shape[1], x.shape[2]]);\n  }\n  let dy4D = dy as Tensor4D;\n  if (dy4D.rank === 3) {\n    dy4D = reshape(dy, [1, dy.shape[0], dy.shape[1], dy.shape[2]]);\n  }\n  const inputs: DepthwiseConv2dNativeBackpropFilterInputs = {x: x4D, dy: dy4D};\n  const attrs: DepthwiseConv2dNativeBackpropFilterAttrs =\n  {strides, pad, dimRoundingMode, dilations, filterShape};\n  // tslint:disable-next-line: no-unnecessary-type-assertion\n  return ENGINE.runKernel(\n    DepthwiseConv2dNativeBackpropFilter,\n    inputs as {} as NamedTensorMap, attrs as {} as NamedAttrMap) as\n    Tensor4D;\n  }\n\nexport const depthwiseConv2dNativeBackpropFilter =\n  op({depthwiseConv2dNativeBackpropFilter_});\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*\nimport {ENGINE} from './engine';\nimport {DepthwiseConv2dNativeBackpropInput, DepthwiseConv2dNativeBackpropInputAttrs, DepthwiseConv2dNativeBackpropInputInputs} from './kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor3D, Tensor4D} from './tensor';\nimport {NamedTensorMap} from './tensor_types';\nimport {op} from './operation';\nimport {reshape}

```

```

from './reshape';\n\nfunction depthwiseConv2dNativeBackpropInput_<T extends Tensor3D|Tensor4D>(\n  xShape:
[number, number, number, number], dy: T, filter: Tensor4D,\n  strides: [number, number]|number, pad:
'valid'|'same'|number,\n  dilations: [number, number]|number = [1, 1],\n  dimRoundingMode?: 'floor'|'round'|'ceil'):
T {\n  let dy4D = dy as Tensor4D;\n  let reshapedTo4D = false;\n  if (dy.rank === 3) {\n    reshapedTo4D = true;\n    dy4D = reshape(dy, [1, dy.shape[0], dy.shape[1], dy.shape[2]]);\n  }\n  const inputs:
DepthwiseConv2dNativeBackpropInputInputs = {dy: dy4D, filter};\n  const attrs:
DepthwiseConv2dNativeBackpropInputAttrs =\n    {strides, pad, dimRoundingMode, dilations, inputShape:
xShape};\n  const res =\n    // tslint:disable-next-line: no-unnecessary-type-assertion\n    ENGINE.runKernel(\n      DepthwiseConv2dNativeBackpropInput, inputs as {} as NamedTensorMap,\n      attrs as {} as
NamedAttrMap) as T;\n  if (reshapedTo4D) {\n    return reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as
T;\n  }\n  return res;\n}\n\nexport const depthwiseConv2dNativeBackpropInput =\n  op({depthwiseConv2dNativeBackpropInput_});\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {ENGINE} from './engine';\nimport {customGrad} from './gradients';\nimport
{FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs, FusedDepthwiseConv2DInputs} from
'./kernel_names';\nimport {NamedAttrMap} from './kernel_registry';\nimport {Tensor, Tensor3D, Tensor4D}
from './tensor';\nimport {GradSaveFunc, NamedTensorMap} from './tensor_types';\nimport
{makeTypesMatch} from './tensor_util';\nimport {convertToTensor} from './tensor_util_env';\nimport
{TensorLike} from './types';\nimport * as util from './util';\nimport {add} from './add';\nimport * as
broadcast_util from './broadcast_util';\nimport * as conv_util from './conv_util';\nimport {depthwiseConv2d
as unfusedDepthwiseConv2d} from './depthwise_conv2d';\nimport {depthwiseConv2dNativeBackpropFilter} from
'./depthwise_conv2d_native_backprop_filter';\nimport {depthwiseConv2dNativeBackpropInput} from
'./depthwise_conv2d_native_backprop_input';\nimport {Activation} from './fused_types';\nimport
{applyActivation, getFusedBiasGradient, getFusedDyActivation, shouldFuse} from './fused_util';\nimport {op}
from './operation';\nimport {reshape} from './reshape';\n\n/**\n * Computes depthwise 2D convolution, optionally
fused with adding a\n * bias and applying an activation.\n * Given a 4D `input` array and a `filter` array of
shape\n * `[filterHeight, filterWidth, inChannels, channelMultiplier]` containing\n * `inChannels` convolutional
filters of depth 1, this op applies a\n * different filter to each input channel (expanding from 1 channel to\n *
`channelMultiplier` channels for each), then concatenates the results\n * together. The output has `inChannels *
channelMultiplier` channels.\n * See\n *
[https://www.tensorflow.org/api_docs/python/tf/nn/depthwise_conv2d](\n *
https://www.tensorflow.org/api_docs/python/tf/nn/depthwise_conv2d)\n * for more details.\n * @param obj An
object with the following properties:\n * @param x The input tensor, of rank 4 or rank 3, of shape\n * `[batch,
height, width, inChannels]`. If rank 3, batch of 1 is\n * assumed.\n * @param filter The filter tensor, rank 4, of
shape\n * `[filterHeight, filterWidth, inChannels, channelMultiplier]`. \n * @param strides The strides of the
convolution: `[strideHeight,\n * strideWidth]`. If strides is a single number, then `strideHeight ==\n *
strideWidth`. \n * @param pad The type of padding algorithm.\n * - `same` and stride 1: output will be of same size
as input,\n * regardless of filter size.\n * - `valid`: output will be smaller than input if filter is larger\n *
than 1x1.\n * - For more info, see this guide:\n * [https://www.tensorflow.org/api_guides/python/nn#Convolution](\n *
https://www.tensorflow.org/api_guides/python/nn#Convolution)\n * @param dilations The dilation rates:
`[dilationHeight,\n * dilationWidth]`\n * in which we sample input values across the height and width dimensions\n *
in atrous convolution. Defaults to `[1, 1]`. If `rate` is a single\n * number, then `dilationHeight ==

```

dilationWidth`. If it is greater than $\text{ceil}(\frac{\text{dilationWidth}}{\text{kernelWidth}})$, then all values of `strides` must be 1.

@param dataFormat: An optional string from: "NHWC", "NCHW". Defaults to "NHWC". Specify the data format of the input and output data. With the default format "NHWC", the data is stored in the order of: [batch, height, width, channels]. Only "NHWC" is currently supported.

@param dimRoundingMode: A string from: 'ceil', 'round', 'floor'. If none is provided, it will default to truncate.

@param bias: Tensor to be added to the result.

@param activation: Name of activation kernel (defaults to 'linear').

@param preluActivationWeights: Tensor of prelu weights to be applied as part of a `prelu` activation, typically the same shape as `x`.

@param leakyreluAlpha: Optional. Alpha to be applied as part of a `leakyrelu` activation.

```

function fusedDepthwiseConv2d_<T extends Tensor3D|Tensor4D>({
  x: T,
  filter: Tensor4D|TensorLike,
  strides: [number, number]|number,
  pad: 'valid'|'same'|number,
  dataFormat?: 'NHWC'|'NCHW',
  dilations?: [number, number]|number,
  dimRoundingMode?: 'floor'|'round'|'ceil',
  bias?: Tensor|TensorLike,
  activation?: Activation,
  preluActivationWeights?: Tensor,
  leakyreluAlpha?: number
}): T {
  if (shouldFuse(ENGINE.state.gradientDepth, activation) === false) {
    let result = unfusedDepthwiseConv2d(x, filter, strides, pad, dataFormat, dilations, dimRoundingMode);
    if (bias != null) result = add(result, bias);
    return applyActivation(result, activation, preluActivationWeights, leakyreluAlpha) as T;
  }
  const $x = convertToTensor(x, 'x', 'depthwiseConv2d');
  const $filter = convertToTensor(filter, 'filter', 'depthwiseConv2d');
  let x4D = $x as Tensor4D;
  let reshapedTo4D = false;
  if ($x.rank === 3) {
    reshapedTo4D = true;
    x4D = reshape($x, [1, $x.shape[0], $x.shape[1], $x.shape[2]]);
  }
  util.assert(x4D.rank === 4, () => `Error in fused depthwiseConv2d: input must be rank 4, but got ` + rank($x4D.rank).`);
  util.assert($filter.rank === 4, () => `Error in fused depthwiseConv2d: filter must be rank 4, ` + `but got rank ${$filter.rank}.`);
  util.assert(x4D.shape[3] === $filter.shape[2], () => `Error in fused depthwiseConv2d: number of input channels ` + `(${x4D.shape[3]}) must match the inChannels dimension in ` + `filter ${$filter.shape[2]}.`);
  if (dilations == null) {
    dilations = [1, 1];
  }
  util.assert(conv_util.eitherStridesOrDilationsAreOne(strides, dilations), () => `Error in fused depthwiseConv2d: Either strides or dilations must ` + `be 1. Got strides ${strides} and dilations ${dilations}.`);
  if (dimRoundingMode != null) {
    util.assert(util.isInt(pad as number), () => `Error in fused depthwiseConv2d: pad must be an integer when ` + `using dimRoundingMode ${dimRoundingMode} but got pad ${pad}.`);
  }
  const convInfo = conv_util.computeConv2DInfo(x4D.shape, $filter.shape, strides, dilations, pad, dimRoundingMode, true /* depthwise */);
  let $bias: Tensor;
  if (bias != null) {
    $bias = convertToTensor(bias, 'bias', 'fused conv2d');
    [$bias] = makeTypesMatch($bias, $x);
    broadcast_util.assertAndGetBroadcastShape(convInfo.outShape, $bias.shape);
  }
  let $preluActivationWeights: Tensor;
  if (preluActivationWeights != null) {
    $preluActivationWeights = convertToTensor(preluActivationWeights, 'prelu weights', 'fused depthwiseConv2d');
  }
  const grad = (dy: Tensor4D, saved: Tensor[]) => {
    util.assert(conv_util.tupleValuesAreOne(dilations), () => `Error in gradient of fused depthwiseConv2d: dilation rates ` + `greater than 1 are not yet supported. Got dilations ` + `${dilations}.`);
    const [$filter, x4D, y, bias] = saved;
    const dyActivation = getFusedDyActivation(dy, y, activation) as Tensor4D;
    const xDer = depthwiseConv2dNativeBackpropInput(x4D as Tensor4D).shape, dyActivation, $filter as Tensor4D, strides, pad, dilations, dimRoundingMode);
    const filterDer = depthwiseConv2dNativeBackpropFilter(x4D as Tensor4D, dyActivation, ($filter as Tensor4D).shape, strides, pad, dilations, dimRoundingMode);
    if (bias != null) {
      const biasDer = getFusedBiasGradient($bias, dyActivation);
      return [xDer, filterDer, biasDer];
    }
    return [xDer, filterDer];
  };
  const inputs: FusedDepthwiseConv2DInputs = {
    x: x4D,
    filter: $filter,
    bias: $bias,
    preluActivationWeights: $preluActivationWeights
  };
  const attrs: FusedDepthwiseConv2DAttrs = {
    strides,
    pad,
    dataFormat,
    dilations,
    dimRoundingMode,
    activation,
    leakyreluAlpha
  };
  // Depending on the the params passed in we will have different number of // inputs and thus a a different number of elements in the gradient.
  if (bias == null) {
    const customOp = customGrad((x4D: Tensor4D,

```

```

filter: Tensor4D, save: GradSaveFunc) => {\n      // tslint:disable-next-line: no-unnecessary-type-assertion\n
let res: Tensor4D|Tensor3D = ENGINE.runKernel(\n      FusedDepthwiseConv2D, inputs as {} as
NamedTensorMap,\n      attrs as {} as NamedAttrMap);\n\n      save([filter, x4D, res]);\n\n      if
(reshapedTo4D) {\n      // tslint:disable-next-line: no-unnecessary-type-assertion\n      res = reshape(res,
[res.shape[1], res.shape[2], res.shape[3]]) as\n      Tensor3D;\n      }\n\n      return { value: res, gradFunc:
grad};\n  });\n  return customOp(x4D, $filter) as T;\n } else {\n  const customOpWithBias = customGrad(\n
(x4D: Tensor4D, filter: Tensor4D, bias: Tensor, save: GradSaveFunc) => {\n      // tslint:disable-next-line: no-
unnecessary-type-assertion\n      let res: Tensor4D|Tensor3D = ENGINE.runKernel(\n
FusedDepthwiseConv2D, inputs as {} as NamedTensorMap,\n      attrs as {} as NamedAttrMap);\n\n      save([filter, x4D, res, bias]);\n\n      if (reshapedTo4D) {\n      // tslint:disable-next-line: no-unnecessary-type-
assertion\n      res = reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as\n      Tensor3D;\n      }\n\n      return { value: res, gradFunc: grad};\n  });\n\n  return customOpWithBias(x4D, $filter, $bias) as T;\n
}\n}\n\nexport const depthwiseConv2d = op({ fusedDepthwiseConv2d_ });\n\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {ENGINE} from '../engine';\nimport {customGrad} from '../gradients';\nimport {_FusedMatMul,
_FusedMatMulAttrs, _FusedMatMulInputs} from '../kernel_names';\nimport {NamedAttrMap} from
'../kernel_registry';\nimport {Tensor, Tensor3D} from '../tensor';\nimport {GradSaveFunc, NamedTensorMap}
from '../tensor_types';\nimport {makeTypesMatch} from '../tensor_util';\nimport {convertToTensor} from
'../tensor_util_env';\nimport {TensorLike} from '../types';\nimport * as util from '../util';\nimport {add} from
'../add';\nimport * as broadcast_util from '../broadcast_util';\nimport {Activation} from '../fused_types';\nimport
{applyActivation, getFusedBiasGradient, getFusedDyActivation, shouldFuse} from '../fused_util';\nimport {matMul
as unfusedMatMul} from '../mat_mul';\nimport {op} from '../operation';\nimport {reshape} from
'../reshape';\n\n/**\n * Computes the dot product of two matrices with optional activation and bias.\n *
```js\n *
const a = tf.tensor2d([-1, -2], [1, 2]);\n * const b = tf.tensor2d([1, 2, 3, 4], [2, 2]);\n * const bias = tf.tensor2d([1, 2],
[1, 2]);\n * \n * tf.fused.matMul({a, b, bias, activation: 'relu'}).print();\n *
```\n * \n * @param obj An object with the
following properties:\n * - `a` First matrix in dot product operation.\n * - `b` Second matrix in dot product
operation.\n * - `transposeA` If true, `a` is transposed before multiplication.\n * - `transposeB` If true, `b` is
transposed before multiplication.\n * - `bias` Matrix to be added to the result.\n * - `activation` Name of activation
kernel (defaults to `linear`).\n * - `preluActivationWeights` Tensor of prelu weights.\n * - `leakyreluAlpha` Alpha of
leakyrelu.\n */\nfunction fusedMatMul<T extends Tensor>({\n  a,\n  b,\n  transposeA = false,\n  transposeB =
false,\n  bias,\n  activation = 'linear',\n  preluActivationWeights,\n  leakyreluAlpha,\n}: {\n  a: T|TensorLike,\n  b:
T|TensorLike,\n  transposeA?: boolean,\n  transposeB?: boolean,\n  bias?: Tensor|TensorLike,\n  activation?:
Activation,\n  preluActivationWeights?: Tensor,\n  leakyreluAlpha?: number\n}): T {\n  if
(shouldFuse(ENGINE.state.gradientDepth, activation) === false) {\n    let result = unfusedMatMul(a, b,
transposeA, transposeB);\n    if (bias != null) {\n      result = add(result, bias);\n    }\n    return
applyActivation(\n      result, activation, preluActivationWeights, leakyreluAlpha) as\n      T;\n  }\n\n  let
$a = convertToTensor(a, 'a', 'fused matMul');\n  let $b = convertToTensor(b, 'b', 'fused matMul');\n  [$a, $b] =
makeTypesMatch($a, $b);\n\n  const innerShapeA =\n    transposeA ? $a.shape[$a.rank - 2] : $a.shape[$a.rank -
1];\n  const innerShapeB =\n    transposeB ? $b.shape[$b.rank - 1] : $b.shape[$b.rank - 2];\n\n  const
outerShapeA =\n    transposeA ? $a.shape[$a.rank - 1] : $a.shape[$a.rank - 2];\n  const outerShapeB =\n
transposeB ? $b.shape[$b.rank - 2] : $b.shape[$b.rank - 1];\n\n  const outerDimsA = $a.shape.slice(0, -2);\n  const
outerDimsB = $b.shape.slice(0, -2);\n  const batchDimA = util.sizeFromShape(outerDimsA);\n  const batchDimB

```

```

= util.sizeFromShape(outerDimsB);\n\n util.assert(\n    $a.rank >= 2 && $b.rank >= 2 && $a.rank ===
$b.rank,\n    () => `Error in fused matMul: inputs must have the same rank of at ` +\n        `least 2, got ranks
${$a.rank} and ${$b.rank}.`);\n\n util.assert(\n    util.arraysEqual(outerDimsA, outerDimsB),\n    () => `Error
in fused matMul: outer dimensions (${outerDimsA}) and (^ +\n        `${outerDimsB}) of Tensors with shapes
${$a.shape} and ` +\n        `${$b.shape} must match.`);\n\n util.assert(\n    innerShapeA === innerShapeB,\n    () => `Error in fused matMul: inner shapes (${innerShapeA}) and (^ +\n        `${innerShapeB}) of Tensors
with shapes ${$a.shape} and ` +\n        `${$b.shape} and transposeA=${transposeA}` +\n        ` and
transposeB=${transposeB} must match.`);\n\n const outShape = $a.shape.slice(0, -2).concat([outerShapeA,
outerShapeB]);\n\n const a3D: Tensor3D = transposeA ?\n    reshape($a, [batchDimA, innerShapeA,
outerShapeA]) :\n    reshape($a, [batchDimA, outerShapeA, innerShapeA]);\n\n const b3D: Tensor3D =
transposeB ?\n    reshape($b, [batchDimB, outerShapeB, innerShapeB]) :\n    reshape($b, [batchDimB,
innerShapeB, outerShapeB]);\n\n let $bias: Tensor;\n\n if (bias != null) {\n    $bias = convertToTensor(bias,
'bias', 'fused matMul');\n    [$bias] = makeTypesMatch($bias, $a);\n\n broadcast_util.assertAndGetBroadcastShape(outShape, $bias.shape);\n\n }\n\n let $preluActivationWeights:
Tensor;\n\n if (preluActivationWeights != null) {\n    $preluActivationWeights = convertToTensor(\n        preluActivationWeights, 'prelu weights', 'fused matMul');\n    }\n\n const grad = (dy: Tensor3D, saved: Tensor[])
=> {\n    const [a3D, b3D, y, $bias] = saved;\n    // we reshape dy because the result of the forward is not\n    //
necessarily going to be a 3d tensor due to a reshape done at the end of\n    // the customOp.\n    const dyActivation
=\n        getFusedDyActivation(reshape(dy, y.shape), y, activation);\n    let aDer: Tensor;\n    let bDer:
Tensor;\n\n    if (!transposeA && !transposeB) {\n        aDer = unfusedMatMul(dyActivation, b3D, false, true);\n        bDer = unfusedMatMul(a3D, dyActivation, true, false);\n    } else if (!transposeA && transposeB) {\n        aDer = unfusedMatMul(dyActivation, b3D, false, false);\n        bDer = unfusedMatMul(dyActivation, a3D, true, false);\n    } else if (transposeA && !transposeB) {\n        aDer = unfusedMatMul(b3D, dyActivation, false, true);\n        bDer = unfusedMatMul(a3D, dyActivation, false, false);\n    } else {\n        aDer = unfusedMatMul(b3D, dyActivation, true, true);\n        bDer = unfusedMatMul(dyActivation, a3D, true, true);\n    }\n\n    if (bias != null) {\n        const biasDer = getFusedBiasGradient($bias, dyActivation);\n        return [aDer, bDer, biasDer];\n    } else {\n        return [aDer, bDer];\n    }\n\n }\n\n }\n\n const inputs: _FusedMatMulInputs = {\n    a: a3D,\n    b: b3D,\n    bias: $bias,\n    preluActivationWeights: $preluActivationWeights\n    };\n\n const attrs: _FusedMatMulAttrs =\n    {transposeA, transposeB, activation, leakyreluAlpha};\n\n // Depending on the the params passed in we will have
different number of\n    // inputs and thus a a different number of elements in the gradient.\n    if (bias == null) {\n        const customOp =\n            customGrad((a3D: Tensor3D, b3D: Tensor3D, save: GradSaveFunc) => {\n                const res =\n                    // tslint:disable-next-line: no-unnecessary-type-assertion\n                    ENGINE.runKernel(\n                        _FusedMatMul, inputs as {} as NamedTensorMap,\n                            attrs as {} as NamedAttrMap) as T;\n\n                save([a3D, b3D, res]);\n                return {value: reshape(res, outShape), gradFunc: grad};\n            });\n        return customOp(a3D, b3D) as T;\n    } else {\n        const customOpWithBias = customGrad(\n            (a3D: Tensor3D, b3D: Tensor3D, $bias: Tensor, save: GradSaveFunc) => {\n                const res =\n                    // tslint:disable-next-line: no-unnecessary-type-assertion\n                    ENGINE.runKernel(\n                        _FusedMatMul, inputs as {} as NamedTensorMap,\n                            attrs as {} as NamedAttrMap) as T;\n                save([a3D, b3D, res, $bias]);\n                return {value: reshape(res, outShape), gradFunc: grad};\n            });\n        return customOpWithBias(a3D, b3D, $bias) as T;\n    }\n\n }\n\n export const matMul = op({fusedMatMul_});\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====\n\n*/\n\nimport {conv2d} from './fused/conv2d';\nimport {depthwiseConv2d} from

```

```
./fused/depthwise_conv2d';\nimport {matMul} from './fused/mat_mul';\nimport {Activation} from
./fused_types';\n\nexport {Activation, conv2d, depthwiseConv2d, matMul};\n", "/*\n * @license\n * Copyright
2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {Tensor1D} from '../tensor';\nimport {op} from './operation';\nimport {cosineWindow} from
../signal_ops_util';\n\n/**\n * Generate a hamming window.\n *\n * See:
https://en.wikipedia.org/wiki/Window_function#Hann_and_Hamming_windows\n *\n * ```js\n *
tf.signal.hammingWindow(10).print();\n * ```\n * @param The length of window\n *\n * @doc {heading:
'Operations', subheading: 'Signal', namespace: 'signal'}\n *\nfunction hammingWindow_(windowLength: number):
Tensor1D {\n  return cosineWindow(windowLength, 0.54, 0.46);\n}\n\nexport const hammingWindow =
op({hammingWindow_});\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {Tensor1D} from '../tensor';\nimport {op} from './operation';\nimport {cosineWindow} from
../signal_ops_util';\n\n/**\n * Generate a Hann window.\n *\n * See:
https://en.wikipedia.org/wiki/Window_function#Hann_and_Hamming_windows\n *\n * ```js\n *
tf.signal.hannWindow(10).print();\n * ```\n * @param The length of window\n *\n * @doc {heading: 'Operations',
subheading: 'Signal', namespace: 'signal'}\n *\nfunction hannWindow_(windowLength: number): Tensor1D {\n
return cosineWindow(windowLength, 0.5, 0.5);\n}\n\nexport const hannWindow = op({hannWindow_});\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {Tensor, Tensor1D} from '../tensor';\nimport {concat} from './concat';\nimport {fill} from
../fill';\nimport {op} from './operation';\nimport {reshape} from './reshape';\nimport {slice} from
../slice';\nimport {tensor2d} from './tensor2d';\n\n/**\n * Expands input into frames of frameLength.\n * Slides a window size with
frameStep.\n *\n * ```js\n * tf.signal.frame([1, 2, 3], 2, 1).print();\n * ```\n * @param signal The input tensor to be
expanded\n * @param frameLength Length of each frame\n * @param frameStep The frame hop size in samples.\n *
@param padEnd Whether to pad the end of signal with padValue.\n * @param padValue An number to use where
the input signal does\n * not exist when padEnd is True.\n *\n * @doc {heading: 'Operations', subheading:
'Signal', namespace: 'signal'}\n *\nfunction frame_(\n  signal: Tensor1D, frameLength: number, frameStep:
number, padEnd = false,\n  padValue = 0): Tensor {\n  let start = 0;\n  const output: Tensor[] = [];\n  while (start +
frameLength <= signal.size) {\n    output.push(slice(signal, start, frameLength));\n    start += frameStep;\n  }\n\n  if
(padEnd) {\n    while (start < signal.size) {\n      const padLen = (start + frameLength) - signal.size;\n      const pad =
concat([\n        slice(signal, start, frameLength - padLen), fill([padLen], padValue)\n      ]);\n      output.push(pad);\n    }\n  }\n}
```

```

    start += frameStep;\n    }\n    }\n    if (output.length === 0) {\n        return tensor2d([], [0, frameLength]);\n    }\n    return reshape(concat(output), [output.length, frameLength]);\n}\nexport const frame = op({ frame_ });\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {Tensor, Tensor1D} from '../tensor';\nimport {concat} from './concat';\nimport {mul} from\n './mul';\nimport {op} from './operation';\nimport {enclosingPowerOfTwo} from './signal_ops_util';\nimport {slice}\n from './slice';\nimport {rfft} from './spectral/rfft';\n\nimport {frame} from './frame';\nimport {hannWindow} from\n './hann_window';\n\n/**\n * Computes the Short-time Fourier Transform of signals\n * See:\n * https://en.wikipedia.org/wiki/Short-time_Fourier_transform\n * \n * \n * const input = tf.tensor1d([1, 1, 1, 1,\n * 1])\n * tf.signal.stft(input, 3, 1).print();\n * \n * \n * @param signal 1-dimensional real value tensor.\n * @param\n * frameLength The window length of samples.\n * @param frameStep The number of samples to step.\n * @param\n * fftLength The size of the FFT to apply.\n * @param windowFn A callable that takes a window length and returns 1-\n * d tensor.\n * \n * @doc {heading: 'Operations', subheading: 'Signal', namespace: 'signal'}\n */\nfunction stft_(\n signal: Tensor1D, frameLength: number, frameStep: number,\n fftLength?: number,\n windowFn: (length:\n number) => Tensor1D = hannWindow): Tensor {\n    if (fftLength == null) {\n        fftLength =\n        enclosingPowerOfTwo(frameLength);\n    }\n    const framedSignal = frame(signal, frameLength, frameStep);\n    const\n    windowedSignal = mul(framedSignal, windowFn(frameLength));\n    const output: Tensor[] = [];\n    for (let i = 0; i <\n        framedSignal.shape[0]; i++) {\n        output.push(\n            rfft(slice(windowedSignal, [i, 0], [1, frameLength]),\n                fftLength);\n    }\n    return concat(output);\n}\n\nexport const stft = op({ stft_ });\n", "/*\n * @license\n * Copyright\n * 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {ENGINE} from '../engine';\nimport {CropAndResize, CropAndResizeAttrs, CropAndResizeInputs}\n from '../kernel_names';\nimport {NamedAttrMap} from '../kernel_registry';\nimport {Tensor1D, Tensor2D,\n Tensor4D} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor}\n from '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport * as util from '../util';\n\nimport {op}\n from './operation';\n\n/**\n * Extracts crops from the input image tensor and resizes them using bilinear\n * sampling or nearest neighbor sampling (possibly with aspect ratio change)\n * to a common output size specified by\n * cropSize.\n * \n * @param image 4d tensor of shape `[batch,imageHeight,imageWidth, depth]`,\n * where\n * imageHeight and imageWidth must be positive, specifying the\n * batch of images from which to take crops\n * \n * @param boxes 2d float32 tensor of shape `[numBoxes, 4]`. Each entry is\n * `[y1, x1, y2, x2]`, where `(y1, x1)`\n * and `(y2, x2)` are the normalized\n * coordinates of the box in the boxInd[i]'th image in the batch\n * \n * @param\n * boxInd 1d int32 tensor of shape `[numBoxes]` with values in range\n * `[0, batch)` that specifies the image that\n * the `i`-th box refers to.\n * \n * @param cropSize 1d int32 tensor of 2 elements `[cropHeigh, cropWidth]`\n * specifying the size to which all crops are resized to.\n * \n * @param method Optional string from `bilinear` |\n * 'nearest`,\n * defaults to bilinear, which specifies the sampling method for resizing\n * \n * @param\n * extrapolationValue A threshold for deciding when to remove boxes based\n * on score. Defaults to 0.\n * \n * @return\n * A 4D tensor of the shape `[numBoxes,cropHeight,cropWidth,depth]`\n * \n * @doc {heading: 'Operations',\n * subheading: 'Images', namespace: 'image'}\n */\nfunction cropAndResize_(\n image: Tensor4D|TensorLike,\n

```

```

boxes: Tensor2D|TensorLike,\n  boxInd: Tensor1D|TensorLike,\n  cropSize: [number, number],\n  method:
'nearest' | 'bilinear',\n  extrapolationValue = 0,\n  ): Tensor4D {\n  const $image =
convertToTensor(image, 'image', 'cropAndResize');\n  const $boxes = convertToTensor(boxes, 'boxes',
'cropAndResize', 'float32');\n  const $boxInd = convertToTensor(boxInd, 'boxInd', 'cropAndResize', 'int32');\n\n
const numBoxes = $boxes.shape[0];\n\n  util.assert(\n    $image.rank === 4,\n    () => `Error in cropAndResize:
image must be rank 4,` +\n    `but got rank ${$image.rank}.`);\n  util.assert(\n    $boxes.rank === 2 &&
$boxes.shape[1] === 4,\n    () => `Error in cropAndResize: boxes must be have size [${numBoxes},4]` +\n
`but had shape ${$boxes.shape}.`);\n  util.assert(\n    $boxInd.rank === 1 && $boxInd.shape[0] === numBoxes,\n
    () => `Error in cropAndResize: boxInd must be have size [${numBoxes}]` +\n    `but had shape
${$boxes.shape}.`);\n  util.assert(\n    cropSize.length === 2,\n    () => `Error in cropAndResize: cropSize must
be of length 2, but got ` +\n    `length ${cropSize.length}.`);\n  util.assert(\n    cropSize[0] >= 1 && cropSize[1]
>= 1,\n    () => `cropSize must be atleast [1,1], but was ${cropSize}`);\n  util.assert(\n    method === 'bilinear' ||
method === 'nearest',\n    () => `method must be bilinear or nearest, but was ${method}`);\n\n  const inputs:\n  CropAndResizeInputs = {image: $image, boxes: $boxes, boxInd: $boxInd};\n  const attrs: CropAndResizeAttrs =
{method, extrapolationValue, cropSize};\n  const res = ENGINE.runKernel(\n    CropAndResize, inputs as {} as
NamedTensorMap,\n    attrs as {} as NamedAttrMap);\n  return res as Tensor4D;\n}\n\n\nexport const
cropAndResize = op({cropAndResize_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {FlipLeftRight, FlipLeftRightInputs} from
'../kernel_names';\nimport {Tensor4D} from '../tensor';\nimport {NamedTensorMap} from
'../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from
'../types';\nimport * as util from '../util';\nimport {op} from '../operation';\n\n/**\n * Flips the image left to right.
Currently available in the CPU, WebGL, and\n * WASM backends.\n * \n * @param image 4d tensor of shape
[batch, imageHeight, imageWidth, depth]\n * \n * @doc {heading: 'Operations', subheading: 'Images',
namespace: 'image'}\n */\nfunction flipLeftRight_(image: Tensor4D|TensorLike): Tensor4D {\n  const $image =
convertToTensor(image, 'image', 'flipLeftRight', 'float32');\n\n  util.assert(\n    $image.rank === 4,\n    () => `Error
in flipLeftRight: image must be rank 4,` +\n    `but got rank ${$image.rank}.`);\n\n  const inputs:
FlipLeftRightInputs = {image: $image};\n  const res =\n    ENGINE.runKernel(FlipLeftRight, inputs as {} as
NamedTensorMap, {});\n  return res as Tensor4D;\n}\n\n\nexport const flipLeftRight =
op({flipLeftRight_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {RotateWithOffset, RotateWithOffsetAttrs,
RotateWithOffsetInputs} from '../kernel_names';\nimport {NamedAttrMap} from '../kernel_registry';\nimport
{Tensor4D} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor}
from '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport * as util from '../util';\n\nimport {op}
from '../operation';\n\n/**\n * Rotates the input image tensor counter-clockwise with an optional offset\n * center of

```



```

rotation. Currently available in the CPU, WebGL, and WASM backends.\n * \n * @param image 4d tensor of shape
`[batch, imageHeight, imageWidth, depth]`. \n * @param radians The amount of rotation. \n * @param fillValue The
value to fill in the empty space leftover \n * after rotation. Can be either a single grayscale value (0-255), or an \n *
array of three numbers `[red, green, blue]` specifying the red, green, \n * and blue channels. Defaults to `0`
(black). \n * @param center The center of rotation. Can be either a single value (0-1), or \n * an array of two
numbers `[centerX, centerY]`. Defaults to `0.5` (rotates \n * the image around its center). \n * \n * @doc {heading:
'Operations', subheading: 'Images', namespace: 'image'} \n * \n function rotateWithOffset(\n image:
Tensor4D|TensorLike, radians: number, \n fillValue: number|[number, number, number] = 0, \n center:
number|[number, number] = 0.5): Tensor4D {\n const $image = convertToTensor(image, 'image',
'rotateWithOffset', 'float32'); \n \n util.assert(\n $image.rank === 4, \n () => 'Error in rotateWithOffset: image
must be rank 4, ' + \n `but got rank ${$image.rank}.`); \n \n const inputs: RotateWithOffsetInputs = {image:
$image}; \n const attrs: RotateWithOffsetAttrs = {radians, fillValue, center}; \n const res = ENGINE.runKernel(\n
RotateWithOffset, inputs as {} as NamedTensorMap, \n attrs as {} as NamedAttrMap); \n return res as
Tensor4D; \n } \n \n export const rotateWithOffset = op({rotateWithOffset_}); \n " , /* \n * @license \n * Copyright
2020 Google LLC. All Rights Reserved. \n * Licensed under the Apache License, Version 2.0 (the "License"); \n *
you may not use this file except in compliance with the License. \n * You may obtain a copy of the License at \n * \n *
http://www.apache.org/licenses/LICENSE-2.0 \n * Unless required by applicable law or agreed to in writing,
software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language
governing permissions and \n * limitations under the License. \n *
===== \n
* \n \n import {Tensor1D, Tensor2D} from '../tensor'; \n import * as util from '../util'; \n \n function
nonMaxSupSanityCheck(\n boxes: Tensor2D, scores: Tensor1D, maxOutputSize: number, \n iouThreshold:
number, scoreThreshold: number, softNmsSigma?: number): {\n maxOutputSize: number, \n iouThreshold:
number, \n scoreThreshold: number, \n softNmsSigma: number} {\n if (iouThreshold == null) {\n iouThreshold
= 0.5; \n } \n if (scoreThreshold == null) {\n scoreThreshold = Number.NEGATIVE_INFINITY; \n } \n if
(softNmsSigma == null) {\n softNmsSigma = 0.0; \n } \n \n const numBoxes = boxes.shape[0]; \n maxOutputSize
= Math.min(maxOutputSize, numBoxes); \n \n util.assert(\n 0 <= iouThreshold && iouThreshold <= 1, \n () =>
`iouThreshold must be in [0, 1], but was '${iouThreshold}`); \n util.assert(\n boxes.rank === 2, \n () => `boxes
must be a 2D tensor, but was of rank '${boxes.rank}`); \n util.assert(\n boxes.shape[1] === 4, \n () => \n
`boxes must have 4 columns, but 2nd dimension was ${boxes.shape[1]}`); \n util.assert(scores.rank === 1, () =>
`scores must be a 1D tensor`); \n util.assert(\n scores.shape[0] === numBoxes, \n () => `scores has
incompatible shape with boxes. Expected ${numBoxes}, ` + \n `but was ${scores.shape[0]}`); \n util.assert(\n
0 <= softNmsSigma && softNmsSigma <= 1, \n () => `softNmsSigma must be in [0, 1], but was
`${softNmsSigma}`); \n return {maxOutputSize, iouThreshold, scoreThreshold, softNmsSigma}; \n } \n \n export
{nonMaxSupSanityCheck}; \n " , /* \n * @license \n * Copyright 2020 Google LLC. All Rights Reserved. \n *
Licensed under the Apache License, Version 2.0 (the "License"); \n * you may not use this file except in
compliance with the License. \n * You may obtain a copy of the License at \n * \n *
http://www.apache.org/licenses/LICENSE-2.0 \n * Unless required by applicable law or agreed to in writing,
software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language
governing permissions and \n * limitations under the License. \n *
===== \n
* \n \n import {ENGINE} from '../engine'; \n import {NonMaxSuppressionV3} from '../kernel_names'; \n import
{Tensor1D, Tensor2D} from '../tensor'; \n import {convertToTensor} from '../tensor_util_env'; \n import
{TensorLike} from '../types'; \n \n import {nonMaxSupSanityCheck} from './nonmax_util'; \n import {op} from
'./operation'; \n \n /* \n * Performs non maximum suppression of bounding boxes based on \n * iou (intersection over
union). \n * \n * @param boxes a 2d tensor of shape `[numBoxes, 4]`. Each entry is \n * `[y1, x1, y2, x2]`, where

```

```

(y1, x1)` and `(y2, x2)` are the corners of the bounding box.
@param scores a 1d tensor providing the box scores of shape [numBoxes].
@param maxOutputSize The maximum number of boxes to be selected.
@param iouThreshold A float representing the threshold for deciding whether boxes overlap too much with respect to IOU. Must be between [0, 1]. Defaults to 0.5 (50% box overlap).
@param scoreThreshold A threshold for deciding when to remove boxes based on score. Defaults to -inf, which means any score is accepted.
@return A 1D tensor with the selected box indices.
@doc {heading: 'Operations', subheading: 'Images', namespace: 'image'}
function nonMaxSuppression_(boxes: Tensor2D|TensorLike, scores: Tensor1D|TensorLike, maxOutputSize: number, iouThreshold = 0.5, scoreThreshold = Number.NEGATIVE_INFINITY): Tensor1D {
  const $boxes = convertToTensor(boxes, 'boxes', 'nonMaxSuppression');
  const $scores = convertToTensor(scores, 'scores', 'nonMaxSuppression');
  const inputs = nonMaxSuppSanityCheck($boxes, $scores, maxOutputSize, iouThreshold, scoreThreshold);
  maxOutputSize = inputs.maxOutputSize;
  iouThreshold = inputs.iouThreshold;
  scoreThreshold = inputs.scoreThreshold;
  const attrs = {maxOutputSize, iouThreshold, scoreThreshold};
  return ENGINE.runKernel(NonMaxSuppressionV3, {boxes: $boxes, scores: $scores}, attrs);
}
export const nonMaxSuppression = op({nonMaxSuppression_});
*/
@license Copyright 2019 Google LLC. All Rights Reserved.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing,
software distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

```

```

=====
*/
Inserts a value into a sorted array. This method allows duplicate, meaning it allows inserting duplicate value, in which case, the element will be inserted at the lowest index of the value.
@param arr The array to modify.
@param element The element to insert.
@param comparator Optional. If no comparator is specified, elements are compared using array_util.defaultComparator, which is suitable for Strings and Numbers in ascending arrays. If the array contains multiple instances of the target value, the left-most instance will be returned. To provide a comparator, it should take 2 arguments to compare and return a negative, zero, or a positive number.
export function binaryInsert<T>(arr: T[], element: T, comparator?: (a: T, b: T) => number) {
  const index = binarySearch(arr, element, comparator);
  const insertionPoint = index < 0 ? -(index + 1) : index;
  arr.splice(insertionPoint, 0, element);
}
*/
Searches the array for the target using binary search, returns the index of the found element, or position to insert if element not found. If no comparator is specified, elements are compared using array_util.defaultComparator, which is suitable for Strings and Numbers in ascending arrays. If the array contains multiple instances of the target value, the left-most instance will be returned.
@param arr The array to be searched in.
@param target The target to be searched for.
@param comparator Should take 2 arguments to compare and return a negative, zero, or a positive number.
@return Lowest index of the target value if found, otherwise the insertion point where the target should be inserted, in the form of -(insertionPoint - 1).
export function binarySearch<T>(arr: T[], target: T, comparator?: (a: T, b: T) => number) {
  return binarySearch_(arr, target, comparator || defaultComparator);
}
*/
Compares its two arguments for order.
@param a The first element to be compared.
@param b The second element to be compared.
@return A negative number, zero, or a positive number as the first argument is less than, equal to, or greater than the second.
function defaultComparator<T>(a: T, b: T): number {
  return a > b ? 1 : a < b ? -1 : 0;
}
function binarySearch_<T>(arr: T[], target: T, comparator: (a: T, b: T) => number) {
  let left = 0;
  let right = arr.length;
  let middle = 0;
  let found = false;
  while (left < right) {
    middle = left + ((right - left) >>> 1);
    const compareResult = comparator(target, arr[middle]);
    if (compareResult > 0) {
      left = middle + 1;
    } else {
      right = middle;
      // If compareResult is 0, the value is found. We record it is found,
      // and then keep looking because there may be duplicate.
      found = !compareResult;
    }
  }
  return found ? left : -left - 1;
}
*/
@license Copyright 2020 Google LLC. All Rights

```

Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {TypedArray} from '../types';\nimport {binaryInsert} from './non_max_suppression_util';\n\n\nImplementation of the NonMaxSuppression kernel shared between webgl and cpu.\n\ninterface Candidate {\n  score: number;\n  boxIndex: number;\n  suppressBeginIndex: number;\n}\n\ninterface NonMaxSuppressionResult {\n  selectedIndices: number[];\n  selectedScores?: number[];\n  validOutputs?: number;\n}\n\nexport function\n  nonMaxSuppressionV3Impl(\n    boxes: TypedArray, scores: TypedArray, maxOutputSize: number,\n    iouThreshold: number, scoreThreshold: number): NonMaxSuppressionResult {\n  return\n    nonMaxSuppressionImpl_(\n      boxes, scores, maxOutputSize, iouThreshold, scoreThreshold,\n      0 /*\n      softNmsSigma */);\n}\n\nexport function nonMaxSuppressionV4Impl(\n  boxes: TypedArray, scores: TypedArray,\n  maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number,\n  padToMaxOutputSize: boolean):\n  NonMaxSuppressionResult {\n  return nonMaxSuppressionImpl_(\n    boxes, scores, maxOutputSize,\n    iouThreshold, scoreThreshold,\n    0 /* softNmsSigma */, false /* returnScoresTensor */,\n    padToMaxOutputSize /* padToMaxOutputSize */, true\n    /* returnValidOutputs */);\n}\n\nexport function\n  nonMaxSuppressionV5Impl(\n    boxes: TypedArray, scores: TypedArray, maxOutputSize: number,\n    iouThreshold: number, scoreThreshold: number,\n    softNmsSigma: number): NonMaxSuppressionResult {\n  return nonMaxSuppressionImpl_(\n    boxes, scores, maxOutputSize, iouThreshold, scoreThreshold,\n    softNmsSigma,\n    true /* returnScoresTensor */);\n}\n\nfunction nonMaxSuppressionImpl_(\n  boxes:\n  TypedArray, scores: TypedArray, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number,\n  softNmsSigma: number,\n  returnScoresTensor = false, padToMaxOutputSize = false,\n  returnValidOutputs =\n  false): NonMaxSuppressionResult {\n  // The list is sorted in ascending order, so that we can always pop the\n  // candidate with the largest score in O(1) time.\n  const candidates = [];\n  for (let i = 0; i < scores.length; i++) {\n    if (scores[i] > scoreThreshold) {\n      candidates.push({score: scores[i], boxIndex: i, suppressBeginIndex: 0});\n    }\n  }\n  candidates.sort(ascendingComparator);\n  // If softNmsSigma is 0, the outcome of this algorithm is exactly same as\n  // before.\n  const scale = softNmsSigma > 0 ? (-0.5 / softNmsSigma) : 0.0;\n  const\n  selectedIndices: number[] = [];\n  const selectedScores: number[] = [];\n  while (selectedIndices.length <\n    maxOutputSize && candidates.length > 0) {\n    const candidate = candidates.pop();\n    const {score: originalScore,\n    boxIndex, suppressBeginIndex} = candidate;\n    if (originalScore < scoreThreshold) {\n      break;\n    }\n    // Overlapping boxes are likely to have similar scores, therefore we\n    // iterate through the previously selected boxes backwards in order to\n    // see if candidate's score should be suppressed. We use\n    // suppressBeginIndex to track and ensure a candidate can be suppressed\n    // by a selected box no more than once. Also, if the overlap exceeds\n    // iouThreshold, we simply ignore the candidate.\n    let ignoreCandidate = false;\n    for (let j =\n    selectedIndices.length - 1; j >= suppressBeginIndex; --j) {\n      const iou = intersectionOverUnion(boxes, boxIndex,\n    selectedIndices[j]);\n      if (iou >= iouThreshold) {\n        ignoreCandidate = true;\n        break;\n      }\n      candidate.score =\n        candidate.score * suppressWeight(iouThreshold, scale, iou);\n      if (candidate.score <=\n    scoreThreshold) {\n        break;\n      }\n    }\n    // At this point, if `candidate.score` has not dropped below\n    // `scoreThreshold`, then we know that we went through all of the\n    // previous selections and can safely update\n    `suppressBeginIndex` to the\n    // end of the selected array. Then we can re-insert the candidate with\n    // the updated score and suppressBeginIndex back in the candidate list.\n    // If on the other hand, `candidate.score` has dropped below the score\n    // threshold, we will not add it back to the candidates list.\n    candidate.suppressBeginIndex = selectedIndices.length;\n    if (!ignoreCandidate) {\n      // Candidate has passed all the tests, and is not suppressed, so\n      // select the candidate.\n      if (candidate.score === originalScore) {\n        selectedIndices.push(boxIndex);\n        selectedScores.push(candidate.score);\n      } else if (candidate.score >
```

```
scoreThreshold) {\n    // Candidate's score is suppressed but is still high enough to be\n    // considered, so add\n    back to the candidates list.\n    binaryInsert(candidates, candidate, ascendingComparator);\n    }\n    }\n    }\n\n\n// NonMaxSuppressionV4 feature: padding output to maxOutputSize.\nconst validOutputs = selectedIndices.length;\nconst elemsToPad = maxOutputSize - validOutputs;\n\nif (padToMaxOutputSize && elemsToPad > 0) {\n    selectedIndices.push(...new Array(elemsToPad).fill(0));\n    selectedScores.push(...new\n    Array(elemsToPad).fill(0.0));\n    }\n\nconst result: NonMaxSuppressionResult = { selectedIndices }; \n\nif (returnScoresTensor) {\n    result['selectedScores'] = selectedScores;\n    }\n\nif (returnValidOutputs) {\n    result['validOutputs'] = validOutputs;\n    }\n\nreturn result;\n}\n\nfunction intersectionOverUnion(boxes:\n    TypedArray, i: number, j: number) {\n    const iCoord = boxes.subarray(i * 4, i * 4 + 4);\n    const jCoord =\n    boxes.subarray(j * 4, j * 4 + 4);\n    const yminI = Math.min(iCoord[0], iCoord[2]);\n    const xminI =\n    Math.min(iCoord[1], iCoord[3]);\n    const ymaxI = Math.max(iCoord[0], iCoord[2]);\n    const xmaxI =\n    Math.max(iCoord[1], iCoord[3]);\n    const yminJ = Math.min(jCoord[0], jCoord[2]);\n    const xminJ =\n    Math.min(jCoord[1], jCoord[3]);\n    const ymaxJ = Math.max(jCoord[0], jCoord[2]);\n    const xmaxJ =\n    Math.max(jCoord[1], jCoord[3]);\n    const areaI = (ymaxI - yminI) * (xmaxI - xminI);\n    const areaJ = (ymaxJ -\n    yminJ) * (xmaxJ - xminJ);\n    if (areaI <= 0 || areaJ <= 0) {\n        return 0.0;\n    }\n    const intersectionYmin =\n    Math.max(yminI, yminJ);\n    const intersectionXmin = Math.max(xminI, xminJ);\n    const intersectionYmax =\n    Math.min(ymaxI, ymaxJ);\n    const intersectionXmax = Math.min(xmaxI, xmaxJ);\n    const intersectionArea =\n    Math.max(intersectionYmax - intersectionYmin, 0.0) *\n    Math.max(intersectionXmax - intersectionXmin,\n    0.0);\n    return intersectionArea / (areaI + areaJ - intersectionArea);\n}\n\n// A Gaussian penalty function, this\n// method always returns values in [0, 1].\n// The weight is a function of similarity, the more overlap two boxes are,\n// the\n// smaller the weight is, meaning highly overlapping boxes will be significantly\n// penalized. On the other hand,\n// a non-overlapping box will not be penalized.\nfunction suppressWeight(iouThreshold: number, scale: number, iou:\n    number) {\n    const weight = Math.exp(scale * iou * iou);\n    return iou <= iouThreshold ? weight :\n    0.0;\n}\n\nfunction ascendingComparator(c1: Candidate, c2: Candidate) {\n    // For objects with same scores, we\n    // make the object with the larger index go\n    // first. In an array that pops from the end, this means that the object\n    // with\n    // the smaller index will be popped first. This ensures the same output as\n    // the TensorFlow python\n    // version.\n    return (c1.score - c2.score) ||\n    ((c1.score === c2.score) && (c2.boxIndex -\n    c1.boxIndex));\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under\n * the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *\n *=====\n\n*/\n\nimport { nonMaxSuppressionV3Impl } from '../backends/non_max_suppression_impl';\nimport { Tensor1D,\n    Tensor2D } from '../tensor';\nimport { convertToTensor } from '../tensor_util_env';\nimport { TensorLike } from\n    '../types';\nimport { nonMaxSuppSanityCheck } from '../nonmax_util';\nimport { tensor1d } from\n    '../tensor1d';\n\n/**\n * Performs non maximum suppression of bounding boxes based on\n * iou (intersection over\n * union).\n * This is the async version of `nonMaxSuppression`\n * @param boxes a 2d tensor of shape\n * `[numBoxes, 4]`. Each entry is\n * `[y1, x1, y2, x2]`, where `(y1, x1)` and `(y2, x2)` are the corners of\n * the\n * bounding box.\n * @param scores a 1d tensor providing the box scores of shape `[numBoxes]`.\n * @param\n    maxOutputSize The maximum number of boxes to be selected.\n * @param iouThreshold A float representing the\n    threshold for deciding whether\n * boxes overlap too much with respect to IOU. Must be between [0, 1].\n * Defaults to 0.5 (50% box overlap).\n * @param scoreThreshold A threshold for deciding when to remove boxes\n    based\n * on score. Defaults to -inf, which means any score is accepted.\n * @return A 1D tensor with the\n    selected box indices.\n * @doc {heading: 'Operations', subheading: 'Images', namespace: 'image'}\n */\nfunction nonMaxSuppressionAsync(\n    boxes: Tensor2D|TensorLike, scores: Tensor1D|TensorLike,\n
```

```

maxOutputSize: number, iouThreshold = 0.5,\n  scoreThreshold = Number.NEGATIVE_INFINITY):
Promise<Tensor1D> {\n  const $boxes = convertToTensor(boxes, 'boxes', 'nonMaxSuppressionAsync');\n  const
$scores = convertToTensor(scores, 'scores', 'nonMaxSuppressionAsync');\n\n  const inputs =
nonMaxSuppSanityCheck(\n    $boxes, $scores, maxOutputSize, iouThreshold, scoreThreshold);\n  maxOutputSize
= inputs.maxOutputSize;\n  iouThreshold = inputs.iouThreshold;\n  scoreThreshold = inputs.scoreThreshold;\n\n
const boxesAndScores = await Promise.all([$boxes.data(), $scores.data()]);\n  const boxesVals =
boxesAndScores[0];\n  const scoresVals = boxesAndScores[1];\n\n  // We call a cpu based impl directly with the
typedarray data here rather\n  // than a kernel because all kernels are synchronous (and thus cannot await\n  //
.data()).\n  const {selectedIndices} = nonMaxSuppressionV3Impl(\n    boxesVals, scoresVals, maxOutputSize,
iouThreshold, scoreThreshold);\n  if ($boxes !== boxes) {\n    $boxes.dispose();\n  }\n  if ($scores !== scores) {\n
$scores.dispose();\n  }\n\n  return tensor1d(selectedIndices, 'int32');\n}\n\nexport const nonMaxSuppressionAsync =
nonMaxSuppressionAsync_;\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,
NonMaxSuppressionV5Inputs} from '../kernel_names';\nimport {NamedAttrMap} from
'../kernel_registry';\nimport {Tensor, Tensor1D, Tensor2D} from '../tensor';\nimport {NamedTensorMap} from
'../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from
'../types';\nimport {nonMaxSuppSanityCheck} from './nonmax_util';\nimport {op} from './operation';\n\n**\n
* Performs non maximum suppression of bounding boxes based on\n * iou (intersection over union).\n *\n * This op
also supports a Soft-NMS mode (c.f.\n * Bodla et al, https://arxiv.org/abs/1704.04503) where boxes reduce the
score\n * of other overlapping boxes, therefore favoring different regions of the image\n * with high scores. To
enable this Soft-NMS mode, set the `softNmsSigma`\n * parameter to be larger than 0.\n *\n * @param boxes a 2d
tensor of shape `[numBoxes, 4]`. Each entry is\n * `[y1, x1, y2, x2]`, where `(y1, x1)` and `(y2, x2)` are the
corners of\n * the bounding box.\n * @param scores a 1d tensor providing the box scores of shape
`[numBoxes]`\n * @param maxOutputSize The maximum number of boxes to be selected.\n * @param
iouThreshold A float representing the threshold for deciding whether\n * boxes overlap too much with respect to
IOU. Must be between [0, 1].\n * Defaults to 0.5 (50% box overlap).\n * @param scoreThreshold A threshold for
deciding when to remove boxes based\n * on score. Defaults to -inf, which means any score is accepted.\n *
@param softNmsSigma A float representing the sigma parameter for Soft NMS.\n * When sigma is 0, it falls
back to nonMaxSuppression.\n * @return A map with the following properties:\n * - selectedIndices: A 1D tensor
with the selected box indices.\n * - selectedScores: A 1D tensor with the corresponding scores for each\n *
selected box.\n *\n * @doc {heading: 'Operations', subheading: 'Images', namespace: 'image'}\n */\nfunction
nonMaxSuppressionWithScore_ (\n  boxes: Tensor2D|TensorLike, scores: Tensor1D|TensorLike,\n  maxOutputSize: number, iouThreshold = 0.5,\n  scoreThreshold = Number.NEGATIVE_INFINITY,\n  softNmsSigma = 0.0): NamedTensorMap {\n  const $boxes = convertToTensor(boxes, 'boxes',
'nonMaxSuppression');\n  const $scores = convertToTensor(scores, 'scores', 'nonMaxSuppression');\n\n  const
params = nonMaxSuppSanityCheck(\n    $boxes, $scores, maxOutputSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n  maxOutputSize = params.maxOutputSize;\n  iouThreshold = params.iouThreshold;\n
scoreThreshold = params.scoreThreshold;\n  softNmsSigma = params.softNmsSigma;\n\n  const inputs:
NonMaxSuppressionV5Inputs = {boxes: $boxes, scores: $scores};\n  const attrs: NonMaxSuppressionV5Attrs =\n  {maxOutputSize, iouThreshold, scoreThreshold, softNmsSigma};\n\n  // tslint:disable-next-line: no-unnecessary-
type-assertion\n  const result = ENGINE.runKernel(\n    NonMaxSuppressionV5, inputs as {} as

```

```

NamedTensorMap,\n          attrs as { } as NamedAttrMap) as Tensor[];\n\n return { selectedIndices: result[0],\n        selectedScores: result[1]};\n\n\nexport const nonMaxSuppressionWithScore =\n  op({nonMaxSuppressionWithScore_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *\n *=====\n *\nimport {nonMaxSuppressionV5Impl} from '../backends/non_max_suppression_impl';\nimport {Tensor1D,\n        Tensor2D} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor}\n        from '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport {nonMaxSupSanityCheck} from\n        './nonmax_util';\nimport {tensor1d} from './tensor1d';\n\n/**\n * Asynchronously performs non maximum\n * suppression of bounding boxes based on\n * iou (intersection over union).\n * This op also supports a Soft-NMS\n * mode (c.f. Bodla et al, https://arxiv.org/abs/1704.04503) where boxes reduce the score\n * of other overlapping\n * boxes, therefore favoring different regions of the image\n * with high scores. To enable this Soft-NMS mode, set the\n * `softNmsSigma`\n * parameter to be larger than 0.\n * @param boxes a 2d tensor of shape `[numBoxes, 4]`.\n * Each entry is\n * `[y1, x1, y2, x2]`, where `(y1, x1)` and `(y2, x2)` are the corners of\n * the bounding box.\n * @param scores a 1d tensor providing the box scores of shape `[numBoxes]`.\n * @param maxSize The\n * maximum number of boxes to be selected.\n * @param iouThreshold A float representing the threshold for deciding\n * whether\n * boxes overlap too much with respect to IOU. Must be between [0, 1].\n * Defaults to 0.5 (50% box\n * overlap).\n * @param scoreThreshold A threshold for deciding when to remove boxes based\n * on score.\n * Defaults to -inf, which means any score is accepted.\n * @param softNmsSigma A float representing the sigma\n * parameter for Soft NMS.\n * When sigma is 0, it falls back to nonMaxSuppression.\n * @return A map with the\n * following properties:\n * - selectedIndices: A 1D tensor with the selected box indices.\n * - selectedScores: A\n * 1D tensor with the corresponding scores for each\n * selected box.\n * @doc {heading: 'Operations',\n *       subheading: 'Images',\n *       namespace: 'image'}\n */\n\n@nasync function nonMaxSuppressionWithScoreAsync(\n  boxes:\n  Tensor2D|TensorLike, scores: Tensor1D|TensorLike,\n  maxSize: number, iouThreshold = 0.5,\n  scoreThreshold = Number.NEGATIVE_INFINITY,\n  softNmsSigma = 0.0): Promise<NamedTensorMap> {\n  const $boxes = convertToTensor(boxes, 'boxes', 'nonMaxSuppressionAsync');\n  const $scores =\n    convertToTensor(scores, 'scores', 'nonMaxSuppressionAsync');\n\n  const params = nonMaxSupSanityCheck(\n    $boxes, $scores, maxSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n  maxSize =\n    params.maxOutputSize;\n  iouThreshold = params.iouThreshold;\n  scoreThreshold = params.scoreThreshold;\n  softNmsSigma = params.softNmsSigma;\n\n  const boxesAndScores = await Promise.all([$boxes.data(),\n    $scores.data()]);\n  const boxesVals = boxesAndScores[0];\n  const scoresVals = boxesAndScores[1];\n\n  // We call\n  a cpu based impl directly with the typedarray data here rather\n  // than a kernel because all kernels are synchronous\n  (and thus cannot await\n  // .data()).\n  const {selectedIndices, selectedScores} = nonMaxSuppressionV5Impl(\n    boxesVals, scoresVals, maxSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n\n  if ($boxes !==\n    boxes) {\n    $boxes.dispose();\n  }\n  if ($scores !==\n    scores) {\n    $scores.dispose();\n  }\n\n  return {\n    selectedIndices: tensor1d(selectedIndices, 'int32'),\n    selectedScores: tensor1d(selectedScores)\n  };}\n\n\nexport\n  const nonMaxSuppressionWithScoreAsync = nonMaxSuppressionWithScoreAsync;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *\n *

```

```

=====
*\n\nimport {ENGINE} from '../engine';\nimport {NonMaxSuppressionV4, NonMaxSuppressionV4Attrs,
NonMaxSuppressionV4Inputs} from '../kernel_names';\nimport {NamedAttrMap} from
'../kernel_registry';\nimport {Tensor, Tensor1D, Tensor2D} from '../tensor';\nimport {NamedTensorMap} from
'../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from
'../types';\n\nimport {nonMaxSuppSanityCheck} from './nonmax_util';\nimport {op} from './operation';\n\n/**
 * Asynchronously performs non maximum suppression of bounding boxes based on
 * iou (intersection over union), with an option to pad results.
 * @param boxes a 2d tensor of shape `[numBoxes, 4]`. Each entry is
 * `[y1, x1, y2, x2]`, where `(y1, x1)` and `(y2, x2)` are the corners of
 * the bounding box.
 * @param scores a 1d tensor providing the box scores of shape `[numBoxes]`.
 * @param maxOutputSize The maximum number of boxes to be selected.
 * @param iouThreshold A float representing the threshold for deciding whether
 * boxes overlap too much with respect to IOU. Must be between [0, 1].
 * Defaults to 0.5 (50% box overlap).
 * @param scoreThreshold A threshold for deciding when to remove boxes based
 * on score. Defaults to -inf, which means any score is accepted.
 * @param padToMaxOutputSize Defaults to false. If true, size of output
 * `selectedIndices` is padded to maxOutputSize.
 * @return A map with the following properties:
 * - selectedIndices: A 1D tensor with the selected box indices.
 * - validOutputs: A scalar denoting how many elements in `selectedIndices`
 * are valid. Valid elements occur first, then padding.
 * @doc {heading: 'Operations', subheading: 'Images', namespace: 'image'}
 */
function nonMaxSuppressionPadded_(\n boxes:
Tensor2D|TensorLike, scores: Tensor1D|TensorLike,\n maxOutputSize: number, iouThreshold = 0.5,\n
scoreThreshold = Number.NEGATIVE_INFINITY,\n padToMaxOutputSize = false): NamedTensorMap {\n
const $boxes = convertToTensor(boxes, 'boxes', 'nonMaxSuppression');\n const $scores = convertToTensor(scores,
'scores', 'nonMaxSuppression');\n\n const params = nonMaxSuppSanityCheck(\n $boxes, $scores,
maxOutputSize, iouThreshold, scoreThreshold,\n null /* softNmsSigma */);\n const $maxOutputSize =
params.maxOutputSize;\n const $iouThreshold = params.iouThreshold;\n const $scoreThreshold =
params.scoreThreshold;\n\n const inputs: NonMaxSuppressionV4Inputs = {boxes: $boxes, scores: $scores};\n
const attrs: NonMaxSuppressionV4Attrs = {\n maxOutputSize: $maxOutputSize,\n iouThreshold:
$iouThreshold,\n scoreThreshold: $scoreThreshold,\n padToMaxOutputSize\n };\n\n // tslint:disable-next-line:
no-unnecessary-type-assertion\n const result = ENGINE.runKernel(\n NonMaxSuppressionV4, inputs
as {} as NamedTensorMap,\n attrs as {} as NamedAttrMap) as Tensor[];\n\n return {selectedIndices:
result[0], validOutputs: result[1]};\n}\n\nexport const nonMaxSuppressionPadded =
op({nonMaxSuppressionPadded_};\n\n/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
=====

```

```

*\n\nimport {nonMaxSuppressionV4Impl} from '../backends/non_max_suppression_impl';\nimport {Tensor1D,
Tensor2D} from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor}
from '../tensor_util_env';\nimport {TensorLike} from '../types';\nimport {nonMaxSuppSanityCheck} from
'./nonmax_util';\nimport {scalar} from './scalar';\nimport {tensor1d} from './tensor1d';\n\n/**
 * Asynchronously performs non maximum suppression of bounding boxes based on
 * iou (intersection over union), with an option to pad results.
 * @param boxes a 2d tensor of shape `[numBoxes, 4]`. Each entry is
 * `[y1, x1, y2, x2]`, where `(y1, x1)` and `(y2, x2)` are the corners of
 * the bounding box.
 * @param scores a 1d tensor providing the box scores of shape `[numBoxes]`.
 * @param maxOutputSize The maximum number of boxes to be selected.
 * @param iouThreshold A float representing the threshold for deciding whether
 * boxes overlap too much with respect to IOU. Must be between [0, 1].
 * Defaults to 0.5 (50% box overlap).
 * @param

```

```

scoreThreshold A threshold for deciding when to remove boxes based\n * on score. Defaults to -inf, which means
any score is accepted.\n * @param padToMaxOutputSize Defaults to false. If true, size of output\n *
`selectedIndices` is padded to maxOutputSize.\n * @return A map with the following properties:\n * -
selectedIndices: A 1D tensor with the selected box indices.\n * - validOutputs: A scalar denoting how many
elements in `selectedIndices`\n * are valid. Valid elements occur first, then padding.\n *\n * @doc {heading:
'Operations', subheading: 'Images', namespace: 'image'}\n *\n * ^/nasync function nonMaxSuppressionPaddedAsync_(\n
boxes: Tensor2D|TensorLike, scores: Tensor1D|TensorLike,\n maxOutputSize: number, iouThreshold = 0.5,\n
scoreThreshold = Number.NEGATIVE_INFINITY,\n padToMaxOutputSize = false):
Promise<NamedTensorMap> {\n const $boxes = convertToTensor(boxes, 'boxes', 'nonMaxSuppressionAsync');\n
const $scores = convertToTensor(scores, 'scores', 'nonMaxSuppressionAsync');\n\n const params =
nonMaxSuppSanityCheck(\n $boxes, $scores, maxOutputSize, iouThreshold, scoreThreshold,\n null /*
softNmsSigma */);\n const $maxOutputSize = params.maxOutputSize;\n const $iouThreshold =
params.iouThreshold;\n const $scoreThreshold = params.scoreThreshold;\n\n const [boxesVals, scoresVals] =\n
await Promise.all([$boxes.data(), $scores.data()]);\n\n // We call a cpu based impl directly with the typedarray data
here rather\n // than a kernel because all kernels are synchronous (and thus cannot await\n // .data()).\n const
{selectedIndices, validOutputs} = nonMaxSuppressionV4Impl(\n boxesVals, scoresVals, $maxOutputSize,
$iouThreshold, $scoreThreshold,\n padToMaxOutputSize);\n\n if ($boxes !== boxes) {\n $boxes.dispose();\n
}\n if ($scores !== scores) {\n $scores.dispose();\n }\n\n return {\n selectedIndices: tensor1d(selectedIndices,
'int32'),\n validOutputs: scalar(validOutputs, 'int32')\n };\n}\n\nexport const nonMaxSuppressionPaddedAsync =
nonMaxSuppressionPaddedAsync_;\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {ENGINE} from '../engine';\nimport {ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs}
from '../kernel_names';\nimport {NamedAttrMap} from '../kernel_registry';\nimport {Tensor3D, Tensor4D}
from '../tensor';\nimport {NamedTensorMap} from '../tensor_types';\nimport {convertToTensor} from
../tensor_util_env';\nimport {TensorLike} from '../types';\nimport * as util from '../util';\n\nimport {op} from
../operation';\nimport {reshape} from ../reshape;\n\n/**\n * Bilinear resize a single 3D image or a batch of 3D
images to a new shape.\n *\n * @param images The images, of rank 4 or rank 3, of shape\n * `[batch, height,
width, inChannels]`. If rank 3, batch of 1 is assumed.\n * @param size The new shape `[newHeight, newWidth]` to
resize the\n * images to. Each channel is resized individually.\n * @param alignCorners Defaults to `false`. If
true, rescale\n * input by `(new_height - 1) / (height - 1)`, which exactly aligns the 4\n * corners of images and
resized images. If false, rescale by\n * `new_height / height`. Treat similarly the width dimension.\n * @param
halfPixelCenters Defaults to `false`. Whether to assume pixel centers\n * are at 0.5, which would make the
floating point coordinates of the top\n * left pixel 0.5, 0.5.\n *\n * @doc {heading: 'Operations', subheading:
'Images', namespace: 'image'}\n *\n * ^/nfunction resizeBilinear_<T extends Tensor3D|Tensor4D>(\n images:
T|TensorLike, size: [number, number], alignCorners = false,\n halfPixelCenters = false): T {\n const $images =
convertToTensor(images, 'images', 'resizeBilinear');\n\n util.assert(\n $images.rank === 3 || $images.rank ===
4,\n () => `Error in resizeBilinear: x must be rank 3 or 4, but got ` +\n `rank ${$images.rank}.`);\n
util.assert(\n size.length === 2,\n () => `Error in resizeBilinear: new shape must 2D, but got shape ` +\n
`${size}.`);\n util.assert(\n halfPixelCenters === false || alignCorners === false,\n () => `Error in
resizeBilinear: If halfPixelCenters is true, ` +\n `alignCorners must be false.`);\n\n let batchImages = $images
as Tensor4D;\n let reshapedTo4D = false;\n if ($images.rank === 3) {\n reshapedTo4D = true;\n batchImages
= reshape(\n $images, [1, $images.shape[0], $images.shape[1], $images.shape[2]]);\n }\n\n const [] = size;\n}

```



```

const inputs: ResizeBilinearInputs = {images: batchImages};\n const attrs: ResizeBilinearAttrs = {alignCorners,
halfPixelCenters, size};\n\n // tslint:disable-next-line: no-unnecessary-type-assertion\n const res =
ENGINE.runKernel(\n          ResizeBilinear, inputs as {} as NamedTensorMap,\n          attrs as {} as
NamedAttrMap) as T;\n\n if (reshapedTo4D) {\n  return reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as
T;\n } \n return res;\n}\n\nexport const resizeBilinear = op({resizeBilinear_});\n", "/**\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {ENGINE} from '../engine';\nimport {ResizeNearestNeighbor, ResizeNearestNeighborAttrs,
ResizeNearestNeighborInputs} from '../kernel_names';\nimport {NamedAttrMap} from
'../kernel_registry';\nimport {Tensor3D, Tensor4D} from '../tensor';\nimport {NamedTensorMap} from
'../tensor_types';\nimport {convertToTensor} from '../tensor_util_env';\nimport {TensorLike} from
'../types';\nimport * as util from '../util';\nimport {op} from '../operation';\nimport {reshape} from
'../reshape';\n\n/**\n * NearestNeighbor resize a batch of 3D images to a new shape.\n *\n * @param images The
images, of rank 4 or rank 3, of shape\n *   `[batch, height, width, inChannels]`. If rank 3, batch of 1 is assumed.\n *
@param size The new shape `[newHeight, newWidth]` to resize the\n *   images to. Each channel is resized
individually.\n * @param alignCorners Defaults to False. If true, rescale\n *   input by `(new_height - 1) / (height -
1)`, which exactly aligns the 4\n *   corners of images and resized images. If false, rescale by\n *   `new_height /
height`. Treat similarly the width dimension.\n * @param halfPixelCenters Defaults to `false`. Whether to assumes
pixels are of\n *   half the actual dimensions, and yields more accurate resizes. This flag\n *   would also make
the floating point coordinates of the top left pixel\n *   0.5, 0.5.\n *\n * @doc {heading: 'Operations', subheading:
'Images', namespace: 'image'}\n *\nfunction resizeNearestNeighbor_<T extends Tensor3D|Tensor4D>(\n  images:
T|TensorLike, size: [number, number], alignCorners = false,\n  halfPixelCenters = false): T {\n  const $images =
convertToTensor(images, 'images', 'resizeNearestNeighbor');\n\n  util.assert(\n    $images.rank === 3 ||
$images.rank === 4,\n    () => `Error in resizeNearestNeighbor: x must be rank 3 or 4, but got `+\n    `rank
${$images.rank}.`);\n  util.assert(\n    size.length === 2,\n    () =>\n    `Error in resizeNearestNeighbor: new
shape must 2D, but got shape `+\n    `${size}.`);\n  util.assert(\n    $images.dtype === 'float32' || $images.dtype
=== 'int32',\n    () => `images` must have `int32` or `float32` as dtype`);\n  util.assert(\n    halfPixelCenters ===
false || alignCorners === false,\n    () => `Error in resizeNearestNeighbor: If halfPixelCenters is true, `+\n
`alignCorners must be false.`);\n  let batchImages = $images as Tensor4D;\n  let reshapedTo4D = false;\n  if
($images.rank === 3) {\n    reshapedTo4D = true;\n    batchImages = reshape(\n      $images, [1, $images.shape[0],
$images.shape[1], $images.shape[2]]);\n  }\n  const [] = size;\n\n  const inputs: ResizeNearestNeighborInputs =
{images: batchImages};\n  const attrs:\n    ResizeNearestNeighborAttrs = {alignCorners, halfPixelCenters,
size};\n\n  // tslint:disable-next-line: no-unnecessary-type-assertion\n  const res = ENGINE.runKernel(\n
ResizeNearestNeighbor, inputs as {} as NamedTensorMap,\n          attrs as {} as NamedAttrMap) as T;\n\n  if
(reshapedTo4D) {\n    return reshape(res, [res.shape[1], res.shape[2], res.shape[3]]) as T;\n  }\n  return
res;\n}\n\nexport const resizeNearestNeighbor = op({resizeNearestNeighbor_});\n", "/**\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====

```

```

*\n\nimport {Tensor} from '././tensor';\nimport {convertToTensor} from '././tensor_util_env';\nimport
{TensorLike} from '././types';\nimport {assert} from '././util';\nimport {greaterEqual} from
 '././greater_equal';\nimport {lessEqual} from '././less_equal';\nimport {logicalAnd} from '././logical_and';\nimport {op}
from '././operation';\nimport {range} from '././range';\nimport {reshape} from '././reshape';\nimport {scalar} from
 '././scalar';\nimport {stack} from '././stack';\nimport {sub} from '././sub';\nimport {unstack} from '././unstack';\nimport
{where} from '././where';\nimport {zeros} from '././zeros';\n\n**\n * Copy a tensor setting everything outside a
central band in each innermost\n * matrix to zero.\n *\n * The band part is computed as follows: Assume input has
`k` dimensions\n * `[I, J, K, ..., M, N]`, then the output is a tensor with the same shape where\n * `band[i, j, k, ..., m,
n] = in_band(m, n) * input[i, j, k, ..., m, n]`.\n *\n * The indicator function\n * `in_band(m, n) = (num_lower < 0 || (m-n)
<= num_lower)`\n * `&& (num_upper < 0 || (n-m) <= num_upper)`\n *\n * ````js\n * const x = tf.tensor2d([[ 0, 1,
2, 3],\n *      [-1, 0, 1, 2],\n *      [-2, -1, 0, 1],\n *      [-3, -2, -1, 0]]);\n * let y =
tf.linalg.bandPart(x, 1, -1);\n * y.print(); // [[ 0, 1, 2, 3],\n *      // [-1, 0, 1, 2],\n *      // [ 0, -1, 0, 1],\n *
// [ 0, 0, -1, 0]]\n * let z = tf.linalg.bandPart(x, 2, 1);\n * z.print(); // [[ 0, 1, 0, 0],\n *      // [-1, 0, 1, 0],\n
*      // [-2, -1, 0, 1],\n *      // [ 0, -2, -1, 0]]\n * ````\n *\n * @param x Rank `k` tensor\n * @param
numLower Number of subdiagonals to keep.\n * If negative, keep entire lower triangle.\n * @param numUpper
Number of subdiagonals to keep.\n * If negative, keep entire upper triangle.\n * @returns Rank `k` tensor of the
same shape as input.\n * The extracted banded tensor.\n *\n * @doc {heading:'Operations', subheading:'Linear
Algebra', namespace:'linalg'}\n *\nfunction bandPart_<T extends Tensor>(\n  a: T|TensorLike, numLower:
number, numUpper: number): T {\n  assert(\n    numLower % 1 === 0,\n    () => `bandPart(): numLower must be
an integer, got ${numLower}.`);\n  assert(\n    numUpper % 1 === 0,\n    () => `bandPart(): numUpper must be an
integer, got ${numUpper}.`);\n  const $a = convertToTensor(a, 'a', 'bandPart');\n  assert(\n    $a.rank >= 2,\n    () => `bandPart(): Rank must be at least 2, got ${$a.rank}.`);\n  const shape = $a.shape;\n  const [M, N] =
$a.shape.slice(-2);\n  if (!(numLower <= M)) {\n    throw new Error(\n      `bandPart(): numLower
(${numLower})`\n      ` must not be greater than the number of rows (${M}).`);\n  }\n  if (!(numUpper <= N))
{\n    throw new Error(\n      `bandPart(): numUpper (${numUpper})`\n      ` must not be greater than the
number of columns (${N}).`);\n  }\n  if (numLower < 0) {\n    numLower = M;\n  }\n  if (numUpper < 0) {\n
numUpper = N;\n  }\n  const i = reshape(range(0, M, 1, 'int32'), [-1, 1]);\n  const j = range(0, N, 1, 'int32');\n  const
ij = sub(i, j);\n  const inBand = logicalAnd(\n    lessEqual(ij, scalar(+numLower, 'int32')),\n    greaterEqual(ij,
scalar(-numUpper, 'int32')));\n  const zero = zeros([M, N], $a.dtype);\n  return reshape(\n
stack(unstack(reshape($a, [-1, M, N]))\n    .map(mat => where(inBand, mat, zero))),\n    shape) as
T;\n}\n\nexport const bandPart = op({bandPart_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====
*\n\nimport {ENGINE} from '././engine';\nimport {Tensor1D, Tensor2D} from '././tensor';\nimport {assert} from
 '././util';\nimport {div} from '././div';\nimport {mul} from '././mul';\nimport {norm} from '././norm';\nimport {op}
from '././operation';\nimport {split} from '././split';\nimport {squeeze} from '././squeeze';\nimport {stack} from
 '././stack';\nimport {sub} from '././sub';\nimport {sum} from '././sum';\n\n**\n * Gram-Schmidt orthogonalization.\n
*\n * ````js\n * const x = tf.tensor2d([[1, 2], [3, 4]]);\n * let y = tf.linalg.gramSchmidt(x);\n * y.print();\n *
console.log('Orthogonalized:');\n * y.dot(y.transpose()).print(); // should be nearly the identity matrix.\n *
console.log('First row direction maintained:');\n * const data = await y.array();\n * console.log(data[0][1] /
data[0][0]); // should be nearly 2.\n * ````\n *\n * @param xs The vectors to be orthogonalized, in one of the two
following\n * formats:\n * - An Array of `tf.Tensor1D`.\n * - A `tf.Tensor2D`, i.e., a matrix, in which case the
vectors are the rows\n * of `xs`.\n * In each case, all the vectors must have the same length and the length\n *

```

must be greater than or equal to the number of vectors.
 @returns The orthogonalized and normalized vectors or matrix.
 Orthogonalization means that the vectors or the rows of the matrix are orthogonal (zero inner products). Normalization means that each vector or each row of the matrix has an L2 norm that equals 1.
 @doc {heading:'Operations', subheading:'Linear Algebra', namespace:'linalg'}
 ^/nfunction
 gramSchmidt_(xs: Tensor1D[]|Tensor2D): Tensor1D[]|Tensor2D {
 let inputIsTensor2D: boolean;
 if (Array.isArray(xs)) {
 inputIsTensor2D = false;
 assert(xs != null && xs.length > 0, () => 'Gram-Schmidt process: input must not be null, undefined, or ' + 'empty');
 const dim = xs[0].shape[0];
 for (let i = 1; i < xs.length; ++i) {
 assert(xs[i].shape[0] === dim, () => 'Gram-Schmidt: Non-unique lengths found in the input vectors: ' + `(\${xs as Tensor1D[]}[i].shape[0] vs. \${dim})`);
 }
 } else {
 inputIsTensor2D = true;
 xs = split(xs, xs.shape[0], 0).map(x => squeeze(x, [0]));
 }
 assert(xs.length <= xs[0].shape[0], () => 'Gram-Schmidt: Number of vectors (\${xs as Tensor1D[]}.length) exceeds ' + 'number of dimensions (\${xs as Tensor1D[]}[0].shape[0])`);
 const ys: Tensor1D[] = [];
 const xs1d = xs;
 for (let i = 0; i < xs.length; ++i) {
 ys.push(ENGINE.tidy(() => {
 let x = xs1d[i];
 if (i > 0) {
 for (let j = 0; j < i; ++j) {
 const proj = mul(sum(mul(ys[j], x)), ys[j]);
 x = sub(x, proj);
 }
 }
 return div(x, norm(x, 'euclidean'));
 }));
 }
 if (inputIsTensor2D) {
 return stack(ys, 0) as Tensor2D;
 } else {
 return ys;
 }
 }
 }
 export const gramSchmidt = op({gramSchmidt_});
 "/*
 @license Copyright 2020 Google LLC. All Rights Reserved.
 Licensed under the Apache License, Version 2.0 (the "License");
 you may not use this file except in compliance with the License.
 You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0>
 Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 See the License for the specific language governing permissions and limitations under the License.

```

=====
^/nimport {ENGINE} from '../engine';
import {dispose} from '../globals';
import {Tensor, Tensor2D} from '../tensor';
import {assert} from '../util';
import {clone} from './clone';
import {concat} from './concat';
import {div} from './div';
import {eye} from './eye';
import {greater} from './greater';
import {matMul} from './mat_mul';
import {mul} from './mul';
import {neg} from './neg';
import {norm} from './norm';
import {op} from './operation';
import {reshape} from './reshape';
import {slice} from './slice';
import {stack} from './stack';
import {sub} from './sub';
import {tensor2d} from './tensor2d';
import {transpose} from './transpose';
import {unstack} from './unstack';
import {where} from './where';
^/n^/n^/n^/n^/n^/n^/n^/n^/n^/n^/n^/n^/n^/n^/
Compute QR decomposition of m-by-n matrix using Householder transformation.
^/n^/n^/n^/n^/n^/
^/n^/n^/n^/n^/
[http://www.cs.cornell.edu/~bindel/class/cs6210-f09/lec18.pdf]
(http://www.cs.cornell.edu/~bindel/class/cs6210-f09/lec18.pdf)
^/n^/n^/n^/
const a = tf.tensor2d([[1, 2], [3, 4]]);
let [q, r] = tf.linalg.qr(a);
console.log('Q');
q.print();
console.log('R');
r.print();
console.log('Orthogonalized');
q.dot(q.transpose()).print() // should be nearly the identity matrix.
console.log('Reconstructed');
q.dot(r).print(); // should be nearly [[1, 2], [3, 4]]
^/n^/n^/n^/
^/n^/n^/
@param x The `tf.Tensor` to be QR-decomposed. Must have rank >= 2. Suppose it has the shape `[..., M, N]`
@param fullMatrices An optional boolean parameter. Defaults to `false`
If `true`, compute full-sized `Q`. If `false` (the default), compute only the leading N columns of `Q` and `R`
@returns An `Array` of two `tf.Tensor`s: `[Q, R]`
`Q` is a unitary matrix, i.e., its columns all have unit norm and are mutually orthogonal
If `M >= N`, `Q` has a shape of `[..., M, N]`
If `fullMatrices` is `false` (default), `Q` has a shape of `[..., M, N]` and `R` has a shape of `[..., N, N]`
If `fullMatrices` is `true` (default), `Q` has a shape of `[..., M, M]` and `R` has a shape of `[..., M, N]`
If `M < N`, `Q` has a shape of `[..., M, M]` and `R` has a shape of `[..., M, N]`
@throws If the rank of `x` is less than 2.
^/n^/n^/
^/n^/n^/
@doc {heading:'Operations', subheading:'Linear Algebra', namespace:'linalg'}
^/n^/nfunction qr_(x: Tensor, fullMatrices = false): [Tensor, Tensor] {
assert(x.rank >= 2, () => `qr() requires input tensor to have a rank >= 2, but got rank ${x.rank}`);
if (x.rank === 2) {
return qr2d(x as Tensor2D, fullMatrices);
} else {
// Rank > 2.
//

```

```

TODO(cais): Below we split the input into individual 2D tensors,
// perform QR decomposition on them and
then stack the results back
// together. We should explore whether this can be parallelized.
const
outerDimsProd = x.shape.slice(0, x.shape.length - 2)
.reduce((value, prev) => value * prev);
const x2ds = unstack(
  reshape(
    x,
    [
      outerDimsProd, x.shape[x.shape.length - 2],
      x.shape[x.shape.length - 1]
    ],
    0);
const q2ds: Tensor2D[] = [];
const r2ds: Tensor2D[] = [];
x2ds.forEach(x2d => {
  const [q2d, r2d] = qr2d(x2d as Tensor2D, fullMatrices);
  q2ds.push(q2d);
  r2ds.push(r2d);
});
const q = reshape(stack(q2ds, 0), x.shape);
const r = reshape(stack(r2ds, 0), x.shape);
return [q, r];
}
}
function qr2d(x: Tensor2D, fullMatrices = false):
[Tensor2D, Tensor2D] {
  return ENGINE.tidy(() => {
    assert(
      x.shape.length === 2,
      () => `qr2d()
requires a 2D Tensor, but got a ${
      x.shape.length}D Tensor.`);
    const m = x.shape[0];
    const n = x.shape[1];
    let q = eye(m); // Orthogonal transform so far.
    let r = clone(x); // Transformed matrix so far.
    const one2D = tensor2d([[1]], [1, 1]);
    let w: Tensor2D = clone(one2D);
    const iters = m >= n ? n : m;
    for (let j = 0; j < iters; ++j) {
      // This tidy within the for-loop ensures we clean up temporary
      // tensors as soon as they are no longer needed.
      const rTemp = r;
      const wTemp = w;
      const qTemp = q;
      [w, r, q] = ENGINE.tidy(): [Tensor2D, Tensor2D, Tensor2D] => {
        // Find H = I - tau * w * w', to put zeros
        below R(j, j).
        const rjEnd1 = slice(r, [j, j], [m - j, 1]);
        const normX = norm(rjEnd1);
        const rjj = slice(r, [j, j], [1, 1]);
        // The sign() function returns 0 on 0, which causes division by zero.
        const s = where(greater(rjj, 0), tensor2d([[1]]), tensor2d([[1]]));
        const u1 = sub(rjj, mul(s, normX));
        const wPre = div(rjEnd1, u1);
        if (wPre.shape[0] === 1) {
          w = clone(one2D);
        } else {
          w = concat(
            [
              one2D,
              slice(wPre, [1, 0], [wPre.shape[0] - 1, wPre.shape[1]])
            ] as
            Tensor2D,
            0);
        }
        const tau = neg(div(matMul(s, u1), normX)) as Tensor2D;
        // -- R := HR, Q := QH.
        const rjEndAll = slice(r, [j, 0], [m - j, n]);
        const tauTimesW: Tensor2D = mul(tau, w);
        const wT: Tensor2D = transpose(w);
        if (j === 0) {
          r = sub(rjEndAll, matMul(tauTimesW, matMul(wT, rjEndAll)));
        } else {
          const rTimesTau: Tensor2D = sub(rjEndAll, matMul(tauTimesW, matMul(wT, rjEndAll)));
          r = concat([slice(r, [0, 0], [j, n]), rTimesTau], 0);
        }
        const tauTimesWT: Tensor2D = transpose(tauTimesW);
        const qAllJEnd = slice(q, [0, j], [m, q.shape[1] - j]);
        if (j === 0) {
          q = sub(qAllJEnd, matMul(matMul(qAllJEnd, w), tauTimesWT));
        } else {
          const qTimesTau: Tensor2D = sub(qAllJEnd, matMul(matMul(qAllJEnd, w), tauTimesWT));
          q = concat([slice(q, [0, 0], [m, j]), qTimesTau, 1);
        }
        return [w, r, q];
      });
      dispose([rTemp, wTemp, qTemp]);
    }
    if (!fullMatrices && m > n) {
      q = slice(q, [0, 0], [m, n]);
      r = slice(r, [0, 0], [n, n]);
    }
    return [q, r];
  }) as [Tensor2D, Tensor2D];
}
}
export const qr =
op({qr_});
"/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
=====
*/
export enum Reduction {
  NONE,
  MEAN,
  SUM,
  SUM_BY_NONZERO_WEIGHTS
}
"/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
=====
*/
import {Tensor} from '../tensor';
import {convertToTensor} from '../tensor_util_env';
import

```

```
{TensorLike} from '../types';\n\nimport {cast} from './cast';\nimport {div} from './div';\nimport {Reduction} from './loss_ops_utils';\nimport {mean} from './mean';\nimport {mul} from './mul';\nimport {notEqual} from './not_equal';\nimport {ones} from './ones';\nimport {op} from './operation';\nimport {scalar} from './scalar';\nimport {sum} from './sum';\n\n/**\n * Computes the weighted loss between two tensors.\n *\n * @param losses Tensor of shape `[batch_size, d1, ... dN]`.\n * @param weights Tensor whose rank is either 0, or the same rank as `losses`, and must be broadcastable to `losses` (i.e., all dimensions must be either `1`, or the same as the corresponding `losses` dimension).\n *\n * @doc {heading: 'Training', subheading: 'Losses', namespace: 'losses'}\n *\nfunction computeWeightedLoss_<T extends Tensor, O extends Tensor>(\n  losses: T|TensorLike, weights?: Tensor|TensorLike,\n  reduction = Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n  const $losses = convertToTensor(losses, 'losses', 'computeWeightedLoss');\n  let $weights: Tensor = null;\n  if (weights != null) {\n    $weights = convertToTensor(weights, 'weights', 'computeWeightedLoss');\n  }\n\n  const weightedLoss = ($weights == null) ? $losses : mul($losses, $weights);\n\n  if (reduction === Reduction.NONE) {\n    return weightedLoss as O;\n  }\n  if (reduction === Reduction.SUM) {\n    return sum(weightedLoss);\n  }\n  if (reduction === Reduction.MEAN) {\n    if ($weights == null) {\n      return mean(weightedLoss);\n    } else {\n      const broadcastFactor = $losses.size / $weights.size;\n      const result = div(sum(weightedLoss), sum($weights));\n      return broadcastFactor > 1 ? div(result, scalar(broadcastFactor)) : result as O;\n    }\n  }\n  if (reduction === Reduction.SUM_BY_NONZERO_WEIGHTS) {\n    if ($weights == null) {\n      return div(sum(weightedLoss), scalar($losses.size));\n    } else {\n      const broadcastedWeights = mul($weights, ones($losses.shape));\n      const numNonZeros = cast(sum(notEqual(broadcastedWeights, scalar(0))), 'float32');\n      return div(sum(weightedLoss), numNonZeros);\n    }\n  }\n\n  throw Error(`Unknown reduction: ${reduction}`);\n}\n\nexport const computeWeightedLoss = op({computeWeightedLoss_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\nimport {Tensor} from '../tensor';\nimport {convertToTensor} from './tensor_util_env';\nimport {TensorLike} from '../types';\nimport {assertShapesMatch} from './util';\nimport {abs} from './abs';\nimport {Reduction} from './loss_ops_utils';\nimport {op} from './operation';\nimport {sub} from './sub';\n\nimport {computeWeightedLoss} from './compute_weighted_loss';\n\n/**\n * Computes the absolute difference loss between two tensors.\n *\n * @param labels The ground truth output tensor, same dimensions as\n * 'predictions'.\n * @param predictions The predicted outputs.\n * @param weights Tensor whose rank is either 0, or the same rank as\n * `labels`, and must be broadcastable to `labels` (i.e., all dimensions\n * must be either `1`, or the same as the corresponding `losses`\n * dimension).\n * @param reduction Type of reduction to apply to loss. Should be of type\n * `Reduction`.\n *\n * @doc {heading: 'Training', subheading: 'Losses', namespace: 'losses'}\n *\nfunction absoluteDifference_<T extends Tensor, O extends Tensor>(\n  labels: T|TensorLike, predictions: T|TensorLike,\n  weights?: Tensor|TensorLike,\n  reduction = Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n  const $labels = convertToTensor(labels, 'labels', 'absoluteDifference');\n  const $predictions =\n    convertToTensor(predictions, 'predictions', 'absoluteDifference');\n  let $weights: Tensor = null;\n  if (weights != null) {\n    $weights = convertToTensor(weights, 'weights', 'absoluteDifference');\n  }\n  assertShapesMatch($labels.shape, $predictions.shape, 'Error in absoluteDifference:');\n  const losses = abs(sub($labels, $predictions));\n  return computeWeightedLoss(losses, $weights, reduction);\n}\n\nexport const absoluteDifference = op({absoluteDifference_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in\n * compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {Tensor} from '../tensor';\nimport {convertToTensor} from '../tensor_util_env';\nimport\n{TensorLike} from '../types';\nimport {assertShapesMatch} from '../util';\nimport {Reduction} from\n../loss_ops_utils';\nimport {mul} from '../mul';\nimport {op} from '../operation';\nimport {scalar} from\n../scalar';\nimport {sub} from '../sub';\nimport {sum} from '../sum';\n\nimport {computeWeightedLoss} from\n../compute_weighted_loss';\n\n/**\n * Computes the cosine distance loss between two tensors.\n * @param\n labels The ground truth output tensor, same dimensions as\n * `predictions`.\n * @param predictions The predicted\n outputs.\n * @param axis The dimension along which the cosine distance is computed.\n * @param weights Tensor whose rank is either 0, or the same rank as\n * `labels`, and must be broadcastable to `labels` (i.e., all dimensions\n * must be either `1`, or the same as the corresponding `losses`\n * dimension).\n * @param reduction Type of\n reduction to apply to loss. Should be of type\n * `Reduction`\n * @doc {heading: 'Training', subheading:\n 'Losses', namespace: 'losses'}\n\nfunction cosineDistance_<T extends Tensor, O extends Tensor>(\n labels:\n T|TensorLike, predictions: T|TensorLike, axis: number,\n weights?: Tensor|TensorLike,\n reduction =\n Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n const $labels = convertToTensor(labels, 'labels',\n 'cosineDistance');\n const $predictions =\n convertToTensor(predictions, 'predictions', 'cosineDistance');\n let\n $weights: Tensor = null;\n if (weights != null) {\n $weights = convertToTensor(weights, 'weights',\n 'cosineDistance');\n }\n assertShapesMatch(\n $labels.shape, $predictions.shape, 'Error in cosineDistance: ');\n const one = scalar(1);\n const losses = sub(one, sum(mul($labels, $predictions), axis, true));\n return\n computeWeightedLoss(losses, $weights, reduction);\n}\n\nexport const cosineDistance =\nop({cosineDistance_});\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *\n
```

```
=====\n*\nimport {Tensor} from '../tensor';\nimport {convertToTensor} from '../tensor_util_env';\nimport\n{TensorLike} from '../types';\nimport {assertShapesMatch} from '../util';\nimport {Reduction} from\n../loss_ops_utils';\nimport {mul} from '../mul';\nimport {op} from '../operation';\nimport {relu} from\n../relu';\nimport {scalar} from '../scalar';\nimport {sub} from '../sub';\n\nimport {computeWeightedLoss} from\n../compute_weighted_loss';\n\n/**\n * Computes the Hinge loss between two tensors.\n * @param\n labels The ground truth output tensor, same dimensions as\n * `predictions`.\n * @param predictions The predicted\n outputs.\n * @param weights Tensor whose rank is either 0, or the same rank as\n * `labels`, and must be broadcastable to\n `labels` (i.e., all dimensions\n * must be either `1`, or the same as the corresponding `losses`\n * dimension).\n * @param reduction Type of\n reduction to apply to loss. Should be of type\n * `Reduction`\n * @doc {heading:\n 'Training', subheading: 'Losses', namespace: 'losses'}\n\nfunction hingeLoss_<T extends Tensor, O extends\n Tensor>(\n labels: T|TensorLike, predictions: T|TensorLike,\n weights?: Tensor|TensorLike,\n reduction =\n Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n let $labels = convertToTensor(labels, 'labels', 'hingeLoss');\n const $predictions = convertToTensor(predictions, 'predictions', 'hingeLoss');\n let $weights: Tensor = null;\n if\n (weights != null) {\n $weights = convertToTensor(weights, 'weights', 'hingeLoss');\n }\n assertShapesMatch($labels.shape, $predictions.shape, 'Error in hingeLoss: ');\n const one = scalar(1);\n //\n Convert binary labels to (-1, 1)\n $labels = sub(mul(scalar(2), $labels), one);\n const losses = relu(sub(one,\n mul($labels, $predictions))); \n return computeWeightedLoss(losses, $weights, reduction);\n}\n\nexport const\n hingeLoss = op({hingeLoss_});\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * \n
```

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/\n\nimport {Tensor} from '../tensor';\nimport {convertToTensor} from '../tensor_util_env';\nimport\n{TensorLike} from '../types';\nimport {assertShapesMatch} from '../util';\nimport {abs} from './abs';\nimport\n{add} from './add';\nimport {Reduction} from './loss_ops_utils';\nimport {minimum} from './minimum';\nimport\n{mul} from './mul';\nimport {op} from './operation';\nimport {scalar} from './scalar';\nimport {square} from\n './square';\nimport {sub} from './sub';\n\nimport {computeWeightedLoss} from\n './compute_weighted_loss';\n\n/**\n * Computes the huber loss between two tensors.\n * @param labels The\n * ground truth output tensor, same dimensions as\n * `predictions`.\n * @param predictions The predicted outputs.\n * @param weights Tensor whose rank is either 0, or the same rank as\n * `labels`, and must be broadcastable to\n * `labels` (i.e., all dimensions\n * must be either `1`, or the same as the corresponding `losses`\n * dimension).\n * @param delta Point where huber loss changes from quadratic to linear.\n * @param reduction Type of reduction to\n * apply to loss. Should be of type\n * `Reduction`.\n * @doc {heading: 'Training', subheading: 'Losses',\n * namespace: 'losses'}\n */\nfunction huberLoss<T extends Tensor, O extends Tensor>(\n  labels: T|TensorLike,\n  predictions: T|TensorLike,\n  weights?: Tensor|TensorLike, delta = 1.0,\n  reduction =\n  Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n  const $labels = convertToTensor(labels, 'labels',\n  'huberLoss');\n  const $predictions = convertToTensor(predictions, 'predictions', 'huberLoss');\n  let $weights:\n  Tensor = null;\n  if (weights != null) {\n    $weights = convertToTensor(weights, 'weights', 'huberLoss');\n  }\n  assertShapesMatch($labels.shape, $predictions.shape, 'Error in huberLoss:');\n  const deltaScalar =\n  scalar(delta);\n  const error = abs(sub($predictions, $labels));\n  const quadratic = minimum(error, deltaScalar);\n  const linear = sub(error, quadratic);\n  const losses =\n  add(mul(scalar(0.5), square(quadratic)),\n  mul(deltaScalar, linear));\n  return computeWeightedLoss(losses, $weights, reduction);\n}\n\nexport const huberLoss\n = op({huberLoss_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */\n
```

```
=====
*/\n\nimport {Tensor} from '../tensor';\nimport {convertToTensor} from '../tensor_util_env';\nimport\n{TensorLike} from '../types';\nimport {assertShapesMatch} from '../util';\nimport {add} from './add';\nimport\n{log} from './log';\nimport {Reduction} from './loss_ops_utils';\nimport {mul} from './mul';\nimport {neg} from\n './neg';\nimport {op} from './operation';\nimport {scalar} from './scalar';\nimport {sub} from './sub';\n\nimport\n{computeWeightedLoss} from './compute_weighted_loss';\n\n/**\n * Computes the log loss between two tensors.\n * @param labels The ground truth output tensor, same dimensions as\n * `predictions`.\n * @param predictions\n * The predicted outputs.\n * @param weights Tensor whose rank is either 0, or the same rank as\n * `labels`, and\n * must be broadcastable to `labels` (i.e., all dimensions\n * must be either `1`, or the same as the corresponding\n * `losses`\n * dimension).\n * @param epsilon A small increment to avoid taking log of zero\n * @param reduction\n * Type of reduction to apply to loss. Should be of type\n * `Reduction`.\n * @doc {heading: 'Training',\n * subheading: 'Losses', namespace: 'losses'}\n */\nfunction logLoss<T extends Tensor, O extends Tensor>(\n  labels: T|TensorLike, predictions: T|TensorLike,\n  weights?: Tensor|TensorLike, epsilon = 1e-7,\n  reduction =\n  Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n  const $labels = convertToTensor(labels, 'labels', 'logLoss');\n  const $predictions = convertToTensor(predictions, 'predictions', 'logLoss');\n  let $weights:\n  Tensor = null;\n  if (weights != null) {\n    $weights = convertToTensor(weights, 'weights', 'logLoss');\n  }\n  assertShapesMatch($labels.shape, $predictions.shape, 'Error in logLoss:');\n  const epsilonScalar =\n  scalar(epsilon);\n  const error = abs(sub($predictions, $labels));\n  const logLoss =\n  add(mul(scalar(-1), log(add(error, epsilonScalar))),\n  mul($labels, error));\n  return computeWeightedLoss(logLoss, $weights, reduction);\n}\n\nexport const logLoss\n = op({logLoss_});\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */\n
```

```

const $predictions = convertToTensor(predictions, 'predictions', 'logLoss');
let $weights: Tensor = null;
if (weights != null) {
  $weights = convertToTensor(weights, 'weights', 'logLoss');
}
assertShapesMatch($labels.shape, $predictions.shape, 'Error in logLoss: ');
const one = scalar(1);
const epsilonScalar = scalar(epsilon);
const l1 = neg(mul($labels, log(add($predictions, epsilonScalar)));
const l2 =
  mul(sub(one, $labels), log(add(sub(one, $predictions), epsilonScalar)));
const losses = sub(l1, l2);
return computeWeightedLoss(losses, $weights, reduction);
}
export const logLoss = op({logLoss_});

```

@license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <http://www.apache.org/licenses/LICENSE-2.0>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.

```

=====
*/
import {Tensor} from '../tensor';
import {convertToTensor} from '../tensor_util_env';
import {TensorLike} from '../types';
import {assertShapesMatch} from '../util';
import {Reduction} from
  './loss_ops_utils';
import {op} from './operation';
import {squaredDifference} from
  './squared_difference';
import {computeWeightedLoss} from './compute_weighted_loss';
/**
 * Computes the mean squared error between two tensors.
 * @param labels The ground truth output tensor, same dimensions as
 * `predictions`.
 * @param predictions The predicted outputs.
 * @param weights Tensor whose rank is either 0, or the same rank as
 * `labels`, and must be broadcastable to `labels` (i.e., all dimensions
 * must be either `1`, or the same as the corresponding `losses`
 * dimension).
 * @param reduction Type of reduction to apply to loss. Should be of type
 * `Reduction`
 * @doc {heading: 'Training', subheading: 'Losses', namespace: 'losses'}
 */
function meanSquaredError<T extends Tensor, O extends Tensor>(
  labels: T|TensorLike, predictions: T|TensorLike,
  weights?: Tensor|TensorLike, reduction =
  Reduction.SUM_BY_NONZERO_WEIGHTS): O {
  const $labels = convertToTensor(labels, 'labels',
  'meanSquaredError');
  const $predictions =
  convertToTensor(predictions, 'predictions',
  'meanSquaredError');
  let $weights: Tensor = null;
  if (weights != null) {
    $weights =
    convertToTensor(weights, 'weights', 'meanSquaredError');
  }
  assertShapesMatch($labels.shape,
  $predictions.shape, 'Error in meanSquaredError: ');
  const losses = squaredDifference($labels, $predictions);
  return computeWeightedLoss(losses, $weights, reduction);
}
export const meanSquaredError =
  op({meanSquaredError_});

```

@license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <http://www.apache.org/licenses/LICENSE-2.0>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.

```

=====
*/
import {Tensor} from '../tensor';
import {convertToTensor} from '../tensor_util_env';
import {TensorLike} from '../types';
import {assertShapesMatch} from '../util';
import {abs} from './abs';
import {add} from './add';
import {exp} from './exp';
import {log1p} from './log1p';
import {Reduction} from
  './loss_ops_utils';
import {mul} from './mul';
import {neg} from './neg';
import {op} from
  './operation';
import {relu} from './relu';
import {scalar} from './scalar';
import {sub} from './sub';
import {computeWeightedLoss} from './compute_weighted_loss';
function sigmoidCrossEntropyWithLogits<T
  extends Tensor, O extends Tensor>(
  labels: T|TensorLike, logits: T|TensorLike): O {
  const $labels =
  convertToTensor(labels, 'labels', 'sigmoidCrossEntropyWithLogits');
  const $logits =
  convertToTensor(logits, 'logits', 'sigmoidCrossEntropyWithLogits');
  assertShapesMatch($labels.shape, $logits.shape, 'Error in
  sigmoidCrossEntropyWithLogits: ');
  /**
   * Implementation Details:
   * For brevity, let `x = logits`, `z
  
```


= labels`. The logistic loss is $z * -\log(\text{sigmoid}(x)) + (1 - z) * -\log(1 - \text{sigmoid}(x))$

$= z * -\log(1 / (1 + \exp(-x))) + (1 - z) * -\log(\exp(-x) / (1 + \exp(-x)))$

$= z * \log(1 + \exp(-x)) + (1 - z) * (-\log(\exp(-x)) + \log(1 + \exp(-x)))$

$= z * \log(1 + \exp(-x)) + (1 - z) * (x + \log(1 + \exp(-x)))$

$= (1 - z) * x + \log(1 + \exp(-x))$

For $x < 0$, to avoid overflow in $\exp(-x)$, we reformulate the above

$x - x * z + \log(1 + \exp(-x))$

$= \log(\exp(x)) - x * z + \log(1 + \exp(-x))$

$= -x * z + \log(1 + \exp(x))$

Hence, to ensure stability and avoid overflow, the implementation uses this equivalent formulation:

```

const maxOutput = relu($logits);
const outputXTarget = mul($logits, $labels);
const sigmoidOutput = log1p(exp(neg(abs($logits))));
return add(sub(maxOutput, outputXTarget), sigmoidOutput);

```

Computes the sigmoid cross entropy loss between two tensors.

If labelSmoothing is nonzero, smooth the labels towards 1/2:

```

newMulticlassLabels = multiclassLabels * (1 - labelSmoothing) + 0.5 * labelSmoothing

```

@param multiClassLabels The ground truth output tensor of shape [batch_size, num_classes], same dimensions as 'predictions'.

@param logits The predicted outputs.

@param weights Tensor whose rank is either 0, or the same rank as labels, and must be broadcastable to labels (i.e., all dimensions must be either 1, or the same as the corresponding losses dimension).

@param labelSmoothing If greater than 0, then smooth the labels.

@param reduction Type of reduction to apply to loss. Should be of type Reduction

```

@doc { heading: 'Training', subheading: 'Losses', namespace: 'losses' }
function sigmoidCrossEntropy_<T extends Tensor, O extends Tensor>(
  multiClassLabels: T|TensorLike, logits: T|TensorLike,
  weights?: Tensor|TensorLike, labelSmoothing = 0,
  reduction = Reduction.SUM_BY_NONZERO_WEIGHTS): O {
  let $multiClassLabels = convertToTensor(multiClassLabels, 'multiClassLabels', 'sigmoidCrossEntropy');
  const $logits = convertToTensor(logits, 'logits', 'sigmoidCrossEntropy');
  let $weights: Tensor = null;
  if (weights != null) {
    $weights = convertToTensor(weights, 'weights', 'sigmoidCrossEntropy');
  }
  assertShapesMatch($multiClassLabels.shape, $logits.shape, 'Error in sigmoidCrossEntropy: ');
  if (labelSmoothing > 0) {
    const labelSmoothingScalar = scalar(labelSmoothing);
    const one = scalar(1);
    const half = scalar(0.5);
    $multiClassLabels = add(mul($multiClassLabels, sub(one, labelSmoothingScalar)), mul(half, labelSmoothingScalar));
  }
  const losses = sigmoidCrossEntropyWithLogits_($multiClassLabels, $logits);
  return computeWeightedLoss(losses, $weights, reduction);
}

```

export const sigmoidCrossEntropy = op({sigmoidCrossEntropy_});

@license Copyright 2020 Google LLC. All Rights Reserved.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```

=====
* \nimport { customGrad } from '../gradients';
* \nimport { Tensor } from '../tensor';
* \nimport { GradSaveFunc } from '../tensor_types';
* \nimport { convertToTensor } from '../tensor_util_env';
* \nimport { TensorLike } from '../types';
* \nimport { assertShapesMatch } from '../util';
* \nimport { add } from './add';
* \nimport { expandShapeToKeepDim } from './axis_util';
* \nimport { cast } from './cast';
* \nimport { div } from './div';
* \nimport { exp } from './exp';
* \nimport { logSumExp } from './log_sum_exp';
* \nimport { Reduction } from './loss_ops_utils';
* \nimport { mul } from './mul';
* \nimport { neg } from './neg';
* \nimport { op } from './operation';
* \nimport { reshape } from './reshape';
* \nimport { scalar } from './scalar';
* \nimport { sub } from './sub';
* \nimport { sum } from './sum';
* \nimport { computeWeightedLoss } from './compute_weighted_loss';

```

Computes softmax cross entropy between logits and labels.

Measures the probability error in discrete classification tasks in which the classes are mutually exclusive (each entry is in exactly one class). For example, each CIFAR-10 image is labeled with one and only one label: an image can be a dog or a truck, but not both.

NOTE: While the classes are mutually exclusive, their probabilities need not be. All that is required is that each row of labels is a valid probability distribution. If they are not, the computation of the

```

gradient\n * will be incorrect.\n * \`WARNING\`: This op expects unscaled logits, since it performs a softmax
on\n * logits internally for efficiency. Do not call this op with the output of\n * softmax, as it will produce incorrect
results.\n * \n * logits and labels must have the same shape, e.g. [batch_size, num_classes]\n * and the same dtype.\n
* @param labels The labels array.\n * @param logits The logits array.\n * @param dim The dimension softmax
would be performed on. Defaults to -1\n * which indicates the last dimension.\n */\nfunction
softmaxCrossEntropyWithLogits_<T extends Tensor, O extends Tensor>(\n labels: T, logits: T, dim = -1): O {\n
if (dim === -1) {\n dim = logits.rank - 1;\n }\n\n if (dim !== logits.rank - 1) {\n throw Error(\n `Softmax
cross entropy along a non-last dimension is not yet ` +\n `supported. Labels / logits was rank ${logits.rank}`
+\n `and dim was ${dim}`);\n }\n // Use a custom gradient for numerical stability.\n const customOp =\n customGrad((labels: Tensor, logits: Tensor, save: GradSaveFunc) => {\n // Reference:\n // 1.
http://cs231n.github.io/linear-classify/#softmax\n // 2. https://blog.feedly.com/tricks-of-the-trade-logsumexp/\n
const keepDims = true;\n const lse = logSumExp(logits, [dim], keepDims);\n const logResult =
sub(cast(logits, 'float32'), lse);\n save([labels, logResult]);\n\n const costVector = neg(mul(logResult,
labels));\n const value: O = sum(costVector, [dim]);\n\n const gradFunc = (dy: O, saved: Tensor[]) => {\n
const [labels, logResult] = saved;\n const dyShape = expandShapeToKeepDim(dy.shape, [dim]);\n
return [\n mul(reshape(dy, dyShape),\n sub(cast(labels, 'float32'), exp(logResult))),\n
mul(reshape(dy, dyShape),\n sub(exp(logResult), cast(labels, 'float32'))),\n ];\n };\n return
{value, gradFunc};\n });\n\n return customOp(labels, logits);\n }\n\n/**\n * Computes the softmax cross entropy
loss between two tensors.\n * \n * If labelSmoothing is nonzero, smooth the labels towards 1/2.\n * \n *
newOnehotLabels = onehotLabels * (1 - labelSmoothing)\n * + labelSmoothing / numClasses\n * \n *
@param onehotLabels One hot encoded labels\n * [batch_size, num_classes], same dimensions as 'predictions'.\n
* @param logits The predicted outputs.\n * @param weights Tensor whose rank is either 0, or 1, and must be\n *
broadcastable to `loss` of shape [batch_size]\n * @param labelSmoothing If greater than 0, then smooth the
labels.\n * @param reduction Type of reduction to apply to loss. Should be of type\n * `Reduction`\n * \n * @doc
{ heading: 'Training', subheading: 'Losses', namespace: 'losses' }\n */\nfunction softmaxCrossEntropy_<T extends
Tensor, O extends Tensor>(\n onehotLabels: T|TensorLike, logits: T|TensorLike,\n weights?:
Tensor|TensorLike, labelSmoothing = 0,\n reduction = Reduction.SUM_BY_NONZERO_WEIGHTS): O {\n let
$onehotLabels =\n convertToTensor(onehotLabels, 'onehotLabels', 'softmaxCrossEntropy');\n const $logits =
convertToTensor(logits, 'logits', 'softmaxCrossEntropy');\n let $weights: Tensor = null;\n\n if (weights !== null) {\n
$weights = convertToTensor(weights, 'weights', 'softmaxCrossEntropy');\n }\n\n assertShapesMatch(\n
$onehotLabels.shape, $logits.shape, 'Error in softmaxCrossEntropy: '); \n\n if (labelSmoothing > 0) {\n const
labelSmoothingScalar = scalar(labelSmoothing);\n const one = scalar(1);\n const numClasses =
scalar($onehotLabels.shape[1]);\n\n $onehotLabels =\n add(mul($onehotLabels, sub(one,
labelSmoothingScalar)),\n div(labelSmoothingScalar, numClasses));\n }\n\n const losses =
softmaxCrossEntropyWithLogits_($onehotLabels, $logits);\n\n return computeWeightedLoss(losses, $weights,
reduction);\n }\n\nexport const softmaxCrossEntropy = op({softmaxCrossEntropy_});\n", "/*\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\n// Modularized ops.\nexport {abs} from './abs';\nexport {acos} from './acos';\nexport {acosh} from
 './acosh';\nexport {add} from './add';\nexport {addN} from './add_n';\nexport {all} from './all';\nexport {any} from
 './any';\nexport {argMax} from './arg_max';\nexport {argMin} from './arg_min';\nexport {asin} from './asin';\nexport
{asinh} from './asinh';\nexport {atan} from './atan';\nexport {atan2} from './atan2';\nexport {atanh} from
 './atanh';\nexport {avgPool} from './avg_pool';\nexport {avgPool3d} from './avg_pool_3d';\nexport

```

{basicLSTMCell} from './basic_lstm_cell';\nextport {batchToSpaceND} from './batch_to_space_nd';\nextport {batchNorm} from './batchnorm';\nextport {batchNorm2d} from './batchnorm2d';\nextport {batchNorm3d} from './batchnorm3d';\nextport {batchNorm4d} from './batchnorm4d';\nextport {bincount} from './bincount';\nextport {broadcastTo} from './broadcast_to';\nextport {buffer} from './buffer';\nextport {cast} from './cast';\nextport {ceil} from './ceil';\nextport {clipByValue} from './clip_by_value';\nextport {clone} from './clone';\nextport {complex} from './complex';\nextport {concat} from './concat';\nextport {concat1d} from './concat_1d';\nextport {concat2d} from './concat_2d';\nextport {concat3d} from './concat_3d';\nextport {concat4d} from './concat_4d';\nextport {conv1d} from './conv1d';\nextport {conv2d} from './conv2d';\nextport {conv2dTranspose} from './conv2d_transpose';\nextport {conv3d} from './conv3d';\nextport {conv3dTranspose} from './conv3d_transpose';\nextport {cos} from './cos';\nextport {cosh} from './cosh';\nextport {cumsum} from './cumsum';\nextport {denseBincount} from './dense_bincount';\nextport {depthToSpace} from './depth_to_space';\nextport {depthwiseConv2d} from './depthwise_conv2d';\nextport {diag} from './diag';\nextport {dilation2d} from './dilation2d';\nextport {div} from './div';\nextport {divNoNaN} from './div_no_nan';\nextport {dot} from './dot';\nextport {elu} from './elu';\nextport {equal} from './equal';\nextport {erf} from './erf';\nextport {exp} from './exp';\nextport {expandDims} from './expand_dims';\nextport {expm1} from './expm1';\nextport {eye} from './eye';\nextport {fill} from './fill';\nextport {floor} from './floor';\nextport {floorDiv} from './floorDiv';\nextport {gather} from './gather';\nextport {greater} from './greater';\nextport {greaterEqual} from './greater_equal';\nextport {imag} from './imag';\nextport {isFinite} from './is_finite';\nextport {isInf} from './is_inf';\nextport {isNaN} from './is_nan';\nextport {leakyRelu} from './leaky_relu';\nextport {less} from './less';\nextport {lessEqual} from './less_equal';\nextport {linspace} from './linspace';\nextport {localResponseNormalization} from './local_response_normalization';\nextport {log} from './log';\nextport {log1p} from './log1p';\nextport {logSigmoid} from './log_sigmoid';\nextport {logSoftmax} from './log_softmax';\nextport {logSumExp} from './log_sum_exp';\nextport {logicalAnd} from './logical_and';\nextport {logicalNot} from './logical_not';\nextport {logicalOr} from './logical_or';\nextport {logicalXor} from './logical_xor';\nextport {matMul} from './mat_mul';\nextport {max} from './max';\nextport {maxPool} from './max_pool';\nextport {maxPool3d} from './max_pool_3d';\nextport {maxPoolWithArgmax} from './max_pool_with_argmax';\nextport {maximum} from './maximum';\nextport {mean} from './mean';\nextport {min} from './min';\nextport {minimum} from './minimum';\nextport {mirrorPad} from './mirror_pad';\nextport {mod} from './mod';\nextport {moments} from './moments';\nextport {mul} from './mul';\nextport {LSTMCellFunc, multiRNNCell} from './multi_rnn_cell';\nextport {multinomial} from './multinomial';\nextport {neg} from './neg';\nextport {notEqual} from './not_equal';\nextport {oneHot} from './one_hot';\nextport {ones} from './ones';\nextport {onesLike} from './ones_like';\nextport {outerProduct} from './outer_product';\nextport {pad} from './pad';\nextport {pad1d} from './pad1d';\nextport {pad2d} from './pad2d';\nextport {pad3d} from './pad3d';\nextport {pad4d} from './pad4d';\nextport {pool} from './pool';\nextport {pow} from './pow';\nextport {prelu} from './prelu';\nextport {print} from './print';\nextport {prod} from './prod';\nextport {rand} from './rand';\nextport {randomGamma} from './random_gamma';\nextport {randomNormal} from './random_normal';\nextport {randomUniform} from './random_uniform';\nextport {range} from './range';\nextport {real} from './real';\nextport {reciprocal} from './reciprocal';\nextport {relu} from './relu';\nextport {relu6} from './relu6';\nextport {reshape} from './reshape';\nextport {reverse} from './reverse';\nextport {reverse1d} from './reverse_1d';\nextport {reverse2d} from './reverse_2d';\nextport {reverse3d} from './reverse_3d';\nextport {reverse4d} from './reverse_4d';\nextport {round} from './round';\nextport {rsqrt} from './rsqrt';\nextport {scalar} from './scalar';\nextport {selu} from './selu';\nextport {separableConv2d} from './separable_conv2d';\nextport {setdiff1dAsync} from './setdiff1d_async';\nextport {sigmoid} from './sigmoid';\nextport {sign} from './sign';\nextport {sin} from './sin';\nextport {sinh} from './sinh';\nextport {slice} from './slice';\nextport {slice1d} from './slice1d';\nextport {slice2d} from './slice2d';\nextport {slice3d} from './slice3d';\nextport {slice4d} from './slice4d';\nextport {softmax} from './softmax';\nextport {softplus} from './softplus';\nextport {spaceToBatchND} from './space_to_batch_nd';\nextport {fft} from './spectral/fft';\nextport {ifft} from './spectral/ifft';\nextport {irfft} from './spectral/irfft';\nextport {rfft} from './spectral/rfft';\nextport {split} from './split';\nextport {sqrt} from './sqrt';\nextport {square} from './square';\nextport {squaredDifference} from './squared_difference';\nextport {squeeze} from './squeeze';\nextport {stack} from './stack';\nextport {step} from

* The `originalName` field is required for keeping track of the canonical name of the variable, which is usually the name of the model weight that the variable is related to plus a suffix, e.g., 'dense1/kernel/momentum'. The name of the `Variable` object itself cannot be used directly due to possible deduplication: Every `Variable` must have a unique name but more than one optimizer objects of the same type may be created for the same model or the same `Variable`.

```

export interface OptimizerVariable {
  originalName: string;
  variable: Variable;
}

/** @doc {heading: 'Training', subheading: 'Classes', namespace: 'train'}
 * An abstract class Optimizer extends Serializable
 * protected iterations_: number;
 * Executes `f()` and minimizes the scalar output of `f()` by computing
 * gradients of y with respect to the list of trainable variables provided by
 * `varList`. If no list is provided, it defaults to all trainable variables.
 * @param f The function to execute and whose output to minimize.
 * @param returnCost Whether to return the scalar cost value produced by
 * executing `f()`.
 * @param varList An optional list of variables to update. If specified, only
 * the trainable variables in varList will be updated by minimize. Defaults to
 * all trainable variables.
 * @doc {heading: 'Training', subheading: 'Optimizers'}
 * minimize(f: () => Scalar, returnCost = false, varList?: Variable[]):
 * Scalar | null
 * const {value, grads} = this.computeGradients(f, varList);
 * if (varList != null) {
 *   const gradArray: NamedTensor[] =
 *     varList.map(v => ({name: v.name, tensor: grads[v.name]}));
 *   this.applyGradients(gradArray);
 * } else {
 *   this.applyGradients(grads);
 * }
 * // Dispose gradients.
 * dispose(grads);
 * if (returnCost) {
 *   return value;
 * } else {
 *   value.dispose();
 *   return null;
 * }
 * }
 * /**
 * The number of iterations that this optimizer instance has been invoked for.
 * get iterations(): number
 * if (this.iterations_ == null) {
 *   this.iterations_ = 0;
 * }
 * return this.iterations_;
 * }
 * protected incrementIterations() {
 *   this.iterations_ = this.iterations + 1;
 * }
 * /**
 * Executes f() and computes the gradient of the scalar output of f() with
 * respect to the list of trainable variables provided by `varList`. If no
 * list is provided, it defaults to all trainable variables.
 * @param f The function to execute and whose output to use for computing
 * gradients with respect to variables.
 * @param varList An optional list of variables to compute gradients with
 * respect to. If specified, only the trainable variables in varList will
 * have gradients computed with respect to. Defaults to all trainable variables.
 * @doc {heading: 'Training', subheading: 'Optimizers'}
 * computeGradients(f: () => Scalar, varList?: Variable[]):
 * {value: Scalar, grads: NamedTensorMap}
 * return variableGrads(f, varList);
 * }
 * /**
 * Updates variables by using the computed gradients.
 * @param variableGrads A mapping of variable name to its gradient value.
 * @doc {heading: 'Training', subheading: 'Optimizers'}
 * abstract
 * applyGradients(variableGrads: NamedTensorMap)
 * NamedTensor[]): void;
 * /**
 * Dispose the variables (if any) owned by this optimizer instance.
 * dispose(): void
 * if (this.iterations_ != null) {
 *   dispose(this.iterations_);
 * }
 * }
 * async saveIterations(): Promise<NamedTensor>
 * if (this.iterations_ == null) {
 *   this.iterations_ = 0;
 * }
 * return {
 *   name: 'iter', // Named for Python compatibility.
 *   // TODO(cais): Use 'int64' type when available.
 *   tensor: scalar(this.iterations_, 'int32')
 * };
 * }
 * async getWeights(): Promise<NamedTensor[]>
 * throw new Error('getWeights() is not implemented for this optimizer yet.');
```

```

 * }
 * async setWeights(weightValues: NamedTensor[]): Promise<void>
 * throw new Error(
 *   `setWeights() is not implemented for this optimizer class ` +
 *   `${this.getClassName()}`);
 * }
 * /**
 * Extract the first element of the weight values and set it
 * as the iterations counter variable of this instance of optimizer.
 * @param weightValues
 * @returns Weight values with the first element consumed and excluded.
 * protected async extractIterations(weightValues: NamedTensor[]):
 * Promise<NamedTensor[]>
 * this.iterations_ = (await weightValues[0].tensor.data())[0];
 * return weightValues.slice(1);
 * }
 * }
 * Object.defineProperty(Optimizer, Symbol.hasInstance, {
 *   value: (instance: Optimizer) => {
 *     return instance.minimize != null && instance.computeGradients != null &&
 *     instance.applyGradients != null;
 *   }
 * });
 * }
 * /**
 * @license
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
```

OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/\n\nimport {ENGINE} from './engine';\nimport {dispose, tidy} from './globals';\nimport {add} from './ops/add';\nimport {div} from './ops/div';\nimport {mul} from './ops/mul';\nimport {sqrt} from './ops/ops';\nimport {square} from './ops/square';\nimport {zerosLike} from './ops/zeros_like';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from './serialization';\nimport {NamedTensor, NamedVariableMap} from './tensor_types';\n\nimport {Optimizer, OptimizerVariable} from './optimizer';\n\n/** @doclink Optimizer */\nexport class AdadeltaOptimizer extends Optimizer {\n  /** @nocollapse */\n  static className = 'Adadelta'; // Name matters for Python compatibility.\n  private accumulatedGrads: OptimizerVariable[] = [];\n  private accumulatedUpdates: OptimizerVariable[] = [];\n\n  constructor(\n    protected learningRate: number, protected rho: number,\n    protected epsilon: number = null) {\n    super();\n\n    if (epsilon == null) {\n      this.epsilon = ENGINE.backend.epsilon();\n    }\n\n    applyGradients(variableGradients: NamedVariableMap|NamedTensor[]) {\n      const variableNames = Array.isArray(variableGradients) ?\n        variableGradients.map(item => item.name) :\n        Object.keys(variableGradients);\n\n      variableNames.forEach((name, i) => {\n        const value = ENGINE.registeredVariables[name];\n        const trainable = false;\n        if (this.accumulatedGrads[i] == null) {\n          this.accumulatedGrads[i] = {\n            originalName: `${name}/accum_grad`,\n            variable: tidy(() => zerosLike(value).variable(trainable))\n          };\n        }\n        if (this.accumulatedUpdates[i] == null) {\n          this.accumulatedUpdates[i] = {\n            originalName: `${name}/accum_var`,\n            variable: tidy(() => zerosLike(value).variable(trainable))\n          };\n        }\n        const gradient = Array.isArray(variableGradients) ?\n          variableGradients[i].tensor :\n          variableGradients[name];\n        if (gradient == null) {\n          return;\n        }\n        const accumulatedGrad = this.accumulatedGrads[i].variable;\n        const accumulatedUpdate = this.accumulatedUpdates[i].variable;\n        tidy(() => {\n          const newAccumulatedGrad =\n            add(mul(accumulatedGrad, this.rho),\n            mul(square(gradient), 1 - this.rho));\n          const updates =\n            mul(div(sqrt(add(accumulatedUpdate, this.epsilon)),\n            sqrt(add(accumulatedGrad, this.epsilon))),\n            gradient);\n          const newAccumulatedUpdate =\n            add(mul(accumulatedUpdate, this.rho),\n            mul(square(updates), 1 - this.rho));\n          accumulatedGrad.assign(newAccumulatedGrad);\n          accumulatedUpdate.assign(newAccumulatedUpdate);\n          const newValue = add(mul(updates, -this.learningRate), value);\n          value.assign(newValue);\n        });\n      });\n      this.incrementIterations();\n    }\n\n    dispose(): void {\n      if (this.accumulatedUpdates != null) {\n        dispose(this.accumulatedGrads.map(v => v.variable));\n        dispose(this.accumulatedUpdates.map(v => v.variable));\n      }\n    }\n\n    async getWeights(): Promise<NamedTensor[]> {\n      // Order matters for Python compatibility.\n      const variables: OptimizerVariable[] =\n        [...this.accumulatedGrads, ...this.accumulatedUpdates];\n      return [await this.saveIterations().concat(\n        variables.map(v => ({name: v.originalName, tensor: v.variable})));\n    ]\n\n    async setWeights(weightValues: NamedTensor[]): Promise<void> {\n      weightValues = await this.extractIterations(weightValues);\n      const variableCount = weightValues.length / 2;\n      const trainable = false;\n      this.accumulatedGrads =\n        weightValues.slice(0, variableCount).map(v => ({\n          originalName: v.name,\n          variable: v.tensor.variable(\n            trainable)\n          }));\n      this.accumulatedUpdates =\n        weightValues.slice(variableCount, variableCount * 2)\n        .map(v => ({\n          originalName: v.name,\n          variable: v.tensor.variable(trainable)\n        }));\n    }\n\n    getConfig(): ConfigDict {\n      return {\n        'learningRate': this.learningRate,\n        'rho': this.rho,\n        'epsilon': this.epsilon\n      };\n    }\n\n    /** @nocollapse */\n    static fromConfig<T> extends Serializable>(\n      cls: SerializableConstructor<T>, config: ConfigDict): T {\n      return new cls(config['learningRate'], config['rho'], config['epsilon']);\n    }\n  }\n\n  registerClass(AdadeltaOptimizer);\n  /** @license\n  * Copyright 2018 Google LLC. All Rights Reserved.\n  * Licensed under the Apache License, Version 2.0 (the "License");\n  * you may not use this file except in compliance with the License.\n  * You may obtain a copy of the License at\n  * http://www.apache.org/licenses/LICENSE-2.0\n  * Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from '../engine';\nimport {dispose, tidy} from '../globals';\nimport {add} from '../ops/add';\nimport {div} from '../ops/div';\nimport {fill} from '../ops/fill';\nimport {mul} from '../ops/mul';\nimport {sqrt} from '../ops/sqrt';\nimport {square} from '../ops/square';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from '../serialization';\nimport {NamedTensor, NamedVariableMap} from '../tensor_types';\nimport {Optimizer, OptimizerVariable} from './optimizer';\n\n/** @doclink Optimizer */\nexport class AdagradOptimizer extends Optimizer {\n  /** @nocollapse */\n  static className = 'Adagrad'; // Note: Name matters for Python compatibility.\n\n  private accumulatedGrads: OptimizerVariable[] = [];\n\n  constructor(\n    protected learningRate: number, private initialAccumulatorValue = 0.1) {\n    super();\n  }\n\n  applyGradients(variableGradients: NamedVariableMap|NamedTensor[]) {\n    const variableNames = Array.isArray(variableGradients) ?\n      variableGradients.map(item => item.name) :\n      Object.keys(variableGradients);\n\n    variableNames.forEach((name, i) => {\n      const value = ENGINE.registeredVariables[name];\n      if (this.accumulatedGrads[i] == null) {\n        const trainable = false;\n        this.accumulatedGrads[i] = {\n          originalName: `${name}/accumulator`,\n          variable: tidy(\n            () => fill(value.shape, this.initialAccumulatorValue)\n              .variable(trainable))\n        };\n      }\n\n      const gradient = Array.isArray(variableGradients) ?\n        variableGradients[i].tensor :\n        variableGradients[name];\n      if (gradient == null) {\n        return;\n      }\n\n      const accumulatedGrad = this.accumulatedGrads[i].variable;\n      tidy(() => {\n        const newAccumulatedGrad = add(accumulatedGrad, square(gradient));\n        accumulatedGrad.assign(newAccumulatedGrad);\n        const newValue = add(\n          mul(div(gradient,\n            sqrt(add(newAccumulatedGrad, ENGINE.backend.epsilon))),\n            this.learningRate),\n          value);\n        value.assign(newValue);\n      });\n      this.incrementIterations();\n    });\n\n    dispose(): void {\n      if (this.accumulatedGrads != null) {\n        dispose(this.accumulatedGrads.map(v => v.variable));\n      }\n    }\n\n    async getWeights(): Promise<NamedTensor[]> {\n      // Order matters for Python compatibility.\n      return [await this.saveIterations()].concat(this.accumulatedGrads.map(\n        v => ({name: v.originalName, tensor: v.variable}));\n    }\n\n    async setWeights(weightValues: NamedTensor[]): Promise<void> {\n      weightValues = await this.extractIterations(weightValues);\n      const trainable = false;\n      this.accumulatedGrads = weightValues.map(\n        v => ({originalName: v.name, variable: v.tensor.variable(trainable)}));\n    }\n\n    getConfig(): ConfigDict {\n      return {\n        'learningRate': this.learningRate,\n        'initialAccumulatorValue': this.initialAccumulatorValue,\n      };\n    }\n\n    /** @nocollapse */\n    static fromConfig<T extends Serializable>(\n      cls: SerializableConstructor<T>, config: ConfigDict): T {\n      return new cls(config['learningRate'], config['initialAccumulatorValue']);\n    }\n\n    registerClass(AdagradOptimizer);\n  }, /***\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n\n\n=====\n*\n\nimport {ENGINE} from '../engine';\nimport {dispose, tidy} from '../globals';\nimport {add} from '../ops/add';\nimport {div} from '../ops/div';\nimport {mul} from '../ops/mul';\nimport {pow} from '../ops/pow';\nimport {scalar} from '../ops/scalar';\nimport {sqrt} from '../ops/sqrt';\nimport {square} from '../ops/square';\nimport {sub} from '../ops/sub';\nimport {zerosLike} from '../ops/zeros_like';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from '../serialization';\nimport {Variable} from '../tensor';\nimport {NamedTensor, NamedVariableMap} from '../tensor_types';\nimport {Optimizer,
```

```

OptimizerVariable} from './optimizer';\n\nexport class AdamOptimizer extends Optimizer {\n  /** @nocollapse */\n  static className = 'Adam'; // Note: Name matters for Python compatibility.\n  private accBeta1: Variable;\n  private accBeta2: Variable;\n  private accumulatedFirstMoment: OptimizerVariable[] = [];\n  private accumulatedSecondMoment: OptimizerVariable[] = [];\n\n  constructor(\n    protected learningRate: number,\n    protected beta1: number,\n    protected beta2: number, protected epsilon: number = null) {\n    super();\n    tidy(() => {\n      // accB* will be updated by batch.\n      this.accBeta1 = scalar(beta1).variable();\n      this.accBeta2 = scalar(beta2).variable();\n    });\n\n    if (epsilon == null) {\n      this.epsilon = ENGINE.backend.epsilon();\n    }\n\n    applyGradients(variableGradients: NamedVariableMap|NamedTensor[]) {\n      const varNames = Array.isArray(variableGradients) ?\n        variableGradients.map(v => v.name) :\n        Object.keys(variableGradients);\n      tidy(() => {\n        const oneMinusAccBeta1 = sub(1, this.accBeta1);\n        const oneMinusAccBeta2 = sub(1, this.accBeta2);\n\n        varNames.forEach((name, i) => {\n          const value = ENGINE.registeredVariables[name];\n          const trainable = false;\n          if (this.accumulatedFirstMoment[i] == null) {\n            this.accumulatedFirstMoment[i] = {\n              originalName: `${name}/m`,\n              variable: tidy(() => zerosLike(value).variable(trainable))\n            };\n          }\n          if (this.accumulatedSecondMoment[i] == null) {\n            this.accumulatedSecondMoment[i] = {\n              originalName: `${name}/v`,\n              variable: tidy(() => zerosLike(value).variable(trainable))\n            };\n          }\n\n          const gradient = Array.isArray(variableGradients) ?\n            variableGradients[i].tensor :\n            variableGradients[name];\n          if (gradient == null) {\n            return;\n          }\n\n          const firstMoment = this.accumulatedFirstMoment[i].variable;\n          const secondMoment = this.accumulatedSecondMoment[i].variable;\n\n          const newFirstMoment =\n            add(mul(firstMoment, this.beta1), mul(gradient, 1 - this.beta1));\n          const newSecondMoment =\n            add(mul(secondMoment, this.beta2),\n              mul(square(gradient), 1 - this.beta2));\n\n          const biasCorrectedFirstMoment =\n            div(newFirstMoment, oneMinusAccBeta1);\n          const biasCorrectedSecondMoment =\n            div(newSecondMoment, oneMinusAccBeta2);\n\n          firstMoment.assign(newFirstMoment);\n          secondMoment.assign(newSecondMoment);\n\n          const newValue =\n            add(mul(div(biasCorrectedFirstMoment,\n              -this.learningRate),\n              add(sqrt(biasCorrectedSecondMoment), this.epsilon)),\n              value);\n          value.assign(newValue);\n        });\n\n        this.accBeta1.assign(mul(this.accBeta1, this.beta1));\n        this.accBeta2.assign(mul(this.accBeta2, this.beta2));\n      });\n      this.incrementIterations();\n    }\n\n    dispose(): void {\n      this.accBeta1.dispose();\n      this.accBeta2.dispose();\n      if (this.accumulatedFirstMoment != null) {\n        dispose(this.accumulatedFirstMoment.map(v => v.variable));\n      }\n      if (this.accumulatedSecondMoment != null) {\n        dispose(this.accumulatedSecondMoment.map(v => v.variable));\n      }\n    }\n\n    async getWeights(): Promise<NamedTensor[]> {\n      // Order matters for Python compatibility.\n      const variables: OptimizerVariable[] =\n        [...this.accumulatedFirstMoment, ...this.accumulatedSecondMoment];\n      return [await this.saveIterations()].concat(\n        variables.map(v => ({name: v.originalName, tensor: v.variable}));\n      );\n\n      async setWeights(weightValues: NamedTensor[]): Promise<void> {\n        weightValues = await this.extractIterations(weightValues);\n        tidy(() => {\n          this.accBeta1.assign(pow(this.beta1, this.iterations_ + 1));\n          this.accBeta2.assign(pow(this.beta2, this.iterations_ + 1));\n        });\n        const variableCount = weightValues.length / 2;\n        const trainable = false;\n        this.accumulatedFirstMoment =\n          weightValues.slice(0, variableCount).map(v => ({\n            originalName: v.name,\n            variable: v.tensor.variable(\n              trainable\n            )));\n        this.accumulatedSecondMoment =\n          weightValues.slice(variableCount, variableCount * 2)\n            .map(v => ({\n              originalName: v.name,\n              variable: v.tensor.variable(trainable)\n            }));\n      }\n\n      getConfig(): ConfigDict {\n        return {\n          'learningRate': this.learningRate,\n          'beta1': this.beta1,\n          'beta2': this.beta2,\n          'epsilon': this.epsilon,\n        };\n      }\n\n      /** @nocollapse */\n      static fromConfig<T> extends Serializable>(\n        cls: SerializableConstructor<T>, config: ConfigDict): T {\n        return new cls(\n          config['learningRate'], config['beta1'], config['beta2'],\n          config['epsilon']);\n      }\n\n      registerClass(AdamOptimizer);\n    },\n    /**\n     * @license\n     * Copyright 2018 Google LLC. All Rights Reserved.\n     * Licensed under the Apache License, Version 2.0 (the \"License\");\n     * you may not use this file except in

```


compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from './engine';\nimport {dispose, tidy} from './globals';\nimport {abs} from './ops/abs';\nimport {add} from './ops/add';\nimport {div} from './ops/div';\nimport {maximum} from './ops/maximum';\nimport {mul} from './ops/mul';\nimport {scalar} from './ops/scalar';\nimport {sub} from './ops/sub';\nimport {zerosLike} from './ops/zeros_like';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from './serialization';\nimport {Variable} from './tensor';\nimport {NamedTensor, NamedVariableMap} from './tensor_types';\n\nimport {Optimizer, OptimizerVariable} from './optimizer';\n\nexport class AdamaxOptimizer extends Optimizer {\n  /** @nocollapse */\n  static className = 'Adamax'; // Note: Name matters for Python compatibility.\n  private accBeta1: Variable;\n  private iteration: Variable;\n  private accumulatedFirstMoment: OptimizerVariable[] = [];\n  private accumulatedWeightedInfNorm: OptimizerVariable[] = [];\n\n  constructor(\n    protected learningRate: number, protected beta1: number,\n    protected beta2: number, protected epsilon: number = null,\n    protected decay = 0.0) {\n    super();\n\n    tidy(() => {\n      this.iteration = scalar(0).variable();\n      this.accBeta1 = scalar(beta1).variable();\n    });\n\n    if (epsilon == null) {\n      this.epsilon = ENGINE.backend.epsilon();\n    }\n  }\n\n  applyGradients(variableGradients: NamedVariableMap|NamedTensor[]) {\n    const variableNames = Array.isArray(variableGradients) ?\n      variableGradients.map(item => item.name) :\n      Object.keys(variableGradients);\n\n    tidy(() => {\n      const oneMinusAccBeta1 = sub(1, this.accBeta1);\n      const lr =\n        div(-this.learningRate, add(mul(this.iteration, this.decay), 1));\n\n      variableNames.forEach((name, i) => {\n        const value = ENGINE.registeredVariables[name];\n        const trainable = false;\n        if (this.accumulatedFirstMoment[i] == null) {\n          this.accumulatedFirstMoment[i] = {\n            originalName: `${name}/m`,\n            variable: zerosLike(value).variable(trainable)\n          };\n        }\n        if (this.accumulatedWeightedInfNorm[i] == null) {\n          this.accumulatedWeightedInfNorm[i] = {\n            originalName: `${name}/v`,\n            variable: zerosLike(value).variable(trainable)\n          };\n        }\n\n        const gradient = Array.isArray(variableGradients) ?\n          variableGradients[i].tensor :\n          variableGradients[name];\n        if (gradient == null) {\n          return;\n        }\n\n        const firstMoment = this.accumulatedFirstMoment[i].variable;\n        const weightedInfNorm = this.accumulatedWeightedInfNorm[i].variable;\n\n        const newFirstMoment =\n          add(mul(firstMoment, this.beta1), mul(gradient, 1 - this.beta1));\n\n        const ut0 = mul(weightedInfNorm, this.beta2);\n        const ut1 = abs(gradient);\n\n        const newWeightedInfNorm = maximum(ut0, ut1);\n\n        firstMoment.assign(newFirstMoment);\n        weightedInfNorm.assign(newWeightedInfNorm);\n\n        const newValue =\n          add(mul(div(lr, oneMinusAccBeta1),\n            div(newFirstMoment, add(newWeightedInfNorm, this.epsilon))),\n            value);\n\n        value.assign(newValue);\n      });\n\n      this.iteration.assign(add(this.iteration, 1));\n      this.accBeta1.assign(mul(this.accBeta1, this.beta1));\n    });\n\n    this.incrementIterations();\n  }\n\n  dispose(): void {\n    this.accBeta1.dispose();\n    this.iteration.dispose();\n\n    if (this.accumulatedFirstMoment != null) {\n      dispose(this.accumulatedFirstMoment.map(v => v.variable));\n    }\n\n    if (this.accumulatedWeightedInfNorm != null) {\n      dispose(this.accumulatedWeightedInfNorm.map(v => v.variable));\n    }\n  }\n\n  async getWeights(): Promise<NamedTensor[]> {\n    throw new Error('getWeights() is not implemented for Adamax yet.);\n  }\n\n  async setWeights(weightValues: NamedTensor[]): Promise<void> {\n    throw new Error('setWeights() is not implemented for Adamax yet.);\n  }\n\n  getConfig(): ConfigDict {\n    return {\n      'learningRate': this.learningRate,\n      'beta1': this.beta1,\n      'beta2': this.beta2,\n      'epsilon': this.epsilon,\n      'decay': this.decay\n    };\n  }\n\n  /** @nocollapse */\n  static fromConfig<T> extends Serializable>(\n    cls: SerializableConstructor<T>, config: ConfigDict): T {\n    return new cls(\n      config['learningRate'],\n      config['beta1'],\n      config['beta2'],\n      config['epsilon'],\n      config['decay']\n    );\n  }\n\n  registerClass(AdamaxOptimizer);\n  /**\n * @license\n * Copyright 2018 Google LLC. All Rights
```

Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
<http://www.apache.org/licenses/LICENSE-2.0>\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ENGINE} from '../engine';\nimport {keep, tidy} from '../globals';\nimport {add} from '../ops/add';\nimport {mul} from '../ops/mul';\nimport {scalar} from '../ops/scalar';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from '../serialization';\nimport {Scalar} from '../tensor';\nimport {NamedTensor, NamedTensorMap} from '../tensor_types';\n\nimport {Optimizer} from './optimizer';\n\n/**\n * @doclink Optimizer *\n * @export class SGDOptimizer extends Optimizer {\n *   /** @nocollapse *\n *   static className = 'SGD'; // Note: Name matters for Python compatibility.\n *   protected c: Scalar;\n *   constructor(protected learningRate: number) {\n *     super();\n *     this.setLearningRate(learningRate);\n *   }\n *   applyGradients(variableGradients: NamedTensorMap|NamedTensor[]) {\n *     const varNames = Array.isArray(variableGradients) ?\n *       variableGradients.map(v => v.name) :\n *       Object.keys(variableGradients);\n *     varNames.forEach((name, i) => {\n *       const gradient = Array.isArray(variableGradients) ?\n *         variableGradients[i].tensor :\n *         variableGradients[name];\n *       if (gradient == null) {\n *         return;\n *       }\n *       const value = ENGINE.registeredVariables[name];\n *       tidy(() => {\n *         const newValue = add(mul(this.c, gradient), value);\n *         value.assign(newValue);\n *       });\n *     });\n *     this.incrementIterations();\n *   }\n *   /**\n *   * Sets the learning rate of the optimizer.\n *   *\n *   setLearningRate(learningRate: number) {\n *     this.learningRate = learningRate;\n *     if (this.c != null) {\n *       this.c.dispose();\n *     }\n *     this.c = keep(scalar(-learningRate));\n *   }\n *   dispose() {\n *     this.c.dispose();\n *   }\n *   async getWeights(): Promise<NamedTensor[]> {\n *     return [await this.saveIterations()];\n *   }\n *   async setWeights(weightValues: NamedTensor[]): Promise<void> {\n *     weightValues = await this.extractIterations(weightValues);\n *     if (weightValues.length !== 0) {\n *       throw new Error('SGD optimizer does not have settable weights.);\n *     }\n *   }\n *   getConfig(): ConfigDict {\n *     return {'learningRate': this.learningRate};\n *   }\n *   /** @nocollapse *\n *   static fromConfig<T extends Serializable>(\n *     cls: SerializableConstructor<T>, config: ConfigDict): T {\n *     return new cls(config['learningRate']);\n *   }\n * }\n\nregisterClass(SGDOptimizer);\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

=====\n*\n\nimport {ENGINE} from '../engine';\nimport {dispose, tidy} from '../globals';\nimport {add} from '../ops/add';\nimport {mul} from '../ops/mul';\nimport {scalar} from '../ops/scalar';\nimport {zerosLike} from '../ops/zeros_like';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from '../serialization';\nimport {Scalar, Tensor} from '../tensor';\nimport {NamedTensor, NamedVariableMap} from '../tensor_types';\n\nimport {OptimizerVariable} from './optimizer';\nimport {SGDOptimizer} from './sgd_optimizer';\n\n/**\n * @doclink Optimizer *\n * @export class MomentumOptimizer extends SGDOptimizer {\n * /** @nocollapse *\n * static className = 'Momentum'; // Name matters for Python compatibility.\n * private m: Scalar;\n * private accumulations: OptimizerVariable[] = [];\n * constructor(\n * protected learningRate: number, private momentum: number,\n * private useNesterov = false) {\n * super(learningRate);\n * this.m = scalar(this.momentum);\n * }\n * applyGradients(variableGradients: NamedVariableMap|NamedTensor[]) {\n * const variableNames = Array.isArray(variableGradients) ?\n * variableGradients.map(item => item.name) :\n

```

Object.keys(variableGradients);\n\n  variableNames.forEach((name, i) => {\n    const value =
ENGINE.registeredVariables[name];\n    if (this.accumulations[i] == null) {\n      const trainable = false;\n      this.accumulations[i] = {\n        originalName: `${name}/momentum`,\n        variable: tidy(() =>
zerosLike(value).variable(trainable))\n      };\n    }\n\n    const accumulation = this.accumulations[i].variable;\n    const gradient = Array.isArray(variableGradients) ?\n      variableGradients[i].tensor :\n      variableGradients[name];\n    if (gradient == null) {\n      return;\n    }\n\n    tidy(() => {\n      let newValue:
Tensor;\n      const newAccumulation = add(mul(this.m, accumulation), gradient);\n      if (this.useNesterov) {\n        newValue = add(\n          mul(this.c, add(gradient, mul(newAccumulation, this.m))), value);\n      } else {\n        newValue = add(mul(this.c, newAccumulation), value);\n      }\n      accumulation.assign(newAccumulation);\n      value.assign(newValue);\n    });\n  });\n  this.incrementIterations();\n}\n\n dispose(): void {\n  this.m.dispose();\n  if (this.accumulations != null) {\n    dispose(this.accumulations.map(v => v.variable));\n  }\n}\n\n /**\n * Sets the momentum of the optimizer.\n * @param momentum\n */\nsetMomentum(momentum: number) {\n  this.momentum = momentum;\n}\n\n async getWeights():
Promise<NamedTensor[]> {\n  // Order matters for Python compatibility.\n  return [await
this.saveIterations()].concat(this.accumulations.map(\n    v => ({name: v.originalName, tensor: v.variable}));\n}\n\n async setWeights(weightValues: NamedTensor[]): Promise<void> {\n  weightValues = await
this.extractIterations(weightValues);\n  const trainable = false;\n  this.accumulations = weightValues.map(\n    v => ({originalName: v.name, variable: v.tensor.variable(trainable)});\n  }\n\n  getConfig(): ConfigDict {\n    return
{\n      'learningRate': this.learningRate,\n      'momentum': this.momentum,\n      'useNesterov': this.useNesterov\n    };\n  }\n\n  /** @nocollapse */\n  static fromConfig<T extends Serializable>(\n    cls: SerializableConstructor<T>,\n    config: ConfigDict): T {\n    return new cls(\n      config['learningRate'], config['momentum'],
config['useNesterov']);\n  }\n}\n\nregisterClass(MomentumOptimizer);\n\n"/**\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */
=====\n
*/\n\nimport {ENGINE} from './engine';\nimport {dispose, tidy} from './globals';\nimport {add} from
'./ops/add';\nimport {div} from './ops/div';\nimport {mul} from './ops/mul';\nimport {sqrt} from
'./ops/sqrt';\nimport {square} from './ops/square';\nimport {sub} from './ops/sub';\nimport {zerosLike} from
'./ops/zeros_like';\nimport {ConfigDict, registerClass, Serializable, SerializableConstructor} from
'./serialization';\nimport {NamedTensor, NamedTensorMap} from './tensor_types';\nimport {Optimizer,
OptimizerVariable} from './optimizer';\n\n/** @doclink Optimizer */\nexport class RMSPropOptimizer extends
Optimizer {\n  /** @nocollapse */\n  static className = 'RMSProp'; // Note: Name matters for Python
compatibility.\n  private centered: boolean;\n\n  private accumulatedMeanSquares: OptimizerVariable[] = [];\n  private accumulatedMoments: OptimizerVariable[] = [];\n  private accumulatedMeanGrads: OptimizerVariable[] =
[];\n\n  constructor(\n    protected learningRate: number, protected decay = 0.9,\n    protected momentum = 0.0,\n    protected epsilon: number = null,\n    centered = false) {\n    super();\n\n    this.centered = centered;\n\n    if
(epsilon == null) {\n      this.epsilon = ENGINE.backend.epsilon();\n    }\n\n    if (learningRate == null) {\n      throw
new Error('learningRate for RMSPropOptimizer must be defined.');

```

```

this.accumulatedMoments[i] = {\n      originalName: `${name}/momentum`,\n      variable: tidy(() =>
zerosLike(value).variable(trainable))\n    });\n    }\n    if (this.accumulatedMeanGrads[i] == null &&
this.centered) {\n      this.accumulatedMeanGrads[i] = {\n        originalName: `${name}/mg`,\n        variable:
tidy(() => zerosLike(value).variable(trainable))\n      }; \n    }\n    const gradient =
Array.isArray(variableGradients) ?\n      variableGradients[i].tensor :\n      variableGradients[name];\n    if
(gradient == null) {\n      return;\n    }\n    const accumulatedMeanSquare =
this.accumulatedMeanSquares[i].variable;\n    const accumulatedMoments =
this.accumulatedMoments[i].variable;\n    tidy(() => {\n      const newAccumulatedMeanSquare =\nadd(mul(accumulatedMeanSquare, this.decay),\n      mul(square(gradient), 1 - this.decay));\n      if
(this.centered) {\n        const accumulatedMeanGrad = this.accumulatedMeanGrads[i].variable;\n        // Centered
gradient\n        const newAccumulatedMeanGrad =\nadd(mul(accumulatedMeanGrad, this.decay),\n      mul(gradient, 1 - this.decay));\n        const gradContribution =\n      div(mul(gradient,
this.learningRate),\n      sqrt(\n      sub(newAccumulatedMeanSquare,\nadd(square(newAccumulatedMeanGrad), this.epsilon)));\n        const newAccumulatedMoments =\nadd(mul(accumulatedMoments, this.momentum), gradContribution);\n        accumulatedMeanSquare.assign(newAccumulatedMeanSquare);\n
accumulatedMeanGrad.assign(newAccumulatedMeanGrad);\n
accumulatedMoments.assign(newAccumulatedMoments);\n        const newValue = sub(value,\nnewAccumulatedMoments);\n        value.assign(newValue);\n      } else {\n        // Plain gradient\n        const
newAccumulatedMeanSquare =\n      add(mul(accumulatedMeanSquare, this.decay),\n      mul(square(gradient), 1 - this.decay));\n        const newAccumulatedMoments =\nadd(mul(accumulatedMoments, this.momentum),\n      div(mul(gradient, this.learningRate),\n      sqrt(add(newAccumulatedMeanSquare, this.epsilon)));\n        accumulatedMeanSquare.assign(newAccumulatedMeanSquare);\n
accumulatedMoments.assign(newAccumulatedMoments);\n        const newValue = sub(value,\nnewAccumulatedMoments);\n        value.assign(newValue);\n      } \n    });\n  }\n  }\n  dispose(): void {\n    if (this.accumulatedMeanSquares != null) {\n
dispose(this.accumulatedMeanSquares.map(v => v.variable));\n    }\n    if (this.accumulatedMeanGrads != null &&
this.centered) {\n      dispose(this.accumulatedMeanGrads.map(v => v.variable));\n    }\n    if
(this.accumulatedMoments != null) {\n      dispose(this.accumulatedMoments.map(v => v.variable));\n    }\n  }\n  }\n  async getWeights(): Promise<NamedTensor[]> {\n    // Order matters for Python compatibility.\n    const variables:
OptimizerVariable[] =\n      [...this.accumulatedMeanSquares, ...this.accumulatedMoments];\n    if (this.centered)
{\n      variables.push(...this.accumulatedMeanGrads);\n    }\n    return [await this.saveIterations()].concat(\n
variables.map(v => ({name: v.originalName, tensor: v.variable}));\n  }\n  }\n  async setWeights(weightValues:
NamedTensor[]): Promise<void> {\n    weightValues = await this.extractIterations(weightValues);\n    const
variableCount =\n      this.centered ? weightValues.length / 3 : weightValues.length / 2;\n    const trainable =
false;\n    this.accumulatedMeanSquares =\n      weightValues.slice(0, variableCount).map(v => ({\n
originalName: v.name,\n      variable: v.tensor.variable(\n
trainable)\n    }));\n    this.accumulatedMoments =\n
weightValues.slice(variableCount, variableCount * 2)\n      .map(v => ({\n
originalName: v.name,\n
variable: v.tensor.variable(trainable)\n    }));\n    if (this.centered) {\n
this.accumulatedMeanGrads =\n      weightValues.slice(variableCount * 2, variableCount * 3)\n        .map(v
=> ({\n
originalName: v.name,\n
variable: v.tensor.variable(trainable)\n    }));\n    }\n  }\n  }\n  getConfig(): ConfigDict {\n    return {\n
'learningRate': this.learningRate,\n    'decay': this.decay,\n
'momentum': this.momentum,\n    'epsilon': this.epsilon,\n    'centered': this.centered\n    }; \n  }\n  }\n  /**
@nocollapse */\n  static fromConfig<T extends Serializable>(\n    cls: SerializableConstructor<T>, config:
ConfigDict): T {\n    return new cls(\n      config['learningRate'], config['decay'], config['momentum'],\n
config['epsilon'], config['centered']);\n  }\n  }\n  registerClass(RMSPropOptimizer); \n  }"/**\n * @license\n *

```

Copyright 2018 Google LLC. All Rights Reserved.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
<http://www.apache.org/licenses/LICENSE-2.0>
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

```
=====  
import {AdadeltaOptimizer} from './adadelta_optimizer';  
import {AdagradOptimizer} from './adagrad_optimizer';  
import {AdamOptimizer} from './adam_optimizer';  
import {AdamaxOptimizer} from './adamax_optimizer';  
import {MomentumOptimizer} from './momentum_optimizer';  
import {RMSPropOptimizer} from './rmsprop_optimizer';  
import {SGDOptimizer} from './sgd_optimizer';  
export class  
OptimizerConstructors {  
  /**  
   * Constructs a `tf.SGDOptimizer` that uses stochastic gradient descent.  
   */  
  static sgd(  
    // Fit a quadratic function by learning the coefficients a, b, c.  
    const xs = tf.tensor1d([0, 1, 2, 3]);  
    const ys = tf.tensor1d([1.1, 5.9, 16.8, 33.9]);  
    const a = tf.scalar(Math.random()).variable();  
    const b = tf.scalar(Math.random()).variable();  
    const c = tf.scalar(Math.random()).variable();  
    //  $y = a * x^2 + b * x + c$   
    const f = x => a.mul(x.square()).add(b.mul(x)).add(c);  
    const loss = (pred, label) =>  
      pred.sub(label).square().mean();  
    const learningRate = 0.01;  
    const optimizer = tf.train.sgd(learningRate);  
    // Train the model.  
    for (let i = 0; i < 10; i++) {  
      optimizer.minimize(() => loss(f(xs), ys));  
    }  
    // Make predictions.  
    console.log(`a: ${a.dataSync()}, b: ${b.dataSync()}, c: ${c.dataSync()}`);  
    const preds = f(xs).dataSync();  
    preds.forEach((pred, i) => {  
      console.log(`x: ${i}, pred: ${pred}`);  
    });  
    /**  
     * @param learningRate The learning rate to use for the SGD algorithm.  
     * @doc {heading: 'Training', subheading: 'Optimizers', namespace: 'train'}  
     */  
    static sgd(learningRate: number): SGDOptimizer {  
      return new SGDOptimizer(learningRate);  
    }  
    /**  
     * Constructs a `tf.MomentumOptimizer` that uses momentum gradient  
     * descent.  
     * See  
     * [http://proceedings.mlr.press/v28/sutskever13.pdf]  
     * [http://proceedings.mlr.press/v28/sutskever13.pdf]  
     * @param learningRate The learning rate to use for the Momentum gradient  
     * descent algorithm.  
     * @param momentum The momentum to use for the momentum gradient  
     * algorithm.  
     * @doc {heading: 'Training', subheading: 'Optimizers', namespace: 'train'}  
     */  
    static momentum(learningRate: number, momentum: number, useNesterov = false):  
      MomentumOptimizer {  
        return new MomentumOptimizer(learningRate, momentum, useNesterov);  
      }  
    /**  
     * Constructs a  
     * `tf.RMSPropOptimizer` that uses RMSProp gradient  
     * descent. This implementation uses plain momentum and  
     * is not centered  
     * version of RMSProp.  
     * See  
     * [http://www.cs.toronto.edu/~tijmen/csc321/slides/lecture\_slides\_lec6.pdf]  
     * [http://www.cs.toronto.edu/~tijmen/csc321/slides/lecture\_slides\_lec6.pdf]  
     * @param learningRate The learning rate to use for the RMSProp gradient  
     * descent algorithm.  
     * @param decay The discounting factor for the history/coming gradient.  
     * @param momentum The momentum to use for the RMSProp gradient  
     * algorithm.  
     * @param epsilon Small value to avoid zero denominator.  
     * @param centered If true, gradients are normalized by the estimated  
     * variance of the gradient.  
     * @doc {heading: 'Training', subheading: 'Optimizers', namespace: 'train'}  
     */  
    static rmsprop(  
      learningRate: number, decay = .9, momentum = 0.0, epsilon: number = null,  
      centered = false): RMSPropOptimizer {  
        return new RMSPropOptimizer(  
          learningRate, decay, momentum, epsilon, centered);  
      }  
    /**  
     * Constructs a  
     * `tf.AdamOptimizer` that uses the Adam algorithm.  
     * See  
     * [https://arxiv.org/abs/1412.6980]  
     * [https://arxiv.org/abs/1412.6980]  
     * @param learningRate The learning rate to use for the Adam gradient  
     * descent algorithm.  
     * @param beta1 The exponential decay rate for the 1st moment estimates.  
     * @param beta2 The exponential decay rate for the 2nd moment estimates.  
     * @param epsilon A small constant for numerical stability.  
     * @doc {heading: 'Training', subheading: 'Optimizers', namespace: 'train'}  
     */  
    static adam(  
      learningRate = 0.001, beta1 = 0.9, beta2 = 0.999, epsilon: number = null):  
      AdamOptimizer {  
        return new AdamOptimizer(learningRate, beta1, beta2, epsilon);  
      }  
  }  
}
```

```

Constructs a `tf.AdadeltaOptimizer` that uses the Adadelta algorithm.\n * See
[https://arxiv.org/abs/1212.5701](https://arxiv.org/abs/1212.5701)\n * @param learningRate The learning rate
to use for the Adadelta gradient\n * descent algorithm.\n * @param rho The learning rate decay over each
update.\n * @param epsilon A constant epsilon used to better condition the grad\n * update.\n * @doc
{heading: 'Training', subheading: 'Optimizers', namespace: 'train'}\n */\n static adadelta(learningRate = .001, rho =
.95, epsilon: number = null):\n   AdadeltaOptimizer {\n     return new AdadeltaOptimizer(learningRate, rho,
epsilon);\n   }\n\n /**\n * Constructs a `tf.AdamaxOptimizer` that uses the Adamax algorithm.\n * See
[https://arxiv.org/abs/1412.6980](https://arxiv.org/abs/1412.6980)\n * @param learningRate The learning rate
to use for the Adamax gradient\n * descent algorithm.\n * @param beta1 The exponential decay rate for the 1st
moment estimates.\n * @param beta2 The exponential decay rate for the 2nd moment estimates.\n * @param
epsilon A small constant for numerical stability.\n * @param decay The learning rate decay over each update.\n
*\n * @doc {heading: 'Training', subheading: 'Optimizers', namespace: 'train'}\n */\n static adamax(\n
learningRate = 0.002, beta1 = 0.9, beta2 = 0.999, epsilon: number = null,\n   decay = 0.0): AdamaxOptimizer {\n
return new AdamaxOptimizer(learningRate, beta1, beta2, epsilon, decay);\n }\n\n /**\n * Constructs a
`tf.AdagradOptimizer` that uses the Adagrad algorithm.\n * See\n *
[http://www.jmlr.org/papers/volume12/duchi11a/duchi11a.pdf](\n *
http://www.jmlr.org/papers/volume12/duchi11a/duchi11a.pdf)\n * or\n * [http://ruder.io/optimizing-gradient-
descent/index.html#adagrad](\n * http://ruder.io/optimizing-gradient-descent/index.html#adagrad)\n * @param
learningRate The learning rate to use for the Adagrad gradient\n * descent algorithm.\n * @param
initialAccumulatorValue Starting value for the accumulators, must be\n * positive.\n * @doc {heading:
'Training', subheading: 'Optimizers', namespace: 'train'}\n */\n static adagrad(learningRate: number,
initialAccumulatorValue = 0.1):\n   AdagradOptimizer {\n     return new AdagradOptimizer(learningRate,
initialAccumulatorValue);\n   }\n\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\n// So typings can propagate.\nimport { AdadeltaOptimizer } from './optimizers/adadelta_optimizer';\nimport
{ AdagradOptimizer } from './optimizers/adagrad_optimizer';\nimport { AdamOptimizer } from
 './optimizers/adam_optimizer';\nimport { AdamaxOptimizer } from './optimizers/adamax_optimizer';\nimport
{ MomentumOptimizer } from './optimizers/momentum_optimizer';\nimport { OptimizerConstructors } from
 './optimizers/optimizer_constructors';\nimport { RMSPropOptimizer } from
 './optimizers/rmsprop_optimizer';\nimport { SGDOptimizer } from './optimizers/sgd_optimizer';\n\n// tslint:disable-
next-line:no-unused-expression\n[MomentumOptimizer, SGDOptimizer, AdadeltaOptimizer, AdagradOptimizer,\nRMSPropOptimizer, AdamaxOptimizer, AdamOptimizer];\n\nexport const train = {\n  sgd:\n    OptimizerConstructors.sgd,\n  momentum: OptimizerConstructors.momentum,\n  adadelta:\n    OptimizerConstructors.adadelta,\n  adagrad: OptimizerConstructors.adagrad,\n  rmsprop:\n    OptimizerConstructors.rmsprop,\n  adamax: OptimizerConstructors.adamax,\n  adam:\n    OptimizerConstructors.adam\n};\n", "/*\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nconst delayCallback: Function = (() => {\n  if (typeof requestAnimationFrame !== 'undefined') {\n    return requestAnimationFrame;\n  } else if (typeof setImmediate !== 'undefined') {\n    return setImmediate;\n  }\n  return (f: Function) => f(); // no delays\n})();\n\n/**\n * Returns a promise that resolve when a requestAnimationFrame has completed.\n * On Node.js this uses setImmediate instead of requestAnimationFrame.\n * This is simply a sugar method so that users can do the following:\n * `await tf.nextFrame();`\n * @doc {heading: 'Performance', subheading: 'Timing'}\n *\nfunction nextFrame(): Promise<void> {\n  return new Promise<void>(resolve => delayCallback(() => resolve()));\n}\n\nexport {nextFrame};\n\n",/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport * as util from './util';\n\nexport function assertParamsConsistent(shapes: number[][], axis: number) {\n  const rank = shapes[0].length;\n  shapes.forEach((shape, i) => {\n    util.assert(\n      shape.length === rank,\n      () => `Error in concat${rank}D: rank of tensors[${i}] must be the same ` +\n        `as the rank of the rest (${rank})`);\n    util.assert(\n      axis >= 0 && axis < rank,\n      () => `Error in concat${rank}D: axis must be between 0 and ${rank - 1}`);\n    const firstShape = shapes[0];\n    shapes.forEach((shape, i) => {\n      for (let r = 0; r < rank; r++) {\n        util.assert(\n          (r === axis) || (shape[r] === firstShape[r]),\n          () => `Error in concat${rank}D: Shape of tensors[${i}] (${shape}) ` +\n            `does not match the shape of the rest (${firstShape}) ` +\n            `along the non-concatenated axis ${i}`);\n      }\n    });\n  });\n}\n\nexport function computeOutShape(shapes: number[][], axis: number): number[] {\n  const outputShape = shapes[0].slice();\n  for (let i = 1; i < shapes.length; i++) {\n    outputShape[axis] += shapes[i][axis];\n  }\n  return outputShape;\n}\n\n",/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\n/**\n * Inputs of size above this threshold will be parallelized by calling multiple\n * shader programs.\n *\nimport {nearestDivisor} from './util';\n\nexport const PARALLELIZE_THRESHOLD = 30;\n\nexport interface ReduceInfo {\n  windowSize: number;\n  batchSize: number;\n  inSize: number;\n  outSize: number;\n}\n\nexport function computeOptimalWindowSize(inSize: number): number {\n  if (inSize <= PARALLELIZE_THRESHOLD) {\n    return inSize;\n  }\n  return nearestDivisor(inSize, Math.floor(Math.sqrt(inSize)));\n}\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\n// Returns the image center in pixels.\n\nexport function getImageCenter(\n  center: number|[number, number],\n  imageHeight: number,\n  imageWidth: number): [number, number] {\n  const centerX =\n    imageWidth * (typeof center ===\n      (typeof center === 'number' ? center : center[0]);\n    const centerY =\n      imageHeight * (typeof center ===\n        'number' ? center : center[1]);\n  return [centerX, centerY];\n}\n\n",/**\n * @license\n * Copyright 2018 Google

```

LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n**\n * Gets the new shape of the input Tensor after it's been reshaped\n * to:\n * [blockShape[0], ..., blockShape[M-1], batch / prod(blockShape),\n * inputShape[1], ..., inputShape[N-1]]\n *\n * See step 1: https://www.tensorflow.org/api_docs/python/tf/batch_to_space_nd\n *\nexport function getReshaped(\n  inputShape: number[], blockShape: number[], prod: number,\n  batchToSpace = true): number[] {\n  let reshaped: number[] = [];\n  if (batchToSpace) {\n    reshaped = reshaped.concat(blockShape.slice(0));\n    reshaped.push(inputShape[0] / prod);\n    reshaped = reshaped.concat(inputShape.slice(1));\n  } else {\n    reshaped = reshaped.concat(inputShape[0]);\n    const spatialLength = blockShape.length;\n    for (let i = 0; i < spatialLength; ++i) {\n      reshaped =\n        reshaped.concat([inputShape[i + 1] / blockShape[i], blockShape[i]]);\n    }\n    reshaped = reshaped.concat(inputShape.slice(spatialLength + 1));\n  }\n  return reshaped;\n}\n\n**\n * Gets the permutation that will transpose the dimensions of the\n * reshaped tensor to shape:\n * [batch / prod(block_shape),inputShape[1], blockShape[0], ..., \n * inputShape[M], blockShape[M-1],inputShape[M+1], ..., inputShape[N-1]]\n *\n * see step 2: https://www.tensorflow.org/api_docs/python/tf/batch_to_space_nd\n *\nexport function getPermuted(\n  reshapedRank: number, blockShapeRank: number,\n  batchToSpace = true): number[] {\n  const permuted = [];\n  if (batchToSpace) {\n    permuted.push(blockShapeRank);\n    for (let i = blockShapeRank + 1; i < reshapedRank; ++i) {\n      if (i <= 2 * blockShapeRank) {\n        permuted.push(i);\n        permuted.push(i - (blockShapeRank + 1));\n      } else {\n        permuted.push(i);\n      }\n    } else {\n      const permutedBeforeBatch = [];\n      const permutedAfterBatch = [];\n      for (let i = 1; i < reshapedRank; ++i) {\n        if (i >= blockShapeRank * 2 + 1 || i % 2 === 1) {\n          permutedAfterBatch.push(i);\n        } else {\n          permutedBeforeBatch.push(i);\n        }\n      }\n      permuted.push(...permutedBeforeBatch);\n      permuted.push(0);\n      permuted.push(...permutedAfterBatch);\n    }\n    return permuted;\n}\n\n**\n * Gets the shape of the reshaped and permuted input Tensor before any cropping\n * is applied. The new shape will be:\n * [batch / prod(blockShape),inputShape[1] * blockShape[0], ..., \n * inputShape[M] * blockShape[M-1],inputShape[M+1], ..., inputShape[N-1]]\n *\n * See step 3: https://www.tensorflow.org/api_docs/python/tf/batch_to_space_nd\n *\nexport function getReshapedPermuted(\n  inputShape: number[], blockShape: number[], prod: number,\n  batchToSpace = true): number[] {\n  const reshapedPermuted = [];\n  if (batchToSpace) {\n    reshapedPermuted.push(inputShape[0] / prod);\n  } else {\n    reshapedPermuted.push(inputShape[0] * prod);\n  }\n  for (let i = 1; i < inputShape.length; ++i) {\n    if (i <= blockShape.length) {\n      if (batchToSpace) {\n        reshapedPermuted.push(blockShape[i - 1] * inputShape[i]);\n      } else {\n        reshapedPermuted.push(inputShape[i] / blockShape[i - 1]);\n      }\n    } else {\n      reshapedPermuted.push(inputShape[i]);\n    }\n  }\n  return reshapedPermuted;\n}\n\n**\n * Converts the crops argument into the beginning coordinates of a slice\n * operation.\n *\nexport function getSliceBeginCoords(\n  crops: number[][], blockShape: number): number[] {\n  const sliceBeginCoords = [0];\n  for (let i = 0; i < blockShape; ++i) {\n    sliceBeginCoords.push(crops[i][0]);\n  }\n  return sliceBeginCoords;\n}\n\n**\n * Converts the crops argument into the size of a slice operation. When\n * combined with getSliceBeginCoords this function allows the reshaped and\n * permuted Tensor to be cropped to its final output shape of:\n * [inputShape[1] * blockShape[0] - crops[0,0] - crops[0,1], ..., \n * inputShape[M] * blockShape[M-1] -crops[M-1,0] -\n * crops[M-1,1],inputShape[M+1], ..., inputShape[N-1]]\n *\n * See step 4: https://www.tensorflow.org/api_docs/python/tf/batch_to_space_nd\n *\nexport function getSliceSize(\n  uncroppedShape: number[], crops: number[][], blockShape: number): number[] {\n  const sliceSize = uncroppedShape.slice(0, 1);\n  for (let i = 0; i < blockShape; ++i) {\n    sliceSize.push(uncroppedShape[i + 1] - crops[i][0] - crops[i][1]);\n  }\n  return sliceSize;\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All
```


Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nexport const SELU_SCALEALPHA = 1.7580993408473768599402175208123;\nexport const SELU_SCALE = 1.0507009873554804934193349852946;\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nexport const ERF_P = 0.3275911;\nexport const ERF_A1 = 0.254829592;\nexport const ERF_A2 = -0.284496736;\nexport const ERF_A3 = 1.421413741;\nexport const ERF_A4 = -1.453152027;\nexport const ERF_A5 = 1.061405429;\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {env} from './environment';\nexport function warn(...msg: Array<{}>): void {\n  if (!env().getBool('IS_TEST')) {\n    console.warn(...msg);\n  }\n}\n\nexport function log(...msg: Array<{}>): void {\n  if (!env().getBool('IS_TEST')) {\n    console.log(...msg);\n  }\n}\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {TypedArray} from './types';\n/**\n * Merges real and imaginary Float32Arrays into a single complex Float32Array.\n * The memory layout is interleaved as follows:\n * real: [r0, r1, r2]\n * imag: [i0, i1, i2]\n * complex: [r0, i0, r1, i1, r2, i2]\n * This is the inverse of splitRealAndImagArrays.\n * @param real The real values of the complex tensor values.\n * @param imag The imag values of the complex tensor values.\n * @returns A complex tensor as a Float32Array with merged values.\n */\nexport function mergeRealAndImagArrays(\n  real: Float32Array, imag: Float32Array): Float32Array {\n  if (real.length !== imag.length) {\n    throw new Error(\n      `Cannot merge real and imag arrays of different lengths. real: ` +\n        `${real.length}, imag: ${imag.length}.`);\n  }\n  const result = new Float32Array(real.length * 2);\n  for (let i = 0; i < result.length; i += 2) {\n    result[i] = real[i / 2];\n    result[i + 1] = imag[i / 2];\n  }\n  return result;\n}\n\n/**\n * Splits a complex Float32Array into real and imag parts.\n * The memory layout is interleaved as follows:\n * complex: [r0, i0, r1, i1, r2, i2]\n * real: [r0, r1, r2]\n * imag: [i0, i1, i2]\n * This is the inverse of mergeRealAndImagArrays.\n * @param complex The complex tensor values.\n * @returns An object with real and imag Float32Array components of the complex\n *
```

```

tensor.\n */\nexport function splitRealAndImagArrays(complex: Float32Array):\n  {real: Float32Array, imag:\n  Float32Array} {\n  const real = new Float32Array(complex.length / 2);\n  const imag = new\n  Float32Array(complex.length / 2);\n  for (let i = 0; i < complex.length; i += 2) {\n    real[i / 2] = complex[i];\n    imag[i / 2] = complex[i + 1];\n  }\n  return {real, imag};\n}\n\n/**\n * Extracts even indexed complex values in the\n  given array.\n * @param complex The complex tensor values\n */\nexport function\n  complexWithEvenIndex(complex: Float32Array):\n  {real: Float32Array, imag: Float32Array} {\n  const len =\n  Math.ceil(complex.length / 4);\n  const real = new Float32Array(len);\n  const imag = new Float32Array(len);\n  for\n  (let i = 0; i < complex.length; i += 4) {\n    real[Math.floor(i / 4)] = complex[i];\n    imag[Math.floor(i / 4)] =\n    complex[i + 1];\n  }\n  return {real, imag};\n}\n\n/**\n * Extracts odd indexed comple values in the given array.\n * @param complex The complex tensor values\n */\nexport function\n  complexWithOddIndex(complex:\n  Float32Array):\n  {real: Float32Array, imag: Float32Array} {\n  const len = Math.floor(complex.length / 4);\n  const real = new Float32Array(len);\n  const imag = new Float32Array(len);\n  for\n  (let i = 2; i < complex.length; i\n  += 4) {\n    real[Math.floor(i / 4)] = complex[i];\n    imag[Math.floor(i / 4)] = complex[i + 1];\n  }\n  return {real,\n  imag};\n}\n\n/**\n * Get the map representing a complex value in the given array.\n * @param complex The\n  complex tensor values.\n * @param index An index of the target complex value.\n */\nexport function\n  getComplexWithIndex(\n  complex: Float32Array, index: number): {real: number, imag: number} {\n  const real =\n  complex[index * 2];\n  const imag = complex[index * 2 + 1];\n  return {real, imag};\n}\n\n/**\n * Insert a given\n  complex value into the TypedArray.\n * @param data The array in which the complex value is inserted.\n * @param c The complex value to be inserted.\n * @param index An index of the target complex value.\n */\nexport\n  function\n  assignToTypedArray(\n  data: TypedArray, real: number, imag: number, index: number) {\n  data[index * 2] = real;\n  data[index * 2 + 1] = imag;\n}\n\n/**\n * Make the list of exponent terms used by FFT.\n */\nexport\n  function\n  exponents(\n  n: number, inverse: boolean): {real: Float32Array, imag: Float32Array} {\n  const real =\n  new Float32Array(n / 2);\n  const imag = new Float32Array(n / 2);\n  for\n  (let i = 0; i < Math.ceil(n / 2); i++) {\n    const x = (inverse ? 2 : -2) * Math.PI * (i / n);\n    real[i] = Math.cos(x);\n    imag[i] = Math.sin(x);\n  }\n  return\n  {real, imag};\n}\n\n/**\n * Make the exponent term used by FFT.\n */\nexport\n  function\n  exponent(\n  k: number, n:\n  number, inverse: boolean): {real: number, imag: number} {\n  const x = (inverse ? 2 : -2) * Math.PI * (k / n);\n  const real = Math.cos(x);\n  const imag = Math.sin(x);\n  return {real, imag};\n}\n\n"/**\n * @license\n * Copyright\n  2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n */\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an\n  "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n */

```

```

=====\n\n*/\nimport {TensorInfo} from './kernel_registry';\nimport {Tensor} from './tensor';\nimport {assert} from\n  './util';\n\n/**\n * Prepare the split size array. When the input is a number, the axis is evenly\n * divided among the\n  split size. When the input contains the negative value, the\n * rest of the axis is allocated toward that.\n */\nexport\n  function\n  prepareSplitSize(\n  x: Tensor|TensorInfo, numOrSizeSplits: number[]|number,\n  axis = 0): number[]\n  {\n  let splitSizes = [];\n  if (typeof (numOrSizeSplits) === 'number') {\n    assert(\n      x.shape[axis] %\n      numOrSizeSplits === 0,\n      () => 'Number of splits must evenly divide the axis.);\n    splitSizes =\n      new\n      Array(numOrSizeSplits).fill(x.shape[axis] / numOrSizeSplits);\n  } else {\n    const numOfNegs =\n      numOrSizeSplits.reduce((count, value) => {\n        if (value === -1) {\n          count += 1;\n        }\n        return count;\n      }, 0);\n    assert(\n      numOfNegs <= 1,\n      () => 'There should be only one negative value in split array.);\n    const negIndex = numOrSizeSplits.indexOf(-1);\n    // Allow the number of split array to be -1, which indicates the\n    rest\n    // of dimension is allocated to that split.\n    if (negIndex !== -1) {\n      const total =\n        numOrSizeSplits.reduce((a, b) => b > 0 ? a + b : a);\n      numOrSizeSplits[negIndex] = x.shape[axis] - total;\n    }\n    assert(\n      x.shape[axis] === numOrSizeSplits.reduce((a, b) => a + b),\n      () => 'The sum of sizes must match\n      the size of the axis dimension.);\n    splitSizes = numOrSizeSplits;\n  }\n  return splitSizes;\n}\n\n"/**\n *

```

@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {TensorInfo} from './kernel_registry';\nimport {nearestDivisor} from './util';\nimport {PARALLELIZE_THRESHOLD} from './reduce_util';\nexport interface SegOpInfo {\n  windowSize: number;\n  batchSize: number;\n  inSize: number;\n  numSegments: number;\n}\nexport function\nsegOpComputeOptimalWindowSize(\n  inSize: number, numSegments: number): number {\n  let done = false;\n  let res;\n  if (inSize <= PARALLELIZE_THRESHOLD) {\n    res = inSize;\n    done = true;\n  } else {\n    res =\n      nearestDivisor(inSize, Math.floor(Math.sqrt(inSize)));\n  }\n  while (!done) {\n    if (res > numSegments || res ===\n      inSize) {\n      done = true;\n    } else {\n      res = nearestDivisor(inSize, res + 1);\n    }\n  }\n  return\n  res;\n}\nexport function computeOutShape(\n  aShape: number[], axis: number, numSegments: number):\n  number[] {\n  const outShape = [];\n  const rank = aShape.length;\n  for (let dim = 0; dim < rank; dim++) {\n    if\n      (dim !== axis) {\n      outShape.push(aShape[dim]);\n    } else {\n      outShape.push(numSegments);\n    }\n  }\n  return outShape;\n}\nexport interface GatherOpShapeInfo {\n  batchSize: number;\n  sliceSize: number;\n  outerSize: number;\n  dimSize: number;\n  outputShape: number[];\n}\nexport function\ncollectGatherOpShapeInfo(\n  x: TensorInfo, indices: TensorInfo, axis: number,\n  batchDims: number):\n  GatherOpShapeInfo {\n  const indicesRank = indices.shape.length;\n  const xRank = x.shape.length;\n  if\n    (batchDims !== 0) {\n    if (batchDims < -indicesRank || batchDims > indicesRank) {\n      throw new Error(`Expect\n      batchDims in the range of [-${indicesRank}, ${\n        indicesRank}], but got ${batchDims}`);\n    }\n    if\n      (batchDims < 0) {\n      batchDims += indicesRank;\n    }\n    if (batchDims > xRank) {\n      throw new\n      Error(`batchDims (${batchDims}) must be less than rank(x) (\n      ${xRank}).`);\n    }\n    if (axis < batchDims) {\n      throw new Error(`batchDims (${batchDims}) must be less than or equal to axis\n      (${axis}).`);\n    }\n    for (let\n      i = 0; i < batchDims; ++i) {\n      if (x.shape[i] !== indices.shape[i]) {\n        throw new Error(`\n        x.shape[${i}]:\n        ${x.shape[i]} should be equal to indices.shape[${\n          i}]: ${indices.shape[i]}`);\n      }\n    }\n    const dimSize =\n      x.shape[axis];\n    const outputShape: number[] = [];\n    let batchSize = 1;\n    let outerSize = 1;\n    let sliceSize =\n      1;\n    for (let i = 0; i < batchDims; ++i) {\n      outputShape.push(x.shape[i]);\n      batchSize *= x.shape[i];\n    }\n    for\n      (let i = batchDims; i < axis; ++i) {\n      outputShape.push(x.shape[i]);\n      outerSize *= x.shape[i];\n    }\n    for\n      (let i = batchDims; i < indicesRank; ++i) {\n      outputShape.push(indices.shape[i]);\n    }\n    for (let i = axis + 1; i <\n      xRank; ++i) {\n      outputShape.push(x.shape[i]);\n      sliceSize *= x.shape[i];\n    }\n    return {batchSize, sliceSize,\n      outerSize, dimSize, outputShape};\n  }\n}\n\n/***\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in\n * compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

=====\n*\n\nimport {decodeString, encodeString} from './util';\n\n// Utilities needed by backend consumers of tf-\n * core.\n * export * from './ops/axis_util';\n * export * from './ops/broadcast_util';\n * export * from\n * './ops/concat_util';\n * export * from './ops/conv_util';\n * export * from './ops/fused_util';\n * export * from\n * './ops/fused_types';\n * export * from './ops/reduce_util';\n * import * as slice_util from './ops/slice_util';\n * export\n * {slice_util};\n * export {BackendValues, TypedArray, upcastType, PixelData} from './types';\n * export\n * {MemoryInfo, TimingInfo} from './engine';\n * export * from './ops/rotate_util';\n * export * from\n * './ops/array_ops_util';\n * export * from './ops/gather_nd_util';\n * export * from './ops/scatter_nd_util';\n * export * from

```
../ops/selu_util';\nextport * from '../ops/fused_util';\nextport * from '../ops/erf_util';\nextport * from '../log';\nextport *
from '../backends/complex_util';\nextport * from '../ops/split_util';\n\nimport * as segment_util from
../ops/segment_util';\nextport {segment_util};\n\nexport function fromUint8ToStringArray(vals: Uint8Array[]) {\n
try {\n // Decode the bytes into string.\n return vals.map(val => decodeString(val));\n } catch (err) {\n throw
new Error(\n `Failed to decode encoded string bytes into utf-8, error: ${err}`);\n }\n}\n\nexport function
fromStringArrayToUint8(strings: string[]) {\n return strings.map(s => encodeString(s));\n}\n\n"/**\n * @license\n
* Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nexport {nonMaxSuppressionV3Impl, nonMaxSuppressionV4Impl, nonMaxSuppressionV5Impl} from
../non_max_suppression_impl';\nextport {whereImpl} from '../where_impl';\n"/**\n * @license\n * Copyright 2020
Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\n// base.ts is tfjs-core without auto registration of things like flags,\n// gradients, chained ops or the opHandler.
See base_side_effects.ts for parts\n// tfjs core that are required side effects.\n\n"/**\n * @fileoverview\n * @suppress
{partialAlias} Optimization disabled due to passing the module\n * object into a function below:\n *\n * import *
as ops from '../ops/ops';\n * setOpHandler(ops);\n *\n\n// Serialization.\n\nimport * as io from './io/io';\nimport * as
math from './math';\nimport * as browser from './ops/browser';\nimport * as gather_util from
../ops/gather_nd_util';\nimport * as scatter_util from '../ops/scatter_nd_util';\nimport * as slice_util from
../ops/slice_util';\nimport * as serialization from './serialization';\nimport * as tensor_util from './tensor_util';\nimport
* as test_util from './test_util';\nimport * as util from './util';\nimport {version} from './version';\n\nexport
{InferenceModel, MetaGraph, MetaGraphInfo, ModelPredictConfig, ModelTensorInfo, SavedModelTensorInfo,
SignatureDef, SignatureDefEntry, SignatureDefInfo} from './model_types';\n\n// Optimizers.\n\nexport
{AdadeltaOptimizer} from './optimizers/adadelta_optimizer';\nextport {AdagradOptimizer} from
../optimizers/adagrad_optimizer';\nextport {AdamOptimizer} from './optimizers/adam_optimizer';\nextport
{AdamaxOptimizer} from './optimizers/adamax_optimizer';\nextport {MomentumOptimizer} from
../optimizers/momentum_optimizer';\nextport {Optimizer} from './optimizers/optimizer';\nextport
{RMSPropOptimizer} from './optimizers/rmsprop_optimizer';\nextport {SGDOptimizer} from
../optimizers/sgd_optimizer';\nextport {Scalar, Tensor, Tensor1D, Tensor2D, Tensor3D, Tensor4D, Tensor5D,
TensorBuffer, Variable} from './tensor';\nextport {GradSaveFunc, NamedTensorMap, TensorContainer,
TensorContainerArray, TensorContainerObject} from './tensor_types';\nextport {BackendValues, DataType,
DataTypeMap, DataValues, NumericDataType, PixelData, Rank, RecursiveArray, ScalarLike, ShapeMap,
sumOutType, TensorLike, TypedArray, upcastType} from './types';\n\nexport * from '../ops/ops';\nextport
{Reduction} from '../ops/loss_ops_utils';\n\nexport * from './train';\nextport * from './globals';\nextport * from
'/kernel_registry';\nextport {customGrad, grad, grads, valueAndGrad, valueAndGrads, variableGrads} from
'/gradients';\n\nexport {TimingInfo, MemoryInfo, ForwardFunc} from './engine';\nextport {Environment, env,
ENV} from './environment';\nextport {Platform} from './platforms/platform';\n\nexport {version as
version_core};\n\n// Top-level method exports.\n\nexport {nextFrame} from './browser_util';\n\n// Second level
exports.\n\nimport * as backend_util from '../backends/backend_util';\nimport * as device_util from
```

```

./device_util';\nexport {\n browser,\n io,\n math,\n serialization,\n test_util,\n util,\n backend_util,\n
tensor_util,\n slice_util,\n gather_util,\n scatter_util,\n device_util\n};\n\nimport * as kernel_impls from
./backends/kernel_impls';\nexport {kernel_impls};\n\n// Backend specific.\nexport {KernelBackend,
BackendTimingInfo, DataMover, DataStorage} from './backends/backend';\n\n// Export all kernel names /
info.\nexport * from './kernel_names';\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\n// Required side effectful code.\nimport './base_side_effects';\n\n// All exports from this package should be in
base.\nexport * from './base';\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nconst contexts: {[key: string]: WebGLRenderingContext} = {};\n\nconst WEBGL_ATTRIBUTES:
WebGLContextAttributes = {\n alpha: false,\n antialias: false,\n premultipliedAlpha: false,\n
preserveDrawingBuffer: false,\n depth: false,\n stencil: false,\n failIfMajorPerformanceCaveat: true\n};\n\nexport
function clearWebGLContext(webGLVersion: number) {\n delete contexts[webGLVersion];\n}\n\nexport function
setWebGLContext(\n webGLVersion: number, gl: WebGLRenderingContext) {\n contexts[webGLVersion] =
gl;\n}\n\nexport function getWebGLContext(webGLVersion: number): WebGLRenderingContext {\n if
(!(webGLVersion in contexts)) {\n const newCtx = getWebGLRenderingContext(webGLVersion);\n if (newCtx
!== null) {\n contexts[webGLVersion] = newCtx;\n } else {\n console.log('Could not get context for
WebGL version', webGLVersion);\n return null;\n }\n }\n const gl = contexts[webGLVersion];\n if
(gl.isContextLost()) {\n delete contexts[webGLVersion];\n return getWebGLContext(webGLVersion);\n }\n\n
gl.disable(gl.DEPTH_TEST);\n gl.disable(gl.STENCIL_TEST);\n gl.disable(gl.BLEND);\n
gl.disable(gl.DITHER);\n gl.disable(gl.POLYGON_OFFSET_FILL);\n gl.disable(gl.SAMPLE_COVERAGE);\n
gl.enable(gl.SCISSOR_TEST);\n gl.enable(gl.CULL_FACE);\n gl.cullFace(gl.BACK);\n\n return
contexts[webGLVersion];\n}\n\nfunction createCanvas(webGLVersion: number) {\n if (typeof OffscreenCanvas
!== 'undefined' && webGLVersion === 2) {\n return new OffscreenCanvas(300, 150);\n } else if (typeof
document !== 'undefined') {\n return document.createElement('canvas');\n } else {\n throw new Error('Cannot
create a canvas in this context');\n }\n}\n\nfunction getWebGLRenderingContext(webGLVersion: number):
WebGLRenderingContext {\n if (webGLVersion !== 1 && webGLVersion !== 2) {\n throw new Error('Cannot
get WebGL rendering context, WebGL is disabled.);\n }\n const canvas = createCanvas(webGLVersion);\n\n
canvas.addEventListener('webglcontextlost', (ev: Event) => {\n ev.preventDefault();\n delete
contexts[webGLVersion];\n }, false);\n if (webGLVersion === 1) {\n return (canvas.getContext('webgl',
WEBGL_ATTRIBUTES) ||\n canvas.getContext('experimental-webgl', WEBGL_ATTRIBUTES)) as\n
WebGLRenderingContext;\n }\n return canvas.getContext('webgl2', WEBGL_ATTRIBUTES) as
WebGLRenderingContext;\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, DataId, DataType, env, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nexport enum PackingScheme {\n  /**\n   * All values in a single texel are densely packed without any constraints.\n   *\n   * This is how the shader encodes a tensor with shape = [2, 3, 4]\n   * (indices are [batch, row, col]).\n   *\n   * 000|001 010|011 020|021\n   * -----\n   * 002|003 012|013 022|023\n   *\n   * 100|101 110|111 120|121\n   * -----\n   * 102|103 112|113 122|123\n   *\n   * \n DENSE,\n\n  /**\n   * Single texels contain only values from the same batch, and from adjacent\n   * rows and columns.\n   *\n   * This is how the shader encodes a tensor with shape = [2, 3, 5]\n   * (indices are [batch, row, col]).\n   *\n   * 000|001 002|003 004|xxx 020|021 022|023 024|xxx\n   * -----\n   * 010|011 012|013 014|xxx xxx|xxx xxx|xxx xxx|xxx\n   *\n   * 100|101 102|103 104|xxx 120|121 122|123 124|xxx\n   * -----\n   * 110|111 112|113 114|xxx xxx|xxx xxx|xxx xxx|xxx\n   *\n   * \n SHARED_BATCH\n\n}\n\nexport enum TextureUsage {\n  RENDER,\n  UPLOAD,\n  PIXELS,\n  DOWNLOAD\n}\n\nexport enum PhysicalTextureType {\n  UNPACKED_FLOAT16,\n  UNPACKED_FLOAT32,\n  PACKED_4X1_UNSIGNED_BYTE,\n  PACKED_2X2_FLOAT32,\n  PACKED_2X2_FLOAT16\n}\n\nexport interface TextureData {\n  // Required.\n  shape: number[];\n  dtype: DataType;\n\n  // Optional.\n  values?: backend_util.BackendValues;\n  texture?: WebGLTexture;\n\n  // For complex numbers, the real and imaginary parts are stored as their own\n  // individual tensorInfos, with a parent joining the two with the\n  // complexTensors field. When this is defined, texture will be null.\n  complexTensorInfos?: {real: TensorInfo, imag: TensorInfo};\n\n  /** [rows, columns] shape of the texture. *\n  texShape?: [number, number];\n\n  usage?: TextureUsage;\n  isPacked?: boolean;\n\n  refCount: number;\n\n  // Available when the tensor has been sliced.\n  slice?: {\n    // Offset in the 'flat index' space.\n    flatOffset: number;\n    // Used for counting how many sliced tensors point to the same texture.\n    origDataId: DataId;\n  };\n}\n\nexport function getUnpackedMatrixTextureShapeWidthHeight(\n  rows: number, columns: number): [number, number] {\n  return [columns, rows];\n}\n\nexport function getUnpackedArraySizeFromMatrixSize(\n  matrixSize: number, channelsPerTexture: number): number {\n  return matrixSize * channelsPerTexture;\n}\n\nexport function getColorMatrixTextureShapeWidthHeight(\n  rows: number, columns: number): [number, number] {\n  return [columns * 4, rows];\n}\n\n/**\n * Get shape for densely packed RGBA texture.\n *\n */\nexport function getDenseTexShape(shape: number[]): [number, number] {\n  const size = util.sizeFromShape(shape);\n  const texelsNeeded = Math.ceil(size / 4);\n  return util.sizeToSquarishShape(texelsNeeded);\n}\n\nexport function getMatrixSizeFromUnpackedArraySize(\n  unpackedSize: number, channelsPerTexture: number): number {\n  if (unpackedSize % channelsPerTexture !== 0) {\n    throw new Error(\n      `unpackedSize (${unpackedSize}) must be a multiple of ` +\n      `${channelsPerTexture}`);\n  }\n  return unpackedSize / channelsPerTexture;\n}\n\nexport function decodeMatrixFromUnpackedColorRGBAArray(\n  unpackedArray: Float32Array, matrix: Float32Array, channels: number) {\n  const requiredSize = unpackedArray.length * channels / 4;\n  if (matrix.length < requiredSize) {\n    throw new Error(\n      `matrix length (${matrix.length}) must be >= ${requiredSize}`);\n  }\n  let dst = 0;\n  for (let src = 0; src < unpackedArray.length; src += 4) {\n    for (let c = 0; c < channels; c++) {\n      matrix[dst++] = unpackedArray[src + c];\n    }\n  }\n}\n\nexport function getPackedMatrixTextureShapeWidthHeight(\n  rows: number, columns: number): [number, number] {\n  return [\n    Math.max(1, Math.ceil(columns / 2)), Math.max(1, Math.ceil(rows / 2))\n  ];\n}\n\nexport function getPackedRGBAArraySizeFromMatrixShape(\n  rows: number, columns: number): number {\n  const [w, h] = getPackedMatrixTextureShapeWidthHeight(rows, columns);\n  return w * h * 4;\n}\n\nexport interface TextureConfig {\n  internalFormatFloat: number;\n  textureFormatFloat: number;\n\n  internalFormatPackedHalfFloat: number;\n  internalFormatHalfFloat: number;\n  internalFormatPackedFloat: number;\n\n  // The format to use during a gl.readPixels call.\n  downloadTextureFormat: number;\n\n  // How many channels need to be unpacked after a gl.readPixels call.\n  downloadUnpackNumChannels: number;\n}
```

```

defaultNumChannels: number;\n textureTypeHalfFloat: number;\n textureTypeFloat: number;\n}\n\nexport
function getTextureConfig(\n // tslint:disable-next-line:no-any\n gl: WebGLRenderingContext,
textureHalfFloatExtension?: any): TextureConfig {\n // tslint:disable-next-line:no-any\n const glany = gl as
any;\n\n let internalFormatFloat: number;\n let internalFormatHalfFloat: number;\n let
internalFormatPackedHalfFloat: number;\n let internalFormatPackedFloat: number;\n let textureFormatFloat:
number;\n\n let downloadTextureFormat: number;\n let downloadUnpackNumChannels: number;\n\n let
defaultNumChannels: number;\n let textureTypeHalfFloat: number;\n let textureTypeFloat: number;\n\n if
(env().getNumber('WEBGL_VERSION') === 2) {\n internalFormatFloat = glany.R32F;\n
internalFormatHalfFloat = glany.R16F;\n internalFormatPackedHalfFloat = glany.RGBA16F;\n
internalFormatPackedFloat = glany.RGBA32F;\n textureFormatFloat = glany.RED;\n
downloadUnpackNumChannels = 4;\n defaultNumChannels = 1;\n textureTypeHalfFloat =
glany.HALF_FLOAT;\n textureTypeFloat = glany.FLOAT;\n } else {\n internalFormatFloat = gl.RGBA;\n
internalFormatHalfFloat = gl.RGBA;\n internalFormatPackedHalfFloat = gl.RGBA;\n
internalFormatPackedFloat = glany.RGBA;\n textureFormatFloat = gl.RGBA;\n downloadUnpackNumChannels
= 4;\n defaultNumChannels = 4;\n textureTypeHalfFloat = textureHalfFloatExtension != null ?\n
textureHalfFloatExtension.HALF_FLOAT_OES :\n null;\n textureTypeFloat = gl.FLOAT;\n }\n
downloadTextureFormat = gl.RGBA;\n\n return {\n internalFormatFloat,\n internalFormatHalfFloat,\n
internalFormatPackedHalfFloat,\n internalFormatPackedFloat,\n textureFormatFloat,\n
downloadTextureFormat,\n downloadUnpackNumChannels,\n defaultNumChannels,\n
textureTypeHalfFloat,\n textureTypeFloat\n };\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*\n\nimport {env, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {getWebGLContext} from
'/canvas_util';\n\nimport {getTextureConfig} from './tex_util';\n\nexport function callAndCheck<T>(gl:
WebGLRenderingContext, func: () => T): T {\n const returnValue = func();\n if (env().getBool('DEBUG')) {\n
checkWebGLError(gl);\n }\n return returnValue;\n}\n\nfunction checkWebGLError(gl: WebGLRenderingContext)
{\n const error = gl.getError();\n if (error !== gl.NO_ERROR) {\n throw new Error('WebGL Error: ' +
getWebGLErrorMessage(gl, error));\n }\n}\n\n// https://en.wikipedia.org/wiki/Half-precision_floating-
point_format\nconst MIN_FLOAT16 = 5.96e-8;\nconst MAX_FLOAT16 = 65504;\n\nexport function
canBeRepresented(num: number): boolean {\n if (env().getBool('WEBGL_RENDER_FLOAT32_ENABLED') ||
num === 0 ||\n (MIN_FLOAT16 < Math.abs(num) && Math.abs(num) < MAX_FLOAT16)) {\n return true;\n
}\n return false;\n}\n\nexport function getWebGLErrorMessage(\n gl: WebGLRenderingContext, status: number):
string {\n switch (status) {\n case gl.NO_ERROR:\n return 'NO_ERROR';\n case gl.INVALID_ENUM:\n
return 'INVALID_ENUM';\n case gl.INVALID_VALUE:\n return 'INVALID_VALUE';\n case
gl.INVALID_OPERATION:\n return 'INVALID_OPERATION';\n case
gl.INVALID_FRAMEBUFFER_OPERATION:\n return 'INVALID_FRAMEBUFFER_OPERATION';\n case
gl.OUT_OF_MEMORY:\n return 'OUT_OF_MEMORY';\n case gl.CONTEXT_LOST_WEBGL:\n return
'CONTEXT_LOST_WEBGL';\n default:\n return `Unknown error code ${status}`;\n }\n}\n\nexport function
getExtensionOrThrow(\n gl: WebGLRenderingContext, extensionName: string): {} {\n return
throwIfNull<{}>(\n gl, () => gl.getExtension(extensionName),\n `Extension "${extensionName}" not
supported on this browser.`);\n}\n\nexport function createVertexShader(\n gl: WebGLRenderingContext,
vertexShaderSource: string): WebGLShader {\n const vertexShader: WebGLShader =
throwIfNull<WebGLShader>(\n gl, () => gl.createShader(gl.VERTEX_SHADER),\n `Unable to create vertex

```

```

WebGLShader.);\n callAndCheck(gl, () => gl.shaderSource(vertexShader, vertexShaderSource));\n
callAndCheck(gl, () => gl.compileShader(vertexShader));\n if (gl.getShaderParameter(vertexShader,\n
gl.COMPILE_STATUS) === false) {\n console.log(gl.getShaderInfoLog(vertexShader));\n throw new\n
Error('Failed to compile vertex shader.);\n }\n return vertexShader;\n}\n\nexport function\n
createFragmentShader(\n gl: WebGLRenderingContext, fragmentShaderSource: string): WebGLShader {\n const\n
fragmentShader: WebGLShader = throwIfNull<WebGLShader>(\n gl, () =>\n
gl.createShader(gl.FRAGMENT_SHADER),\n 'Unable to create fragment WebGLShader.);\n callAndCheck(gl,\n
() => gl.shaderSource(fragmentShader, fragmentShaderSource));\n callAndCheck(gl, () =>\n
gl.compileShader(fragmentShader));\n if (gl.getShaderParameter(fragmentShader, gl.COMPILE_STATUS) ===\n
false) {\n logShaderSourceAndInfoLog(\n fragmentShaderSource, gl.getShaderInfoLog(fragmentShader));\n\n
throw new Error('Failed to compile fragment shader.);\n }\n return fragmentShader;\n}\n\nconst lineNumberRegex\n
= /ERROR: [0-9]+:([0-9]+)/g;\nfunction logShaderSourceAndInfoLog(\n shaderSource: string, shaderInfoLog:\n
string) {\n const lineNumberRegexResult = lineNumberRegex.exec(shaderInfoLog);\n if (lineNumberRegexResult\n
== null) {\n console.log(`Couldn't parse line number in error: ${shaderInfoLog}`);\n\n
console.log(shaderSource);\n return;\n }\n\n const lineNumber = +lineNumberRegexResult[1];\n const\n
shaderLines = shaderSource.split('\\n');\n const pad = shaderLines.length.toString().length + 2;\n const\n
linesWithLineNumbers = shaderLines.map(\n (line, lineNumber) =>\n util.rightPad((lineNumber +\n
1).toString(), pad) + line);\n let maxLineLength = 0;\n for (let i = 0; i < linesWithLineNumbers.length; i++) {\n\n
maxLineLength = Math.max(linesWithLineNumbers[i].length, maxLineLength);\n }\n\n const beforeErrorLines =\n
linesWithLineNumbers.slice(0, lineNumber - 1);\n const errorLine = linesWithLineNumbers.slice(lineNumber - 1,\n
lineNumber);\n const afterErrorLines = linesWithLineNumbers.slice(lineNumber);\n\n
console.log(beforeErrorLines.join('\\n'));\n console.log(shaderInfoLog.split('\\n')[0]);\n console.log(\n `%c\n
${util.rightPad(errorLine[0], maxLineLength)} `,\n 'border: 1px solid red; background-color: #e3d2d2;\n
color: #a61717');\n console.log(afterErrorLines.join('\\n'));\n}\n\nexport function createProgram(gl:\n
WebGLRenderingContext): WebGLProgram {\n return throwIfNull<WebGLProgram>(\n gl, () =>\n
gl.createProgram(), 'Unable to create WebGLProgram.);\n}\n\nexport function linkProgram(gl:\n
WebGLRenderingContext, program: WebGLProgram) {\n callAndCheck(gl, () => gl.linkProgram(program));\n if\n
(gl.getProgramParameter(program, gl.LINK_STATUS) === false) {\n\n
console.log(gl.getProgramInfoLog(program));\n throw new Error('Failed to link vertex and fragment shaders.);\n\n
}\n}\n\nexport function validateProgram(\n gl: WebGLRenderingContext, program: WebGLProgram) {\n\n
callAndCheck(gl, () => gl.validateProgram(program));\n if (gl.getProgramParameter(program,\n
gl.VALIDATE_STATUS) === false) {\n console.log(gl.getProgramInfoLog(program));\n throw new\n
Error('Shader program validation failed.);\n }\n}\n\nexport function createStaticVertexBuffer(\n gl:\n
WebGLRenderingContext, data: Float32Array): WebGLBuffer {\n const buffer: WebGLBuffer =\n
throwIfNull<WebGLBuffer>(\n gl, () => gl.createBuffer(), 'Unable to create WebGLBuffer');\n\n
callAndCheck(gl, () => gl.bindBuffer(gl.ARRAY_BUFFER, buffer));\n callAndCheck(gl, () =>\n
gl.bufferData(gl.ARRAY_BUFFER, data, gl.STATIC_DRAW));\n return buffer;\n}\n\nexport function\n
createStaticIndexBuffer(\n gl: WebGLRenderingContext, data: Uint16Array): WebGLBuffer {\n const buffer:\n
WebGLBuffer = throwIfNull<WebGLBuffer>(\n gl, () => gl.createBuffer(), 'Unable to create WebGLBuffer');\n\n
callAndCheck(gl, () => gl.bindBuffer(gl.ELEMENT_ARRAY_BUFFER, buffer));\n callAndCheck(\n gl, () =>\n
gl.bufferData(gl.ELEMENT_ARRAY_BUFFER, data, gl.STATIC_DRAW));\n return buffer;\n}\n\nexport\n
function getNumChannels(): number {\n if (env().getNumber('WEBGL_VERSION') === 2) {\n return 1;\n }\n\n
return 4;\n}\n\nexport function createTexture(gl: WebGLRenderingContext): WebGLTexture {\n return\n
throwIfNull<WebGLTexture>(\n gl, () => gl.createTexture(), 'Unable to create WebGLTexture.);\n}\n\nexport\n
function validateTextureSize(width: number, height: number) {\n const maxTextureSize =\n
env().getNumber('WEBGL_MAX_TEXTURE_SIZE');\n if ((width <= 0) || (height <= 0)) {\n const requested =\n
`${width}x${height}`;\n throw new Error('Requested texture size ' + requested + ' is invalid.);\n }\n if\n
((width > maxTextureSize) || (height > maxTextureSize)) {\n const requested = `${width}x${height}`;\n const max =

```



```

`[${maxTextureSize}x${maxTextureSize}];\n  throw new Error(\n    'Requested texture size ' + requested + '\n
' greater than WebGL maximum on this browser / GPU ' + max + '.');\n }\n}\n\nexport function
createFramebuffer(gl: WebGLRenderingContext): WebGLFramebuffer {\n return
throwIfNull<WebGLFramebuffer>(\n  gl, () => gl.createFramebuffer(), 'Unable to create
WebGLFramebuffer.);\n }\n\nexport function bindVertexBufferToProgramAttribute(\n gl:
WebGLRenderingContext, program: WebGLProgram, attribute: string,\n  buffer: WebGLBuffer,
arrayEntriesPerItem: number, itemStrideInBytes: number,\n  itemOffsetInBytes: number): boolean {\n const loc =
gl.getAttribLocation(program, attribute);\n if (loc === -1) {\n // The GPU compiler decided to strip out this
attribute because it's unused,\n // thus no need to bind.\n return false;\n }\n callAndCheck(gl, () =>
gl.bindBuffer(gl.ARRAY_BUFFER, buffer));\n callAndCheck(\n  gl,\n  () => gl.vertexAttribPointer(\n
loc, arrayEntriesPerItem, gl.FLOAT, false, itemStrideInBytes,\n    itemOffsetInBytes));\n callAndCheck(gl, ()
=> gl.enableVertexAttribArray(loc));\n return true;\n }\n\nexport function bindTextureUnit(\n gl:
WebGLRenderingContext, texture: WebGLTexture, textureUnit: number) {\n validateTextureUnit(gl,
textureUnit);\n callAndCheck(gl, () => gl.activeTexture(gl.TEXTURE0 + textureUnit));\n callAndCheck(gl, () =>
gl.bindTexture(gl.TEXTURE_2D, texture));\n }\n\nexport function unbindTextureUnit(\n gl:
WebGLRenderingContext, textureUnit: number) {\n validateTextureUnit(gl, textureUnit);\n callAndCheck(gl, ()
=> gl.activeTexture(gl.TEXTURE0 + textureUnit));\n callAndCheck(gl, () => gl.bindTexture(gl.TEXTURE_2D,
null));\n }\n\nexport function getProgramUniformLocationOrThrow(\n gl: WebGLRenderingContext, program:
WebGLProgram,\n  uniformName: string): WebGLUniformLocation {\n return
throwIfNull<WebGLUniformLocation>(\n  gl, () => gl.getUniformLocation(program, uniformName),\n
'uniform \'' + uniformName + '\' not present in program.);\n }\n\nexport function getProgramUniformLocation(\n
gl: WebGLRenderingContext, program: WebGLProgram,\n  uniformName: string): WebGLUniformLocation {\n
return gl.getUniformLocation(program, uniformName);\n }\n\nexport function
bindTextureToProgramUniformSampler(\n gl: WebGLRenderingContext, texture: WebGLTexture,\n
uniformSamplerLocation: WebGLUniformLocation, textureUnit: number) {\n callAndCheck(gl, () =>
bindTextureUnit(gl, texture, textureUnit));\n callAndCheck(gl, () => gl.uniform1i(uniformSamplerLocation,
textureUnit));\n }\n\nexport function bindCanvasToFramebuffer(gl: WebGLRenderingContext) {\n
callAndCheck(gl, () => gl.bindFramebuffer(gl.FRAMEBUFFER, null));\n callAndCheck(gl, () => gl.viewport(0, 0,
gl.canvas.width, gl.canvas.height));\n callAndCheck(gl, () => gl.scissor(0, 0, gl.canvas.width,
gl.canvas.height));\n }\n\nexport function bindColorTextureToFramebuffer(\n gl: WebGLRenderingContext,
texture: WebGLTexture,\n  framebuffer: WebGLFramebuffer) {\n callAndCheck(gl, () =>
gl.bindFramebuffer(gl.FRAMEBUFFER, framebuffer);\n callAndCheck(\n  gl,\n  () =>
gl.framebufferTexture2D(\n    gl.FRAMEBUFFER, gl.COLOR_ATTACHMENT0, gl.TEXTURE_2D, texture,
0));\n }\n\nexport function unbindColorTextureFromFramebuffer(\n gl: WebGLRenderingContext, framebuffer:
WebGLFramebuffer) {\n callAndCheck(gl, () => gl.bindFramebuffer(gl.FRAMEBUFFER, framebuffer);\n
callAndCheck(\n  gl,\n  () => gl.framebufferTexture2D(\n    gl.FRAMEBUFFER,
gl.COLOR_ATTACHMENT0, gl.TEXTURE_2D, null, 0));\n }\n\nexport function validateFramebuffer(gl:
WebGLRenderingContext) {\n const status = gl.checkFramebufferStatus(gl.FRAMEBUFFER);\n if (status !==
gl.FRAMEBUFFER_COMPLETE) {\n throw new Error(\n    'Error binding framebuffer: ' +
getFramebufferErrorMessage(gl, status);\n  )\n }\n }\n\nexport function getFramebufferErrorMessage(\n gl:
WebGLRenderingContext, status: number): string {\n switch (status) {\n case
gl.FRAMEBUFFER_INCOMPLETE_ATTACHMENT:\n return
'FRAMEBUFFER_INCOMPLETE_ATTACHMENT';\n case
gl.FRAMEBUFFER_INCOMPLETE_MISSING_ATTACHMENT:\n return
'FRAMEBUFFER_INCOMPLETE_MISSING_ATTACHMENT';\n case
gl.FRAMEBUFFER_INCOMPLETE_DIMENSIONS:\n return
'FRAMEBUFFER_INCOMPLETE_DIMENSIONS';\n case gl.FRAMEBUFFER_UNSUPPORTED:\n return
'FRAMEBUFFER_UNSUPPORTED';\n default:\n return `unknown error ${status}`;\n }\n }\n\nfunction

```

```

throwIfNull<T>(\n  gl: WebGLRenderingContext, returnOrNull: () => T | null,\n  failureMessage: string): T {\n
const tOrNull: T|null = callAndCheck(gl, () => returnOrNull());\n  if (tOrNull === null) {\n    throw new
Error(failureMessage);\n  }\n  return tOrNull;\n}\n\nfunction validateTextureUnit(gl: WebGLRenderingContext,
textureUnit: number) {\n  const maxTextureUnit = gl.MAX_COMBINED_TEXTURE_IMAGE_UNITS - 1;\n
const glTextureUnit = textureUnit + gl.TEXTURE0;\n  if (glTextureUnit < gl.TEXTURE0 || glTextureUnit >
maxTextureUnit) {\n    const textureUnitRange = `[gl.TEXTURE0, gl.TEXTURE${maxTextureUnit}]`;\n    throw
new Error(`textureUnit must be in ${textureUnitRange}.`);\n  }\n}\n\nexport function getBatchDim(shape:
number[], dimsToSkip = 2): number {\n  return util.sizeFromShape(shape.slice(0, shape.length -
dimsToSkip));\n}\n\nexport function getRowsCols(shape: number[]): [number, number] {\n  if (shape.length === 0)
{\n    throw Error('Cannot get rows and columns of an empty shape array.);\n  }\n  return [\n    shape.length > 1 ?
shape[shape.length - 2] : 1, shape[shape.length - 1]\n  ];\n}\n\nexport function getShapeAs3D(shape: number[]):
[number, number, number] {\n  let shapeAs3D: [number, number, number] = [1, 1, 1];\n  const isScalar =
shape.length === 0 || (shape.length === 1 && shape[0] === 1);\n  if (!isScalar) {\n    shapeAs3D =\n    [getBatchDim(shape), ...getRowsCols(shape)] as [number, number, number];\n  }\n  return
shapeAs3D;\n}\n\nexport function getTextureShapeFromLogicalShape(\n  logShape: number[], isPacked = false):
[number, number] {\n  let maxTexSize = env().getNumber('WEBGL_MAX_TEXTURE_SIZE');\n  if (isPacked) {\n
    maxTexSize = maxTexSize * 2;\n    // This logic ensures we accurately count the number of packed texels
needed\n    // to accommodate the tensor. We can only pack values in the same texel if\n    // they are from adjacent
pairs of rows/cols within the same batch. So if a\n    // tensor has 3 rows, we pretend it has 4 rows in order to account
for the\n    // fact that the texels containing the third row are half empty.\n    logShape = logShape.map(\n      (d, i)
=> i >= logShape.length - 2 ?\n        util.nearestLargerEven(logShape[i]) : logShape[i]);\n    // Packed
texture height is at least 2 (the channel height of a single\n    // texel).\n    if (logShape.length === 1) {\n
logShape = [2, logShape[0]];\n    }\n    // If logical shape is 2, we don't squeeze, since we want to match
physical.\n    if (logShape.length !== 2) {\n      const squeezeResult = util.squeezeShape(logShape);\n      logShape =
squeezeResult.newShape;\n    }\n    let size = util.sizeFromShape(logShape);\n    if (logShape.length <= 1 && size <=
maxTexSize) {\n      return [1, size];\n    } else if (\n      logShape.length === 2 && logShape[0] <= maxTexSize &&\n
logShape[1] <= maxTexSize) {\n      return logShape as [number, number];\n    } else if (\n      logShape.length ===
3 && logShape[0] * logShape[1] <= maxTexSize &&\n      logShape[2] <= maxTexSize) {\n      return [logShape[0]
* logShape[1], logShape[2]];\n    } else if (\n      logShape.length === 3 && logShape[0] <= maxTexSize &&\n
logShape[1] * logShape[2] <= maxTexSize) {\n      return [logShape[0], logShape[1] * logShape[2]];\n    } else if (\n
logShape.length === 4 &&\n      logShape[0] * logShape[1] * logShape[2] <= maxTexSize &&\n      logShape[3]
<= maxTexSize) {\n      return [logShape[0] * logShape[1] * logShape[2], logShape[3]];\n    } else if (\n
logShape.length === 4 && logShape[0] <= maxTexSize &&\n      logShape[1] * logShape[2] * logShape[3] <=
maxTexSize) {\n      return [logShape[0], logShape[1] * logShape[2] * logShape[3]];\n    } else {\n      if (isPacked) {\n
// For packed textures size equals the number of channels required to\n      // accommodate the texture data.
However in order to squarify such that\n      // inner dimensions stay even, we rewrite size to equal the number of\n
// texels. Then in the return statement we rehydrate the squarified\n      // dimensions to channel units.\n      const
batchDim = getBatchDim(logShape);\n      let rows = 2, cols = 2;\n      if (logShape.length) {\n        [rows, cols] =
getRowsCols(logShape);\n      }\n      size = batchDim * (rows / 2) * (cols / 2);\n      return
util.sizeToSquarishShape(size).map(d => d * 2) as [number, number];\n    }\n    return
util.sizeToSquarishShape(size);\n  }\n}\n\nfunction isEven(n: number): boolean {\n  return n % 2 ===
0;\n}\n\n/**\n * This determines whether reshaping a packed texture requires rearranging\n * the data within the
texture, assuming 2x2 packing.\n */\nexport function isReshapeFree(shape1: number[], shape2: number[]): boolean
{\n  shape1 = shape1.slice(-2);\n  shape2 = shape2.slice(-2);\n  if (util.arraysEqual(shape1, shape2)) {\n    return
true;\n  }\n  if (!shape1.length || !shape2.length) { // One of the shapes is a scalar.\n    return true;\n  }\n  if
(shape1[0] === 0 || shape1[1] === 0 || shape2[0] === 0 ||\n    shape2[1] === 0) {\n    return true;\n  }\n  if
(shape1.length !== shape2.length) { // One of the shapes is a vector.\n    const shape1Cols = shape1.slice(-1)[0];\n
const shape2Cols = shape2.slice(-1)[0];\n    if (shape1Cols === shape2Cols) {\n      return true;\n    }\n    if

```

```

(isEven(shape1Cols) && isEven(shape2Cols) &&\n    (shape1[0] === 1 || shape2[0] === 1)) {\n    return true;\n
}\n }\n return shape1[1] === shape2[1] && isEven(shape1[0]) && isEven(shape2[0]);\n}\n\n// We cache webgl
params because the environment gets reset between\n// unit tests and we don't want to constantly query the
WebGLContext for\n// MAX_TEXTURE_SIZE.\nlet MAX_TEXTURE_SIZE: number;\nlet
MAX_TEXTURES_IN_SHADER: number;\n\nexport function getWebGLMaxTextureSize(webGLVersion:
number): number {\n if (MAX_TEXTURE_SIZE == null) {\n    const gl = getWebGLContext(webGLVersion);\n
MAX_TEXTURE_SIZE = gl.getParameter(gl.MAX_TEXTURE_SIZE);\n }\n return
MAX_TEXTURE_SIZE;\n}\n\nexport function resetMaxTextureSize() {\n MAX_TEXTURE_SIZE =
null;\n}\n\nexport function resetMaxTexturesInShader() {\n MAX_TEXTURES_IN_SHADER = null;\n}\n\nexport
function getMaxTexturesInShader(webGLVersion: number): number {\n if (MAX_TEXTURES_IN_SHADER ==
null) {\n    const gl = getWebGLContext(webGLVersion);\n    MAX_TEXTURES_IN_SHADER =
gl.getParameter(gl.MAX_TEXTURE_IMAGE_UNITS);\n }\n // We cap at 16 to avoid spurious runtime \"memory
exhausted\" error.\n return Math.min(16, MAX_TEXTURES_IN_SHADER);\n}\n\nexport function
getWebGLDisjointQueryTimerVersion(webGLVersion: number):\n    number {\n if (webGLVersion === 0) {\n
return 0;\n }\n\n let queryTimerVersion: number;\n    const gl = getWebGLContext(webGLVersion);\n\n if
(hasExtension(gl, 'EXT_disjoint_timer_query_webgl2') &&\n    webGLVersion === 2) {\n    queryTimerVersion =
2;\n } else if (hasExtension(gl, 'EXT_disjoint_timer_query')) {\n    queryTimerVersion = 1;\n } else {\n
queryTimerVersion = 0;\n }\n return queryTimerVersion;\n}\n\nexport function hasExtension(gl:
WebGLRenderingContext, extensionName: string) {\n    const ext = gl.getExtension(extensionName);\n    return ext !=
null;\n}\n\nexport function isWebGLVersionEnabled(webGLVersion: 1|2) {\n    try {\n    const gl =
getWebGLContext(webGLVersion);\n    if (gl != null) {\n    return true;\n    }\n    } catch (e) {\n    console.log('Error
when getting WebGL context: ', e);\n    return false;\n    }\n    return false;\n}\n\nexport function
isCapableOfRenderingToFloatTexture(webGLVersion: number):\n    boolean {\n if (webGLVersion === 0) {\n
return false;\n }\n\n const gl = getWebGLContext(webGLVersion);\n\n if (webGLVersion === 1) {\n    if
(!hasExtension(gl, 'OES_texture_float')) {\n    return false;\n    }\n } else {\n    if (!hasExtension(gl,
'EXT_color_buffer_float')) {\n    return false;\n    }\n }\n\n const isFramebufferComplete =
createFloatTextureAndBindToFramebuffer(gl);\n    return isFramebufferComplete;\n}\n\n**\n * Check if we can
download values from a float/half-float texture.\n * \n * Note that for performance reasons we use binding a texture
to a framebuffer\n * as a proxy for ability to download float values later using readPixels. The\n * texture params of
this texture will not match those in readPixels exactly\n * but if we are unable to bind some kind of float texture to
the framebuffer\n * then we definitely will not be able to read float values from it.\n */\n\nexport function
isDownloadFloatTextureEnabled(webGLVersion: number): boolean {\n if (webGLVersion === 0) {\n    return
false;\n }\n\n const gl = getWebGLContext(webGLVersion);\n\n if (webGLVersion === 1) {\n    if
(!hasExtension(gl, 'OES_texture_float')) {\n    return false;\n    }\n } if (!hasExtension(gl,
'WEBGL_color_buffer_float')) {\n    return false;\n    }\n } else {\n    if (hasExtension(gl,
'EXT_color_buffer_float')) {\n    return createFloatTextureAndBindToFramebuffer(gl);\n    }\n }\n\n const
COLOR_BUFFER_HALF_FLOAT = 'EXT_color_buffer_half_float';\n    if (hasExtension(gl,
COLOR_BUFFER_HALF_FLOAT)) {\n    const textureHalfFloatExtension =\n
gl.getExtension(COLOR_BUFFER_HALF_FLOAT);\n    return
createHalfFloatTextureAndBindToFramebuffer(\n        gl, textureHalfFloatExtension);\n    }\n\n return false;\n
}\n\n const isFramebufferComplete = createFloatTextureAndBindToFramebuffer(gl);\n    return
isFramebufferComplete;\n}\n\nfunction createFloatTextureAndBindToFramebuffer(gl:
WebGLRenderingContext):\n    boolean {\n    const texConfig = getTextureConfig(gl);\n\n    const texture =
gl.createTexture();\n    gl.bindTexture(gl.TEXTURE_2D, texture);\n\n    const width = 1;\n    const height = 1;\n
gl.texImage2D(\n    gl.TEXTURE_2D, 0, texConfig.internalFormatFloat, width, height, 0,\n
texConfig.textureFormatFloat, texConfig.textureTypeFloat, null);\n\n    const framebuffer =
gl.createFramebuffer();\n    gl.bindFramebuffer(gl.FRAMEBUFFER, framebuffer);\n    gl.framebufferTexture2D(\n
gl.FRAMEBUFFER, gl.COLOR_ATTACHMENT0, gl.TEXTURE_2D, texture, 0);\n\n    const

```

```

isFramebufferComplete =\n    gl.checkFramebufferStatus(gl.FRAMEBUFFER) ===
gl.FRAMEBUFFER_COMPLETE;\n\n    gl.bindTexture(gl.TEXTURE_2D, null);\n    gl.bindFramebuffer(gl.FRAMEBUFFER, null);\n    gl.deleteTexture(texture);\n    gl.deleteFramebuffer(frameBuffer);\n\n    return isFramebufferComplete;\n}\n\nfunction
createHalfFloatTextureAndBindToFramebuffer(\n    // tslint:disable-next-line:no-any\n    gl:
WebGLRenderingContext, textureHalfFloatExtension: any): boolean {\n    const texConfig = getTextureConfig(gl,
textureHalfFloatExtension);\n    const texture = gl.createTexture();\n    gl.bindTexture(gl.TEXTURE_2D, texture);\n\n    const width = 1;\n    const height = 1;\n    gl.texImage2D(\n        gl.TEXTURE_2D, 0,
texConfig.internalFormatHalfFloat, width, height, 0,\n        texConfig.textureFormatFloat,
texConfig.textureTypeHalfFloat, null);\n\n    const frameBuffer = gl.createFramebuffer();\n    gl.bindFramebuffer(gl.FRAMEBUFFER, frameBuffer);\n    gl.framebufferTexture2D(\n        gl.FRAMEBUFFER,
gl.COLOR_ATTACHMENT0, gl.TEXTURE_2D, texture, 0);\n\n    const isFramebufferComplete =\n    gl.checkFramebufferStatus(gl.FRAMEBUFFER) === gl.FRAMEBUFFER_COMPLETE;\n\n    gl.bindTexture(gl.TEXTURE_2D, null);\n    gl.bindFramebuffer(gl.FRAMEBUFFER, null);\n    gl.deleteTexture(texture);\n    gl.deleteFramebuffer(frameBuffer);\n\n    return isFramebufferComplete;\n}\n\nexport
function isWebGLFenceEnabled(webGLVersion: number) {\n    if (webGLVersion !== 2) {\n        return false;\n    }\n    const gl = getWebGLContext(webGLVersion);\n\n    // tslint:disable-next-line:no-any\n    const isEnabled = (gl as
any).fenceSync != null;\n    return isEnabled;\n}\n\nexport function assertNotComplex(\n    tensor:
TensorInfo|TensorInfo[], opName: string): void {\n    if (!Array.isArray(tensor)) {\n        tensor = [tensor];\n    }\n    tensor.forEach(t => {\n        if (t != null) {\n            util.assert(\n                t.dtype !== 'complex64',\n                () => `${opName}
does not support complex64 tensors` +\n                `in the WebGL backend.`);\n        }\n    });\n}\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====
*\n\nimport {device_util, env} from '@tensorflow/tfjs-core';\n\nimport {getMaxTexturesInShader,
getWebGLDisjointQueryTimerVersion, getWebGLMaxTextureSize, isCapableOfRenderingToFloatTexture,
isDownloadFloatTextureEnabled, isWebGLFenceEnabled, isWebGLVersionEnabled} from './webgl_util';\n\nconst
ENV = env();\n\n/**\n * This file contains WebGL-specific flag registrations.\n */\n\n/**\n * True if WebGL is
supported.\n */\n\nENV.registerFlag('HAS_WEBGL', () => ENV.getNumber('WEBGL_VERSION') > 0);\n\n0:
No WebGL, 1: WebGL 1.0, 2: WebGL 2.0.\n\nENV.registerFlag('WEBGL_VERSION', () => {\n    if
(isWebGLVersionEnabled(2)) {\n        return 2;\n    } else if (isWebGLVersionEnabled(1)) {\n        return 1;\n    }\n    return
0;\n});\n\n/**\n * Whether to check for numerical representation problems.\n */\n\nENV.registerFlag('WEBGL_CHECK_NUMERICAL_PROBLEMS', () => false);\n\nENV.registerFlag(\n    'WEBGL_BUFFER_SUPPORTED', () => ENV.get('WEBGL_VERSION') === 2);\n\n/**\n * Whether the WebGL
backend will sometimes forward ops to the CPU.\n */\n\nENV.registerFlag('WEBGL_CPU_FORWARD', () =>
true);\n\n/**\n * Whether the WebGL backend will always use f16 textures for rendering.\n */\n\nENV.registerFlag('WEBGL_FORCE_F16_TEXTURES', () => false);\n\n/**\n * Whether to turn all packing related
flags on.\n */\n\nENV.registerFlag('WEBGL_PACK', () => ENV.getBool('HAS_WEBGL'));\n\n/**\n * Whether we will
pack the batchnormalization op.\n */\n\nENV.registerFlag('WEBGL_PACK_NORMALIZATION', () =>
ENV.getBool('WEBGL_PACK'));\n\n/**\n * Whether we will pack the clip op.\n */\n\nENV.registerFlag('WEBGL_PACK_CLIP', () => ENV.getBool('WEBGL_PACK'));\n\n/**\n * Whether we will
pack the depthwise conv op.\n */\n\n// TODO:
https://github.com/tensorflow/tfjs/issues/1679\n\nENV.registerFlag('WEBGL_PACK_DEPTHWISECONV', () =>
false);\n\n/**\n * Whether we will pack binary ops.\n */\n\nENV.registerFlag(\n

```

```

'WEBGL_PACK_BINARY_OPERATIONS', () => ENV.getBool('WEBGL_PACK'));\n\n/** Whether we will pack
unary ops. */\nENV.registerFlag(\n  'WEBGL_PACK_UNARY_OPERATIONS', () =>
ENV.getBool('WEBGL_PACK'));\n\n/** Whether we will pack array ops. */\nENV.registerFlag(\n
'WEBGL_PACK_ARRAY_OPERATIONS', () => ENV.getBool('WEBGL_PACK'));\n\n/** Whether we will pack
image ops. */\nENV.registerFlag(\n  'WEBGL_PACK_IMAGE_OPERATIONS', () =>
ENV.getBool('WEBGL_PACK'));\n\n/** Whether we will pack reduce ops.
*/\nENV.registerFlag('WEBGL_PACK_REDUCE', () => ENV.getBool('WEBGL_PACK'));\n\n/** Whether packed
WebGL kernels lazily unpack their outputs. */\nENV.registerFlag('WEBGL_LAZILY_UNPACK', () =>
ENV.getBool('WEBGL_PACK'));\n\n/** Whether we will use the im2col algorithm to speed up convolutions.
*/\nENV.registerFlag('WEBGL_CONV_IM2COL', () => ENV.getBool('WEBGL_PACK'));\n\n/** The maximum
texture dimension. */\nENV.registerFlag(\n  'WEBGL_MAX_TEXTURE_SIZE',\n  () =>
getWebGLMaxTextureSize(ENV.getNumber('WEBGL_VERSION')));\n\n/** The maximum texture dimension.
*/\nENV.registerFlag(\n  'WEBGL_MAX_TEXTURES_IN_SHADER',\n  () =>
getMaxTexturesInShader(ENV.getNumber('WEBGL_VERSION')));\n\n/**\n * The disjoint_query_timer extension
version.\n * 0: disabled, 1: EXT_disjoint_timer_query, 2:\n * EXT_disjoint_timer_query_webgl2.\n * In Firefox
with WebGL 2.0,\n * EXT_disjoint_timer_query_webgl2 is not available, so we must use the\n * WebGL 1.0
extension.\n */\nENV.registerFlag('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION', () => {\n
const webGLVersion = ENV.getNumber('WEBGL_VERSION');\n\n if (webGLVersion === 0) {\n  return 0;\n
}\n return getWebGLDisjointQueryTimerVersion(webGLVersion);\n});\n\n/**\n * Whether the timer object from
the disjoint_query_timer extension gives\n * timing information that is reliable.\n */\nENV.registerFlag(\n
'WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_RELIABLE',\n  () =>
ENV.getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION') > 0 &&\n
!device_util.isMobile());\n\n/**\n * Whether the device is physically capable of rendering to float32 textures.\n
*/\nENV.registerFlag(\n  'WEBGL_RENDER_FLOAT32_CAPABLE',\n  () =>
isCapableOfRenderingToFloatTexture(ENV.getNumber('WEBGL_VERSION')));\n\n/**\n * Whether rendering to
float32 textures is enabled. If disabled, renders to\n * float16 textures.\n
*/\nENV.registerFlag('WEBGL_RENDER_FLOAT32_ENABLED', () => {\n return
ENV.getBool('WEBGL_FORCE_F16_TEXTURES') ?\n  false :\n
ENV.getBool('WEBGL_RENDER_FLOAT32_CAPABLE');\n});\n\n/**\n * Whether downloading float textures is
enabled (16 or 32 bit). If disabled,\n * uses IEEE 754 encoding of the float32 values to 4 uint8 when downloading.\n
*/\nENV.registerFlag(\n  'WEBGL_DOWNLOAD_FLOAT_ENABLED',\n  () =>
isDownloadFloatTextureEnabled(ENV.getNumber('WEBGL_VERSION')));\n\n/** Whether the fence API is
available. */\nENV.registerFlag(\n  'WEBGL_FENCE_API_ENABLED',\n  () =>
isWebGLFenceEnabled(ENV.getNumber('WEBGL_VERSION')));\n\n/**\n * Tensors with size <= than this will be
uploaded as uniforms, not textures.\n */\nENV.registerFlag('WEBGL_SIZE_UPLOAD_UNIFORM', () => {\n //
Use uniform uploads only when 32bit floats are supported. In\n // 16bit\n // environments there are problems with
comparing a 16bit texture value\n // with a 32bit uniform value.\n const useUniforms =
ENV.getBool('WEBGL_RENDER_FLOAT32_ENABLED');\n return useUniforms ? 4 : 0;\n});\n\n/**\n * If the
total number of bytes allocated on the GPU is greater than this\n * number, we will aggressively delete textures
upon disposal with\n * gl.deleteMatrixTexture, rather than making them available for reuse.\n */\n * Default value -1
indicates that we will never aggressively delete textures.\n */\nENV.registerFlag(\n
'WEBGL_DELETE_TEXTURE_THRESHOLD',\n  () => {\n  return -1;\n },\n  threshold => {\n  if
(threshold < 0 && threshold !== -1) {\n   throw new Error(\n
`WEBGL_DELETE_TEXTURE_THRESHOLD must be -1 (indicating never ` +\n   `delete) or at least 0, but
got ${threshold}.`);\n  }\n });\n\n"},"**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {env} from '@tensorflow/tfjs-core';\nexport type GLSL = {\n  version: string,\n  attribute: string,\n  varyingVs: string,\n  varyingFs: string,\n  texture2D: string,\n  output: string,\n  defineOutput: string,\n  defineSpecialNaN: string,\n  defineSpecialInf: string,\n  defineRound: string\n};\nexport function\ngetGlsIDifferences(): GLSL {\n  let version: string;\n  let attribute: string;\n  let varyingVs: string;\n  let varyingFs: string;\n  let texture2D: string;\n  let output: string;\n  let defineOutput: string;\n  let defineSpecialNaN: string;\n  let defineSpecialInf: string;\n  let defineRound: string;\n  if (env().getNumber('WEBGL_VERSION') === 2) {\n    version = '#version 300 es';\n    attribute = 'in';\n    varyingVs = 'out';\n    varyingFs = 'in';\n    texture2D = 'texture';\n    output = 'outputColor';\n    defineOutput = 'out vec4 outputColor;'\n    // Use custom isnan definition to work\n    // across differences between\n    // implementations on various platforms. While this should happen in ANGLE\n    // we still see differences between android and windows (on chrome) when\n    // using isnan directly.\n    defineSpecialNaN = `\n      bool isnan_custom(float val) {\n        return (val > 0.0 || val < 0.0) ? false : val != 0.0;\n      }\n      bvec4 isnan_custom(vec4 val) {\n        return bvec4(isnan_custom(val.x),\n          isnan_custom(val.y),\n          isnan_custom(val.z),\n          isnan_custom(val.w));\n      }\n      #define isnan(value) isnan_custom(value)\n    `;\n    // In\n    // webgl 2 we do not need to specify a custom isinf so there is no\n    // need for a special INFINITY constant.\n    defineSpecialInf = `;\n    defineRound = `\n      #define round(value) newRound(value)\n      int newRound(float\n        value) {\n          return int(floor(value + 0.5));\n        }\n        ivec4 newRound(vec4 value) {\n          return\n            ivec4(floor(value + vec4(0.5)));\n        }\n        `;\n    } else {\n      version = ";\n      attribute = 'attribute';\n      varyingVs =\n        'varying';\n      varyingFs = 'varying';\n      texture2D = 'texture2D';\n      output = 'gl_FragColor';\n      defineOutput = ";\n      // WebGL1 has no built in isnan so we define one here.\n      defineSpecialNaN = `\n        #define isnan(value)\n        isnan_custom(value)\n        bool isnan_custom(float val) {\n          return (val > 0. || val < 1. || val == 0.) ? false : true;\n        }\n        bvec4 isnan_custom(vec4 val) {\n          return bvec4(isnan(val.x), isnan(val.y), isnan(val.z),\n            isnan(val.w));\n        }\n        `;\n      defineSpecialInf = `\n        uniform float INFINITY;\n        bool isinf(float val) {\n          return abs(val) == INFINITY;\n        }\n        bvec4 isinf(vec4 val) {\n          return equal(abs(val), vec4(INFINITY));\n        }\n        `;\n      defineRound = `\n        int round(float value) {\n          return int(floor(value + 0.5));\n        }\n        ivec4\n        round(vec4 value) {\n          return ivec4(floor(value + vec4(0.5)));\n        }\n        `;\n    }\n  }\n  return {\n    version,\n    attribute,\n    varyingVs,\n    varyingFs,\n    texture2D,\n    output,\n    defineOutput,\n    defineSpecialNaN,\n    defineSpecialInf,\n    defineRound\n  };}\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {util} from '@tensorflow/tfjs-core';\n/**\n * Produces GLSL code that derives logical coordinates\n * from a flat\n * index. The code performs integer division with each stride and decrements\n * the index until the\n * index equals the final dimension coordinate.\n */\nexport function getLogicalCoordinatesFromFlatIndex(\n  coords: string[], shape: number[], index = 'index'): string {\n  const strides = util.computeStrides(shape);\n  return\n    strides\n      .map((stride, i) => {\n        const line1 = `int ${coords[i]} = ${index} / ${stride}`;\n        const line2 = i\n          ===\n            strides.length - 1 ?\n              `int ${coords[i + 1]} = ${index} - ${coords[i]} * ${stride}`\n              :\n                `index --\n                  ${coords[i]} * ${stride}`;\n        return `${line1}; ${line2};`;\n      })\n      .join(");\n\nfunction buildVec(x:\n  string[]): string {\n  if (x.length === 1) {\n    return `${x[0]}`;\n  }\n  return\n    `vec${x.length}(${x.join(',')}`;\n}\n/**\n * Produces GLSL code that computes the dot product of the input x and\n * y\n * vectors. Handles splitting inputs into increments of vec4s when necessary.\n */\nexport function dotify(x:
```

```

string[], y: string[]): string {\n if (x.length !== y.length) {\n throw new Error(\n `Vectors to be dotted must be
of the same length - ` +\n `got ${x.length} and ${y.length}`);\n } }\n\n const slices: string[] = [];\n const
nearestVec4 = Math.floor(x.length / 4);\n const nearestVec4Remainder = x.length % 4;\n\n for (let i = 0; i <
nearestVec4; i++) {\n const xSlice = x.slice(i * 4, i * 4 + 4);\n const ySlice = y.slice(i * 4, i * 4 + 4);\n
slices.push(`${buildVec(xSlice)}, ${buildVec(ySlice)}`);\n }\n\n if (nearestVec4Remainder !== 0) {\n let xSlice
= x.slice(nearestVec4 * 4);\n let ySlice = y.slice(nearestVec4 * 4);\n if (xSlice.length === 1) {\n xSlice =
xSlice.map(d => `float(${d})`);\n ySlice = ySlice.map(d => `float(${d})`);\n }\n
slices.push(`${buildVec(xSlice)}, ${buildVec(ySlice)}`);\n }\n\n return slices.map((d, i) =>
`dot(${d}`).join('+');\n }\n\n`*\n * Produces GLSL that computes the flat index from 3D coordinates.\n */\n\nexport
function getFlatIndexFrom3D(shape: [number, number, number]): string {\n const strides =
util.computeStrides(shape).map(d => d.toString());\n\n return `\n int getFlatIndex(ivec3 coords) {\n return
coords.x * ${strides[0]} + coords.y * ${strides[1]} + coords.z;\n }\n`;\n }\n\n\nexport const
ENCODE_FLOAT_SNIPPET = `\n const float FLOAT_MAX = 1.70141184e38;\n const float FLOAT_MIN =
1.17549435e-38;\n\n lowp vec4 encode_float(highp float v) {\n if (isnan(v)) {\n return vec4(255, 255, 255,
255);\n }\n\n highp float av = abs(v);\n\n if (av < FLOAT_MIN) {\n return vec4(0.0, 0.0, 0.0, 0.0);\n }
else if (v > FLOAT_MAX) {\n return vec4(0.0, 0.0, 128.0, 127.0) / 255.0;\n } else if (v < -FLOAT_MAX) {\n
return vec4(0.0, 0.0, 128.0, 255.0) / 255.0;\n }\n\n highp vec4 c = vec4(0,0,0,0);\n\n highp float e =
floor(log2(av));\n highp float m = exp2(fract(log2(av))) - 1.0;\n\n c[2] = floor(128.0 * m);\n m -= c[2] /
128.0;\n c[1] = floor(32768.0 * m);\n m -= c[1] / 32768.0;\n c[0] = floor(8388608.0 * m);\n\n highp float
ebias = e + 127.0;\n c[3] = floor(ebias / 2.0);\n ebias -= c[3] * 2.0;\n c[2] += floor(ebias) * 128.0;\n\n c[3] +=
128.0 * step(0.0, -v);\n\n return c / 255.0;\n }\n`;\n *
*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n
*\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
*\n
\n
\n\nimport {getGlslDifferences} from './glsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\nimport *
as shader_util from './shader_compiler_util';\nimport {getDenseTexShape, PackingScheme} from
'/tex_util';\n\nexport class DecodeMatrixProgram implements GPGPUProgram {\n variableNames = ['A'];\n
userCode: string;\n outputShape: [number, number, number];\n packedInputs = false;\n packedOutput = true;\n
outPackingScheme = PackingScheme.DENSE;\n\n constructor(outputShape: [number, number, number]) {\n
const texShape = getDenseTexShape(outputShape);\n const glsl = getGlslDifferences();\n this.outputShape =
outputShape;\n\n this.userCode = `\n ivec3 outCoordsFromFlatIndex(int index) {\n ${\n
shader_util.getLogicalCoordinatesFromFlatIndex(\n [r', 'c', 'd'], outputShape)}\n return ivec3(r, c, d);\n
}\n\n void main() {\n ivec2 resTexRC = ivec2(resultUV.yx *\n vec2(${texShape[0]},
${texShape[1]}));\n int index = 4 * (resTexRC.x * ${texShape[1]} + resTexRC.y);\n\n vec4 result =
vec4(0.);\n\n for (int i=0; i<4; i++) {\n int flatIndex = index + i;\n ivec3 rc =
outCoordsFromFlatIndex(flatIndex);\n result[i] = getA(rc.x, rc.y, rc.z);\n }\n\n ${glsl.output} =
result;\n }\n`;\n *
*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n
*\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
*\n
\n
\n\n
\n\n`

```

```

*\n\nimport {getGlsIDifferences} from './glsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\nimport *
as shader_util from './shader_compiler_util';\nimport {getDenseTexShape, PackingScheme} from
 './tex_util';\n\nexport class DecodeMatrixPackedProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  userCode: string;\n  packedInputs = true;\n  packedOutput = true;\n  outputShape: [number, number, number];\n  outPackingScheme = PackingScheme.DENSE;\n\n  constructor(outputShape: [number, number, number]) {\n    const texShape = getDenseTexShape(outputShape);\n    const glsl = getGlsIDifferences();\n    this.outputShape =
outputShape;\n\n    this.userCode = `\n      ivec3 outCoordsFromFlatIndex(int index) {\n        ${\n
shader_util.getLogicalCoordinatesFromFlatIndex(\n          ['r', 'c', 'd'], outputShape)}\n        return ivec3(r, c, d);\n
      }\n\n      void main() {\n        ivec2 resTexRC = ivec2(resultUV.yx * \n          vec2(${texShape[0]},
${texShape[1]}));\n        int index = 4 * (resTexRC.x * ${texShape[1]} + resTexRC.y);\n\n        vec4 result =
vec4(0.);\n        for (int i=0; i<4; i++) {\n          int flatIndex = index + i;\n          ivec3 rc =
outCoordsFromFlatIndex(flatIndex);\n          result[i] = getChannel(getA(rc.x, rc.y, rc.z), vec2(rc.y, rc.z));\n
        }\n\n        ${glsl.output} = result;\n      }\n    `;\n  }\n\n  /**\n   * @license\n   * Copyright 2018 Google LLC. All
Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this
file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * \n
http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,
software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language
governing permissions and\n   * limitations under the License.\n   *

```

```

=====\n
*\n\nimport {getGlsIDifferences} from './glsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\nimport
{ENCODE_FLOAT_SNIPPET} from './shader_compiler_util';\nimport {TextureUsage} from './tex_util';\n\nexport
class EncodeFloatProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  userCode: string;\n  outputShape: number[];\n  outTexUsage = TextureUsage.DOWNLOAD;\n\n  constructor(outputShape: number[])
{\n    const glsl = getGlsIDifferences();\n    this.outputShape = outputShape;\n    this.userCode = `\n
${ENCODE_FLOAT_SNIPPET}\n\n    void main() {\n      float x = getAAtOutCoords();\n      ${glsl.output} =
encode_float(x);\n    }\n  `;\n  }\n\n  /**\n   * @license\n   * Copyright 2018 Google LLC. All Rights Reserved.\n
   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in
compliance with the License.\n   * You may obtain a copy of the License at\n   * \n
http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,
software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language
governing permissions and\n   * limitations under the License.\n   *

```

```

=====\n
*\n\nimport {getGlsIDifferences} from './glsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\nimport
{ENCODE_FLOAT_SNIPPET} from './shader_compiler_util';\nimport {TextureUsage} from './tex_util';\n\nexport
class EncodeFloatPackedProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  userCode: string;\n  outputShape: number[];\n  packedInputs = true;\n  packedOutput = false;\n  outTexUsage =
TextureUsage.DOWNLOAD;\n\n  constructor(outputShape: [number, number, number]) {\n    const glsl =
getGlsIDifferences();\n    this.outputShape = outputShape;\n    this.userCode = `\n
${ENCODE_FLOAT_SNIPPET}\n\n    void main() {\n      ivec3 coords = getOutputCoords();\n      float x =
getChannel(getAAtOutCoords(), vec2(coords.y, coords.z));\n      ${glsl.output} = encode_float(x);\n    }\n  `;\n
}\n\n  /**\n   * @license\n   * Copyright 2018 Google LLC. All Rights Reserved.\n   * Licensed under the Apache
License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the License.\n
   * You may obtain a copy of the License at\n   * \n
http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,
software\n   * distributed under the License is distributed on an "AS IS"
BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the
License for the specific language governing permissions and\n   * limitations under the License.\n   *

```



```

=====
*\n\nimport {getGslIDifferences} from './gsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\nimport *
as shader_util from './shader_compiler_util';\n\nexport class EncodeMatrixProgram implements GPGPUProgram {\n
variableNames = ['A'];\n userCode: string;\n outputShape: number[];\n\n constructor(\n   outputShape: [number,
number, number], texShape: [number, number],\n   inputIsUnsignedByte = false) {\n   const gsl =
getGslIDifferences();\n   const [height, width] = texShape;\n   this.outputShape = outputShape;\n\n   let output =
`result`;\n   if (inputIsUnsignedByte) {\n     output = `floor(result * 255. + 0.5)`;\n   }\n\n   this.userCode = `\n
${shader_util.getFlatIndexFrom3D(outputShape)}\n\n   void main() {\n     ivec3 coords =
getOutputCoords();\n\n     int flatIndex = getFlatIndex(coords);\n     int offset = imod(flatIndex, 4);\n\n
flatIndex = idiv(flatIndex, 4, 1.);\n     int r = flatIndex / ${width};\n     int c = imod(flatIndex, ${width});\n
vec2 uv = (vec2(c, r) + halfCR) / vec2(${width}.0, ${height}.0);\n     vec4 values = ${gsl.texture2D}(A, uv);\n\n
float result;\n\n     if(offset == 0) {\n       result = values[0];\n     } else if(offset == 1) {\n       result =
values[1];\n     } else if(offset == 2) {\n       result = values[2];\n     } else {\n       result = values[3];\n
}\n\n     ${gsl.output} = vec4(${output}, 0., 0., 0.); \n   `;\n   }\n}\n\n"/**\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n
* http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {getGslIDifferences} from './gsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\nimport *
as shader_util from './shader_compiler_util';\n\n/*\nThis is how the shader encodes a tensor with shape = [2, 3,
5]\n(indices are [batch, row, col]).\n000|001 002|003 004|xxx 020|021 022|023 024|xxx\n-----
----- ----
--- -----
-----\n010|011 012|013 014|xxx xxx|xxx xxx|xxx\n\n100|101 102|103 104|xxx
120|121 122|123 124|xxx\n-----
----- -----
-----\n110|111 112|113 114|xxx xxx|xxx
xxx|xxx\n\nSingle texels contain only values from the same batch, and from adjacent rows\nand
columns.\n */\n\nexport class EncodeMatrixPackedProgram implements GPGPUProgram {\n variableNames =
['A'];\n userCode: string;\n outputShape: number[];\n packedInputs = false;\n packedOutput = true;\n\n
constructor(\n   outputShape: [number, number, number], texShape: [number, number],\n   inputIsUnsignedByte
= false) {\n   const gsl = getGslIDifferences();\n   const [height, width] = texShape;\n   this.outputShape =
outputShape;\n\n   let mainLoop = ";\n   let output = 'result';\n   if (inputIsUnsignedByte) {\n     output =
'floor(result * 255. + 0.5)';\n   }\n\n   for (let row = 0; row <= 1; row++) {\n     for (let col = 0; col <= 1; col++) {\n
\n       const channel = row * 2 + col;\n\n       mainLoop += `\n         localCoords = coords;\n         if(localCoords[2] +
${col} < ${outputShape[2]}) {\n           localCoords[2] += ${col};\n           if(localCoords[1] + ${row} <
${outputShape[1]}) {\n             localCoords[1] += ${row};\n\n             flatIndex = getFlatIndex(localCoords);\n
\n             offset = imod(flatIndex, 4);\n\n             flatIndex = idiv(flatIndex, 4, 1.);\n\n             r = flatIndex / ${width};\n
\n             c = imod(flatIndex, ${width});\n\n             uv = (vec2(c, r) + halfCR) / vec2(${width}.0, ${height}.0);\n
\n             values = ${gsl.texture2D}(A, uv);\n\n             if(offset == 0) {\n               result[${channel}] = values[0];\n
\n             } else if(offset == 1) {\n               result[${channel}] = values[1];\n\n             } else if(offset == 2) {\n
\n               result[${channel}] = values[2];\n\n             } else {\n               result[${channel}] = values[3];\n\n             }\n
\n             }\n           }\n         }\n\n       this.userCode += `\n         ${shader_util.getFlatIndexFrom3D(outputShape)}\n\n
\n       void main() {\n         ivec3 coords = getOutputCoords();\n         vec4 result = vec4(0.); \n         int flatIndex, r, c,
offset;\n         ivec3 localCoords;\n         vec2 uv;\n         vec4 values;\n\n         ${mainLoop}\n\n         ${gsl.output} =
${output};\n         }\n       `;\n     }\n   }\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * \n
* http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {PixelData, TypedArray} from '@tensorflow/tfjs-core';\nimport {getGslsDifferences} from './gsls_version';\nimport * as tex_util from './tex_util';\nimport {TextureConfig} from './tex_util';\nimport * as webgl_util from './webgl_util';\n\nexport function createVertexShader(gl: WebGLRenderingContext): WebGLShader {\n  const gsls = getGslsDifferences();\n  const vertexShaderSource = `${gsls.version}\n  precision\n  highp float;\n  ${gsls.attribute} vec3 clipSpacePos;\n  ${gsls.attribute} vec2 uv;\n  ${gsls.varyingVs} vec2\n  resultUV;\n\n  void main() {\n    gl_Position = vec4(clipSpacePos, 1);\n    resultUV = uv;\n  };\n  return\n  webgl_util.createVertexShader(gl, vertexShaderSource);\n}\n\nexport function createVertexBuffer(gl:\n  WebGLRenderingContext): WebGLBuffer {\n  // [x y z u v] * [upper-left, lower-left, upper-right, lower-right]\n  const vertexArray = new Float32Array([\n    -1, 1, 0, 0, 1, -1, -1, 0, 0, 0, 1, 1, 0, 1, 1, -1, 0, 1, 0]);\n  return\n  webgl_util.createStaticVertexBuffer(gl, vertexArray);\n}\n\nexport function createIndexBuffer(gl:\n  WebGLRenderingContext): WebGLBuffer {\n  // OpenGL (and WebGL) have \"CCW == front\" winding\n  const\n  triangleVertexIndices = new Uint16Array([0, 1, 2, 2, 1, 3]);\n  return\n  webgl_util.createStaticIndexBuffer(gl,\n  triangleVertexIndices);\n}\n\nfunction createAndConfigureTexture(\n  gl: WebGLRenderingContext, width:\n  number, height: number,\n  internalFormat: number, textureFormat: number,\n  textureType: number): WebGLTexture {\n  webgl_util.validateTextureSize(width, height);\n  const texture =\n  webgl_util.createTexture(gl);\n\n  const tex2d = gl.TEXTURE_2D;\n  webgl_util.callAndCheck(gl, () =>\n  gl.bindTexture(tex2d, texture));\n  webgl_util.callAndCheck(\n  gl, () => gl.texParameteri(tex2d,\n  gl.TEXTURE_WRAP_S, gl.CLAMP_TO_EDGE));\n  webgl_util.callAndCheck(\n  gl, () =>\n  gl.texParameteri(tex2d, gl.TEXTURE_WRAP_T, gl.CLAMP_TO_EDGE));\n  webgl_util.callAndCheck(\n  gl, ()\n  => gl.texParameteri(tex2d, gl.TEXTURE_MIN_FILTER, gl.NEAREST));\n  webgl_util.callAndCheck(\n  gl, ()\n  => gl.texParameteri(tex2d, gl.TEXTURE_MAG_FILTER, gl.NEAREST));\n  webgl_util.callAndCheck(\n  gl,\n  () => gl.texImage2D(\n  tex2d, 0, internalFormat, width, height, 0, textureFormat,\n  textureType,\n  null));\n  webgl_util.callAndCheck(gl, () => gl.bindTexture(gl.TEXTURE_2D, null));\n  return\n  texture;\n}\n\nexport function getInternalFormatForFloat32MatrixTexture(\n  textureConfig: TextureConfig) {\n  return\n  textureConfig.internalFormatFloat;\n}\n\nexport function createFloat32MatrixTexture(\n  gl:\n  WebGLRenderingContext, rows: number, columns: number,\n  textureConfig: TextureConfig): WebGLTexture {\n  const [width, height] =\n  tex_util.getUnpackedMatrixTextureShapeWidthHeight(rows, columns);\n  return\n  createAndConfigureTexture(\n  gl, width, height,\n  getInternalFormatForFloat32MatrixTexture(textureConfig),\n  textureConfig.textureFormatFloat,\n  gl.FLOAT);\n}\n\nexport function getInternalFormatForFloat16MatrixTexture(\n  textureConfig: TextureConfig)\n  {\n  return\n  textureConfig.internalFormatHalfFloat;\n}\n\nexport function createFloat16MatrixTexture(\n  gl:\n  WebGLRenderingContext, rows: number, columns: number,\n  textureConfig: TextureConfig): WebGLTexture {\n  const [width, height] =\n  tex_util.getUnpackedMatrixTextureShapeWidthHeight(rows, columns);\n  return\n  createAndConfigureTexture(\n  gl, width, height,\n  getInternalFormatForFloat16MatrixTexture(textureConfig),\n  textureConfig.textureFormatFloat,\n  textureConfig.textureTypeHalfFloat);\n}\n\nexport function getInternalFormatForUnsignedBytesMatrixTexture(\n  textureConfig: TextureConfig) {\n  return\n  textureConfig.downloadTextureFormat;\n}\n\nexport function\n  createUnsignedBytesMatrixTexture(\n  gl: WebGLRenderingContext, rows: number, columns: number,\n  textureConfig: TextureConfig): WebGLTexture {\n  const [width, height] =\n  tex_util.getUnpackedMatrixTextureShapeWidthHeight(rows, columns);\n  return\n  createAndConfigureTexture(\n  gl, width, height,\n  getInternalFormatForUnsignedBytesMatrixTexture(textureConfig),\n  gl.RGBA,\n  gl.UNSIGNED_BYTE);\n}\n\nexport function getInternalFormatForPackedMatrixTexture(\n  textureConfig:\n  TextureConfig) {\n  return\n  textureConfig.internalFormatPackedFloat;\n}\n\nexport function\n  createPackedMatrixTexture(\n  gl: WebGLRenderingContext, rows: number, columns: number,\n  textureConfig:
```

```

TextureConfig): WebGLTexture {\n  const [width, height] =\n
tex_util.getPackedMatrixTextureShapeWidthHeight(rows, columns);\n  return createAndConfigureTexture(\n    gl,\n
width, height, getInternalFormatForPackedMatrixTexture(textureConfig),\n    gl.RGBA, gl.FLOAT);\n}\n\n\nexport\n
function getInternalFormatForFloat16PackedMatrixTexture(\n  textureConfig: TextureConfig) {\n  return\n
textureConfig.internalFormatPackedHalfFloat;\n}\n\n\nexport function createFloat16PackedMatrixTexture(\n  gl:\n
WebGLRenderingContext, rows: number, columns: number,\n  textureConfig: TextureConfig): WebGLTexture {\n
const [width, height] =\n    tex_util.getPackedMatrixTextureShapeWidthHeight(rows, columns);\n  return\n
createAndConfigureTexture(\n    gl, width, height,\n
getInternalFormatForFloat16PackedMatrixTexture(textureConfig), gl.RGBA,\n
textureConfig.textureTypeHalfFloat);\n}\n\n\nexport function bindVertexProgramAttributeStreams(\n  gl:\n
WebGLRenderingContext, program: WebGLProgram,\n  vertexBuffer: WebGLBuffer): boolean {\n  const\n
posOffset = 0;          // x is the first buffer element\n  const uvOffset = 3 * 4;          // uv comes after [x y z]\n
const stride = (3 * 4) + (2 * 4); // xyz + uv, each entry is 4-byte float.\n  webgl_util.callAndCheck(\n    gl, () =>\n
gl.bindBuffer(gl.ARRAY_BUFFER, vertexBuffer));\n  const success =\n
webgl_util.bindVertexBufferToProgramAttribute(\n    gl, program, 'clipSpacePos', vertexBuffer, 3, stride,\n
posOffset);\n  return success &&\n    webgl_util.bindVertexBufferToProgramAttribute(\n      gl, program, 'uv',\n
vertexBuffer, 2, stride, uvOffset);\n}\n\n\nexport function uploadDenseMatrixToTexture(\n  gl:\n
WebGLRenderingContext, texture: WebGLTexture, width: number,\n  height: number, data: TypedArray,\n
textureConfig: TextureConfig) {\n  webgl_util.callAndCheck(gl, () => gl.bindTexture(gl.TEXTURE_2D,\n
texture));\n}\n\n  let dataForUpload: TypedArray, texelDataType: number, internalFormat: number;\n  if (data\n
instanceof Uint8Array) {\n    dataForUpload = new Uint8Array(width * height * 4);\n    texelDataType =\n
gl.UNSIGNED_BYTE;\n    internalFormat = gl.RGBA;\n  } else {\n    dataForUpload = new Float32Array(width *  

height * 4);\n    texelDataType = gl.FLOAT;\n    internalFormat = textureConfig.internalFormatPackedFloat;\n
}\n\n  dataForUpload.set(data);\n\n  webgl_util.callAndCheck(\n    gl,\n    () => gl.texImage2D(\n
gl.TEXTURE_2D, 0, internalFormat, width, height, 0, gl.RGBA,\n    texelDataType, dataForUpload));\n}\n\n
webgl_util.callAndCheck(gl, () => gl.bindTexture(gl.TEXTURE_2D, null));\n}\n\n\nexport function\n
uploadPixelDataToTexture(\n  gl: WebGLRenderingContext, texture: WebGLTexture,\n  pixels:\n
PixelData|ImageData|HTMLImageElement|HTMLCanvasElement|\n  HTMLVideoElement) {\n  webgl_util.callAndCheck(gl, () => gl.bindTexture(gl.TEXTURE_2D, texture));\n  if ((pixels as PixelData).data\n
instanceof Uint8Array) {\n    webgl_util.callAndCheck(\n      gl,\n      () => gl.texImage2D(\n
gl.TEXTURE_2D, 0, gl.RGBA, pixels.width, pixels.height, 0, gl.RGBA,\n      gl.UNSIGNED_BYTE, (pixels as  

PixelData).data));\n  } else {\n    webgl_util.callAndCheck(\n      gl,\n      () => gl.texImage2D(\n
gl.TEXTURE_2D, 0, gl.RGBA, gl.RGBA, gl.UNSIGNED_BYTE,\n      pixels as ImageData |  

HTMLImageElement | HTMLCanvasElement | HTMLVideoElement));\n  }\n}\n\n
webgl_util.callAndCheck(gl, () => gl.bindTexture(gl.TEXTURE_2D, null));\n}\n\n\nexport function\n
createBufferFromOutputTexture(\n  gl2: WebGL2RenderingContext, rows: number, columns: number,\n
textureConfig: TextureConfig): WebGLBuffer {\n  // Create and bind the buffer.\n  const buffer =\n
gl2.createBuffer();\n  webgl_util.callAndCheck(\n    gl2, () => gl2.bindBuffer(gl2.PIXEL_PACK_BUFFER,\n
buffer));\n}\n\n  // Initialize the buffer to the size of the texture in bytes.\n  const bytesPerFloat = 4;\n  const\n
valuesPerTexel = 4;\n  const bufferSizeBytes = bytesPerFloat * valuesPerTexel * rows * columns;\n}\n\n
webgl_util.callAndCheck(\n  gl2,\n  () => gl2.bufferData(\n    gl2.PIXEL_PACK_BUFFER,\n
bufferSizeBytes, gl2.STREAM_READ));\n}\n\n  // Enqueue a command on the GPU command queue to copy of  

texture into the\n  // buffer.\n  webgl_util.callAndCheck(\n    gl2, () => gl2.readPixels(0, 0, columns, rows,\n
gl2.RGBA, gl2.FLOAT, 0));\n}\n\n  webgl_util.callAndCheck(\n    gl2, () =>\n
gl2.bindBuffer(gl2.PIXEL_PACK_BUFFER, null));\n}\n\n  return buffer;\n}\n\n\nexport function\n
downloadFloat32MatrixFromBuffer(\n  gl: WebGLRenderingContext, buffer: WebGLBuffer,\n  size: number):  

Float32Array {\n  const gl2 = gl as WebGL2RenderingContext;\n\n  const downloadTarget = new  

Float32Array(size);\n\n  gl2.bindBuffer(gl2.PIXEL_PACK_BUFFER, buffer);\n}

```

```

gl2.getBufferSubData(gl2.PIXEL_PACK_BUFFER, 0, downloadTarget);\n
gl2.bindBuffer(gl2.PIXEL_PACK_BUFFER, null);\n\n return downloadTarget;\n}\n\nexport function
downloadByteEncodedFloatMatrixFromOutputTexture(\n gl: WebGLRenderingContext, rows: number, columns:
number,\n textureConfig: TextureConfig) {\n const [w, h] =\n
tex_util.getUnpackedMatrixTextureShapeWidthHeight(rows, columns);\n\n const numChannels = 4;\n const
downloadTarget = new Uint8Array(\n tex_util.getUnpackedArraySizeFromMatrixSize(rows * columns,
numChannels));\n\n webgl_util.callAndCheck(\n gl,\n () => gl.readPixels(\n 0, 0, w, h,
textureConfig.downloadTextureFormat, gl.UNSIGNED_BYTE,\n downloadTarget));\n\n // By wrapping the
buffer in a Float32Array, we use native browser IEEE 754\n // decoding of the 4 bytes that back each 32 bit float.\n
return new Float32Array(downloadTarget.buffer);\n}\n\nexport function downloadPackedMatrixFromBuffer(\n
gl: WebGLRenderingContext, buffer: WebGLBuffer, batch: number, rows: number,\n cols: number,
physicalRows: number, physicalCols: number,\n textureConfig: TextureConfig): Float32Array {\n const gl2 = gl
as WebGL2RenderingContext;\n\n const downloadTarget =\n new
Float32Array(tex_util.getPackedRGBAArraySizeFromMatrixShape(\n physicalRows, physicalCols));\n\n
gl2.bindBuffer(gl2.PIXEL_PACK_BUFFER, buffer);\n gl2.getBufferSubData(gl2.PIXEL_PACK_BUFFER, 0,
downloadTarget);\n gl2.bindBuffer(gl2.PIXEL_PACK_BUFFER, null);\n\n return downloadTarget;\n}\n\nexport
function downloadMatrixFromPackedOutputTexture(\n gl: WebGLRenderingContext, physicalRows: number,\n
physicalCols: number): Float32Array {\n const packedRGBA = new Float32Array(physicalRows * physicalCols *
4);\n webgl_util.callAndCheck(\n gl,\n () => gl.readPixels(\n 0, 0, physicalCols, physicalRows,
gl.RGBA, gl.FLOAT, packedRGBA));\n\n return packedRGBA;\n}\n\n", "/*\n * @license\n * Copyright 2017
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {env, PixelData, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {getWebGLContext,
setWebGLContext} from './canvas_util';\n\nimport * as gpgpu_util from './gpgpu_util';\n\nimport * as tex_util from
 './tex_util';\n\nimport {TextureConfig} from './tex_util';\n\nimport {WebGL1DisjointQueryTimerExtension,
WebGL2DisjointQueryTimerExtension} from './webgl_types';\n\nimport * as webgl_util from
 './webgl_util';\n\nexport interface FenceContext {\n query: WebGLQuery|WebGLSync;\n isFencePassed():
boolean;\n}\n\nexport class GPGPUContext {\n gl: WebGLRenderingContext;\n textureFloatExtension: {};\n
textureHalfFloatExtension: {};\n colorBufferFloatExtension: {};\n colorBufferHalfFloatExtension: {};\n
disjointQueryTimerExtension: WebGL2DisjointQueryTimerExtension|\n
WebGL1DisjointQueryTimerExtension;\n vertexBuffer: WebGLBuffer;\n indexBuffer: WebGLBuffer;\n
framebuffer: WebGLFramebuffer;\n outputTexture: WebGLTexture|null = null;\n program: WebGLProgram|null =
null;\n private disposed = false;\n private disjoint: boolean;\n textureConfig: TextureConfig;\n\n constructor(gl?:
WebGLRenderingContext) {\n const glVersion = env().getNumber('WEBGL_VERSION');\n if (gl != null) {\n
this.gl = gl;\n setWebGLContext(glVersion, gl);\n } else {\n this.gl = getWebGLContext(glVersion);\n
}\n\n // WebGL 2.0 enables texture floats without an extension.\n let COLOR_BUFFER_FLOAT =
'WEBGL_color_buffer_float';\n const COLOR_BUFFER_HALF_FLOAT = 'EXT_color_buffer_half_float';\n if
(env().getNumber('WEBGL_VERSION') === 1) {\n const TEXTURE_FLOAT = 'OES_texture_float';\n
const TEXTURE_HALF_FLOAT = 'OES_texture_half_float';\n\n this.textureFloatExtension =\n
webgl_util.getExtensionOrThrow(this.gl, TEXTURE_FLOAT);\n if (webgl_util.hasExtension(this.gl,
TEXTURE_HALF_FLOAT)) {\n this.textureHalfFloatExtension =\n
webgl_util.getExtensionOrThrow(this.gl, TEXTURE_HALF_FLOAT);\n } else if
(env().get('WEBGL_FORCE_F16_TEXTURES')) {\n throw new Error(\n 'GL context does not support

```

```

half float textures, yet the '+\n      'environment flag WEBGL_FORCE_F16_TEXTURES is set to true.);\n
}\n\n  this.colorBufferFloatExtension = this.gl.getExtension(COLOR_BUFFER_FLOAT);\n  if\n(webgl_util.hasExtension(this.gl, COLOR_BUFFER_HALF_FLOAT)) {\n    this.colorBufferHalfFloatExtension\n=\n    webgl_util.getExtensionOrThrow(this.gl, COLOR_BUFFER_HALF_FLOAT);\n  } else if\n(env().get('WEBGL_FORCE_F16_TEXTURES')) {\n    throw new Error(\n      'GL context does not support\ncolor renderable half floats, yet '+\n      'the environment flag WEBGL_FORCE_F16_TEXTURES is set to\ntrue.);\n  }\n  } else {\n    COLOR_BUFFER_FLOAT = 'EXT_color_buffer_float';\n    if\n(webgl_util.hasExtension(this.gl, COLOR_BUFFER_FLOAT)) {\n      this.colorBufferFloatExtension =\nthis.gl.getExtension(COLOR_BUFFER_FLOAT);\n    } else if (webgl_util.hasExtension(this.gl,\nCOLOR_BUFFER_HALF_FLOAT)) {\n      this.colorBufferHalfFloatExtension =\nthis.gl.getExtension(COLOR_BUFFER_HALF_FLOAT);\n    } else {\n      throw new Error('GL context does not\nsupport color renderable floats');\n    }\n  }\n\n  this.vertexBuffer = gpgpu_util.createVertexBuffer(this.gl);\n  this.indexBuffer = gpgpu_util.createIndexBuffer(this.gl);\n  this.framebuffer =\nwebgl_util.createFramebuffer(this.gl);\n\n  this.textureConfig =\n  tex_util.getTextureConfig(this.gl,\nthis.textureHalfFloatExtension);\n}\n\nprivate get debug(): boolean {\n  return env().getBool('DEBUG');\n}\n\npublic dispose() {\n  if (this.disposed) {\n    return;\n  }\n  if (this.program != null) {\n    console.warn(\n'Disposing a GPGPUContext that still has a bound WebGLProgram.' +\n      ' This is probably a resource leak,\ndelete the program with '+\n      'GPGPUContext.deleteProgram before disposing.);\n  }\n  if\n(this.outputTexture != null) {\n    console.warn(\n      'Disposing a GPGPUContext that still has a bound output\nmatrix '+\n      'texture. This is probably a resource leak, delete the output '+\n      'matrix texture with\nGPGPUContext.deleteMatrixTexture before '+\n      'disposing.);\n  }\n  const gl = this.gl;\n  webgl_util.callAndCheck(gl, () => gl.finish());\n  webgl_util.callAndCheck(gl, () =>\ngl.bindFramebuffer(gl.FRAMEBUFFER, null));\n  webgl_util.callAndCheck(gl, () =>\ngl.deleteFramebuffer(this.framebuffer));\n  webgl_util.callAndCheck(gl, () =>\ngl.bindBuffer(gl.ARRAY_BUFFER, null));\n  webgl_util.callAndCheck(\n  gl, () =>\ngl.bindBuffer(gl.ELEMENT_ARRAY_BUFFER, null));\n  webgl_util.callAndCheck(gl, () =>\ngl.deleteBuffer(this.indexBuffer));\n  this.disposed = true;\n}\n\npublic createFloat32MatrixTexture(rows:\nnumber, columns: number):\n  WebGLTexture {\n  this.throwIfDisposed();\n  return\ngpgpu_util.createFloat32MatrixTexture(\n  this.gl, rows, columns, this.textureConfig);\n}\n\npublic\ncreateFloat16MatrixTexture(rows: number, columns: number):\n  WebGLTexture {\n  this.throwIfDisposed();\n  return\ngpgpu_util.createFloat16MatrixTexture(\n  this.gl, rows, columns, this.textureConfig);\n}\n\npublic\ncreateUnsignedBytesMatrixTexture(rows: number, columns: number):\n  WebGLTexture {\n  this.throwIfDisposed();\n  return\ngpgpu_util.createUnsignedBytesMatrixTexture(\n  this.gl, rows, columns,\nthis.textureConfig);\n}\n\npublic uploadPixelDataToTexture(\n  texture: WebGLTexture,\n  pixels:\nPixelData|ImageData|HTMLImageElement|HTMLCanvasElement) {\n  this.throwIfDisposed();\ngpgpu_util.uploadPixelDataToTexture(this.gl, texture, pixels);\n}\n\npublic uploadDenseMatrixToTexture(\n  texture: WebGLTexture, width: number, height: number, data: TypedArray) {\n  this.throwIfDisposed();\ngpgpu_util.uploadDenseMatrixToTexture(\n  this.gl, texture, width, height, data, this.textureConfig);\n}\n\npublic\ncreateFloat16PackedMatrixTexture(rows: number, columns: number):\n  WebGLTexture {\n  this.throwIfDisposed();\n  return\ngpgpu_util.createFloat16PackedMatrixTexture(\n  this.gl, rows, columns,\nthis.textureConfig);\n}\n\npublic\ncreatePackedMatrixTexture(rows: number, columns: number):\n  WebGLTexture {\n  this.throwIfDisposed();\n  return\ngpgpu_util.createPackedMatrixTexture(\n  this.gl, rows,\ncolumns, this.textureConfig);\n}\n\npublic deleteMatrixTexture(texture: WebGLTexture) {\n  this.throwIfDisposed();\n  if (this.outputTexture === texture) {\n    webgl_util.unbindColorTextureFromFramebuffer(this.gl, this.framebuffer);\n    this.outputTexture = null;\n  }\n  webgl_util.callAndCheck(this.gl, () => this.gl.deleteTexture(texture));\n}\n\npublic\ndownloadByteEncodedFloatMatrixFromOutputTexture(\n  texture: WebGLTexture, rows: number, columns:\nnumber): Float32Array {\n  return this.downloadMatrixDriver(\n  texture,\n  () =>

```

```

gpgpu_util.downloadByteEncodedFloatMatrixFromOutputTexture(\n      this.gl, rows, columns,
this.textureConfig));\n }\n\n public downloadPackedMatrixFromBuffer(\n      buffer: WebGLBuffer, batch:
number, rows: number, columns: number,\n      physicalRows: number, physicalCols: number): Float32Array {\n
return gpgpu_util.downloadPackedMatrixFromBuffer(\n      this.gl, buffer, batch, rows, columns, physicalRows,
physicalCols,\n      this.textureConfig);\n }\n\n public downloadFloat32MatrixFromBuffer(buffer: WebGLBuffer,
size: number):\n      Float32Array {\n      return gpgpu_util.downloadFloat32MatrixFromBuffer(this.gl, buffer,
size);\n }\n\n public createBufferFromTexture(\n      texture: WebGLTexture, rows: number, columns: number):
WebGLBuffer {\n      this.bindTextureToFramebuffer(texture);\n      const result =
gpgpu_util.createBufferFromOutputTexture(\n      this.gl as WebGL2RenderingContext, rows, columns,
this.textureConfig);\n      this.unbindTextureToFramebuffer();\n      return result;\n }\n\n public
createAndWaitForFence(): Promise<void> {\n      const fenceContext = this.createFence(this.gl);\n      return
this.pollFence(fenceContext);\n }\n\n private createFence(gl: WebGLRenderingContext): FenceContext {\n      let
query: WebGLQuery|WebGLSync;\n      let isFencePassed: () => boolean;\n\n      if
(env().getBool('WEBGL_FENCE_API_ENABLED')) {\n      const gl2 = gl as WebGL2RenderingContext;\n\n      const sync = gl2.fenceSync(gl2.SYNC_GPU_COMMANDS_COMPLETE, 0);\n      gl.flush();\n\n      isFencePassed = () => {\n      const status = gl2.clientWaitSync(sync, 0, 0);\n      return status ===
gl2.ALREADY_SIGNALED ||\n      status === gl2.CONDITION_SATISFIED;\n      };\n\n      query = sync;\n
} else if (\n      env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION') > 0) {\n
query = this.beginQuery();\n      this.endQuery();\n      isFencePassed = () => this.isQueryAvailable(\n      query,\n      env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION'));\n      } else {\n      // If
we have no way to fence, return true immediately. This will fire in\n      // WebGL 1.0 when there is no disjoint
query timer. In this case, because\n      // the fence passes immediately, we'll immediately ask for a download of\n
// the texture, which will cause the UI thread to hang.\n      isFencePassed = () => true;\n      }\n\n      return {query,
isFencePassed};\n }\n\n public downloadMatrixFromPackedTexture(\n      texture: WebGLTexture, physicalRows:
number,\n      physicalCols: number): Float32Array {\n      return this.downloadMatrixDriver(\n      texture,\n      ()
=> gpgpu_util.downloadMatrixFromPackedOutputTexture(\n      this.gl, physicalRows, physicalCols));\n }\n\n private
vertexAttrsAreBound = false;\n\n public createProgram(fragmentShaderSource: string): WebGLProgram
{\n      this.throwIfDisposed();\n      const gl = this.gl;\n      const fragmentShader: WebGLShader =\n
webgl_util.createFragmentShader(gl, fragmentShaderSource);\n      const vertexShader: WebGLShader =
gpgpu_util.createVertexShader(gl);\n      const program: WebGLProgram = webgl_util.createProgram(gl);\n
webgl_util.callAndCheck(gl, () => gl.attachShader(program, vertexShader));\n      webgl_util.callAndCheck(gl, () =>
gl.attachShader(program, fragmentShader));\n      webgl_util.linkProgram(gl, program);\n      if (this.debug) {\n
webgl_util.validateProgram(gl, program);\n      }\n      if (!this.vertexAttrsAreBound) {\n
this.setProgram(program);\n      this.vertexAttrsAreBound = gpgpu_util.bindVertexProgramAttributeStreams(\n
gl, this.program, this.vertexBuffer);\n      }\n      return program;\n }\n\n public deleteProgram(program:
WebGLProgram) {\n      this.throwIfDisposed();\n      if (program === this.program) {\n      this.program = null;\n
}\n      if (program != null) {\n      webgl_util.callAndCheck(this.gl, () => this.gl.deleteProgram(program));\n      }\n
}\n\n public setProgram(program: WebGLProgram|null) {\n      this.throwIfDisposed();\n      this.program =
program;\n      if ((this.program != null) && this.debug) {\n      webgl_util.validateProgram(this.gl, this.program);\n
}\n      webgl_util.callAndCheck(this.gl, () => this.gl.useProgram(program));\n      }\n\n public getUniformLocation(\n
program: WebGLProgram, uniformName: string,\n      shouldThrow = true): WebGLUniformLocation {\n
this.throwIfDisposed();\n      if (shouldThrow) {\n      return webgl_util.getProgramUniformLocationOrThrow(\n
this.gl, program, uniformName);\n      } else {\n      return webgl_util.getProgramUniformLocation(\n      this.gl,
program, uniformName);\n      }\n      }\n\n public getAttributeLocation(program: WebGLProgram, attribute: string):
number {\n      this.throwIfDisposed();\n      return webgl_util.callAndCheck(\n      this.gl, () =>
this.gl.getAttribLocation(program, attribute));\n      }\n\n public getUniformLocationNoThrow(program:
WebGLProgram, uniformName: string):\n      WebGLUniformLocation {\n      this.throwIfDisposed();\n      return
this.gl.getUniformLocation(program, uniformName);\n      }\n\n public setInputMatrixTexture(\n

```

```

inputMatrixTexture: WebGLTexture, uniformLocation: WebGLUniformLocation, textureUnit: number) {\n
this.throwIfDisposed();\n this.throwIfNoProgram();\n webgl_util.bindTextureToProgramUniformSampler(\n
this.gl, inputMatrixTexture, uniformLocation, textureUnit);\n }\n\n public setOutputMatrixTexture(\n
outputMatrixTexture: WebGLTexture, rows: number, columns: number) {\n
this.setOutputMatrixTextureDriver(outputMatrixTexture, columns, rows);\n }\n\n public
setOutputPackedMatrixTexture(\n outputPackedMatrixTexture: WebGLTexture, rows: number, columns:
number) {\n this.throwIfDisposed();\n const [width, height] =\n
tex_util.getPackedMatrixTextureShapeWidthHeight(rows, columns);\n
this.setOutputMatrixTextureDriver(outputPackedMatrixTexture, width, height);\n }\n\n public
setOutputMatrixWriteRegion(\n startRow: number, numRows: number, startColumn: number,\n
numColumns: number) {\n this.setOutputMatrixWriteRegionDriver(\n startColumn, startRow, numColumns,
numRows);\n }\n\n public setOutputPackedMatrixWriteRegion(\n startRow: number, numRows: number,
startColumn: number,\n numColumns: number) {\n throw new Error('setOutputPackedMatrixWriteRegion not
implemented.);\n }\n\n public debugValidate() {\n if (this.program != null) {\n
webgl_util.validateProgram(this.gl, this.program);\n }\n webgl_util.validateFramebuffer(this.gl);\n }\n\n public
executeProgram() {\n this.throwIfDisposed();\n this.throwIfNoProgram();\n const gl = this.gl;\n if
(this.debug) {\n this.debugValidate();\n }\n webgl_util.callAndCheck(\n gl, () =>
gl.drawElements(gl.TRIANGLES, 6, gl.UNSIGNED_SHORT, 0));\n }\n\n public
blockUntilAllProgramsCompleted() {\n this.throwIfDisposed();\n webgl_util.callAndCheck(this.gl, () =>
this.gl.finish());\n }\n\n private getQueryTimerExtension(): WebGL1DisjointQueryTimerExtension\n
|WebGL2DisjointQueryTimerExtension {\n if (this.disjointQueryTimerExtension == null) {\n
this.disjointQueryTimerExtension =\n webgl_util.getExtensionOrThrow(\n this.gl,\n
env().getNumber(\n 'WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION') === 2 ?\n
'EXT_disjoint_timer_query_webgl2':\n 'EXT_disjoint_timer_query') as\n
WebGL1DisjointQueryTimerExtension | WebGL2DisjointQueryTimerExtension;\n }\n return
this.disjointQueryTimerExtension;\n }\n\n private getQueryTimerExtensionWebGL2():
WebGL2DisjointQueryTimerExtension {\n return this.getQueryTimerExtension();\n }\n\n private
getQueryTimerExtensionWebGL1(): WebGL1DisjointQueryTimerExtension {\n return
this.getQueryTimerExtension() as WebGL1DisjointQueryTimerExtension;\n }\n\n beginQuery(): WebGLQuery
{\n if (env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION') === 2) {\n const
gl2 = this.gl as WebGL2RenderingContext;\n const ext = this.getQueryTimerExtensionWebGL2();\n const
query = gl2.createQuery();\n gl2.beginQuery(ext.TIME_ELAPSED_EXT, query);\n return query;\n }\n
const ext = this.getQueryTimerExtensionWebGL1();\n const query = ext.createQueryEXT() as WebGLQuery;\n
ext.beginQueryEXT(ext.TIME_ELAPSED_EXT, query);\n return query;\n }\n\n endQuery() {\n if
(env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION') === 2) {\n const gl2 =
this.gl as WebGL2RenderingContext;\n const ext = this.getQueryTimerExtensionWebGL2();\n
gl2.endQuery(ext.TIME_ELAPSED_EXT);\n return;\n }\n const ext =
this.getQueryTimerExtensionWebGL1();\n ext.endQueryEXT(ext.TIME_ELAPSED_EXT);\n }\n\n public async
waitForQueryAndGetTime(query: WebGLQuery): Promise<number> {\n await util.repeatedTry(\n () =>
this.disposed || // while testing contexts are created / disposed\n // in rapid succession, so without
this check we\n // may poll for the query timer indefinitely\n this.isQueryAvailable(\n
query,\n env().getNumber(\n
'WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION')));\n return this.getQueryTime(\n query,\n
env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_VERSION'));\n }\n\n private
getQueryTime(query: WebGLQuery, queryTimerVersion: number): number {\n if (queryTimerVersion === 0) {\n
return null;\n }\n\n if (queryTimerVersion === 2) {\n const gl2 = this.gl as WebGL2RenderingContext;\n
const timeElapsedNanos = gl2.getQueryParameter(query, gl2.QUERY_RESULT);\n // Return milliseconds.\n
return timeElapsedNanos / 1000000;\n } else {\n const ext = this.getQueryTimerExtensionWebGL1();\n

```

```

const timeElapsedNanos =\n      ext.getQueryObjectEXT(query, ext.QUERY_RESULT_EXT);\n // Return milliseconds.\n return timeElapsedNanos / 1000000;\n }\n }\n\n private isQueryAvailable(query: WebGLQuery, queryTimerVersion: number):\n boolean {\n if (queryTimerVersion === 0) {\n return true;\n }\n\n if (queryTimerVersion === 2) {\n const gl2 = this.gl as WebGL2RenderingContext;\n const ext = this.getQueryTimerExtensionWebGL2();\n\n const available =\n gl2.getQueryParameter(query, gl2.QUERY_RESULT_AVAILABLE);\n if (this.disjoint == null) {\n this.disjoint = this.gl.getParameter(ext.GPU_DISJOINT_EXT);\n }\n\n return available && !this.disjoint;\n } else {\n const ext = this.getQueryTimerExtensionWebGL1();\n\n const available =\n ext.getQueryObjectEXT(query, ext.QUERY_RESULT_AVAILABLE_EXT);\n if (this.disjoint == null) {\n this.disjoint = this.gl.getParameter(ext.GPU_DISJOINT_EXT);\n }\n\n return available && !this.disjoint;\n }\n }\n\n pollFence(fenceContext: FenceContext) {\n return new Promise<void>(resolve => {\n this.addItemToPoll(() => fenceContext.isFencePassed(), () => resolve());\n });\n }\n\n private itemsToPoll: PollItem[] = [];\n pollItems(): void {\n // Find the last query that has finished.\n const index = linearSearchLastTrue(this.itemsToPoll.map(x => x.isDoneFn));\n for (let i = 0; i <= index; ++i) {\n const {resolveFn} = this.itemsToPoll[i];\n resolveFn();\n }\n this.itemsToPoll = this.itemsToPoll.slice(index + 1);\n }\n\n private addItemToPoll(isDoneFn: () => boolean, resolveFn: () => void) {\n this.itemsToPoll.push({isDoneFn, resolveFn});\n if (this.itemsToPoll.length > 1) {\n // We already have a running loop that polls.\n return;\n }\n // Start a new loop that polls.\n util.repeatedTry(() => {\n this.pollItems();\n // End the loop if no more items to poll.\n return this.itemsToPoll.length === 0;\n });\n }\n\n private bindTextureToFramebuffer(texture: WebGLTexture) {\n this.throwIfDisposed();\n webgl_util.bindColorTextureToFramebuffer(\n this.gl, texture, this.framebuffer);\n if (this.debug) {\n webgl_util.validateFramebuffer(this.gl);\n }\n }\n\n private unbindTextureToFramebuffer() {\n if (this.outputTexture != null) {\n webgl_util.bindColorTextureToFramebuffer(\n this.gl, this.outputTexture, this.framebuffer);\n if (this.debug) {\n webgl_util.validateFramebuffer(this.gl);\n }\n } else {\n webgl_util.unbindColorTextureFromFramebuffer(this.gl, this.framebuffer);\n }\n }\n\n private downloadMatrixDriver(\n texture: WebGLTexture,\n downloadAndDecode: () => Float32Array): Float32Array {\n this.bindTextureToFramebuffer(texture);\n const result = downloadAndDecode();\n this.unbindTextureToFramebuffer();\n return result;\n }\n\n private setOutputMatrixTextureDriver(\n outputMatrixTextureMaybePacked: WebGLTexture, width: number,\n height: number) {\n this.throwIfDisposed();\n const gl = this.gl;\n webgl_util.bindColorTextureToFramebuffer(\n gl, outputMatrixTextureMaybePacked, this.framebuffer);\n if (this.debug) {\n webgl_util.validateFramebuffer(gl);\n }\n this.outputTexture = outputMatrixTextureMaybePacked;\n webgl_util.callAndCheck(gl, () => gl.viewport(0, 0, width, height));\n webgl_util.callAndCheck(gl, () => gl.scissor(0, 0, width, height));\n }\n\n private setOutputMatrixWriteRegionDriver(\n x: number, y: number, width: number, height: number) {\n this.throwIfDisposed();\n webgl_util.callAndCheck(\n this.gl, () => this.gl.scissor(x, y, width, height));\n }\n\n private throwIfDisposed() {\n if (this.disposed) {\n throw new Error('Attempted to use disposed GPGPUContext.);\n }\n }\n\n private throwIfNoProgram() {\n if (this.program == null) {\n throw new Error('No GPU program is currently set.);\n }\n }\n }\n\n type PollItem = {\n isDoneFn: () => boolean,\n resolveFn: () => void\n};\n\n /**\n * Finds the index of the last true element using linear search.\n * Note: We can't do binary search because Chrome expects us to explicitly\n * test all fences before download.\n * https://github.com/tensorflow/tfjs/issues/1145\n */\n export function linearSearchLastTrue(arr: Array<() => boolean>): number {\n let i = 0;\n for (; i < arr.length; ++i) {\n const isDone = arr[i];\n if (!isDone) {\n break;\n }\n }\n return i - 1;\n }\n\n /**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

```


governing permissions and\n * limitations under the License.\n *

```
=====\n
*\n\nimport {backend_util, util} from '@tensorflow/tfjs-core';\nconst {getBroadcastDims} = backend_util;\nimport {getGlsIDifferences, GLSL} from './glsl_version';\nimport * as shader_util from './shader_compiler_util';\n\nexport type ShapeInfo = {\n  logicalShape: number[],\n  texShape: [number, number],\n  isUniform: boolean,\n  isPacked: boolean,\n  flatOffset: number\n};\n\nexport type InputInfo = {\n  name: string,\n  shapeInfo: ShapeInfo\n};\n\nexport function makeShader(\n  inputsInfo: InputInfo[], outputShape: ShapeInfo, userCode: string,\n  usesPackedTextures: boolean): string {\n  const prefixSnippets: string[] = [];\n  inputsInfo.forEach(x => {\n    const size = util.sizeFromShape(x.shapeInfo.logicalShape);\n    // Snippet when we decided to upload the values as uniform.\n    if (x.shapeInfo.isUniform) {\n      prefixSnippets.push(`uniform float ${x.name}${size > 1 ? ` [${size}]` : ``};`);\n    } else {\n      prefixSnippets.push(`uniform sampler2D ${x.name};`);\n      prefixSnippets.push(`uniform int offset${x.name};`);\n    }\n  });\n  const inputPrefixSnippet = prefixSnippets.join(`\\n`);\n  const inputSamplingSnippet = inputsInfo.map(x => getInputSamplingSnippet(x, outputShape, usesPackedTextures)).join(`\\n`);\n  const outTexShape = outputShape.texShape;\n  const glsl = getGlsIDifferences();\n  const floatTextureSampleSnippet = getFloatTextureSampleSnippet(glsl);\n  let outputSamplingSnippet: string;\n  let floatTextureSetOutputSnippet: string;\n  let shaderPrefix = getShaderPrefix(glsl);\n  if (outputShape.isPacked) {\n    outputSamplingSnippet = getPackedOutputSamplingSnippet(outputShape.logicalShape, outTexShape);\n    floatTextureSetOutputSnippet = getFloatTextureSetRGBASnippet(glsl);\n  } else {\n    outputSamplingSnippet = getOutputSamplingSnippet(outputShape.logicalShape, outTexShape);\n    floatTextureSetOutputSnippet = getFloatTextureSetRSnippet(glsl);\n  }\n  if (usesPackedTextures) {\n    shaderPrefix += SHADER_PACKED_PREFIX;\n  }\n  const source = [\n    shaderPrefix, floatTextureSampleSnippet, floatTextureSetOutputSnippet, inputPrefixSnippet, outputSamplingSnippet, inputSamplingSnippet, userCode\n  ].join(`\\n`);\n  return source;\n}\n\nfunction getSamplerFromInInfo(inInfo: InputInfo): string {\n  const shape = inInfo.shapeInfo.logicalShape;\n  switch (shape.length) {\n    case 0:\n      return getSamplerScalar(inInfo);\n    case 1:\n      return getSampler1D(inInfo);\n    case 2:\n      return getSampler2D(inInfo);\n    case 3:\n      return getSampler3D(inInfo);\n    case 4:\n      return getSampler4D(inInfo);\n    case 5:\n      return getSampler5D(inInfo);\n    case 6:\n      return getSampler6D(inInfo);\n    default:\n      throw new Error(`\n    ${shape.length}-D input sampling` +\n      ` is not yet supported`);\n  }\n}\n\nfunction getPackedSamplerFromInInfo(inInfo: InputInfo): string {\n  const shape = inInfo.shapeInfo.logicalShape;\n  switch (shape.length) {\n    case 0:\n      return getPackedSamplerScalar(inInfo);\n    case 1:\n      return getPackedSampler1D(inInfo);\n    case 2:\n      return getPackedSampler2D(inInfo);\n    case 3:\n      return getPackedSampler3D(inInfo);\n    default:\n      return getPackedSamplerND(inInfo);\n  }\n}\n\nfunction getInputSamplingSnippet(\n  inInfo: InputInfo, outShapeInfo: ShapeInfo, usesPackedTextures = false): string {\n  let res = ``;\n  if (usesPackedTextures) {\n    res += getPackedSamplerFromInInfo(inInfo);\n  } else {\n    res += getSamplerFromInInfo(inInfo);\n  }\n  const inShape = inInfo.shapeInfo.logicalShape;\n  const outShape = outShapeInfo.logicalShape;\n  if (inShape.length <= outShape.length) {\n    if (usesPackedTextures) {\n      res += getPackedSamplerAtOutputCoords(inInfo, outShapeInfo);\n    } else {\n      res += getSamplerAtOutputCoords(inInfo, outShapeInfo);\n    }\n  }\n  return res;\n}\n\nfunction getPackedOutputSamplingSnippet(\n  outShape: number[], outTexShape: [number, number]): string {\n  switch (outShape.length) {\n    case 0:\n      return getOutputScalarCoords();\n    case 1:\n      return getOutputPacked1DCoords(outShape as [number], outTexShape);\n    case 2:\n      return getOutputPacked2DCoords(outShape as [number, number], outTexShape);\n    case 3:\n      return getOutputPacked3DCoords(\n      outShape as [number, number, number], outTexShape);\n    default:\n      return getOutputPackedNDCoords(outShape, outTexShape);\n  }\n}\n\nfunction getOutputSamplingSnippet(\n  outShape: number[], outTexShape: [number, number]): string {\n  switch (outShape.length) {\n    case 0:\n      return getOutputScalarCoords();\n    case 1:\n      return getOutput1DCoords(outShape as [number], outTexShape);\n    case 2:\n      return getOutput2DCoords(outShape as [number, number], outTexShape);\n    case 3:\n      return
```

```

getOutput3DCoords(\n      outShape as [number, number, number], outTexShape);\n case 4:\n return
getOutput4DCoords(\n      outShape as [number, number, number, number], outTexShape);\n case 5:\n return
getOutput5DCoords(\n      outShape as [number, number, number, number, number], outTexShape);\n case 6:\n
return getOutput6DCoords(\n      outShape as [number, number, number, number, number, number],\n
outTexShape);\n default:\n throw new Error(\n      `${outShape.length}-D output sampling is not yet
supported`);\n } }\n\nfunction getFloatTextureSampleSnippet(gsl: GLSL): string {\n return \n float
sampleTexture(sampler2D textureSampler, vec2 uv) {\n return ${gsl.texture2D}(textureSampler, uv).r;\n }\n
};\n\nfunction getFloatTextureSetRSnippet(gsl: GLSL): string {\n return \n void setOutput(float val) {\n
${gsl.output} = vec4(val, 0, 0, 0);\n }\n `;\n\nfunction getFloatTextureSetRGBASnippet(gsl: GLSL): string
{\n return \n void setOutput(vec4 val) {\n ${gsl.output} = val;\n }\n `;\n\nfunction getShaderPrefix(gsl:
GLSL): string {\n const SHADER_PREFIX = `${gsl.version}\n precision highp float;\n precision highp int;\n
precision highp sampler2D;\n ${gsl.varyingFs} vec2 resultUV;\n ${gsl.defineOutput}\n const vec2 halfCR =
vec2(0.5, 0.5);\n\n struct ivec5\n {\n int x;\n int y;\n int z;\n int w;\n int u;\n };\n\n struct
ivec6\n {\n int x;\n int y;\n int z;\n int w;\n int u;\n int v;\n };\n\n uniform float NAN;\n
${gsl.defineSpecialNaN}\n ${gsl.defineSpecialInf}\n ${gsl.defineRound}\n\n int imod(int x, int y) {\n
return x - y * (x / y);\n }\n\n int idiv(int a, int b, float sign) {\n int res = a / b;\n int mod = imod(a, b);\n
if (sign < 0. && mod != 0) {\n res -= 1;\n }\n return res;\n }\n\n //Based on the work of Dave
Hoskins\n //https://www.shadertoy.com/view/4djSRW\n #define HASHSCALE1 443.8975\n float
random(float seed){\n vec2 p = resultUV * seed;\n vec3 p3 = fract(vec3(p.xyx) * HASHSCALE1);\n p3
+= dot(p3, p3.yzx + 19.19);\n return fract((p3.x + p3.y) * p3.z);\n }\n\n ${SAMPLE_1D_SNIIPPET}\n
${SAMPLE_2D_SNIIPPET}\n ${SAMPLE_3D_SNIIPPET}\n `;\n\n return SHADER_PREFIX;\n }\n\nconst
SAMPLE_1D_SNIIPPET = \nvec2 uvFromFlat(int texNumR, int texNumC, int index) {\n int texR = index /
texNumC;\n int texC = index - texR * texNumC;\n return (vec2(texC, texR) + halfCR) / vec2(texNumC,
texNumR);\n }\n\nvec2 packedUVfrom1D(int texNumR, int texNumC, int index) {\n int texelIndex = index / 2;\n
texR = texelIndex / texNumC;\n int texC = texelIndex - texR * texNumC;\n return (vec2(texC, texR) + halfCR) /
vec2(texNumC, texNumR);\n }\n\nconst SAMPLE_2D_SNIIPPET = \nvec2 packedUVfrom2D(int
texelsInLogicalRow, int texNumR, int texNumC, int row, int col) {\n int texelIndex = (row / 2) *
texelsInLogicalRow + (col / 2);\n int texR = texelIndex / texNumC;\n int texC = texelIndex - texR * texNumC;\n
return (vec2(texC, texR) + halfCR) / vec2(texNumC, texNumR);\n }\n\nconst SAMPLE_3D_SNIIPPET = \nvec2
packedUVfrom3D(int texNumR, int texNumC, int texelsInBatch, int texelsInLogicalRow, int b, int row, int
col) {\n int index = b * texelsInBatch + (row / 2) * texelsInLogicalRow + (col / 2);\n int texR = index /
texNumC;\n int texC = index - texR * texNumC;\n return (vec2(texC, texR) + halfCR) / vec2(texNumC,
texNumR);\n }\n\nconst SHADER_PACKED_PREFIX = \n float getChannel(vec4 frag, vec2 innerDims) {\n
vec2 modCoord = mod(innerDims, 2.);\n return modCoord.x == 0. ? (modCoord.y == 0. ? frag.r : frag.g) :
(modCoord.y == 0. ? frag.b : frag.a);\n }\n float getChannel(vec4 frag, int dim) {\n float modCoord =
mod(float(dim), 2.);\n return modCoord == 0. ? frag.r : frag.g;\n }\n\nfunction getOutputScalarCoords() {\n
return \n int getOutputCoords() {\n return 0;\n }\n `;\n\nfunction getOutputPacked1DCoords(\n shape:
[number], texShape: [number, number]): string {\n const packedTexShape =\n [Math.ceil(texShape[0] / 2),
Math.ceil(texShape[1] / 2)];\n if (packedTexShape[0] === 1) {\n return \n int getOutputCoords() {\n
return 2 * int(resultUV.x * ${packedTexShape[1]}.0);\n }\n `;\n }\n\n if (packedTexShape[1] === 1) {\n
return \n int getOutputCoords() {\n return 2 * int(resultUV.y * ${packedTexShape[0]}.0);\n }\n `;\n
}\n\n return \n int getOutputCoords() {\n ivec2 resTexRC = ivec2(resultUV.yx *
vec2(${packedTexShape[0]}, ${packedTexShape[1]}));\n return 2 * (resTexRC.x * ${packedTexShape[1]} +
resTexRC.y);\n }\n `;\n }\n\nfunction getOutput1DCoords(\n shape: [number], texShape: [number, number]):
string {\n if (texShape[0] === 1) {\n return \n int getOutputCoords() {\n return int(resultUV.x *
${texShape[1]}.0);\n }\n `;\n }\n\n if (texShape[1] === 1) {\n return \n int getOutputCoords() {\n
return int(resultUV.y * ${texShape[0]}.0);\n }\n `;\n }\n\n return \n int getOutputCoords() {\n ivec2
resTexRC = ivec2(resultUV.yx *
vec2(${texShape[0]}, ${texShape[1]}));\n return

```

```

resTexRC.x * ${texShape[1]} + resTexRC.y;\n  }\n `;\n}\n\nfunction getOutputPacked3DCoords(\n  shape:
[number, number, number], texShape: [number, number]): string {\n  const packedTexShape =\n
[Math.ceil(texShape[0] / 2), Math.ceil(texShape[1] / 2)];\n  const texelsInLogicalRow = Math.ceil(shape[2] / 2);\n
const texelsInBatch = texelsInLogicalRow * Math.ceil(shape[1] / 2);\n  \n  return ` \n   ivec3 getOutputCoords() {\n
ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${packedTexShape[0]},
${packedTexShape[1]}));\n   int index = resTexRC.x * ${packedTexShape[1]} + resTexRC.y;\n   \n   int b =
index / ${texelsInBatch};\n   index -= b * ${texelsInBatch};\n   \n   int r = 2 * (index / ${texelsInLogicalRow});\n
   int c = imod(index, ${texelsInLogicalRow}) * 2;\n   \n   return ivec3(b, r, c);\n  }\n `;\n}\n\nfunction
getOutput3DCoords(\n  shape: [number, number, number], texShape: [number, number]): string {\n  const
coordsFromIndexSnippet =\n  shader_util.getLogicalCoordinatesFromFlatIndex(['r', 'c', 'd'], shape);\n  \n  return ` \n
   ivec3 getOutputCoords() {\n   ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${texShape[0]},
${texShape[1]}));\n   int index = resTexRC.x * ${texShape[1]} + resTexRC.y;\n
${coordsFromIndexSnippet}\n   return ivec3(r, c, d);\n  }\n `;\n}\n\nfunction getOutputPackedNDCoords(\n
shape: number[], texShape: [number, number]): string {\n  const packedTexShape =\n  [Math.ceil(texShape[0] /
2), Math.ceil(texShape[1] / 2)];\n  \n  const texelsInLogicalRow = Math.ceil(shape[shape.length - 1] / 2);\n
const texelsInBatch =\n  texelsInLogicalRow * Math.ceil(shape[shape.length - 2] / 2);\n  let texelsInBatchN =
texelsInBatch;\n  let batches = ``;\n  let coords = 'b, r, c';\n  \n  for (let b = 2; b < shape.length - 1; b++) {\n
texelsInBatchN *= shape[shape.length - b - 1];\n  batches = ` \n   int b${b} = index / ${texelsInBatchN};\n
index -= b${b} * ${texelsInBatchN};\n   ` + batches;\n  coords = `b${b}, ` + coords;\n  }\n  \n  return ` \n
   ivec${shape.length} getOutputCoords() {\n   ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${packedTexShape[0]},
${packedTexShape[1]}));\n   int index = resTexRC.x * ${packedTexShape[1]} +
resTexRC.y;\n   \n   ${batches}\n   \n   int b = index / ${texelsInBatch};\n   index -= b * ${texelsInBatch};\n   \n
int r = 2 * (index / ${texelsInLogicalRow});\n   int c = imod(index, ${texelsInLogicalRow}) * 2;\n   \n   return
ivec${shape.length}(${coords});\n  }\n `;\n}\n\nfunction getOutput4DCoords(\n  shape: [number, number,
number, number],\n  texShape: [number, number]): string {\n  const coordsFromIndexSnippet =
shader_util.getLogicalCoordinatesFromFlatIndex(\n    ['r', 'c', 'd', 'd2'], shape);\n  \n  return ` \n   ivec4
getOutputCoords() {\n   ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${texShape[0]},
${texShape[1]}));\n   int index = resTexRC.x * ${texShape[1]} + resTexRC.y;\n   ${coordsFromIndexSnippet}\n
return ivec4(r, c,
d, d2);\n  }\n `;\n}\n\nfunction getOutput5DCoords(\n  shape: [number, number, number, number, number],\n
texShape: [number, number]): string {\n  const coordsFromIndexSnippet =
shader_util.getLogicalCoordinatesFromFlatIndex(\n    ['r', 'c', 'd', 'd2', 'd3'], shape);\n  \n  return ` \n   ivec5
getOutputCoords() {\n   ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${texShape[0]},
${texShape[1]}));\n   int index = resTexRC.x * ${texShape[1]} + resTexRC.y;\n   \n   ${coordsFromIndexSnippet}\n
return outShape;\n  }\n `;\n}\n\nfunction getOutput6DCoords(\n  shape: [number, number, number, number, number, number],\n
texShape: [number, number]): string {\n  const coordsFromIndexSnippet =
shader_util.getLogicalCoordinatesFromFlatIndex(\n    ['r', 'c', 'd', 'd2', 'd3', 'd4'], shape);\n  \n  return ` \n   ivec6
getOutputCoords() {\n   ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${texShape[0]},
${texShape[1]}));\n   int index = resTexRC.x * ${texShape[1]} + resTexRC.y;\n   \n   ${coordsFromIndexSnippet}\n
return result;\n  }\n `;\n}\n\nfunction getOutputPacked2DCoords(\n  shape:
[number, number], texShape: [number, number]): string {\n  const packedTexShape =\n  [Math.ceil(texShape[0] /
2), Math.ceil(texShape[1] / 2)];\n  \n  if (util.arraysEqual(shape, texShape)) {\n  return ` \n   ivec2 getOutputCoords()
{\n   return 2 * ivec2(resultUV.yx * \n                               vec2(${packedTexShape[0]},
${packedTexShape[1]}));\n  }\n `;\n  }\n  \n  // texels needed to accommodate a logical row\n  const texelsInLogicalRow = Math.ceil(shape[1] / 2);\n
\n  /**\n   * getOutputCoords\n   * \n   * resTexRC: The rows and columns of the texels. If you move over one\n   *
texel to the right in the packed texture, you are moving over one column\n   * (not two).\n   * \n   * index: The texel
index\n   */\n  return ` \n   ivec2 getOutputCoords() {\n   ivec2 resTexRC = ivec2(resultUV.yx * \n                               vec2(${packedTexShape[0]},
${packedTexShape[1]}));\n   int index = resTexRC.x * ${packedTexShape[1]} +

```

```

resTexRC.y;\n    int r = 2 * (index / ${texelsInLogicalRow});\n    int c = imod(index, ${texelsInLogicalRow}) *
2;\n\n    return ivec2(r, c);\n    }\n    `;\n}\n\nfunction getOutput2DCoords(\n    shape: [number, number], texShape:
[number, number]): string {\n    if (util.arraysEqual(shape, texShape)) {\n        return `
    ivec2 getOutputCoords() {\n        return ivec2(resultUV.yx * vec2(${texShape[0]},
${texShape[1]}));\n        }\n        `;\n    }\n    if (shape[1] === 1) {\n        return `
    ivec2 getOutputCoords() {\n        ivec2 resTexRC = ivec2(resultUV.yx *
vec2(${texShape[0]}, ${texShape[1]}));\n        int index = resTexRC.x *
${texShape[1]} + resTexRC.y;\n        return ivec2(index, 0);\n        }\n        `;\n    }\n    if (shape[0] === 1) {\n        return `
    ivec2 getOutputCoords() {\n        ivec2 resTexRC = ivec2(resultUV.yx *
vec2(${texShape[0]}, ${texShape[1]}));\n        int index = resTexRC.x *
${texShape[1]} + resTexRC.y;\n        return ivec2(0, index);\n        }\n        `;\n    }\n    return `
    ivec2
getOutputCoords() {\n        ivec2 resTexRC = ivec2(resultUV.yx *
vec2(${texShape[0]},
${texShape[1]}));\n        int index = resTexRC.x * ${texShape[1]} + resTexRC.y;\n        int r = index /
${shape[1]};\n        int c = index - r * ${shape[1]};\n        return ivec2(r, c);\n        }\n        `;\n    }\n}\n\nfunction
getFlatOffsetUniformName(texName: string): string {\n    return `offset${texName}`;\n}\n\nfunction
getPackedSamplerScalar(inputInfo: InputInfo): string {\n    const texName = inputInfo.name;\n    const funcName =
'get' + texName.charAt(0).toUpperCase() + texName.slice(1);\n    const glsl = getGlslDifferences();\n    return `
    vec4 ${funcName}() {\n        return ${glsl.texture2D}(${texName}, halfCR);\n        }\n        `;\n    }\n}\n\nfunction
getSamplerScalar(inputInfo: InputInfo): string {\n    const texName = inputInfo.name;\n    const funcName = 'get' +
texName.charAt(0).toUpperCase() + texName.slice(1);\n    if (inputInfo.shapeInfo.isUniform) {\n        return `float
${funcName}() {\n        return ${texName};\n        `;\n    }\n    const [texNumR, texNumC] = inputInfo.shapeInfo.texShape;\n    if
(texNumR === 1 && texNumC === 1) {\n        return `
    float ${funcName}() {\n        return
sampleTexture(${texName}, halfCR);\n        }\n        `;\n    }\n    const [tNumR, tNumC] =
inputInfo.shapeInfo.texShape;\n    const offset = getFlatOffsetUniformName(texName);\n    return `
    float
${funcName}() {\n        vec2 uv = uvFromFlat(${tNumR}, ${tNumC}, ${offset});\n        return
sampleTexture(${texName}, uv);\n        }\n        `;\n    }\n}\n\nfunction getPackedSampler1D(inputInfo: InputInfo): string {\n
const texName = inputInfo.name;\n    const funcName = 'get' + texName.charAt(0).toUpperCase() +
texName.slice(1);\n    const texShape = inputInfo.shapeInfo.texShape;\n    const packedTexShape =
[Math.ceil(texShape[0] / 2), Math.ceil(texShape[1] / 2)];\n    const glsl = getGlslDifferences();\n\n    return `
    vec4
${funcName}(int index) {\n        vec2 uv = packedUVfrom1D(\n            ${packedTexShape[0]},
${packedTexShape[1]}, index);\n        return ${glsl.texture2D}(${texName}, uv);\n        }\n        `;\n    }\n}\n\nfunction
getSampler1D(inputInfo: InputInfo): string {\n    const texName = inputInfo.name;\n    const funcName = 'get' +
texName.charAt(0).toUpperCase() + texName.slice(1);\n\n    if (inputInfo.shapeInfo.isUniform) {\n        // Uniform
arrays will be less than 65505 (no risk of float16 overflow).\n        return `
    float ${funcName}(int index) {\n        ${getUniformSampler(inputInfo)}\n        }\n        `;\n    }\n    const texShape = inputInfo.shapeInfo.texShape;\n    const
tNumR = texShape[0];\n    const tNumC = texShape[1];\n    if (tNumC === 1 && tNumR === 1) {\n        return `
    float
${funcName}(int index) {\n        return sampleTexture(${texName}, halfCR);\n        }\n        `;\n    }\n    const offset =
getFlatOffsetUniformName(texName);\n    if (tNumC === 1) {\n        return `
    float
${funcName}(int index) {\n        vec2 uv = vec2(0.5, (float(index + ${offset}) + 0.5) /
${tNumR}.0);\n        return sampleTexture(${texName},
uv);\n        }\n        `;\n    }\n    if (tNumR === 1) {\n        return `
    float
${funcName}(int index) {\n        vec2 uv =
vec2((float(index + ${offset}) + 0.5) / ${tNumC}.0, 0.5);\n        return sampleTexture(${texName}, uv);\n        }\n        `;\n    }\n    return `
    float
${funcName}(int index) {\n        vec2 uv = uvFromFlat(${tNumR}, ${tNumC}, index +
${offset});\n        return sampleTexture(${texName}, uv);\n        }\n        `;\n    }\n}\n\nfunction getPackedSampler2D(inputInfo:
InputInfo): string {\n    const shape = inputInfo.shapeInfo.logicalShape;\n    const texName = inputInfo.name;\n    const
funcName = 'get' + texName.charAt(0).toUpperCase() + texName.slice(1);\n    const texShape =
inputInfo.shapeInfo.texShape;\n\n    const texNumR = texShape[0];\n    const texNumC = texShape[1];\n    const glsl =
getGlslDifferences();\n    if (texShape != null && util.arraysEqual(shape, texShape)) {\n        return `
    vec4
${funcName}(int row, int col) {\n        vec2 uv = (vec2(col, row) + halfCR) /
vec2(${texNumC}.0,
${texNumR}.0);\n        return ${glsl.texture2D}(${texName}, uv);\n        }\n        `;\n    }\n    const packedTexShape =
[Math.ceil(texShape[0] / 2), Math.ceil(texShape[1] / 2)];\n    const valuesPerRow = Math.ceil(shape[1] /

```

```

2);\n\n return \n   vec4 ${funcName}(int row, int col) {\n   vec2 uv = packedUVfrom2D(${valuesPerRow},
${packedTexShape[0]}, ${\n   packedTexShape[1]}, row, col);\n   return ${gsl.texture2D}(${texName}, uv);\n
}\n `;\n}\n\nfunction getSampler2D(inputInfo: InputInfo): string {\n const shape =
inputInfo.shapeInfo.logicalShape;\n const texName = inputInfo.name;\n const funcName = 'get' +
texName.charAt(0).toUpperCase() + texName.slice(1);\n const texShape = inputInfo.shapeInfo.texShape;\n\n if
(texShape != null && util.arraysEqual(shape, texShape)) {\n const texNumR = texShape[0];\n const texNumC =
texShape[1];\n return \n   float ${funcName}(int row, int col) {\n   vec2 uv = (vec2(col, row) + halfCR) /
vec2(${texNumC}.0, ${texNumR}.0);\n   return sampleTexture(${texName}, uv);\n   }\n `;\n }\n\n const
{newShape, keptDims} = util.squeezeShape(shape);\n const squeezedShape = newShape;\n if
(squeezedShape.length < shape.length) {\n const newInputInfo = squeezeInputInfo(inputInfo, squeezedShape);\n
const params = ['row', 'col'];\n return \n   ${getSamplerFromInInfo(newInputInfo)}\n   float ${funcName}(int
row, int col) {\n   return ${funcName}(${getSqueezedParams(params, keptDims)});\n   }\n `;\n }\n\n if
(inputInfo.shapeInfo.isUniform) {\n // Uniform arrays will be less than 65505 (no risk of float16 overflow).\n
return \n   float ${funcName}(int row, int col) {\n   int index = round(dot(vec2(row, col), vec2(${shape[1]},
1)));\n   ${getUniformSampler(inputInfo)}\n   }\n `;\n }\n\n const texNumR = texShape[0];\n const
texNumC = texShape[1];\n const offset = getFlatOffsetUniformName(texName);\n if (texNumC === 1) {\n //
index is used directly as physical (no risk of float16 overflow).\n return \n   float ${funcName}(int row, int col)
{\n   float index = dot(vec3(row, col, ${offset}), vec3(${shape[1]}, 1, 1));\n   vec2 uv = vec2(0.5, (index + 0.5) /
${texNumR}.0);\n   return sampleTexture(${texName}, uv);\n   }\n `;\n }\n\n if (texNumR === 1) {\n // index
is used directly as physical (no risk of float16 overflow).\n return \n   float ${funcName}(int row, int col) {\n
float index = dot(vec3(row, col, ${offset}), vec3(${shape[1]}, 1, 1));\n   vec2 uv = vec2((index + 0.5) /
${texNumC}.0, 0.5);\n   return sampleTexture(${texName}, uv);\n   }\n `;\n }\n\n return \n float
${funcName}(int row, int col) {\n // Explicitly use integer operations as dot() only works on floats.\n int index =
row * ${shape[1]} + col + ${offset};\n   vec2 uv = uvFromFlat(${texNumR}, ${texNumC}, index);\n   return
sampleTexture(${texName}, uv);\n   }\n `;\n }\n\nfunction getPackedSampler3D(inputInfo: InputInfo): string {\n
const shape = inputInfo.shapeInfo.logicalShape;\n const texName = inputInfo.name;\n const funcName = 'get' +
texName.charAt(0).toUpperCase() + texName.slice(1);\n const texShape = inputInfo.shapeInfo.texShape;\n const
packedTexShape =\n   [Math.ceil(texShape[0] / 2), Math.ceil(texShape[1] / 2)];\n\n if (shape[0] === 1) {\n
const squeezedShape = shape.slice(1);\n const keptDims = [1, 2];\n const newInputInfo =
squeezeInputInfo(inputInfo, squeezedShape);\n const params = ['b', 'row', 'col'];\n return \n
${getPackedSamplerFromInInfo(newInputInfo)}\n   vec4 ${funcName}(int b, int row, int col) {\n   return
${funcName}(${getSqueezedParams(params, keptDims)});\n   }\n `;\n }\n\n const texNumR =
packedTexShape[0];\n const texNumC = packedTexShape[1];\n const valuesPerRow = Math.ceil(shape[2] / 2);\n
const texelsInBatch = valuesPerRow * Math.ceil(shape[1] / 2);\n const gsl = getGslDifferences();\n\n return \n
vec4 ${funcName}(int b, int row, int col) {\n   vec2 uv = packedUVfrom3D(\n     ${texNumR}, ${texNumC},
${texelsInBatch}, ${valuesPerRow}, b, row, col);\n   return ${gsl.texture2D}(${texName}, uv);\n   }\n
`;\n }\n\nfunction getSampler3D(inputInfo: InputInfo): string {\n const shape = inputInfo.shapeInfo.logicalShape;\n
const texName = inputInfo.name;\n const funcName = 'get' + texName.charAt(0).toUpperCase() +
texName.slice(1);\n const stride0 = shape[1] * shape[2];\n const stride1 = shape[2];\n\n const {newShape,
keptDims} = util.squeezeShape(shape);\n const squeezedShape = newShape;\n if (squeezedShape.length <
shape.length) {\n const newInputInfo = squeezeInputInfo(inputInfo, squeezedShape);\n const params = ['row',
'col', 'depth'];\n return \n   ${getSamplerFromInInfo(newInputInfo)}\n   float ${funcName}(int row, int col,
int depth) {\n   return ${funcName}(${getSqueezedParams(params, keptDims)});\n   }\n `;\n }\n\n if
(inputInfo.shapeInfo.isUniform) {\n // Uniform arrays will be less than 65505 (no risk of float16 overflow).\n
return \n   float ${funcName}(int row, int col, int depth) {\n   int index = round(dot(vec3(row, col, depth),\n
vec3(${stride0}, ${stride1}, 1)));\n   ${getUniformSampler(inputInfo)}\n   }\n `;\n }\n\n const
texShape = inputInfo.shapeInfo.texShape;\n const texNumR = texShape[0];\n const texNumC = texShape[1];\n
const flatOffset = inputInfo.shapeInfo.flatOffset;\n if (texNumC === stride0 && flatOffset == null) {\n // texC is

```

```

used directly as physical (no risk of float16 overflow).\n return \n float ${funcName}(int row, int col, int
depth) {\n float texR = float(row);\n float texC = dot(vec2(col, depth), vec2(${stride1}, 1));\n vec2
uv = (vec2(texC, texR) + halfCR) ^\n vec2(${texNumC}.0, ${texNumR}.0);\n return
sampleTexture(${texName}, uv);\n }\n `;\n }\n\n if (texNumC === stride1 && flatOffset == null) {\n //
texR is used directly as physical (no risk of float16 overflow).\n return \n float ${funcName}(int row, int col,
int depth) {\n float texR = dot(vec2(row, col), vec2(${shape[1]}, 1));\n float texC = float(depth);\n vec2 uv
= (vec2(texC, texR) + halfCR) / vec2(${texNumC}.0, ${texNumR}.0);\n return sampleTexture(${texName},
uv);\n }\n `;\n }\n\n const offset = getFlatOffsetUniformName(texName);\n return \n float ${funcName}(int
row, int col, int depth) {\n // Explicitly use integer operations as dot() only works on floats.\n int index =
row * ${stride0} + col * ${stride1} + depth + ${offset};\n vec2 uv = uvFromFlat(${texNumR}, ${texNumC},
index);\n return sampleTexture(${texName}, uv);\n }\n `;\n }\n\nfunction getPackedSamplerND(inputInfo:
InputInfo): string {\n const shape = inputInfo.shapeInfo.logicalShape;\n const rank = shape.length;\n const
texName = inputInfo.name;\n const funcName = 'get' + texName.charAt(0).toUpperCase() + texName.slice(1);\n
const texShape = inputInfo.shapeInfo.texShape;\n const packedTexShape =\n [Math.ceil(texShape[0] / 2),
Math.ceil(texShape[1] / 2)];\n const texNumR = packedTexShape[0];\n const texNumC = packedTexShape[1];\n\n
const valuesPerRow = Math.ceil(shape[rank - 1] / 2);\n let texelsInBatch = valuesPerRow * Math.ceil(shape[rank -
2] / 2);\n let params = `int b, int row, int col`;\n let index = `b * ${texelsInBatch} + (row / 2) * ${valuesPerRow} +
(col / 2)`;\n for (let b = 2; b < rank - 1; b++) {\n params = `int b${b}, ` + params;\n texelsInBatch *= shape[rank
- b - 1];\n index = `b${b} * ${texelsInBatch} + ` + index;\n }\n const glsl = getGlslDifferences();\n return \n
vec4 ${funcName}(${params}) {\n int index = ${index};\n int texR = index / ${texNumC};\n int texC =
index - texR * ${texNumC};\n vec2 uv = (vec2(texC, texR) + halfCR) / vec2(${texNumC}, ${texNumR});\n
return ${glsl.texture2D}(${texName}, uv);\n }\n `;\n }\n\nfunction getSampler4D(inputInfo: InputInfo): string {\n
const shape = inputInfo.shapeInfo.logicalShape;\n const texName = inputInfo.name;\n const funcName = 'get' +
texName.charAt(0).toUpperCase() + texName.slice(1);\n const stride2 = shape[3];\n const stride1 = shape[2] *
stride2;\n const stride0 = shape[1] * stride1;\n\n const {newShape, keptDims} = util.squeezeShape(shape);\n if
(newShape.length < shape.length) {\n const newInputInfo = squeezeInputInfo(inputInfo, newShape);\n const
params = ['row', 'col', 'depth', 'depth2'];\n return \n ${getSamplerFromInInfo(newInputInfo)}\n float
${funcName}(int row, int col, int depth, int depth2) {\n return ${funcName}(${getSqueezedParams(params,
keptDims)});\n }\n `;\n }\n\n if (inputInfo.shapeInfo.isUniform) {\n // Uniform arrays will be less than
65505 (no risk of float16 overflow).\n return \n float ${funcName}(int row, int col, int depth, int depth2) {\n
int index = round(dot(vec4(row, col, depth, depth2),\n vec4(${stride0}, ${stride1}, ${stride2},
1)));\n ${getUniformSampler(inputInfo)}\n }\n `;\n }\n\n const flatOffset =
inputInfo.shapeInfo.flatOffset;\n const texShape = inputInfo.shapeInfo.texShape;\n const texNumR =
texShape[0];\n const texNumC = texShape[1];\n\n if (texNumC === stride0 && flatOffset == null) {\n // texC is
used directly as physical (no risk of float16 overflow).\n return \n float ${funcName}(int row, int col, int
depth, int depth2) {\n float texR = float(row);\n float texC =\n dot(vec3(col, depth, depth2),\n
vec3(${stride1}, ${stride2}, 1));\n vec2 uv = (vec2(texC, texR) + halfCR) ^\n vec2(${texNumC}.0,
${texNumR}.0);\n return sampleTexture(${texName}, uv);\n }\n `;\n }\n\n if (texNumC === stride2 &&
flatOffset == null) {\n // texR is used directly as physical (no risk of float16 overflow).\n return \n float
${funcName}(int row, int col, int depth, int depth2) {\n float texR = dot(vec3(row, col, depth),\n
vec3(${shape[1] * shape[2]}, ${shape[2]}, 1));\n float texC = float(depth2);\n vec2 uv = (vec2(texC, texR)
+ halfCR) ^\n vec2(${texNumC}.0, ${texNumR}.0);\n return sampleTexture(${texName}, uv);\n
}\n `;\n }\n\n const offset = getFlatOffsetUniformName(texName);\n return \n float ${funcName}(int row, int
col, int depth, int depth2) {\n // Explicitly use integer operations as dot() only works on floats.\n int index =
row * ${stride0} + col * ${stride1} +\n depth * ${stride2} + depth2;\n vec2 uv =
uvFromFlat(${texNumR}, ${texNumC}, index + ${offset});\n return sampleTexture(${texName}, uv);\n }\n
`;\n }\n\nfunction getSampler5D(inputInfo: InputInfo): string {\n const shape = inputInfo.shapeInfo.logicalShape;\n
const texName = inputInfo.name;\n const funcName = 'get' + texName.charAt(0).toUpperCase() +

```

```

texName.slice(1);\n const stride3 = shape[4];\n const stride2 = shape[3] * stride3;\n const stride1 = shape[2] *
stride2;\n const stride0 = shape[1] * stride1;\n\n const {newShape, keptDims} = util.squeezeShape(shape);\n if
(newShape.length < shape.length) {\n const newInputInfo = squeezeInputInfo(inputInfo, newShape);\n const
params = ['row', 'col', 'depth', 'depth2', 'depth3'];\n return \n\n   ${getSamplerFromInInfo(newInputInfo)}\n\n
float ${funcName}(int row, int col, int depth, int depth2, int depth3) {\n return
${funcName}(${getSqueezedParams(params, keptDims)});\n   }\n\n   }\n\n   }\n\n   if (inputInfo.shapeInfo.isUniform)
{\n // Uniform arrays will be less than 65505 (no risk of float16 overflow).\n return \n\n   float ${funcName}(int
row, int col, int depth, int depth2, int depth3) {\n float index = dot(\n vec4(row, col, depth, depth2),\n
vec4(${stride0}, ${stride1}, ${stride2}, ${stride3})) +\n depth3;\n   ${getUniformSampler(inputInfo)}\n
}\n\n   }\n\n   }\n\n   const flatOffset = inputInfo.shapeInfo.flatOffset;\n const texShape =
inputInfo.shapeInfo.texShape;\n const texNumR = texShape[0];\n const texNumC = texShape[1];\n\n   if (texNumC
=== stride0 && flatOffset == null) {\n // texC is used directly as physical (no risk of float16 overflow).\n return
\n\n   float ${funcName}(int row, int col, int depth, int depth2, int depth3) {\n int texR = row;\n float texC
= dot(vec4(col, depth, depth2, depth3),\n vec4(${stride1}, ${stride2}, ${stride3}, 1));\n vec2 uv
= (vec2(texC, texR) + halfCR) /\n vec2(${texNumC}.0, ${texNumR}.0);\n return
sampleTexture(${texName}, uv);\n   }\n\n   }\n\n   }\n\n   if (texNumC === stride3 && flatOffset == null) {\n //
texR is used directly as physical (no risk of float16 overflow).\n return \n\n   float ${funcName}(int row, int col,
int depth, int depth2, int depth3) {\n float texR = dot(\n vec4(row, col, depth, depth2),\n
vec4(${shape[1] * shape[2] * shape[3]},\n ${shape[2] * shape[3]}, ${shape[3]}, 1));\n int texC =
depth3;\n vec2 uv = (vec2(texC, texR) + halfCR) /\n vec2(${texNumC}.0, ${texNumR}.0);\n
return sampleTexture(${texName}, uv);\n   }\n\n   }\n\n   }\n\n   const offset =
getFlatOffsetUniformName(texName);\n return \n\n   float ${funcName}(int row, int col, int depth, int depth2, int
depth3) {\n // Explicitly use integer operations as dot() only works on floats.\n int index = row * ${stride0} +
col * ${stride1} + depth * ${stride2} +\n depth2 * ${stride3} + depth3 + ${offset};\n vec2 uv =
uvFromFlat(${texNumR}, ${texNumC}, index);\n return sampleTexture(${texName}, uv);\n   }\n\n   }\n\n   }\n\n   }\n\n   function getSampler6D(inputInfo: InputInfo): string {\n const shape = inputInfo.shapeInfo.logicalShape;\n
const texName = inputInfo.name;\n const funcName = 'get' + texName.charAt(0).toUpperCase() +
texName.slice(1);\n\n const {newShape, keptDims} = util.squeezeShape(shape);\n if (newShape.length <
shape.length) {\n const newInputInfo = squeezeInputInfo(inputInfo, newShape);\n const params = ['row', 'col',
'depth', 'depth2', 'depth3', 'depth4'];\n return \n\n   ${getSamplerFromInInfo(newInputInfo)}\n\n   float
${funcName}(int row, int col, int depth,\n int depth2, int depth3, int depth4) {\n return
${funcName}(${getSqueezedParams(params, keptDims)});\n   }\n\n   }\n\n   }\n\n   }\n\n   const stride4 = shape[5];\n const
stride3 = shape[4] * stride4;\n const stride2 = shape[3] * stride3;\n const stride1 = shape[2] * stride2;\n const
stride0 = shape[1] * stride1;\n\n   if (inputInfo.shapeInfo.isUniform) {\n // Uniform arrays will be less than 65505
(no risk of float16 overflow).\n return \n\n   float ${funcName}(int row, int col, int depth,\n int depth2,\n int
depth3, int depth4) {\n int index = round(dot(\n vec4(row, col, depth, depth2),\n vec4(${stride0},
${stride1}, ${stride2}, ${stride3})) +\n dot(\n vec2(depth3, depth4),\n vec2(${stride4}, 1));\n
${getUniformSampler(inputInfo)}\n   }\n\n   }\n\n   }\n\n   const flatOffset = inputInfo.shapeInfo.flatOffset;\n const
texShape = inputInfo.shapeInfo.texShape;\n const texNumR = texShape[0];\n const texNumC = texShape[1];\n\n   if
(texNumC === stride0 && flatOffset == null) {\n // texC is used directly as physical (no risk of float16
overflow).\n return \n\n   float ${funcName}(int row, int col, int depth,\n int depth2, int depth3, int
depth4) {\n int texR = row;\n float texC = dot(vec4(col, depth, depth2, depth3),\n vec4(${stride1},
${stride2}, ${stride3}, ${stride4})) +\n float(depth4);\n vec2 uv = (vec2(texC, texR) + halfCR) /\n
vec2(${texNumC}.0, ${texNumR}.0);\n return sampleTexture(${texName}, uv);\n   }\n\n   }\n\n   }\n\n   }\n\n   if
(texNumC === stride4 && flatOffset == null) {\n // texR is used directly as physical (no risk of float16
overflow).\n return \n\n   float ${funcName}(int row, int col, int depth,\n int depth2, int depth3, int
depth4) {\n float texR = dot(vec4(row, col, depth, depth2),\n vec4(${shape[1] * shape[2] * shape[3] *
shape[4]},\n ${shape[2] * shape[3] * shape[4]},\n ${shape[3] * shape[4]},\n

```

```

    ${shape[4]}) + float(depth3); \n    int texC = depth4; \n    vec2 uv = (vec2(texC, texR) + halfCR) / \n
    vec2(${texNumC}.0, ${texNumR}.0); \n    return sampleTexture(${texName}, uv); \n    } \n `; \n } \n const
offset = getFlatOffsetUniformName(texName); \n return ` \n float ${funcName}(int row, int col, int depth, \n
    int depth2, int depth3, int depth4) { \n // Explicitly use integer operations as dot() only works on floats. \n int
index = row * ${stride0} + col * ${stride1} + depth * ${stride2} + \n    depth2 * ${stride3} + depth3 *
${stride4} + depth4 + ${offset}; \n    vec2 uv = uvFromFlat(${texNumR}, ${texNumC}, index); \n    return
sampleTexture(${texName}, uv); \n    } \n `; \n } \n \n function getUniformSampler(inputInfo: InputInfo): string { \n
const texName = inputInfo.name; \n const inSize = util.sizeFromShape(inputInfo.shapeInfo.logicalShape); \n \n if
(inSize < 2) { \n    return `return ${texName};`; \n } \n return ` \n for (int i = 0; i < ${inSize}; i++) { \n    if (i ==
index) { \n    return ${texName}[i]; \n    } \n } \n `; \n } \n \n function getPackedSamplerAtOutputCoords(\n
inputInfo: InputInfo, outShapeInfo: ShapeInfo) { \n const texName = inputInfo.name; \n const texFuncSnippet =
texName.charAt(0).toUpperCase() + texName.slice(1); \n const funcName = 'get' + texFuncSnippet +
'AtOutCoords'; \n const inRank = inputInfo.shapeInfo.logicalShape.length; \n const outRank =
outShapeInfo.logicalShape.length; \n \n const broadcastDims = getBroadcastDims(\n
inputInfo.shapeInfo.logicalShape, outShapeInfo.logicalShape); \n \n const type = getCoordsDataType(outRank); \n
const rankDiff = outRank - inRank; \n let coordsSnippet: string; \n const fields = ['x', 'y', 'z', 'w', 'u', 'v']; \n \n if
(inRank === 0) { \n    coordsSnippet = "; \n } else if (outRank < 2 && broadcastDims.length >= 1) { \n
coordsSnippet = 'coords = 0;'; \n } else { \n    coordsSnippet = \n        broadcastDims.map(d => `coords.${fields[d +
rankDiff]} = 0;`) \n        .join("\n"); \n } \n let unpackedCoordsSnippet = "; \n if (outRank < 2 && inRank > 0) { \n
unpackedCoordsSnippet = 'coords'; \n } else { \n    unpackedCoordsSnippet = inputInfo.shapeInfo.logicalShape \n
        .map((s, i) => `coords.${fields[i + rankDiff]}`) \n        .join(', '); \n } \n \n let output =
`return outputValue;`; \n const inSize = util.sizeFromShape(inputInfo.shapeInfo.logicalShape); \n const
isInputScalar = inSize === 1; \n const outSize = util.sizeFromShape(outShapeInfo.logicalShape); \n const
isOutputScalar = outSize === 1; \n \n if (inRank === 1 && !isInputScalar && !isOutputScalar) { \n    output = ` \n
return vec4(outputValue.xy, outputValue.xy); \n    `; \n } else if (isInputScalar && !isOutputScalar) { \n    if (outRank
=== 1) { \n    output = ` \n    return vec4(outputValue.x, outputValue.x, 0., 0.); \n    `; \n } else { \n    output =
` \n    return vec4(outputValue.x); \n    `; \n } \n } else if (broadcastDims.length) { \n    const rows = inRank - 2; \n
const cols = inRank - 1; \n \n if (broadcastDims.indexOf(rows) > -1 && broadcastDims.indexOf(cols) > -1) { \n
output = `return vec4(outputValue.x);`; \n } else if (broadcastDims.indexOf(rows) > -1) { \n    output = `return
vec4(outputValue.x, outputValue.y, ` + \n        `outputValue.x, outputValue.y);`; \n } else if
(broadcastDims.indexOf(cols) > -1) { \n    output = `return vec4(outputValue.xx, outputValue.zz);`; \n } \n } \n \n
return ` \n vec4 ${funcName}() { \n    ${type} coords = getOutputCoords(); \n    ${coordsSnippet} \n    vec4
outputValue = get${texFuncSnippet}(${unpackedCoordsSnippet}); \n    ${output} \n    } \n `; \n } \n \n function
getSamplerAtOutputCoords(\n    inputInfo: InputInfo, outShapeInfo: ShapeInfo) { \n const texName =
inputInfo.name; \n const texFuncSnippet = texName.charAt(0).toUpperCase() + texName.slice(1); \n const
funcName = 'get' + texFuncSnippet + 'AtOutCoords'; \n const outTexShape = outShapeInfo.texShape; \n const
inTexShape = inputInfo.shapeInfo.texShape; \n const inRank = inputInfo.shapeInfo.logicalShape.length; \n const
outRank = outShapeInfo.logicalShape.length; \n \n if (!inputInfo.shapeInfo.isUniform && inRank === outRank
&& \n    inputInfo.shapeInfo.flatOffset == null && \n    util.arrayEqual(inTexShape, outTexShape)) { \n return
` \n float ${funcName}() { \n    return sampleTexture(${texName}, resultUV); \n    } \n `; \n } \n \n const type
= getCoordsDataType(outRank); \n const broadcastDims = getBroadcastDims(\n
inputInfo.shapeInfo.logicalShape, outShapeInfo.logicalShape); \n const rankDiff = outRank - inRank; \n let
coordsSnippet: string; \n const fields = ['x', 'y', 'z', 'w', 'u', 'v']; \n \n if (inRank === 0) { \n    coordsSnippet = "; \n
} else if (outRank < 2 && broadcastDims.length >= 1) { \n    coordsSnippet = 'coords = 0;'; \n } else { \n
coordsSnippet = \n        broadcastDims.map(d => `coords.${fields[d + rankDiff]} = 0;`) \n        .join("\n"); \n } \n
let unpackedCoordsSnippet = "; \n if (outRank < 2 && inRank > 0) { \n    unpackedCoordsSnippet = 'coords'; \n }
else { \n    unpackedCoordsSnippet = inputInfo.shapeInfo.logicalShape \n        .map((s, i) =>
`coords.${fields[i + rankDiff]}`) \n        .join(', '); \n } \n \n return ` \n float ${funcName}() { \n

```



```

${type} coords = getOutputCoords();\n  ${coordsSnippet}\n  return
get${texFuncSnippet}(${unpackedCoordsSnippet});\n  }\n `;\n\n\nexport function getCoordsDataType(rank:
number): string {\n  if (rank <= 1) {\n    return 'int';\n  } else if (rank === 2) {\n    return 'ivec2';\n  } else if (rank
=== 3) {\n    return 'ivec3';\n  } else if (rank === 4) {\n    return 'ivec4';\n  } else if (rank === 5) {\n    return
'ivec5';\n  } else if (rank === 6) {\n    return 'ivec6';\n  } else {\n    throw Error(`GPU for rank ${rank} is not yet
supported`);\n  }\n}\n\n/** Returns a new input info (a copy) that has a squeezed logical shape. */\nfunction
squeezeInputInfo(\n  inInfo: InputInfo, squeezedShape: number[]): InputInfo {\n  // Deep copy.\n  const
newInputInfo: InputInfo = JSON.parse(JSON.stringify(inInfo));\n  newInputInfo.shapeInfo.logicalShape =
squeezedShape;\n  return newInputInfo;\n}\n\n\nfunction getSqueezedParams(params: string[], keptDims: number[]):
string {\n  return keptDims.map(d => params[d]).join(', ');\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
\n
*/\n\nimport {env, Tensor, TypedArray, util} from '@tensorflow/tfjs-core';\nimport {GPGPUContext} from
'./gpgpu_context';\nimport * as shader_compiler from './shader_compiler';\nimport {InputInfo, ShapeInfo} from
'./shader_compiler';\nimport {PackingScheme, TextureData, TextureUsage} from './tex_util';\n\nexport interface
GPGPUProgram {\n  variableNames: string[];\n  outputShape: number[];\n  userCode: string;\n  /** If true, this
program expects packed input textures. Defaults to false. */\n  packedInputs?: boolean;\n  /** If true, this program
produces a packed texture. Defaults to false. */\n  packedOutput?: boolean;\n  /** \n * Affects what type of texture
we allocate for the output. Defaults to\n * `TextureUsage.RENDER`.\n * \n * outTexUsage?: TextureUsage;\n
/** \n * The type of scheme to use when packing texels for the output values.\n * See `PackingScheme` for details.
Defaults to `PackingScheme.SHARED_BATCH`.\n * \n * outPackingScheme?: PackingScheme;\n}\n\n\nexport
interface GPGPUBinary {\n  webGLProgram: WebGLProgram;\n  program: GPGPUProgram;\n  uniformLocations:
{[name: string]: WebGLUniformLocation};\n  source: string;\n  inShapeInfos: ShapeInfo[];\n  outShapeInfo:
ShapeInfo;\n  infLoc: WebGLUniformLocation;\n  nanLoc: WebGLUniformLocation;\n}\n\n\nexport interface
TensorData {\n  shape: number[];\n  texData: TextureData;\n  isUniform: boolean;\n  // Available when we decide to
upload as uniform instead of texture.\n  uniformValues?: TypedArray;\n}\n\n\nexport function compileProgram<T
extends Tensor, K extends Tensor>(\n  gpgpu: GPGPUContext, program: GPGPUProgram, inputs: TensorData[],\n  output:
TensorData): GPGPUBinary {\n  const userCode = program.userCode;\n  const inputInfos: InputInfo[] =
inputs.map((input, i) => {\n    const shapeInfo: ShapeInfo = {\n      logicalShape: input.shape,\n      texShape:
input.isUniform ? null : input.texData.texShape,\n      isUniform: input.isUniform,\n      isPacked: input.isUniform ?
false : input.texData.isPacked,\n      flatOffset: null\n    };\n    if (input.texData != null && input.texData.slice != null
&&\n      input.texData.slice.flatOffset > 0) {\n      shapeInfo.flatOffset = input.texData.slice.flatOffset;\n    }\n    return {name: program.variableNames[i], shapeInfo};\n  });\n  const inShapeInfos = inputInfos.map(x =>
x.shapeInfo);\n  const outShapeInfo: ShapeInfo = {\n    logicalShape: output.shape,\n    texShape:
output.texData.texShape,\n    isUniform: false,\n    isPacked: output.texData.isPacked,\n    flatOffset: null\n  };\n  const source = shader_compiler.makeShader(\n    inputInfos, outShapeInfo, userCode, program.packedInputs);\n\n  const webGLProgram = gpgpu.createProgram(source);\n\n  // Add special uniforms (NaN, INFINITY)\n  let
infLoc: WebGLUniformLocation = null;\n  const nanLoc = gpgpu.getUniformLocation(webGLProgram, 'NaN',
false);\n  if (env().getNumber('WEBGL_VERSION') === 1) {\n    infLoc =
gpgpu.getUniformLocation(webGLProgram, 'INFINITY', false);\n  }\n\n  // Add user-defined uniforms\n  const
uniformLocations: {[name: string]: WebGLUniformLocation} = {};\n  for (let i = 0; i <
program.variableNames.length; i++) {\n    const varName = program.variableNames[i];\n    const shouldThrow =
false;\n    uniformLocations[varName] =\n      gpgpu.getUniformLocation(webGLProgram, varName,

```



```
TensorInfo|TensorInfo[], opName: string): void {\n if (!Array.isArray(tensor)) {\n  tensor = [tensor];\n }\n tensor.forEach(t => {\n  if (t !== null) {\n   util.assert(\n    t.dtype !== 'complex64',\n    () => `{\n opName} does not support complex64 tensors in the CPU backend.`);\n   }\n });\n };\n\n"}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n License);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an AS IS BASIS,\n * WITHOUT\n WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific\n language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport { Abs, AbsInputs, KernelConfig, KernelFunc, TypedArray, util } from '@tensorflow/tfjs-core';\n\nimport { MathBackendCPU } from './backend_cpu';\n\nimport { assertNotComplex } from './cpu_util';\n\nexport function simpleAbsImpl(vals: TypedArray): Float32Array {\n  const resultValues = new Float32Array(vals.length);\n  for (let i = 0; i < vals.length; ++i) {\n    resultValues[i] = Math.abs(vals[i]);\n  }\n  return resultValues;\n}\n\nexport const abs = (args: { inputs: AbsInputs, backend: MathBackendCPU }) => {\n  const { x } = args.inputs;\n  const cpuBackend = args.backend;\n  \n  assertNotComplex(x, 'abs');\n  \n  let resultValues = new Float32Array(util.sizeFromShape(x.shape));\n  const values = cpuBackend.data.get(x.dataId).values as TypedArray;\n  resultValues = simpleAbsImpl(values);\n  \n  return cpuBackend.makeOutput(resultValues, x.shape, 'float32');\n};\n\nexport const absConfig: KernelConfig = {\n  kernelName: Abs,\n  backendName: 'cpu',\n  kernelFunc: abs as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport { backend_util, DataType, NumericDataType, TypedArray, util } from '@tensorflow/tfjs-core';\n\nimport { SimpleBinaryKernelImpl, SimpleBinaryOperation } from './binary_types';\n\n/**\n * Template that creates implementation for binary ops. Supports broadcast.\n */\n\nexport function createSimpleBinaryKernelImpl(op: SimpleBinaryOperation):\n  SimpleBinaryKernelImpl {\n  return (aShape: number[], bShape: number[], aVals: TypedArray, bVals: TypedArray, dtype: DataType): [TypedArray, number[]] => {\n    const newShape = backend_util.assertAndGetBroadcastShape(aShape, bShape);\n    const resultRank = newShape.length;\n    const resultStrides = util.computeStrides(newShape);\n    const resultSize = util.sizeFromShape(newShape);\n    const result =\n      util.getTypedArrayFromDType(dtype as NumericDataType, resultSize);\n    const aRank = aShape.length;\n    const bRank = bShape.length;\n    const aStrides = util.computeStrides(aShape);\n    const bStrides = util.computeStrides(bShape);\n    const aBroadcastDims = backend_util.getBroadcastDims(aShape, newShape);\n    const bBroadcastDims = backend_util.getBroadcastDims(bShape, newShape);\n    \n    if (aBroadcastDims.length + bBroadcastDims.length === 0) {\n      for (let i = 0; i < result.length; ++i) {\n        result[i] = op(aVals[i % aVals.length], bVals[i % bVals.length]);\n      }\n    } else {\n      for (let i = 0; i < result.length; ++i) {\n        const loc = util.indexToLoc(i, resultRank, resultStrides);\n        const aLoc = loc.slice(-aRank);\n        aBroadcastDims.forEach(d => aLoc[d] = 0);\n        const aIndex = util.locToIndex(aLoc, aRank, aStrides);\n        const bLoc = loc.slice(-bRank);\n        bBroadcastDims.forEach(d => bLoc[d] = 0);\n        const bIndex = util.locToIndex(bLoc, bRank, bStrides);\n        result[i] = op(aVals[aIndex], bVals[bIndex]);\n      }\n    }\n    \n    return [result, newShape];\n  };\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { Complex, ComplexInputs, KernelConfig, KernelFunc, TensorInfo, TypedArray } from\n '@tensorflow/tfjs-core';\nimport { MathBackendCPU } from '../backend_cpu';\n\nexport function complex(args:\n {inputs: ComplexInputs, backend: MathBackendCPU});\n  TensorInfo {\n    const {inputs, backend} = args;\n    const {real, imag} = inputs;\n\n    const realVals = backend.data.get(real.dataId).values as TypedArray;\n    const\n    imagVals = backend.data.get(imag.dataId).values as TypedArray;\n\n    const complexInfo =\n    backend.makeTensorInfo(real.shape, 'complex64');\n\n    const complex = backend.data.get(complexInfo.dataId);\n\n    // The complex tensor owns the underlying real and imag tensorInfos, only the\n    // complex tensor tracks refCount, when complexData is disposed the\n    // underlying tensorData will be disposed.\n    complex.complexTensorInfos =\n    {\n      real: backend.makeTensorInfo(real.shape, 'float32', realVals),\n      imag: backend.makeTensorInfo(imag.shape,\n      'float32', imagVals)\n    };\n\n    return complexInfo;\n  }\n\nexport const complexConfig: KernelConfig = {\n  kernelName: Complex,\n  backendName: 'cpu',\n  kernelFunc: complex as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n  law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { DataType, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { MathBackendCPU } from\n '../backend_cpu';\nimport { complex } from '../kernels/Complex';\n\n/**\n * Generates a tensorInfo with all zeros\n  value.\n * @param backend cpu backend.\n * @param shape Shape for the zeros tensor.\n * @param dtype\n  Optional. If set, the result has this dtype.\n */\nexport function zeros(\n  backend: MathBackendCPU, shape:\n  number[],\n  dtype: DataType = 'float32'): TensorInfo {\n  if (dtype === 'complex64') {\n    const real =\n    zeros(backend, shape, 'float32');\n    const imag = zeros(backend, shape, 'float32');\n\n    return complex({inputs:\n    {real, imag}, backend});\n  }\n\n  const values = util.makeZerosTypedArray(util.sizeFromShape(shape), dtype);\n\n  return backend.makeTensorInfo(shape, dtype, values);\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC.\n  All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this\n  file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n  law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language\n  governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { Identity, IdentityInputs, KernelConfig, KernelFunc, TensorInfo } from '@tensorflow/tfjs-\n  core';\nimport { MathBackendCPU } from '../backend_cpu';\n\nexport function identity(\n  args: {inputs:\n  IdentityInputs, backend: MathBackendCPU}): TensorInfo {\n  const {inputs, backend} = args;\n  const {x} =\n  inputs;\n\n  backend.incRef(x.dataId);\n\n  return {dataId: x.dataId, shape: x.shape, dtype: x.dtype};\n}\n\nexport\n  const identityConfig: KernelConfig = {\n  kernelName: Identity,\n  backendName: 'cpu',\n  kernelFunc: identity as\n  {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n  under the Apache License, Version 2.0 (the \"License\");\n * you may not use this\n  file except in compliance with the\n  License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless\n  required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n  on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n  implied.\n * See the License for the specific language governing permissions and\n * limitations under the
```

License.\n *

```
=====\n
*\n\nimport {KernelConfig, KernelFunc, Real, RealInputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport
{MathBackendCPU} from '../backend_cpu';\n\nexport function real(args: {inputs: RealInputs, backend:
MathBackendCPU}): \n  TensorInfo {\n  const {inputs, backend} = args;\n  const {input} = inputs;\n\n  const real =
backend.data.get(input.dataId).complexTensorInfos.real;\n  const realVal = backend.data.get(real.dataId).values;\n\n
// When complex tensor is disposed, its underlying parts will be disposed too.\n // Make new tensor out of the real
value of the complex. This makes sure the\n // value is still accessible even if complex tensor is disposed.\n return
backend.makeTensorInfo(real.shape, real.dtype, realVal);\n}\n\nexport const realConfig: KernelConfig = {\n
kernelName: Real,\n backendName: 'cpu',\n kernelFunc: real as { } as KernelFunc\n};\n", "/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
```

```
=====\n
*\n\nimport {Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc, TensorInfo, TypedArray, util} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendCPU} from '../backend_cpu';\n\nimport
{createSimpleBinaryKernelImpl} from '../utils/binary_impl';\n\nimport {zeros} from '../utils/zeros_impl';\n\nimport
{complex} from './Complex';\n\nimport {identity} from './Identity';\n\nimport {real} from './Real';\n\nexport function
cast(\n  args: {inputs: CastInputs, backend: MathBackendCPU, attrs: CastAttrs}): \n  TensorInfo {\n  const
{inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {dtype} = attrs;\n\n  // Casting to complex64.\n if
(dtype === 'complex64') {\n  if (x.dtype === 'complex64') {\n  return identity({inputs: {x}, backend});\n  }\n\n
const zerosTensorInfo = zeros(backend, x.shape, x.dtype);\n  const floatX = cast({inputs: {x}, backend, attrs:
{dtype: 'float32'}});\n\n  const result =\n    complex({inputs: {real: floatX, imag: zerosTensorInfo},
backend});\n\n  backend.disposeIntermediateTensorInfo(zerosTensorInfo);\n
backend.disposeIntermediateTensorInfo(floatX);\n\n  return result;\n  }\n\n // Casting from complex64\n if
(x.dtype === 'complex64') {\n  const realPart = real({inputs: {input: x}, backend});\n  const result = cast({inputs:
{x: realPart}, backend, attrs: {dtype}});\n\n  backend.disposeIntermediateTensorInfo(realPart);\n\n  return
result;\n  }\n\n if (!util.hasEncodingLoss(x.dtype, dtype)) {\n  // We don't change the underlying data, since we
cast to higher\n // precision.\n  const result = identity({inputs: {x}, backend});\n  return {dataId: result.dataId,
shape: result.shape, dtype};\n  }\n\n if (dtype === 'int32') {\n  const values = backend.data.get(x.dataId).values as
TypedArray;\n  const resultValues = Int32Array.from(values);\n  return backend.makeTensorInfo(x.shape, 'int32',
resultValues);\n  }\n\n if (dtype === 'bool') {\n  // This is essentially the result of notEqual(x, 0). We avoid using\n
// kernel notEqual to avoid circular dependency, i.e. binary_utils ->\n // cast -> notEqual -> binary_utils.\n
const xVals = backend.data.get(x.dataId).values as TypedArray;\n  const zero = util.toTypedArray([0],
x.dtype);\n\n  const [resultData, resultShape] = createSimpleBinaryKernelImpl(\n    (a, b) => (a !== b) ? 1 :
0)(x.shape, [], xVals, zero, 'bool');\n\n  return backend.makeTensorInfo(resultShape, 'bool', resultData);\n  }\n\n
throw new Error(`Error in Cast: failed to cast ${x.dtype} to ${dtype}`);\n}\n\nexport const castConfig:
KernelConfig = {\n  kernelName: Cast,\n  backendName: 'cpu',\n  kernelFunc: cast as { } as
KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the 'License');\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an 'AS IS' BASIS,\n *\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
```

```

=====
*/\n\nimport { backend_util, BinaryInputs, DataType, KernelFunc, TypedArray, util } from '@tensorflow/tfjs-
core';\n\nimport { MathBackendCPU } from './backend_cpu';\nimport { assertNotComplex } from
'./cpu_util';\nimport { cast } from './kernels/Cast';\nimport { complex } from './kernels/Complex';\n\nimport
{ ComplexBinaryKernelImpl, ComplexBinaryOperation, SimpleBinaryKernelImpl } from './binary_types';\n\n/**\n *
Template that creates a `KernelFunc` for binary ops.\n * @param name Kernel name.\n * @param
binaryKernelImpl A `SimpleBinaryKernelImpl` for the kernel.\n * @param binaryKernelComplexImpl Optional. If
exists, represents a\n * `ComplexBinaryKernelImpl` for the kernel, will be used when input dtype\n * is
`complex64`.\n * @param dtype Optional. If set, the result has this dtype. Otherwise, the\n * result has the same
dtype as the first input. This is mainly used in\n * comparison kernels, such as Equal, Less, Greater, etc.\n
*/\n\nexport function binaryKernelFunc(\n  name: string, simpleImpl: SimpleBinaryKernelImpl,\n  complexImpl?:
ComplexBinaryKernelImpl, dtype?: DataType): KernelFunc {\n  if (complexImpl == null) {\n    return ({inputs,
backend}) => {\n      const {a, b} = inputs as BinaryInputs;\n      const cpuBackend = backend as
MathBackendCPU;\n\n      assertNotComplex([a, b], name);\n      const aVals =
cpuBackend.data.get(a.dataId).values as TypedArray;\n      const bVals = cpuBackend.data.get(b.dataId).values as
TypedArray;\n\n      const $dtype = dtype || a.dtype;\n      const [resultData, resultShape] =\n
simpleImpl(a.shape, b.shape, aVals, bVals, $dtype);\n      return cpuBackend.makeTensorInfo(resultShape, $dtype,
resultData);\n    }; \n  }\n  return ({inputs, backend}) => {\n    const {a, b} = inputs as BinaryInputs;\n    const
cpuBackend = backend as MathBackendCPU;\n\n    if (a.dtype === 'complex64' || b.dtype === 'complex64') {\n
const $aComplex = cast(\n      inputs: {x: a}, backend: cpuBackend, attrs: {dtype: 'complex64'});\n      const
$aComplexVals = cpuBackend.data.get($aComplex.dataId);\n      const aReal =
$aComplexVals.complexTensorInfos.real;\n      const aImag = $aComplexVals.complexTensorInfos.imag;\n\n      const
aRealVals =\n        cpuBackend.data.get(aReal.dataId).values as Float32Array;\n      const aImagVals =\n
cpuBackend.data.get(aImag.dataId).values as Float32Array;\n\n      const $bComplex = cast(\n        inputs: {x:
b}, backend: cpuBackend, attrs: {dtype: 'complex64'});\n      const $bComplexVals =
cpuBackend.data.get($bComplex.dataId);\n      const bReal = $bComplexVals.complexTensorInfos.real;\n      const
bImag = $bComplexVals.complexTensorInfos.imag;\n\n      const bRealVals =\n
cpuBackend.data.get(bReal.dataId).values as Float32Array;\n      const bImagVals =\n
cpuBackend.data.get(bImag.dataId).values as Float32Array;\n\n      const [resultRealData, resultImagData,
resultShape] = complexImpl(\n        a.shape, b.shape, aRealVals, aImagVals, bRealVals, bImagVals);\n      const
resultReal =\n        cpuBackend.makeTensorInfo(resultShape, 'float32', resultRealData);\n      const resultImag
=\n        cpuBackend.makeTensorInfo(resultShape, 'float32', resultImagData);\n      const result = complex(\n
        inputs: {real: resultReal, imag: resultImag}, backend: cpuBackend);\n\n      cpuBackend.disposeIntermediateTensorInfo($aComplex);\n
      cpuBackend.disposeIntermediateTensorInfo($bComplex);\n      cpuBackend.disposeIntermediateTensorInfo(resultReal);\n
      cpuBackend.disposeIntermediateTensorInfo(resultImag);\n      return result;\n    } else {\n      const aVals =
cpuBackend.data.get(a.dataId).values as TypedArray;\n      const bVals = cpuBackend.data.get(b.dataId).values as
TypedArray;\n\n      const $dtype = dtype || a.dtype;\n      const [resultData, resultShape] =\n
simpleImpl(a.shape, b.shape, aVals, bVals, $dtype);\n      return cpuBackend.makeTensorInfo(resultShape, $dtype,
resultData);\n    } \n  };\n}\n\n/**\n * Template that creates the complex type implementation for binary ops.\n *
Supports broadcast.\n */\n\nexport function createComplexBinaryKernelImpl(op: ComplexBinaryOperation):\n  ComplexBinaryKernelImpl {\n  return (aShape: number[], bShape: number[], aRealVals: Float32Array,\n    aImagVals: Float32Array, bRealVals: Float32Array,\n    bImagVals: Float32Array): [TypedArray, TypedArray,
number[]] => {\n    const resultShape = backend_util.assertAndGetBroadcastShape(aShape, bShape);\n    const
resultSize = util.sizeFromShape(resultShape);\n    const resultRank = resultShape.length;\n    const resultStrides =
util.computeStrides(resultShape);\n    const resultRealVals = util.getTypedArrayFromDType('float32',
resultSize);\n    const resultImagVals = util.getTypedArrayFromDType('float32', resultSize);\n    const

```

```

aBroadcastDims = backend_util.getBroadcastDims(aShape, resultShape);\n  const bBroadcastDims =
backend_util.getBroadcastDims(bShape, resultShape);\n\n  const aVals =
backend_util.mergeRealAndImagArrays(aRealVals, aImagVals);\n  const bVals =
backend_util.mergeRealAndImagArrays(bRealVals, bImagVals);\n\n  const aRank = aShape.length;\n  const
aStrides = util.computeStrides(aShape);\n\n  const bRank = bShape.length;\n  const bStrides =
util.computeStrides(bShape);\n\n  if (aBroadcastDims.length + bBroadcastDims.length === 0) {\n    for (let i = 0;
i < resultRealVals.length; i++) {\n      const aIdx = i % aVals.length;\n      const bIdx = i % bVals.length;\n\n      const result =\n        op(aVals[aIdx * 2], aVals[aIdx * 2 + 1], bVals[bIdx * 2],\n          bVals[bIdx * 2 + 1]);\n\n      resultRealVals[i] = result.real;\n      resultImagVals[i] = result.imag;\n    } else {\n      for (let i = 0; i <
resultRealVals.length; i++) {\n        const loc = util.indexToLoc(i, resultRank, resultStrides);\n        const aLoc =
loc.slice(-aRank);\n        aBroadcastDims.forEach(d => aLoc[d] = 0);\n        const aIndex = util.locToIndex(aLoc,
aRank, aStrides);\n\n        const bLoc = loc.slice(-bRank);\n        bBroadcastDims.forEach(d => bLoc[d] = 0);\n        const bIndex = util.locToIndex(bLoc, bRank, bStrides);\n\n        const opResult =\n          op(aVals[aIndex * 2],
aVals[aIndex * 2 + 1], bVals[bIndex * 2],\n            bVals[bIndex * 2 + 1]);\n\n        resultRealVals[i] =
opResult.real;\n        resultImagVals[i] = opResult.imag;\n      } }\n    return [resultRealVals, resultImagVals,
resultShape];\n  };\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createSimpleBinaryKernelImpl} from
'./utils/binary_impl';\n\nimport {binaryKernelFunc, createComplexBinaryKernelImpl} from
'./utils/binary_utils';\n\nexport const addImpl = createSimpleBinaryKernelImpl(((a, b) => a + b));\n\nexport const
addComplexImpl =\n  createComplexBinaryKernelImpl(((aReal, aImag, bReal, bImag) => {\n    return {real:
aReal + bReal, imag: aImag + bImag};\n  }));\n\nexport const add = binaryKernelFunc(Add, addImpl,
addComplexImpl);\n\nexport const addConfig: KernelConfig = {\n  kernelName: Add,\n  backendName: 'cpu',\n  kernelFunc: add;\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {buffer, DataType, Rank, TensorBuffer, TypedArray, util} from '@tensorflow/tfjs-core';\n\nexport
function bincountImpl(\n  xVals: TypedArray, weightsVals: TypedArray, weightsDtype: DataType,\n  weightsShape: number[], size: number): TypedArray {\n  const weightsSize = util.sizeFromShape(weightsShape);\n  const outVals = util.makeZerosTypedArray(size, weightsDtype) as TypedArray;\n  for (let i = 0; i < xVals.length;
i++) {\n    const value = xVals[i];\n    if (value < 0) {\n      throw new Error('Input x must be non-negative!');\n    }\n\n    if (value >= size) {\n      continue;\n    }\n\n    if (weightsSize > 0) {\n      outVals[value] +=
weightsVals[i];\n    } else {\n      outVals[value] += 1;\n    } }\n  return outVals;\n}\n\nexport function
bincountReduceImpl<R extends Rank>(\n  xBuf: TensorBuffer<R>, weightsBuf: TensorBuffer<R>, size:
number,\n  binaryOutput = false): TensorBuffer<R> {\n  const numRows = xBuf.shape[0];\n  const numCols =
xBuf.shape[1];\n  const outBuf = buffer([numRows, size], weightsBuf.dtype);\n  for (let i = 0; i < numRows;
i++) {\n    for (let j = 0; j < numCols; j++) {\n      const value = xBuf.get(i, j);\n      if (value < 0) {\n        throw new

```

```
Error('Input x must be non-negative!');\n  }\n\n  if (value >= size) {\n    continue;\n  }\n\n  if\n(binaryOutput) {\n    outBuf.set(1, i, value);\n  } else {\n    if (weightsBuf.size > 0) {\n      outBuf.set(outBuf.get(i, value) + weightsBuf.get(i, j), i, value);\n    } else {\n      outBuf.set(outBuf.get(i, value)\n+ 1, i, value);\n    }\n  }\n}\n}\n}\n}\n}\n\nreturn outBuf as TensorBuffer<R>;\n}\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {NumericDataType, util} from '@tensorflow/tfjs-core';\nimport {SimpleUnaryImpl,\nSimpleUnaryOperation} from './unary_types';\n\n/*\n * Template that creates implementation for unary op.\n */\n\nexport function createSimpleUnaryImpl(op: SimpleUnaryOperation):\n  SimpleUnaryImpl {\n  return (values,\ndtype, attrs) => {\n    const newValues =\n      util.getTypedArrayFromDType(dtype as NumericDataType,\nvalues.length);\n    for (let i = 0; i < values.length; ++i) {\n      newValues[i] = op(values[i], attrs);\n    }\n    return\nnewValues;\n  };\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */
```

```
=====\n\n*\n\nimport {DataType, KernelFunc, TypedArray, UnaryInputs, util} from '@tensorflow/tfjs-core';\nimport\n{MathBackendCPU} from './backend_cpu';\nimport {assertNotComplex} from './cpu_util';\nimport\n{SimpleUnaryImpl, SimpleUnaryOperation} from './unary_types';\n\n/*\n * Template that creates a `KernelFunc`\n * for unary ops.\n * @param name Kernel name.\n * @param op A `SimpleUnaryOperation` for the kernel.\n * @param dtype Optional. If set, the result has this dtype. Otherwise, the\n * result has the same dtype as the input.\n * This is mainly used in certain\n * kernels that return bool type, such as isFinite, isInf, etc.\n */\n\nexport function\nunaryKernelFunc(\n  name: string, op: SimpleUnaryOperation, dtype?: DataType): KernelFunc {\n  return\n({inputs, attrs, backend}) => {\n    const {x} = inputs as UnaryInputs;\n    assertNotComplex(x, name);\n    if\n(x.dtype === 'string' || dtype === 'string') {\n      throw new Error('unaryKernelFunc does not support string\ninput/output');\n    }\n\n    const cpuBackend = backend as MathBackendCPU;\n    const values =\ncpuBackend.data.get(x.dataId).values as TypedArray;\n    const xSize = util.sizeFromShape(x.shape);\n    const\n$dtype = dtype || x.dtype;\n    const newValues = util.getArrayFromDType($dtype, xSize);\n    for (let i = 0; i <\nxSize; ++i) {\n      newValues[i] = op(values[i], attrs);\n    }\n    return cpuBackend.makeTensorInfo(x.shape,\n$ddtype, newValues);\n  };\n}\n\n/*\n * Template that creates a `KernelFunc` for unary ops from the given\n * `SimpleUnaryImpl`.\n * @param name Kernel name.\n * @param unaryImpl A `SimpleUnaryImpl` that\n * implements the op.\n * @param dtype Optional. If set, the result has this dtype. Otherwise, the\n * result has the\n * same dtype as the input. This is mainly used in certain\n * kernels that return bool type, such as isFinite, isInf,\n * etc.\n */\n\nexport function unaryKernelFuncFromImpl(\n  name: string, unaryImpl: SimpleUnaryImpl, dtype?:\n  DataType): KernelFunc {\n  return ({inputs, attrs, backend}) => {\n    const {x} = inputs as UnaryInputs;\n    assertNotComplex(x, name);\n    if\n(x.dtype === 'string' || dtype === 'string') {\n      throw new\nError('unaryKernelFunc does not support string input/output');\n    }\n\n    const cpuBackend = backend as\nMathBackendCPU;\n    const values = cpuBackend.data.get(x.dataId).values as TypedArray;\n    const $dtype =\ndtype || x.dtype;\n    const newValues = unaryImpl(values, $dtype, attrs);\n    return\ncpuBackend.makeTensorInfo(x.shape, $dtype, newValues);\n  };\n}\n", "/*\n * @license\n * Copyright 2020
```


Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the License);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an AS IS BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Ceil, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createSimpleUnaryImpl} from\n './utils/unary_impl';\nimport {unaryKernelFuncFromImpl} from './utils/unary_utils';\nexport const ceilImpl =\n createSimpleUnaryImpl((xi) => Math.ceil(xi));\nexport const ceil = unaryKernelFuncFromImpl(Ceil,\n ceilImpl);\nexport const ceilConfig: KernelConfig = {\n  kernelName: Ceil,\n  backendName: 'cpu',\n  kernelFunc:\n  ceil,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache\n * License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You\n * may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required\n * by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n * License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {backend_util, BackendValues, DataType, TypedArray, util} from '@tensorflow/tfjs-core';\nexport\n function concatImpl(\n  inputs: Array<{vals: BackendValues, shape: number[]}>, outShape: number[],\n  dtype:\n  DataType, simplyConcat: boolean): TypedArray|string[] {\n  const outVals = util.getArrayFromDType(dtype,\n  util.sizeFromShape(outShape));\n\n  if (simplyConcat && dtype !== 'string') {\n    // Use built-in TypedArray.set()\n    method for speed.\n    let offset = 0;\n    inputs.forEach(input => {\n      const size =\n      util.sizeFromShape(input.shape);\n      (outVals as TypedArray).set(input.vals as TypedArray, offset);\n      offset\n      += size;\n    });\n  } else {\n    let colOffset = 0;\n    inputs.forEach(input => {\n      const decodedData = dtype\n      === 'string' ?\n      backend_util.fromUint8ToStringArray(input.vals as Uint8Array[]) :\n      input.vals as\n      TypedArray;\n      let tIdx = 0;\n      for (let row = 0; row < input.shape[0]; ++row) {\n        const resIdx = row *\n        outShape[1] + colOffset;\n        for (let col = 0; col < input.shape[1]; ++col) {\n          outVals[resIdx + col] =\n          decodedData[tIdx++];\n        }\n        colOffset += input.shape[1];\n      }\n    });\n  }\n  return\n  outVals;\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the License);\n * you may not use this file except in compliance with the License.\n * \n * You\n * may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless\n * required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an AS\n * IS BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See\n * the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createSimpleUnaryImpl} from\n './utils/unary_impl';\nimport {unaryKernelFuncFromImpl} from './utils/unary_utils';\nexport const expImpl =\n createSimpleUnaryImpl((xi) => Math.exp(xi));\nexport const exp = unaryKernelFuncFromImpl(Exp,\n expImpl);\nexport const expConfig: KernelConfig = {\n  kernelName: Exp,\n  backendName: 'cpu',\n  kernelFunc:\n  exp,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache\n * License, Version 2.0 (the License);\n * you may not use this file except in compliance with the License.\n * You\n * may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required\n * by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an AS IS\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n * License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Expn1, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createSimpleUnaryImpl} from
```

```
./utils/unary_impl';\nimport {unaryKernelFuncFromImpl} from './utils/unary_utils';\n\nexport const expm1Impl =  
createSimpleUnaryImpl((xi) => Math.expm1(xi));\n\nexport const expm1 = unaryKernelFuncFromImpl(Expm1,  
expm1Impl);\n\nexport const expm1Config: KernelConfig = {\n  kernelName: Expm1,\n  backendName: 'cpu',\n  kernelFunc: expm1,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed  
under the Apache License, Version 2.0 (the License);\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an AS IS BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n */
```

```
=====\n\n*/\n\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createSimpleUnaryImpl} from  
./utils/unary_impl';\nimport {unaryKernelFuncFromImpl} from './utils/unary_utils';\n\nexport const floorImpl =  
createSimpleUnaryImpl((xi) => Math.floor(xi));\n\nexport const floor = unaryKernelFuncFromImpl(Floor,  
floorImpl);\n\nexport const floorConfig: KernelConfig = {\n  kernelName: Floor,\n  backendName: 'cpu',\n  kernelFunc: floor,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed  
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n */
```

```
=====\n\n*/\n\nimport {buffer, DataType, Rank, TensorBuffer} from '@tensorflow/tfjs-core';\n\nexport function  
gatherV2Impl<R extends Rank, D extends DataType>(\n  xBuf: TensorBuffer<R, D>, indicesBuf:  
TensorBuffer<R, D>,\n  flattenOutputShape: number[]): TensorBuffer<R, D> {\n  const outBuf =  
buffer(flattenOutputShape, xBuf.dtype);\n  for (let i = 0; i < outBuf.size; ++i) {\n    const newLoc =  
outBuf.indexToLoc(i);\n    const originalLoc: number[] = newLoc.slice();\n    const batchIdx = originalLoc[0];\n    const indicesIdx = originalLoc[2];\n    const indicesIndex = indicesBuf.locToIndex([batchIdx, indicesIdx]);\n    originalLoc[2] = indicesBuf.values[indicesIndex] as number;\n    const originalIndex =  
xBuf.locToIndex(originalLoc);\n    outBuf.values[i] = xBuf.values[originalIndex];\n  }\n  return outBuf as  
TensorBuffer<R, D>;\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed  
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n */
```

```
=====\n\n*/\n\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createSimpleBinaryKernelImpl}  
from './utils/binary_impl';\nimport {binaryKernelFunc} from './utils/binary_utils';\n\nexport const greaterImpl =\ncreateSimpleBinaryKernelImpl((a: number, b: number) => (a > b) ? 1 : 0);\n\nexport const greater =\nbinaryKernelFunc(Greater, greaterImpl, null /* complexImpl */, 'bool');\n\nexport const greaterConfig:  
KernelConfig = {\n  kernelName: Greater,\n  backendName: 'cpu',\n  kernelFunc: greater,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n */
```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {KernelConfig, Less} from '@tensorflow/tfjs-core';\nimport {createSimpleBinaryKernelImpl} from\n './utils/binary_impl';\nimport {binaryKernelFunc} from './utils/binary_utils';\nexport const lessImpl =\n createSimpleBinaryKernelImpl((a: number, b: number) => (a < b) ? 1 : 0);\nexport const less =\n binaryKernelFunc(Less, lessImpl, null /* complexImpl */, 'bool');\nexport const lessConfig: KernelConfig = {\n kernelName: Less,\n backendName: 'cpu',\n kernelFunc: less\n};\n"/**\n * @license\n * Copyright 2020 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n\n*\n\nimport {TypedArray, util} from '@tensorflow/tfjs-core';\nexport function linspaceImpl(\n start: number,\n stop: number, num: number): TypedArray {\n const step = (stop - start) / (num - 1);\n const values =\n util.makeZerosTypedArray(num, 'float32');\n values[0] = start;\n for (let i = 1; i < values.length; i++) {\n values[i] = values[i - 1] + step;\n }\n return values;\n}\n"/**\n * @license\n * Copyright 2020 Google LLC. All\n Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the License);\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an AS IS BASIS,\n * WITHOUT WARRANTIES OR\n CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing\n permissions and\n * limitations under the License.\n *\n
```

```
=====\n\n*\n\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';\nimport {createSimpleUnaryImpl} from\n './utils/unary_impl';\nimport {unaryKernelFuncFromImpl} from './utils/unary_utils';\nexport const logImpl =\n createSimpleUnaryImpl((xi) => Math.log(xi));\nexport const log = unaryKernelFuncFromImpl(Log,\n logImpl);\nexport const logConfig: KernelConfig = {\n kernelName: Log,\n backendName: 'cpu',\n kernelFunc:\n log\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache\n License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You\n may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required\n by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"\n BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n\n*\n\nimport {DataType, NumericDataType, TypedArray, util} from '@tensorflow/tfjs-core';\nexport function\n maxImpl(\n aVals: TypedArray, reduceSize: number, outShape: number[],\n dtype: DataType): TypedArray {\n const vals = util.getTypedArrayFromDType(\n dtype as NumericDataType, util.sizeFromShape(outShape));\n for (let i = 0; i < vals.length; ++i) {\n const offset = i * reduceSize;\n let max = aVals[offset];\n for (let j = 0; j\n < reduceSize; ++j) {\n const value = aVals[offset + j];\n if (value > max) {\n max = value;\n }\n }\n vals[i] = max;\n }\n return vals;\n}\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in\n compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
```

governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {KernelConfig, Maximum} from '@tensorflow/tfjs-core';\nimport {createSimpleBinaryKernelImpl}\nfrom './utils/binary_impl';\nimport {binaryKernelFunc} from './utils/binary_utils';\n\nexport const maximumImpl =\ncreateSimpleBinaryKernelImpl(\n  ((aValue, bValue) => Math.max(aValue, bValue)));\nexport const maximum =\nbinaryKernelFunc(Maximum, maximumImpl);\n\nexport const maximumConfig: KernelConfig = {\n  kernelName:\nMaximum,\n  backendName: 'cpu',\n  kernelFunc: maximum\n};\n\n"/**\n * @license\n * Copyright 2020 Google\nLLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\nuse this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\nsoftware\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\nOR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *\n\n
```

```
=====\n\n*\n\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\nimport {createSimpleBinaryKernelImpl}\nfrom './utils/binary_impl';\nimport {binaryKernelFunc} from './utils/binary_utils';\n\nexport const minimumImpl =\ncreateSimpleBinaryKernelImpl(\n  ((aValue, bValue) => Math.min(aValue, bValue)));\nexport const minimum =\nbinaryKernelFunc(Minimum, minimumImpl);\n\nexport const minimumConfig: KernelConfig = {\n  kernelName:\nMinimum,\n  backendName: 'cpu',\n  kernelFunc: minimum\n};\n\n"/**\n * @license\n * Copyright 2020 Google\nLLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\nuse this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\nsoftware\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\nOR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *\n\n
```

```
=====\n\n*\n\nimport {KernelConfig, Multiply} from '@tensorflow/tfjs-core';\nimport {createSimpleBinaryKernelImpl}\nfrom './utils/binary_impl';\nimport {binaryKernelFunc, createComplexBinaryKernelImpl} from\n './utils/binary_utils';\n\nexport const multiplyImpl =\n  createSimpleBinaryKernelImpl(((aValue, bValue) =>\naValue * bValue));\nexport const multiplyComplexImpl =\n  createComplexBinaryKernelImpl(((aReal, aImag,\nbReal, bImag) => {\n    return {\n      real: aReal * bReal - aImag * bImag,\n      imag: aReal * bImag + aImag *\nbReal\n    };\n  }));\n\nexport const multiply =\nbinaryKernelFunc(Multiply, multiplyImpl,\nmultiplyComplexImpl);\n\nexport const multiplyConfig: KernelConfig = {\n  kernelName: Multiply,\n  backendName: 'cpu',\n  kernelFunc: multiply\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights\nReserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\nexcept in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\nsoftware\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\nOR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *\n\n
```

```
=====\n\n*\n\nimport {DataType, KernelConfig, KernelFunc, Neg, TensorInfo, TypedArray, UnaryInputs, util} from\n '@tensorflow/tfjs-core';\nimport {MathBackendCPU} from './backend_cpu';\nimport {assertNotComplex} from\n './cpu_util';\nimport {multiplyImpl} from './Multiply';\n\nexport function negImpl(xVals: TypedArray, xShape:\nnumber[], xDtype: DataType):\n  [TypedArray, number[]] {\n  const minusOne =\n    util.createScalarValue(-1 as\n  { } as 'float32', xDtype) as TypedArray;\n  return multiplyImpl([], xShape, minusOne, xVals, xDtype);\n}\n\nexport\nfunction neg(args: {inputs: UnaryInputs, backend: MathBackendCPU}):\n  TensorInfo {\n  const {inputs,\nbackend} = args;\n  const {x} = inputs;\n  assertNotComplex(x, 'neg');\n  const xVals =\n\n
```

```
backend.data.get(x.dataId).values as TypedArray;\n const [res, newShape] = negImpl(xVals, x.shape, x.dtype);\n return backend.makeTensorInfo(newShape, x.dtype, res);\n}\n\nexport const negConfig: KernelConfig = {\n  kernelName: Neg,\n  backendName: 'cpu',\n  kernelFunc: neg as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, NotEqual } from '@tensorflow/tfjs-core';\nimport { createSimpleBinaryKernelImpl }\nfrom '../utils/binary_impl';\nimport { binaryKernelFunc } from '../utils/binary_utils';\nexport const notEqualImpl\n=\n  createSimpleBinaryKernelImpl(((a, b) => (a !== b) ? 1 : 0));\nexport const notEqual =\n  binaryKernelFunc(NotEqual, notEqualImpl, null /* complexOp */, 'bool');\n\nexport const notEqualConfig:\nKernelConfig = {\n  kernelName: NotEqual,\n  backendName: 'cpu',\n  kernelFunc: notEqual\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { DataType, NumericDataType, TypedArray } from '@tensorflow/tfjs-core';\nimport { util } from\n '@tensorflow/tfjs-core';\nexport function transposeImpl(\n  xVals: TypedArray, xShape: number[], dtype:\n  DataType, perm: number[],\n  newShape: number[]): TypedArray {\n  const xRank = xShape.length;\n  const xSize\n  = util.sizeFromShape(xShape);\n  const xStrides = util.computeStrides(xShape);\n  const newStrides =\n  util.computeStrides(newShape);\n\n  const result = util.getTypedArrayFromDType(\n    dtype as\n    NumericDataType, util.sizeFromShape(newShape));\n\n  for (let i = 0; i < xSize; ++i) {\n    const loc =\n    util.indexToLoc(i, xRank, xStrides);\n\n    // Permute location.\n    const newLoc: number[] = new\n    Array(loc.length);\n    for (let i = 0; i < newLoc.length; i++) {\n      newLoc[i] = loc[perm[i]];\n    }\n\n    const\n    newIndex = util.locToIndex(newLoc, xRank, newStrides);\n    result[newIndex] = xVals[i];\n  }\n  return\n  result;\n}\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless\n * required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs, TypedArray }\nfrom '@tensorflow/tfjs-core';\nimport { MathBackendCPU } from '../backend_cpu';\nimport { assertNotComplex }\nfrom '../cpu_util';\nimport { transposeImpl } from './Transpose_impl';\nexport function transpose(args: {\n  inputs:\n  TransposeInputs,\n  attrs: TransposeAttrs,\n  backend: MathBackendCPU\n}): TensorInfo {\n  const { inputs, attrs,\n  backend } = args;\n  const { x } = inputs;\n  const { perm } = attrs;\n\n  assertNotComplex(x, 'transpose');\n\n  const\n  xRank = x.shape.length;\n  const newShape: number[] = new Array(xRank);\n  for (let i = 0; i < newShape.length;\n  i++) {\n    newShape[i] = x.shape[perm[i]];\n  }\n\n  const values = backend.data.get(x.dataId).values as\n  TypedArray;\n  const result = transposeImpl(values, x.shape, x.dtype, perm, newShape);\n  const dataId =\n  backend.write(result, newShape, x.dtype);\n  return { dataId, shape: newShape, dtype: x.dtype};\n}\n\nexport const
```

transposeConfig: KernelConfig = {\n kernelName: Transpose,\n backendName: 'cpu',\n kernelFunc: transpose as
{ } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```
=====\n*\n\nimport { backend_util, DataType, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo,  
TypedArray, upcastType, util } from '@tensorflow/tfjs-core';\nimport { MathBackendCPU } from  
 './backend_cpu';\nimport { assertNotComplex } from './cpu_util';\nimport { transpose } from './Transpose';\n\nexport  
function prodImpl(\n  xShape: number[], xDtype: DataType, xVals: TypedArray,\n  reductionAxes: number[]):\n  {outVals: TypedArray, outShape: number[], outDtype: DataType} {\n  const [outShape, reduceShape] =\n  backend_util.computeOutAndReduceShapes(xShape, reductionAxes);\n  const outDtype = upcastType(xDtype,  
'int32');\n  const outVals = util.makeZerosTypedArray(\n    util.sizeFromShape(outShape), outDtype) as  
TypedArray;\n  const reduceSize = util.sizeFromShape(reduceShape);\n  for (let i = 0; i < outVals.length; ++i) {\n  const offset = i * reduceSize;\n  let prod = 1;\n  for (let j = 0; j < reduceSize; ++j) {\n  prod *= xVals[offset +  
j];\n  }\n  outVals[i] = prod;\n  }\n  return {outVals, outShape, outDtype};\n}\n\nexport function prod(\n  args:  
{inputs: ProdInputs, backend: MathBackendCPU, attrs: ProdAttrs}):  
TensorInfo {\n  const {inputs, backend,  
attrs} = args;\n  const {x} = inputs;\n  const {axis, keepDims} = attrs;\n  assertNotComplex(x, 'prod');\n  const  
xRank = x.shape.length;\n  const axes = util.parseAxisParam(axis, x.shape);\n  const permutation =  
backend_util.getAxesPermutation(axes, xRank);\n  let reductionAxes = axes;\n  let permutedX = x;\n  const  
intermediateTensorInfos = [];\n  if (permutation != null) {\n  permutedX = transpose({inputs: {x}, backend, attrs:  
{perm: permutation}});\n  intermediateTensorInfos.push(permutedX);\n  reductionAxes =  
backend_util.getInnerMostAxes(reductionAxes.length, xRank);\n  }\n  const xVals =  
backend.data.get(permutedX.dataId).values as TypedArray;\n  const {outVals, outShape, outDtype} =\n  prodImpl(permutedX.shape, permutedX.dtype, xVals, reductionAxes);\n  let resultShape = outShape;\n  if  
(keepDims) {\n  resultShape = backend_util.expandShapeToKeepDim(outShape, axes);\n  }\n  intermediateTensorInfos.forEach(\n  t => backend.disposeIntermediateTensorInfo(t));\n  return  
backend.makeTensorInfo(resultShape, outDtype, outVals);\n}\n\nexport const prodConfig: KernelConfig = {\n  kernelName: Prod,\n  backendName: 'cpu',\n  kernelFunc: prod as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { DataTypeMap, util } from '@tensorflow/tfjs-core';\n\nexport function rangeImpl(\n  start: number,  
stop: number, step: number,\n  dtype: 'float32'|'int32'): DataTypeMap['float32'|'int32'] {\n  const sameStartStop =  
start === stop;\n  const increasingRangeNegativeStep = start < stop && step < 0;\n  const  
decreasingRangePositiveStep = stop < start && step > 1;\n  if (sameStartStop || increasingRangeNegativeStep ||\n  decreasingRangePositiveStep) {\n  return util.makeZerosTypedArray(0, dtype);\n  }\n  const numElements =  
Math.abs(Math.ceil((stop - start) / step));\n  const values = util.makeZerosTypedArray(numElements, dtype);\n  if  
(stop < start && step === 1) {\n  // Auto adjust the step's sign if it hasn't been set\n  // (or was set to 1)\n  step = -  
1;\n  }\n  values[0] = start;\n  for (let i = 1; i < values.length; i++) {\n  values[i] = values[i - 1] + step;\n  }\n  return values;\n}\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
```

the Apache License, Version 2.0 (the License);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * <http://www.apache.org/licenses/LICENSE-2.0>\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an AS IS BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\nimport {createSimpleUnaryImpl} from './utils/unary_impl';\nimport {unaryKernelFuncFromImpl} from './utils/unary_utils';\nexport const rsqrtImpl = createSimpleUnaryImpl((xi) => 1 / Math.sqrt(xi));\nexport const rsqrt = unaryKernelFuncFromImpl(Rsqrt, rsqrtImpl);\nexport const rsqrtConfig: KernelConfig = {\n  kernelName: Rsqrt,\n  backendName: 'cpu',\n  kernelFunc: rsqrt,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {backend_util, BackendValues, buffer, DataType, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\nimport {MathBackendCPU} from './backend_cpu';\nimport {assertNotComplex} from './cpu_util';\nexport function sliceImpl(\n  vals: BackendValues, begin: number[], size: number[], shape: number[],\n  dtype: DataType): BackendValues {\n  const isContinous = slice_util.isSliceContinous(shape, begin, size);\n  const length = util.sizeFromShape(size);\n  const xStrides = util.computeStrides(shape);\n  if (isContinous) {\n    const flatOffset = slice_util.computeFlatOffset(begin, xStrides);\n    if (dtype === 'string') {\n      return (vals as Uint8Array[]).slice(flatOffset, flatOffset + length);\n    }\n    return (vals as TypedArray).subarray(flatOffset, flatOffset + length);\n  }\n  const decodedData = dtype === 'string' ?\n    backend_util.fromUint8ToStringArray(vals as Uint8Array[]) :\n    vals as TypedArray;\n  const inBuf = buffer(shape, dtype, decodedData);\n  const outBuf = buffer(size, dtype);\n  for (let i = 0; i < outBuf.size; ++i) {\n    const outLoc = outBuf.indexToLoc(i);\n    const inLoc = outLoc.map((idx: number, j) => idx + begin[j]);\n    outBuf.set(inBuf.get(...inLoc), ...outLoc);\n  }\n  if (dtype === 'string') {\n    return backend_util.fromStringArrayToUint8(outBuf.values as string[]);\n  }\n  return outBuf.values as TypedArray;\n}\n\nexport function slice(\n  args: {inputs: SliceInputs, backend: MathBackendCPU, attrs: SliceAttrs}):\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {begin, size} = attrs;\n  assertNotComplex(x, 'slice');\n  const [$begin, $size] = slice_util.parseSliceParams(x, begin, size);\n  slice_util.assertParamsValid(x, $begin, $size);\n  const vals = backend.data.get(x.dataId).values;\n  const outVals = sliceImpl(vals, $begin, $size, x.shape, x.dtype);\n  return backend.makeTensorInfo($size, x.dtype, outVals);\n}\n\nexport const sliceConfig: KernelConfig = {\n  kernelName: Slice,\n  backendName: 'cpu',\n  kernelFunc: slice as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\nimport
```

```
{createSimpleBinaryKernelImpl} from './utils/binary_impl';\nimport {binaryKernelFunc} from
 './utils/binary_utils';\n\nexport const squaredDifferenceImpl = createSimpleBinaryKernelImpl(((a, b) => {\n const
diff = a - b;\n return diff * diff;\n}));\n\nexport const squaredDifference =\n  binaryKernelFunc(SquaredDifference,
squaredDifferenceImpl);\n\nexport const squaredDifferenceConfig: KernelConfig = {\n kernelName:
SquaredDifference,\n backendName: 'cpu',\n kernelFunc: squaredDifference\n};\n", "/*\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {buffer, Rank, TensorBuffer} from '@tensorflow/tfjs-core';\n\nexport function stridedSliceImpl<R
extends Rank>(\n  outShape: number[], xBuf: TensorBuffer<R>, strides: number[],\n  begin: number[]):
TensorBuffer<R> {\n  const outBuf = buffer(outShape, xBuf.dtype);\n  for (let i = 0; i < outBuf.size; i++) {\n
const loc = outBuf.indexToLoc(i);\n  const newLoc: number[] = new Array(loc.length);\n  for (let j = 0; j <
newLoc.length; j++) {\n    newLoc[j] = loc[j] * strides[j] + begin[j];\n  }\n  outBuf.set(xBuf.get(...newLoc),
...loc);\n }\n  return outBuf as TensorBuffer<R>;\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\n\nimport {createSimpleBinaryKernelImpl} from
 './utils/binary_impl';\nimport {binaryKernelFunc, createComplexBinaryKernelImpl} from
 './utils/binary_utils';\n\nexport const subImpl =\n  createSimpleBinaryKernelImpl(((aValue, bValue) => aValue -
bValue));\n\nexport const subComplexImpl =\n  createComplexBinaryKernelImpl(((aReal, aImag, bReal, bImag) =>
{\n  return {real: aReal - bReal, imag: aImag - bImag};\n }));\n\nexport const sub = binaryKernelFunc(Sub,
subImpl, subComplexImpl);\n\nexport const subConfig: KernelConfig = {\n kernelName: Sub,\n backendName:
'cpu',\n kernelFunc: sub\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {buffer, DataType, Rank, TensorBuffer} from '@tensorflow/tfjs-core';\n\n/*\n * An implementation
of the tile kernel shared between webgl and cpu for string\n * tensors only.\n */\n\nexport function tileImpl<R
extends Rank>(\n  xBuf: TensorBuffer<R, DataType>,\n  reps: number[]): TensorBuffer<R, DataType> {\n  const
newShape: number[] = new Array(xBuf.rank);\n  for (let i = 0; i < newShape.length; i++) {\n    newShape[i] =
xBuf.shape[i] * reps[i];\n  }\n  const result = buffer(newShape, xBuf.dtype);\n  for (let i = 0; i < result.values.length;
++i) {\n    const newLoc = result.indexToLoc(i);\n    const originalLoc: number[] = new Array(xBuf.rank);\n    for
(let j = 0; j < originalLoc.length; j++) {\n      originalLoc[j] = newLoc[j] % xBuf.shape[j];\n    }\n    const
originalIndex = xBuf.locToIndex(originalLoc);\n    result.values[i] = xBuf.values[originalIndex];\n  }\n  return
result as TensorBuffer<R, DataType>;\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
```


Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\n/** An implementation of the TopK kernel shared between webgl and cpu. */\nimport { buffer, NumericDataType, Rank, ShapeMap, Tensor, TensorBuffer, TypedArray, util } from '@tensorflow/tfjs-core';\nexport function topKImpl<T extends Tensor, R extends Rank>(x: TypedArray, xShape: number[], xDtype: NumericDataType, k: number, sorted: boolean): [TensorBuffer<R, NumericDataType>, TensorBuffer<R, 'int32'>] {\n  // Reshape into a 2d tensor [batch, lastDim] and compute topk along lastDim.\n  const lastDim = xShape[xShape.length - 1];\n  const [batch, size] = [x.length / lastDim, lastDim];\n  const allTopKVals = util.getTypedArrayFromDType(xDtype, batch * k);\n  const allTopKIndices = util.getTypedArrayFromDType('int32', batch * k);\n  for (let b = 0; b < batch; b++) {\n    const offset = b * size;\n    const vals = x.subarray(offset, offset + size);\n    const valAndInd: Array<{ value: number, index: number }> = [];\n    for (let i = 0; i < vals.length; i++) {\n      valAndInd.push({ value: vals[i], index: i });\n    }\n    valAndInd.sort((a, b) => b.value - a.value);\n    const outOffset = b * k;\n    const topKVals = allTopKVals.subarray(outOffset, outOffset + k);\n    const topKIndices = allTopKIndices.subarray(outOffset, outOffset + k);\n    for (let i = 0; i < k; i++) {\n      topKVals[i] = valAndInd[i].value;\n      topKIndices[i] = valAndInd[i].index;\n    }\n  }\n  // Reshape back to the original input shape, except that the last\n  // dimension is k.\n  const outputShape = xShape.slice();\n  outputShape[outputShape.length - 1] = k;\n  return [buffer(outputShape as ShapeMap[R], xDtype, allTopKVals),\n    buffer(outputShape as ShapeMap[R], 'int32', allTopKIndices)];\n}\n\n/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { BackendValues, DataType, TensorBuffer, TypedArray, util } from '@tensorflow/tfjs-core';\nexport function uniqueImpl(values: BackendValues, axis: number, shape: number[], dtype: DataType): {\n  outputValues: BackendValues,\n  outputShape: number[],\n  indices: BackendValues\n} {\n  // Normalize and validate axis.\n  const $axis = util.parseAxisParam(axis, shape)[0];\n  // Calculate the new shape that is suitable for extracting data along the\n  // given axis.\n  //\n  // The rank is 3.\n  // The size of the 1st dimension is the size of all the axes < the given axis.\n  // The size of the 2nd dimension is the same as the size of the given axis.\n  // The size of the 3rd dimension is the size of all the axes > the given axis.\n  //\n  // For example, for a 4D tensor with shape=[2, 3, 5, 4] and axis=2, the\n  // newShape would be: [2*3, 5, 4].\n  //\n  // Note that this is not the final output shape. This will be the shape for an\n  // intermediate TensorBuffer (see inputBuffer below) to allow us to extract\n  // values along the given axis. To demonstrate how it works, consider the\n  // following example:\n  //\n  // Input: a 3D tensor, with shape [1, 2, 3]\n  //\n  // [1,2,3], [4,5,6]\n  //\n  // Axis: 2 (the last axis).\n  //\n  // Along axis 2, we expect to extract 3 tensors: [1,4], [2,5], [3,6].\n  //\n  // For this example, newShape would be: [2, 3, 1], where 2 is calculated from\n  // 1*2. The re-shaped data would look like:\n  //\n  // [1], [2], [3]\n  //\n  // [4], [5], [6]\n  //\n  // Then, we can construct a 3-level nested loop by the following dimension\n  // order to extract the values along the axis (dimension1):\n  // i: dimension1 // 0,1,2\n  // (newShape[1])\n  // m: dimension0 // 0,1 (newShape[0])\n  // n: dimension2 // 0 (newShape[2])\n  //\n  //\n  //\n  // Iteration 0: data at [0, 0, 0] => \"1\"\n  // Iteration 1: data at [1, 0, 0] => \"4\"\n  // Iteration 2: data at [0, 1, 0] => \"2\"\n  // Iteration 3: data at [1, 1, 0] => \"5\"\n  // We
```

```

got [2,5].\n // Iteration 4: data at [0, 2, 0] => \"3\"\n // Iteration 5: data at [1, 2, 0] => \"6\"\n // We got [3,6].\n
const newShape = [1, shape[0], 1];\n for (let i = 0; i < $axis; i++) {\n  newShape[0] *= shape[i];\n }\n
newShape[1] = shape[$axis];\n for (let i = $axis + 1; i < shape.length; i++) {\n  newShape[2] *= shape[i];\n }\n\n
// A map from unique elements (their string representations) to their values\n // in \"indices\" (below).\n const
uniqueElements: {[key: string]: number} = {};\n // The indices of each unique element in the original tensor along
the given\n // axis. It is 1D and has the same size as the given axis.\n const indices = new
Int32Array(shape[$axis]);\n // Create a buffer so we can easily extract value at a given location.\n const
inputBuffer = new TensorBuffer(newShape, dtype, values as TypedArray);\n // The indices along the given axis
that have unique elements. This is a\n // de-duped version of \"indices\" above.\n const uniqueIndices: number[] =
[];\n const is1DTensor = newShape[0] === 1 && newShape[2] === 1;\n for (let i = 0; i < shape[$axis]; i++) {\n
// Extract values along the axis.\n  let element: string;\n  if (is1DTensor) {\n    // Fast path for 1D tensor input.\n
    element = values[i].toString();\n  } else {\n    const axisValues = [];\n    for (let m = 0; m < newShape[0]; m++) {\n
//\n      for (let n = 0; n < newShape[2]; n++) {\n        axisValues.push(inputBuffer.get(m, i, n));\n      }\n    }\n
    element = axisValues.join(',');\n  }\n  // Dedup and update various indices.\n  if (uniqueElements[element] !==
undefined) {\n    indices[i] = uniqueElements[element];\n  } else {\n    const uniqueIndex =
Object.keys(uniqueElements).length;\n    uniqueElements[element] = uniqueIndex;\n    indices[i] =
uniqueIndex;\n    uniqueIndices.push(i);\n  }\n }\n\n // Now we know where each of the unique elements are
located along the axis\n // (uniqueIndices). Extract them from input buffer and store them in the\n // output
buffer.\n const outputTmpShape = newShape.slice();\n outputTmpShape[1] =
Object.keys(uniqueElements).length;\n const outputBuffer = new TensorBuffer(outputTmpShape, dtype);\n
uniqueIndices.forEach((uniqueElementIndex, i) => {\n  for (let m = 0; m < newShape[0]; m++) {\n    for (let n =
0; n < newShape[2]; n++) {\n      outputBuffer.set(inputBuffer.get(m, uniqueElementIndex, n), m, i, n);\n    }\n
  });\n});\n\n // The output shape can be calculated from the input shape with the size of\n // the given axis replaced
by the number of unique elements along that axis.\n const outputShape = shape.slice();\n outputShape[$axis] =
outputTmpShape[1];\n\n return {\n  outputValues: outputBuffer.values as BackendValues,\n  outputShape,\n  indices,\n };}\n\n\", \"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\n// Shared functionality among backends.\nexport {simpleAbsImpl} from './kernels/Abs';\nexport {addImpl}
from './kernels/Add';\nexport {bincountImpl, bincountReduceImpl} from './kernels/Bincount_impl';\nexport
{ceilImpl} from './kernels/Ceil';\nexport {concatImpl} from './kernels/Concat_impl';\nexport {expImpl} from
 './kernels/Exp';\nexport {expm1Impl} from './kernels/Expm1';\nexport {floorImpl} from './kernels/Floor';\nexport
{gatherV2Impl} from './kernels/GatherV2_impl';\nexport {greaterImpl} from './kernels/Greater';\nexport {lessImpl}
from './kernels/Less';\nexport {linSpaceImpl} from './kernels/LinSpace_impl';\nexport {logImpl} from
 './kernels/Log';\nexport {maxImpl} from './kernels/Max_impl';\nexport {maximumImpl} from
 './kernels/Maximum';\nexport {minimumImpl} from './kernels/Minimum';\nexport {multiplyImpl} from
 './kernels/Multiply';\nexport {negImpl} from './kernels/Neg';\nexport {notEqualImpl} from
 './kernels/NotEqual';\nexport {prodImpl} from './kernels/Prod';\nexport {rangeImpl} from
 './kernels/Range_impl';\nexport {rsqrtImpl} from './kernels/Rsqrt';\nexport {sliceImpl} from
 './kernels/Slice';\nexport {squaredDifferenceImpl} from './kernels/SquaredDifference';\nexport {stridedSliceImpl}
from './kernels/StridedSlice_impl';\nexport {subImpl} from './kernels/Sub';\nexport {tileImpl} from
 './kernels/Tile_impl';\nexport {topKImpl} from './kernels/TopK_impl';\nexport {transposeImpl} from
 './kernels/Transpose_impl';\nexport {uniqueImpl} from './kernels/Unique_impl';\nexport

```

{ComplexBinaryKernelImpl, SimpleBinaryKernelImpl} from './utils/binary_types';\n", "\n/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\n// Import shared functionality from tfjs-backend-cpu without triggering\n// side effects.\n// tslint:disable-next-line: no-imports-from-dist\nimport * as shared from '@tensorflow/tfjs-backend-cpu/dist/shared';\n// tslint:disable-next-line: no-imports-from-dist\nimport {SimpleBinaryKernelImpl} from '@tensorflow/tfjs-backend-cpu/dist/shared';\n// tslint:disable-next-line: no-imports-from-dist\nimport {SimpleUnaryImpl} from '@tensorflow/tfjs-backend-cpu/dist/utils/unary_types';\n\nexport type SimpleBinaryKernelImplCPU = SimpleBinaryKernelImpl;\nexport type SimpleUnaryKernelImplCPU = SimpleUnaryImpl;\n\nconst {\n  addImpl: addImplCPU,\n  bincountImpl: bincountImplCPU,\n  bincountReduceImpl: bincountReduceImplCPU,\n  ceilImpl: ceilImplCPU,\n  concatImpl: concatImplCPU,\n  expImpl: expImplCPU,\n  expm1Impl: expm1ImplCPU,\n  floorImpl: floorImplCPU,\n  gatherV2Impl: gatherV2ImplCPU,\n  greaterImpl: greaterImplCPU,\n  lessImpl: lessImplCPU,\n  lessImplCPU,\n  linspaceImpl: linspaceImplCPU,\n  logImpl: logImplCPU,\n  maxImpl: maxImplCPU,\n  maximumImpl: maximumImplCPU,\n  minimumImpl: minimumImplCPU,\n  multiplyImpl: multiplyImplCPU,\n  negImpl: negImplCPU,\n  prodImpl: prodImplCPU,\n  rangeImpl: rangeImplCPU,\n  rsqrtImpl: rsqrtImplCPU,\n  simpleAbsImpl: simpleAbsImplCPU,\n  sliceImpl: sliceImplCPU,\n  stridedSliceImpl: stridedSliceImplCPU,\n  subImpl: subImplCPU,\n  tileImpl: tileImplCPU,\n  topKImpl: topKImplCPU,\n  transposeImpl: transposeImplCPU,\n  uniqueImpl: uniqueImplCPU,\n} = shared;\n\nexport {\n  addImplCPU,\n  bincountImplCPU,\n  bincountReduceImplCPU,\n  ceilImplCPU,\n  concatImplCPU,\n  expImplCPU,\n  expm1ImplCPU,\n  floorImplCPU,\n  gatherV2ImplCPU,\n  greaterImplCPU,\n  lessImplCPU,\n  linspaceImplCPU,\n  logImplCPU,\n  maxImplCPU,\n  maximumImplCPU,\n  minimumImplCPU,\n  multiplyImplCPU,\n  negImplCPU,\n  prodImplCPU,\n  simpleAbsImplCPU,\n  sliceImplCPU,\n  stridedSliceImplCPU,\n  subImplCPU,\n  rangeImplCPU,\n  rsqrtImplCPU,\n  tileImplCPU,\n  topKImplCPU,\n  transposeImplCPU,\n  uniqueImplCPU,\n};\n", "\n/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nexport function getVecChannels(name: string, rank: number): string[] {\n  return ['x', 'y', 'z', 'w', 'u', 'v'].slice(0, rank).map(d => `${name}.${d}`);\n}\n\nexport function getChannels(name: string, rank: number): string[] {\n  if (rank === 1) {\n    return [name];\n  }\n  return getVecChannels(name, rank);\n}\n\nexport function getSourceCoords(rank: number, dims: string[]): string {\n  if (rank === 1) {\n    return 'rc';\n  }\n  let coords = '';\n  for (let i = 0; i < rank; i++) {\n    coords += dims[i];\n    if (i < rank - 1) {\n      coords += ',';\n    }\n  }\n  return coords;\n}\n", "\n/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getChannels} from './packing_util';\nimport
{getCoordsDataType} from './shader_compiler';\n\nexport class PackProgram implements GPGPUProgram {\n
variableNames = ['A'];\n outputShape: number[];\n userCode: string;\n packedInputs = false;\n packedOutput =
true;\n\n constructor(\n   outputShape:\n   number[]) { //
TODO(https://github.com/tensorflow/tfjs/issues/893):\n           // Only input / output 3D tensors.\n
this.outputShape = outputShape;\n   const rank = outputShape.length;\n\n   if (rank === 0) {\n   this.userCode =
`\n   void main() {\n   setOutput(vec4(getA(), 0., 0., 0.));\n   }\n   `;\n   } else {\n   const channels =
getChannels('rc', rank);\n   const dtype = getCoordsDataType(rank);\n   const outOfBoundsCondition = \n
getOutOfBoundsCondition(rank, outputShape, channels);\n   const setup = getSetup(\n   rank,
outputShape[outputShape.length - 1],\n   outputShape[outputShape.length - 2], channels);\n   const output =
getOutput(outputShape, channels);\n\n   this.userCode = `\n   void main() {\n   ${dtype} rc =
getOutputCoords();\n   if(${outOfBoundsCondition}) {\n   setOutput(vec4(0));\n   } else {\n
${setup}\n   setOutput(vec4(${output}));\n   }\n   }\n   `;\n   }\n   }\n\nfunction
getSourceCoordsArr(rank: number, dims: string[]): string[] {\n   const coords = [];\n\n   for (let row = 0; row <= 1;
row++) {\n   for (let col = 0; col <= 1; col++) {\n   let coord = `${row === 0 ? 'r' : 'rp1'}`, ${col === 0 ? 'c' :
'cp1'}`;\n\n   for (let d = 2; d < rank; d++) {\n   coord = `${dims[dims.length - 1 - d]},` + coord;\n   }\n\n
coords.push(coord);\n   }\n   }\n   return coords;\n   }\n\nfunction getOutOfBoundsCondition(\n   rank: number, shape:
number[], dims: string[]): string {\n   if (rank === 1) {\n   return `rc > ${shape[0]}`;\n   }\n\n   let cond = ";\n   for (let
i = rank - 2; i < rank; i++) {\n   cond += `${dims[i]} >= ${shape[i]}`;\n   if (i < rank - 1) {\n   cond += "||";\n   }\n
}\n\n   return cond;\n   }\n\nfunction getSetup(\n   rank: number, cols: number, rows: number, dims: string[]): string
{\n   if (rank === 1) {\n   return ";\n   }\n\n   const innerDims = dims.slice(-2);\n\n   return `\n   int r =
${innerDims[0]};\n   int c = ${innerDims[1]};\n   int rp1 = r + 1;\n   int cp1 = c + 1;\n\n   bool cEdge = cp1 >=
${cols};\n   bool rEdge = rp1 >= ${rows};\n   `;\n   }\n\nfunction getOutput(shape: number[], dims: string[]): string
{\n   const rank = shape.length;\n   const sourceCoords = getSourceCoordsArr(rank, dims);\n   if (rank === 1) {\n
return `getA(rc),\n   rc + 1 >= ${shape[0]} ? 0. : getA(rc + 1),\n   0, 0`;\n   }\n\n   return
`getA(${sourceCoords[0]},\n   cEdge ? 0. : getA(${sourceCoords[1]},\n   rEdge ? 0. :
getA(${sourceCoords[2]}),\n   rEdge || cEdge ? 0. : getA(${sourceCoords[3]})`;\n   }\n   }"/**\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====

```

```

=====
*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport * as shader_util from
'/shader_compiler_util';\n\nexport class ReshapePackedProgram implements GPGPUProgram {\n
variableNames =
['A'];\n packedInputs = true;\n packedOutput = true;\n outputShape: number[];\n userCode: string;\n\n
constructor(outputShape: [number, number, number], inputShape: [\n   number, number, number\n   ]) {\n
this.outputShape = outputShape;\n\n   let mainLoop = ``;\n   for (let i = 0; i < 4; i++) {\n   let thisRC = `thisRC =
rc`;\n   if (i % 2 === 1) {\n   thisRC += `thisRC.z += 1`;\n   }\n   if (i > 1) {\n   thisRC += `thisRC.y +=
1`;\n   }\n\n   mainLoop += `\n   ${thisRC}\n   ${i > 0 ? `if(thisRC.y < rows && thisRC.z < cols)` : ``}`;\n\n
int flatIndex = getFlatIndex(thisRC);\n   ivec3 inputRC =
inputCoordsFromReshapedOutCoords(flatIndex);\n   vec2 inputRCInnerDims =
vec2(float(inputRC.y),float(inputRC.z));\n\n   result[${i}] =\n   getChannel(getA(inputRC.x, inputRC.y,
inputRC.z), inputRCInnerDims);\n   ${i > 0 ? '}' : ''};\n   }\n\n   this.userCode = `\n
${getReshapedInputCoords(inputShape)}\n   ${shader_util.getFlatIndexFrom3D(outputShape)}\n\n   void
main() {\n   ivec3 rc = getOutputCoords();\n\n   vec4 result = vec4(0.); \n   ivec3 thisRC;\n   int rows =

```

```

    int cols = ${outputShape[2]};
    ${mainLoop}
    setOutput(result);
}
}
function getReshapedInputCoords(shape: [number, number, number]): string {
  const coordsFromIndexSnippet =
    shader_util.getLogicalCoordinatesFromFlatIndex(['r', 'c', 'd'], shape);
  return `ivec3 inputCoordsFromReshapedOutCoords(int index) {
    ${coordsFromIndexSnippet}
    return ivec3(r, c, d);
  }`;
}
"/**
 * @license
 * Copyright 2017 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */

```

```

=====
import {env} from '@tensorflow/tfjs-core';
import {GPGPUContext} from './gpgpu_context';
import {getInternalFormatForFloat16MatrixTexture, getInternalFormatForFloat16PackedMatrixTexture,
getInternalFormatForFloat32MatrixTexture, getInternalFormatForPackedMatrixTexture,
getInternalFormatForUnsignedBytesMatrixTexture} from './gpgpu_util';
import {getPackedMatrixTextureShapeWidthHeight, getUnpackedMatrixTextureShapeWidthHeight, PhysicalTextureType,
TextureConfig, TextureUsage} from './tex_util';
export class TextureManager {
  private numUsedTextures = 0;
  private numFreeTextures = 0;
  private _numBytesAllocated = 0;
  private _numBytesFree = 0; // How many bytes that have been allocated
  // are available for reuse.
  private freeTextures: {[shape: string]: WebGLTexture[]} = {};
  private logEnabled = false;
  private usedTextures: {[shape: string]: WebGLTexture[]} = {};
  constructor(private gpgpu: GPGPUContext) {}
  acquireTexture(shapeRC: [number, number], usage: TextureUsage, isPacked: boolean): WebGLTexture {
    const physicalTexType = getPhysicalFromLogicalTextureType(usage, isPacked);
    const shapeKey = getKeyFromTextureShape(shapeRC, physicalTexType, isPacked);
    if (!(shapeKey in this.freeTextures)) {
      this.freeTextures[shapeKey] = [];
    }
    if (!(shapeKey in this.usedTextures)) {
      this.usedTextures[shapeKey] = [];
    }
    const texBytes = computeBytes(shapeRC, physicalTexType, this.gpgpu.gl, this.gpgpu.textureConfig, isPacked);
    if (this.freeTextures[shapeKey].length > 0) {
      this.numFreeTextures--;
      this.numUsedTextures++;
      this._numBytesFree -= texBytes;
      this.log();
      const newTexture = this.freeTextures[shapeKey].shift();
      this.usedTextures[shapeKey].push(newTexture);
      return newTexture;
    }
    let newTexture: WebGLTexture;
    if (physicalTexType === PhysicalTextureType.PACKED_2X2_FLOAT32) {
      newTexture = this.gpgpu.createPackedMatrixTexture(shapeRC[0], shapeRC[1]);
    } else if (physicalTexType === PhysicalTextureType.PACKED_2X2_FLOAT16) {
      newTexture = this.gpgpu.createFloat16PackedMatrixTexture(shapeRC[0], shapeRC[1]);
    } else if (physicalTexType === PhysicalTextureType.UNPACKED_FLOAT32) {
      newTexture = this.gpgpu.createFloat32MatrixTexture(shapeRC[0], shapeRC[1]);
    } else if (physicalTexType === PhysicalTextureType.UNPACKED_FLOAT16) {
      newTexture = this.gpgpu.createFloat16MatrixTexture(shapeRC[0], shapeRC[1]);
    } else if (physicalTexType === PhysicalTextureType.PACKED_4X1_UNSIGNED_BYTE) {
      newTexture = this.gpgpu.createUnsignedBytesMatrixTexture(shapeRC[0], shapeRC[1]);
    }
    this.usedTextures[shapeKey].push(newTexture);
    this.numUsedTextures++;
    this._numBytesAllocated += texBytes;
    this.log();
    return newTexture;
  }
  releaseTexture(texture: WebGLTexture, shape: [number, number], logicalTexType: TextureUsage, isPacked: boolean): void {
    if (this.freeTextures == null) {
      // Already disposed.
      return;
    }
    const physicalTexType = getPhysicalFromLogicalTextureType(logicalTexType, isPacked);
    const shapeKey = getKeyFromTextureShape(shape, physicalTexType, isPacked);
    if (!(shapeKey in this.freeTextures)) {
      this.freeTextures[shapeKey] = [];
    }
    const texBytes = computeBytes(shape, physicalTexType,

```

```

this.gpgpu.gl, this.gpgpu.textureConfig, \n    isPacked); \n    const deleteTexThreshold =
env().get('WEBGL_DELETE_TEXTURE_THRESHOLD'); \n    if (deleteTexThreshold !== -1 && \n
this._numBytesAllocated > deleteTexThreshold) { \n    this.gpgpu.deleteMatrixTexture(texture); \n
this._numBytesAllocated -= texBytes; \n    } else { \n    this.freeTextures[shapeKey].push(texture); \n
this.numFreeTextures++; \n    this._numBytesFree += texBytes; \n    } \n \n    this.numUsedTextures--; \n \n    const
texList = this.usedTextures[shapeKey]; \n    const texIndex = texList.indexOf(texture); \n    if (texIndex < 0) { \n
throw new Error(\n        'Cannot release a texture that was never provided by this ' + \n        'texture manager'); \n
} \n    texList.splice(texIndex, 1); \n    this.log(); \n    } \n \n    private log() { \n    if (!this.logEnabled) { \n    return; \n
} \n    const total = this.numFreeTextures + this.numUsedTextures; \n    console.log(\n        'Free/Used',
`${this.numFreeTextures} / ${this.numUsedTextures}`, \n        `${total}`); \n    const freeRatio =
this._numBytesFree / this._numBytesAllocated; \n    console.log(`Bytes allocated: ${this._numBytesAllocated}`); \n
console.log(`Bytes unused: ${this._numBytesFree} (${ \n        Math.round(100 * freeRatio)}%)`); \n    } \n \n    get
numBytesAllocated(): number { \n    return this._numBytesAllocated; \n    } \n \n    get numBytesFree(): number { \n
return this._numBytesFree; \n    } \n \n    getNumUsedTextures(): number { \n    return this.numUsedTextures; \n    } \n \n
getNumFreeTextures(): number { \n    return this.numFreeTextures; \n    } \n \n    dispose() { \n    if (this.freeTextures ===
null) { \n    // Already disposed. \n    return; \n    } \n    for (const texShape in this.freeTextures) { \n
this.freeTextures[texShape].forEach(tex => { \n        this.gpgpu.deleteMatrixTexture(tex); \n    }); \n    } \n    for
(const texShape in this.usedTextures) { \n    this.usedTextures[texShape].forEach(tex => { \n
this.gpgpu.deleteMatrixTexture(tex); \n    }); \n    } \n    this.freeTextures = null; \n    this.usedTextures = null; \n
this.numUsedTextures = 0; \n    this.numFreeTextures = 0; \n    this._numBytesAllocated = 0; \n
this._numBytesFree = 0; \n    } \n \n \n    function numBytesForInternalFormat(\n    gl: WebGLRenderingContext,
internalFormat: number): number { \n    // tslint:disable-next-line:no-any \n    const glany = gl as any; \n    if
(internalFormat === glany.R32F) { \n    return 4; \n    } else if (internalFormat === glany.R16F) { \n    return 2; \n
} else if (internalFormat === glany.RGBA32F) { \n    return 16; \n    } else if (internalFormat === gl.RGBA) { \n
return 16; \n    } else if (internalFormat === glany.RGBA16F) { \n    return 8; \n    } \n    throw new Error(`Unknown
internal format ${internalFormat}`); \n    } \n \n \n    export function computeBytes(\n    shape: [number, number],
physicalTexType: PhysicalTextureType, \n    gl: WebGLRenderingContext, textureConfig: TextureConfig, \n
isPacked: boolean): number { \n    // It is not possible to infer packed status from the texture type because \n //
depending on the textureConfig, different texture types may resolve to the \n // same internal format (e.g. in
WebGL1, the internal format for \n // UNPACKED_FLOAT16 textures is gl.RGBA). Therefore we pass in
`isPacked` \n // explicitly. \n    const internalFormat = \n        internalFormatForPhysicalTexType(physicalTexType,
textureConfig); \n \n    let numElements: number; \n    if (isPacked) { \n    const [packedWidth, packedHeight] = \n
getPackedMatrixTextureShapeWidthHeight(shape[0], shape[1]); \n    numElements = packedWidth *
packedHeight; \n \n    } else { \n    const [width, height] = \n
getUnpackedMatrixTextureShapeWidthHeight(shape[0], shape[1]); \n    numElements = width * height; \n    } \n \n
const bytesPerElement = numBytesForInternalFormat(gl, internalFormat); \n    return numElements *
bytesPerElement; \n    } \n \n \n    function internalFormatForPhysicalTexType(\n    physicalTexType:
PhysicalTextureType, \n    textureConfig: TextureConfig): number { \n    switch (physicalTexType) { \n    case
PhysicalTextureType.PACKED_2X2_FLOAT32: \n    return
getInternalFormatForPackedMatrixTexture(textureConfig); \n    case
PhysicalTextureType.PACKED_2X2_FLOAT16: \n    return
getInternalFormatForFloat16PackedMatrixTexture(textureConfig); \n    case
PhysicalTextureType.UNPACKED_FLOAT32: \n    return
getInternalFormatForFloat32MatrixTexture(textureConfig); \n    case
PhysicalTextureType.UNPACKED_FLOAT16: \n    return
getInternalFormatForFloat16MatrixTexture(textureConfig); \n    case
PhysicalTextureType.PACKED_4X1_UNSIGNED_BYTE: \n    return
getInternalFormatForUnsignedBytesMatrixTexture(textureConfig); \n    default: \n    throw new Error(`Unknown

```



```

true;\n\n constructor(aShape: number[], opSnippet: string) {\n  this.outputShape = aShape;\n  this.userCode = `\n
  vec4 unaryOperation(vec4 x) {\n    ${opSnippet}\n  }\n\n  void main() {\n    vec4 x =
  getAAtOutCoords());\n    vec4 y = unaryOperation(x);\n    setOutput(y);\n  }\n  `;\n }\n}\n"/**\n *
  @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
  2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
  the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getChannels, getSourceCoords} from
 './packing_util';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class UnpackProgram
  implements GPGPUProgram {\n  variableNames = ['A'];\n  packedInputs = true;\n  packedOutput = false;\n
  outputShape: number[];\n  userCode: string;\n\n  constructor(outputShape: number[]) {\n    this.outputShape =
  outputShape;\n    const rank = outputShape.length;\n    const channels = getChannels('rc', rank);\n    const dtype =
  getCoordsDataType(rank);\n    const sourceCoords = getSourceCoords(rank, channels);\n    const innerDims =
  channels.slice(-2);\n    const coords = rank <= 1 ? 'rc' : `vec2(${innerDims.join(',')}`);\n    this.userCode = `\n
  void main() {\n    ${dtype} rc = getOutputCoords();\n    vec4 packedInput = getA(${sourceCoords});\n    setOutput(getChannel(packedInput, ${coords}));\n  }\n  `;\n }\n}\n"/**\n *
  @license\n * Copyright 2017
  Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
  may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
  http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
  software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
  governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\n// Import webgl flags.\nimport './flags_webgl';\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport
 {backend_util, BackendValues, buffer, DataId, DataStorage, DataType, DataValues, engine, env, kernel_impls,
  KernelBackend, MemoryInfo, NumericDataType, Rank, RecursiveArray, scalar, ShapeMap, Tensor, Tensor2D,
  TensorBuffer, TensorInfo, tidy, TimingInfo, TypedArray, util} from '@tensorflow/tfjs-core';\nimport
 {getWebGLContext} from './canvas_util';\nimport {DecodeMatrixProgram} from './decode_matrix_gpu';\nimport
 {DecodeMatrixPackedProgram} from './decode_matrix_packed_gpu';\nimport {EncodeFloatProgram} from
 './encode_float_gpu';\nimport {EncodeFloatPackedProgram} from './encode_float_packed_gpu';\nimport
 {EncodeMatrixProgram} from './encode_matrix_gpu';\nimport {EncodeMatrixPackedProgram} from
 './encode_matrix_packed_gpu';\nimport {GPGPUContext} from './gpgpu_context';\nimport * as gpgpu_math from
 './gpgpu_math';\nimport {GPGPUBinary, GPGPUProgram, TensorData} from './gpgpu_math';\nimport
 {simpleAbsImplCPU} from './kernel_utils/shared';\nimport {PackProgram} from './pack_gpu';\nimport
 {ReshapePackedProgram} from './reshape_packed_gpu';\nimport * as tex_util from './tex_util';\nimport
 {TextureData, TextureUsage} from './tex_util';\nimport {TextureManager} from './texture_manager';\nimport *
  as unary_op from './unaryop_gpu';\nimport {UnaryOpProgram} from './unaryop_gpu';\nimport
 {UnaryOpPackedProgram} from './unaryop_packed_gpu';\nimport {UnpackProgram} from './unpack_gpu';\nimport
 * as webgl_util from './webgl_util';\n\nconst whereImpl = kernel_impls.whereImpl;\n\nexport const
  EPSILON_FLOAT32 = 1e-7;\nexport const EPSILON_FLOAT16 = 1e-4;\n\nexport type KernelInfo = {\n  name: string;\n
  query: Promise<number>;\n};\n\nexport type TimerNode = RecursiveArray<KernelInfo>|KernelInfo;\n\nexport
  interface CPUMeterQuery {\n  startMs: number;\n  endMs?: number;\n}\n\nexport interface WebGLMemoryInfo
  extends MemoryInfo {\n  numBytesInGPU: number;\n  // Tracks the total number of bytes allocated on the GPU,
  accounting for the\n  // physical texture type.\n  numBytesInGPUAllocated: number;\n  // Tracks byte size of
  textures that were created and then made available for\n  // reuse (disposed).\n  numBytesInGPUFree: number;\n

```



```

unreliable: boolean;\n}\n\nexport interface WebGLTimingInfo extends TimingInfo {\n  uploadWaitMs: number;\n  downloadWaitMs: number;\n}\n\nconst binaryCaches: {[webGLVersion: string]: {[key: string]: GPGPUBinary}} =
{\n}\n\nexport function getBinaryCache(webGLVersion: number) {\n  if (webGLVersion in binaryCaches) {\n    return binaryCaches[webGLVersion];\n  }\n  binaryCaches[webGLVersion] = {};\n  return
binaryCaches[webGLVersion];\n}\n\n// Empirically determined constant used to determine size threshold for
handling\n// off execution to the CPU.\nconst CPU_HANDOFF_SIZE_THRESHOLD = 128;\n\n// Empirically
determined constant used to decide the number of MB on GPU\n// before we warn about high memory use. The MB
are this constant * screen area\n// * dpi / 1024 / 1024.\nconst BEFORE_PAGING_CONSTANT = 600;\n\nfunction
numMBBeforeWarning(): number {\n  if (env().global.screen == null) {\n    return 1024; // 1 GB.\n  }\n  return
(env().global.screen.height * env().global.screen.width *\n    window.devicePixelRatio) *\n  BEFORE_PAGING_CONSTANT / 1024 / 1024;\n}\n\nexport class MathBackendWebGL extends KernelBackend
{\n  texData: DataStorage<TextureData>;\n  gpgpu: GPGPUContext;\n\n  private static nextDataId = 0;\n  private
nextDataId(): number {\n    return MathBackendWebGL.nextDataId++;\n  }\n  // Maps data ids that have a pending
read operation, to list of subscribers.\n  private pendingRead = new WeakMap<DataId, Array<(arr: TypedArray) =>
void>>();\n  // List of data ids that are scheduled for disposal, but are waiting on a\n  // pending read operation.\n
private pendingDisposal = new WeakSet<DataId>;\n\n  // Used to count the number of 'shallow' sliced tensors that
point to the\n  // same data id.\n  dataRefCount = new WeakMap<DataId, number>();\n  private numBytesInGPU =
0;\n\n  private canvas: HTMLCanvasElement|OffscreenCanvas;\n\n  private programTimersStack: TimerNode[];\n
private activeTimers: TimerNode[];\n  // Accumulated time spent (including blocking) in uploading data to webgl.\n
private uploadWaitMs = 0;\n  // Accumulated time spent (including blocking in downloading data from webgl.\n
private downloadWaitMs = 0;\n  private cpuBackend: KernelBackend;\n\n  // Number of bits of precision of this
backend.\n  private floatPrecisionValue: 32|16;\n\n  private textureManager: TextureManager;\n  private
binaryCache: {[key: string]: GPGPUBinary};\n  private gpgpuCreatedLocally: boolean;\n  private
numMBBeforeWarning: number;\n  private warnedAboutMemory = false;\n  private warnedAboutCPUBackend =
false;\n\n  constructor(gpgpu?: GPGPUContext) {\n    super();\n    if (!env().getBool('HAS_WEBGL')) {\n      throw
new Error('WebGL is not supported on this device');\n    }\n\n    if (gpgpu == null) {\n      const gl =
getWebGLContext(env().getNumber('WEBGL_VERSION'));\n      this.binaryCache =
getBinaryCache(env().getNumber('WEBGL_VERSION'));\n      this.gpgpu = new GPGPUContext(gl);\n      this.canvas =
gl.canvas;\n      this.gpgpuCreatedLocally = true;\n    } else {\n      this.gpgpu = gpgpu;\n      this.binaryCache =
{};\n      this.gpgpuCreatedLocally = false;\n      this.canvas = gpgpu.gl.canvas;\n    }\n\n    this.textureManager =
new TextureManager(this.gpgpu);\n    this.numMBBeforeWarning =
numMBBeforeWarning();\n\n    this.texData = new DataStorage(this, engine());\n  }\n\n  numDataIds() {\n    return
this.texData.numDataIds() +\n      (this.cpuBackend ? this.cpuBackend.numDataIds() : 0) -\n      this.pendingDeletes;\n  }\n\n  write(values: BackendValues, shape: number[], dtype: DataType): DataId {\n    if
(env().getBool('WEBGL_CHECK_NUMERICAL_PROBLEMS') ||\n      env().getBool('DEBUG')) {\n      this.checkNumericalProblems(values);\n    }\n\n    if (dtype === 'complex64' && values != null) {\n      throw new
Error(\n      `Cannot write to a complex64 dtype. ` +\n      `Please use tf.complex(real, imag).`);\n    }\n\n    const
dataId = {id: this.nextDataId()};\n    this.texData.set(\n      dataId,\n      {shape, dtype, values, usage:
TextureUsage.UPLOAD, refCount: 1});\n    return dataId;\n  }\n\n  /** Return refCount of a `TensorData`. */\n
refCount(dataId: DataId): number {\n    if (this.texData.has(dataId)) {\n      const tensorData =
this.texData.get(dataId);\n      return tensorData.refCount;\n    }\n    return 0;\n  }\n\n  /** Increase refCount of a
`TextureData`. */\n  incRef(dataId: DataId): void {\n    const texData = this.texData.get(dataId);\n    texData.refCount++;\n  }\n\n  /** Decrease refCount of a `TextureData`. */\n  decRef(dataId: DataId): void {\n    if
(this.texData.has(dataId)) {\n      const texData = this.texData.get(dataId);\n      texData.refCount--;\n    }\n  }\n\n  move(\n    dataId: DataId, values: BackendValues, shape: number[], dtype: DataType,\n    refCount: number):
void {\n    if (env().getBool('DEBUG')) {\n      this.checkNumericalProblems(values);\n    }\n\n    if (dtype ===
'complex64') {\n      throw new Error(\n      `Cannot write to a complex64 dtype. ` +\n      `Please use
tf.complex(real, imag).`);\n    }\n\n    this.texData.set(\n      dataId, {shape, dtype, values, usage:

```

```

TextureUsage.UPLOAD, refCount});\n }\n\n disposeIntermediateTensorInfo(tensorInfo: TensorInfo): void {\n
this.disposeData(tensorInfo.dataId);\n }\n\n readSync(dataId: DataId): BackendValues {\n  const texData =
this.texData.get(dataId);\n  const { values, dtype, complexTensorInfos, slice, shape, isPacked } = texData;\n\n  //
The presence of `slice` indicates this tensor is a shallow slice of a\n  // different tensor, and is using that original
tensor's texture. Run\n  // `clone` in order to copy that texture and read from it.\n  if (slice != null) {\n    let
program;\n    if (isPacked) {\n      program = new UnaryOpPackedProgram(shape, unary_op.CLONE);\n    } else
{\n      program = new UnaryOpProgram(shape, unary_op.CLONE);\n    }\n    const res =\n
this.runWebGLProgram(program, [{dataId, shape, dtype}], dtype);\n    const data = this.readSync(res.dataId);\n
this.disposeIntermediateTensorInfo(res);\n    return data;\n  }\n  if (values != null) {\n    return
this.convertAndCacheOnCPU(dataId);\n  }\n  if (dtype === 'string') {\n    return values;\n  }\n  const
shouldTimeProgram = this.activeTimers != null;\n  let start: number;\n  if (shouldTimeProgram) {\n    start =
util.now();\n  }\n\n  let result: Float32Array;\n  if (dtype === 'complex64') {\n    const realValues =\n
this.readSync(complexTensorInfos.real.dataId) as Float32Array;\n    const imagValues =\n
this.readSync(complexTensorInfos.imag.dataId) as Float32Array;\n    result =
backend_util.mergeRealAndImagArrays(realValues, imagValues);\n  } else {\n    result =
this.getValuesFromTexture(dataId);\n  }\n\n  if (shouldTimeProgram) {\n    this.downloadWaitMs += util.now()
- start;\n  }\n  return this.convertAndCacheOnCPU(dataId, result);\n }\n\n async read(dataId: DataId):
Promise<BackendValues> {\n  if (this.pendingRead.has(dataId)) {\n    const subscribers =
this.pendingRead.get(dataId);\n    return new Promise<TypedArray>(resolve => subscribers.push(resolve));\n  }\n
  const texData = this.texData.get(dataId);\n  const { values, shape, slice, dtype, complexTensorInfos, isPacked } =
texData;\n\n  // The presence of `slice` indicates this tensor is a shallow slice of a\n  // different tensor, and is
using that original tensor's texture. Run\n  // `clone` in order to copy that texture and read from it.\n  if (slice !=
null) {\n    let program;\n    if (isPacked) {\n      program = new UnaryOpPackedProgram(shape,
unary_op.CLONE);\n    } else {\n      program = new UnaryOpProgram(shape, unary_op.CLONE);\n    }\n
const res =\n      this.runWebGLProgram(program, [{dataId, shape, dtype}], dtype);\n    const data =
this.read(res.dataId);\n    this.disposeIntermediateTensorInfo(res);\n    return data;\n  }\n\n  if (values != null)
{\n    return this.convertAndCacheOnCPU(dataId);\n  }\n\n  if
(!env().getBool('WEBGL_DOWNLOAD_FLOAT_ENABLED') &&\n
env().getNumber('WEBGL_VERSION') === 2) {\n    throw new Error(\n      `tensor.data() with
WEBGL_DOWNLOAD_FLOAT_ENABLED=false and ` +\n      `WEBGL_VERSION=2 not yet supported.`);\n  }\n
  let buffer = null;\n  let tmpDownloadTarget: TensorInfo;\n\n  if (dtype !== 'complex64' &&
env().get('WEBGL_BUFFER_SUPPORTED')) {\n    // Possibly copy the texture into a buffer before inserting a
fence.\n    tmpDownloadTarget = this.decode(dataId);\n    const tmpData =
this.texData.get(tmpDownloadTarget.dataId);\n    buffer = this.gpgpu.createBufferFromTexture(\n
tmpData.texture, ...tex_util.getDenseTexShape(shape));\n  }\n\n  this.pendingRead.set(dataId, []);\n\n  if (dtype
!== 'complex64') {\n    // Create a fence and wait for it to resolve.\n    await
this.gpgpu.createAndWaitForFence();\n  }\n\n  // Download the values from the GPU.\n  let vals:
Float32Array;\n  if (dtype === 'complex64') {\n    const ps = await Promise.all([\n
this.read(complexTensorInfos.real.dataId),\n    this.read(complexTensorInfos.imag.dataId)\n  ]);\n    const
realValues = ps[0];\n    const imagValues = ps[1];\n    vals = backend_util.mergeRealAndImagArrays(\n
realValues as Float32Array, imagValues as Float32Array);\n  } else if (buffer == null) {\n    vals =
this.getValuesFromTexture(dataId);\n  } else {\n    const size = util.sizeFromShape(shape);\n    vals =
this.gpgpu.downloadFloat32MatrixFromBuffer(buffer, size);\n  }\n  if (tmpDownloadTarget != null) {\n
this.disposeIntermediateTensorInfo(tmpDownloadTarget);\n  }\n  const dTypeVals =
this.convertAndCacheOnCPU(dataId, vals);\n\n  const subscribers = this.pendingRead.get(dataId);\n
this.pendingRead.delete(dataId);\n\n  // Notify all pending reads.\n  subscribers.forEach(resolve =>
resolve(dTypeVals));\n  if (this.pendingDisposal.has(dataId)) {\n    this.pendingDisposal.delete(dataId);\n  }
if (this.disposeData(dataId)) {\n    engine().removeDataId(dataId, this);\n  }\n  this.pendingDeletes--;\n  }\n

```

```

return dTypeVals;
}

bufferSync<R extends Rank>(t: TensorInfo): TensorBuffer<R> {
  const data = this.readSync(t.dataId);
  let decodedData = data as DataValues;
  if (t.dtype === 'string') {
    try {
      // Decode the bytes into string.
      decodedData = (data as Uint8Array[]).map(d => util.decodeString(d));
    } catch {
      throw new Error('Failed to decode encoded string bytes into utf-8');
    }
  }
  return buffer(t.shape as ShapeMap[R], t.dtype, decodedData) as TensorBuffer<R>;
}

private checkNumericalProblems(values: BackendValues): void {
  if (values == null) return;
  for (let i = 0; i < values.length; i++) {
    const num = values[i] as number;
    if (!webgl_util.canBeRepresented(num)) {
      if (env().getBool('WEBGL_RENDER_FLOAT32_CAPABLE')) {
        throw Error(`The value ${num} cannot be represented with your ` +
          `current settings. Consider enabling float32 rendering: ` +
          `tf.env().set('WEBGL_RENDER_FLOAT32_ENABLED', true);`);
      }
      throw Error(`The value ${num} cannot be represented on this device.`);
    }
  }
}

private getValuesFromTexture(dataId: DataId): Float32Array {
  const {shape, dtype, isPacked} = this.texData.get(dataId);
  const size = util.sizeFromShape(shape);
  if (env().getBool('WEBGL_DOWNLOAD_FLOAT_ENABLED')) {
    const tmpTarget = this.decode(dataId);
    const tmpData = this.texData.get(tmpTarget.dataId);
    const vals = this.gpgpu.downloadMatrixFromPackedTexture(tmpData.texture,
      ...tex_util.getDenseTexShape(shape)).subarray(0, size);
    this.disposeIntermediateTensorInfo(tmpTarget);
    return vals;
  }
  const shouldUsePackedProgram = env().getBool('WEBGL_PACK') && isPacked === true;
  const outputShape = shouldUsePackedProgram ? webgl_util.getShapeAs3D(shape) : shape;
  const program = shouldUsePackedProgram ? new EncodeFloatPackedProgram(outputShape as [number, number, number]) :
    new EncodeFloatProgram(outputShape);
  const output = this.runWebGLProgram(program, [{shape: outputShape, dtype, dataId}], 'float32');
  const tmpData = this.texData.get(output.dataId);
  const vals = this.gpgpu.downloadByteEncodedFloatMatrixFromOutputTexture(tmpData.texture,
    tmpData.texShape[0], tmpData.texShape[1]).subarray(0, size);
  this.disposeIntermediateTensorInfo(output);
  return vals;
}

timerAvailable(): boolean {
  return env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_RELIABLE') > 0;
}

async time(f: () => void): Promise<WebGLTimingInfo> {
  const oldActiveTimers = this.activeTimers;
  const newActiveTimers: TimerNode[] = [];
  let outerMostTime = false;
  if (this.programTimersStack == null) {
    this.programTimersStack = newActiveTimers;
    outerMostTime = true;
  } else {
    this.activeTimers.push(newActiveTimers);
  }
  this.activeTimers = newActiveTimers;
  f();
  // needing to split these up because util.flatten only accepts certain types
  const flattenedActiveTimerQueries = util.flatten(this.activeTimers.map((d: KernelInfo) => d.query)).filter(d => d != null);
  const flattenedActiveTimerNames = util.flatten(this.activeTimers.map((d: KernelInfo) => d.name)).filter(d => d != null);
  this.activeTimers = oldActiveTimers;
  if (outerMostTime) {
    this.programTimersStack = null;
  }
  const res: WebGLTimingInfo = {
    uploadWaitMs: this.uploadWaitMs,
    downloadWaitMs: this.downloadWaitMs,
    kernelMs: null,
    wallMs: null // will be filled by the engine
  };
  if (env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_RELIABLE') > 0) {
    const kernelMs = await Promise.all(flattenedActiveTimerQueries);
    res['kernelMs'] = util.sum(kernelMs);
    res['getExtraProfileInfo'] = () => kernelMs.map((d, i) => ({name: flattenedActiveTimerNames[i], ms: d})).map(d => `${d.name}: ${d.ms}`)
      .join(', ');
  } else {
    res['kernelMs'] = {
      error: 'WebGL query timers are not supported in this environment.'
    };
  }
  this.uploadWaitMs = 0;
  this.downloadWaitMs = 0;
  return res;
}

memory(): WebGLMemoryInfo {
  return {
    unreliable: false,
    numBytesInGPU: this.numBytesInGPU,
    numBytesInGPUAllocated: this.textureManager.numBytesAllocated,
    numBytesInGPUFree: this.textureManager.numBytesFree
  } as WebGLMemoryInfo;
}

private startTimer(): WebGLQuery|CPUTimerQuery {
  if (env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_RELIABLE') > 0) {
    return this.gpgpu.beginQuery();
  }
  return {startMs: util.now(), endMs: null};
}

private endTimer(query: WebGLQuery|CPUTimerQuery): WebGLQuery|CPUTimerQuery {
  if

```

```

(env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_RELIABLE') > 0) {\n
this.gpgpu.endQuery();\n return query;\n }\n (query as CPUTimerQuery).endMs = util.now();\n return
query;\n }\n\n private async getQueryTime(query: WebGLQuery|CPUTimerQuery): Promise<number> {\n if
(env().getNumber('WEBGL_DISJOINT_QUERY_TIMER_EXTENSION_RELIABLE') > 0) {\n return
this.gpgpu.waitForQueryAndGetTime(query as WebGLQuery);\n }\n const timerQuery = query as
CPUTimerQuery;\n return timerQuery.endMs - timerQuery.startMs;\n }\n\n private pendingDeletes = 0;\n\n
/**\n * Decrease the RefCount on the dataId and dispose the memory if the dataId\n * has 0 refCount. If there are
pending read on the data, the disposal would\n * added to the pending delete queue. Return true if the dataId is
removed\n * from backend or the backend does not contain the dataId, false if the\n * dataId is not removed.
Memory may or may not be released even when dataId\n * is removed, which also depends on dataRefCount, see
`releaseGPU`\n * @param dataId\n * @oaram force Optional, remove the data regardless of refCount\n */\n
disposeData(dataId: DataId, force = false): boolean {\n if (this.pendingDisposal.has(dataId)) {\n return false;\n
}\n\n // No-op if already disposed.\n if (!this.texData.has(dataId)) {\n return true;\n }\n\n // if force flag is
set, change refCount to 0, this would ensure disposal\n // when added to the pendingDisposal queue. Memory may
or may not be\n // released, which also depends on dataRefCount, see `releaseGPU`\n if (force) {\n
this.texData.get(dataId).refCount = 0;\n } else {\n this.texData.get(dataId).refCount--;\n }\n\n if (!force &&
this.texData.get(dataId).refCount > 0) {\n return false;\n }\n\n if (this.pendingRead.has(dataId)) {\n
this.pendingDisposal.add(dataId);\n this.pendingDeletes++;\n return false;\n }\n\n
this.releaseGPUData(dataId);\n const {complexTensorInfos} = this.texData.get(dataId);\n if
(complexTensorInfos != null) {\n this.disposeData(complexTensorInfos.real.dataId, force);\n
this.disposeData(complexTensorInfos.imag.dataId, force);\n }\n\n this.texData.delete(dataId);\n\n return
true;\n }\n\n private releaseGPUData(dataId: DataId): void {\n const {texture, dtype, texShape, usage, isPacked,
slice} =\n this.texData.get(dataId);\n const key = slice && slice.origDataId || dataId;\n const refCount =
this.dataRefCount.get(key);\n\n if (refCount > 1) {\n this.dataRefCount.set(key, refCount - 1);\n } else {\n
this.dataRefCount.delete(key);\n if (texture != null) {\n this.numBytesInGPU -=
this.computeBytes(texShape, dtype);\n this.textureManager.releaseTexture(texture, texShape, usage,
isPacked);\n }\n }\n\n const texData = this.texData.get(dataId);\n texData.texture = null;\n
texData.texShape = null;\n texData.isPacked = false;\n texData.slice = null;\n }\n\n getTexture(dataId: DataId):
WebGLTexture {\n this.uploadToGPU(dataId);\n return this.texData.get(dataId).texture;\n }\n\n /**\n *
Returns internal information for the specific data bucket. Used in unit\n * tests.\n */\n
getDataInfo(dataId: DataId): TextureData {\n return this.texData.get(dataId);\n }\n\n private getCPUBackend(): KernelBackend|null
{\n if (!env().getBool('WEBGL_CPU_FORWARD')) {\n return null;\n }\n\n if (this.cpuBackend == null)
{\n this.cpuBackend = engine().findBackend('cpu');\n }\n\n return this.cpuBackend;\n }\n\n /**\n Tests
whether all the inputs to an op are small and on the CPU. This heuristic\n determines when it would be faster to
execute a kernel on the CPU. WebGL\n kernels opt into running this check and forwarding when appropriate.\n
TODO(https://github.com/tensorflow/tfjs/issues/872): Develop a more\n
sustainable strategy for optimizing
backend execution of ops.\n */\n
shouldExecuteOnCPU(inputs: TensorInfo[],\n sizeThreshold =
CPU_HANDOFF_SIZE_THRESHOLD): boolean {\n const cpuBackend = this.getCPUBackend();\n if
(!env().getBool('IS_TEST') && !this.warnedAboutCPUBackend &&\n cpuBackend == null) {\n
console.warn(\n 'Your application contains ops that are small enough to be ' +\n 'executed on the CPU
backend, however the CPU backend cannot ' +\n 'be found. Consider importing the CPU backend ' +\n
'(@tensorflow/tfjs-backend-cpu) for better performance.);\n this.warnedAboutCPUBackend = true;\n }\n\n
return cpuBackend != null &&\n inputs.every(\n input => this.texData.get(input.dataId).texture == null
&&\n util.sizeFromShape(input.shape) < sizeThreshold);\n }\n\n getGPGPUContext(): GPGPUContext
{\n return this.gpgpu;\n }\n\n where(condition: Tensor): Tensor2D {\n backend_util.warn(\n 'tf.where() in
webgl locks the UI thread. ' +\n 'Call tf.whereAsync() instead');\n const condVals = condition.dataSync();\n
return whereImpl(condition.shape, condVals);\n }\n\n private packedUnaryOp(x: TensorInfo, op: string, dtype:
DataType) {\n const program = new UnaryOpPackedProgram(x.shape, op);\n const outInfo =

```

```

this.compileAndRun(program, [x], dtype);\n  return engine().makeTensorFromDataId(\n    outInfo.dataId,\n    outInfo.shape, outInfo.dtype);\n  }\n\n  // TODO(msoulanille) remove this once the backend has been modularized\n  // a copy is needed here to break a circular dependency.\n  // Also remove the op from unary_op.\n  abs<T extends\n  Tensor>(x: T): T {\n    // TODO: handle cases when x is complex.\n    if (this.shouldExecuteOnCPU([x]) &&\n    x.dtype !== 'complex64') {\n      const outValues =\n        simpleAbsImplCPU(this.texData.get(x.dataId).values as\n        TypedArray);\n      return this.makeOutput(x.shape, x.dtype, outValues);\n    }\n    if\n    (env().getBool('WEBGL_PACK_UNARY_OPERATIONS')) {\n      return this.packedUnaryOp(x, unary_op.ABS,\n      x.dtype) as T;\n    }\n\n    const program = new UnaryOpProgram(x.shape, unary_op.ABS);\n    const outInfo =\n    this.compileAndRun(program, [x]);\n    return engine().makeTensorFromDataId(\n      outInfo.dataId,\n      outInfo.shape, outInfo.dtype) as T;\n  }\n\n  makeTensorInfo(\n    shape: number[], dtype: DataType,\n    values?:\n    BackendValues|string[]): TensorInfo {\n    let dataId;\n    if (dtype === 'string' && values != null && values.length\n    > 0 &&\n    util.isString(values[0])) {\n      const encodedValues =\n        (values as {}) as string[]).map(d =>\n        util.encodeString(d));\n      dataId = this.write(encodedValues, shape, dtype);\n    } else {\n      dataId =\n      this.write(values as TypedArray, shape, dtype);\n    }\n\n    this.texData.get(dataId).usage = null;\n    return {dataId,\n    shape, dtype};\n  }\n\n  private makeOutput<T extends Tensor>(\n    shape: number[], dtype: DataType, values?:\n    BackendValues): T {\n    const {dataId} = this.makeTensorInfo(shape, dtype, values);\n    return\n    engine().makeTensorFromDataId(dataId, shape, dtype, this) as T;\n  }\n\n  private unpackTensor(input: TensorInfo):\n  TensorInfo {\n    const program = new UnpackProgram(input.shape);\n    return this.runWebGLProgram(program,\n    [input], input.dtype);\n  }\n\n  private packTensor(input: TensorInfo): TensorInfo {\n    const program = new\n    PackProgram(input.shape);\n    const preventEagerUnpackingOutput = true;\n    return this.runWebGLProgram(\n    program, [input], input.dtype, null /* customSetup */,\n    preventEagerUnpackingOutput);\n  }\n\n  private\n  packedReshape(input: TensorInfo, afterShape: number[]): TensorInfo {\n    const input3DShape = [\n    webgl_util.getBatchDim(input.shape),\n    ...webgl_util.getRowsCols(input.shape)\n    ] as [number, number,\n    number];\n    const input3D: TensorInfo = {\n      dtype: input.dtype,\n      shape: input3DShape,\n      dataId:\n      input.dataId\n    }; \n    const afterShapeAs3D = [\n    webgl_util.getBatchDim(afterShape),\n    ...webgl_util.getRowsCols(afterShape)\n    ] as [number, number, number];\n\n    const program = new\n    ReshapePackedProgram(afterShapeAs3D, input3DShape);\n    const preventEagerUnpackingOfOutput = true;\n    const output = this.runWebGLProgram(\n    program, [input3D], input.dtype, null /* customSetup */,\n    preventEagerUnpackingOfOutput);\n    return {dataId: output.dataId, shape: afterShape, dtype: output.dtype};\n  }\n\n  private decode(dataId: DataId): TensorInfo {\n    const texData = this.texData.get(dataId);\n    const\n    {isPacked, shape, dtype} = texData;\n    const shapeAs3D =\n    webgl_util.getShapeAs3D(shape) as [number,\n    number, number];\n    let program;\n    if (isPacked) {\n      program = new\n      DecodeMatrixPackedProgram(shapeAs3D);\n    } else {\n      program = new DecodeMatrixProgram(shapeAs3D);\n    }\n\n    const preventEagerUnpackingOfOutput = true;\n    const out = this.runWebGLProgram(\n    program,\n    [{shape: shapeAs3D, dtype, dataId}], dtype,\n    null /* customSetup */, preventEagerUnpackingOfOutput);\n    return {dtype, shape, dataId: out.dataId};\n  }\n\n  runWebGLProgram(\n    program: GPGPUProgram, inputs:\n    TensorInfo[], outputDtype: DataType,\n    customSetup?: (gpgpu: GPGPUContext, webGLProgram:\n    WebGLProgram) => void,\n    preventEagerUnpackingOfOutput = false): TensorInfo {\n    const output =\n    this.makeTensorInfo(program.outputShape, outputDtype);\n    const outData = this.texData.get(output.dataId);\n\n    if\n    (program.packedOutput) {\n      outData.isPacked = true;\n    }\n\n    if (program.outPackingScheme ===\n    tex_util.PackingScheme.DENSE) {\n      const texelShape = tex_util.getDenseTexShape(program.outputShape);\n      // For a densely packed output, we explicitly set texShape\n      // so it doesn't get assigned later according to our\n      typical packing\n      // scheme wherein a single texel can only contain values from adjacent\n      // rows/cols.\n      outData.texShape = texelShape.map(d => d * 2) as [number, number];\n    }\n\n    if (program.outTexUsage != null)\n    {\n      outData.usage = program.outTexUsage;\n    }\n\n    if (util.sizeFromShape(output.shape) === 0) {\n      //\n      Short-circuit the computation since the result is empty (has 0 in its\n      // shape).\n      outData.values =\n      util.getTypedArrayFromDType(output.dtype as 'float32', 0);\n      return output;\n    }\n\n    const dataToDispose:\n    TensorInfo[] = [];\n    const inputsData: TensorData[] = inputs.map(input => {\n      if (input.dtype === 'complex64')

```

```

{\n    throw new Error(\n        `GPGPUProgram does not support complex64 input. For complex64` +\n
`dtypes, please separate the program into real and imaginary` +\n        `parts.`);\n    }\n\n    let texData =
this.texData.get(input.dataId);\n    if (texData.texture === null) {\n        if (!program.packedInputs &&\n
util.sizeFromShape(input.shape) <= \n            env().getNumber('WEBGL_SIZE_UPLOAD_UNIFORM')) {\n
// Upload small tensors that live on the CPU as uniforms, not as\n        // textures. Do this only when the
environment supports 32bit floats\n        // due to problems when comparing 16bit floats with 32bit floats.\n        //
TODO(https://github.com/tensorflow/tfjs/issues/821): Make it\n        // possible for packed shaders to sample from
uniforms.\n        return {\n            shape: input.shape,\n            texData: null,\n            isUniform: true,\n
uniformValues: texData.values as TypedArray\n        }; \n    }\n\n    // This ensures that if a packed program's
inputs have not yet been\n    // uploaded to the GPU, they get uploaded as packed right off the bat.\n    if
(program.packedInputs) {\n        texData.isPacked = true;\n        texData.shape = input.shape;\n    }\n    } else
if (!texData.isPacked !== !program.packedInputs) {\n        input = texData.isPacked ? this.unpackTensor(input) : \n
this.packTensor(input);\n        dataToDispose.push(input);\n        texData =
this.texData.get(input.dataId);\n    } else if (\n        texData.isPacked &&\n
!webgl_util.isReshapeFree(texData.shape, input.shape)) {\n        // This is a special case where a texture exists for a
tensor\n        // but the shapes are incompatible (due to packing constraints) because\n        // the tensor did not have
a chance to go through the packed reshape\n        // shader. This only happens when we reshape the *same* tensor to
form\n        // *distinct* inputs to an op, e.g. dotting a vector with itself. This\n        // case will disappear once
packed uploading is the default.\n\n        const savedInput = input;\n        const targetShape = input.shape;\n\n
input.shape = texData.shape;\n        input = this.packedReshape(input as Tensor, targetShape);\n
dataToDispose.push(input);\n        texData = this.texData.get(input.dataId);\n        savedInput.shape =
targetShape;\n    }\n\n    this.uploadToGPU(input.dataId);\n    return {shape: input.shape, texData, isUniform:
false};\n    });\n\n    this.uploadToGPU(output.dataId);\n    const outputData:\n        TensorData = {shape:
output.shape, texData: outData, isUniform: false};\n    const key = gpgpu_math.makeShaderKey(program,
inputsData, outputData);\n    const binary = this.getAndSaveBinary(key, () => {\n        return
gpgpu_math.compileProgram(\n            this.gpgpu, program, inputsData, outputData);\n    });\n    const
shouldTimeProgram = this.activeTimers !== null;\n    let query: WebGLQuery|CPUTimerQuery;\n    if
(shouldTimeProgram) {\n        query = this.startTimer();\n    }\n\n    gpgpu_math.runProgram(\n        this.gpgpu,
binary, inputsData, outputData, customSetup);\n\n    dataToDispose.forEach(info =>
this.disposeIntermediateTensorInfo(info));\n\n    if (shouldTimeProgram) {\n        query = this.endTimer(query);\n
this.activeTimers.push(\n            {name: program.constructor.name, query: this.getQueryTime(query)});\n    }\n\n    if
(!env().getBool('WEBGL_LAZILY_UNPACK') && outData.isPacked &&\n        preventEagerUnpackingOfOutput
=== false) {\n        const unpacked = this.unpackTensor(output);\n        this.disposeIntermediateTensorInfo(output);\n
return unpacked;\n    }\n    return output;\n    }\n\n    compileAndRun(\n        program: GPGPUProgram, inputs:
TensorInfo[], outputDtype?: DataType,\n        customSetup?: (gpgpu: GPGPUContext, webGLProgram:
WebGLProgram) => void,\n        preventEagerUnpackingOfOutput = false): TensorInfo {\n        outputDtype =
outputDtype || inputs[0].dtype;\n        const outInfo = this.runWebGLProgram(\n            program, inputs, outputDtype,
customSetup,\n            preventEagerUnpackingOfOutput);\n        return outInfo;\n    }\n\n    private getAndSaveBinary(key:
string, getBinary: () => GPGPUBinary):\n        GPGPUBinary {\n        if (!(key in this.binaryCache)) {\n
this.binaryCache[key] = getBinary();\n        }\n        return this.binaryCache[key];\n    }\n\n    getTextureManager():
TextureManager {\n        return this.textureManager;\n    }\n\n    private disposed = false;\n    dispose() {\n        if
(this.disposed) {\n            return;\n        }\n        // Avoid disposing the compiled webgl programs during unit testing
because\n        // it slows down test execution.\n        if (!env().getBool('IS_TEST')) {\n            const allKeys =
Object.keys(this.binaryCache);\n            allKeys.forEach(key => {\n
this.gpgpu.deleteProgram(this.binaryCache[key].webGLProgram);\n                delete this.binaryCache[key];\n            });\n
}\n        this.textureManager.dispose();\n        if (this.canvas !== null &&\n            (typeof (HTMLCanvasElement) !==
'undefined' &&\n                this.canvas instanceof HTMLCanvasElement)) {\n            this.canvas.remove();\n        } else {\n
this.canvas = null;\n        }\n        if (this.gpgpuCreatedLocally) {\n            this.gpgpu.program = null;\n        }\n    }\n
}

```

```

this.gpgpu.dispose();\n }\n this.disposed = true;\n }\n\n floatPrecision(): 16|32 {\n if (this.floatPrecisionValue
== null) {\n this.floatPrecisionValue = tidy() => {\n if
(!env().get('WEBGL_RENDER_FLOAT32_ENABLED')) {\n // Momentarily switching DEBUG flag to false
so we don't throw an\n // error trying to upload a small value.\n const debugFlag =
env().getBool('DEBUG');\n env().set('DEBUG', false);\n const underflowCheckValue =
this.abs(scalar(1e-8)).dataSync()[0];\n env().set('DEBUG', debugFlag);\n\n if (underflowCheckValue >
0) {\n return 32;\n }\n }\n return 16;\n });\n }\n return this.floatPrecisionValue;\n }\n\n /** Returns the smallest representable number. */\n epsilon(): number {\n return this.floatPrecision() === 32 ?
EPSILON_FLOAT32 : EPSILON_FLOAT16;\n }\n\n uploadToGPU(dataId: DataId): void {\n const texData =
this.texData.get(dataId);\n const {shape, dtype, values, texture, usage, isPacked} = texData;\n\n if (texture !=
null) {\n // Array is already on GPU. No-op.\n return;\n }\n const shouldTimeProgram = this.activeTimers
!= null;\n let start: number;\n if (shouldTimeProgram) {\n start = util.now();\n }\n\n let texShape =
texData.texShape;\n if (texShape == null) {\n texShape =
webgl_util.getTextureShapeFromLogicalShape(shape, isPacked);\n texData.texShape = texShape;\n }\n\n if
(values != null) {\n const shapeAs3D = webgl_util.getShapeAs3D(shape);\n\n let program;\n let width =
texShape[1], height = texShape[0];\n const isByteArray = values instanceof Uint8Array;\n\n if (isPacked) {\n
[width, height] = tex_util.getPackedMatrixTextureShapeWidthHeight(\n texShape[0], texShape[1]);\n
program = new EncodeMatrixPackedProgram(\n shapeAs3D, [height, width], isByteArray);\n } else {\n
program =\n new EncodeMatrixProgram(shapeAs3D, [height, width], isByteArray);\n }\n\n const
tempDenseInputHandle = this.makeTensorInfo([height, width], dtype);\n if (isByteArray) {\n
this.texData.get(tempDenseInputHandle.dataId).usage =\n TextureUsage.PIXELS;\n } else {\n
this.texData.get(tempDenseInputHandle.dataId).usage =\n TextureUsage.UPLOAD;\n }\n\n
this.gpgpu.uploadDenseMatrixToTexture(\n this.getTexture(tempDenseInputHandle.dataId), width, height,\n
values as TypedArray);\n\n // We want the output to remain packed regardless of the value of\n //
WEBGL_PACK.\n const preventEagerUnpacking = true;\n const encodedOutputTarget =
this.runWebGLProgram(\n program, [tempDenseInputHandle], dtype, null, preventEagerUnpacking);\n\n //
Have the original texture assume the identity of the encoded output.\n const outputTexData =
this.texData.get(encodedOutputTarget.dataId);\n texData.texture = outputTexData.texture;\n texData.texShape
= outputTexData.texShape;\n texData.isPacked = outputTexData.isPacked;\n texData.usage =
outputTexData.usage;\n\n this.disposeIntermediateTensorInfo(tempDenseInputHandle);\n\n
this.texData.delete(encodedOutputTarget.dataId);\n\n // Once uploaded, don't store the values on cpu.\n
texData.values = null;\n if (shouldTimeProgram) {\n this.uploadWaitMs += util.now() - start;\n }\n }
else {\n const newTexture = this.acquireTexture(texShape, usage, dtype, isPacked);\n texData.texture =
newTexture;\n }\n }\n\n private convertAndCacheOnCPU(dataId: DataId, float32Values?: Float32Array):\n
TypedArray {\n const texData = this.texData.get(dataId);\n const {dtype} = texData;\n\n
this.releaseGPUData(dataId);\n\n if (float32Values != null) {\n texData.values =
float32ToTypedArray(float32Values, dtype as 'float32');\n }\n return texData.values as TypedArray;\n }\n\n
private acquireTexture(\n texShape: [number, number], texType: TextureUsage, dtype: DataType,\n isPacked:
boolean): WebGLTexture {\n this.numBytesInGPU += this.computeBytes(texShape, dtype);\n if
(!this.warnedAboutMemory &&\n this.numBytesInGPU > this.numMBBeforeWarning * 1024 * 1024) {\n
const mb = (this.numBytesInGPU / 1024 / 1024).toFixed(2);\n this.warnedAboutMemory = true;\n
console.warn(\n `High memory usage in GPU: ${mb} MB, ` +\n `most likely due to a memory leak`);\n
}\n return this.textureManager.acquireTexture(texShape, texType, isPacked);\n }\n\n private
computeBytes(shape: [number, number], dtype: DataType) {\n return shape[0] * shape[1] *
util.bytesPerElement(dtype);\n }\n\n\nfunction float32ToTypedArray<D extends NumericDataType>(\n a:
Float32Array, dtype: D): tf.DataTypeMap[D] {\n if (dtype === 'float32' || dtype === 'complex64') {\n return a as
tf.DataTypeMap[D];\n } else if (dtype === 'int32' || dtype === 'bool') {\n const result = (dtype === 'int32') ? new
Int32Array(a.length) :\n new Uint8Array(a.length);\n for (let i = 0; i < result.length; ++i)

```

```

{\n  result[i] = Math.round(a[i]);\n } \n  return result as tf.DataTypeMap[D];\n } else {\n  throw new
Error('Unknown dtype ${dtype}');\n }\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
===== \n
*\n\nimport {env} from '@tensorflow/tfjs-core';\n\nimport * as gpgpu_util from './gpgpu_util';\nimport * as
webgl_util from './webgl_util';\n\nexport {MathBackendWebGL, WebGLMemoryInfo, WebGLTimingInfo} from
'./backend_webgl';\nexport {setWebGLContext} from './canvas_util';\nexport {GPGPUContext} from
'./gpgpu_context';\nexport {GPGPUProgram} from './gpgpu_math';\n// WebGL specific utils.\nexport {gpgpu_util,
webgl_util};\n\n/**\n * Enforce use of half precision textures if available on the platform.\n *\n * @doc {heading:
'Environment', namespace: 'webgl'}\n *\nexport function forceHalfFloat(): void {\n
env().set('WEBGL_FORCE_F16_TEXTURES', true);\n}\n}\n", "/*\n * @license\n * Copyright 2017 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
===== \n
*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport const CHECK_NAN_SNIPPET = `\n  if (isnan(a)) return a;\n  if (isnan(b)) return
b;\n`;\n\nexport const SQUARED_DIFFERENCE = `return (a - b) * (a - b);`\n\nexport class BinaryOpProgram
implements GPGPUProgram {\n  variableNames = ['A', 'B'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(op: string, aShape: number[], bShape: number[]) {\n    this.outputShape =
backend_util.assertAndGetBroadcastShape(aShape, bShape);\n    this.userCode = `\n    float binaryOperation(float
a, float b) {\n      ${op}\n    }\n\n    void main() {\n      float a = getAAtOutCoords();\n      float b =
getBAtOutCoords();\n      setOutput(binaryOperation(a, b));\n    }\n`;\n  }\n}\n}\n", "/*\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
===== \n
*\n\nimport {backend_util, util} from '@tensorflow/tfjs-core';\n\nimport {GPGPUProgram} from
'./gpgpu_math';\nimport {getChannels} from './packing_util';\nimport {getCoordsDataType} from
'./shader_compiler';\n\nexport const CHECK_NAN_SNIPPET = `\n  result.r = isNaN.r > 0. ? NAN : result.r;\n
result.g = isNaN.g > 0. ? NAN : result.g;\n  result.b = isNaN.b > 0. ? NAN : result.b;\n  result.a = isNaN.a > 0. ?
NAN : result.a;\n`;\n\nexport const ELU_DER = `\n  vec4 bGTEZero = vec4(greaterThanEqual(b, vec4(0.))); \n
return (bGTEZero * a) + ((vec4(1.0) - bGTEZero) * (a * (b + vec4(1.0))));\n`;\n\nexport const NOT_EQUAL = `\n
return vec4(notEqual(a, b));\n`;\n\nexport class BinaryOpPackedProgram implements GPGPUProgram {\n
  variableNames = ['A', 'B'];\n  outputShape: number[];\n  userCode: string;\n  supportsBroadcasting = true;\n
  packedInputs = true;\n  packedOutput = true;\n\n  constructor(\n    op: string, aShape: number[], bShape:
number[],\n    checkOutOfBounds = false) {\n    this.outputShape =

```



```

backend_util.assertAndGetBroadcastShape(aShape, bShape);\n  const rank = this.outputShape.length;\n  let\n  checkOutOfBoundsString = ";\n  if (checkOutOfBounds) {\n    if (rank === 0 ||\n    util.sizeFromShape(this.outputShape) === 1) {\n      checkOutOfBoundsString = `\n      result.y = 0.;\n      result.z = 0.;\n      result.w = 0.;\n      `;\n    } else {\n      const dtype = getCoordsDataType(rank);\n      checkOutOfBoundsString = `\n      ${dtype} coords = getOutputCoords();\n      `;\n      if (rank === 1) {\n        checkOutOfBoundsString += `\n        result.y = (coords + 1) >= ${this.outputShape[0]} ? 0. : result.y;\n        result.z = 0.;\n        result.w = 0.;\n        `;\n      } else {\n        const channels = getChannels('coords', rank);\n        checkOutOfBoundsString += `\n        bool nextRowOutOfBounds =\n        (${channels[rank - 2]} + 1) >=\n        ${this.outputShape[rank - 2]};\n        bool nextColOutOfBounds =\n        (${channels[rank - 1]} + 1) >=\n        ${this.outputShape[rank - 1]};\n        result.y = nextColOutOfBounds ? 0. : result.y;\n        result.z =\n        nextRowOutOfBounds ? 0. : result.z;\n        result.w = nextColOutOfBounds || nextRowOutOfBounds ? 0. :\n        result.w;\n        `;\n      }\n    }\n  }\n  this.userCode = `\n  vec4 binaryOperation(vec4 a, vec4 b) {\n  ${op}\n  }\n  void main() {\n    vec4 a = getAAtOutCoords();\n    vec4 b = getBAtOutCoords();\n    vec4 result = binaryOperation(a, b);\n    ${checkOutOfBoundsString}\n    setOutput(result);\n  }\n  `;\n  }\n  }"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache\n * License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You\n * may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required\n * by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n * License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {env, KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util}\nfrom '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport\n{BinaryOpProgram} from '../binaryop_gpu';\nimport {BinaryOpPackedProgram} from\n../binaryop_packed_gpu';\n\nexport const LEAKYRELU = `return (a < 0.) ? b * a : a;`\n\nexport const\nLEAKYRELU_PACKED = `\n  vec4 aLessThanZero = vec4(lessThan(a, vec4(0.)));\n  return (aLessThanZero * (b\n  * a)) + ((vec4(1.0) - aLessThanZero) * a);`\n\n\nexport function leakyRelu(args: {\n  inputs: LeakyReluInputs,\n  backend: MathBackendWebGL,\n  attrs: LeakyReluAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} =\n  args;\n  const {x} = inputs;\n  const {alpha} = attrs;\n\n  const $alpha = backend.makeTensorInfo([\n    [],\n    'float32',\n    util.createScalarValue(alpha as {} as 'float32', 'float32')]);\n\n  const program =\n  env().getBool('WEBGL_PACK_BINARY_OPERATIONS') ?\n  new\n  BinaryOpPackedProgram(LEAKYRELU_PACKED, x.shape, $alpha.shape) :\n  new\n  BinaryOpProgram(LEAKYRELU, x.shape, $alpha.shape);\n  const result = backend.runWebGLProgram(program,\n  [x, $alpha], x.dtype);\n  backend.disposeIntermediateTensorInfo($alpha);\n  return result;\n}\n\nexport const\nleakyReluConfig: KernelConfig = {\n  kernelName: LeakyRelu,\n  backendName: 'webgl',\n  kernelFunc: leakyRelu\n  as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless\n * required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *
=====
*/\n\nimport {env, KernelConfig, KernelFunc, Prelu, PreluInputs, TensorInfo} from '@tensorflow/tfjs-\n  core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {BinaryOpProgram} from\n  '../binaryop_gpu';\nimport {BinaryOpPackedProgram} from '../binaryop_packed_gpu';\n\nexport const PRELU =\n  `return (a < 0.) ? b * a : a;`\n\nexport const PRELU_PACKED = `\n  vec4 aLessThanZero = vec4(lessThan(a,\n  vec4(0.)));\n  return (aLessThanZero * (b * a)) + ((vec4(1.0) - aLessThanZero) * a);`\n\n\nexport function

```

```

prelu(args: {inputs: PreluInputs, backend: MathBackendWebGL}): TensorInfo {
  \n  const {inputs, backend} =
  args;\n  const {x, alpha} = inputs;\n  \n  const program = env().getBool('WEBGL_PACK_BINARY_OPERATIONS')
  ?\n  new BinaryOpPackedProgram(PRELU_PACKED, x.shape, alpha.shape) :\n  new
  BinaryOpProgram(PRELU, x.shape, alpha.shape);\n  return backend.runWebGLProgram(program, [x, alpha],
  x.dtype);\n}\n\nexport const preluConfig: KernelConfig = {\n  kernelName: Prelu,\n  backendName: 'webgl',\n  kernelFunc: prelu as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
  Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
  except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
  http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
  software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
  governing permissions and\n * limitations under the License.\n *
  =====\n
  *\n\nimport {backend_util, BinaryInputs, DataType, env, KernelFunc, TypedArray, UnaryInputs, upcastType}
  from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport
  {BinaryOpProgram} from './binaryop_gpu';\nimport {BinaryOpPackedProgram} from
  './binaryop_packed_gpu';\nimport {complex} from './kernels/Complex';\nimport {LEAKYRELU,
  LEAKYRELU_PACKED} from './kernels/LeakyRelu';\nimport {PRELU, PRELU_PACKED} from
  './kernels/Prelu';\nimport * as unary_op from './unaryop_gpu';\nimport {UnaryOpProgram} from
  './unaryop_gpu';\nimport * as unary_packed_op from './unaryop_packed_gpu';\nimport {UnaryOpPackedProgram}
  from './unaryop_packed_gpu';\n\nimport {SimpleBinaryKernelImplCPU, SimpleUnaryKernelImplCPU} from
  './shared';\n\nexport const CHECK_NAN_SNIPPET_UNARY = `if (isnan(x)) return x;`;\n\nexport const
  CHECK_NAN_SNIPPET_BINARY = `\n  if (isnan(a)) return a;\n  if (isnan(b)) return b;\n`;\n\nexport const
  CHECK_NAN_SNIPPET_BINARY_PACKED = `\n  result.r = isNaN.r > 0. ? NAN : result.r;\n  result.g = isNaN.g
  > 0. ? NAN : result.g;\n  result.b = isNaN.b > 0. ? NAN : result.b;\n  result.a = isNaN.a > 0. ? NAN :
  result.a;\n`;\n\ntype UnaryKernelFuncConfig = {\n  opSnippet: string,\n  packedOpSnippet?: string,\n
  cpuKernelImpl?: SimpleUnaryKernelImplCPU,\n  dtype?: DataType\n};\n\n/**\n * Template that creates a
  `KernelFunc` for unary ops.\n * @param opSnippet Op snippet to create `UnaryOpProgram`.\n * @param
  packedOpSnippet Op snippet to create `UnaryOpPackedProgram`.\n * @param dtype Optional. If set, the result has
  this dtype. Otherwise, the\n * result has the same dtype as the first input. This is mainly used in\n *
  comparison kernels, such as Equal, Less, Greater, etc.\n */\nexport function unaryKernelFunc(\n  {opSnippet,
  packedOpSnippet, cpuKernelImpl, dtype}: UnaryKernelFuncConfig): KernelFunc {\n  return ({inputs,
  backend}) => {\n    const {x} = inputs as UnaryInputs;\n    const webglBackend = backend as
  MathBackendWebGL;\n    \n    const $dtype = dtype || x.dtype;\n    if (webglBackend.shouldExecuteOnCPU([x]) &&
  cpuKernelImpl != null) {\n      const xData = webglBackend.texData.get(x.dataId);\n      const outValues =
  cpuKernelImpl(xData.values as TypedArray, $dtype);\n      return webglBackend.makeTensorInfo(x.shape, $dtype,
  outValues);\n    }\n    \n    const shouldUsePackedProgram =\n    env().getBool('WEBGL_PACK_UNARY_OPERATIONS') && packedOpSnippet != null;\n    let program:
  UnaryOpProgram|UnaryOpPackedProgram;\n    if (shouldUsePackedProgram) {\n      program = new
  UnaryOpPackedProgram(x.shape, packedOpSnippet);\n    } else {\n      program = new UnaryOpProgram(x.shape,
  opSnippet);\n    }\n    return webglBackend.runWebGLProgram(program, [x], $dtype);\n  };}\n\ntype
  BinaryKernelFuncConfig = {\n  opSnippet: string,\n  packedOpSnippet?: string,\n  checkOutOfBounds?: boolean,\n
  supportsComplex?: boolean,\n  cpuKernelImpl?: SimpleBinaryKernelImplCPU,\n  dtype?: DataType\n};\n\n/**\n *
  Template that creates a `KernelFunc` for binary ops.\n * @param opSnippet Op snippet to create
  `BinaryOpProgram`.\n * @param packedOpSnippet Op snippet to create `BinaryOpPackedProgram`.\n * @param
  checkOutOfBoundsForPackedProgram Whether to set checkOutOfBounds=true\n * when creating
  BinaryOpPackedProgram.\n * @param dtype Optional. If set, the result has this dtype. Otherwise, the\n *
  result has the same dtype as the first input. This is mainly used in\n * comparison kernels, such as Equal, Less, Greater,

```



```

const bSample = transposeB ? 'rc.z, i * 2' : 'i * 2, rc.z';\n  const aSwizzle = transposeA ? ['a.xxyy', 'a.zzww'] :
['a.xzzz', 'a.yyyw'];\n  const bSwizzle = transposeB ? ['b.xzxx', 'b.yyyw'] : ['b.xyxy', 'b.zzww'];\n\n  let
activationSnippet = "", applyActivationSnippet = "";\n  if (activation) {\n    if (hasPreluActivation) {\n
activationSnippet = `vec4 activation(vec4 a) {\n      vec4 b = getPreluActivationWeightsAtOutCoords();\n
${activation}\n    }`;\n    } else if (hasLeakyreluActivation) {\n      activationSnippet = `vec4 activation(vec4 a)
{\n      vec4 b = getLeakyreluAlphaAtOutCoords();\n      ${activation}\n    }`;\n    } else {\n
activationSnippet = `vec4 activation(vec4 x) {\n      ${activation}\n    }`;\n    }\n\n    applyActivationSnippet
= `result = activation(result);`;\n  }\n\n  const addBiasSnippet = addBias ? 'result += getBiasAtOutCoords()'; : "";\n
  if (addBias) {\n    this.variableNames.push('bias');\n  }\n\n  if (hasPreluActivation) {\n
this.variableNames.push('preluActivationWeights');\n  }\n\n  if (hasLeakyreluActivation) {\n
this.variableNames.push('leakyreluAlpha');\n  }\n\n  let batchASnippet = 'rc.x';\n  let batchBSnippet = 'rc.x';\n
if (aShape[0] < bShape[0]) {\n    batchASnippet = `int(min(float(rc.x), ${aShape[0] - 1}))`;\n  } else if
(bShape[0] < aShape[0]) {\n    batchBSnippet = `int(min(float(rc.x), ${bShape[0] - 1}))`;\n  }\n\n  this.userCode
= `\n    ${activationSnippet}\n\n    const float sharedDimension = ${sharedDimensionPacked}.0;\n\n    vec4
dot2x2ARowBCol(ivec3 rc) {\n      vec4 result = vec4(0);\n      for (int i = 0; i < ${sharedDimensionPacked}; i++)
{\n        int batchA = ${batchASnippet};\n        int batchB = ${batchBSnippet};\n        vec4 a =
getMatrixA(batchA, ${aSample});\n        vec4 b = getMatrixB(batchB, ${bSample});\n\n        // These swizzled
products need to be separately added.\n        // See: https://github.com/tensorflow/tfjs/issues/1735\n        result +=
(${aSwizzle[0]} * ${bSwizzle[0]});\n        result += (${aSwizzle[1]} * ${bSwizzle[1]});\n      }\n      return
result;\n    }\n\n    void main() {\n      ivec3 rc = getOutputCoords();\n      vec4 result =
dot2x2ARowBCol(rc);\n\n      ${addBiasSnippet}\n      ${applyActivationSnippet}\n\n      setOutput(result);\n
    }\n  `;\n  }\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from './gpgpu_math';\n\n//
(Ar + Ai)(Br + Bi) =\n// ArBr + ArBi + AiBr + AiBi = ArBr - AB + ArBi + AiBr\n// Yr = ArBr - AB\n// Yi = ArBi
+ AiBr\n\nexport const COMPLEX_MULTIPLY = {\n  REAL: 'return areal * breal - aimag * bimag;',\n  IMAG:
'return areal * bimag + aimag * breal;'\n};\n\nexport class BinaryOpComplexProgram implements GPGPUProgram
{\n  variableNames = ['AReal', 'AImag', 'BReal', 'BImag'];\n  userCode: string;\n  outputShape: number[];\n\n  constructor(op: string, aShape: number[], bShape: number[]) {\n    this.outputShape =
backend_util.assertAndGetBroadcastShape(aShape, bShape);\n\n    this.userCode = `\n    float
binaryOpComplex(\n      float areal, float aimag, float breal, float bimag) {\n      ${op}\n    }\n\n    void main()
{\n      float areal = getARealAtOutCoords();\n      float aimag = getAImagAtOutCoords();\n      float breal =
getBRealAtOutCoords();\n      float bimag = getBImagAtOutCoords();\n      setOutput(binaryOpComplex(areal,
aimag, breal, bimag));\n    }\n  `;\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from

```

```

'./backend_webgl';\nimport {ReshapePackedProgram} from './reshape_packed_gpu';\nimport {getBatchDim,
getRowsCols} from './webgl_util';\n\nexport function packedReshape(\n  input: TensorInfo, afterShape:
number[],\n  backend: MathBackendWebGL): TensorInfo {\n  const input3DShape =\n[getBatchDim(input.shape),\n  ...getRowsCols(input.shape)] as [number, number, number];\n  const input3D:
TensorInfo = {\n  dtype: input.dtype,\n  shape: input3DShape,\n  dataId: input.dataId\n };;\n  const
afterShapeAs3D =\n  [getBatchDim(afterShape),\n  ...getRowsCols(afterShape)] as [number, number,
number];;\n  const program = new ReshapePackedProgram(afterShapeAs3D, input3DShape);\n  const
preventEagerUnpackingOfOutput = true;\n  const output = backend.runWebGLProgram(\n    program, [input3D],
input.dtype, null /* customSetup */,\n    preventEagerUnpackingOfOutput);\n  return {dataId: output.dataId, shape:
afterShape, dtype: output.dtype};;\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {packedReshape}
from './kernel_utils/reshape';\nimport {isReshapeFree} from './webgl_util';\n\nexport function reshape(args: {\n
inputs: ReshapeInputs,\n  backend: MathBackendWebGL,\n  attrs: ReshapeAttrs\n}): TensorInfo {\n  const {inputs,
backend, attrs} = args;\n  const {x} = inputs;\n  const {shape} = attrs;\n  const webglBackend = backend;\n\n  const
xSize = util.sizeFromShape(x.shape);\n  const $shape = util.inferFromImplicitShape(shape, xSize);\n  const $xSize
= util.sizeFromShape($shape);\n\n  util.assert(\n    xSize === $xSize,\n    () => `The new shape (${ $shape }) has
${ $xSize } elements and the old ` +\n      `shape (${ x.shape }) has ${ xSize } elements. The new shape and old ` +\n
      `shape must have the same number of elements.`);\n\n  const xTexData =
webglBackend.texData.get(x.dataId);\n  if (xTexData.isPacked && !isReshapeFree(x.shape, $shape) &&\n
!(xTexData.texture !== null && isReshapeFree(xTexData.shape, $shape))) {\n    return packedReshape(x, $shape,
webglBackend);\n  }\n\n  webglBackend.incRef(x.dataId);\n  return {dataId: x.dataId, shape: $shape, dtype:
x.dtype};;\n}\n\nexport const reshapeConfig: KernelConfig = {\n  kernelName: Reshape,\n  backendName:
'webgl',\n  kernelFunc: reshape as {} as KernelFunc\n};;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util, util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class MeanProgram implements GPGPUProgram {\n  variableNames = ['x'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(reduceInfo: backend_util.ReduceInfo, divisor?:
number) {\n    const {windowSize, batchSize, inSize, outSize} = reduceInfo;\n    this.outputShape = [batchSize,
outSize];\n    const windowSizeNearestVec4 = Math.floor(windowSize / 4) * 4;\n    const
windowSizeVec4Remainder = windowSize % 4;\n\n    let updateSnippet = `sumValue += dot(values, ones);`\n    if
(divisor !== null) {\n      const denominator = 1 / divisor;\n      updateSnippet = `sumValue += dot(values * ${\n
util.isInt(denominator) ? denominator.toPrecision(2) :\n      denominator}, ones);`\n    }\n\n    let
checkOutOfBounds = `;\n    if (inSize % windowSize > 0) {\n      checkOutOfBounds = `\n      if (inIdx < 0 || inIdx
>= ${inSize}) {\n        return 0.0;\n      }\n    `;\n  }\n\n  this.userCode = `\n    const vec4 ones = vec4(1.0,

```

```

1.0, 1.0, 1.0);\n\n float getValue(int batch, int inIdx) {\n    ${checkOutOfBounds}\n    return getX(batch,
inIdx);\n }\n\n void main() {\n    ivec2 coords = getOutputCoords();\n    int batch = coords[0];\n    int
outIdx = coords[1];\n    int inOffset = outIdx * ${windowSize};\n\n    float sumValue = 0.0;\n\n    for (int i =
0; i < ${windowSizeNearestVec4}; i += 4) {\n        int inIdx = inOffset + i;\n        vec4 values = vec4(\n
getValue(batch, inIdx),\n            getValue(batch, inIdx + 1),\n            getValue(batch, inIdx + 2),\n
getValue(batch, inIdx + 3)\n        );\n        ${updateSnippet}\n    }\n\n    int inIdx = inOffset +
${windowSizeNearestVec4};\n    if (${windowSizeVec4Remainder} === 1) {\n        vec4 values =
vec4(getValue(batch, inIdx), 0.0, 0.0, 0.0);\n        ${updateSnippet}\n    } else if
(${windowSizeVec4Remainder} === 2) {\n        vec4 values = vec4(\n            getValue(batch, inIdx),\n
getValue(batch, inIdx + 1), 0.0, 0.0);\n        ${updateSnippet}\n    } else if (${windowSizeVec4Remainder}
=== 3) {\n        vec4 values = vec4(\n            getValue(batch, inIdx),\n            getValue(batch, inIdx + 1),\n
getValue(batch, inIdx + 2), 0.0);\n        ${updateSnippet}\n    }\n    setOutput(sumValue);\n }\n `;\n
}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util} from 'tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'/gpgpu_math';\n\nexport class ReduceProgram implements GPGPUProgram {\n    variableNames = ['x'];\n    outputShape: number[];\n    userCode: string;\n\n    constructor(\n        reduceInfo: backend_util.ReduceInfo,\n        reduceType: 'all'|'any'|'max'|'min'|'sum'|'prod') {\n        const {windowSize, batchSize, inSize, outSize} = reduceInfo;\n        this.outputShape = [batchSize, outSize];\n\n        let initializationValue = '0.0';\n        let compareOp = ` `;\n\n        if
(reduceType === 'prod') {\n            initializationValue = '1.0';\n        } else if (reduceType === 'min') {\n            // WebGL on
Firefox Linux can't compile 1/0 so we do 1/eps.\n            initializationValue = '1.0 / 1e-20';\n            compareOp = `min`;\n        }
else if (reduceType === 'max') {\n            // WebGL on Firefox Linux can't compile 1/0 so we do 1/eps.\n            initializationValue = '-1.0 / 1e-20';\n            compareOp = `max`;\n        }\n\n        let returnValue =
`${reduceType}(${reduceType}(${reduceType}(` +\n            'minMaxValue[0], minMaxValue[1], minMaxValue[2],
minMaxValue[3]`);\n\n        if (reduceType === 'sum') {\n            returnValue = `sumValue`;\n        } else if (reduceType ===
'prod') {\n            returnValue = `prodValue`;\n        } else if (reduceType === 'all') {\n            returnValue = `allValue`;\n        }
else if (reduceType === 'any') {\n            returnValue = `anyValue`;\n        }\n\n        const windowSizeNearestVec4 =
Math.floor(windowSize / 4) * 4;\n        const windowSizeVec4Remainder = windowSize % 4;\n\n        let updateSnippet =
`\n        if (${reduceType} === 'sum') {\n            sumValue += dot(values, ones);\n        } else if (${reduceType} ===
'prod') {\n            vec2 tmp = vec2(values[0], values[1]) * vec2(values[2], values[3]);\n            prodValue *= tmp[0] *
tmp[1];\n        } else {\n            minMaxValue = ${compareOp}(values, minMaxValue);\n        }\n        `;\n\n        let vecType =
`vec4`;\n\n        if (reduceType === 'all') {\n            initializationValue = '1.0';\n            updateSnippet = `\n            bool
reducedAllValue = all(values);\n            float floatedReducedAllValue = float(reducedAllValue);\n            allValue =
float(allValue >= 1.0 && floatedReducedAllValue >= 1.0);\n            `;\n            vecType = `bvec4`;\n        } else if
(reduceType === 'any') {\n            initializationValue = '0.0';\n            updateSnippet = `\n            bool reducedAnyValue =
any(values);\n            float floatedReducedAnyValue = float(reducedAnyValue);\n            anyValue = float(anyValue >=
1.0 || floatedReducedAnyValue >= 1.0);\n            `;\n            vecType = `bvec4`;\n        }\n\n        let checkOutOfBounds = ` `;\n
if (inSize % windowSize > 0) {\n            checkOutOfBounds = `\n            if (inIdx < 0 || inIdx >= ${inSize}) {\n
return initializationValue;\n            }\n            `;\n        }\n\n        this.userCode = `\n        const float initializationValue =
${initializationValue};\n        const vec4 ones = vec4(1.0, 1.0, 1.0, 1.0);\n\n        float getValue(int batch, int inIdx) {\n
            ${checkOutOfBounds}\n            return getX(batch, inIdx);\n        }\n\n        void main() {\n            ivec2 coords =
getOutputCoords();\n            int batch = coords[0];\n            int outIdx = coords[1];\n            int inOffset = outIdx *
${windowSize};\n\n            vec4 minMaxValue = vec4(${initializationValue});\n            float prodValue = 1.0;\n

```

```

float sumValue = 0.0;\n    float allValue = 1.0;\n    float anyValue = 0.0;\n\n    for (int i = 0; i <
${windowSizeNearestVec4}; i += 4) {\n        int inIdx = inOffset + i;\n        ${vecType} values = ${vecType}(\n
        getValue(batch, inIdx),\n        getValue(batch, inIdx + 1),\n        getValue(batch, inIdx + 2),\n
        getValue(batch, inIdx + 3)\n        );\n\n        ${updateSnippet}\n        }\n\n        int inIdx = inOffset +
${windowSizeNearestVec4};\n        if (${windowSizeVec4Remainder} === 1) {\n            ${vecType} values =
${vecType}(\n                getValue(batch, inIdx),\n                initializationValue,\n                initializationValue,\n
                initializationValue\n                );\n\n                ${updateSnippet}\n            } else if (${windowSizeVec4Remainder} === 2) {\n
                ${vecType} values = ${vecType}(\n                    getValue(batch, inIdx),\n                    getValue(batch, inIdx + 1),\n
                    initializationValue,\n                    initializationValue\n                    );\n\n                    ${updateSnippet}\n                } else if
($windowSizeVec4Remainder === 3) {\n                    ${vecType} values = ${vecType}(\n                        getValue(batch,
inIdx),\n                        getValue(batch, inIdx + 1),\n                        getValue(batch, inIdx + 2),\n                        initializationValue\n
                    );\n\n                    ${updateSnippet}\n                }\n            setOutput(${returnValue});\n        }\n    }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {backend_util, DataType, TensorInfo} from '@tensorflow/tfjs-core';\nimport
{MathBackendWebGL} from '../backend_webgl';\nimport {MeanProgram} from '../mean_gpu';\nimport
{ReduceProgram} from '../reduce_gpu';\n\ntype ReduceTypes = 'all'|'any'|'max'|'min'|'sum'|'prod'|'mean';\n\n//
Returns an array of configuration objects that describe each stage of the\n// reduction.\n\nfunction
getReductionStages(inShape: number[]):\n    Array<{inSize: number, windowSize: number, outSize: number}> {\n
    const stages = [];\n\n    while (stages.length === 0 || stages[stages.length - 1].outSize !== 1) {\n        const outSize:
number =\n            stages.length ? stages[stages.length - 1].outSize : inShape[1];\n        const windowSize =
backend_util.computeOptimalWindowSize(outSize);\n        stages.push({\n            inSize: outSize,\n            windowSize,\n
            outSize: Math.ceil(outSize / windowSize)\n        });\n    }\n\n    return stages;\n}\n\n\nexport function reduce(\n    x:
TensorInfo, dtype: DataType, reductionType: ReduceTypes,\n    backend: MathBackendWebGL): TensorInfo {\n
    const reductionStages = getReductionStages(x.shape);\n\n    let result = x;\n    for (let i = 0; i < reductionStages.length;\n
    i++) {\n        const {inSize, windowSize, outSize} = reductionStages[i];\n        let program:
ReduceProgram|MeanProgram;\n        let previousResult: TensorInfo;\n        if (reductionType === 'mean') {\n
            program = i === 0 ?\n                new MeanProgram(\n                    {windowSize, inSize, batchSize: x.shape[0], outSize},\n
                    inSize)\n                :\n                new MeanProgram({windowSize, inSize, batchSize: x.shape[0], outSize});\n        } else {\n
            program = new ReduceProgram(\n                {windowSize, inSize, batchSize: x.shape[0], outSize}, reductionType);\n
        }\n\n        previousResult = result;\n        result = backend.runWebGLProgram(program, [result], dtype);\n\n        if
(previousResult.dataId !== x.dataId) {\n            backend.disposeIntermediateTensorInfo(previousResult);\n        }\n    }\n\n    return result;\n}\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from
'/shader_compiler';\n\nexport class TransposeProgram implements GPGPUProgram {\n    variableNames = ['A'];\n
    outputShape: number[];\n    userCode: string;\n    rank: number;\n\n    constructor(aShape: number[], newDim:

```

```

number[]) {\n  const outputShape: number[] = new Array(aShape.length);\n  for (let i = 0; i < outputShape.length;\n  i++) {\n    outputShape[i] = aShape[newDim[i]];\n  }\n  this.outputShape = outputShape;\n  this.rank =\n  outputShape.length;\n  const dtype = getCoordsDataType(this.rank);\n  const switched =\n  getSwitchedCoords(newDim);\n\n  this.userCode = `\n  void main() {\n    ${dtype} resRC =\n    getOutputCoords();\n    setOutput(getA(${switched}));\n  }\n  `;\n}\n\nfunction\ngetSwitchedCoords(newDim: number[]): string {\n  const rank = newDim.length;\n  if (rank > 6) {\n    throw\n    Error(`Transpose for rank ${rank} is not yet supported`);\n  }\n  const originalOrder =\n    ['resRC.x', 'resRC.y',\n    'resRC.z', 'resRC.w', 'resRC.u', 'resRC.v'];\n  const switchedCoords = new Array(rank);\n  for (let i = 0; i <\n  newDim.length; i++) {\n    switchedCoords[newDim[i]] = originalOrder[i];\n  }\n  return\n  switchedCoords.join();\n}\n\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless\n * required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *

```

```

=====
*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getVecChannels} from './packing_util';\nimport\n{getCoordsDataType} from './shader_compiler';\n\nexport class TransposePackedProgram implements\nGPGPUProgram {\n  variableNames = ['A'];\n  outputShape: number[];\n  userCode: string;\n  rank: number;\n  packedInputs = true;\n  packedOutput = true;\n\n  constructor(aShape: number[], newDim: number[]) {\n    const\n    outputShape: number[] = new Array(aShape.length);\n    for (let i = 0; i < outputShape.length; i++) {\n\n    outputShape[i] = aShape[newDim[i]];\n    }\n    this.outputShape = outputShape;\n    this.rank =\n    outputShape.length;\n    if (this.rank > 6) {\n      throw Error(`\n      Packed transpose for rank ${this.rank} is not\n      yet supported.`);\n    }\n    const dtype = getCoordsDataType(this.rank);\n    const outputOrder =\n    getVecChannels('rc', this.rank);\n    const switchedOrder = new Array(this.rank);\n    for (let i = 0; i <\n    newDim.length; i++) {\n      switchedOrder[newDim[i]] = outputOrder[i];\n    }\n    const innerDims =\n    `vec2(${switchedOrder.slice(-2).join()})`;\n    const nextColumn =\n    `++${outputOrder[this.rank - 1]} <\n    ${outputShape[this.rank - 1]}`;\n    const getc = `getChannel(getA(${switchedOrder.join()}), ${innerDims})`;\n\n    this.userCode = `\n    void main() {\n      ${dtype} rc = getOutputCoords();\n      vec4 result = vec4(0.);\n      result[0] = ${getc};\n      if (${nextColumn}) {\n        result[1] = ${getc};\n      }\n      --${outputOrder[this.rank -\n      1]};\n      if (++${outputOrder[this.rank - 2]} < ${outputShape[this.rank - 2]}) {\n        result[2] = ${getc};\n      }\n      if (${nextColumn}) {\n        result[3] = ${getc};\n      }\n      setOutput(result);\n    }\n    `;\n}\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util, sumOutType, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport\n{MathBackendWebGL} from '../backend_webgl';\nimport {reduce} from '../kernel_utils/reduce';\nimport {reshape}\nfrom './Reshape';\nimport {transposeImpl} from './Transpose_impl';\n\nexport function sumImpl(\n  x:\n  TensorInfo, axis: number|number[], keepDims: boolean,\n  backend: MathBackendWebGL): TensorInfo {\n  const\n  reductionIndices = axis;\n  const xRank = x.shape.length;\n  const origAxes =\n  util.parseAxisParam(reductionIndices, x.shape);\n  let axes = origAxes;\n  const permutedAxes =\n  backend_util.getAxesPermutation(axes, xRank);\n  const sumInputIsTransposed = permutedAxes !== null;\n  let\n  sumInput = x;\n  if (sumInputIsTransposed) {\n    sumInput = transposeImpl(x, permutedAxes, backend);\n  }\n  axes

```



```

= backend_util.getInnerMostAxes(axes.length, xRank);\n } \n\n backend_util.assertAxesAreInnerMostDims('sum',
axes, xRank);\n const [sumOutShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(sumInput.shape, axes);\n\n let outShape = sumOutShape;\n if
(keepDims) {\n // rather than reshape at the end, set the target shape here.\n outShape =
backend_util.expandShapeToKeepDim(sumOutShape, origAxes);\n } \n\n const inSize =
util.sizeFromShape(reduceShape);\n const xSize = util.sizeFromShape(x.shape);\n const batchSize = xSize /
inSize;\n const reshapedInput = reshape(\n {inputs: {x: sumInput}, attrs: {shape: [batchSize, inSize]},
backend});\n\n const outType = sumOutType(x.dtype);\n\n const reduced = reduce(reshapedInput, outType, 'sum',
backend);\n const out =\n reshape({inputs: {x: reduced}, attrs: {shape: outShape}, backend});\n\n
backend.disposeIntermediateTensorInfo(reshapedInput);\n backend.disposeIntermediateTensorInfo(reduced);\n if
(sumInputIsTransposed) {\n backend.disposeIntermediateTensorInfo(sumInput);\n } \n\n return out;\n } \n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs} from '@tensorflow/tfjs-core';\n\nimport
{MathBackendWebGL} from '../backend_webgl';\n\nimport {sumImpl} from './Sum_impl';\n\nexport function
sum(\n args: {inputs: SumInputs, attrs: SumAttrs, backend: MathBackendWebGL}) {\n const {inputs, backend,
attrs} = args;\n\n const {x} = inputs;\n const {axis, keepDims} = attrs;\n\n return sumImpl(x, axis, keepDims,
backend);\n }\n\nexport const sumConfig: KernelConfig = {\n kernelName: Sum,\n backendName: 'webgl',\n
kernelFunc: sum as {} as KernelFunc\n }; \n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {backend_util, TensorInfo, upcastType, util} from '@tensorflow/tfjs-core';\n\nimport
{MathBackendWebGL} from '../backend_webgl';\n\nimport {mapActivationToShaderProgram} from
'../kernel_utils/kernel_funcs_utils';\n\nimport {MatMulPackedProgram} from './mulmat_packed_gpu';\n\nimport
{multiply} from './Multiply';\n\nimport {reshape} from './Reshape';\n\nimport {sum} from './Sum';\n\nimport {transpose}
from './Transpose';\n\n// Empirically determined minimal shared dimension in matmul before we forward\n// to
a.mul(b).sum() in order to take advantage of GPU parallelism. See\n// https://github.com/tensorflow/tfjs-
core/pull/1379 for benchmarks.\n\nexport const MATMUL_SHARED_DIM_THRESHOLD = 1000;\n\nntype
BatchMatMulConfig = {\n a: TensorInfo,\n b: TensorInfo,\n transposeA: boolean,\n transposeB: boolean,\n
backend: MathBackendWebGL,\n bias?: TensorInfo,\n preluActivationWeights?: TensorInfo,\n leakyreluAlpha?:
number,\n activation?: backend_util.Activation\n};\n\nexport function batchMatMulImpl({\n a,\n b,\n
transposeA,\n transposeB,\n backend,\n bias = null,\n preluActivationWeights = null,\n leakyreluAlpha = 0,\n
activation = null\n}: BatchMatMulConfig): TensorInfo {\n const aRank = a.shape.length;\n const bRank =
b.shape.length;\n\n const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n const
innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n\n const outerShapeA = transposeA ?
a.shape[aRank - 1] : a.shape[aRank - 2];\n const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank -
1];\n\n const outerDimsA = a.shape.slice(0, -2);\n const outerDimsB = b.shape.slice(0, -2);\n\n const batchDimA =
util.sizeFromShape(outerDimsA);\n const batchDimB = util.sizeFromShape(outerDimsB);\n\n const

```

```

batchDimsCompatible =\n    batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n\nutil.assert(\n    aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n    () => `Error in matMul: the input\n    batch dimensions must either be the `+\n        `same or at least one input batch dimension must be 1. Got input `+\n        `batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n\nconst outShapeOuterDims =\n    batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\nconst outShape =\n    outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n\nutil.assert(\n    innerShapeA === innerShapeB,\n    () => `Error in matMul: inner shapes (${innerShapeA}) and `+\n        `${innerShapeB}) of Tensors with shapes\n    ${a.shape} and `+\n        `${b.shape} and transposeA=${transposeA}` `+\n        ` and transposeB=${transposeB}`\n    must match.`);\n\nconst a3dShape: [number, number, number] = transposeA ?\n    [batchDimA, innerShapeA,\n    outerShapeA] :\n    [batchDimA, outerShapeA, innerShapeA];\nconst b3dShape: [number, number, number] =\n    transposeB ?\n    [batchDimB, outerShapeB, innerShapeB] :\n    [batchDimB, innerShapeB, outerShapeB];\n\n// The rest of the implementation is designed to operate on rank-3 tensors\nconst a3d = reshape({inputs: {x: a},\n    backend, attrs: {shape: a3dShape}});\nconst b3d = reshape({inputs: {x: b}, backend, attrs: {shape:\n    b3dShape}});\nconst intermediates: TensorInfo[] = [a3d, b3d];\nconst batchDim = Math.max(batchDimA,\n    batchDimB);\nconst sharedDim = transposeA ? a3d.shape[1] : a3d.shape[2];\nconst hasBias = bias != null;\nconst hasPreluActivationWeights = preluActivationWeights != null;\nconst hasLeakyreluAlpha = activation ===\n    'leakyrelu';\nconst fusedActivation = activation != null ?\n    mapActivationToShaderProgram(activation, true) :\n    null;\nconst containsFusedOps = hasBias || hasPreluActivationWeights ||\n    hasLeakyreluAlpha ||\n    fusedActivation != null;\nlet out: TensorInfo;\n\n// Since the matrices are vectors, it is faster to call mul().sum()\n// because sum() is O(sqrt(N)) due to divide-and-conquer.\nif ((outerShapeA === 1 || outerShapeB === 1) &&\n    sharedDim > MATMUL_SHARED_DIM_THRESHOLD && containsFusedOps === false) {\n    let aVec = a3d;\n    let bVec = b3d;\n    if (transposeA) {\n        aVec = transpose({inputs: {x: a3d}, backend, attrs: {perm: [0, 2, 1]}});\n        intermediates.push(aVec);\n    }\n    if (transposeB) {\n        bVec = transpose({inputs: {x: b3d}, backend, attrs:\n        {perm: [0, 2, 1]}});\n        intermediates.push(bVec);\n    }\n\n    const shouldReshapeA = outerShapeB !== 1;\n    const shouldReshapeB = outerShapeB === 1;\n\n    let aVec3d = aVec;\n    if (shouldReshapeA) {\n        aVec3d = reshape({\n            inputs: {x: aVec},\n            backend,\n            attrs: {shape: [batchDim, sharedDim, 1]}\n        });\n        intermediates.push(aVec3d);\n    }\n\n    const axis = outerShapeB === 1 ? 2 : 1;\n    let bVec3d = bVec;\n    if (shouldReshapeB) {\n        bVec3d = reshape({\n            inputs: {x: bVec},\n            backend,\n            attrs: {shape:\n            [batchDim, 1, sharedDim]}\n        });\n        intermediates.push(bVec3d);\n    }\n\n    const product =\n    multiply({inputs: {a: aVec3d, b: bVec3d}, backend});\n    out = sum({inputs: {x: product}, backend, attrs: {axis,\n    keepDims: true}});\n    intermediates.push(product);\n} else {\n    const dtype = upcastType(a.dtype, b.dtype);\n    const program = new MatMulPackedProgram(\n        a3dShape, b3dShape, [batchDim, outerShapeA, outerShapeB],\n        transposeA,\n        transposeB, hasBias, fusedActivation, hasPreluActivationWeights,\n        hasLeakyreluAlpha);\n    const inputs: TensorInfo[] = [a3d, b3d];\n    if (bias != null) {\n        inputs.push(bias);\n    }\n    if (hasPreluActivationWeights) {\n        inputs.push(reluActivationWeights);\n    }\n    if (hasLeakyreluAlpha)\n    {\n        const $leakyreluAlpha = backend.makeTensorInfo(\n            [], 'float32',\n            util.createScalarValue(leakyreluAlpha as {} as 'float32', 'float32'));\n        inputs.push($leakyreluAlpha);\n        intermediates.push($leakyreluAlpha);\n    }\n\n    out = backend.runWebGLProgram(program, inputs, dtype);\n}\n\nconst outReshaped =\n    reshape({inputs: {x: out}, backend, attrs: {shape: outShape}});\nintermediates.push(out);\nfor (const i of intermediates) {\n    backend.disposeIntermediateTensorInfo(i);\n}\nreturn outReshaped;\n}\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the License);\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an AS IS BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *
=====

```

```

*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from
'@tensorflow/tfjs-core';\n\nimport { MathBackendWebGL } from '../backend_webgl';\nimport { batchMatMulImpl }
from './BatchMatMul_impl';\n\nexport function _fusedMatMul(args: { \n inputs: _FusedMatMulInputs,\n attrs:
_FusedMatMulAttrs,\n backend: MathBackendWebGL\n }) { \n const { inputs, backend, attrs } = args;\n const { a, b,
bias, preluActivationWeights } = inputs;\n const { transposeA, transposeB, activation, leakyreluAlpha } = attrs;\n\n
return batchMatMulImpl({ \n a,\n b,\n transposeA,\n transposeB,\n backend,\n bias,\n
preluActivationWeights,\n leakyreluAlpha,\n activation\n });\n}\n\nexport const _fusedMatMulConfig:
KernelConfig = { \n kernelName: _FusedMatMul,\n backendName: 'webgl',\n kernelFunc: _fusedMatMul as { } as
KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { Acos, KernelConfig } from '@tensorflow/tfjs-core';\nimport { unaryKernelFunc } from
'../kernel_utils/kernel_funcs_utils';\nimport { CHECK_NAN_SNIPPET } from '../unaryop_gpu';\n\nconst ACOS =
CHECK_NAN_SNIPPET + ` \n if (abs(x) > 1.) { \n   return NAN;\n } \n return acos(x); \n `;\n\nexport const acos =
unaryKernelFunc({ opSnippet: ACOS });\n\nexport const acosConfig: KernelConfig = { \n kernelName: Acos,\n backendName: 'webgl',\n kernelFunc: acos,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { Acosh, KernelConfig } from '@tensorflow/tfjs-core';\nimport { unaryKernelFunc } from
'../kernel_utils/kernel_funcs_utils';\nimport { CHECK_NAN_SNIPPET } from '../unaryop_gpu';\n\nconst ACOSH =
CHECK_NAN_SNIPPET + ` \n if (x < 1.0) return NAN;\nreturn log(x + sqrt(x * x - 1.0)); \n `;\n\nexport const acosh =
unaryKernelFunc({ opSnippet: ACOSH });\n\nexport const acoshConfig: KernelConfig = { \n kernelName: Acosh,\n backendName: 'webgl',\n kernelFunc: acosh,\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { GPGPUProgram } from './gpgpu_math';\n\nexport class AddNProgram implements GPGPUProgram
{ \n variableNames: string[];\n outputShape: number[] = [];\n userCode: string;\n\n constructor(outputShape:
number[], shapes: number[][] ) { \n this.outputShape = outputShape;\n this.variableNames = shapes.map((_, i) =>
`T${i}`);\n\n const snippets: string[] = [];\n // Get target elements from every input tensor.\n
this.variableNames.forEach(variable => { \n snippets.push(` float v${ variable } =
get${ variable }AtOutCoords();`);\n });\n // Calculate the sum of all elements.\n const operation =
this.variableNames\n .map(variable => { \n return `v${ variable }`;\n
})\n .join(' + ');\n\n this.userCode = ` \n void main() { \n ${ snippets.join("\n
") }\n`;\n

```

```
float result = ${operation};\n    setOutput(result);\n    }\n    `;\n    }\n}\n\n",/**\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\nexport class AddNPackedProgram implements\nGPGPUProgram {\n  variableNames: string[];\n  outputShape: number[] = [];\n  userCode: string;\n  packedInputs =\ntrue;\n  packedOutput = true;\n\n  constructor(outputShape: number[], shapes: number[][]) {\n    this.outputShape =\noutputShape;\n    this.variableNames = shapes.map((_, i) => `T${i}`);\n\n    const snippets: string[] = [];\n    // Get\n    target elements from every input tensor.\n    this.variableNames.forEach(variable => {\n      snippets.push(`vec4\nv${variable} = get${variable}AtOutCoords();`);\n    });\n\n    // Calculate the sum of all elements.\n    const\n    operation = this.variableNames\n      .map(variable => {\n        return `v${variable}`;\n      })\n      .join(' + ');\n\n    this.userCode = `\n    void main() {\n      ${snippets.join("\n")}\n      vec4 result = ${operation};\n      setOutput(result);\n    }\n    `;\n  }\n}\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {AddN, AddNInputs, env, KernelConfig, KernelFunc, TensorInfo, upcastType} from\n '@tensorflow/tfjs-core';\nimport {AddNProgram} from './addn_gpu';\nimport {AddNPackedProgram} from\n './addn_packed_gpu';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {identity} from\n './Identity';\nexport function addN(args: {inputs: AddNInputs, backend: MathBackendWebGL}):\n TensorInfo\n {\n  const {inputs, backend} = args;\n  const tensors = inputs;\n  if (tensors.length === 1) {\n    return\n    identity({inputs: {x: tensors[0]}, backend});\n  }\n\n  // Limit the number of uploaded textures for optimization.\n  if (tensors.length > env().get('WEBGL_MAX_TEXTURES_IN_SHADER')) {\n    const midIndex =\n    Math.floor(tensors.length / 2);\n    const leftSide = addN({inputs: tensors.slice(0, midIndex), backend});\n    const\n    rightSide = addN({inputs: tensors.slice(midIndex), backend});\n    return addN({inputs: [leftSide, rightSide],\n    backend});\n  }\n\n  const dtype =\n    tensors.map(t => t.dtype).reduce((d1, d2) => upcastType(d1, d2));\n  const\n  shapes = tensors.map(t => t.shape);\n  // We can make sure shapes are identical in op level.\n  const usePackedOp =\n    env().getBool('WEBGL_PACK');\n  const program = usePackedOp ?\n    new\n    AddNPackedProgram(tensors[0].shape, shapes) :\n    new AddNProgram(tensors[0].shape, shapes);\n  return\n    backend.runWebGLProgram(program, tensors, dtype);\n}\n\nexport const addNConfig: KernelConfig = {\n  kernelName: AddN,\n  backendName: 'webgl',\n  kernelFunc: addN as { } as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from\n '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {reduce} from
```

```

'./kernel_utils/reduce';\n\nimport {reshape} from './Reshape';\nimport {transpose} from './Transpose';\n\nexport
function all(\n  args: {inputs: AllInputs, backend: MathBackendWebGL, attrs: AllAttrs});\n  TensorInfo {\n const
{inputs, backend, attrs} = args;\n const {x} = inputs;\n const {axis, keepDims} = attrs;\n\n const xRank =
x.shape.length;\n\n const origAxes = util.parseAxisParam(axis, x.shape);\n let axes = origAxes;\n const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n let permutedX = x;\n if (permutedAxes != null)
{\n  permutedX = transpose({inputs: {x}, backend, attrs: {perm: permutedAxes}});\n  axes =
backend_util.getInnerMostAxes(axes.length, xRank);\n } \n\n backend_util.assertAxesAreInnerMostDims('all',
axes, xRank);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(permutedX.shape, axes);\n const inSize =
util.sizeFromShape(reduceShape);\n\n const a2D =\n  reshape({inputs: {x: permutedX}, backend, attrs: {shape:
[-1, inSize]}});\n const reduced = reduce(a2D, a2D.dtype, 'all', backend);\n\n let res;\n if (keepDims) {\n const
newShape = backend_util.expandShapeToKeepDim(outShape, origAxes);\n  res = reshape({inputs: {x: reduced},
backend, attrs: {shape: newShape}});\n } else {\n  res = reshape({inputs: {x: reduced}, backend, attrs: {shape:
outShape}});\n } \n\n backend.disposeIntermediateTensorInfo(a2D);\n
backend.disposeIntermediateTensorInfo(reduced);\n\n if (permutedAxes != null) {\n
backend.disposeIntermediateTensorInfo(permutedX);\n } \n\n return res;\n}\n\nexport const allConfig:
KernelConfig = {\n kernelName: All,\n backendName: 'webgl',\n kernelFunc: all as { } as
KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
===== \n
*/\n\nimport {Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\nimport {reduce} from
'./kernel_utils/reduce';\nimport {reshape} from './Reshape';\nimport {transpose} from './Transpose';\n\nexport
function any(\n  args: {inputs: AnyInputs, backend: MathBackendWebGL, attrs: AnyAttrs});\n  TensorInfo {\n
const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {axis, keepDims} = attrs;\n\n const xRank =
x.shape.length;\n\n const origAxes = util.parseAxisParam(axis, x.shape);\n let axes = origAxes;\n const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n let permutedX = x;\n if (permutedAxes != null)
{\n  permutedX = transpose({inputs: {x}, backend, attrs: {perm: permutedAxes}});\n  axes =
backend_util.getInnerMostAxes(axes.length, xRank);\n } \n\n backend_util.assertAxesAreInnerMostDims('any',
axes, xRank);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(permutedX.shape, axes);\n const inSize =
util.sizeFromShape(reduceShape);\n\n const a2D =\n  reshape({inputs: {x: permutedX}, backend, attrs: {shape:
[-1, inSize]}});\n const reduced = reduce(a2D, a2D.dtype, 'any', backend);\n let res;\n if (keepDims) {\n const
newShape = backend_util.expandShapeToKeepDim(outShape, origAxes);\n  res = reshape({inputs: {x: reduced},
backend, attrs: {shape: newShape}});\n } else {\n  res = reshape({inputs: {x: reduced}, backend, attrs: {shape:
outShape}});\n } \n\n backend.disposeIntermediateTensorInfo(a2D);\n
backend.disposeIntermediateTensorInfo(reduced);\n\n if (permutedAxes != null) {\n
backend.disposeIntermediateTensorInfo(permutedX);\n } \n\n return res;\n}\n\nexport const anyConfig:
KernelConfig = {\n kernelName: Any,\n backendName: 'webgl',\n kernelFunc: any as { } as
KernelFunc\n};\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed

```

on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ArgMinMaxProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    reduceInfo: backend_util.ReduceInfo, op: 'max'|'min',\n    firstPass: boolean) {\n    const {windowSize, batchSize, outSize} = reduceInfo;\n    if (!firstPass) {\n      this.variableNames.push('bestIndicesA');\n    }\n    this.outputShape = [batchSize, outSize];\n    const compOp = (op === 'max') ? '>' : '<';\n    const indexSnippet = firstPass ? 'inOffset + i;'\n      : 'round(getBestIndicesA(batch, inOffset + i));'\n    this.userCode = `\n    void main() {\n      ivec2 coords = getOutputCoords();\n      int batch = coords[0];\n      int outIdx = coords[1];\n      int inOffset = outIdx * ${windowSize};\n      int bestIndex = inOffset;\n      float bestValue = getA(batch, bestIndex);\n      for (int i = 0; i < ${windowSize}; i++) {\n        int inIdx = ${indexSnippet};\n        float candidate = getA(batch, inIdx);\n        if (candidate ${compOp} bestValue) {\n          bestValue = candidate;\n          bestIndex = inIdx;\n        }\n      }\n      setOutput(float(bestIndex));\n    }\n  `;\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n`;\n}\n\n=====\n*\n\nimport {util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getChannels} from './packing_util';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class ArgMinMaxPackedProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  outputShape: number[];\n  userCode: string;\n  packedInputs = true;\n  packedOutput = true;\n\n  constructor(\n    shape: number[],\n    windowSize: number, op: 'max'|'min',\n    firstPass: boolean) {\n    util.assert(shape.length > 2, () =>`\n    Packed arg${op.charAt(0).toUpperCase()}${op.slice(1)} supports only inputs with rank above 2.`);\n    const inSize = shape[shape.length - 1];\n    const outSize = Math.ceil(inSize / windowSize);\n    this.outputShape = shape.slice(0, -1);\n    if (outSize > 1) {\n      this.outputShape.push(outSize);\n    }\n    if (!firstPass) {\n      this.variableNames.push('bestIndicesA');\n    }\n    const outShape = this.outputShape;\n    const rank = outShape.length;\n    const dtype = getCoordsDataType(rank);\n    const coords = getChannels('coords', rank);\n    let sourceLocSetup;\n    let sourceRank;\n    if (outSize === 1) {\n      sourceRank = rank + 1;\n      const sourceLocDType = getCoordsDataType(sourceRank);\n      sourceLocR = ${sourceLocDType}(${coords.join()}), 0);\n      sourceLocG = ${sourceLocDType}(${coords.join()}), 0);\n      sourceLocA = ${sourceLocDType}(${coords.join()}), 0);\n      sourceLocB = ${sourceLocDType}(${coords.join()}), 0);\n    } else {\n      sourceRank = rank;\n      sourceLocSetup = `\n      ${dtype} sourceLocR = coords;\n      ++${coords[rank - 1]};\n      ${dtype} sourceLocG = coords;\n      ++${coords[rank - 2]};\n      ${dtype} sourceLocA = coords;\n      --${coords[rank - 1]};\n      ${dtype} sourceLocB = coords;\n      --${coords[rank - 2]};\n    `;\n    }\n    const channels = ['x', 'y', 'z', 'w', 'u', 'v'].slice(0, sourceRank);\n    const inChannel = '.' + channels[sourceRank - 1];\n    // e.g. \".b\" for rank 3.\n    const intChannels = channels.map(x => 'int ' + x);\n    const srcRCoords =\n      getChannels('sourceLocR', sourceRank - 1).concat('inIdx.r');\n    const srcGCoords =\n      getChannels('sourceLocG', sourceRank - 1).concat('inIdx.g');\n    const srcBCoords =\n      getChannels('sourceLocB', sourceRank - 1).concat('inIdx.b');\n    const srcACoords =\n      getChannels('sourceLocA', sourceRank - 1).concat('inIdx.a');\n    const compOp = (op === 'max') ? 'greaterThan' :
```

```

'lessThan';\n  const fetchCandidateIdx = firstPass ? " : "\n      inIdx =
round(vec4(getBestIndicesAChannel(${srcRCoords.join()})),\n
getBestIndicesAChannel(${srcGCoords.join()}),\n
getBestIndicesAChannel(${srcBCoords.join()}),\n
getBestIndicesAChannel(${srcACoords.join()}));\n\n  const fetchValue = `vec4(\n
getAChannel(${srcRCoords.join()}),\n      hasNextCol ? getAChannel(${srcGCoords.join()}) : 0.,\n
hasNextRow ? getAChannel(${srcBCoords.join()}) : 0.,\n      hasNextRow && hasNextCol ?
getAChannel(${srcACoords.join()}) : 0.`;\n\n  const getBestIndicesAChannelSnippet = firstPass ? " : "\n  float
getBestIndicesAChannel(${intChannels.join()}) {\n      return getChannel(getBestIndicesA(${channels.join()}),\n
vec2(${channels.slice(-2).join()}));\n  };\n\n  this.userCode = `\n  float
getAChannel(${intChannels.join()}) {\n      return getChannel(getA(${channels.join()}),\n
vec2(${channels.slice(-2).join()}));\n  }\n  ${getBestIndicesAChannelSnippet}\n  void main() {\n
${dtype} coords = getOutputCoords();\n      bool hasNextCol = ${coords[rank - 1]} < ${outShape[rank - 1] - 1};\n
      bool hasNextRow = ${coords[rank - 2]} < ${outShape[rank - 2] - 1};\n      ${sourceLocSetup}\n      ivec4
srcIdx = ivec4(sourceLocR${inChannel}, sourceLocG${inChannel},\n      sourceLocB${inChannel},
sourceLocA${inChannel}) * ${windowSize};\n      ivec4 inIdx = srcIdx;\n      vec4 bestIndex = vec4(inIdx);\n
vec4 bestValue = ${fetchValue};\n\n      for (int i = 0; i < ${windowSize}; i++) {\n          inIdx = srcIdx;\n
${fetchCandidateIdx}\n          vec4 candidate = ${fetchValue};\n          bvec4 nan = isnan(candidate);\n          bvec4
replace = bvec4(\n              vec4(${compOp}(candidate, bestValue)) * (vec4(1.0) - vec4(nan));\n\n              bestValue =
vec4(replace.x ? candidate.x : bestValue.x,\n                  replace.y ? candidate.y : bestValue.y,\n
                  replace.z ? candidate.z : bestValue.z,\n                  replace.w ? candidate.w : bestValue.w);\n          bestIndex
= mix(bestIndex, vec4(inIdx), vec4(replace));\n          srcIdx++;\n      }\n      setOutput(bestIndex);\n  }\n  `;\n
}\n}\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util, env, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {ArgMinMaxProgram}
from './argminmax_gpu';\nimport {ArgMinMaxPackedProgram} from './argminmax_packed_gpu';\nimport
{MathBackendWebGL} from './backend_webgl';\nimport {reshape} from './kernels/Reshape';\n\nfunction
argReduce(\n  backend: MathBackendWebGL, x: TensorInfo, reduceType: 'max'|'min',\n  bestIndicesA:
TensorInfo = null): TensorInfo {\n  let batchSize = x.shape[0];\n  let inSize = x.shape[1];\n  if (bestIndicesA != null)
{\n    batchSize = bestIndicesA.shape[0];\n    inSize = bestIndicesA.shape[1];\n  }\n  const windowSize =
backend_util.computeOptimalWindowSize(inSize);\n  const reduceInfo =\n    {windowSize, inSize, batchSize,
outSize: Math.ceil(inSize / windowSize)};\n  const program =\n    new ArgMinMaxProgram(reduceInfo,
reduceType, bestIndicesA == null);\n  const inputs = [x];\n  if (bestIndicesA != null) {\n
inputs.push(bestIndicesA);\n  }\n  const output = backend.runWebGLProgram(program, inputs, 'int32');\n  // No
need to run another GPGPU program.\n  if (output.shape[1] === 1) {\n    return output;\n  }\n  const result =
argReduce(backend, x, reduceType, output);\n  backend.disposeIntermediateTensorInfo(output);\n  return
result;\n}\n\nfunction argReducePacked(\n  backend: MathBackendWebGL, x: TensorInfo, reduceType:
'max'|'min',\n  bestIndicesA: TensorInfo = null): TensorInfo {\n  const inShape = bestIndicesA != null ?
bestIndicesA.shape : x.shape;\n  const inSize = inShape[inShape.length - 1];\n  const windowSize =
backend_util.computeOptimalWindowSize(inSize);\n  const program = new ArgMinMaxPackedProgram(\n
inShape, windowSize, reduceType, bestIndicesA == null);\n  const inputs = bestIndicesA == null ? [x] : [x,
bestIndicesA];\n  const output = backend.runWebGLProgram(program, inputs, 'int32');\n  if (output.shape.length
=== x.shape.length) {\n    const result = argReducePacked(backend, x, reduceType, output);\n

```

```

backend.disposeIntermediateTensorInfo(output);\n  return result;\n }\n return output;\n}\n\nexport function
argMinMaxReduce(\n  backend: MathBackendWebGL, x: TensorInfo, axis: number,\n  reduceType: 'min'|'max'):\n  TensorInfo {\n    const axes = [axis];\n    backend_util.assertAxesAreInnerMostDims(\n      'arg' +
reduceType.charAt(0).toUpperCase() + reduceType.slice(1), axes,\n      x.shape.length);\n    if
(!env().getBool('WEBGL_PACK_REDUCE') || x.shape.length <= 2) {\n      const intermediateTensorInfos = [];\n      const [outShape, reduceShape] =\n        backend_util.computeOutAndReduceShapes(x.shape, axes);\n      const inSize
= util.sizeFromShape(reduceShape);\n      const a2D = reshape({inputs: {x}, backend, attrs: {shape: [-1, inSize]}});\n      intermediateTensorInfos.push(a2D);\n      const reduced = argReduce(backend, a2D, reduceType);\n      intermediateTensorInfos.push(reduced);\n      const reshaped =\n        reshape({inputs: {x: reduced}, backend, attrs:
{shape: outShape}});\n      intermediateTensorInfos.forEach(\n        t =>
backend.disposeIntermediateTensorInfo(t);\n      return reshaped;\n    }\n    return argReducePacked(backend, x,
reduceType);\n  }\n  ,"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {ArgMax, ArgMaxAttrs, ArgMaxInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util}
from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\n\nimport
{argMinMaxReduce} from '../kernel_utils/arg_min_max';\n\nimport {transpose} from './Transpose';\n\nexport
function argMax(\n  args:\n    {inputs: ArgMaxInputs, backend: MathBackendWebGL, attrs: ArgMaxAttrs});\n  TensorInfo {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {axis} = attrs;\n    let axes =
util.parseAxisParam(axis, x.shape);\n    const permutedAxes = backend_util.getAxesPermutation(axes,
x.shape.length);\n    let $x = x;\n    const intermediateTensorInfos = [];\n    if (permutedAxes != null) {\n      $x =
transpose({inputs: {x}, backend, attrs: {perm: permutedAxes}});\n      intermediateTensorInfos.push($x);\n      axes =
backend_util.getInnerMostAxes(axes.length, $x.shape.length);\n    }\n\n    backend_util.assertAxesAreInnerMostDims('argMax', [axes[0]], $x.shape.length);\n    const out =
argMinMaxReduce(backend, $x, axes[0], 'max');\n\n    intermediateTensorInfos.forEach(\n      t =>
backend.disposeIntermediateTensorInfo(t);\n    return out;\n  }\n\nexport const argMaxConfig: KernelConfig = {\n  kernelName: ArgMax,\n  backendName: 'webgl',\n  kernelFunc: argMax as {} as KernelFunc\n};\n  ,"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {ArgMin, ArgMinAttrs, ArgMinInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util}
from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\n\nimport
{argMinMaxReduce} from '../kernel_utils/arg_min_max';\n\nimport {transpose} from './Transpose';\n\nexport
function argMin(\n  args:\n    {inputs: ArgMinInputs, backend: MathBackendWebGL, attrs: ArgMinAttrs});\n  TensorInfo {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {axis} = attrs;\n    let axes =
util.parseAxisParam(axis, x.shape);\n    const permutedAxes = backend_util.getAxesPermutation(axes,
x.shape.length);\n    let $x = x;\n    const intermediateTensorInfos = [];\n    if (permutedAxes != null) {\n      $x =
transpose({inputs: {x}, backend, attrs: {perm: permutedAxes}});\n      intermediateTensorInfos.push($x);\n      axes =
backend_util.getInnerMostAxes(axes.length, $x.shape.length);\n    }\n\n

```



```

backend_util.assertAxesAreInnerMostDims('argMin', [axes[0]], $x.shape.length);\n\n const out =
argMinMaxReduce(backend, $x, axes[0], 'min');\n\n intermediateTensorInfos.forEach(\n    t =>
backend.disposeIntermediateTensorInfo(t);\n return out;\n)\n\nexport const argMinConfig: KernelConfig = {\n
kernelName: ArgMin,\n backendName: 'webgl',\n kernelFunc: argMin as { } as KernelFunc\n};\n\n", "/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {Asin, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\nimport {CHECK_NAN_SNIPPET} from './unaryop_gpu';\n\nconst ASIN =
CHECK_NAN_SNIPPET + \n if (abs(x) > 1.) {\n return NAN;\n }\n return asin(x);\n`;\n\nexport const asin =
unaryKernelFunc({opSnippet: ASIN});\n\nexport const asinConfig: KernelConfig = {\n kernelName: Asin,\n
backendName: 'webgl',\n kernelFunc: asin,\n};\n\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {Asinh, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\nimport {CHECK_NAN_SNIPPET} from './unaryop_gpu';\n\nconst ASINH =
CHECK_NAN_SNIPPET + `return log(x + sqrt(x * x + 1.0));`\n\nexport const asinh =
unaryKernelFunc({opSnippet: ASINH});\n\nexport const asinhConfig: KernelConfig = {\n kernelName: Asinh,\n
backendName: 'webgl',\n kernelFunc: asinh,\n};\n\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {Atan, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\nimport {CHECK_NAN_SNIPPET} from './unaryop_gpu';\n\nconst ATAN =
CHECK_NAN_SNIPPET + \n return atan(x);\n`;\n\nexport const atan = unaryKernelFunc({opSnippet:
ATAN});\n\nexport const atanConfig: KernelConfig = {\n kernelName: Atan,\n backendName: 'webgl',\n
kernelFunc: atan,\n};\n\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*\n\nimport {Atan2} from '@tensorflow/tfjs-core';\nimport {KernelConfig} from '@tensorflow/tfjs-

```

```

core';\n\nimport {binaryKernelFunc, CHECK_NAN_SNIPPET_BINARY,
CHECK_NAN_SNIPPET_BINARY_PACKED} from './kernel_utils/kernel_funcs_utils';\n\nconst ATAN2 =
CHECK_NAN_SNIPPET_BINARY + \n return atan(a, b);\n\nconst ATAN2_PACKED = \n vec4 result =
atan(a, b);\n vec4 isNaN = min(vec4(isnan(a)) + vec4(isnan(b)), vec4(1.0));\n ` +\n
CHECK_NAN_SNIPPET_BINARY_PACKED + \n return result;\n\nexport const atan2 =\n
binaryKernelFunc({opSnippet: ATAN2, packedOpSnippet: ATAN2_PACKED});\n\nexport const atan2Config:
KernelConfig = {\n kernelName: Atan2,\n backendName: 'webgl',\n kernelFunc: atan2,\n};\n"/**\n * @license\n
* Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {Atanh, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\n\nimport {CHECK_NAN_SNIPPET} from './unaryop_gpu';\n\nconst ATANH =
CHECK_NAN_SNIPPET + \n if ((x < -1.0) || (x > 1.0)) return NAN;\n\nreturn (log(1.0 + x) - log(1.0 - x)) /
2.0;\n\nexport const atanh = unaryKernelFunc({opSnippet: ATANH});\n\nexport const atanhConfig: KernelConfig
= {\n kernelName: Atanh,\n backendName: 'webgl',\n kernelFunc: atanh,\n};\n"/**\n * @license\n
* Copyright
2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class Pool2DProgram implements GPGPUProgram {\n variableNames = ['x'];\n
outputShape: number[];\n userCode: string;\n\n constructor(\n convInfo: backend_util.Conv2DInfo, poolType:
'max'|'avg',\n computePositions: boolean, flattenPositions = false,\n includeBatchInIndex = false) {\n if
(poolType === 'avg' && computePositions) {\n throw new Error('Cannot compute positions for average
pool.);\n }\n\n const filterWidth = convInfo.filterWidth;\n const strideHeight = convInfo.strideHeight;\n
const strideWidth = convInfo.strideWidth;\n const dilationHeight = convInfo.dilationHeight;\n const
dilationWidth = convInfo.dilationWidth;\n const effectiveFilterHeight = convInfo.effectiveFilterHeight;\n
const effectiveFilterWidth = convInfo.effectiveFilterWidth;\n\n const padTop = convInfo.padInfo.top;\n const
padLeft = convInfo.padInfo.left;\n this.outputShape = convInfo.outShape;\n\n const isAvgPool = poolType ===
'avg';\n\n const batchFlattenPositionStr = `((batch * ${convInfo.inHeight} + xR) * ${convInfo.inWidth} + xC) *
${convInfo.inChannels} + d`;\n const flattenPositionStr = `(xR * ${convInfo.inWidth} + xC) *
${convInfo.inChannels} + d`;\n\n let initializationValue = '0.0';\n if (!isAvgPool) {\n // WebGL on Firefox
Linux can't compile 1/0 so we do 1/eps.\n initializationValue = '-1.0 / 1e-20';\n }\n\n if (computePositions)
{\n const compareOp = '>=';\n\n this.userCode = \n const ivec2 strides = ivec2(${strideHeight},
${strideWidth});\n const ivec2 pads = ivec2(${padTop}, ${padLeft});\n\n void main() {\n ivec4
coords = getOutputCoords();\n int batch = coords[0];\n int d = coords[3];\n\n ivec2 xRCCorner =
coords.yz * strides - pads;\n int xRCorner = xRCCorner.x;\n int xCCorner = xRCCorner.y;\n\n //
max/min x(?, ?, d) to get y(yR, yC, d).\n // ? = to be determined\n float minMaxValue = 0.0;\n float
minMaxValueFound = 0.0;\n int minMaxPosition = 0;\n float avgValue = 0.0;\n for (int wR = 0;\n
wR < ${effectiveFilterHeight};\n wR += ${dilationHeight}) {\n int xR = xRCorner + wR;\n\n
if (xR < 0 || xR >= ${convInfo.inHeight}) {\n continue;\n }\n\n for (int wC = 0; wC <

```

```

    ${effectiveFilterWidth});\n        wC += ${dilationWidth}) {\n            int xC = xCCorner + wC;\n            if (xC < 0 || xC >= ${convInfo.inWidth}) {\n                continue;\n            }\n            float value = getX(batch, xR, xC, d);\n            // If a min / max value has already been found, use it. If not,\n            // use the current value.\n            float currMinMaxValue = mix(\n                value, minMaxValue, minMaxValueFound);\n            if (value ${compareOp} currMinMaxValue) {\n                minMaxValue = value;\n                minMaxValueFound = 1.0;\n                minMaxPosition = ${\n                    flattenPositions ? (includeBatchInIndex ? batchFlattenPositionStr :\n                        flattenPositionStr) :\n                    `wR * ${effectiveFilterWidth} + wC`};\n            }\n        }\n        setOutput(float(minMaxPosition));\n    }\n    `;\n    return;\n}\n\nconst compareOp = 'max';\nlet returnValue = `${poolType}(${poolType}(${poolType})C +\n    minMaxValue[0], minMaxValue[1]), minMaxValue[2]), minMaxValue[3]);\n    if (poolType === 'avg') {\n        returnValue = `avgValue / count`;\n    }\n    const filterWidthNearestVec4 = Math.floor(filterWidth / 4) * 4;\n    const filterWidthVec4Remainder = filterWidth % 4;\n    const updateSnippet = `\n        if (${isAvgPool}) {\n            avgValue += dot(values, ones);\n        } else {\n            minMaxValue = ${compareOp}(values, minMaxValue);\n        }\n    `;\n    this.userCode = `\n        const ivec2 strides = ivec2(${strideHeight}, ${strideWidth});\n        const ivec2 pads = ivec2(${padTop}, ${padLeft});\n        const float initializationValue = ${initializationValue};\n        const vec4 ones = vec4(1.0, 1.0, 1.0, 1.0);\n        float count = 0.0;\n        float getValue(int batch, int xR, int xC, int d) {\n            if (xC < 0 || xC >= ${convInfo.inWidth}) {\n                return initializationValue;\n            }\n            count += 1.0;\n            return getX(batch, xR, xC, d);\n        }\n        void main() {\n            ivec4 coords = getOutputCoords();\n            int batch = coords[0];\n            int d = coords[3];\n            ivec2 xRCCorner = coords.yz * strides - pads;\n            int xRCorner = xRCCorner.x;\n            int xCCorner = xRCCorner.y;\n            // max/min x(?, ?, d) to get y(yR, yC, d).\n            // ? = to be determined\n            vec4 minMaxValue = vec4(${initializationValue});\n            float avgValue = 0.0;\n            count = 0.0;\n            for (int wR = 0; wR < ${effectiveFilterHeight};\n                wR += ${dilationHeight}) {\n                int xR = xRCorner + wR;\n                if (xR < 0 || xR >= ${convInfo.inHeight}) {\n                    continue;\n                }\n                for (int wC = 0; wC < ${filterWidthNearestVec4};\n                    wC += 4) {\n                    int xC = xCCorner + wC * ${dilationWidth};\n                    vec4 values = vec4(\n                        getValue(batch, xR, xC, d),\n                        getValue(batch, xR, xC +\n                            ${dilationWidth}, d),\n                        getValue(batch, xR, xC +\n                            2 * ${dilationWidth}, d),\n                        getValue(batch, xR, xC +\n                            3 * ${dilationWidth}, d));\n                    ${updateSnippet}\n                }\n                int xC = xCCorner +\n                    ${filterWidthNearestVec4};\n                if (${filterWidthVec4Remainder} === 1) {\n                    vec4 values = vec4(\n                        getValue(batch, xR, xC, d),\n                        initializationValue,\n                        initializationValue,\n                        initializationValue);\n                    ${updateSnippet}\n                } else if (${filterWidthVec4Remainder} === 2) {\n                    vec4 values = vec4(\n                        getValue(batch, xR, xC, d),\n                        getValue(batch, xR, xC +\n                            ${dilationWidth}, d),\n                        initializationValue,\n                        initializationValue);\n                    ${updateSnippet}\n                } else if (${filterWidthVec4Remainder} === 3) {\n                    vec4 values = vec4(\n                        getValue(batch, xR, xC, d),\n                        getValue(batch, xR, xC +\n                            ${dilationWidth}, d),\n                        initializationValue,\n                        initializationValue);\n                    ${updateSnippet}\n                }\n                setOutput(${returnValue});\n            }\n        `;\n    }\n}\n\nexport class Pool3DProgram implements\n    GPGPUProgram {\n    variableNames = ['x'];\n    outputShape: number[];\n    userCode: string;\n\n    constructor(\n        convInfo: backend_util.Conv3DInfo, poolType: 'max'|'avg',\n        computePositions: boolean, flattenPositions =\n            false,\n        includeBatchInIndex = false) {\n        if (poolType === 'avg' && computePositions) {\n            throw new\n                Error('Cannot compute positions for average pool.);\n        }\n        const filterWidth = convInfo.filterWidth;\n        const\n            strideDepth = convInfo.strideDepth;\n        const strideHeight = convInfo.strideHeight;\n        const strideWidth =\n            convInfo.strideWidth;\n        const dilationDepth = convInfo.dilationDepth;\n        const dilationHeight =\n            convInfo.dilationHeight;\n        const dilationWidth = convInfo.dilationWidth;\n        const effectiveFilterDepth =\n            convInfo.effectiveFilterDepth;\n        const effectiveFilterHeight = convInfo.effectiveFilterHeight;\n        const\n            effectiveFilterWidth = convInfo.effectiveFilterWidth;\n        const padFront = convInfo.padInfo.front;\n        const\n            padTop = convInfo.padInfo.top;\n        const padLeft = convInfo.padInfo.left;\n        this.outputShape =\n            convInfo.outShape;\n        const isAvgPool = poolType === 'avg';\n        let initializationValue = '0.0';\n        if\n            (!isAvgPool) {\n            // WebGL on Firefox Linux can't compile 1/0 so we do 1/eps.\n            initializationValue = '-1.0 /

```

```

1e-20';\n } \n\n if (computePositions) {\n     const compareOp = '>=';\n\n     this.userCode = `\n     const ivec3
strides =\n     ivec3(${strideDepth}, ${strideHeight}, ${strideWidth});\n     const ivec3 pads =
ivec3(${padFront}, ${padTop}, ${padLeft});\n\n     void main() {\n     ivec5 coords = getOutputCoords();\n     int batch = coords.x;\n     int ch = coords.u;\n\n     ivec3 xCorner = ivec3(coords.y, coords.z, coords.w) *
strides - pads;\n     int xDCorner = xCorner.x;\n     int xRCorner = xCorner.y;\n     int xCCorner =
xCorner.z;\n\n     // max/min x(?, ?, ?, ch) to get y(yD, yR, yC, ch).\n     // ? = to be determined\n     float
minMaxValue = 0.0;\n     float minMaxValueFound = 0.0;\n     int minMaxPosition = 0;\n\n     for (int wD
= 0; wD < ${effectiveFilterDepth};\n         wD += ${dilationDepth}) {\n         int xD = xDCorner + wD;\n\n         if (xD < 0 || xD >= ${convInfo.inDepth}) {\n             continue;\n         }\n\n         for (int wR = 0; wR <
${effectiveFilterHeight};\n             wR += ${dilationHeight}) {\n             int xR = xRCorner + wR;\n\n             if (xR < 0 || xR >= ${convInfo.inHeight}) {\n                 continue;\n             }\n\n             for (int wC = 0; wC <
${effectiveFilterWidth};\n                 wC += ${dilationWidth}) {\n                 int xC = xCCorner + wC;\n\n                 if (xC < 0 || xC >= ${convInfo.inWidth}) {\n                     continue;\n                 }\n\n                 float value =
getX(batch, xD, xR, xC, ch);\n\n                 // If a min / max value has already been found, use it. If not,\n                 //
use the current value.\n                 float currMinMaxValue = mix(\n                     value, minMaxValue,
minMaxValueFound);\n                 if (value ${compareOp} currMinMaxValue) {\n                     minMaxValue =
value;\n                     minMaxValueFound = 1.0;\n                     minMaxPosition = ${\n                         flattenPositions ?\n                         (includeBatchInIndex ?\n                             `((batch * ${convInfo.inDepth} + xD) * ${\n
convInfo.inHeight} + xR) * ${convInfo.inWidth} + xC) * ${\n
convInfo.inChannels} + ch` :\n                             `((xD * ${convInfo.inHeight} + xR) * ${\n
convInfo.inWidth} + xC) * ${convInfo.inChannels} +
ch)` :\n                         `wD * ${effectiveFilterHeight} * ${effectiveFilterWidth} +\n
wR *
${effectiveFilterWidth} + wC`);\n                 }\n                 }\n                 }\n                 }\n\n                 setOutput(float(minMaxPosition));\n                 }\n                 `;\n                 return;\n                 }\n\n                 const compareOp = 'max';\n                 let
returnValue = `${poolType}(${poolType})(${poolType}(` +\n                 'minMaxValue[0], minMaxValue[1],
minMaxValue[2]), minMaxValue[3]');\n                 if (poolType === 'avg') {\n                     returnValue = `avgValue / count`;\n                 }\n\n                 const filterWidthNearestVec4 = Math.floor(filterWidth / 4) * 4;\n                 const filterWidthVec4Remainder =
filterWidth % 4;\n\n                 const updateSnippet = `\n                 if (${isAvgPool}) {\n                     avgValue += dot(values, ones);\n                 }\n                 } else {\n                     minMaxValue = ${compareOp}(values, minMaxValue);\n                 }\n                 `;\n\n                 this.userCode = `\n
const ivec3 strides =\n                 ivec3(${strideDepth}, ${strideHeight}, ${strideWidth});\n                 const ivec3 pads =
ivec3(${padFront}, ${padTop}, ${padLeft});\n                 const float initializationValue = ${initializationValue};\n
const vec4 ones = vec4(1.0, 1.0, 1.0, 1.0);\n                 float count = 0.0;\n\n                 float getValue(int batch, int xD, int xR, int
xC, int ch) {\n                 if (xC < 0 || xC >= ${convInfo.inWidth}) {\n                     return initializationValue;\n                 }\n\n                 count += 1.0;\n                 return getX(batch, xD, xR, xC, ch);\n                 }\n\n                 void main() {\n                 ivec5 coords =
getOutputCoords();\n                 int batch = coords.x;\n                 int ch = coords.u;\n\n                 ivec3 xCorner = ivec3(coords.y,
coords.z, coords.w) * strides - pads;\n                 int xDCorner = xCorner.x;\n                 int xRCorner = xCorner.y;\n                 int
xCCorner = xCorner.z;\n\n                 // max/min x(?, ?, ?, d) to get y(yD, yR, yC, ch).\n                 // ? = to be determined\n                 vec4 minMaxValue = vec4(${initializationValue});\n                 float avgValue = 0.0;\n                 count = 0.0;\n\n                 for (int
wD = 0; wD < ${effectiveFilterDepth};\n                     wD += ${dilationDepth}) {\n                     int xD = xDCorner + wD;\n\n                     if (xD < 0 || xD >= ${convInfo.inDepth}) {\n                         continue;\n                     }\n\n                     for (int wR = 0; wR <
${effectiveFilterHeight};\n                         wR += ${dilationHeight}) {\n                         int xR = xRCorner + wR;\n\n                         if (xR
< 0 || xR >= ${convInfo.inHeight}) {\n                             continue;\n                         }\n\n                         for (int wC = 0; wC <
${filterWidthNearestVec4}; wC += 4) {\n                             int xC = xCCorner + wC * ${dilationWidth};\n\n                             vec4
values = vec4(\n                                 getValue(batch, xD, xR, xC, ch),\n                                 getValue(batch, xD, xR, xC +
${dilationWidth}, ch),\n                                 getValue(batch, xD, xR, xC + 2 * ${dilationWidth}, ch),\n                                 getValue(batch, xD, xR, xC + 3 * ${dilationWidth}, ch)\n                             );\n\n                             ${updateSnippet}\n                             }\n\n                             int xC = xCCorner + ${filterWidthNearestVec4};\n                             if (${filterWidthVec4Remainder} === 1) {\n
vec4 values = vec4(\n                                 getValue(batch, xD, xR, xC, ch),\n                                 initializationValue,\n                                 initializationValue,\n                                 initializationValue\n                             );\n\n                             ${updateSnippet}\n                             } else if

```

```

({filterWidthVec4Remainder === 2}) {\n      vec4 values = vec4(\n      getValue(batch, xD, xR, xC,
ch),\n      getValue(batch, xD, xR, xC + ${dilationWidth}, ch),\n      initializationValue,\n
initializationValue\n      );\n\n      ${updateSnippet}\n      } else if (${filterWidthVec4Remainder ===
3}) {\n      vec4 values = vec4(\n      getValue(batch, xD, xR, xC, ch),\n      getValue(batch, xD, xR,
xC + ${dilationWidth}, ch),\n      getValue(batch, xD, xR, xC + 2 * ${dilationWidth}, ch),\n
initializationValue\n      );\n\n      ${updateSnippet}\n      }\n      }\n      setOutput(${returnValue});\n      }\n      }\n      `;\n      }\n      }"},/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\nimport { AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util }
from '@tensorflow/tfjs-core';\nimport { MathBackendWebGL } from './backend_webgl';\nimport
{ Pool2DProgram } from './pool_gpu';\nimport { assertNotComplex } from './webgl_util';\nimport { identity } from
'/Identity';\n\nexport function avgPool(args: {\n  inputs: AvgPoolInputs,\n  backend: MathBackendWebGL,\n  attrs:
AvgPoolAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n
assertNotComplex(x, 'avgPool');\n  const {filterSize, strides, pad, dimRoundingMode} = attrs;\n  const dilations =
1;\n\n  util.assert(\n    backend_util.eitherStridesOrDilationsAreOne(strides, dilations),\n    () => 'Error in
avgPool: Either strides or dilations must be 1. ' +\n    `Got strides ${strides} and dilations '${dilations}'`);\n\n
const convInfo = backend_util.computePool2DInfo(\n    x.shape as [number, number, number, number], filterSize,
strides,\n    dilations, pad, dimRoundingMode);\n  if (convInfo.filterWidth === 1 && convInfo.filterHeight === 1
&&\n    util.arraysEqual(convInfo.inShape, convInfo.outShape)) {\n    return identity({inputs: {x}, backend});\n
}\n\n  const avgPoolProgram = new Pool2DProgram(convInfo, 'avg', false);\n  return
backend.runWebGLProgram(avgPoolProgram, [x], 'float32');\n}\n\nexport const avgPoolConfig: KernelConfig =
{\n  kernelName: AvgPool,\n  backendName: 'webgl',\n  kernelFunc: avgPool as {} as KernelFunc\n};\n"},/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\nimport { AvgPool3D, AvgPool3DAttrs, AvgPool3DInputs, backend_util, KernelConfig, KernelFunc,
TensorInfo } from '@tensorflow/tfjs-core';\nimport { MathBackendWebGL } from './backend_webgl';\nimport
{ Pool3DProgram } from './pool_gpu';\n\nexport function avgPool3D(args: {\n  inputs: AvgPool3DInputs,\n
backend: MathBackendWebGL,\n  attrs: AvgPool3DAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} =
args;\n  const {x} = inputs;\n  const {filterSize, strides, pad, dimRoundingMode, dataFormat} = attrs;\n  const
dilations: [number, number, number] = [1, 1, 1];\n\n  const convInfo = backend_util.computePool3DInfo(\n
x.shape as [number, number, number, number, number], filterSize, strides,\n  dilations, pad, dimRoundingMode,
dataFormat);\n  const avgPoolProgram = new Pool3DProgram(convInfo, 'avg', false);\n  return
backend.runWebGLProgram(avgPoolProgram, [x], 'float32');\n}\n\nexport const avgPool3DConfig: KernelConfig =
{\n  kernelName: AvgPool3D,\n  backendName: 'webgl',\n  kernelFunc: avgPool3D as {} as
KernelFunc\n};\n"},/*\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n

```

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied. See the License for the specific language governing permissions and
limitations under the License.

```
=====\n
*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class AvgPool2DBackpropProgram implements GPGPUProgram {\n  variableNames =
['dy'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(convInfo: backend_util.Conv2DInfo) {\n    this.outputShape = convInfo.inShape;\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth = convInfo.strideWidth;\n    const dilationHeight = convInfo.dilationHeight;\n    const dilationWidth = convInfo.dilationWidth;\n    const effectiveFilterHeight = convInfo.effectiveFilterHeight;\n    const effectiveFilterWidth = convInfo.effectiveFilterWidth;\n\n    const padTop = effectiveFilterHeight - 1 - convInfo.padInfo.top;\n    const padLeft = effectiveFilterWidth - 1 - convInfo.padInfo.left;\n\n    const avgMultiplier = 1 / (filterHeight * filterWidth);\n\n    this.userCode = `\n    const ivec2 pads = ivec2(${padTop}, ${padLeft});\n    const float avgMultiplier = float(${avgMultiplier});\n\n    void main() {\n      ivec4 coords = getOutputCoords();\n      int b = coords[0];\n      int d = coords[3];\n      ivec2 dyRCCorner = coords.yz - pads;\n      int dyRCorner = dyRCCorner.x;\n      int dyCCorner = dyRCCorner.y;\n      // Convolve dy(?, ?, d) with pos mask(:, :, d) to get dx(xR, xC, d).\n      // ? = to be determined. := across all values in that axis.\n      float dotProd = 0.0;\n      for (int wR = 0; wR < ${effectiveFilterHeight}; wR += ${dilationHeight}) {\n        float dyR = float(dyRCorner + wR) / ${strideHeight}.0;\n        if (dyR < 0.0 || dyR >= ${convInfo.outHeight}.0 || fract(dyR) > 0.0) {\n          continue;\n        }\n        int idyR = int(dyR);\n        for (int wC = 0; wC < ${effectiveFilterWidth}; wC += ${dilationWidth}) {\n          float dyC = float(dyCCorner + wC) / ${strideWidth}.0;\n          if (dyC < 0.0 || dyC >= ${convInfo.outWidth}.0 || fract(dyC) > 0.0) {\n            continue;\n          }\n          int idyC = int(dyC);\n          float dyValue = getDy(b, idyR, idyC, d);\n          dotProd += dyValue * avgMultiplier;\n        }\n      }\n      setOutput(dotProd);\n    }\n  }\n\n  export class AvgPool3DBackpropProgram implements GPGPUProgram {\n    variableNames = ['dy'];\n    outputShape: number[];\n    userCode: string;\n\n    constructor(convInfo: backend_util.Conv3DInfo) {\n      this.outputShape = convInfo.inShape;\n      const filterDepth = convInfo.filterDepth;\n      const filterHeight = convInfo.filterHeight;\n      const filterWidth = convInfo.filterWidth;\n      const strideDepth = convInfo.strideDepth;\n      const strideHeight = convInfo.strideHeight;\n      const strideWidth = convInfo.strideWidth;\n      const dilationDepth = convInfo.dilationDepth;\n      const dilationHeight = convInfo.dilationHeight;\n      const dilationWidth = convInfo.dilationWidth;\n      const effectiveFilterDepth = convInfo.effectiveFilterDepth;\n      const effectiveFilterHeight = convInfo.effectiveFilterHeight;\n      const effectiveFilterWidth = convInfo.effectiveFilterWidth;\n\n      const padFront = effectiveFilterDepth - 1 - convInfo.padInfo.front;\n      const padTop = effectiveFilterHeight - 1 - convInfo.padInfo.top;\n      const padLeft = effectiveFilterWidth - 1 - convInfo.padInfo.left;\n\n      const avgMultiplier = 1 / (filterDepth * filterHeight * filterWidth);\n\n      this.userCode = `\n      const ivec3 pads = ivec3(${padFront}, ${padTop}, ${padLeft});\n      const float avgMultiplier = float(${avgMultiplier});\n\n      void main() {\n        ivec5 coords = getOutputCoords();\n        int batch = coords.x;\n        int ch = coords.u;\n        ivec3 dyCorner = ivec3(coords.y, coords.z, coords.w) - pads;\n        int dyDCorner = dyCorner.x;\n        int dyRCorner = dyCorner.y;\n        int dyCCorner = dyCorner.z;\n        // Convolve dy(?, ?, ?, d) with pos mask(:, :, :, ch) to get\n        // dx(xD, xR, xC, ch).\n        // ? = to be determined. := across all values in that axis.\n        float dotProd = 0.0;\n        for (int wD = 0; wD < ${effectiveFilterDepth}; wD += ${dilationDepth}) {\n          float dyD = float(dyDCorner + wD) / ${strideDepth}.0;\n          if (dyD < 0.0 || dyD >= ${convInfo.outDepth}.0 || fract(dyD) > 0.0) {\n            continue;\n          }\n          int idyD = int(dyD);\n          for (int wR = 0; wR < ${effectiveFilterHeight}; wR += ${dilationHeight}) {\n            float dyR = float(dyRCorner + wR) / ${strideHeight}.0;\n            if (dyR < 0.0 || dyR >= ${convInfo.outHeight}.0 || fract(dyR) > 0.0) {\n              continue;\n            }\n            int idyR = int(dyR);\n            for (int wC = 0; wC <
```

```

${effectiveFilterWidth});\n          wC += ${dilationWidth}) {\n          float dyC = float(dyCCorner + wC) /
${strideWidth}.0);\n          if (dyC < 0.0 || dyC >= ${convInfo.outWidth}.0 ||\n          fract(dyC) > 0.0) {\n          continue;\n          }\n          int idyC = int(dyC);\n          float dyValue = getDy(batch, idyD, idyR,
idyC, ch);\n          dotProd += dyValue * avgMultiplier;\n          }\n          }\n          }\n
setOutput(dotProd);\n      }\n      `;\n      }\n      }\n      "\n" * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport { AvgPool3DGrad, AvgPool3DGradAttrs, AvgPool3DGradInputs, backend_util, KernelConfig,
KernelFunc, TensorInfo } from '@tensorflow/tfjs-core';\nimport { AvgPool3DBackpropProgram } from
'./avg_pool_backprop_gpu';\nimport { MathBackendWebGL } from './backend_webgl';\n\nexport function
avgPool3DGrad(args: {\n inputs: AvgPool3DGradInputs,\n backend: MathBackendWebGL,\n attrs:
AvgPool3DGradAttrs\n}): TensorInfo {\n const {inputs, backend, attrs} = args;\n const {dy, input} = inputs;\n
const x = input;\n const {filterSize, strides, pad, dimRoundingMode} = attrs;\n const dilations: [number, number,
number] = [1, 1, 1];\n\n const convInfo = backend_util.computePool3DInfo(\n   x.shape as [number, number,
number, number, number], filterSize, strides,\n   dilations, pad, dimRoundingMode);\n const
avgPoolBackpropProgram = new AvgPool3DBackpropProgram(convInfo);\n return
backend.runWebGLProgram(avgPoolBackpropProgram, [dy], x.dtype);\n}\n\nexport const avgPoolGrad3DConfig:
KernelConfig = {\n kernelName: AvgPool3DGrad,\n backendName: 'webgl',\n kernelFunc: avgPool3DGrad as {\n
as KernelFunc\n};\n"},\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport { AvgPoolGrad, AvgPoolGradAttrs, AvgPoolGradInputs, backend_util, KernelConfig, KernelFunc,
TensorInfo } from '@tensorflow/tfjs-core';\nimport { AvgPool2DBackpropProgram } from
'./avg_pool_backprop_gpu';\nimport { MathBackendWebGL } from './backend_webgl';\nimport
{assertNotComplex} from './webgl_util';\n\nexport function avgPoolGrad(args: {\n inputs: AvgPoolGradInputs,\n
backend: MathBackendWebGL,\n attrs: AvgPoolGradAttrs\n}): TensorInfo {\n const {inputs, backend, attrs} =
args;\n const {dy, input} = inputs;\n const x = input;\n assertNotComplex([dy, input], 'avgPoolGrad');\n const
{filterSize, strides, pad} = attrs;\n\n const convInfo = backend_util.computePool2DInfo(\n   x.shape as [number,
number, number, number], filterSize, strides,\n   1 /* dilations */, pad);\n const avgPoolBackpropProgram = new
AvgPool2DBackpropProgram(convInfo);\n return backend.runWebGLProgram(avgPoolBackpropProgram, [dy],
x.dtype);\n}\n\nexport const avgPoolGradConfig: KernelConfig = {\n kernelName: AvgPoolGrad,\n
backendName: 'webgl',\n kernelFunc: avgPoolGrad as {\n as KernelFunc\n};\n"},\n"/**\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport {batchMatMulImpl}
from './BatchMatMul_impl';\n\nexport function batchMatMul(args: {\n  inputs: BatchMatMulInputs,\n  attrs:
BatchMatMulAttrs,\n  backend: MathBackendWebGL\n}) {\n  const {inputs, backend, attrs} = args;\n  const {a, b}
= inputs;\n  const {transposeA, transposeB} = attrs;\n\n  return batchMatMulImpl({a, b, transposeA, transposeB,
backend});\n}\n\nexport const batchMatMulConfig: KernelConfig = {\n  kernelName: BatchMatMul,\n  backendName: 'webgl',\n  kernelFunc: batchMatMul as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright
2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class BatchNormProgram implements GPGPUProgram {\n  variableNames: string[];\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(\n    xShape: number[], meanShape: number[],\n    varianceShape: number[],\n    offsetShape: number[]|null, scaleShape: number[]|null,\n    varianceEpsilon: number) {\n    this.variableNames = ['x', 'mean', 'variance'];\n    backend_util.assertAndGetBroadcastShape(xShape,
meanShape);\n    backend_util.assertAndGetBroadcastShape(xShape, varianceShape);\n\n    let offsetSnippet =
'0.0';\n    if (offsetShape != null) {\n      backend_util.assertAndGetBroadcastShape(xShape, offsetShape);\n      this.variableNames.push('offset');\n      offsetSnippet = 'getOffsetAtOutCoords()';\n    }\n\n    let scaleSnippet =
'1.0';\n    if (scaleShape != null) {\n      backend_util.assertAndGetBroadcastShape(xShape, scaleShape);\n      this.variableNames.push('scale');\n      scaleSnippet = 'getScaleAtOutCoords()';\n    }\n\n    this.outputShape =
xShape;\n    this.userCode = `\n    void main() {\n      float x = getXAtOutCoords();\n      float mean =
getMeanAtOutCoords();\n      float variance = getVarianceAtOutCoords();\n      float offset = ${offsetSnippet};\n      float scale = ${scaleSnippet};\n      float inv = scale * inversesqrt(variance + float(${varianceEpsilon}));\n      setOutput(dot(vec3(x, -mean, offset), vec3(inv, inv, 1)));\n    }\n  `;\n}\n\n"/**\n * @license\n * Copyright
2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class BatchNormPackedProgram implements GPGPUProgram {\n  variableNames:
string[];\n  outputShape: number[];\n  userCode: string;\n  packedInputs = true;\n  packedOutput = true;\n\n  constructor(\n    xShape: number[], meanShape: number[], varianceShape: number[],\n    offsetShape: number[]|null, scaleShape: number[]|null,\n    varianceEpsilon: number) {\n    this.variableNames = ['x', 'mean',
'variance'];\n    backend_util.assertAndGetBroadcastShape(xShape, meanShape);\n    backend_util.assertAndGetBroadcastShape(xShape, varianceShape);\n\n    let offsetSnippet = 'vec4(0.0)';\n    if
(offsetShape != null) {\n      backend_util.assertAndGetBroadcastShape(xShape, offsetShape);\n      this.variableNames.push('offset');\n      offsetSnippet = 'getOffsetAtOutCoords()';\n    }\n\n    let scaleSnippet =
'vec4(1.0)';\n    if (scaleShape != null) {\n      backend_util.assertAndGetBroadcastShape(xShape, scaleShape);\n      this.variableNames.push('scale');\n      scaleSnippet = 'getScaleAtOutCoords()';\n    }\n\n    this.outputShape =
xShape;\n    this.userCode = `\n    void main() {\n      vec4 offset = ${offsetSnippet};\n      vec4 scale =

```



```

${scaleSnippet};\n\n    vec4 x = getXAtOutCoords();\n    vec4 mean = getMeanAtOutCoords();\n    vec4\n    variance = getVarianceAtOutCoords();\n    vec4 inv = scale * inversesqrt(variance +\n    vec4(${varianceEpsilon}));\n    setOutput((x - mean) * inv + offset);\n    }\n    `;\n    }\n}\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {env, FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc,\nTensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\n\nimport\n {BatchNormProgram} from './batchnorm_gpu';\n\nimport {BatchNormPackedProgram} from\n './batchnorm_packed_gpu';\n\n\nexport const batchNorm: (params: {\n  inputs: FusedBatchNormInputs,\n  backend:\n  MathBackendWebGL,\n  attrs: FusedBatchNormAttrs\n}) => TensorInfo = ({inputs, backend, attrs}) => {\n  const\n  {x, mean, variance, offset, scale} = inputs;\n\n  util.assert(\n    mean.shape.length === variance.shape.length,\n    () => 'Batch normalization gradient requires mean and variance to have '\n    +\n    'equal ranks.);\n  util.assert(\n    offset == null || mean.shape.length === offset.shape.length,\n    () => 'Batch normalization gradient requires mean\n    and offset to have '\n    +\n    'equal ranks.);\n  util.assert(\n    scale == null || mean.shape.length ===\n    scale.shape.length,\n    () => 'Batch normalization gradient requires mean and scale to have '\n    +\n    'equal\n    ranks.);\n\n  let {varianceEpsilon} = attrs;\n  if (varianceEpsilon == null) {\n    varianceEpsilon = 0.001;\n  }\n\n  const finalInputs = [x, mean, variance];\n  let offsetShape = null;\n  if (offset != null) {\n    offsetShape =\n    offset.shape;\n    finalInputs.push(offset);\n  }\n\n  let scaleShape = null;\n  if (scale != null) {\n    scaleShape =\n    scale.shape;\n    finalInputs.push(scale);\n  }\n\n  const program =\n  env().getBool('WEBGL_PACK_NORMALIZATION') ?\n    new BatchNormPackedProgram(\n      x.shape,\n      mean.shape, variance.shape, offsetShape, scaleShape,\n      varianceEpsilon) :\n    new BatchNormProgram(\n      x.shape, mean.shape, variance.shape, offsetShape, scaleShape,\n      varianceEpsilon);\n  const output =\n  backend.runWebGLProgram(program, finalInputs, finalInputs[0].dtype);\n\n  return output;\n};\n\n\nexport const\n  batchNormConfig: KernelConfig = {\n    kernelName: FusedBatchNorm,\n    backendName: 'webgl',\n    kernelFunc:\n    batchNorm as {\n    } as KernelFunc,\n  };\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in\n compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {GPGPUContext} from './gpgpu_context';\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nimport\n {getCoordsDataType} from './shader_compiler';\n\n\nexport class SliceProgram implements GPGPUProgram {\n  variableNames = ['source'];\n  outputShape: number[];\n  userCode: string;\n  rank: number;\n\n  // Caching uniform\n  location for speed.\n  startLoc: WebGLUniformLocation;\n\n  constructor(destSize: number[]) {\n    this.outputShape = destSize;\n    this.rank = destSize.length;\n\n    const dtype = getCoordsDataType(this.rank);\n    const uniformPart = `uniform int start[${this.rank}];`;\n    const sourceCoords = getCoords(this.rank);\n\n    let\n    body: string;\n    const coordSum = destSize.map((_, i) => {\n      return `sourceLoc.${coords[i]} = start[${i}] +\n      coords.${coords[i]};`\n    });\n    body =`\n    ${dtype} sourceLoc;\n    ${dtype} coords =\n    getOutputCoords();\n    ${coordSum.join('\n')}\n    `;\n    this.userCode =`\n    ${uniformPart}\n    void\n    main() {\n    ${body}\n    setOutput(getSource(${sourceCoords}));\n    }\n    `;\n  }\n\n  getCustomSetupFunc(start: number[]) {\n    if (start.length !== this.rank) {\n      throw Error(`The rank

```

```

    (${this.rank}) of the program must match the `+` length of start (${start.length}));\n } \n return (gpgpu:
GPGPUContext, webGLProgram: WebGLProgram) => {\n if (this.startLoc == null) {\n this.startLoc =
gpgpu.getUniformLocationNoThrow(webGLProgram, 'start');\n if (this.startLoc == null) {\n // This means
the compiler has optimized and realized it doesn't need\n // the uniform.\n return;\n }\n }\n
gpgpu.gl.uniform1iv(this.startLoc, start);\n };\n }\n\nconst coords = ['x', 'y', 'z', 'w', 'u', 'v'];\nfunction
getCoords(rank: number): string {\n if (rank === 1) {\n return 'sourceLoc';\n } else if (rank <= 6) {\n return
coords.slice(0, rank).map(x => 'sourceLoc.' + x).join(',');\n } else {\n throw Error(`Slicing for rank ${rank} is not
yet supported`);\n }\n }\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

===== \n
*/\n\nimport {GPGPUContext} from './gpgpu_context';\nimport {GPGPUProgram} from './gpgpu_math';\nimport
{getChannels} from './packing_util';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class
SlicePackedProgram implements GPGPUProgram {\n variableNames = ['source'];\n packedInputs = true;\n
packedOutput = true;\n outputShape: number[];\n userCode: string;\n rank: number;\n\n // Caching uniform
location for speed.\n startLoc: WebGLUniformLocation;\n\n constructor(destSize: number[]) {\n
this.outputShape = destSize;\n this.rank = destSize.length;\n\n const dtype = getCoordsDataType(this.rank);\n
const coords = getChannels('coords', this.rank);\n const sourceLoc = getChannels('sourceLoc', this.rank);\n\n
const innerDims =\n this.rank === 1 ? 'sourceLoc' : `vec2(${sourceLoc.slice(-2).join()})`; \n const getChannel
=\n `getChannel(getSource(${sourceLoc.join()}), ${innerDims})`; \n const upperRow = \n result.x =
${getChannel}; \n if (++${coords[this.rank - 1]} < ${destSize[this.rank - 1]}) {\n ++${sourceLoc[this.rank -
1]}; \n result.y = ${getChannel}; \n --${sourceLoc[this.rank - 1]}; \n } \n `; \n const lowerRow =
this.rank === 1 ? " : \n --${coords[this.rank - 1]}; \n if (++${coords[this.rank - 2]} < ${destSize[this.rank -
2]}) {\n ++${sourceLoc[this.rank - 2]}; \n result.z = ${getChannel}; \n if (++${coords[this.rank - 1]} <
${destSize[this.rank - 1]}) {\n ++${sourceLoc[this.rank - 1]}; \n result.w = ${getChannel}; \n } \n
} \n `; \n\n const sourceLocSetup = this.rank <= 4 ? \n `sourceLoc = coords +\n
${dtype}(${destSize.map((_, i) => `start[${i}]`).join()})`; : \n destSize.map((_, i) => `${sourceLoc[i]} =
${coords[i]} + start[${i}];`)\n .join("\\n"); \n this.userCode = \n uniform int start[${this.rank}]; \n void
main() {\n ${dtype} coords = getOutputCoords(); \n ${dtype} sourceLoc; \n ${sourceLocSetup}\n
vec4 result = vec4(0.); \n ${upperRow}\n ${lowerRow}\n setOutput(result);\n } \n `; \n }\n\n
getCustomSetupFunc(start: number[]) {\n if (start.length !== this.rank) {\n throw Error(\n `The rank
(${this.rank}) of the program must match the `+` length of start (${start.length}));\n } \n return (gpgpu:
GPGPUContext, webGLProgram: WebGLProgram) => {\n if (this.startLoc == null) {\n this.startLoc =
gpgpu.getUniformLocationNoThrow(webGLProgram, 'start');\n if (this.startLoc == null) {\n // This means
the compiler has optimized and realized it doesn't need\n // the uniform.\n return;\n }\n }\n
gpgpu.gl.uniform1iv(this.startLoc, start);\n };\n }\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

===== \n
*/\n\nimport {backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,

```

```

KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from
'./backend_webgl';\n\nimport {reshape} from './Reshape';\n\nimport {slice} from './Slice';\n\nimport {transpose} from
'./Transpose';\n\nexport const batchToSpaceND = (args: {\n  inputs: BatchToSpaceNDInputs,\n  backend:
MathBackendWebGL,\n  attrs: BatchToSpaceNDAttrs\n}): TensorInfo => {\n  const {inputs, backend, attrs} =
args;\n  const {x} = inputs;\n  const {blockShape, crops} = attrs;\n\n  util.assert(\n    x.shape.length <= 4,\n    ()
=> 'batchToSpaceND for rank > 4 with a WebGL backend not '+\n      'implemented yet');\n  const prod =
blockShape.reduce((a, b) => a * b);\n\n  const reshaped = backend_util.getReshaped(x.shape, blockShape, prod);\n
const permuted = backend_util.getPermuted(reshaped.length, blockShape.length);\n  const reshapedPermuted =\nbackend_util.getReshapedPermuted(x.shape, blockShape, prod);\n  const sliceBeginCoords =\nbackend_util.getSliceBeginCoords(crops, blockShape.length);\n  const sliceSize =\nbackend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n  const toDispose = [];\n\n  const
reshapedIntermediate =\n  reshape({inputs: {x}, backend, attrs: {shape: reshaped}});\n  const
transposedIntermediate = transpose(\n    {inputs: {x: reshapedIntermediate}, backend, attrs: {perm: permuted}});\n
const reshapedIntermediate2 = reshape({\n  inputs: {x: transposedIntermediate},\n  backend,\n  attrs: {shape:
reshapedPermuted}\n  });\n  const sliced = slice({\n  inputs: {x: reshapedIntermediate2},\n  backend,\n  attrs:
{begin: sliceBeginCoords, size: sliceSize}\n  });\n  toDispose.push(reshapedIntermediate);\n
toDispose.push(transposedIntermediate);\n  toDispose.push(reshapedIntermediate2);\n\n  toDispose.forEach(t =>
backend.disposeIntermediateTensorInfo(t));\n\n  return sliced;\n};\n\nexport const batchToSpaceNDConfig:
KernelConfig = {\n  kernelName: BatchToSpaceND,\n  backendName: 'webgl',\n  kernelFunc: batchToSpaceND as
{ } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {Bincount, BincountAttrs, BincountInputs, KernelConfig, KernelFunc, TensorInfo, TypedArray} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport {bincountImplCPU}
from './kernel_utils/shared';\n\nexport function bincount(args: {\n  inputs: BincountInputs,\n  backend:
MathBackendWebGL,\n  attrs: BincountAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x,
weights} = inputs;\n  const {size} = attrs;\n\n  const xVals = backend.readSync(x.dataId) as TypedArray;\n  const
weightsVals = backend.readSync(weights.dataId) as TypedArray;\n\n  const outVals =\n  bincountImplCPU(xVals, weightsVals, weights.dtype, weights.shape, size);\n\n  return
backend.makeTensorInfo([size], weights.dtype, outVals);\n}\n\nexport const bincountConfig: KernelConfig = {\n
kernelName: Bincount,\n  backendName: 'webgl',\n  kernelFunc: bincount as { } as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from
'./backend_webgl';\n\nimport {UnaryOpProgram} from './unaryop_gpu';\n\nconst TO_INT = `return
float(int(x));`\n\nexport function int(input: TensorInfo, backend: MathBackendWebGL): TensorInfo {\n  const
program = new UnaryOpProgram(input.shape, TO_INT);\n  const output = backend.runWebGLProgram(program,
[input], 'int32');\n  return {dataId: output.dataId, shape: output.shape, dtype: output.dtype};\n}\n\n"/**\n *

```

@license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {GPGPUContext} from './gpgpu_context';\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ClipProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  userCode: string;\n  outputShape: number[];\n\n  // Caching uniform locations for speed.\n  minLoc: WebGLUniformLocation;\n  maxLoc: WebGLUniformLocation;\n\n  constructor(aShape: number[]) {\n    this.outputShape = aShape;\n    this.userCode =`\n    uniform float minVal;\n    uniform float maxVal;\n    void main() {\n      float value =\n      getAAAtOutCoords();\n      if (isnan(value)) {\n        setOutput(value);\n        return;\n      }\n      setOutput(clamp(value, minVal, maxVal));\n    }\n  }\n\n  getCustomSetupFunc(min: number, max: number) {\n    return (gpgpu: GPGPUContext, webGLProgram: WebGLProgram) => {\n      if (this.minLoc == null) {\n        this.minLoc = gpgpu.getUniformLocationNoThrow(webGLProgram, 'minVal');\n        this.maxLoc =\n        gpgpu.getUniformLocationNoThrow(webGLProgram, 'maxVal');\n      }\n      gpgpu.gl.uniform1f(this.minLoc, min);\n      gpgpu.gl.uniform1f(this.maxLoc, max);\n    };}\n\n  }, \"/*\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport {GPGPUContext} from './gpgpu_context';\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ClipPackedProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  packedInputs = true;\n  packedOutput = true;\n  userCode: string;\n  outputShape: number[];\n\n  // Caching uniform locations for speed.\n  minLoc: WebGLUniformLocation;\n  maxLoc: WebGLUniformLocation;\n\n  constructor(aShape: number[]) {\n    this.outputShape = aShape;\n    this.userCode =`\n    uniform float minVal;\n    uniform float maxVal;\n    void main() {\n      vec4 value = getAAAtOutCoords();\n      if (any(isnan(value))) {\n        setOutput(value);\n        return;\n      }\n      setOutput(clamp(value, vec4(minVal), vec4(maxVal)));\n    }\n  }\n\n  getCustomSetupFunc(min: number, max: number) {\n    return (gpgpu: GPGPUContext, webGLProgram: WebGLProgram) => {\n      if (this.minLoc == null) {\n        this.minLoc =\n        gpgpu.getUniformLocationNoThrow(webGLProgram, 'minVal');\n        this.maxLoc =\n        gpgpu.getUniformLocationNoThrow(webGLProgram, 'maxVal');\n      }\n      gpgpu.gl.uniform1f(this.minLoc, min);\n      gpgpu.gl.uniform1f(this.maxLoc, max);\n    };}\n\n  }, \"/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, env, KernelConfig, KernelFunc, TensorInfo}\nfrom '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {ClipProgram} from '../clip_gpu';\nimport {ClipPackedProgram} from '../clip_packed_gpu';\n\nexport function clipByValue(args: {\n  inputs: ClipByValueInputs,\n  backend: MathBackendWebGL,\n  attrs: ClipByValueAttrs\n}): TensorInfo {\n
```

```

const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {clipValueMin, clipValueMax} = attrs;\n\n let
program;\n if (env().getBool('WEBGL_PACK_CLIP')) {\n program = new ClipPackedProgram(x.shape);\n }
else {\n program = new ClipProgram(x.shape);\n }\n const customSetup =
program.getCustomSetupFunc(clipValueMin, clipValueMax);\n return backend.runWebGLProgram(program, [x],
x.dtype, customSetup);\n}\n\nexport const clipByValueConfig: KernelConfig = {\n kernelName: ClipByValue,\n backendName: 'webgl',\n kernelFunc: clipByValue as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright
2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\\n
*/\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ComplexAbsProgram implements
GPGPUProgram {\n variableNames = ['real', 'imag'];\n userCode: string;\n outputShape: number[];\n\n constructor(shape: number[]) {\n this.outputShape = shape;\n this.userCode = `
\n void main() {\n float re
= abs(getRealAtOutCoords());\n float im = abs(getImagAtOutCoords());\n float mx = max(re, im);\n\n
// sadly the length function in glsl is not underflow-safe\n // (at least not on Intel GPUs). So the safe solution
is\n // to ensure underflow-safety in all cases.\n setOutput(\n mx == 0.0 ? 0.0 : mx * length(vec2(1,
min(re, im)/mx))\n );\n }\n `;\n }\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\\n
*/\n\nimport {ComplexAbs, ComplexAbsInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {ComplexAbsProgram} from
'./complex_abs_gpu';\n\n// Returns a TensorInfo with the complex shape and the dataId of the\n// underlying part.
We need to do this because a reshaped complex tensor is\n// not reflected in its parts.\nfunction
makeComplexComponentTensorInfo(\n complexTensor: TensorInfo, complexPart: TensorInfo): TensorInfo {\n
return {\n dataId: complexPart.dataId,\n dtype: complexPart.dtype,\n shape: complexTensor.shape\n
};\n}\n\nexport function complexAbs(\n args: {inputs: ComplexAbsInputs, backend: MathBackendWebGL}):
TensorInfo {\n const {inputs, backend} = args;\n const {x} = inputs;\n\n const xData =
backend.texData.get(x.dataId);\n\n const program = new ComplexAbsProgram(x.shape);\n const programInputs =
[\n makeComplexComponentTensorInfo(x, xData.complexTensorInfos.real),\n
makeComplexComponentTensorInfo(x, xData.complexTensorInfos.imag),\n ];\n\n return
backend.runWebGLProgram(\n program, programInputs, programInputs[0].dtype);\n}\n\nexport const
complexAbsConfig: KernelConfig = {\n kernelName: ComplexAbs,\n backendName: 'webgl',\n kernelFunc:
complexAbs as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\\n

```

```

*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class ConcatProgram implements GPGPUProgram {\n  variableNames: string[];\n  outputShape: number[] = [];\n  userCode: string;\n\n  // Concat 2d tensors along axis=1. See comments in
MathBackendWebGL.concat().\n  constructor(shapes: Array<[number, number]>) {\n    this.outputShape =
backend_util.computeOutShape(shapes, 1 /* axis */);\n    this.variableNames = shapes.map((_, i) => `T${i}`);\n\n    const offsets: number[] = new Array(shapes.length - 1);\n    offsets[0] = shapes[0][1];\n    for (let i = 1; i <
offsets.length; i++) {\n      offsets[i] = offsets[i - 1] + shapes[i][1];\n    }\n\n    const snippets = [\n      `if (yC <
${offsets[0]}) setOutput(getT0(yR, yC));`\n      for (let i = 1; i < offsets.length; i++) {\n        const shift = offsets[i -
1];\n        snippets.push(\n          `else if (yC < ${offsets[i]})` +\n          `setOutput(getT${i}(yR, yC-${shift}));`\n        );\n      }\n      const lastIndex = offsets.length;\n      const lastShift = offsets[offsets.length - 1];\n      snippets.push(`else
setOutput(getT${lastIndex}(yR, yC-${lastShift}));`);\n\n      this.userCode = `\n        void main() {\n          ivec2 coords
= getOutputCoords();\n          int yR = coords.x;\n          int yC = coords.y;\n          ${snippets.join("\n          ")}\n        }\n      `;\n    }\n  }\n\n  /**\n   * @license\n   * Copyright 2019 Google LLC. All Rights Reserved.\n   * Licensed under the
Apache License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the
License.\n   * You may obtain a copy of the License at\n   * http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing, software\n   * distributed under the License is distributed
on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the
License.\n   */

```

```

=====
*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport {GPGPUProgram} from
'./gpgpu_math';\nimport {getChannels} from './packing_util';\nimport {getCoordsDataType} from
'./shader_compiler';\n\nexport class ConcatPackedProgram implements GPGPUProgram {\n  variableNames:
string[];\n  packedInputs = true;\n  packedOutput = true;\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(shapes: number[][], axis: number) {\n    this.outputShape = backend_util.computeOutShape(shapes,
axis);\n    const shape = this.outputShape;\n    const rank = shape.length;\n    const dtype =
getCoordsDataType(rank);\n    const coords = getChannels('coords', rank);\n    const channels = ['x', 'y', 'z', 'w', 'u',
'v'].slice(0, rank);\n    this.variableNames = shapes.map((_, i) => `T${i}`);\n\n    const offsets: number[] = new
Array(shapes.length - 1);\n    offsets[0] = shapes[0][axis];\n    for (let i = 1; i < offsets.length; i++) {\n      offsets[i] =
offsets[i - 1] + shapes[i][axis];\n    }\n\n    const channel = channels[axis];\n    const lastChannels = channels.slice(-
2);\n    const allChannels = channels.join();\n\n    let getValueSnippet = `if (${channel} < ${offsets[0]}) {\n
return getChannel(\n      getT0(${allChannels}), vec2(${lastChannels.join()});\n    `;\n    for (let i = 1; i <
offsets.length; i++) {\n      const shift = offsets[i - 1];\n      // Note: the >= comparison below may seem unnecessary
given the check\n      // above but is needed to workaround branch execution issues on some\n      // devices. It makes
all the conditions exclusive without relying on\n      // execution order.\n      getValueSnippet += `\n      if
(${channel} < ${offsets[i]} && ${channel} >= ${offsets[i - 1]}) {\n        return getChannel(\n
getT${i}(${shiftedChannels(channels, channel, shift)}),\n          vec2(${shiftedChannels(lastChannels, channel,
shift)});\n        `;\n      }\n    }\n\n    const lastIndex = offsets.length;\n    const shift = offsets[offsets.length - 1];\n
getValueSnippet += `\n    return getChannel(\n      getT${lastIndex}(${shiftedChannels(channels, channel,
shift)}),\n      vec2(${shiftedChannels(lastChannels, channel, shift)});`\n\n    this.userCode = `\n    float
getValue(${channels.map(x => 'int ' + x)}) {\n      ${getValueSnippet}\n    }\n\n    void main() {\n      ${dtype}
coords = getOutputCoords();\n      vec4 result = vec4(getValue(${coords}), 0., 0., 0.); \n      ${coords[rank - 1]}
= ${coords[rank - 1]} + 1;\n      if (${coords[rank - 1]} < ${shape[rank - 1]}) {\n        result.g =
getValue(${coords});\n      }\n      ${coords[rank - 2]} = ${coords[rank - 2]} + 1;\n      if (${coords[rank - 2]}
< ${shape[rank - 2]}) {\n        result.a = getValue(${coords});\n      }\n      ${coords[rank - 1]} =
${coords[rank - 1]} - 1;\n      if (${coords[rank - 2]} < ${shape[rank - 2]} &&\n        ${coords[rank - 1]} <
${shape[rank - 1]}) {\n        result.b = getValue(${coords});\n      }\n      setOutput(result);\n    }\n  `;\n
}\n\n  /**\n   * Return an expression for coordinates into a vector where a given channel\n   * will be offset by

```

```
[shift].\n *\n * @param channels the channels to consider\n * @param channel the channel we want shifted\n * @param shift the amount to subtract from the channel.\n *\n * @returns a string of the form 'x, y-[shift], z' where any one channel can\n * have the shift applied.\n */\nfunction shiftedChannels(channels: string[], channel: string, shift: number) {\n  const channelIdx = channels.indexOf(channel);\n  const res = channels.map((c, idx) => {\n    if (idx === channelIdx) {\n      return `${c} - ${shift}`;\n    } else {\n      return c;\n    }\n  });\n  return res.join();\n}\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {Imag, ImagInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {identity} from './Identity';\n\nexport function imag(args: {inputs: ImagInputs, backend: MathBackendWebGL}):\n  TensorInfo {\n  const {inputs, backend} = args;\n  const {input} = inputs;\n  const inputData = backend.texData.get(input.dataId);\n  \n  return identity({inputs: {x: inputData.complexTensorInfos.imag}, backend});\n}\n\nexport const imagConfig: KernelConfig = {\n  kernelName: Imag,\n  backendName: 'webgl',\n  kernelFunc: imag as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {concatImpl} from './Concat_impl';\nimport {identity} from './Identity';\n\nexport function concat(\n  args: {\n    inputs: ConcatInputs, attrs: ConcatAttrs, backend: MathBackendWebGL\n  }):\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {axis} = attrs;\n  const $axis = util.parseAxisParam(axis, inputs[0].shape)[0];\n  const outShape =\n    backend_util.computeOutShape(inputs.map(t => t.shape), $axis);\n  \n  if (util.sizeFromShape(outShape) === 0) {\n    return backend.makeTensorInfo(outShape, inputs[0].dtype, []);\n  }\n  \n  // Keep only non-empty tensors (ignore tensors with 0 in their shape).\n  const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n  if ($inputs.length === 1) {\n    return identity({inputs: {x: $inputs[0]}, backend});\n  }\n  \n  const shapes = $inputs.map(t => t.shape);\n  backend_util.assertParamsConsistent(shapes, $axis);\n  \n  return concatImpl($inputs, $axis, backend);\n}\n\nexport const concatConfig: KernelConfig = {\n  kernelName: Concat,\n  backendName: 'webgl',\n  kernelFunc: concat as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class Conv2DProgram implements GPGPUProgram {\n  variableNames = ['x', 'W'];\n  outputShape: number[];\n  userCode: string;\n  \n  constructor(\n    convInfo: backend_util.Conv2DInfo, addBias =
```

```

false,\n  activation: string = null, hasPreluActivationWeights = false,\n  hasLeakyreluAlpha = false) {\n
this.outputShape = convInfo.outShape;\n  const padTop = convInfo.padInfo.top;\n  const padLeft =
convInfo.padInfo.left;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth =
convInfo.strideWidth;\n  const dilationHeight = convInfo.dilationHeight;\n  const dilationWidth =
convInfo.dilationWidth;\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth =
convInfo.filterWidth;\n\n  const inputDepthNearestVec4 = Math.floor(convInfo.inChannels / 4) * 4;\n  const
inputDepthVec4Remainder = convInfo.inChannels % 4;\n  const isChannelsLast = convInfo.dataFormat ===
'channelsLast';\n\n  const rowDim = isChannelsLast ? 1 : 2;\n  const colDim = isChannelsLast ? 2 : 3;\n  const
channelDim = isChannelsLast ? 3 : 1;\n\n  let activationSnippet = "", applyActivationSnippet = ""; \n  if (activation)
{\n    if (hasPreluActivationWeights) {\n      activationSnippet = `float activation(float a) {\n        float b =
getPreluActivationWeightsAtOutCoords();\n          ${activation}\n        }`; \n    } else if (hasLeakyreluAlpha) {\n
activationSnippet = `float activation(float a) {\n        float b = getLeakyreluAlphaAtOutCoords();\n
${activation}\n        }`; \n    } else {\n      activationSnippet = `\n        float activation(float x) {\n
${activation}\n        }\n        `;\n    }\n\n    applyActivationSnippet = `result = activation(result);`; \n  }\n\n
const addBiasSnippet = addBias ? 'result += getBiasAtOutCoords();' : ""; \n  if (addBias) {\n
this.variableNames.push('bias');\n  }\n\n  if (hasPreluActivationWeights) {\n
this.variableNames.push('preluActivationWeights');\n  }\n\n  if (hasLeakyreluAlpha) {\n
this.variableNames.push('leakyreluAlpha');\n  }\n\n  this.userCode = `\n    ${activationSnippet}\n\n    const
ivec2 strides = ivec2(${strideHeight}, ${strideWidth});\n    const ivec2 pads = ivec2(${padTop}, ${padLeft});\n\n
void main() {\n      ivec4 coords = getOutputCoords();\n      int batch = coords[0];\n      int d2 =
coords[${channelDim}];\n\n      ivec2 xRCCorner =\n          ivec2(coords[${rowDim}], coords[${colDim}]) *
strides - pads;\n      int xRCorner = xRCCorner.x;\n      int xCCorner = xRCCorner.y;\n\n      // Convolve x(?, ?,
d1) with w(:, :, d1, d2) to get y(yR, yC, d2). \n      // ? = to be determined. := across all values in that axis.\n
float dotProd = 0.0;\n      for (int wR = 0; wR < ${filterHeight}; wR++) {\n          int xR = xRCorner + wR *
${dilationHeight};\n\n          if (xR < 0 || xR >= ${convInfo.inHeight}) {\n              continue;\n          }\n\n
for (int wC = 0; wC < ${filterWidth}; wC++) {\n          int xC = xCCorner + wC * ${dilationWidth};\n\n          if (xC
< 0 || xC >= ${convInfo.inWidth}) {\n              continue;\n          }\n\n          for (int d1 = 0; d1 <
${inputDepthNearestVec4}; d1 += 4) {\n              vec4 wValues = vec4(\n                  getW(wR, wC, d1, d2),\n
getW(wR, wC, d1 + 1, d2),\n                  getW(wR, wC, d1 + 2, d2),\n                  getW(wR, wC, d1 + 3, d2)\n
);\n\n              if (${isChannelsLast}) {\n                  vec4 xValues = vec4(\n                      getX(batch, xR, xC, d1),\n
getX(batch, xR, xC, d1 + 1),\n                      getX(batch, xR, xC, d1 + 2),\n                      getX(batch, xR, xC, d1 +
3)\n                  );\n                  dotProd += dot(xValues, wValues);\n              } else {\n                  vec4 xValues =
vec4(\n                      getX(batch, d1, xR, xC),\n                      getX(batch, d1 + 1, xR, xC),\n                      getX(batch, d1 +
2, xR, xC),\n                      getX(batch, d1 + 3, xR, xC)\n                  );\n                  dotProd += dot(xValues, wValues);\n
              }\n\n              if (${inputDepthVec4Remainder} === 1) {\n                  if (${isChannelsLast}) {\n
dotProd +=\n                      getX(batch, xR, xC, ${inputDepthNearestVec4}) * \n                      getW(wR, wC,
${inputDepthNearestVec4}, d2);\n                  } else {\n                      dotProd +=\n                      getX(batch,
${inputDepthNearestVec4}, xR, xC) * \n                      getW(wR, wC, ${inputDepthNearestVec4}, d2);\n                  }\n
              } else if (${inputDepthVec4Remainder} === 2) {\n                  vec2 wValues = vec2(\n
getW(wR, wC, ${inputDepthNearestVec4}, d2),\n                      getW(wR, wC, ${inputDepthNearestVec4} + 1, d2)\n
);\n\n                  if (${isChannelsLast}) {\n                      vec2 xValues = vec2(\n                          getX(batch, xR, xC,
${inputDepthNearestVec4}),\n                          getX(batch, xR, xC, ${inputDepthNearestVec4} + 1)\n                      );\n
dotProd += dot(xValues, wValues);\n                  } else {\n                      vec2 xValues = vec2(\n                          getX(batch,
${inputDepthNearestVec4}, xR, xC),\n                          getX(batch, ${inputDepthNearestVec4} + 1, xR, xC)\n                      );\n
dotProd += dot(xValues, wValues);\n                  }\n\n              } else if (${inputDepthVec4Remainder} ===
3) {\n                  vec3 wValues = vec3(\n                      getW(wR, wC, ${inputDepthNearestVec4}, d2),\n
getW(wR, wC, ${inputDepthNearestVec4} + 1, d2),\n                      getW(wR, wC, ${inputDepthNearestVec4} + 2,
d2)\n                  );\n\n                  if (${isChannelsLast}) {\n                      vec3 xValues = vec3(\n
getX(batch, xR,

```



```

xC, ${inputDepthNearestVec4}),\n                getX(batch, xR, xC, ${inputDepthNearestVec4} + 1),\n                getX(batch, xR, xC, ${inputDepthNearestVec4} + 2)\n                );\n                dotProd += dot(xValues, wValues);\n            } else {\n                vec3 xValues = vec3(\n                getX(batch, ${inputDepthNearestVec4}, xR, xC),\n                getX(batch, ${inputDepthNearestVec4} + 1, xR, xC),\n                getX(batch, ${inputDepthNearestVec4} +\n2, xR, xC)\n                );\n                dotProd += dot(xValues, wValues);\n            }\n        }\n        float result = dotProd;\n        ${addBiasSnippet}\n        ${applyActivationSnippet}\n        setOutput(result);\n    }\n}\n\nexport class Conv3DProgram implements GPGPUProgram {\n    variableNames = ['x', 'W'];\n    outputShape: number[];\n    userCode: string;\n\n    constructor(convInfo:\nbackend_util.Conv3DInfo) {\n        this.outputShape = convInfo.outShape;\n        const padFront =\nconvInfo.padInfo.front;\n        const padTop = convInfo.padInfo.top;\n        const padLeft = convInfo.padInfo.left;\n        const strideDepth = convInfo.strideDepth;\n        const strideHeight = convInfo.strideHeight;\n        const strideWidth =\nconvInfo.strideWidth;\n        const dilationDepth = convInfo.dilationDepth;\n        const dilationHeight =\nconvInfo.dilationHeight;\n        const dilationWidth = convInfo.dilationWidth;\n        const filterDepth =\nconvInfo.filterDepth;\n        const filterHeight = convInfo.filterHeight;\n        const filterWidth =\nconvInfo.filterWidth;\n\n        const inputDepthNearestVec4 = Math.floor(convInfo.inChannels / 4) * 4;\n        const\ninputDepthVec4Remainder = convInfo.inChannels % 4;\n        this.userCode = `\n        const ivec3 strides =\nivec3(${strideDepth}, ${strideHeight}, {\n        strideWidth});\n        const ivec3 pads = ivec3(${padFront},\n${padTop}, ${padLeft});\n\n        void main() {\n            ivec5 coords = getOutputCoords();\n            int batch =\ncoords.x;\n            int d2 = coords.u;\n\n            ivec3 xFRCCorner = ivec3(coords.y, coords.z, coords.w) * strides -\npads;\n            int xFCorner = xFRCCorner.x;\n            int xRCorner = xFRCCorner.y;\n            int xCCorner =\nxFRCCorner.z;\n\n            // Convolve x(?, ?, ?, d1) with w(:, :, :, d1, d2) to get\n            // y(yF, yR, yC, d2). ? = to be\ndetermined. : = across all\n            // values in that axis.\n            float dotProd = 0.0;\n            for (int wF = 0; wF <\n${filterDepth}; wF++) {\n                int xF = xFCorner + wF * ${dilationDepth};\n                if (xF < 0 || xF >=\n${convInfo.inDepth}) {\n                    continue;\n                }\n                for (int wR = 0; wR < ${filterHeight}; wR++) {\n                    int xR = xRCorner + wR * ${dilationHeight};\n                    if (xR < 0 || xR >=\n${convInfo.inHeight}) {\n                        continue;\n                    }\n                    for (int wC = 0; wC < ${filterWidth}; wC++) {\n                        int xC = xCCorner + wC *\n${dilationWidth};\n                        if (xC < 0 || xC >=\n${convInfo.inWidth}) {\n                            continue;\n                        }\n                        for (int d1 = 0; d1 < ${inputDepthNearestVec4}; d1 += 4) {\n                            vec4 xValues = vec4(\ngetX(batch, xF, xR, xC, d1),\n                getX(batch, xF, xR, xC, d1 + 1),\n                getX(batch, xF, xR, xC, d1 +\n2),\n                getX(batch, xF, xR, xC, d1 + 3)\n                );\n                            vec4 wValues = vec4(\ngetX(batch, xF, xR, xC, d1 + 1, d2),\n                getX(batch, xF, xR, xC, d1 + 2,\nd2),\n                getX(batch, xF, xR, xC, d1 + 3, d2)\n                );\n                            dotProd += dot(xValues, wValues);\n                        }\n                        if (${inputDepthVec4Remainder} === 1) {\n                            dotProd +=\n                getX(batch, xF,\nxR, xC, ${inputDepthNearestVec4}) *\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4}, d2);\n                        }\n                        else if (${inputDepthVec4Remainder} === 2) {\n                            vec2 xValues = vec2(\n                getX(batch, xF, xR,\nxC, ${inputDepthNearestVec4} + 1)\n                );\n                            vec2 wValues = vec2(\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4}, d2),\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4} + 1, d2)\n                );\n                            dotProd += dot(xValues,\nwValues);\n                        }\n                        else if (${inputDepthVec4Remainder} === 3) {\n                            vec3 xValues = vec3(\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4}),\n                getX(batch, xF, xR, xC,\n${inputDepthNearestVec4} + 1),\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4} + 2)\n                );\n                            vec3 wValues = vec3(\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4}, d2),\n                getX(batch, xF, xR, xC, ${inputDepthNearestVec4} + 1, d2),\n                getX(batch, xF, xR, xC,\n${inputDepthNearestVec4} + 2, d2)\n                );\n                            dotProd += dot(xValues, wValues);\n                        }\n                    }\n                }\n                setOutput(dotProd);\n            }\n}\n\n"/**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {getGslDifferences} from './gsl_version';\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class Im2ColPackedProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  packedInputs = true;\n  packedOutput = true;\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    outputShape: number[], inputShape: number[],\n    convInfo: backend_util.Conv2DInfo) {\n    this.outputShape = outputShape;\n\n    const {filterWidth, inChannels, strideWidth, strideHeight, padInfo, outWidth, dilationWidth, dilationHeight, dataFormat} = convInfo;\n    const {left, top} = padInfo;\n    const itemsPerBlockRow = inChannels * filterWidth;\n    const gsl = getGslDifferences();\n    const isChannelsLast = dataFormat === 'channelsLast';\n    const rowDim = isChannelsLast ? 0 : 1;\n    const colDim = isChannelsLast ? 1 : 2;\n\n    let unrolled = ``;\n    for (let row = 0; row <= 1; row++) {\n      for (let col = 0; col <= 1; col++) {\n        unrolled +=`\n        blockIndex = rc.y + ${col};\n        pos = rc.x + ${row};\n        if(blockIndex < ${outputShape[1]} && pos < ${outputShape[0]}) {\n          offsetY = int(blockIndex / (${outWidth})) * ${strideHeight} - ${\n          top};\n          d0 = offsetY + ${dilationHeight} * (pos / ${itemsPerBlockRow});\n          if(d0 < ${inputShape[rowDim]} && d0 >= 0) {\n            offsetX = int(mod(float(blockIndex), ${outWidth}.) * ${\n            strideWidth}. - ${left}.);\n            d1 = offsetX + ${dilationWidth} * (int(mod(float(pos), ${\n            itemsPerBlockRow}.) / ${inChannels}.));\n            if(d1 < ${inputShape[colDim]} && d1 >= 0) {\n              ch = int(mod(float(pos), ${inChannels}.));\n              if (${isChannelsLast}) {\n                innerDims = vec2(d1, ch);\n                result[${row} * 2 + col] = getChannel(\n                  getA(d0, int(innerDims.x)),\n                  int(innerDims.y), innerDims);\n              } else {\n                innerDims = vec2(d0, d1);\n                result[${row} * 2 + col] = getChannel(\n                  getA(ch, int(innerDims.x),\n                    int(innerDims.y)), innerDims);\n              }\n            }\n          }\n        }\n      }\n    }\n    this.userCode =`\n    void main() {\n      ivec2 rc = getOutputCoords();\n      vec4 result = vec4(0);\n      int blockIndex, pos, offsetY, d0, offsetX, d1, ch;\n      vec2 innerDims;\n      ${unrolled}\n      ${gsl.output} = result;\n    }\n  `;\n  }\n}\n\nthis.userCode =`\nvoid main() {\n  ivec2 rc = getOutputCoords();\n  vec4 result = vec4(0);\n  int blockIndex, pos, offsetY, d0, offsetX, d1, ch;\n  vec2 innerDims;\n  ${unrolled}\n  ${gsl.output} = result;\n}\n`;\n}\n}\n\n\"**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *`
```

```
=====\n*\n\nimport {backend_util, env, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {Im2ColPackedProgram} from './im2col_packed_gpu';\nimport {mapActivationToShaderProgram} from './kernel_utils/kernel_funcs_utils';\nimport {MatMulPackedProgram} from './mulmat_packed_gpu';\nimport * as webgl_util from './webgl_util';\nimport {batchMatMulImpl, MATMUL_SHARED_DIM_THRESHOLD} from './BatchMatMul_impl';\nimport {identity} from './Identity';\nimport {reshape} from './Reshape';\n\ninterface Conv2DConfig {\n  x: TensorInfo,\n  filter: TensorInfo,\n  convInfo: backend_util.Conv2DInfo,\n  backend: MathBackendWebGL,\n  bias?: TensorInfo,\n  preluActivationWeights?: TensorInfo,\n  leakyreluAlpha?: number,\n  activation?: backend_util.Activation\n};\n\n// For 1x1 kernels that iterate through every point in the input, convolution\n// can be expressed as matrix multiplication (without need for memory\n// remapping).\n\nexport function conv2dByMatMul({x, filter, convInfo, backend, bias = null, preluActivationWeights = null, leakyreluAlpha = 0, activation = null}: Conv2DConfig) {\n  // Reshapes conv2D input to 2D tensors, uses matMul and then reshape the\n  // result from 2D to 4D.\n  const xShape = x.shape;\n  const xTexData = backend.texData.get(x.dataId);\n  const sharedMatMulDim = convInfo.inChannels;\n  const outerShapeX = xShape[0] * xShape[1] * xShape[2];\n  const
```

```

outerShapeFilter = convInfo.outChannels;\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n
const transposeA = false;\n const transposeB = false;\n\n let out: TensorInfo;\n const intermediates: TensorInfo[] =
[];\n\n // TODO: Once reduction ops are packed, batchMatMul will always be packed\n // and we can remove this
condition.\n const batchMatMulWillBeUnpacked =\n (outerShapeX === 1 || outerShapeFilter === 1) &&\n
sharedMatMulDim > MATMUL_SHARED_DIM_THRESHOLD;\n const reshapeWillBeExpensive = xShape[2]
% 2 !== 0 && !xTexData.isPacked;\n\n if (batchMatMulWillBeUnpacked ||
!env().getBool('WEBGL_LAZILY_UNPACK') ||\n !env().getBool('WEBGL_PACK_BINARY_OPERATIONS')
||\n !reshapeWillBeExpensive) {\n const targetShape = isChannelsLast ? xShape[0] * xShape[1] * xShape[2] :\n
xShape[0] * xShape[2] * xShape[3];\n const xReshaped = reshape({\n inputs: {x},\n
backend,\n attrs: {shape: [1, targetShape, convInfo.inChannels]}\n });\n const filterReshaped = reshape({\n
inputs: {x: filter},\n backend,\n attrs: {shape: [1, convInfo.inChannels, convInfo.outChannels]}\n });\n
const result = batchMatMulImpl({\n a: xReshaped,\n b: filterReshaped,\n transposeA,\n transposeB,\n
backend,\n bias,\n activation,\n preluActivationWeights,\n leakyreluAlpha\n });\n\n out =
reshape(\n {inputs: {x: result}}, backend, attrs: {shape: convInfo.outShape});\n\n
intermediates.push(xReshaped);\n intermediates.push(filterReshaped);\n intermediates.push(result);\n } else {\n
// Following optimization is specific to packed |x| with odd row count\n // (For example, in channelLast mode,
'row count' refers to x.shape[2]):\n // we avoid expensive packed 2x2 reshape by padding row count to next,\n //
even number. When x.shape[2] is odd, the result of packed batchMatMul is\n // the same (has the same texture
layout and values in the texture) as\n // it is for even x.shape[2] + 1. We make the odd-rows tensor to look
like\n // even-rows tensor before the operation and, after the batchMatMul,\n // fix the even-rows result to have
odd number of rows.\n const targetShape = isChannelsLast ?\n xShape[0] * xShape[1] * (xShape[2] + 1) :\n
xShape[0] * xShape[2] * (xShape[3] + 1);\n const xReshaped: TensorInfo = {\n dataId: x.dataId,\n shape:
[1, targetShape, convInfo.inChannels],\n dtype: x.dtype\n }; \n // xTexData.shape gets referenced from
GPGPUBinary.inShapeInfos.\n // Decrementing row count, after batchMatMul->...->compileProgram leads to\n
// invalid row count within the reference in GPGPUBinary.inShapeInfos.\n // Alternative fix would be to provide a
copy to GPGPUBinary.inShapeInfos\n // in compileProgram method, but that would affect compilation of all\n //
programs - instead, provide a copy here, with even row count, before\n // calling batchMatMul->...-
>compileProgram and after that, the original\n // xTexData.shape is restored.\n const originalXTexDataShape =
xTexData.shape;\n xTexData.shape = xTexData.shape.slice();\n xTexData.shape[xTexData.shape.length -
2]++; \n util.assert(\n webgl_util.isReshapeFree(xTexData.shape, xReshaped.shape),\n () => `packed
reshape ${xTexData.shape} to ${\n xReshaped.shape} isn't free`);\n const filterReshaped = reshape({\n
inputs: {x: filter},\n backend,\n attrs: {shape: [1, convInfo.inChannels, convInfo.outChannels]}\n });\n
intermediates.push(filterReshaped);\n const pointwiseConv = batchMatMulImpl({\n a: xReshaped,\n b:
filterReshaped,\n backend,\n transposeA,\n transposeB,\n bias,\n activation,\n
preluActivationWeights,\n leakyreluAlpha\n });\n\n const pointwiseConvTexData =
backend.texData.get(pointwiseConv.dataId);\n util.assert(\n pointwiseConvTexData.isPacked,\n () =>
'batchMatMul result is expected to be packed');\n // Restore the input shape to original.\n xTexData.shape =
originalXTexDataShape;\n // Set the output shape - there is no need for expensive reshape as data\n // layout is
already correct.\n pointwiseConvTexData.shape = convInfo.outShape;\n\n out = identity({inputs: {x:
pointwiseConv}, backend});\n out.shape = convInfo.outShape;\n\n intermediates.push(pointwiseConv);\n }\n\n
for (const i of intermediates) {\n backend.disposeIntermediateTensorInfo(i);\n }\n\n return out;\n}\n\n//
Implements the im2row algorithm as outlined in \"High Performance\n// Convolutional Neural Networks for
Document Processing\" (Suvisoft, 2006)\nexport function conv2dWithIm2Row({\n x,\n filter,\n convInfo,\n
backend,\n bias = null,\n preluActivationWeights = null,\n leakyreluAlpha = 0,\n activation = null\n }):
Conv2DConfig {\n // Rearranges conv2d input so each block to be convolved over forms the\n // column of a new
matrix with shape [filterWidth * filterHeight *\n // inChannels, outHeight * outWidth]. The filter is also rearranged
so each\n // output channel forms a row of a new matrix with shape [outChannels,\n // filterWidth * filterHeight *
inChannels]. The convolution is then\n // computed by multiplying these matrices and reshaping the result.\n const

```

```

{\n  filterWidth,\n  filterHeight,\n  inChannels,\n  outWidth,\n  outHeight,\n  dataFormat\n } = convInfo;\n\n
const isChannelsLast = dataFormat === 'channelsLast';\n\n const sharedDim = filterWidth * filterHeight *
inChannels;\n const numCols = outHeight * outWidth;\n const x2ColShape = [sharedDim, numCols];\n const
transposeA = true;\n const transposeB = false;\n\n const intermediates: TensorInfo[] = [];\n\n const xSqueezed =\n
  reshape({inputs: {x}, backend, attrs: {shape: x.shape.slice(1)}});\n const w2Row = reshape({\n  inputs: {x:
filter},\n  backend,\n  attrs: {shape: [1, sharedDim, util.sizeFromShape(filter.shape) / sharedDim]}\n });\n\n
intermediates.push(xSqueezed);\n intermediates.push(w2Row);\n\n const im2ColProgram =\n  new
Im2ColPackedProgram(x2ColShape, xSqueezed.shape, convInfo);\n const im2Col =
backend.runWebGLProgram(im2ColProgram, [xSqueezed], 'float32');\n const im2ColReshaped = reshape({\n
inputs: {x: im2Col},\n  backend,\n  attrs: {shape: [1, x2ColShape[0], x2ColShape[1]]}\n });\n\n
intermediates.push(im2Col);\n intermediates.push(im2ColReshaped);\n\n const hasBias = bias != null;\n const
hasPreluActivationWeights = preluActivationWeights != null;\n const hasLeakyreluAlpha = activation ===
'leakyrelu';\n const fusedActivation =\n  activation ? mapActivationToShaderProgram(activation, true) : null;\n\n
const matmulProgram = new MatMulPackedProgram(\n  im2ColReshaped.shape as [number, number, number],\n
  w2Row.shape as [number, number, number],\n  [1, numCols, convInfo.outChannels], transposeA, transposeB,
hasBias,\n  fusedActivation, hasPreluActivationWeights, hasLeakyreluAlpha);\n const inputs: TensorInfo[] =
[im2ColReshaped, w2Row];\n if (bias) {\n  inputs.push(bias);\n }\n if (hasPreluActivationWeights) {\n
inputs.push(reluActivationWeights);\n }\n if (hasLeakyreluAlpha) {\n  const $leakyreluAlpha =
backend.makeTensorInfo(\n  [], 'float32',\n  util.createScalarValue(leakyreluAlpha as { } as 'float32',
'float32'));\n  inputs.push($leakyreluAlpha);\n  intermediates.push($leakyreluAlpha);\n }\n const product =
backend.runWebGLProgram(matmulProgram, inputs, 'float32');\n\n const outShape = isChannelsLast ?\n  [1,
outHeight, outWidth, convInfo.outChannels] :\n  [1, convInfo.outChannels, outHeight, outWidth];\n const out
=\n  reshape({inputs: {x: product}, backend, attrs: {shape: outShape}});\n\n intermediates.push(product);\n for
(const i of intermediates) {\n  backend.disposeIntermediateTensorInfo(i);\n }\n\n return out;\n\n"},"/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, env, KernelConfig, KernelFunc, TensorInfo}
from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\n\nimport
{Conv2DProgram} from './conv_gpu';\n\nimport {conv2dByMatMul, conv2dWithIm2Row} from
'./Conv2D_impl';\n\nimport {reshape} from './Reshape';\n\nexport function conv2d(\n  args:\n  {inputs:
Conv2DInputs, attrs: Conv2DAttrs, backend: MathBackendWebGL}) {\n  const {inputs, backend, attrs} = args;\n
const {x, filter} = inputs;\n  const {strides, pad, dataFormat, dilations, dimRoundingMode} = attrs;\n\n const
$dataFormat = backend_util.convertConv2DDataFormat(dataFormat);\n  const convInfo =
backend_util.computeConv2DInfo(\n  x.shape as [number, number, number, number],\n  filter.shape as
[number, number, number, number], strides, dilations, pad,\n  dimRoundingMode, false /* depthwise */,
$dataFormat);\n  let out: TensorInfo;\n\n if (convInfo.filterHeight === 1 && convInfo.filterWidth === 1 &&\n
convInfo.dilationHeight === 1 && convInfo.dilationWidth === 1 &&\n  convInfo.strideHeight === 1 &&
convInfo.strideWidth === 1 &&\n  (convInfo.padInfo.type === 'SAME' || convInfo.padInfo.type === 'VALID'))
{\n  out = conv2dByMatMul({x, filter, convInfo, backend});\n } else if
(env().getBool('WEBGL_CONV_IM2COL') && x.shape[0] === 1) {\n  out = conv2dWithIm2Row({x, filter,
convInfo, backend});\n } else {\n  const program = new Conv2DProgram(convInfo);\n  out =
backend.runWebGLProgram(program, [x, filter], 'float32');\n }\n\n const outReshaped =\n  reshape({inputs: {x:
out}, backend, attrs: {shape: convInfo.outShape}});\n  backend.disposeIntermediateTensorInfo(out);\n\n return

```

```

outReshaped;\n}\n\nexport const conv2DConfig: KernelConfig = {\n  kernelName: Conv2D,\n  backendName:
'webgl',\n  kernelFunc: conv2d as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2017 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'/gpgpu_math';\n\nexport class Conv2DDerFilterProgram implements GPGPUProgram {\n  variableNames = ['x',
'dy'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(convInfo: backend_util.Conv2DInfo) {\n    this.outputShape = convInfo.filterShape;\n\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth =
convInfo.strideWidth;\n    const padTop = convInfo.padInfo.top;\n    const padLeft = convInfo.padInfo.left;\n    const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n\n    this.userCode = `\n    void main() {\n      ivec4 coords = getOutputCoords();\n      int wR = coords.x;\n      int wC = coords.y;\n      int d1 = coords.z;\n      int d2 = coords.w;\n      // Convolve x(?, ?, d1) with dy(:, :, d2) to get dw(wR, wC, d1, d2).\n      // ? = to be
determined. := across all values in that axis.\n      float dotProd = 0.0;\n      for (int b = 0; b <
${convInfo.batchSize}; b++) {\n        for (int yR = 0; yR < ${convInfo.outHeight}; yR++) {\n          int xR = wR
+ yR * ${strideHeight} - ${padTop};\n          if (xR < 0 || xR >= ${convInfo.inHeight}) {\n            continue;\n
          }\n          for (int yC = 0; yC < ${convInfo.outWidth}; yC++) {\n            int xC = wC + yC *
${strideWidth} - ${padLeft};\n            if (xC < 0 || xC >= ${convInfo.inWidth}) {\n              continue;\n
            }\n            if (${isChannelsLast}) {\n              float dyValue = getDy(b, yR, yC, d2);\n              float xValue =
getX(b, xR, xC, d1);\n              dotProd += (xValue * dyValue);\n            } else {\n              float dyValue =
getDy(b, d2, yR, yC);\n              float xValue = getX(b, d1, xR, xC);\n              dotProd += (xValue * dyValue);\n
            }\n          }\n        }\n      }\n      setOutput(dotProd);\n    }\n  }\n}\n\nexport class
Conv2DDerInputProgram implements GPGPUProgram {\n  variableNames = ['dy', 'W'];\n  outputShape:
number[];\n  userCode: string;\n\n  constructor(convInfo: backend_util.Conv2DInfo) {\n    this.outputShape =
convInfo.inShape;\n\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth = convInfo.strideWidth;\n    const isChannelsLast =
convInfo.dataFormat === 'channelsLast';\n\n    const padTop = filterHeight - 1 - convInfo.padInfo.top;\n    const
padLeft = filterWidth - 1 - convInfo.padInfo.left;\n\n    const rowDim = isChannelsLast ? 1 : 2;\n    const colDim =
isChannelsLast ? 2 : 3;\n    const channelDim = isChannelsLast ? 3 : 1;\n\n    this.userCode = `\n    const ivec2 pads
= ivec2(${padTop}, ${padLeft});\n    void main() {\n      ivec4 coords = getOutputCoords();\n      int batch =
coords[0];\n      int d1 = coords[${channelDim}];\n      ivec2 dyCorner = ivec2(coords[${rowDim}],
coords[${colDim}]) - pads;\n      int dyRCorner = dyCorner.x;\n      int dyCCorner = dyCorner.y;\n      //
Convolve dy(?, ?, d2) with w(:, :, d1, d2) to compute dx(xR, xC, d1).\n      // ? = to be determined. := across all
values in that axis.\n      float dotProd = 0.0;\n      for (int wR = 0; wR < ${filterHeight}; wR++) {\n        float
dyR = float(dyRCorner + wR) / ${strideHeight}.0;\n        if (dyR < 0.0 || dyR >= ${convInfo.outHeight}.0 ||
fract(dyR) > 0.0) {\n          continue;\n        }\n        int idyR = int(dyR);\n        int wRPerm = ${filterHeight} -
1 - wR;\n\n        for (int wC = 0; wC < ${filterWidth}; wC++) {\n          float dyC = float(dyCCorner + wC) /
${strideWidth}.0;\n          if (dyC < 0.0 || dyC >= ${convInfo.outWidth}.0 || fract(dyC) > 0.0) {\n            continue;\n
          }\n          int idyC = int(dyC);\n          int wCPerm = ${filterWidth} - 1 - wC;\n\n          for
(int d2 = 0; d2 < ${convInfo.outChannels}; d2++) {\n            if (${isChannelsLast}) {\n              float xValue =
getDy(batch, idyR, idyC, d2);\n              float wValue = getW(wRPerm, wCPerm, d1, d2);\n              dotProd +=
xValue * wValue;\n            } else {\n              float xValue = getDy(batch, d2, idyR, idyC);\n              float
wValue = getW(wRPerm, wCPerm, d1, d2);\n              dotProd += xValue * wValue;\n            }\n          }\n        }\n      }\n      setOutput(dotProd);\n    }\n  }\n}\n\nexport class Conv3DDerFilterProgram implements

```

```

GPGPUProgram {
  variableNames = ['x', 'dy'];
  outputShape: number[];
  userCode: string;

  constructor(convInfo: backend_util.Conv3DInfo) {
    this.outputShape = convInfo.filterShape;
    const strideDepth = convInfo.strideDepth;
    const strideHeight = convInfo.strideHeight;
    const strideWidth = convInfo.strideWidth;
    const padFront = convInfo.padInfo.front;
    const padTop = convInfo.padInfo.top;
    const padLeft = convInfo.padInfo.left;

    this.userCode = `
  void main() {
    ivec5 coords = getOutputCoords();
    int wF = coords.x;
    int wR = coords.y;
    int wC = coords.z;
    int d1 = coords.w;
    int d2 = coords.u;
    float dotProd = 0.0;
    for (int b = 0; b < ${convInfo.batchSize}; b++) {
      for (int yF = 0; yF < ${convInfo.outDepth}; yF++) {
        int xF = wF + yF * ${strideDepth} - ${padFront};
        if (xF < 0 || xF >= ${convInfo.inDepth}) {
          continue;
        }
        for (int yR = 0; yR < ${convInfo.outHeight}; yR++) {
          int xR = wR + yR * ${strideHeight} - ${padTop};
          if (xR < 0 || xR >= ${convInfo.inHeight}) {
            continue;
          }
          for (int yC = 0; yC < ${convInfo.outWidth}; yC++) {
            int xC = wC + yC * ${strideWidth} - ${padLeft};
            if (xC < 0 || xC >= ${convInfo.inWidth}) {
              continue;
            }
            float dyValue = getDy(b, yF, yR, yC, d2);
            float xValue = getX(b, xF, xR, xC, d1);
            dotProd += (xValue * dyValue);
          }
        }
      }
      setOutput(dotProd);
    }
  }
`
}

Conv3DDerInputProgram implements GPGPUProgram {
  variableNames = ['dy', 'W'];
  outputShape: number[];
  userCode: string;

  constructor(convInfo: backend_util.Conv3DInfo) {
    this.outputShape = convInfo.inShape;
    const filterDepth = convInfo.filterDepth;
    const filterHeight = convInfo.filterHeight;
    const filterWidth = convInfo.filterWidth;
    const strideDepth = convInfo.strideDepth;
    const strideHeight = convInfo.strideHeight;
    const strideWidth = convInfo.strideWidth;
    const padFront = filterDepth - 1 - convInfo.padInfo.front;
    const padTop = filterHeight - 1 - convInfo.padInfo.top;
    const padLeft = filterWidth - 1 - convInfo.padInfo.left;

    this.userCode = `
  const ivec3 pads = ivec3(${padFront}, ${padTop}, ${padLeft});
  void main() {
    ivec5 coords = getOutputCoords();
    int batch = coords.x;
    int d1 = coords.u;
    ivec3 dyCorner = ivec3(coords.y, coords.z, coords.w) - pads;
    int dyFCorner = dyCorner.x;
    int dyRCorner = dyCorner.y;
    int dyCCorner = dyCorner.z;
    float dotProd = 0.0;
    for (int wF = 0; wF < ${filterDepth}; wF++) {
      float dyF = float(dyFCorner + wF) / ${strideDepth}.0;
      if (dyF < 0.0 || dyF >= ${convInfo.outDepth}.0 || fract(dyF) > 0.0) {
        continue;
      }
      int idyF = int(dyF);
      int wFPerm = ${filterDepth} - 1 - wF;
      for (int wR = 0; wR < ${filterHeight}; wR++) {
        float dyR = float(dyRCorner + wR) / ${strideHeight}.0;
        if (dyR < 0.0 || dyR >= ${convInfo.outHeight}.0 || fract(dyR) > 0.0) {
          continue;
        }
        int idyR = int(dyR);
        int wRPerm = ${filterHeight} - 1 - wR;
        for (int wC = 0; wC < ${filterWidth}; wC++) {
          float dyC = float(dyCCorner + wC) / ${strideWidth}.0;
          if (dyC < 0.0 || dyC >= ${convInfo.outWidth}.0 || fract(dyC) > 0.0) {
            continue;
          }
          int idyC = int(dyC);
          int wCPerm = ${filterWidth} - 1 - wC;
          for (int d2 = 0; d2 < ${convInfo.outChannels}; d2++) {
            float xValue = getDy(batch, idyF, idyR, idyC, d2);
            float wValue = getW(wFPerm, wRPerm, wCPerm, d1, d2);
            dotProd += xValue * wValue;
          }
        }
      }
      setOutput(dotProd);
    }
  }
`
}

// *****
*
* \nimport {backend_util, Conv2DBackpropFilter, Conv2DBackpropFilterAttrs, Conv2DBackpropFilterInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';
* \nimport {MathBackendWebGL} from './backend_webgl';
* \nimport {Conv2DDerFilterProgram} from './conv_backprop_gpu';
* \nexport function conv2DBackpropFilter(args: {
  inputs: Conv2DBackpropFilterInputs,
  attrs: Conv2DBackpropFilterAttrs,

```

```

backend: MathBackendWebGL\n)) {\n const {inputs, backend, attrs} = args;\n const {x, dy} = inputs;\n const
{strides, pad, dataFormat, dimRoundingMode, filterShape} = attrs;\n\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
x.shape as [number, number, number, number], filterShape, strides,\n 1 /* dilations */, pad, dimRoundingMode,
false /* depthwise */, \n $dataFormat);\n\n const program = new Conv2DDerFilterProgram(convInfo);\n return
backend.runWebGLProgram(program, [x, dy], 'float32');\n}\n\nexport const conv2DBackpropFilterConfig:
KernelConfig = {\n kernelName: Conv2DBackpropFilter,\n backendName: 'webgl',\n kernelFunc:
conv2DBackpropFilter as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from
'./backend_webgl';\n\nimport {Conv2DDerInputProgram} from './conv_backprop_gpu';\n\nexport function
conv2DBackpropInput(args: {\n inputs: Conv2DBackpropInputInputs,\n attrs: Conv2DBackpropInputAttrs,\n
backend: MathBackendWebGL\n}) {\n const {inputs, backend, attrs} = args;\n const {dy, filter} = inputs;\n const
{inputShape, strides, pad, dataFormat, dimRoundingMode} = attrs;\n\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n 1 /* dilations */, pad,
dimRoundingMode, false, $dataFormat);\n\n const program = new Conv2DDerInputProgram(convInfo);\n return
backend.runWebGLProgram(program, [dy, filter], 'float32');\n}\n\nexport const conv2DBackpropInputConfig:
KernelConfig = {\n kernelName: Conv2DBackpropInput,\n backendName: 'webgl',\n kernelFunc:
conv2DBackpropInput as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, Conv3D, Conv3DAttrs, Conv3DInputs, KernelConfig, KernelFunc} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport {Conv3DProgram}
from './conv_gpu';\n\nexport function conv3D(\n args:\n {inputs: Conv3DInputs, attrs: Conv3DAttrs,
backend: MathBackendWebGL}) {\n const {inputs, backend, attrs} = args;\n const {x, filter} = inputs;\n const
{strides, pad, dilations} = attrs;\n\n const convInfo = backend_util.computeConv3DInfo(\n x.shape as [number,
number, number, number, number], \n filter.shape as [number, number, number, number, number], strides,\n
dilations, pad);\n\n const program = new Conv3DProgram(convInfo);\n return
backend.runWebGLProgram(program, [x, filter], 'float32');\n}\n\nexport const conv3DConfig: KernelConfig = {\n
kernelName: Conv3D,\n backendName: 'webgl',\n kernelFunc: conv3D as {} as KernelFunc,\n};\n"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

```

the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {backend_util, Conv3DBackpropFilterV2, Conv3DBackpropFilterV2Attrs,  
Conv3DBackpropFilterV2Inputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport  
{MathBackendWebGL} from './backend_webgl';\nimport {Conv3DDerFilterProgram} from  
 './conv_backprop_gpu';\n\nexport function conv3DBackpropFilterV2(args: {\n inputs:  
Conv3DBackpropFilterV2Inputs,\n attrs: Conv3DBackpropFilterV2Attrs,\n backend: MathBackendWebGL\n})  
{\n const {inputs, backend, attrs} = args;\n const {x, dy} = inputs;\n const {strides, pad, filterShape} = attrs;\n\n const convInfo = backend_util.computeConv3DInfo(\n x.shape as [number, number, number, number, number],  
filterShape, strides,\n 1 /* dilations */, pad);\n\n const program = new Conv3DDerFilterProgram(convInfo);\n\n return backend.runWebGLProgram(program, [x, dy], 'float32');\n}\n\nexport const  
conv3DBackpropFilterV2Config: KernelConfig = {\n kernelName: Conv3DBackpropFilterV2,\n backendName:  
'webgl',\n kernelFunc: conv3DBackpropFilterV2 as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020  
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you  
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *  
Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {backend_util, Conv3DBackpropInputV2, Conv3DBackpropInputV2Attrs,  
Conv3DBackpropInputV2Inputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport  
{MathBackendWebGL} from './backend_webgl';\nimport {Conv3DDerInputProgram} from  
 './conv_backprop_gpu';\n\nexport function conv3DBackpropInput(args: {\n inputs:  
Conv3DBackpropInputV2Inputs,\n attrs: Conv3DBackpropInputV2Attrs,\n backend: MathBackendWebGL\n})  
{\n const {inputs, backend, attrs} = args;\n const {dy, filter} = inputs;\n const {pad, strides, inputShape} =  
attrs;\n\n const convInfo = backend_util.computeConv3DInfo(\n inputShape, filter.shape as [number, number,  
number, number, number],\n strides, 1 /* dilations */, pad);\n\n const program = new  
Conv3DDerInputProgram(convInfo);\n\n return backend.runWebGLProgram(program, [dy, filter],  
'float32');\n}\n\nexport const conv3DBackpropInputConfig: KernelConfig = {\n kernelName:  
Conv3DBackpropInputV2,\n backendName: 'webgl',\n kernelFunc: conv3DBackpropInput as { } as  
KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the  
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *  
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n */
```

```
=====\n\n*\n\nimport {Cos, KernelConfig} from '@tensorflow/tfjs-core';\nimport {CHECK_NAN_SNIPPET_UNARY,  
unaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\n\nconst COS = CHECK_NAN_SNIPPET_UNARY +  
\n\nreturn cos(x);\n};\n\nexport const cos = unaryKernelFunc({opSnippet: COS});\n\nexport const cosConfig:  
KernelConfig = {\n kernelName: Cos,\n backendName: 'webgl',\n kernelFunc: cos,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *  
Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
```


the specific language governing permissions and limitations under the License.

```
=====  
*import {Cosh, KernelConfig} from '@tensorflow/tfjs-core';import {unaryKernelFunc} from  
 './kernel_utils/kernel_funcs_utils';const COSH = `float e2x = exp(-x);return (e2x + 1.0 / e2x) /  
 2.0;`;export const cosh = unaryKernelFunc({opSnippet: COSH});export const coshConfig: KernelConfig  
 = {kernelName: Cosh, backendName: 'webgl', kernelFunc: cosh,};  
* @license * Copyright  
 2017 Google LLC. All Rights Reserved. * Licensed under the Apache License, Version 2.0 (the "License"); *  
 you may not use this file except in compliance with the License. * You may obtain a copy of the License at *  
 http://www.apache.org/licenses/LICENSE-2.0 * Unless required by applicable law or agreed to in writing,  
 software * distributed under the License is distributed on an "AS IS" BASIS, * WITHOUT WARRANTIES  
 OR CONDITIONS OF ANY KIND, either express or implied. * See the License for the specific language  
 governing permissions and limitations under the License. *  
=====
```

```
=====  
*import {GPGPUProgram} from './gpgpu_math';export class CropAndResizeProgram implements  
 GPGPUProgram {variableNames = ['Image', 'Boxes', 'BoxInd'];outputShape: number[] = [];userCode:  
 string;  
 constructor(imageShape: [number, number, number, number], boxShape: [number, number],  
 cropSize: [number, number], method: 'bilinear'|'nearest', extrapolationValue: number) {const [batch,  
 imageHeight, imageWidth, depth] = imageShape;const [numBoxes, ] = boxShape;const [cropHeight,  
 cropWidth] = cropSize;this.outputShape = [numBoxes, cropHeight, cropWidth, depth];const methodId =  
 method === 'bilinear' ? 1 : 0;const [inputHeightFloat, inputWidthFloat] = [`${imageHeight - 1}.0`,  
 `${imageWidth - 1}.0`];const [heightRatio, heightScale, inY] = cropHeight > 1 ? [n  
 `$(imageHeight - 1) / (cropHeight - 1)`,  
 `(y2-y1) * height_ratio`,  
 `y1 * ${inputHeightFloat} +  
 float(y) * (height_scale)`,  
 ] : [n  
 `0.0`,  
 `0.0`,  
 `0.5 * (y1+y2) * ${inputHeightFloat}`,  
 ];const [widthRatio, widthScale, inX] = cropWidth > 1 ? [n  
 `$(imageWidth - 1) / (cropWidth -  
 1)`,  
 `(x2-x1) * width_ratio`,  
 `x1 * ${inputWidthFloat} + float(x) * (width_scale)`,  
 ] : [n  
 `0.0`,  
 `0.0`,  
 `0.5 * (x1+x2) * ${inputWidthFloat}`,  
 ];// Reference implementation  
 tslint:disable-next-line:max-line-length //  
 https://github.com/tensorflow/tensorflow/blob/master/tensorflow/core/kernels/crop_and_resize_op_gpu.cu.cc  
 this.userCode = `const float height_ratio = float(${heightRatio});const float width_ratio =  
 float(${widthRatio});void main() {ivec4 coords = getOutputCoords();int b = coords[0];int  
 y = coords[1];int x = coords[2];int d = coords[3];// get box valsfloat y1 =  
 getBoxes(b,0);float x1 = getBoxes(b,1);float y2 = getBoxes(b,2);float x2 = getBoxes(b,3);  
 // get image in batch indexint bInd = round(getBoxInd(b));if(bInd < 0 || bInd >= ${batch}) {  
 return;}float height_scale = ${heightScale};float width_scale = ${widthScale};float  
 in_y = ${inY};if(in_y < 0.0 || in_y > ${inputHeightFloat}) {  
 setOutput(float(${extrapolationValue}));return;}float in_x = ${inX};if(in_x < 0.0 ||  
 in_x > ${inputWidthFloat}) {setOutput(float(${extrapolationValue}));return;}vec2  
 sourceFracIndexCR = vec2(in_x,in_y);if(${methodId} == 1) {// Compute the four integer indices.  
 ivec2 sourceFloorCR = ivec2(sourceFracIndexCR);ivec2 sourceCeilCR =  
 ivec2(ceil(sourceFracIndexCR));float topLeft = getImage(b, sourceFloorCR.y, sourceFloorCR.x, d);  
 float bottomLeft = getImage(b, sourceCeilCR.y, sourceFloorCR.x, d);float topRight = getImage(b,  
 sourceFloorCR.y, sourceCeilCR.x, d);float bottomRight = getImage(b, sourceCeilCR.y, sourceCeilCR.x,  
 d);vec2 fracCR = sourceFracIndexCR - vec2(sourceFloorCR);float top = topLeft + (topRight -  
 topLeft) * fracCR.x;float bottom = bottomLeft + (bottomRight - bottomLeft) * fracCR.x;float  
 newValue = top + (bottom - top) * fracCR.y;setOutput(newValue);} else {// Compute the  
 coordinators of nearest neighbor point.ivec2 sourceNearestCR = ivec2(floor(n  
 sourceFracIndexCR +  
 vec2(0.5,0.5)));float newValue = getImage(b, sourceNearestCR.y, sourceNearestCR.x, d);  
 setOutput(newValue);}  
 }  
 }  
 `; * @license * Copyright 2020 Google LLC. All
```

Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {CropAndResizeProgram} from './crop_and_resize_gpu';\n\nexport const cropAndResize = (args: {n inputs: CropAndResizeInputs,\n backend: MathBackendWebGL,\n attrs: CropAndResizeAttrs\n}): TensorInfo => {\n  const {inputs, backend, attrs} = args;\n  const {image, boxes, boxInd} = inputs;\n  const {cropSize, method, extrapolationValue} = attrs;\n\n  const program = new CropAndResizeProgram(\n    image.shape as [number, number, number, number],\n    boxes.shape as [number, number], cropSize, method, extrapolationValue);\n  return backend.runWebGLProgram(program, [image, boxes, boxInd], 'float32');\n};\n\nexport const cropAndResizeConfig: KernelConfig = {\n  kernelName: CropAndResize,\n  backendName: 'webgl',\n  kernelFunc: cropAndResize as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {GPGPUContext} from './gpgpu_context';\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class CumSumProgram implements GPGPUProgram {\n  variableNames = ['x'];\n  outputShape: number[];\n  userCode: string;\n\n  // Caching uniform location for speed.\n  index: WebGLUniformLocation;\n\n  constructor(shape: number[], exclusive: boolean, reverse: boolean) {\n    this.outputShape = shape;\n    const rank = shape.length;\n    const val = exclusive ? '0.0' : `getX(${getCoords(rank, 'coords')})`;\n    const length = shape[shape.length - 1];\n    let condition = \"\";\n    let idxString = \"\";\n    // When exclusive is set, the cumsum op becomes roll op that copies the\n    // value from the previous index based on the direction specified by the\n    // reverse flag.\n    if (exclusive) {\n      condition = reverse ? `end != ${length - 1}` : `end != 0`;\n      idxString = reverse ? `end + 1` : `end - 1`;\n    } else {\n      condition = reverse ? `end + pow2 < ${length}` : `end >= pow2`;\n      idxString = (reverse ? `end + pow2` : `end - pow2`);\n    }\n\n    this.userCode = `\n    uniform float index;\n    void main() {\n      ${getCoordsDataType(rank)} coords = getOutputCoords();\n      int end = ${getFinalCoord(rank, 'coords')};\n      float val = ${val};\n      int pow2 = int(pow(2.0, index));\n      if (${condition}) {\n        int idx = ${idxString};\n        ${getFinalCoord(rank, 'coords')} = idx;\n        val += getX(${getCoords(rank, 'coords')});\n      }\n      setOutput(val);\n    }\n  `;\n\n  getCustomSetupFunc(index: number) {\n    return (gpgpu: GPGPUContext, webGLProgram: WebGLProgram) => {\n      if (this.index == null) {\n        this.index = gpgpu.getUniformLocation(webGLProgram, 'index');\n      }\n      gpgpu.gl.uniform1f(this.index, index);\n    }; \n  }\n\n  function getCoords(rank: number, name: string): string {\n    if (rank === 1) {\n      return `${name}`;\n    } else if (rank === 2) {\n      return `${name}.x, ${name}.y`;\n    } else if (rank === 3) {\n      return `${name}.x, ${name}.y, ${name}.z`;\n    } else if (rank === 4) {\n      return `${name}.x, ${name}.y, ${name}.z, ${name}.w`;\n    } else {\n      throw Error(`Cumulative sum for rank ${rank} is not yet supported`);\n    }\n  }\n\n  function getFinalCoord(rank: number, name: string): string {\n    if (rank === 1) {\n      return `${name}`;\n    } else if (rank === 2) {\n      return `${name}.y`;\n    } else if (rank === 3) {\n      return `${name}.z`;\n    } else if (rank === 4) {\n      return `${name}.w`;\n    } else {\n      throw Error(`Cumulative sum for rank ${rank} is not yet supported`);\n    }\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
```

under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
<http://www.apache.org/licenses/LICENSE-2.0>
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

```
=====  
*\n\nimport { backend_util, Cumsum, CumsumAttrs, CumsumInputs, KernelConfig, KernelFunc, TensorInfo } from  
'@tensorflow/tfjs-core';\n\nimport { MathBackendWebGL } from '../backend_webgl';\n\nimport { CumSumProgram } from '../cumsum_gpu';\n\nimport { identity } from './Identity';\n\nimport { transpose } from './Transpose';\n\n\nexport function cumsum(\n  args:\n    { inputs: CumsumInputs, backend: MathBackendWebGL, attrs: CumsumAttrs }):\n  TensorInfo {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { axis, exclusive, reverse } = attrs;\n\n  const xRank = x.shape.length;\n  const permutation = backend_util.getAxesPermutation([axis], xRank);\n  let permutedX = x;\n  if (permutation != null) {\n    permutedX = transpose({ inputs: { x }, backend, attrs: { perm: permutation } });\n  }\n  const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n  if (permutedAxis !== xRank - 1) {\n    throw new Error(\n      `WebGL cumsum shader expects an inner-most axis=${x\n      x.shape.length - 1}` +\n      `but got axis=${axis}`);\n  }\n  const size = permutedX.shape[permutedAxis];\n  let result = identity({ inputs: { x: permutedX }, backend });\n  // Use cumsum parallel algorithm, ref: https://developer.nvidia.com/gpugems/gpugems3/part-vi-gpu-computing/chapter-39-parallel-prefix-sum-scan-cuda\n  for (let i = 0; i <= Math.ceil(Math.log2(size)) - 1; i++) {\n    const program = new CumSumProgram(permutedX.shape, false, reverse);\n    const customSetup = program.getCustomSetupFunc(i);\n    const prevResult = result;\n    result =\n      backend.runWebGLProgram(program, [result], result.dtype, customSetup);\n    backend.disposeIntermediateTensorInfo(prevResult);\n  }\n  // For exclusive cumsum, shift the end result in the direction of sum\n  // and add 0 to the front index.\n  if (exclusive) {\n    const program = new CumSumProgram(permutedX.shape, exclusive, reverse);\n    const prevResult = result;\n    result = backend.runWebGLProgram(program, [result], result.dtype);\n    backend.disposeIntermediateTensorInfo(prevResult);\n  }\n  if (permutation != null) {\n    const reversePermutation = backend_util.getUndoAxesPermutation(permutation);\n    const reverseTransposedResult = transpose(\n      { inputs: { x: result }, backend, attrs: { perm: reversePermutation } });\n    backend.disposeIntermediateTensorInfo(result);\n    backend.disposeIntermediateTensorInfo(permutedX);\n  }\n  return reverseTransposedResult;\n}\n\n\nexport const cumsumConfig: KernelConfig = {\n  kernelName: Cumsum,\n  backendName: 'webgl',\n  kernelFunc: cumsum as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====  
*\n\nimport { DenseBincount, DenseBincountAttrs, DenseBincountInputs, KernelConfig, KernelFunc, TensorInfo, TypedArray } from '@tensorflow/tfjs-core';\n\nimport { MathBackendWebGL } from '../backend_webgl';\n\nimport { bincountImplCPU, bincountReduceImplCPU } from '../kernel_utils/shared';\n\n\nexport function denseBincount(args:\n  {\n    inputs: DenseBincountInputs,\n    backend: MathBackendWebGL,\n    attrs: DenseBincountAttrs\n  }): TensorInfo {\n  const { inputs, backend, attrs } = args;\n  const { x, weights } = inputs;\n  const { size, binaryOutput } = attrs;\n  if (x.shape.length === 1) {\n    const xVals = backend.readSync(x.dataId) as TypedArray;\n    const weightsVals = backend.readSync(weights.dataId) as TypedArray;\n    const outVals =\n      bincountImplCPU(xVals, weightsVals, weights.dtype, weights.shape, size);\n    return backend.makeTensorInfo([size], weights.dtype, outVals);\n  } else if (x.shape.length === 2) {\n    const xBuf = backend.bufferSync(x);\n    const weightsBuf =
```

```

backend.bufferSync(weights);\n\n  const outBuf = bincountReduceImplCPU(xBuf, weightsBuf, size,
binaryOutput);\n\n  return backend.makeTensorInfo(outBuf.shape, weights.dtype, outBuf.values);\n } \n\n throw
new Error(\n  `Error in denseBincount: input must be at most rank 2, but got rank` +\n
`${x.shape.length}.`);\n}\n\nexport const denseBincountConfig: KernelConfig = {\n  kernelName:
DenseBincount,\n  backendName: 'webgl',\n  kernelFunc: denseBincount as {} as KernelFunc\n};\n", "/*\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class DepthToSpaceProgram implements
GPGPUProgram {\n  variableNames = ['x'];\n  outputShape: number[] = [];\n  userCode: string;\n  blockSize:
number;\n  dataFormat: string;\n\n  constructor(\n    outputShape: number[], blockSize: number, dataFormat:
'NHWC'|'NCHW') {\n    this.outputShape = outputShape;\n    this.blockSize = blockSize;\n    this.dataFormat =
dataFormat;\n    this.userCode = `\n    void main() {\n      ivec4 coords = getOutputCoords();\n      int b =
coords[0];\n      int h = ${this.getHeightCoordString()};\n      int w = ${this.getWidthCoordString()};\n      int d =
${this.getDepthCoordString()};\n\n      int in_h = h / ${blockSize};\n      int offset_h = imod(h, ${blockSize});\n
int in_w = w / ${blockSize};\n      int offset_w = imod(w, ${blockSize});\n      int offset_d = (offset_h *
${blockSize} + offset_w) *\n      ${this.getOutputDepthSize()};\n      int in_d = d + offset_d;\n\n      float result =
${this.getInputSamplingString()};\n      setOutput(result);\n    }\n  ;\n }\n\n private getHeightCoordString(): string
{\n  if (this.dataFormat === 'NHWC') {\n    return `coords[1]`;\n  } else {\n    return `coords[2]`;\n  } \n }\n\n
private getWidthCoordString(): string {\n  if (this.dataFormat === 'NHWC') {\n    return `coords[2]`;\n  } else
{\n    return `coords[3]`;\n  } \n }\n\n private getDepthCoordString(): string {\n  if (this.dataFormat ===
'NHWC') {\n    return `coords[3]`;\n  } else {\n    return `coords[1]`;\n  } \n }\n\n private
getOutputDepthSize(): number {\n  if (this.dataFormat === 'NHWC') {\n    return this.outputShape[3];\n  } else
{\n    return this.outputShape[1];\n  } \n }\n\n private getInputSamplingString(): string {\n  if (this.dataFormat
=== 'NHWC') {\n    return `getX(b, in_h, in_w, in_d)`;\n  } else {\n    return `getX(b, in_d, in_h, in_w)`;\n  } \n
}\n}\n", "/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from 'tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport
{DepthToSpaceProgram} from './depth_to_space_gpu';\n\nexport function depthToSpace(args: {\n  inputs:
DepthToSpaceInputs,\n  backend: MathBackendWebGL,\n  attrs: DepthToSpaceAttrs\n}): TensorInfo {\n  const
{inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {blockSize, dataFormat} = attrs;\n\n  util.assert(\n
blockSize > 1,\n    () => `blockSize should be > 1 for depthToSpace, but was: ${blockSize}`);\n\n  const batchSize
= x.shape[0];\n  const inputHeight = (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n  const inputWidth =
(dataFormat === 'NHWC') ? x.shape[2] : x.shape[3];\n  const inputDepth = (dataFormat === 'NHWC') ? x.shape[3]
: x.shape[1];\n\n  const outputHeight = inputHeight * blockSize;\n  const outputWidth = inputWidth * blockSize;\n
const outputDepth = inputDepth / (blockSize * blockSize);\n\n  const outputShape = (dataFormat === 'NHWC') ?\n
[batchSize, outputHeight, outputWidth, outputDepth] :\n  [batchSize, outputDepth, outputHeight,
outputWidth];\n\n  const program = new DepthToSpaceProgram(outputShape, blockSize, dataFormat);\n  return

```

```

backend.runWebGLProgram(program, [x], x.dtype);\n\n\nexport const depthToSpaceConfig: KernelConfig = {\n
kernelName: DepthToSpace,\n
backendName: 'webgl',\n
kernelFunc: depthToSpace as {} as\n
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the\n
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n
implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n
License.\n *

```

```

=====\n
*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from\n
'./gpgpu_math';\n\nexport class DepthwiseConv2DProgram implements GPGPUProgram {\n
variableNames = ['x',\n
'W'];\n
outputShape: number[];\n
userCode: string;\n\n
constructor(\n
convInfo: backend_util.Conv2DInfo,\n
addBias = false,\n
activation: string = null, hasPreluActivation = false,\n
hasLeakyReluAlpha = false) {\n
this.outputShape = convInfo.outShape;\n\n
const xNumRows = convInfo.inHeight;\n
const xNumCols =\n
convInfo.inWidth;\n
const padTop = convInfo.padInfo.top;\n
const padLeft = convInfo.padInfo.left;\n
const\n
strideHeight = convInfo.strideHeight;\n
const strideWidth = convInfo.strideWidth;\n
const dilationHeight =\n
convInfo.dilationHeight;\n
const dilationWidth = convInfo.dilationWidth;\n
const filterHeight =\n
convInfo.filterHeight;\n
const filterWidth = convInfo.filterWidth;\n
const channelMul = convInfo.outChannels /\n
convInfo.inChannels;\n\n
let activationSnippet = ", applyActivationSnippet = ";\n
if (activation) {\n
if\n
(hasPreluActivation) {\n
activationSnippet = `float activation(float a) {\n
float b =\n
getPreluActivationWeightsAtOutCoords();\n
${activation}\n
}`;\n
} else if (hasLeakyReluAlpha) {\n
activationSnippet = `float activation(float a) {\n
float b = getLeakyreluAlphaAtOutCoords();\n
${activation}\n
}`;\n
} else {\n
activationSnippet = `\n
float activation(float x) {\n
${activation}\n
}\n
`;\n
}\n\n
applyActivationSnippet = `result = activation(result);`\n
}\n\n
const addBiasSnippet = addBias ? 'result += getBiasAtOutCoords()';\n
if (addBias) {\n
this.variableNames.push('bias');\n
}\n\n
if (hasPreluActivation) {\n
this.variableNames.push('preluActivationWeights');\n
}\n
if (hasLeakyReluAlpha) {\n
this.variableNames.push('leakyreluAlpha');\n
}\n\n
this.userCode = `\n
${activationSnippet}\n\n
const\n
ivec2 strides = ivec2(${strideHeight}, ${strideWidth});\n
const ivec2 pads = ivec2(${padTop}, ${padLeft});\n\n
void main() {\n
ivec4 coords = getOutputCoords();\n
int batch = coords.x;\n
ivec2 xRCCorner =\n
coords.yz * strides - pads;\n
int d2 = coords.w;\n
int d1 = d2 / ${channelMul};\n
int q = d2 - d1 *\n
${channelMul};\n\n
int xRCorner = xRCCorner.x;\n
int xCCorner = xRCCorner.y;\n\n
// Convolve x(?,\n
?, d1) with w(:, :, d1, q) to get y(yR, yC, d2).\n
// ? = to be determined. : = across all values in that axis.\n
float dotProd = 0.0;\n
// TO DO(dsmilkov): Flatten the two for loops and vec4 the operations.\n
for (int wR\n
= 0; wR < ${filterHeight}; wR++) {\n
int xR = xRCorner + wR * ${dilationHeight};\n\n
if (xR < 0 || xR\n
>= ${xNumRows}) {\n
continue;\n
}\n\n
for (int wC = 0; wC < ${filterWidth}; wC++) {\n
int xC = xCCorner + wC * ${dilationWidth};\n\n
if (xC < 0 || xC >= ${xNumCols}) {\n
continue;\n
}\n\n
float xVal = getX(batch, xR, xC, d1);\n
float wVal = getW(wR, wC, d1, q);\n
dotProd\n
+= xVal * wVal;\n
}\n
}\n\n
float result = dotProd;\n
${addBiasSnippet}\n
${applyActivationSnippet}\n
setOutput(result);\n
}\n
`;\n
}\n\n
}\n\n
}\n", "/*\n * @license\n * Copyright 2018\n
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you\n
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n
governing permissions and\n * limitations under the License.\n *

```

```

=====\n

```

```

*\n\nimport {backend_util, util} from '@tensorflow/tfjs-core';\n\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class DepthwiseConvPacked2DProgram implements GPGPUProgram {\n  variableNames
= ['x', 'W'];\n  packedInputs = true;\n  packedOutput = true;\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    convInfo: backend_util.Conv2DInfo, addBias = false,\n    activation: string = null,\n    hasPreluActivation = false,\n    hasLeakyReluAlpha = false) {\n    this.outputShape = convInfo.outShape;\n\n    const xNumRows = convInfo.inHeight;\n    const xNumCols = convInfo.inWidth;\n    const padTop =
convInfo.padInfo.top;\n    const padLeft = convInfo.padInfo.left;\n    const strideHeight = convInfo.strideHeight;\n
const strideWidth = convInfo.strideWidth;\n    const dilationHeight = convInfo.dilationHeight;\n    const
dilationWidth = convInfo.dilationWidth;\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth =
convInfo.filterWidth;\n    const texelsAcross = filterWidth;\n\n    let mainLoop = `int xR; int xC; int xCOffset;`\n
for (let r = 0; r < filterHeight; r++) {\n    for (let c = 0; c < filterWidth; c++) {\n      mainLoop += `\n      vec4
xTexelR${r}C${c * 2} = vec4(0.);\n      vec4 wR${r}C${c} = vec4(0.);\n      vec4 xR${r}C${c} = vec4(0.);`\n
    }\n  }\n  /**\n   * This vectorized implementation works by gathering the values needed for\n   * each
output channel's dot product into vec4's and then multiplying them\n   * all together (this happens in the final
double for-loop below). Most of\n   * the main loop consists of constructing these vec4's with the minimum\n   *
number of texture2D calls, which means making use of all four returned\n   * values from a texture2D call at
once.\n   */\n  for (let r = 0; r < filterHeight; r++) {\n    for (let texelC = 0; texelC < texelsAcross; texelC++) {\n
      const c = texelC * 2;\n\n      mainLoop += `\n      xR = xRCorner + ${r * dilationHeight};\n      xC =
xCCorner + ${c * dilationWidth};\n      `;\n\n      if (strideWidth === 1) {\n        if (c < filterWidth) {\n          //
If padding is odd, the outer texels have to be composed.\n          if (padLeft % 2 === 1) {\n            // TODO:
Ensure vec4 previous does not result in redundant sample,\n            // and avoid setting xTexelRC's that exceed the
boundary in the\n            // first place rather than resetting them to vec4(0)).\n            // To compute xCOffset:\n
            // - If padding is odd, we must add 1 to ensure we ask for an\n            // even-numbered row.\n            // -
We subtract 2 to access the previous texel.\n            mainLoop += `\n            xCOffset = xC + 1;\n
if(xR >= 0 && xR < ${xNumRows} && xCOffset >= 0 && xCOffset < ${\n            xNumCols}) {\n
xTexelR${r}C${c} = getX(batch, xR, xCOffset, d1);\n            // Need to manually clear unused channels in
case\n            // we're reading from recycled texture.\n            if(xCOffset + 1 >= ${xNumCols}) {\n
xTexelR${r}C${c}.zw = vec2(0.);}\n            } else {\n              xTexelR${r}C${c} = vec4(0.);}\n
            }\n            xCOffset = xC + 1 - 2;\n            if(xR >= 0 && xR < ${xNumRows} && xCOffset >= 0
&& xCOffset < ${\n            xNumCols}) {\n              vec4 previous = getX(batch, xR, xCOffset, d1);\n
            // Need to manually clear unused channels in case\n            // we're reading from recycled texture.\n
if(xCOffset + 1 >= ${xNumCols}) {\n              previous.zw = vec2(0.);}\n            }\n            xR${r}C${c} =
vec4(previous.zw, xTexelR${r}C${c}.xy);\n            } else {\n              xR${r}C${c} = vec4(0,
0, xTexelR${r}C${c}.xy);\n            }\n            `;\n            } else {\n              // Padding is even, so xRC
corresponds to a single texel.\n              mainLoop += `\n              if(xR >= 0 && xR < ${xNumRows} && xC >=
0 && xC < ${xNumCols}) {\n                xTexelR${r}C${c} = getX(batch, xR, xC, d1);\n              } else {\n
                xTexelR${r}C${c} = vec4(0.);}\n              }\n              xR${r}C${c} = xTexelR${r}C${c};\n              `;\n
            }\n            if (c + 1 < filterWidth) {\n              // If dilation is even, the second entry should match the first\n
              // (either both are composed or both are single samples). But if\n              // dilation is odd, then the second entry
should be the opposite\n              // of the first (if the first is composed, the second is a single\n              // sample,
and vice versa.)\n              const nextTexelOffset = padLeft % 2 === 0 ?\n              util.nearestLargerEven(dilationWidth) : \n              dilationWidth;\n              if ((dilationWidth % 2 === 0 &&
padLeft % 2 === 1) ||\n              (dilationWidth % 2 !== 0 && padLeft % 2 !== 1)) {\n                mainLoop += `\n
                xCOffset = xC + ${padLeft % 2} + ${nextTexelOffset};\n                if(xR >= 0 && xR <
${xNumRows} &&\n                xCOffset >= 0 && xCOffset < ${xNumCols}) {\n                  xTexelR${r}C${c}
+ 2} = getX(batch, xR, xCOffset, d1);\n                }\n                `;\n                // If dilation > 1 then the xRC's will
not be able to share any\n                // values, so each xRC will require two unique calls to getX.\n                if
(dilationWidth > 1) {\n                  mainLoop += `\n                  xCOffset -= 2;\n                  if(xR >= 0 && xR <

```

```

    ${xNumRows} && \n          xCOffset >= 0 && xCOffset < ${xNumCols}) {\n
xTexelR${r}C${c} = getX(batch, xR, xCOffset, d1);\n          } else {\n          xTexelR${r}C${c} =
vec4(0.); \n          }\n          };\n          }\n\n          mainLoop += ` \n          xR${r}C${c + 1} =
vec4(\n          xTexelR${r}C${c}.zw, xTexelR${r}C${c + 2}.xy);\n          `;\n          } else {\n
mainLoop += ` \n          xCOffset = xC + ${nextTexelOffset}; \n\n          if(xR >= 0 && xR <
${xNumRows} && \n          xCOffset >= 0 && xCOffset < ${xNumCols}) {\n          xTexelR${r}C${c
+ 2} = getX(batch, xR, xCOffset, d1);\n          }\n\n          xR${r}C${c + 1} = xTexelR${r}C${c + 2};\n
          `;\n          }\n          }\n          } else { // stride > 1\n          if (c < filterWidth) {\n          mainLoop
+= ` \n          if(xR >= 0 && xR < ${xNumRows}) {\n          `;\n\n          // Depending on whether padLeft is
even or odd, we want either the\n          // xy or zw channels from X texels for xR${r}C${c}. If padLeft is\n
// even, xR${r}C${c + 1} is simply the zw channels of texels we've\n          // already sampled. But if padLeft is
odd, xR${r}C${c + 1}.zw will\n          // need to come from the xy channels of a new texel, hence the `vec4\n
// final` initialized below.\n          if (padLeft % 2 === 1) {\n          mainLoop += ` \n          xCOffset = xC + 1
- ${strideWidth}; \n          if(xCOffset >= 0 && xCOffset < ${xNumCols}) {\n          xTexelR${r}C${c} =
getX(batch, xR, xCOffset, d1);\n          } else {\n          xTexelR${r}C${c} = vec4(0.); \n          }\n\n
          if(xC + 1 >= 0 && xC + 1 < ${xNumCols}) {\n          xTexelR${r}C${c + 2} = getX(batch, xR, xC + 1,
d1);\n          } else {\n          xTexelR${r}C${c + 2} = vec4(0.); \n          }\n\n          xR${r}C${c} =
vec4(\n          xTexelR${r}C${c}.zw, xTexelR${r}C${c + 2}.zw);\n          `;\n          if (c + 1 <
filterWidth) {\n          mainLoop += ` \n          vec4 final = vec4(0.); \n          xCOffset = xC + 1 +
${strideWidth}; \n          if(xCOffset >= 0 && xCOffset < ${xNumCols}) {\n          final = getX(batch,
xR, xCOffset, d1);\n          }\n          xR${r}C${c + 1} = vec4(xTexelR${r}C${c + 2}.xy, final.xy);\n
          `;\n          }\n          } else {\n          mainLoop += ` \n          if(xC >= 0 && xC < ${xNumCols}) {\n
          xTexelR${r}C${c} = getX(batch, xR, xC, d1);\n          } else {\n          xTexelR${r}C${c} =
vec4(0.); \n          }\n\n          xCOffset = xC + ${strideWidth}; \n          if(xCOffset >= 0 && xCOffset <
${xNumCols}) {\n          xTexelR${r}C${c + 2} = getX(batch, xR, xCOffset, d1);\n          } else {\n
          xTexelR${r}C${c + 2} = vec4(0.); \n          }\n\n          xR${r}C${c} = vec4(\n
          xTexelR${r}C${c}.xy, xTexelR${r}C${c + 2}.xy);\n          `;\n          if (c + 1 < filterWidth) {\n
mainLoop += ` \n          xR${r}C${c + 1} = vec4(\n          xTexelR${r}C${c}.zw, xTexelR${r}C${c +
2}.zw);\n          `;\n          }\n          }\n\n          mainLoop += ` `;\n          }\n          }\n\n          if (c <
filterWidth) {\n          mainLoop += ` \n          vec4 wTexelR${r}C${c} = getW(${r}, ${c}, d1, q);\n
          wR${r}C${c} = vec4(wTexelR${r}C${c}.xz, wTexelR${r}C${c}.xz);\n          `;\n          if (c + 1 < filterWidth)
{\n          mainLoop += ` \n          vec4 wTexelR${r}C${c + 1} = getW(${r}, ${c + 1}, d1, q);\n
          wR${r}C${c + 1} =\n          vec4(wTexelR${r}C${c + 1}.xz, wTexelR${r}C${c + 1}.xz); \n          }\n          }\n
          }\n          }\n          for (let r = 0; r < filterHeight; r++) {\n          for (let c = 0; c < filterWidth; c++) {\n          mainLoop +=
` \n          dotProd += xR${r}C${c} * wR${r}C${c}; `;\n          }\n          }\n          let activationSnippet = ", applyActivationSnippet =
";\n          if (activation) {\n          if (hasPreluActivation) {\n          activationSnippet = `vec4 activation(vec4 a) {\n
          vec4 b = getPreluActivationWeightsAtOutCoords(); \n          ${activation}\n          `;\n          } else if
(hasLeakyReluAlpha) {\n          activationSnippet = `vec4 activation(vec4 a) {\n          vec4 b =
getLeakyreluAlphaAtOutCoords(); \n          ${activation}\n          `;\n          } else {\n          activationSnippet = `vec4
activation(vec4 x) {\n          ${activation}\n          `;\n          }\n          }\n          applyActivationSnippet = `result =
activation(result); `;\n          }\n          }\n          const addBiasSnippet = addBias ? 'result += getBiasAtOutCoords():'; \n          if
(addBias) {\n          this.variableNames.push('bias'); \n          }\n          }\n          if (hasPreluActivation) {\n
          this.variableNames.push('preluActivationWeights'); \n          }\n          if (hasLeakyReluAlpha) {\n
          this.variableNames.push('leakyreluAlpha'); \n          }\n          }\n          this.userCode = ` \n          ${activationSnippet}\n          const
ivec2 strides = ivec2(${strideHeight}, ${strideWidth}); \n          const ivec2 pads = ivec2(${padTop}, ${padLeft}); \n\n
          void main() {\n          ivec4 coords = getOutputCoords(); \n          int batch = coords.x; \n          ivec2 xRCCorner =
coords.yz * strides - pads; \n          int d2 = coords.w; \n          int d1 = d2; \n          int q = 0; \n          int xRCorner =
xRCCorner.x; \n          int xCCorner = xRCCorner.y; \n          vec4 dotProd = vec4(0.); \n\n          ${mainLoop}\n          }\n

```

```
vec4 result = dotProd;\n    ${addBiasSnippet}\n    ${applyActivationSnippet}\n    setOutput(result);\n    }\n};\n}\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n\n*/\n\nimport { backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,\nDepthwiseConv2dNativeInputs, env, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-core';\nimport\n{MathBackendWebGL} from './backend_webgl';\nimport {DepthwiseConv2DProgram} from\n './conv_gpu_depthwise';\nimport {DepthwiseConvPacked2DProgram} from\n './conv_packed_gpu_depthwise';\n\nexport function depthwiseConv2dNative(args: {\n inputs:\nDepthwiseConv2dNativeInputs,\n attrs: DepthwiseConv2dNativeAttrs,\n backend: MathBackendWebGL\n}) {\n\nconst {inputs, backend, attrs} = args;\nconst {x, filter} = inputs;\nconst {strides, pad, dilations,\ndimRoundingMode} = attrs;\n\nlet $dilations = dilations;\nif ($dilations == null) {\n  $dilations = [1, 1];\n}\n\nutil.assert(\n  backend_util.eitherStridesOrDilationsAreOne(strides, $dilations),\n  () => 'Error in\ndepthwiseConv2d: Either strides or dilations must be '+\n  `1. Got strides ${strides} and dilations\n'${$dilations}`);\n\nconst convInfo = backend_util.computeConv2DInfo(\n  x.shape as [number, number,\nnumber, number],\n  filter.shape as [number, number, number, number],\n  strides, $dilations,\n  pad,\ndimRoundingMode, true /* depthwise */);\n\nlet program:\nDepthwiseConv2DProgram|DepthwiseConvPacked2DProgram;\n\nif\n(env().getBool('WEBGL_PACK_DEPTHWISECONV') && convInfo.strideWidth <= 2 &&\nconvInfo.outChannels / convInfo.inChannels === 1) {\n  program = new\nDepthwiseConvPacked2DProgram(convInfo);\n} else {\n  program = new\nDepthwiseConv2DProgram(convInfo);\n}\n\nreturn backend.runWebGLProgram(program, [x, filter],\n'float32');\n}\n\nexport const depthwiseConv2dNativeConfig: KernelConfig = {\n  kernelName:\nDepthwiseConv2dNative,\n  backendName: 'webgl',\n  kernelFunc: depthwiseConv2dNative as {\n} as\nKernelFunc,\n};\n\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n\n*/\n\nimport { backend_util } from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from\n './gpgpu_math';\n\nexport class DepthwiseConv2DDerFilterProgram implements GPGPUProgram {\n\nvariableNames = ['x', 'dy'];\noutputShape: number[];\nuserCode: string;\n\nconstructor(convInfo:\nbackend_util.Conv2DInfo) {\n  this.outputShape = convInfo.filterShape;\n  const strideHeight =\nconvInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n  const padTop = convInfo.padInfo.top;\nconst padLeft = convInfo.padInfo.left;\n  const channelMul = convInfo.outChannels / convInfo.inChannels;\n\nthis.userCode = `\n  void main() {\n    ivec4 coords = getOutputCoords();\n    int wR = coords.x;\n    int\nwC = coords.y;\n    int d1 = coords.z;\n    int dm = coords.w;\n    int d2 = d1 * ${channelMul} + dm;\n\nfloat dotProd = 0.0;\n    // TO DO: Vec4 over the batch size\n    for (int b = 0; b < ${convInfo.batchSize};\nb++) {\n      for (int yR = 0; yR < ${convInfo.outHeight}; yR++) {\n        int xR = wR + yR * ${strideHeight} -\n${padTop};\n        if (xR < 0 || xR >= ${convInfo.inHeight}) {\n          continue;\n        }\n        for (int
```



```

=====
*\n\nimport {backend_util, DepthwiseConv2dNativeBackpropInput, DepthwiseConv2dNativeBackpropInputAttrs,
DepthwiseConv2dNativeBackpropInputInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\n\nimport
{MathBackendWebGL} from './backend_webgl';\n\nimport {DepthwiseConv2DDerInputProgram} from
'./conv_backprop_gpu_depthwise';\n\nexport function depthwiseConv2dNativeBackpropInput(args: {\n inputs:
DepthwiseConv2dNativeBackpropInputInputs,\n attrs: DepthwiseConv2dNativeBackpropInputAttrs,\n backend:
MathBackendWebGL\n}) {\n const {inputs, backend, attrs} = args;\n const {dy, filter} = inputs;\n const {strides,
dilations, pad, dimRoundingMode, inputShape} = attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
true /* depthwise */);\n\n const program = new DepthwiseConv2DDerInputProgram(convInfo);\n return
backend.runWebGLProgram(program, [dy, filter], 'float32');\n}\n\nexport const
depthwiseConv2dNativeBackpropInputConfig: KernelConfig = {\n kernelName:
DepthwiseConv2dNativeBackpropInput,\n backendName: 'webgl',\n kernelFunc:
depthwiseConv2dNativeBackpropInput as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class DiagProgram implements GPGPUProgram
{\n variableNames = ['X'];\n outputShape: number[];\n userCode: string;\n\n constructor(size: number) {\n
this.outputShape = [size, size];\n this.userCode = `\n void main() {\n ivec2 coords = getOutputCoords();\n
float val = coords[0] == coords[1] ? getX(coords[0]) : 0.0;\n  setOutput(val);\n }\n `;\n }\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {Diag, DiagInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport {DiagProgram} from
'./diag_gpu';\n\nimport {reshape} from './Reshape';\n\nexport function diag(args: {inputs: DiagInputs, backend:
MathBackendWebGL}):\n TensorInfo {\n const {inputs, backend} = args;\n const {x} = inputs;\n\n const
outShape = [...x.shape, ...x.shape];\n const xSize = util.sizeFromShape(x.shape);\n\n const flat = reshape({inputs:
{x}, backend, attrs: {shape: [xSize]}});\n\n const program = new DiagProgram(xSize);\n const res =
backend.runWebGLProgram(program, [flat], flat.dtype);\n\n const out = reshape({inputs: {x: res}, backend, attrs:
{shape: outShape}});\n\n backend.disposeIntermediateTensorInfo(flat);\n
backend.disposeIntermediateTensorInfo(res);\n\n return out;\n}\n\nexport const diagConfig: KernelConfig = {\n
kernelName: Diag,\n backendName: 'webgl',\n kernelFunc: diag as {} as KernelFunc\n};\n\n"/**\n * @license\n *
Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class Dilation2DProgram implements GPGPUProgram {\n  variableNames = ['x', 'W'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(convInfo: backend_util.Conv2DInfo) {\n    this.outputShape = convInfo.outShape;\n\n    const {\n      inHeight,\n      inWidth,\n      padInfo,\n      strideHeight,\n      strideWidth,\n      filterHeight,\n      filterWidth,\n      dilationHeight,\n      dilationWidth\n    } = convInfo;\n\n    const {top: padTop, left: padLeft} = padInfo;\n\n    this.userCode = `\n      const ivec2 strides =
ivec2(${strideHeight}, ${strideWidth});\n      const ivec2 pads = ivec2(${padTop}, ${padLeft});\n      const float
neg_infinity = -3.4e38;\n      void main() {\n        ivec4 coords = getOutputCoords();\n        int batch = coords.x;\n        int d1 = coords.w;\n        ivec2 outTopLeftCorner =\n          coords.yz * strides - pads;\n        int hBeg =
outTopLeftCorner.x;\n        int wBeg = outTopLeftCorner.y;\n\n        float curVal = neg_infinity;\n        for (int h =
0; h < ${filterHeight}; h++) {\n          int hIn = hBeg + h * ${dilationHeight};\n          if (hIn >= 0 && hIn <
${inHeight}) {\n            for (int w = 0; w < ${filterWidth}; w++) {\n              int wIn = wBeg + w *
${dilationWidth};\n              if (wIn >= 0 && wIn < ${inWidth}) {\n                float xVal = getX(batch, hIn, wIn,
d1);\n                float wVal = getW(h, w, d1);\n                float val = xVal + wVal;\n                if (val > curVal) {\n
                  curVal = val;\n                }\n              }\n            }\n          }\n\n          float result = curVal;\n          setOutput(result);\n        }\n      }\n    `;\n  }\n}\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util, Dilation2D, Dilation2DAttrs, Dilation2DInputs, KernelConfig, KernelFunc,
TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport
{Dilation2DProgram} from './dilation_gpu';\nimport {reshape} from './Reshape';\n\nexport function
dilation2D(args: {\n  inputs: Dilation2DInputs,\n  attrs: Dilation2DAttrs,\n  backend: MathBackendWebGL\n}) {\n
  const {inputs, backend, attrs} = args;\n  const {x, filter} = inputs;\n  const {strides, pad, dilations} = attrs;\n\n  const
convInfo = backend_util.computeDilation2DInfo(\n    x.shape as [number, number, number, number],\n    filter.shape as [number, number, number],\n    strides, pad,\n    'NHWC' /* dataFormat */,\n    dilations);\n\n  let out:
TensorInfo;\n\n  const program = new Dilation2DProgram(convInfo);\n  out =
backend.runWebGLProgram(program, [x, filter], 'float32');\n\n  const outReshaped =\n    reshape({inputs: {x: out},\n      backend, attrs: {shape: convInfo.outShape}});\n\n  backend.disposeIntermediateTensorInfo(out);\n\n  return
outReshaped;\n}\n\nexport const dilation2DConfig: KernelConfig = {\n  kernelName: Dilation2D,\n  backendName:
'webgl',\n  kernelFunc: dilation2D as {} as KernelFunc,\n};\n\n", "/*\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {Elu, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\n\nconst ELU = `return (x >= 0.0) ? x : (exp(x) - 1.0);`\n\nconst ELU_PACKED
= `\n  vec4 result;\n\n  result.r = (x.r >= 0.0) ? x.r : (exp(x.r) - 1.0);\n  result.g = (x.g >= 0.0) ? x.g : (exp(x.g) -
1.0);\n  result.b = (x.b >= 0.0) ? x.b : (exp(x.b) - 1.0);\n  result.a = (x.a >= 0.0) ? x.a : (exp(x.a) - 1.0);\n\n  return
result;\n`;\n\nconst elu = unaryKernelFunc({opSnippet: ELU, packedOpSnippet: ELU_PACKED});\n\nexport const

```

```

eluConfig: KernelConfig = {\n kernelName: Elu,\n backendName: 'webgl',\n kernelFunc: elu as { } as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {EluGrad, EluGradInputs, env, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {MathBackendWebGL} from './backend_webgl';\nimport {BinaryOpProgram} from
'./binaryop_gpu';\nimport {BinaryOpPackedProgram} from './binaryop_packed_gpu';\n\nconst ELU_DER = `return
(b >= 1.0) ? a : a * (b + 1.0);`\n\nconst ELU_DER_PACKED = `\n  vec4 bGTEZero = vec4(greaterThanEqual(b,
vec4(0.0))); \n  return (bGTEZero * a) + ((vec4(1.0) - bGTEZero) * (a * (b + vec4(1.0)))));\n`; \n\nexport const eluGrad
=\n  (args: {inputs: EluGradInputs, backend: MathBackendWebGL}): TensorInfo => {\n    const {inputs,
backend} = args;\n    const {dy, y} = inputs;\n\n    const program =
env().getBool('WEBGL_PACK_BINARY_OPERATIONS') ?\n      new
BinaryOpPackedProgram(ELU_DER_PACKED, dy.shape, y.shape) :\n      new BinaryOpProgram(ELU_DER,
dy.shape, y.shape);\n    return backend.runWebGLProgram(program, [dy, y], dy.dtype);\n  };\n\nexport const
eluGradConfig: KernelConfig = {\n  kernelName: EluGrad,\n  backendName: 'webgl',\n  kernelFunc: eluGrad as { }
as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {Equal, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {binaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\n\nconst PACKED_EQUAL = `\n  return vec4(equal(a, b));\n`; \n\nconst EQUAL
= `return float(a == b);`\n\nexport const equal = binaryKernelFunc(\n  {opSnippet: EQUAL, packedOpSnippet:
PACKED_EQUAL, dtype: 'bool'});\n\nexport const equalConfig: KernelConfig = {\n  kernelName: Equal,\n  backendName: 'webgl',\n  kernelFunc: equal as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {backend_util, Erf, KernelConfig} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\n\nconst ERF = `\n  // Error function is calculated approximately with elementary
function.\n  // See \"Handbook of Mathematical Functions with Formulas,\n  // Graphs, and Mathematical Tables\", \n  Abramowitz and Stegun.\n  float p = ${backend_util.ERF_P};\n  float a1 = ${backend_util.ERF_A1};\n  float a2 =
${backend_util.ERF_A2};\n  float a3 = ${backend_util.ERF_A3};\n  float a4 = ${backend_util.ERF_A4};\n  float
a5 = ${backend_util.ERF_A5};\n\n  float sign = sign(x);\n  x = abs(x);\n  float t = 1.0 / (1.0 + p * x);\n  return sign *
(1.0 - (((((a5*t + a4)*t) + a3)*t + a2)*t + a1)*t*exp(-x*x));\n`; \n\nexport const erf = unaryKernelFunc({opSnippet:
ERF});\n\nexport const erfConfig: KernelConfig = {\n  kernelName: Erf,\n  backendName: 'webgl',\n  kernelFunc:

```

erf,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the License);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an AS IS BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {reshape} from './Reshape';\n\nexport function expandDims(args: {\n  inputs: ExpandDimsInputs,\n  attrs: ExpandDimsAttrs,\n  backend: MathBackendWebGL\n}): TensorInfo {\n  const {inputs, attrs, backend} = args;\n  const {dim} = attrs;\n  const {input} = inputs;\n  const inputRank = input.shape.length;\n  const newShape = input.shape.slice();\n  let $dim = dim;\n  if (dim < 0) {\n    // Negative value is counted from the tail of rank.\n    util.assert(\n      -(inputRank + 1) <= dim,\n      () => `Axis must be in the interval [${-(inputRank + 1)}, ${\n        inputRank\n      }]);\n    $dim = inputRank + dim + 1;\n  }\n  newShape.splice($dim, 0, 1);\n  return reshape({inputs: {x: input}, backend, attrs: {shape: newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'webgl',\n  kernelFunc: expandDims as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class FFTProgram implements GPGPUProgram {\n  variableNames = ['real', 'imag'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    component: 'real'|'imag',\n    inputShape: [number, number],\n    inverse: boolean) {\n    const innerDim = inputShape[1];\n    this.outputShape = inputShape;\n    const exponentMultiplierSnippet =\n      inverse ? `2.0 * ${Math.PI}` : `-.2.0 * ${Math.PI}`;\n    const resultDenominator = inverse ? `${innerDim}.0` : '1.0';\n    let opString: string;\n    if (component === 'real') {\n      opString = 'return real * expR - imag * expI;'\n    } else if (component === 'imag') {\n      opString = 'return real * expI + imag * expR;'\n    } else {\n      throw new Error(`FFT component must be either \"real\" or \"imag\", got ${component}.`);\n    }\n    this.userCode = `\n    const float exponentMultiplier = ${exponentMultiplierSnippet};\n    float unaryOpComplex(float real, float expR, float imag, float expI) {\n      ${opString}\n    }\n    float mulMatDFT(int batch, int index) {\n      float indexRatio = float(index) / float(${innerDim});\n      float exponentMultiplierTimesIndexRatio =\n        exponentMultiplier * indexRatio;\n      float result = 0.0;\n      for (int i = 0; i < ${innerDim}; i++) {\n        // x = (-2|2 * PI / N) * index * i;\n        float x = exponentMultiplierTimesIndexRatio * float(i);\n        float expR = cos(x);\n        float expI = sin(x);\n        float real = getReal(batch, i);\n        float imag = getImag(batch, i);\n        result +=\n          unaryOpComplex(real, expR, imag, expI) / ${resultDenominator};\n      }\n      return result;\n    }\n\n    void main() {\n      ivec2 coords = getOutputCoords();\n      setOutput(mulMatDFT(coords[0], coords[1]));\n    }\n  `;\n}\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

*\n\nimport {TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from
'./backend_webgl';\n\nimport {FFTProgram} from './fft_gpu';\n\nimport {complex} from './Complex';\n\nimport
{reshape} from './Reshape';\n\nexport function fftImpl(\n  x: TensorInfo, inverse: boolean, backend:
MathBackendWebGL): TensorInfo {\n  const xData = backend.texData.get(x.dataId);\n\n  const inputSize =
util.sizeFromShape(x.shape);\n  // Collapse all outer dimensions to a single batch dimension.\n  const
innerDimensionSize = x.shape[x.shape.length - 1];\n  const batch = inputSize / innerDimensionSize;\n\n  const
input2D = reshape(\n    {inputs: {x}, backend, attrs: {shape: [batch, innerDimensionSize]}});\n\n  const xShape =
input2D.shape as [number, number];\n  const realProgram = new FFTProgram('real', xShape, inverse);\n  const
imagProgram = new FFTProgram('imag', xShape, inverse);\n\n  const inputs = [\n    {\n      dataId:
xData.complexTensorInfos.real.dataId,\n      dtype: xData.complexTensorInfos.real.dtype,\n      shape: xShape\n
    },\n    {\n      dataId: xData.complexTensorInfos.imag.dataId,\n      dtype: xData.complexTensorInfos.imag.dtype,\n
      shape: xShape\n    }\n  ];\n\n  const realPart = backend.runWebGLProgram(realProgram, inputs, 'float32');\n  const
imagPart = backend.runWebGLProgram(imagProgram, inputs, 'float32');\n\n  const complexOutput =\n  complex({inputs: {real: realPart, imag: imagPart}, backend});\n\n  backend.disposeIntermediateTensorInfo(realPart);\n  backend.disposeIntermediateTensorInfo(imagPart);\n\n  const
complexOutputReshaped =\n    reshape({inputs: {x: complexOutput}, backend, attrs: {shape: x.shape}});\n\n  backend.disposeIntermediateTensorInfo(input2D);\n  backend.disposeIntermediateTensorInfo(complexOutput);\n\n  return complexOutputReshaped;\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {FFT, FFTInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport
{MathBackendWebGL} from './backend_webgl';\n\nimport {fftImpl} from './FFT_impl';\n\nexport function
fft(args: {inputs: FFTInputs, backend: MathBackendWebGL}):\n  TensorInfo {\n  const {inputs, backend} =
args;\n  const {input} = inputs;\n\n  return fftImpl(input, false /* inverse */, backend);\n}\n\nexport const fftConfig:
KernelConfig = {\n  kernelName: FFT,\n  backendName: 'webgl',\n  kernelFunc: fft;\n};\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {GPGPUContext} from './gpgpu_context';\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport
class FillProgram implements GPGPUProgram {\n  variableNames: string[];\n  outputShape: number[] = [];\n  userCode:
string;\n\n  valueLoc: WebGLUniformLocation;\n\n  constructor(shape: number[], value: number) {\n  this.variableNames = ['x'];\n  this.outputShape = shape;\n\n  this.userCode = `\n    uniform float value;\n    void
main() {\n      // Input can be obtained from uniform value.\n      setOutput(value);\n    }\n  `;\n}\n\n  getCustomSetupFunc(value: number) {\n  return (gpgpu: GPGPUContext, webGLProgram: WebGLProgram) =>
{\n    if (this.valueLoc == null) {\n      this.valueLoc = gpgpu.getUniformLocationNoThrow(webGLProgram,
'value');\n    }\n    gpgpu.gl.uniform1f(this.valueLoc, value);\n  };}\n}\n\n"/**\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,

```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Fill, FillAttrs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {FillProgram} from '../fill_gpu';\n\nexport function fill(args: {backend: MathBackendWebGL, attrs: FillAttrs});\n  TensorInfo {\n    const {backend, attrs} = args;\n    const {shape, value} = attrs;\n    let {dtype} = attrs;\n\n    dtype = dtype || util.inferDType(value);\n\n    if (dtype === 'string') {\n      // String type should be handled in CPU memory.\n      const values = util.getArrayFromDType(dtype, util.sizeFromShape(shape));\n      values.fill(value as string);\n      return backend.makeTensorInfo(shape, dtype, values);\n    } else {\n      const program = new FillProgram(shape, value as number);\n      const customSetup = program.getCustomSetupFunc(value as number);\n      return backend.runWebGLProgram(program, [], dtype, customSetup);\n    }\n  }\n\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName: 'webgl',\n  kernelFunc: fill as {} as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class FlipLeftRightProgram implements GPGPUProgram {\n  variableNames = ['Image'];\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(imageShape: [number, number, number, number]) {\n    const imageWidth = imageShape[2];\n    this.outputShape = imageShape;\n\n    this.userCode = `\n    void main() {\n      ivec4 coords = getOutputCoords();\n      int x = coords[2];\n      int coordX = ${imageWidth} - x;\n      float\n      outputValue;\n      if(coordX >= 0 && coordX < ${imageWidth}) {\n        outputValue = getImage(coords[0], coords[1], coordX, coords[3]);\n      } else {\n        outputValue = getImage(coords[0], coords[1], coords[2], coords[3]);\n      }\n      setOutput(outputValue);\n    }\n  `;\n}\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, Tensor4D} from '@tensorflow/tfjs-core';\nimport {FlipLeftRight, FlipLeftRightInputs} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {FlipLeftRightProgram} from '../flip_left_right_gpu';\n\nexport const flipLeftRightConfig: KernelConfig = {\n  kernelName: FlipLeftRight,\n  backendName: 'webgl',\n  kernelFunc: ({inputs, backend}) => {\n    const {image} = inputs as FlipLeftRightInputs;\n    const webglBackend = backend as MathBackendWebGL;\n    const program = new FlipLeftRightProgram((image as Tensor4D).shape);\n    const output = webglBackend.runWebGLProgram(program, [image], image.dtype);\n    return output;\n  };\n};\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
```



```

    if (depth == 0) {\n        value = values.r;\n    } else if (depth == 1) {\n        value = values.g;\n    }
else if (depth == 2) {\n        value = values.b;\n    } else if (depth == 3) {\n        value = values.a;\n
}\n\n    result[row * 2 + col] = floor(value * 255.0 + 0.5);\n    }\n    }\n    ${{gls.output}} = result;\n
}\n`;
}\n}\n","/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {env, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {FromPixels,
FromPixelsAttrs, FromPixelsInputs} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from
'./backend_webgl';\nimport {TextureUsage} from './tex_util';\nimport {FromPixelsProgram} from
'./FromPixels_utils/from_pixels_gpu';\nimport {FromPixelsPackedProgram} from
'./FromPixels_utils/from_pixels_packed_gpu';\n\nexport const fromPixelsConfig: KernelConfig = {\n kernelName:
FromPixels,\n backendName: 'webgl',\n kernelFunc: fromPixels as {} as KernelFunc,\n};\n\nlet
fromPixels2DContext: CanvasRenderingContext2D;\n\nfunction fromPixels(args: {\n inputs: FromPixelsInputs,\n
backend: MathBackendWebGL,\n attrs: FromPixelsAttrs\n}): TensorInfo {\n const {inputs, backend, attrs} =
args;\n let {pixels} = inputs;\n const {numChannels} = attrs;\n\n const isVideo = typeof (HTMLVideoElement)
!== 'undefined' &&\n pixels instanceof HTMLVideoElement;\n const isImage = typeof (HTMLImageElement)
!== 'undefined' &&\n pixels instanceof HTMLImageElement;\n const isImageBitmap = typeof (ImageBitmap)
!== 'undefined' &&\n pixels instanceof ImageBitmap;\n const [width, height] = isVideo ?\n [\n (pixels as
HTMLVideoElement).videoWidth,\n (pixels as HTMLVideoElement).videoHeight\n ] : \n [pixels.width,
pixels.height];\n\n const texShape: [number, number] = [height, width];\n const outShape = [height, width,
numChannels];\n\n if (isImage || isVideo || isImageBitmap) {\n if (fromPixels2DContext == null) {\n
fromPixels2DContext = document.createElement('canvas').getContext('2d');\n }\n\n
fromPixels2DContext.canvas.width = width;\n fromPixels2DContext.canvas.height = height;\n
fromPixels2DContext.drawImage(\n pixels as HTMLVideoElement | HTMLImageElement | ImageBitmap,\n
0, 0, width, height);\n pixels = fromPixels2DContext.canvas;\n }\n\n const tempPixelHandle =
backend.makeTensorInfo(texShape, 'int32');\n // This is a byte texture with pixels.\n
backend.texData.get(tempPixelHandle.dataId).usage = TextureUsage.PIXELS;\n
backend.gpgpu.uploadPixelDataToTexture(\n backend.getTexture(tempPixelHandle.dataId), pixels as
ImageData);\n const program = env().getBool('WEBGL_PACK') ?\n new FromPixelsPackedProgram(outShape)
:\n new FromPixelsProgram(outShape);\n const res = backend.runWebGLProgram(program, [tempPixelHandle],
'int32');\n backend.disposeData(tempPixelHandle.dataId);\n return res;\n}\n","/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util, env, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig,
KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from
'./backend_webgl';\nimport {Conv2DProgram} from './conv_gpu';\nimport {mapActivationToShaderProgram}
from './kernel_utils/kernel_funcs_utils';\nimport {conv2dByMatMul, conv2dWithIm2Row} from
'./Conv2D_impl';\nimport {reshape} from './Reshape';\n\nexport function fusedConv2d(args: {\n inputs:

```

```

FusedConv2DInputs,\n attrs: FusedConv2DAttrs,\n backend: MathBackendWebGL\n)) {\n const {inputs,\n backend, attrs} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const {\n strides,\n pad,\n dataFormat,\n dilations,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } = attrs;\n\n const\n $dataFormat = backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo =\n backend_util.computeConv2DInfo(\n x.shape as [number, number, number, number],\n filter.shape as\n [number, number, number, number], strides, dilations, pad,\n dimRoundingMode, false /* depthwise */,\n $dataFormat);\n let out: TensorInfo;\n const intermediates: TensorInfo[] = [];\n\n if (convInfo.filterHeight === 1\n && convInfo.filterWidth === 1 &&\n convInfo.dilationHeight === 1 && convInfo.dilationWidth === 1 &&\n convInfo.strideHeight === 1 && convInfo.strideWidth === 1 &&\n (convInfo.padInfo.type === 'SAME' ||\n convInfo.padInfo.type === 'VALID')) {\n out = conv2dByMatMul({\n x,\n filter,\n convInfo,\n backend,\n bias,\n activation,\n preluActivationWeights,\n leakyreluAlpha\n });\n } else if\n (env().getBool('WEBGL_CONV_IM2COL') && x.shape[0] === 1) {\n out = conv2dWithIm2Row({\n x,\n filter,\n convInfo,\n backend,\n bias,\n activation,\n preluActivationWeights,\n leakyreluAlpha\n });\n } else {\n const hasBias = bias != null;\n const hasPreluActivationWeights = preluActivationWeights !=\n null;\n const hasLeakyreluAlpha = activation === 'leakyrelu';\n const fusedActivation =\n activation ?\n mapActivationToShaderProgram(activation, false) : null;\n const program = new Conv2DProgram(\n convInfo, hasBias, fusedActivation, hasPreluActivationWeights,\n hasLeakyreluAlpha);\n const inputs:\n TensorInfo[] = [x, filter];\n if (bias) {\n inputs.push(bias);\n }\n if (preluActivationWeights) {\n inputs.push(preluActivationWeights);\n }\n if (hasLeakyreluAlpha) {\n const $leakyreluAlpha =\n backend.makeTensorInfo(\n [], 'float32',\n util.createScalarValue(leakyreluAlpha as {} as 'float32',\n 'float32'));\n inputs.push($leakyreluAlpha);\n intermediates.push($leakyreluAlpha);\n }\n out =\n backend.runWebGLProgram(program, inputs, 'float32');\n }\n\n const outReshaped =\n reshape({inputs: {x:\n out}, backend, attrs: {shape: convInfo.outShape}});\n\n intermediates.push(out);\n intermediates.forEach(t =>\n backend.disposeIntermediateTensorInfo(t));\n\n return outReshaped;\n }\n\n\nexport const fusedConv2DConfig:\n KernelConfig = {\n kernelName: FusedConv2D,\n backendName: 'webgl',\n kernelFunc: fusedConv2d as {} as\n KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
=====
*/\n\nimport {backend_util, env, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,\n FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-\ncore';\n\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {DepthwiseConv2DProgram} from\n '../conv_gpu_depthwise';\nimport {DepthwiseConvPacked2DProgram} from\n '../conv_packed_gpu_depthwise';\nimport {mapActivationToShaderProgram} from\n '../kernel_utils/kernel_funcs_utils';\n\nexport function fusedDepthwiseConv2D(args: {\n inputs:\n FusedDepthwiseConv2DInputs,\n attrs: FusedDepthwiseConv2DAttrs,\n backend: MathBackendWebGL\n}) {\n const {inputs, backend, attrs} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const {strides,\n pad, dilations, dimRoundingMode, activation, leakyreluAlpha} =\n attrs;\n\n const intermediates: TensorInfo[] =\n [];\n\n let $dilations = dilations;\n if ($dilations == null) {\n $dilations = [1, 1];\n }\n\n util.assert(\n backend_util.eitherStridesOrDilationsAreOne(strides, $dilations),\n () => 'Error in depthwiseConv2d: Either\n strides or dilations must be '\n `1. Got strides ${strides} and dilations '${dilations}'`);\n\n const convInfo =\n backend_util.computeConv2DInfo(\n x.shape as [number, number, number, number],\n filter.shape as\n [number, number, number, number], strides, $dilations,\n pad, dimRoundingMode, true /* depthwise */);\n\n const shouldPackDepthwiseConv = env().getBool('WEBGL_PACK_DEPTHWISECONV') &&\n

```

```

convInfo.strideWidth <= 2 &&\n    convInfo.outChannels / convInfo.inChannels === 1;\n    const fusedActivation =
activation ?\n    mapActivationToShaderProgram(activation, shouldPackDepthwiseConv) :\n    null;\n    const
programInputs: TensorInfo[] = [x, filter];\n\n    const hasBias = bias != null;\n    const hasPreluActivationWeights =
preluActivationWeights != null;\n    const hasLeakyreluAlpha = activation === 'leakyrelu';\n    if (hasBias) {\n
programInputs.push(bias);\n    }\n    if (hasPreluActivationWeights) {\n
programInputs.push(preluActivationWeights);\n    }\n    if (hasLeakyreluAlpha) {\n    const $leakyreluAlpha =
backend.makeTensorInfo(\n        [], 'float32',\n        util.createScalarValue(leakyreluAlpha as {} as 'float32',
'float32'));\n    programInputs.push($leakyreluAlpha);\n    intermediates.push($leakyreluAlpha);\n    }\n\n    let
program: DepthwiseConv2DProgram|DepthwiseConvPacked2DProgram;\n    if (shouldPackDepthwiseConv) {\n
program = new DepthwiseConvPacked2DProgram(\n        convInfo, hasBias, fusedActivation,
hasPreluActivationWeights,\n        hasLeakyreluAlpha);\n    } else {\n    program = new
DepthwiseConv2DProgram(\n        convInfo, hasBias, fusedActivation, hasPreluActivationWeights,\n
hasLeakyreluAlpha);\n    }\n\n    const result = backend.runWebGLProgram(program, programInputs, 'float32');\n\n
intermediates.forEach(t => backend.disposeIntermediateTensorInfo(t));\n    return result;\n}\n\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n    kernelName: FusedDepthwiseConv2D,\n    backendName:
'webgl',\n    kernelFunc: fusedDepthwiseConv2D as {} as KernelFunc,\n};\n\n",/**\n * @license\n * Copyright 2018
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from
'/shader_compiler';\n\nexport class GatherNDProgram implements GPGPUProgram {\n    variableNames = ['x',
'indices'];\n    outputShape: number[];\n    userCode: string;\n    constructor(\n        private sliceDim: number, private
strides: number[], shape: number[]) {\n        this.outputShape = shape;\n        const stridesType =
getCoordsDataType(strides.length);\n        const dtype = getCoordsDataType(shape.length);\n        const strideString =
this.sliceDim > 1 ? 'strides[j] : 'strides';\n        this.userCode = `\n        ${stridesType} strides =
${stridesType}(${this.strides});\n        void main() {\n            ${dtype} coords = getOutputCoords();\n            int
flattenIndex = 0;\n            for (int j = 0; j < ${this.sliceDim}; j++) {\n                int index = round(getIndices(coords[0],
j));\n                flattenIndex += index * ${strideString};\n            }\n            setOutput(getX(flattenIndex, coords[1]));\n
        }\n    `;\n}\n\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n *
distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND,
either express or implied.\n * See the License for the specific language governing permissions and\n * limitations
under the License.\n *
=====\n
*\n\nimport {backend_util, GatherNd, GatherNdInputs, KernelConfig, KernelFunc, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {GatherNDProgram}
from './gather_nd_gpu';\nimport {reshape} from './Reshape';\n\nexport function gatherNd(\n    args: {inputs:
GatherNdInputs, backend: MathBackendWebGL}): TensorInfo {\n    const {inputs, backend} = args;\n    const
{params, indices} = inputs;\n\n    const indicesShape = indices.shape;\n    const sliceRank =
indicesShape[indicesShape.length - 1];\n\n    const [resultShape, numSlices, sliceSize, strides] =\n
backend_util.prepareAndValidate(params, indices);\n\n    const flattenIndices = reshape(\n        {inputs: {x: indices},
backend, attrs: {shape: [numSlices, sliceRank]}});\n    const flattenX = reshape({\n        inputs: {x: params},\n

```

```

backend,\n  attrs: {shape: [(util.sizeFromShape(params.shape) / sliceSize), sliceSize]}\n  });\n\n const program =\n  new GatherNDProgram(sliceRank, strides, [numSlices, sliceSize]);\n  const res = backend.runWebGLProgram(\n    program, [flattenX, flattenIndices], flattenX.dtype);\n\n  const reshaped =\n    reshape({inputs: {x: res}, backend,\n      attrs: {shape: resultShape}});\n\n  backend.disposeIntermediateTensorInfo(flattenIndices);\n  backend.disposeIntermediateTensorInfo(flattenX);\n  backend.disposeIntermediateTensorInfo(res);\n\n  return\n    reshaped;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n  kernelName: GatherNd,\n  backendName: 'webgl',\n  kernelFunc: gatherNd as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
\n\n=====\n\n*/\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class GatherProgram implements GPGPUProgram {\n  variableNames = ['A', 'indices'];\n  outputShape: number[];\n  userCode: string;\n  rank: number;\n\n  constructor(aShape: number[], outputShape: number[]) {\n    this.outputShape = outputShape;\n    this.rank = outputShape.length;\n\n    const dtype = getCoordsDataType(this.rank);\n    const sourceCoords = getSourceCoords(aShape, 2);\n\n    this.userCode = `
void main() {\n  ${dtype} resRC = getOutputCoords();\n  setOutput(getA(${sourceCoords}));\n}\n\n// The input and output are always flattened into rank 4 tensors.\nfunction getSourceCoords(aShape: number[], axis: number): string {\n  const currentCoords = ['resRC.x', 'resRC.y', 'resRC.z', 'resRC.w'];\n  const sourceCoords = [];\n  for (let i = 0; i < aShape.length; i++) {\n    if (i === 2) {\n      sourceCoords.push('int(getIndices(resRC.x, resRC.z));');\n    } else {\n      sourceCoords.push('${currentCoords[i]}');\n    }\n  }\n  return sourceCoords.join();\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
\n\n=====\n\n*/\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {GatherProgram} from './gather_gpu';\nimport {gatherV2ImplCPU} from './kernel_utils/shared';\nimport {reshape} from './Reshape';\n\nexport function gatherV2(args: {\n  inputs: GatherV2Inputs,\n  backend: MathBackendWebGL,\n  attrs: GatherV2Attrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x, indices} = inputs;\n  const {axis, batchDims} = attrs;\n\n  const parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n  const shapeInfo = backend_util.segment_util.collectGatherOpShapeInfo(\n    x, indices, parsedAxis, batchDims);\n\n  const indicesSize = util.sizeFromShape(indices.shape);\n  const toDispose = [];\n\n  const flattenX = reshape({\n    inputs: {x},\n    backend,\n    attrs: {\n      shape: [\n        shapeInfo.batchSize, shapeInfo.outerSize, shapeInfo.dimSize,\n        shapeInfo.sliceSize\n      ]\n    }\n  });\n\n  const flattenIndex = reshape({\n    inputs: {x: indices},\n    backend,\n    attrs: {shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]}\n  });\n\n  toDispose.push(flattenX);\n  toDispose.push(flattenIndex);\n\n  const flattenOutputShape = [\n    shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n    shapeInfo.sliceSize\n  ];\n\n  if (backend.shouldExecuteOnCPU([x, indices]) || x.dtype === 'string') {\n    const indicesBuf = backend.bufferSync(flattenIndex);\n    const xBuf = backend.bufferSync(flattenX);\n    const outBuf = gatherV2ImplCPU(xBuf, indicesBuf, flattenOutputShape);\n\n    toDispose.forEach(t =>

```

```

backend.disposeIntermediateTensorInfo(t));\n\n return backend.makeTensorInfo(\n  shapeInfo.outputShape,
outBuf.dtype, outBuf.values as TypedArray);\n }\n\n const program = new GatherProgram(flattenX.shape,
flattenOutputShape);\n const res = backend.runWebGLProgram(\n  program, [flattenX, flattenIndex],
flattenX.dtype);\n toDispose.push(res);\n\n const reshaped = reshape(\n  {inputs: {x: res}}, backend, attrs:
{shape: shapeInfo.outputShape});\n toDispose.forEach(t => backend.disposeIntermediateTensorInfo(t));\n return
reshaped);\n\n\nexport const gatherV2Config: KernelConfig = {\n kernelName: GatherV2,\n backendName:
'webgl',\n kernelFunc: gatherV2 as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {GreaterEqual, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {binaryKernelFunc}
from './kernel_utils/kernel_funcs_utils';\n\nconst GREATER_EQUAL = `return float(a >= b);`\nconst
GREATER_EQUAL_PACKED = `\n return vec4(greaterThanEqual(a, b));\n`;\n\n\nexport const greaterEqual =
binaryKernelFunc({\n opSnippet: GREATER_EQUAL,\n packedOpSnippet: GREATER_EQUAL_PACKED,\n
dtype: 'bool'\n});\n\nexport const greaterEqualConfig: KernelConfig = {\n kernelName: GreaterEqual,\n
backendName: 'webgl',\n kernelFunc: greaterEqual as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {IFFT, IFFTInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport
{MathBackendWebGL} from './backend_webgl';\n\nimport {fftImpl} from './FFT_impl';\n\nexport function
ifft(args: {inputs: IFFTInputs, backend: MathBackendWebGL}):\n  TensorInfo {\n const {inputs, backend} =
args;\n const {input} = inputs;\n\n return fftImpl(input, true /* inverse */, backend);\n }\n\n\nexport const ifftConfig:
KernelConfig = {\n kernelName: IFFT,\n backendName: 'webgl',\n kernelFunc: ifft\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {IsFinite, KernelConfig} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from
 './kernel_utils/kernel_funcs_utils';\n\nconst IS_FINITE = `return float(!isnan(x) && !isinf(x));`\n\n\nexport const
isFinite = unaryKernelFunc({opSnippet: IS_FINITE, dtype: 'bool'});\n\n\nexport const isFiniteConfig: KernelConfig
= {\n kernelName: IsFinite,\n backendName: 'webgl',\n kernelFunc: isFinite\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

```

the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {IsInf, KernelConfig} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n'./kernel_utils/kernel_funcs_utils';\n\nconst IS_INF = `return float(isinf(x));`\n\nexport const isInf =\n  unaryKernelFunc({opSnippet: IS_INF, dtype: 'bool'});\n\nexport const isInfConfig: KernelConfig = {\n  kernelName: IsInf,\n  backendName: 'webgl',\n  kernelFunc: isInf,\n};\n\n"/**\n * @license\n * Copyright 2020\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n\n*\n\nimport {IsNan, KernelConfig} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n'./kernel_utils/kernel_funcs_utils';\n\nconst IS_NAN = `return float(isnan(x));`\n\nexport const isNaN =\n  unaryKernelFunc({opSnippet: IS_NAN, dtype: 'bool'});\n\nexport const isNaNConfig: KernelConfig = {\n  kernelName: IsNan,\n  backendName: 'webgl',\n  kernelFunc: isNaN,\n};\n\n"/**\n * @license\n * Copyright 2020\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, LessEqual} from '@tensorflow/tfjs-core';\nimport {binaryKernelFunc}\nfrom './kernel_utils/kernel_funcs_utils';\n\nexport const LESS_EQUAL = `return float(a <= b);`\n\nexport const\n  LESS_EQUAL_PACKED = `\n  return vec4(lessThanEqual(a, b));`\n\nexport const lessEqual =\n  binaryKernelFunc(\n    {opSnippet: LESS_EQUAL, packedOpSnippet: LESS_EQUAL_PACKED, dtype:\n    'bool'});\n\nexport const lessEqualConfig: KernelConfig = {\n  kernelName: LessEqual,\n  backendName: 'webgl',\n  kernelFunc: lessEqual as {\n  } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, LinSpace, LinSpaceAttrs, TensorInfo}\nfrom '@tensorflow/tfjs-\ncore';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {linSpaceImplCPU} from\n'./kernel_utils/shared';\n\nexport function linSpace(\n  args: {backend: MathBackendWebGL, attrs:\n  LinSpaceAttrs}): TensorInfo {\n  const {backend, attrs} = args;\n  const {start, stop, num} = attrs;\n\n  // TODO:\n  Use CPU implementation due to the precision problem in Safari.\n  const outVals = linSpaceImplCPU(start, stop,\n  num);\n  return backend.makeTensorInfo([outVals.length], 'float32', outVals);\n}\n\nexport const linSpaceConfig:\n  KernelConfig = {\n  kernelName: LinSpace,\n  backendName: 'webgl',\n  kernelFunc: linSpace as {\n  } as\n  KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
```

on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, Log1p} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n'./kernel_utils/kernel_funcs_utils';\n\nconst LOG1P = `return log(1.0 + x)`;\n\nexport const log1p =\n  unaryKernelFunc({opSnippet: LOG1P});\n\nexport const log1pConfig: KernelConfig = {\n  kernelName: Log1p,\n  backendName: 'webgl',\n  kernelFunc: log1p,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n * \n * \n */\n\n=====\n\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, LogicalAnd} from '@tensorflow/tfjs-core';\nimport\n{binaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\n\nconst LOGICAL_AND = `return float(a >= 1.0 &&\n b >= 1.0)`;\n\nconst LOGICAL_AND_PACKED = `\n return vec4(\n  vec4(greaterThanEqual(a, vec4(1.0))) *\n  vec4(greaterThanEqual(b, vec4(1.0))))`;\n\n\nexport const logicalAnd = binaryKernelFunc({\n  opSnippet:\n  LOGICAL_AND,\n  packedOpSnippet: LOGICAL_AND_PACKED,\n  dtype: 'bool'\n});\n\nexport const\n  logicalAndConfig: KernelConfig = {\n    kernelName: LogicalAnd,\n    backendName: 'webgl',\n    kernelFunc:\n    logicalAnd as {\n    } as KernelFunc\n  };\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in\n * compliance with the License.\n * You may obtain a copy of the License at\n * \n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n * \n * \n */\n\n=====\n\n
```

```
=====\n*\n\nimport {KernelConfig, LogicalNot} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n'./kernel_utils/kernel_funcs_utils';\n\nconst LOGICAL_NOT = `return float(!(x >= 1.0))`;\n\nexport const\n  logicalNot = unaryKernelFunc({opSnippet: LOGICAL_NOT});\n\nexport const logicalNotConfig: KernelConfig =\n  {\n    kernelName: LogicalNot,\n    backendName: 'webgl',\n    kernelFunc: logicalNot,\n  };\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * \n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n * \n * \n */\n\n=====\n\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, LogicalOr} from '@tensorflow/tfjs-core';\nimport {binaryKernelFunc}\nfrom './kernel_utils/kernel_funcs_utils';\n\nconst LOGICAL_OR = `return float(a >= 1.0 || b >= 1.0)`;\n\nconst\n  LOGICAL_OR_PACKED = `\n return min(\n  vec4(greaterThanEqual(a, vec4(1.0))) +\n  vec4(greaterThanEqual(b, vec4(1.0))),\n  vec4(1.0))`;\n\n\nexport const logicalOr = binaryKernelFunc(\n  {\n    opSnippet: LOGICAL_OR,\n    packedOpSnippet: LOGICAL_OR_PACKED,\n    dtype: 'bool'\n  });\n\nexport const\n  logicalOrConfig: KernelConfig = {\n    kernelName: LogicalOr,\n    backendName: 'webgl',\n    kernelFunc: logicalOr\n  } as\n  KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed\n * under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the\n * \n * \n */\n\n=====\n\n
```

License.\n * You may obtain a copy of the License at\n * <http://www.apache.org/licenses/LICENSE-2.0>\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class LRNProgram implements GPGPUProgram {\n\n  variableNames = ['x'];\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(\n    xShape: number[], radius: number, bias: number, alpha: number,\n    beta: number) {\n    const rad = radius;\n    const maxD = xShape[3] - 1;\n    this.outputShape = xShape;\n\n    // optimize pow(bias + alpha * sum, -beta)\n    // src: https://github.com/tensorflow/tensorflow/.\n    // blob/26033a1644a9c4a5f5e3170ab2e864b6a4ccd4ca/.\n    // tensorflow/core/kernels/mkl_lrn_op.cc#L320\n    let powOperator;\n    const basis = `float(${bias}) + float(${alpha}) * sum`;\n    if (beta === 0.5) {\n      powOperator = `inversesqrt(${basis})`;\n    } else if (beta === 1.0) {\n      powOperator = `1.0/(${basis})`;\n    } else {\n      powOperator = `exp(log(${basis}) * float(-${beta}))`;\n    }\n\n    this.userCode = `\n      void main() {\n        ivec4 coords = getOutputCoords();\n        int b = coords[0];\n        int r = coords[1];\n        int c = coords[2];\n        int d = coords[3];\n        float x = getX(b, r, c, d);\n        float sum = 0.0;\n        for (int j = -${rad}; j <= ${rad}; j++) {\n          int idx = d + j;\n          if (idx >= 0 && idx <= ${maxD}) {\n            float z = getX(b, r, c, idx);\n            sum += z * z;\n          }\n        }\n        float val = x * ${powOperator};\n        setOutput(val);\n      }\n    `;\n  }\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class LRNPackedProgram implements GPGPUProgram {\n\n  variableNames = ['x'];\n  outputShape: number[] = [];\n  userCode: string;\n  packedInputs = true;\n  packedOutput = true;\n\n  constructor(\n    xShape: number[], radius: number, bias: number, alpha: number,\n    beta: number) {\n    const rad = radius;\n    const maxD = xShape[3] - 1;\n    this.outputShape = xShape;\n\n    // optimize pow(bias + alpha * sum, -beta)\n    // src: https://github.com/tensorflow/tensorflow/.\n    // blob/26033a1644a9c4a5f5e3170ab2e864b6a4ccd4ca/.\n    // tensorflow/core/kernels/mkl_lrn_op.cc#L320\n    let powOperator;\n    const basis = `float(${bias}) + float(${alpha}) * sum`;\n    if (beta === 0.5) {\n      powOperator = `inversesqrt(${basis})`;\n    } else if (beta === 1.0) {\n      powOperator = `1.0/(${basis})`;\n    } else {\n      powOperator = `exp(log(${basis}) * float(-${beta}))`;\n    }\n\n    this.userCode = `\n      void main() {\n        ivec4 coords = getOutputCoords();\n        int b = coords.x;\n        int r = coords.y;\n        int c = coords.z;\n        int d = coords.w;\n\n        bool hasNextCol = d < ${this.outputShape[3]};\n        bool hasNextRow = c < ${this.outputShape[2]};\n        vec4 sum = vec4(0.);\n        vec4 xFragAtOutputCoords = getX(b, r, c, d);\n        vec4 xAtOutputCoords = vec4(\n          getChannel(xFragAtOutputCoords, vec2(c, d)),\n          hasNextCol ?\n            getChannel(xFragAtOutputCoords, vec2(c, d + 1)) : 0.0,\n          hasNextRow ?\n            getChannel(xFragAtOutputCoords, vec2(c + 1, d)) : 0.0,\n            (hasNextRow && hasNextCol) ?\n            getChannel(xFragAtOutputCoords, vec2(c + 1, d + 1)) : 0.0\n        );\n\n        int firstChannel = d - ${rad};\n        vec2 cache = vec2(0.);\n        if (firstChannel >= 0) {\n          vec4 firstChannelFrag = getX(b, r, c, firstChannel);\n          cache.x = getChannel(firstChannelFrag, vec2(c, firstChannel));\n          if (hasNextRow) {\n            cache.y = getChannel(firstChannelFrag, vec2(c + 1, firstChannel));\n          }\n        }\n\n        ivec2 depth = ivec2(d, d + 1);\n        for (int j = -${rad}; j <= ${rad}; j++) {\n          ivec2 idx = depth + j;\n          bvec2 aboveLowerBound = greaterThanEqual(idx, ivec2(0));\n          bvec2 belowUpperBound = lessThanEqual(idx, ivec2(${maxD}));\n          bool depthInRange = aboveLowerBound.x && belowUpperBound.x;\n          bool depthPlusOneInRange =\n
```



```

aboveLowerBound.y && belowUpperBound.y;\n\n    if(depthInRange || depthPlusOneInRange){\n        vec4 z
= vec4(0.);\n        vec4 xFragAtCurrentDepth;\n        z.xz = cache.xy;\n        if(depthPlusOneInRange &&
hasNextCol){\n            xFragAtCurrentDepth = idx.y != d ?\n                getX(b, r, c, idx.y) :
xFragAtOutputCoords;\n            z.y = getChannel(xFragAtCurrentDepth, vec2(c, idx.y));\n
if(hasNextRow){\n            z.w = getChannel(xFragAtCurrentDepth, vec2(c + 1, idx.y));\n            }\n        }\n        cache.xy = z.yw;\n        sum += z * z;\n    }\n    }\n    vec4 result = xAtOutputCoords *
${powOperator};\n    setOutput(result);\n    }\n    `;\n    }\n}\n\n",/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {env, KernelConfig, KernelFunc, LRN, LRNAttrs, LRNInputs, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport {LRNProgram} from
 './lrn_gpu';\n\nimport {LRNPackedProgram} from './lrn_packed_gpu';\n\nexport const lrn =\n (args: {inputs:
LRNInputs, backend: MathBackendWebGL, attrs: LRNAttrs}):\n    TensorInfo => {\n    const {inputs,
backend, attrs} = args;\n    const {x} = inputs;\n    const {depthRadius, bias, alpha, beta} = attrs;\n\n
const program = env().getBool('WEBGL_PACK_NORMALIZATION') ?\n        new
LRNPackedProgram(x.shape, depthRadius, bias, alpha, beta) :\n        new LRNProgram(x.shape, depthRadius,
bias, alpha, beta);\n    return backend.runWebGLProgram(program, [x], x.dtype);\n    };\n\n// tslint:disable-
next-line: variable-name\n\nexport const LRNConfig: KernelConfig = {\n    kernelName: LRN,\n    backendName:
'webgl',\n    kernelFunc: lrn as { } as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2018 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class LRNGradProgram implements
GPGPUProgram {\n    variableNames = ['inputImage', 'outputImage', 'dy'];\n    outputShape: number[] = [];\n
    userCode: string;\n    depthRadius: number;\n    bias: number;\n    alpha: number;\n    beta: number;\n    depth: number;\n\n
constructor(\n    inputShape: number[], depthRadius: number, bias: number, alpha: number,\n    beta: number) {\n
this.outputShape = inputShape;\n    this.depth = inputShape[3];\n    this.depthRadius = depthRadius;\n    this.bias =
bias;\n    this.alpha = alpha;\n    this.beta = beta;\n    this.userCode = `\n    void main() {\n        ivec4 coords =
getOutputCoords();\n        int b = coords[0];\n        int r = coords[1];\n        int c = coords[2];\n\n        float result =
0.0;\n        for (int d = 0; d < ${this.depth}; ++d) {\n            int depthBegin = int(max(0.0, float(d -
${depthRadius}));\n            int depthEnd = int(min(float(${this.depth}),\n                float(d + ${depthRadius} +
1)));\n\n            const int MIN_DEPTH_BEGIN = 0;\n            const int MAX_DEPTH_END = ${this.depth};\n\n
float norm = 0.0;\n            for (int k = MIN_DEPTH_BEGIN; k < MAX_DEPTH_END; ++k) {\n                if (k <
depthBegin){\n                    continue;\n                }\n                else if (k >= depthBegin && k < depthEnd) {\n                    norm
+= getInputImage(b, r, c, k) * getInputImage(b, r, c, k);\n                }\n                else {\n                    break;\n                }\n            }\n\n            norm = float(${alpha}) * norm + float(${bias});\n\n            for(int k = MIN_DEPTH_BEGIN; k <
MAX_DEPTH_END; ++k){\n                if (k < depthBegin){\n                    continue;\n                }\n                else if (k >=
depthBegin && k < depthEnd){\n                    float dyi = -2.0 * float(${alpha})\n                        * float(${beta})\n                    *\n                    getInputImage(b ,r ,c, k) * getOutputImage(b, r, c, d)\n                        / norm;\n                    if (k == d) {\n                        dyi +=

```

```

pow(norm, -1.0 * ${beta});\n          }\n          if (k == coords[3]) {\n          dyi *= getDy(b, r, c, d);\n          result += dyi;\n          }\n          }\n          else {\n          break;\n          }\n          }\n          }\n
setOutput(result);\n  }\n  `;\n  }\n  }\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelConfig, KernelFunc, LRNGrad, LRNGradAttrs, LRNGradInputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { MathBackendWebGL } from '../backend_webgl';\nimport { LRNGradProgram } from '../lrn_grad_gpu';\n\nexport const lrnGrad = (args: {\n  inputs: LRNGradInputs,\n  backend: MathBackendWebGL,\n  attrs: LRNGradAttrs\n}): TensorInfo => {\n  const { inputs, backend, attrs } = args;\n  const { x, y, dy } = inputs;\n  const { depthRadius, bias, alpha, beta } = attrs;\n\n  const program = new LRNGradProgram(x.shape, depthRadius, bias, alpha, beta);\n  return backend.runWebGLProgram(program, [x, y, dy], x.dtype);\n};\n\n// tslint:disable-next-line: variable-name\nexport const LRNGradConfig: KernelConfig = {\n  kernelName: LRNGrad,\n  backendName: 'webgl',\n  kernelFunc: lrnGrad as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { backend_util, KernelConfig, TypedArray, util } from '@tensorflow/tfjs-core';\nimport { MathBackendWebGL } from '../backend_webgl';\nimport { maxImplCPU } from '../kernel_utils/shared';\nimport { maxImpl } from './Max_impl';\nimport { transposeImpl, transposeImplCPU } from './Transpose_impl';\n\nexport function max(\n  args: {\n    inputs: MaxInputs,\n    backend: MathBackendWebGL,\n    attrs: MaxAttrs\n  }): TensorInfo {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { reductionIndices, keepDims } = attrs;\n\n  const xRank = x.shape.length;\n  const origAxes = util.parseAxisParam(reductionIndices, x.shape);\n  let axes = origAxes;\n  const permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n  const maxInputIsTransposed = permutedAxes != null;\n  const shouldExecuteOnCPU = backend.shouldExecuteOnCPU([x]);\n  let maxInput = x;\n  if (maxInputIsTransposed) {\n    if (shouldExecuteOnCPU) {\n      const xTexData = backend.texData.get(maxInput.dataId);\n      const values = xTexData.values as TypedArray;\n\n      const newShape: number[] = new Array(xRank);\n      for (let i = 0; i < newShape.length; i++) {\n        newShape[i] = x.shape[permutedAxes[i]];\n      }\n      const maxInputValues =\n        transposeImplCPU(values, x.shape, x.dtype, permutedAxes, newShape);\n      maxInput = backend.makeTensorInfo(newShape, x.dtype);\n      const maxInputData = backend.texData.get(maxInput.dataId);\n      maxInputData.values = maxInputValues;\n    } else {\n      maxInput = transposeImpl(x, permutedAxes, backend);\n    }\n  }\n  axes = backend_util.getInnerMostAxes(axes.length, xRank);\n  backend_util.assertAxesAreInnerMostDims('max', axes, xRank);\n  const [maxOutShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(maxInput.shape, axes);\n  let outShape = maxOutShape;\n  if (keepDims) {\n    // rather than reshape at the end, set the target shape here.\n    outShape = backend_util.expandShapeToKeepDim(maxOutShape, origAxes);\n  }\n  let out;\n  if (shouldExecuteOnCPU) {\n    const xTexData = backend.texData.get(maxInput.dataId);\n    const values = xTexData.values as TypedArray;\n    const outValues =\n      maxImplCPU(values, util.sizeFromShape(reduceShape), outShape, x.dtype);\n    out =

```

```

backend.makeTensorInfo(outShape, x.dtype);\n  const outData = backend.texData.get(out.dataId);\n  outData.values = outValues;\n } else {\n  out = maxImpl(maxInput, reduceShape, outShape, backend);\n }\n\n if\n (maxInputIsTransposed) {\n  backend.disposeIntermediateTensorInfo(maxInput);\n }\n\n return out;\n }\n\nexport\n const maxConfig: KernelConfig = {\n  kernelName: Max,\n  backendName: 'webgl',\n  kernelFunc: max as {} as\n  KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *

```

```

=====\n
*/\nimport {backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, TensorInfo, util}\n from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport\n {Pool2DProgram} from './pool_gpu';\nimport {assertNotComplex} from './webgl_util';\nimport {identity} from\n './Identity';\n\nexport function maxPool(args: {\n  inputs: MaxPoolInputs,\n  backend: MathBackendWebGL,\n  attrs: MaxPoolAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  assertNotComplex(x, 'maxPool');\n  const {filterSize, strides, pad, dimRoundingMode} = attrs;\n  const dilations =\n  1;\n\n  util.assert(\n    backend_util.eitherStridesOrDilationsAreOne(strides, dilations),\n    () => 'Error in\n maxPool: Either strides or dilations must be 1. ' +\n    `Got strides ${strides} and dilations '${dilations}'`);\n\n  const convInfo = backend_util.computePool2DInfo(\n    x.shape as [number, number, number, number], filterSize,\n    strides,\n    dilations, pad, dimRoundingMode);\n  if (convInfo.filterWidth === 1 && convInfo.filterHeight === 1\n    &&\n    util.arraysEqual(convInfo.inShape, convInfo.outShape)) {\n    return identity({inputs: {x}, backend});\n  }\n  const maxPoolProgram = new Pool2DProgram(convInfo, 'max', false);\n  return\n  backend.runWebGLProgram(maxPoolProgram, [x], x.dtype);\n }\n\nexport const maxPoolConfig: KernelConfig =\n {\n  kernelName: MaxPool,\n  backendName: 'webgl',\n  kernelFunc: maxPool as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\nimport {backend_util, KernelConfig, KernelFunc, MaxPool3D, MaxPool3DAttrs, MaxPool3DInputs,\n TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport\n {Pool3DProgram} from './pool_gpu';\n\nexport function maxPool3d(args: {\n  inputs: MaxPool3DInputs,\n  backend: MathBackendWebGL,\n  attrs: MaxPool3DAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} =\n  args;\n  const {x} = inputs;\n  const {filterSize, strides, pad, dataFormat, dimRoundingMode} = attrs;\n  const\n  dilations: [number, number, number] = [1, 1, 1];\n\n  const convInfo = backend_util.computePool3DInfo(\n    x.shape as [number, number, number, number, number], filterSize, strides,\n    dilations, pad, dimRoundingMode,\n    dataFormat);\n  const maxPoolProgram = new Pool3DProgram(convInfo, 'max', false);\n  return\n  backend.runWebGLProgram(maxPoolProgram, [x], x.dtype);\n }\n\nexport const maxPool3DConfig: KernelConfig\n = {\n  kernelName: MaxPool3D,\n  backendName: 'webgl',\n  kernelFunc: maxPool3d as {} as\n  KernelFunc\n};\n", "/*\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

```

implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from\n './gpgpu_math';\n\nexport class MaxPool2DBackpropProgram implements GPGPUProgram {\n  variableNames =\n    ['dy', 'maxPos'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(convInfo:\n    backend_util.Conv2DInfo) {\n    this.outputShape = convInfo.inShape;\n    const strideHeight =\n      convInfo.strideHeight;\n    const strideWidth = convInfo.strideWidth;\n    const dilationHeight =\n      convInfo.dilationHeight;\n    const effectiveFilterHeight = convInfo.effectiveFilterHeight;\n    const\n      effectiveFilterWidth = convInfo.effectiveFilterWidth;\n    const padTop = effectiveFilterHeight - 1 -\n      convInfo.padInfo.top;\n    const padLeft = effectiveFilterWidth - 1 - convInfo.padInfo.left;\n\n    const lastIndex =\n      effectiveFilterHeight * effectiveFilterWidth - 1;\n    this.userCode = `\n      const ivec2 pads = ivec2(${padTop},\n        ${padLeft});\n      void main() {\n        ivec4 coords = getOutputCoords();\n        int b = coords[0];\n        int d =\n        coords[3];\n        ivec2 dyRCCorner = coords.yz - pads;\n        int dyRCorner = dyRCCorner.x;\n        int\n        dyCCorner = dyRCCorner.y;\n        // Convolve dy(?, ?, d) with pos mask(:, :, d) to get dx(xR, xC, d).\n        // ? =\n        to be determined. := across all values in that axis.\n        float dotProd = 0.0;\n        for (int wR = 0; wR <\n          ${effectiveFilterHeight};\n          wR += ${dilationHeight}) {\n          float dyR = float(dyRCorner + wR) /\n            ${strideHeight}.0;\n          if (dyR < 0.0 || dyR >= ${convInfo.outHeight}.0 || fract(dyR) > 0.0) {\n            continue;\n          }\n          int idyR = int(dyR);\n          for (int wC = 0; wC < ${effectiveFilterWidth}; wC++) {\n            float dyC = float(dyCCorner + wC) / ${strideWidth}.0;\n            if (dyC < 0.0 || dyC >=\n              ${convInfo.outWidth}.0 ||\n              fract(dyC) > 0.0) {\n              continue;\n            }\n            int idyC =\n              int(dyC);\n            float dyValue = getDy(b, idyR, idyC, d);\n            int maxPosValue = ${lastIndex} -\n              int(getMaxPos(b, idyR, idyC, d));\n            // Get the current value, check it against the value from the\n            //\n            position matrix.\n            int curPosValue = wR * ${effectiveFilterWidth} + wC;\n            float mask =\n              float(maxPosValue == curPosValue ? 1.0 : 0.0);\n            dotProd += dyValue * mask;\n          }\n          setOutput(dotProd);\n        }\n      `;\n    }\n  }\n\n  export class MaxPool3DBackpropProgram implements\n    GPGPUProgram {\n    variableNames = ['dy', 'maxPos'];\n    outputShape: number[];\n    userCode: string;\n\n    constructor(convInfo: backend_util.Conv3DInfo) {\n      this.outputShape = convInfo.inShape;\n      const strideDepth =\n        convInfo.strideDepth;\n      const strideHeight = convInfo.strideHeight;\n      const strideWidth =\n        convInfo.strideWidth;\n      const dilationDepth = convInfo.dilationDepth;\n      const dilationHeight =\n        convInfo.dilationHeight;\n      const dilationWidth = convInfo.dilationWidth;\n      const effectiveFilterDepth =\n        convInfo.effectiveFilterDepth;\n      const effectiveFilterHeight = convInfo.effectiveFilterHeight;\n      const\n        effectiveFilterWidth = convInfo.effectiveFilterWidth;\n      const padFront = effectiveFilterDepth - 1 -\n        convInfo.padInfo.front;\n      const padTop = effectiveFilterHeight - 1 - convInfo.padInfo.top;\n      const padLeft =\n        effectiveFilterWidth - 1 - convInfo.padInfo.left;\n\n      const lastIndex =\n        effectiveFilterDepth *\n        effectiveFilterHeight * effectiveFilterWidth - 1;\n      this.userCode = `\n        const ivec3 pads = ivec3(${padFront},\n          ${padTop}, ${padLeft});\n        void main() {\n          ivec5 coords = getOutputCoords();\n          int batch =\n            coords.x;\n          int ch = coords.u;\n          ivec3 dyCorner = ivec3(coords.y, coords.z, coords.w) - pads;\n          int\n            dyDCorner = dyCorner.x;\n          int dyRCorner = dyCorner.y;\n          int dyCCorner = dyCorner.z;\n          //\n          Convolve dy(?, ?, ?, ch) with pos mask(:, :, :, d) to get\n          // dx(xD, xR, xC, ch).\n          // ? = to be determined. :=\n          across all values in that axis.\n          float dotProd = 0.0;\n          for (int wD = 0; wD < ${effectiveFilterDepth};\n            wD += ${dilationDepth}) {\n            float dyD = float(dyDCorner + wD) / ${strideDepth}.0;\n            if (dyD <\n              0.0 || dyD >= ${convInfo.outDepth}.0 || fract(dyD) > 0.0) {\n              continue;\n            }\n            int idyD =\n              int(dyD);\n            for (int wR = 0; wR < ${effectiveFilterHeight};\n              wR += ${dilationHeight}) {\n              float dyR = float(dyRCorner + wR) / ${strideHeight}.0;\n              if (dyR < 0.0 || dyR >= ${convInfo.outHeight}.0\n                ||\n                fract(dyR) > 0.0) {\n                continue;\n              }\n              int idyR = int(dyR);\n              for (int wC =\n                0; wC < ${effectiveFilterWidth};\n                wC += ${dilationWidth}) {\n                float dyC = float(dyCCorner +\n                  wC) / ${strideWidth}.0;\n                if (dyC < 0.0 || dyC >= ${convInfo.outWidth}.0 ||\n                  fract(dyC) > 0.0)
```



```

maxPoolBackPropProgram, [dy, maxPoolPositions], x.dtype);\n
backend.disposeIntermediateTensorInfo(maxPoolPositions);\n return result;\n}\n\nexport const
maxPoolGradConfig: KernelConfig = {\n kernelName: MaxPoolGrad,\n backendName: 'webgl',\n kernelFunc:
maxPoolGrad as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { backend_util, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { MathBackendWebGL } from
'./backend_webgl';\n\nimport { Pool2DProgram } from './pool_gpu';\n\nexport function maxPoolWithArgmaxImpl(\n
x: TensorInfo, includeBatchInIndex: boolean,\n convInfo: backend_util.Conv2DInfo,\n backend:
MathBackendWebGL): TensorInfo[] {\n let program = new Pool2DProgram(convInfo, 'max', false);\n const
poolOutput = backend.runWebGLProgram(program, [x], 'float32');\n\n program = new Pool2DProgram(convInfo,
'max', true, true, includeBatchInIndex);\n const indexOutput = backend.runWebGLProgram(program, [x],
'float32');\n return [poolOutput, indexOutput];\n}\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { MaxPoolWithArgmax, MaxPoolWithArgmaxAttrs, MaxPoolWithArgmaxInputs } from
'@tensorflow/tfjs-core';\n\nimport { backend_util, KernelConfig, util } from '@tensorflow/tfjs-core';\n\nimport
{ MathBackendWebGL } from './backend_webgl';\n\nimport { maxPoolWithArgmaxImpl } from
'./MaxPoolWithArgmax_impl';\n\nexport const maxPoolWithArgmaxConfig: KernelConfig = {\n kernelName:
MaxPoolWithArgmax,\n backendName: 'webgl',\n kernelFunc: ({ inputs, attrs, backend }) => {\n const { x } =
inputs as MaxPoolWithArgmaxInputs;\n const { filterSize, strides, pad, includeBatchInIndex } =\n attrs as { }
as MaxPoolWithArgmaxAttrs;\n const webglBackend = backend as MathBackendWebGL;\n\n util.assert(\n
x.shape.length === 4,\n () => `Error in maxPool: input must be rank 4 but got rank ${\n
x.shape.length}`);\n const dilations: [number, number] = [1, 1];\n util.assert(\n
backend_util.eitherStridesOrDilationsAreOne(strides, dilations),\n () => `Error in maxPool: Either strides or
dilations must be 1. '\n `Got strides ${strides} and dilations '${dilations}');\n\n const convInfo =
backend_util.computePool2DInfo(\n x.shape as [number, number, number, number], filterSize, strides,\n
dilations, pad);\n\n const [result, indexes] =\n maxPoolWithArgmaxImpl(x, includeBatchInIndex, convInfo,
webglBackend);\n return [result, indexes];\n } }\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { TensorInfo, util } from '@tensorflow/tfjs-core';\n\nimport { MathBackendWebGL } from
'./backend_webgl';\n\nimport { reduce } from './kernel_utils/reduce';\n\nimport { reshape } from

```

```

'./kernels/Reshape';\n\nexport function meanImpl(\n  x: TensorInfo, reduceShape: number[], outShape:
number[],\n  backend: MathBackendWebGL): TensorInfo {\n  const inSize = util.sizeFromShape(reduceShape);\n  const xSize = util.sizeFromShape(x.shape);\n  const batchSize = xSize / inSize;\n  const reshapedInput =\n  reshape({inputs: {x}, attrs: {shape: [batchSize, inSize]}, backend});\n\n  const reduced = reduce(reshapedInput,\n  'float32', 'mean', backend);\n  const reshapedOutput =\n  reshape({inputs: {x: reduced}, attrs: {shape: outShape},\n  backend});\n\n  backend.disposeIntermediateTensorInfo(reshapedInput);\n\n  backend.disposeIntermediateTensorInfo(reduced);\n\n  return reshapedOutput;\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *\n *=====\n *\nimport {backend_util, KernelConfig, Mean, MeanAttrs, MeanInputs, TensorInfo, TypedArray, util} from\n '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {meanImpl} from\n './Mean_impl';\nimport {transposeImpl, transposeImplCPU} from './Transpose_impl';\n\nexport const meanConfig:\n KernelConfig = {\n  kernelName: Mean,\n  backendName: 'webgl',\n  kernelFunc: ({inputs, attrs, backend}) => {\n    const {x} = inputs as MeanInputs;\n    const {keepDims, axis} = attrs as {} as MeanAttrs;\n    const webglBackend\n    = backend as MathBackendWebGL;\n\n    const xRank = x.shape.length;\n    const origAxes =\n    util.parseAxisParam(axis, x.shape);\n\n    let axes = origAxes;\n    const permutedAxes =\n    backend_util.getAxesPermutation(axes, xRank);\n    const meanInputIsTransposed = permutedAxes !== null;\n\n    const shouldExecuteOnCPU = webglBackend.shouldExecuteOnCPU([x]);\n    const intermediates: TensorInfo[] =\n    [];\n\n    let meanInput = x;\n    if (meanInputIsTransposed) {\n      if (shouldExecuteOnCPU) {\n        const\n        xTexData = webglBackend.texData.get(meanInput.dataId);\n        const values = xTexData.values as\n        TypedArray;\n\n        const newShape: number[] = new Array(xRank);\n        for (let i = 0; i < newShape.length;\n        i++) {\n          newShape[i] = x.shape[permutedAxes[i]];\n        }\n        const meanInputValues =\n        transposeImplCPU(values, x.shape, x.dtype, permutedAxes, newShape);\n\n        meanInput =\n        webglBackend.makeTensorInfo(newShape, x.dtype);\n        const meanInputData =\n        webglBackend.texData.get(meanInput.dataId);\n        meanInputData.values = meanInputValues;\n      } else {\n        meanInput = transposeImpl(x, permutedAxes, webglBackend);\n      }\n\n      intermediates.push(meanInput);\n\n      axes = backend_util.getInnerMostAxes(axes.length, xRank);\n    }\n\n    backend_util.assertAxesAreInnerMostDims('sum', axes, xRank);\n    const [meanOutShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(meanInput.shape, axes);\n\n    let outShape = meanOutShape;\n    if\n    (keepDims) {\n      // rather than reshape at the end, set the target shape here.\n      outShape =\n      backend_util.expandShapeToKeepDim(meanOutShape, origAxes);\n    }\n\n    const out = meanImpl(meanInput,\n    reduceShape, outShape, webglBackend);\n    for (const i of intermediates) {\n      webglBackend.disposeIntermediateTensorInfo(i);\n    }\n\n    return out;\n  }\n};\n\n"/**\n * @license\n * Copyright\n * 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *\n *=====\n *\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from\n '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {reduce} from\n './kernel_utils/reduce';\nimport {reshape} from './Reshape';\nimport {transpose} from './Transpose';\n\nexport

```

```

function min(\n  args: {inputs: MinInputs, backend: MathBackendWebGL, attrs: MinAttrs});\n  TensorInfo {\n
const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {axis, keepDims} = attrs;\n  const xRank =
x.shape.length;\n  const origAxes = util.parseAxisParam(axis, x.shape);\n  let axes = origAxes;\n  const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n  let permutedX = x;\n  if (permutedAxes != null)
{\n  permutedX = transpose({inputs: {x}, backend, attrs: {perm: permutedAxes}});\n  axes =
backend_util.getInnerMostAxes(axes.length, x.shape.length);\n  }\n  backend_util.assertAxesAreInnerMostDims('min', axes, xRank);\n  const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(permutedX.shape, axes);\n  const inSize =
util.sizeFromShape(reduceShape);\n  const a2D =\n  reshape({inputs: {x: permutedX}, backend, attrs: {shape: [-
1, inSize]}});\n  const reduced = reduce(a2D, a2D.dtype, 'min', backend);\n  let res;\n  if (keepDims) {\n  const
newShape = backend_util.expandShapeToKeepDim(outShape, origAxes);\n  res = reshape({inputs: {x: reduced},
backend, attrs: {shape: newShape}});\n  } else {\n  res = reshape({inputs: {x: reduced}, backend, attrs: {shape:
outShape}});\n  }\n  backend.disposeIntermediateTensorInfo(a2D);\n
backend.disposeIntermediateTensorInfo(reduced);\n  if (permutedAxes != null) {\n
backend.disposeIntermediateTensorInfo(permutedX);\n  }\n  return res;\n}\n\nexport const minConfig:
KernelConfig = {\n  kernelName: Min,\n  backendName: 'webgl',\n  kernelFunc: min as { } as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */
=====\n
*/\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from
'/shader_compiler';\n\nexport class MirrorPadProgram implements GPGPUProgram {\n  variableNames = ['x'];\n
outputShape: number[];\n  userCode: string;\n  constructor(\n    xShape: number[],\n    paddings: Array<[number,
number]>,\n    mode: 'reflect'|'symmetric') {\n    this.outputShape = paddings.map(\n      (p, i) => p[0] /* beforePad
*/ + xShape[i] + p[1] /* afterPad */);\n    const rank = xShape.length;\n    const dtype =
getCoordsDataType(rank);\n    const start = paddings.map(p => p[0]).join(',');\n    const end = paddings.map((p, i)
=> p[0] + xShape[i]).join(',');\n    const unpackedCoords =\n      ['coords[0]', 'coords[1]', 'coords[2]',
'coords[3]'].slice(0, rank);\n    const offset = mode === 'reflect' ? 0 : 1;\n    if (rank === 1) {\n      this.userCode =
`\n      int start = ${start};\n      int end = ${end};\n      void main() {\n        int outC = getOutputCoords();\n
        if (outC < start) {\n          outC = start * 2 - outC - ${offset};\n        } else if (outC >= end) {\n          outC =
(end - 1) * 2 - outC + ${offset};\n        }\n        setOutput(getX(outC - start));\n      }\n      `;\n      return;\n    }\n    this.userCode =
`\n    ${dtype} start = ${dtype}(${start});\n    ${dtype} end = ${dtype}(${end});\n    void
main() {\n      ${dtype} outC = getOutputCoords();\n      for (int i = 0; i < ${rank}; i++) {\n        if (outC[i] <
start[i]) {\n          outC[i] = start[i] * 2 - outC[i] - ${offset};\n        } else if (outC[i] >= end[i]) {\n          outC[i] =
(end[i] - 1) * 2 - outC[i] + ${offset};\n        }\n        ${dtype} coords = outC - start;\n
        setOutput(getX(${unpackedCoords}));\n      }\n      `;\n    }\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */
=====\n
*/\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getChannels} from './packing_util';\nimport

```



```

{getCoordsDataType} from './shader_compiler';\n\n**\n * Example shader code for\n * `mirrorPad(tf.tensor1d([1,
2, 3], 'int32'), [[2, 2]], 'reflect')`\n * ``\n *  const int start = int(2);\n *  const int end = int(5);\n *  void main()
{\n *    int outputLoc = getOutputCoords();\n *    vec4 result = vec4(0.);\n *    int rc = outputLoc;\n *    int source = rc;\n *    if (source < start) {\n *      source = start * 2 - source - 0;\n *    } else if (source >= end)
{\n *      source = (end - 1) * 2 - source + 0;\n *    }\n *    source -= start;\n *    result[0] =
getChannel(getX(source), source);\n *    rc += 1;\n *    if(rc < 6) {\n *      int source = rc;\n *      if (source <
start) {\n *        source = start * 2 - source - 0;\n *      } else if (source >= end) {\n *        source = (end - 1) *
2 - source + 0;\n *      }\n *      source -= start;\n *    }\n *    result[1] = getChannel(getX(source), source);\n *
}\n *    setOutput(result);\n *  }\n * ``\n\n\nexport class MirrorPadPackedProgram implements
GPGPUProgram {\n  variableNames = ['x'];\n  packedInputs = true;\n  packedOutput = true;\n  outputShape:
number[];\n  userCode: string;\n\n  constructor(\n    xShape: number[], paddings: Array<[number, number]>,\n    mode: 'reflect'|'symmetric') {\n    this.outputShape = paddings.map(\n      (p, i) => p[0] /* beforePad */ + xShape[i]
+ p[1] /* afterPad */);\n    const rank = xShape.length;\n    const dtype = getCoordsDataType(rank);\n\n    const start
= paddings.map(p => p[0]).join(',');\n    const end = paddings.map((p, i) => p[0] + xShape[i]).join(',');\n    const
coords = getChannels('rc', rank);\n    const source = getChannels('source', rank);\n    const cLimit = `${coords[rank -
1]} < ${this.outputShape[rank - 1]}`;\n    const innerDims =\n      rank === 1 ? 'source' : `vec2(${source.slice(-
2).join()})`;\n    const offset = mode === 'reflect' ? 0 : 1;\n\n    let mainLoop = ";\n    if (rank === 1) {\n      const
padSetup = `\n      ${dtype} source = rc;\n      if (source < start) {\n        source = start * 2 - source - ${offset};\n
      } else if (source >= end) {\n        source = (end - 1) * 2 - source + ${offset};\n      }\n      source -= start;\n
`;\n      mainLoop = `\n      ${dtype} rc = outputLoc;\n      ${padSetup}\n      result[0] =
getChannel(getX(${source.join()}), ${innerDims});\n      ${coords[rank - 1]} += 1;\n      if(${cLimit}) {\n
${padSetup}\n      result[1] = getChannel(getX(${source.join()}), ${innerDims});\n      }\n      `;\n    } else {\n      const
padSetup = `\n      ${dtype} source = rc;\n      ${dtype} lt = ${dtype}(lessThan(source, start));\n
${dtype} gte = ${dtype}(greaterThanEqual(source, end));\n      ${dtype} orig = 1 - (lt + gte);\n      source = orig *
source +\n      lt * (start * 2 - source - ${offset}) +\n      gte * ((end - 1) * 2 - source + ${offset});\n      source
-= start;\n      `;\n      mainLoop = `\n      ${dtype} rc = outputLoc;\n      ${padSetup}\n      result[0] =
getChannel(getX(${source.join()}), ${innerDims});\n      ${coords[rank - 1]} += 1;\n      if(${cLimit}) {\n
${padSetup}\n      result[1] = getChannel(getX(${source.join()}), ${innerDims});\n      }\n      rc = outputLoc;\n
      ${coords[rank - 2]} += 1;\n      if(${coords[rank - 2]} < ${this.outputShape[rank - 2]}) {\n      ${padSetup}\n
      result[2] = getChannel(getX(${source.join()}), ${innerDims});\n      ${coords[rank - 1]} += 1;\n
      if(${cLimit}) {\n      ${padSetup}\n      result[3] = getChannel(getX(${source.join()}), ${innerDims});\n
      }\n      }\n      `;\n    }\n\n    this.userCode = `\n    const ${dtype} start = ${dtype}(${start});\n    const ${dtype}
end = ${dtype}(${end});\n\n    void main() {\n      ${dtype} outputLoc = getOutputCoords();\n      vec4 result =
vec4(0.); \n      ${mainLoop}\n      setOutput(result);\n    }\n      `;\n  }\n\n  **\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*\n\nimport {env, KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs, TensorInfo} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\nimport {MirrorPadProgram}
from './mirror_pad_gpu';\nimport {MirrorPadPackedProgram} from './mirror_pad_packed_gpu';\n\nexport const
mirrorPadKernelFunc: (params: {\n  inputs: MirrorPadInputs,\n  backend: MathBackendWebGL,\n  attrs:
MirrorPadAttrs\n}) => TensorInfo = ({inputs, backend, attrs}) => {\n  const {x} = inputs;\n  const {paddings,
mode} = attrs;\n\n  const program = env().getBool('WEBGL_PACK_ARRAY_OPERATIONS') ?\n    new
MirrorPadPackedProgram(x.shape, paddings, mode) :\n    new MirrorPadProgram(x.shape, paddings, mode);\n\n

```

```

const output = backend.runWebGLProgram(program, [x], x.dtype);\n\n return output;\n};\n\nexport const
mirrorPadConfig: KernelConfig = {\n kernelName: MirrorPad,\n backendName: 'webgl',\n kernelFunc:
mirrorPadKernelFunc as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { KernelConfig, KernelFunc, Mod } from '@tensorflow/tfjs-core';\n\nimport
{ CHECK_NAN_SNIPPET } from './binaryop_packed_gpu';\n\nimport { binaryKernelFunc } from
'./kernel_utils/kernel_funcs_utils';\n\nconst MOD = `if (b === 0.0) return NAN;\n return mod(a, b);`\n\nconst
MOD_PACKED = `\n vec4 result = mod(a, b);\n vec4 isNaN = vec4(equal(b, vec4(0.0)));\n ` +\n
CHECK_NAN_SNIPPET + `\n return result;\n`;\n\nexport const mod = binaryKernelFunc({\n opSnippet: MOD,\n
packedOpSnippet: MOD_PACKED,\n});\n\nexport const modConfig: KernelConfig = {\n kernelName: Mod,\n
backendName: 'webgl',\n kernelFunc: mod as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2017
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { GPGPUContext } from './gpgpu_context';\n\nimport { GPGPUProgram } from './gpgpu_math';\n\nexport
class MultinomialProgram implements GPGPUProgram {\n variableNames = ['probs'];\n outputShape: number[];\n
userCode: string;\n\n // Caching uniform location for speed.\n seedLoc: WebGLUniformLocation;\n\n
constructor(batchSize: number, numOutcomes: number, numSamples: number) {\n this.outputShape = [batchSize,
numSamples];\n\n this.userCode = `\n uniform float seed;\n\n void main() {\n ivec2 coords =
getOutputCoords();\n  int batch = coords[0];\n float r = random(seed);\n float cdf = 0.0;\n\n for
(int i = 0; i < ${numOutcomes - 1}; i++) {\n cdf += getProbs(batch, i);\n\n if (r < cdf) {\n
setOutput(float(i));\n return;\n }\n }\n\n // If no other event happened, last event happened.\n
setOutput(float(${numOutcomes - 1}));\n }\n `;\n\n getCustomSetupFunc(seed: number) {\n return
(gpgpu: GPGPUContext, webGLProgram: WebGLProgram) => {\n if (this.seedLoc === null) {\n
this.seedLoc = gpgpu.getUniformLocation(webGLProgram, 'seed');\n }\n gpgpu.gl.uniform1f(this.seedLoc,
seed);\n }; }\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { RealDiv } from '@tensorflow/tfjs-core';\n\nimport { KernelConfig } from '@tensorflow/tfjs-
core';\n\nimport { binaryKernelFunc } from './kernel_utils/kernel_funcs_utils';\n\n// Without the equality check div
produces 0.9999 for a = b, which when\n// floored can cause errors.\nconst DIV = `\nif (a == b) {\n return
1.0;\n};\nreturn a / b;`\n\n// We do the same as in ./binaryop_gpu, with vec4 and ivec4.\n\n// On Linux, the vectorized
implementation produces NaNs when a and b are 0.\nconst DIV_PACKED = `\n // vec4 one = vec4(equal(a, b));\n

```

```

// return one + (vec4(1.0) - one) * a / b;\n vec4 result = a / b;\n if(a.x == b.x) {\n  result.x = 1.;\n }\n if(a.y ==
b.y) {\n  result.y = 1.;\n }\n if(a.z == b.z) {\n  result.z = 1.;\n }\n if(a.w == b.w) {\n  result.w = 1.;\n }\n\n
return result;\n`;\n\nexport const realDiv = binaryKernelFunc(\n  {opSnippet: DIV, packedOpSnippet:
DIV_PACKED, checkOutOfBounds: true});\n\nexport const realDivConfig: KernelConfig = {\n  kernelName:
RealDiv,\n  backendName: 'webgl',\n  kernelFunc: realDiv,\n};\n","/*\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\n\nimport {exp} from
'./Exp';\nimport {max} from './Max';\nimport {realDiv} from './RealDiv';\nimport {reshape} from
'./Reshape';\nimport {sub} from './Sub';\nimport {sum} from './Sum';\n\nexport function softmax(args: {\n  inputs:
SoftmaxInputs,\n  backend: MathBackendWebGL,\n  attrs: SoftmaxAttrs\n}): TensorInfo {\n  const {inputs,
backend, attrs} = args;\n  const {logits} = inputs;\n  const {dim} = attrs;\n\n  const axes =
util.parseAxisParam([dim], logits.shape);\n\n  const maxLogit = max({\n    inputs: {x: logits},\n    backend,\n    attrs: {reductionIndices: axes, keepDims: false}\n  });\n\n  const expandedShape =
backend_util.expandShapeToKeepDim(maxLogit.shape, axes);\n\n  const maxLogitsReshaped =\n  reshape({inputs: {x: maxLogit}, backend, attrs: {shape: expandedShape}});\n\n  const a =\n  sub({inputs: {a: logits,
b: maxLogitsReshaped}, backend}) as TensorInfo;\n  const b = exp({inputs: {x: a}, backend}) as TensorInfo;\n
const sumExp =\n  sum({inputs: {x: b}, backend, attrs: {axis: axes, keepDims: false}});\n  const
sumExpReshaped =\n  reshape({inputs: {x: sumExp}, backend, attrs: {shape: expandedShape}});\n\n  const res
=\n  realDiv({inputs: {a: b, b: sumExpReshaped}, backend}) as TensorInfo;\n\n  backend.disposeIntermediateTensorInfo(maxLogit);\n
backend.disposeIntermediateTensorInfo(maxLogitsReshaped);\n  backend.disposeIntermediateTensorInfo(a);\n
backend.disposeIntermediateTensorInfo(b);\n  backend.disposeIntermediateTensorInfo(sumExp);\n
backend.disposeIntermediateTensorInfo(sumExpReshaped);\n\n  return res;\n}\n\nexport const softmaxConfig:
KernelConfig = {\n  kernelName: Softmax,\n  backendName: 'webgl',\n  kernelFunc: softmax as {} as
KernelFunc\n};\n","/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*\n\nimport {KernelConfig, KernelFunc, Multinomial, MultinomialAttrs, MultinomialInputs, TensorInfo} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\n\nimport
{MultinomialProgram} from './multinomial_gpu';\n\nimport {softmax} from './Softmax';\n\nexport function
multinomial(args: {\n  inputs: MultinomialInputs,\n  backend: MathBackendWebGL,\n  attrs: MultinomialAttrs\n}):
TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {logits} = inputs;\n  const {numSamples, seed,
normalized} = attrs;\n\n  const probs = normalized ?\n  logits :\n  softmax(\n    {inputs: {logits}, backend,
attrs: {dim: logits.shape.length - 1}});\n\n  const batchSize = probs.shape[0];\n  const numOutcomes =
probs.shape[1];\n  const program = new MultinomialProgram(batchSize, numOutcomes, numSamples);\n  const
customSetup = program.getCustomSetupFunc(seed);\n\n  const res = backend.runWebGLProgram(program, [probs],

```

```
'int32', customSetup);\n if (!normalized) {\n  backend.disposeIntermediateTensorInfo(probs);\n }\n return res;\n}\n\nexport const multinomialConfig: KernelConfig = {\n  kernelName: Multinomial,\n  backendName: 'webgl',\n  kernelFunc: multinomial as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*/\n\nimport {backend_util, kernel_impls, KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs, NonMaxSuppressionV3Inputs, TypedArray} from '@tensorflow/tfjs-core';\nconst nonMaxSuppressionV3Impl = kernel_impls.nonMaxSuppressionV3Impl;\nimport {MathBackendWebGL} from '../backend_webgl';\n\nexport function nonMaxSuppressionV3(args: {\n  inputs: NonMaxSuppressionV3Inputs,\n  backend: MathBackendWebGL,\n  attrs: NonMaxSuppressionV3Attrs\n}) {\n  backend_util.warn(\n    'tf.nonMaxSuppression() in webgl locks the UI thread. ' +\n    'Call tf.nonMaxSuppressionAsync() instead');\n\n  const {inputs, backend, attrs} = args;\n  const {boxes, scores} = inputs;\n  const {maxOutputSize, iouThreshold, scoreThreshold} = attrs;\n\n  const boxesVals = backend.readSync(boxes.dataId) as TypedArray;\n  const scoresVals = backend.readSync(scores.dataId) as TypedArray;\n  const {selectedIndices} = nonMaxSuppressionV3Impl(\n    boxesVals, scoresVals, maxOutputSize, iouThreshold, scoreThreshold);\n\n  return backend.makeTensorInfo(\n    [selectedIndices.length], 'int32', new Int32Array(selectedIndices));\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n  kernelName: NonMaxSuppressionV3,\n  backendName: 'webgl',\n  kernelFunc: nonMaxSuppressionV3 as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*/\n\nimport {backend_util, kernel_impls, KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs, NonMaxSuppressionV4Inputs, TensorInfo, TypedArray} from '@tensorflow/tfjs-core';\nconst nonMaxSuppressionV4Impl = kernel_impls.nonMaxSuppressionV4Impl;\nimport {MathBackendWebGL} from '../backend_webgl';\n\nexport function nonMaxSuppressionV4(args: {\n  inputs: NonMaxSuppressionV4Inputs,\n  backend: MathBackendWebGL,\n  attrs: NonMaxSuppressionV4Attrs\n}): [TensorInfo, TensorInfo] {\n  backend_util.warn(\n    'tf.nonMaxSuppression() in webgl locks the UI thread. ' +\n    'Call tf.nonMaxSuppressionAsync() instead');\n\n  const {inputs, backend, attrs} = args;\n  const {boxes, scores} = inputs;\n  const {maxOutputSize, iouThreshold, scoreThreshold, padToMaxOutputSize} = attrs;\n  const boxesVals = backend.readSync(boxes.dataId) as TypedArray;\n  const scoresVals = backend.readSync(scores.dataId) as TypedArray;\n  const {selectedIndices, validOutputs} = nonMaxSuppressionV4Impl(\n    boxesVals, scoresVals, maxOutputSize, iouThreshold, scoreThreshold,\n    padToMaxOutputSize);\n\n  return [\n    backend.makeTensorInfo(\n      [selectedIndices.length], 'int32', new Int32Array(selectedIndices)),\n    backend.makeTensorInfo([], 'int32', new Int32Array([validOutputs]))\n  ];\n}\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n  kernelName: NonMaxSuppressionV4,\n  backendName: 'webgl',\n  kernelFunc: nonMaxSuppressionV4 as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
```

License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*  
import { backend_util, kernel_impls, KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs, NonMaxSuppressionV5Inputs, TensorInfo, TypedArray } from '@tensorflow/tfjs-core';  
const nonMaxSuppressionV5Impl = kernel_impls.nonMaxSuppressionV5Impl;  
import { MathBackendWebGL } from '../backend_webgl';  
export function nonMaxSuppressionV5(args: { inputs: NonMaxSuppressionV5Inputs, backend: MathBackendWebGL, attrs: NonMaxSuppressionV5Attrs }): [TensorInfo, TensorInfo] {  
  backend_util.warn('tf.nonMaxSuppression() in webgl locks the UI thread. ' +  
    'Call tf.nonMaxSuppressionAsync() instead');  
  const { inputs, backend, attrs } = args;  
  const { boxes, scores } = inputs;  
  const { maxOutputSize, iouThreshold, scoreThreshold, softNmsSigma } = attrs;  
  const boxesVals = backend.readSync(boxes.dataId) as TypedArray;  
  const scoresVals = backend.readSync(scores.dataId) as TypedArray;  
  const maxOutputSizeVal = maxOutputSize;  
  const iouThresholdVal = iouThreshold;  
  const scoreThresholdVal = scoreThreshold;  
  const softNmsSigmaVal = softNmsSigma;  
  const { selectedIndices, selectedScores } = nonMaxSuppressionV5Impl(  
    boxesVals, scoresVals, maxOutputSizeVal, iouThresholdVal,  
    scoreThresholdVal, softNmsSigmaVal);  
  return [backend.makeTensorInfo([selectedIndices.length], 'int32', new Int32Array(selectedIndices)),  
    backend.makeTensorInfo([selectedScores.length], 'float32', new Float32Array(selectedScores))];  
}  
export const nonMaxSuppressionV5Config: KernelConfig = {  
  kernelName: NonMaxSuppressionV5, backendName: 'webgl',  
  kernelFunc: nonMaxSuppressionV5 as KernelFunc;  
};  
/**  
 * @license  
 * Copyright 2017 Google LLC. All Rights Reserved.  
 * Licensed under the Apache License, Version 2.0 (the "License");  
 * you may not use this file except in compliance with the License.  
 * You may obtain a copy of the License at  
 * http://www.apache.org/licenses/LICENSE-2.0  
 * Unless required by applicable law or agreed to in writing,  
 * software distributed under the License is distributed on an "AS IS"  
 * BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
 * See the License for the specific language governing permissions and  
 * limitations under the License.  
 */  
=====
```

```
*  
import { GPGPUProgram } from '../gpgpu_math';  
export class OneHotProgram implements GPGPUProgram {  
  variableNames = ['indices'];  
  outputShape: number[];  
  userCode: string;  
  // Caching uniform location for speed.  
  seedLoc: WebGLUniformLocation;  
  constructor(  
    numIndices: number, depth: number, onValue: number, offValue: number) {  
    this.outputShape = [numIndices, depth];  
    this.userCode = `void main() {  
  ivec2 coords = getOutputCoords();  
  int index = round(getIndices(coords.x));  
  setOutput(mix(float(${offValue}), float(${onValue}), float(index == coords.y)));  
}`;  
}  
/**  
 * @license  
 * Copyright 2020 Google LLC. All Rights Reserved.  
 * Licensed under the Apache License, Version 2.0 (the "License");  
 * you may not use this file except in compliance with the License.  
 * You may obtain a copy of the License at  
 * http://www.apache.org/licenses/LICENSE-2.0  
 * Unless required by applicable law or agreed to in writing,  
 * software distributed under the License is distributed on an "AS IS"  
 * BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
 * See the License for the specific language governing permissions and  
 * limitations under the License.  
 */  
=====
```

```
*  
import { KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs, TensorInfo, util } from '@tensorflow/tfjs-core';  
import { MathBackendWebGL } from '../backend_webgl';  
import { OneHotProgram } from '../onehot_gpu';  
import { reshape } from './Reshape';  
export const oneHot = (args: { inputs: OneHotInputs, backend: MathBackendWebGL, attrs: OneHotAttrs }): TensorInfo => {  
  const { inputs, backend, attrs } = args;  
  const { indices } = inputs;  
  const { depth, onValue, offValue } = attrs;  
  const indicesSize = util.sizeFromShape(indices.shape);  
  const program = new OneHotProgram(indicesSize, depth,  
=====
```

```

onValue, offValue);
const reshaped = reshape({inputs: {x: indices}, backend, attrs: {shape:
[indicesSize]}});
const result = backend.runWebGLProgram(program, [reshaped], indices.dtype);
backend.disposeIntermediateTensorInfo(reshaped);
const outShape = [...indices.shape, depth];
const out =
reshape({inputs: {x: result}, backend, attrs: {shape: outShape}});
backend.disposeIntermediateTensorInfo(result);
return out;
}
export const oneHotConfig: KernelConfig =
{
kernelName: OneHot,
backendName: 'webgl',
kernelFunc: oneHot as { } as KernelFunc
};
/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version
 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a
  copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable
  law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for
  the specific language governing permissions and
 * limitations under the License.
 */
=====
import {KernelConfig, KernelFunc, TensorInfo, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-
core';
import {MathBackendWebGL} from '../backend_webgl';
import {complex} from './Complex';
import {fill} from './Fill';
import {imag} from './Imag';
import {real} from './Real';
export function zerosLike(
args: {inputs: ZerosLikeInputs, backend: MathBackendWebGL}): TensorInfo {
const {inputs, backend} = args;
const {x} = inputs;
if (x.dtype === 'complex64') {
const realPart = real({inputs: {input: x}, backend});
const r = zerosLike({inputs: {x: realPart}, backend});
const imagPart = imag({inputs: {input: x}, backend});
const i = zerosLike({inputs: {x: imagPart}, backend});
const result = complex({inputs: {real: r, imag: i},
backend});
backend.disposeIntermediateTensorInfo(realPart);
backend.disposeIntermediateTensorInfo(r);
backend.disposeIntermediateTensorInfo(imagPart);
backend.disposeIntermediateTensorInfo(i);
return result;
} else {
return fill({
attrs: {
shape:
x.shape,
dtype: x.dtype,
value: x.dtype === 'string' ? " : 0\n },
backend
});
}
}
export const zerosLikeConfig: KernelConfig = {
kernelName: ZerosLike,
backendName: 'webgl',
kernelFunc:
zerosLike as { } as KernelFunc
};
/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in
  compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
  software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
  OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
  governing permissions and
 * limitations under the License.
 */
=====
import {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs, TensorInfo} from '@tensorflow/tfjs-
core';
import {MathBackendWebGL} from '../backend_webgl';
import {complex} from './Complex';
import {fill} from './Fill';
import {imag} from './Imag';
import {real} from './Real';
import {zerosLike} from
 './ZerosLike';
export function onesLike(
args: {inputs: OnesLikeInputs, backend: MathBackendWebGL}):
TensorInfo {
const {inputs, backend} = args;
const {x} = inputs;
if (x.dtype === 'string') {
throw new
Error('onesLike is not supported under string dtype');
} else if (x.dtype === 'complex64') {
const realPart =
real({inputs: {input: x}, backend});
const r = onesLike({inputs: {x: realPart}, backend});
const imagPart =
imag({inputs: {input: x}, backend});
const i = zerosLike({inputs: {x: imagPart}, backend});
const result =
complex({inputs: {real: r, imag: i}, backend});
backend.disposeIntermediateTensorInfo(realPart);
backend.disposeIntermediateTensorInfo(r);
backend.disposeIntermediateTensorInfo(imagPart);
backend.disposeIntermediateTensorInfo(i);
return result;
} else {
// TODO(cais, smilkov): Add WebGL
shader for onesLike.
// https://github.com/tensorflow/tfjs/issues/1293
return fill({attrs: {shape: x.shape,
dtype: x.dtype, value: 1}, backend});
}
}
export const onesLikeConfig: KernelConfig = {
kernelName:
OnesLike,
backendName: 'webgl',
kernelFunc: onesLike as { } as KernelFunc
};
/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the

```

"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { MathBackendWebGL } from '../backend_webgl';\nimport { concat } from './Concat';\nimport { expandDims } from './ExpandDims';\n\nexport function pack(\n  args: { inputs: PackInputs, backend: MathBackendWebGL, attrs: PackAttrs }):\n  TensorInfo {\n  const { inputs, backend, attrs } = args;\n  const { axis } = attrs;\n\n  if (inputs.length === 1) {\n    return expandDims(\n      { inputs: { input: inputs[0] }, backend, attrs: { dim: axis } });\n  }\n\n  const shape = inputs[0].shape;\n  const dtype = inputs[0].dtype;\n\n  inputs.forEach(t => {\n    util.assertShapesMatch(\n      shape, t.shape, \n      'All tensors passed to stack must have matching shapes');\n    util.assert(\n      dtype === t.dtype, \n      () => 'All tensors passed to stack must have matching dtypes');\n  });\n\n  const intermediateTensorInfos: TensorInfo[] = [];\n  const expandedTensors = inputs.map(t => {\n    const expandedT =\n      expandDims({ inputs: { input: t }, backend, attrs: { dim: axis } });\n    intermediateTensorInfos.push(expandedT);\n    return expandedT;\n  });\n\n  const result = concat({ inputs: expandedTensors, backend, attrs: { axis } });\n\n  intermediateTensorInfos.forEach(\n    t => backend.disposeIntermediateTensorInfo(t);\n  );\n\n  return result;\n}\n\nexport const packConfig: KernelConfig = {\n  kernelName: Pack,\n  backendName: 'webgl',\n  kernelFunc: pack as { } as KernelFunc\n};\n",/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { GPGPUProgram } from './gpgpu_math';\nimport { getCoordsDataType } from './shader_compiler';\n\nexport class PadProgram implements GPGPUProgram {\n  variableNames = ['x'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    xShape: number[],\n    paddings: Array<[number, number]>,\n    constantValue: number) {\n    this.outputShape = paddings.map(\n      (p, i) => p[0] /* beforePad */ + xShape[i] + p[1] /* afterPad */);\n    const rank = xShape.length;\n    const type = getCoordsDataType(rank);\n\n    const start = paddings.map(p => p[0]).join(',');\n    const end = paddings.map((p, i) => p[0] + xShape[i]).join(',');\n    const unpackedCoords =\n      ['coords[0]', 'coords[1]', 'coords[2]', 'coords[3]'].slice(0, rank);\n\n    if (rank === 1) {\n      this.userCode = `\n      int start = ${start};\n      int end = ${end};\n\n      void main() {\n        int outC = getOutputCoords();\n        if (outC < start || outC >= end) {\n          setOutput(float(${constantValue}));\n        } else {\n          setOutput(getX(outC - start));\n        }\n      }\n      `;\n      return;\n    }\n\n    this.userCode = `\n    ${type} start = ${type}(${start});\n    ${type} end = ${type}(${end});\n\n    void main() {\n      ${type} outC = getOutputCoords();\n      if (any(lessThan(outC, start)) || any(greaterThanEqual(outC, end))) {\n        setOutput(float(${constantValue}));\n      } else {\n        ${type} coords = outC - start;\n        setOutput(getX(${unpackedCoords}));\n      }\n    }\n    `;\n  }\n}\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

*\/\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getChannels} from './packing_util';\nimport
{getCoordsDataType} from './shader_compiler';\n\nexport class PadPackedProgram implements GPGPUProgram
{\n  variableNames = ['x'];\n  packedInputs = true;\n  packedOutput = true;\n  outputShape: number[];\n  userCode:
string;\n\n  constructor(\n    xShape: number[], paddings: Array<[number, number]>,\n    constantValue: number)
{\n    this.outputShape = paddings.map(\n      (p, i) => p[0] /* beforePad */ + xShape[i] + p[1] /* afterPad */);\n
    const rank = xShape.length;\n    const dtype = getCoordsDataType(rank);\n\n    const start = paddings.map(p =>
p[0]).join(',');\n    const end = paddings.map((p, i) => p[0] + xShape[i]).join(',');\n    const coords = getChannels('rc',
rank);\n    const source = getChannels('source', rank);\n    const cLimit = `${coords[rank - 1]} <
${this.outputShape[rank - 1]}`;\n    const innerDims =\n      rank === 1 ? 'source': `vec2(${source.slice(-
2).join()})`;\n\n    const componentSetup = [\n      `${dtype} rc = outputLoc;`, `${coords[rank - 1]} += 1;\n
if(${cLimit}) {\n      `,\n      rank === 1 ? " : "`\n      rc = outputLoc;\n      `${coords[rank - 2]} += 1;\n
if(${coords[rank - 2]} < ${this.outputShape[rank - 2]}) {\n      `,\n      rank === 1 ? " : "`\n      `${coords[rank - 1]} += 1;\n
if(${cLimit}) {\n      `,\n      ];\n\n    const paddingArea = rank === 1 ?\n      'rc < start || rc >= end':\n      'any(lessThan(rc,
start)) || any(greaterThanEqual(rc, end));'\n    let mainLoop = `;\n    for (let i = 0, j = rank === 1 ? 2 : 4; i < j; i++)
{\n      mainLoop += `\n      ${componentSetup[i]}\n      if (${paddingArea}) {\n      result[${i}] =
float(${constantValue});\n      } else {\n      ${dtype} source = rc - start;\n      result[${i}] =
getChannel(getX(${source.join()}), ${innerDims});\n      }\n      `;\n      }\n      }\n      mainLoop += (rank === 1 ? `}`
:`\n      `)});\n\n    this.userCode = `\n    const ${dtype} start = ${dtype}(${start});\n    const ${dtype} end =
${dtype}(${end});\n\n    void main() {\n      ${dtype} outputLoc = getOutputCoords();\n      vec4 result =
vec4(0.);\n      ${mainLoop}\n      setOutput(result);\n      }\n      `;\n      }\n      }\n      `,\n      `"/**\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\/\n\nimport {env, KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, TensorInfo} from
'@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {PadProgram} from
'./pad_gpu';\nimport {PadPackedProgram} from './pad_packed_gpu';\n\nexport const padV2 = (\n  args: {inputs:
PadV2Inputs, backend: MathBackendWebGL, attrs: PadV2Attrs}): \n  TensorInfo => {\n    const {inputs,
backend, attrs} = args;\n    const {x} = inputs;\n    const {paddings, constantValue} = attrs;\n\n    const
program = env().getBool('WEBGL_PACK_ARRAY_OPERATIONS') ?\n      new PadPackedProgram(x.shape,
paddings, constantValue) : \n      new PadProgram(x.shape, paddings, constantValue);\n    return
backend.runWebGLProgram(program, [x], x.dtype);\n  };\n\nexport const padV2Config: KernelConfig = {\n
kernelName: PadV2,\n  backendName: 'webgl',\n  kernelFunc: padV2 as {} as KernelFunc\n};\n"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\/\n\nimport {KernelConfig, KernelFunc, Pow} from '@tensorflow/tfjs-core';\nimport
{CHECK_NAN_SNIPPET} from './binaryop_packed_gpu';\nimport {binaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\n\nconst POW = \n  if(a < 0.0 && floor(b) < b){\n    return NAN;\n  }\n  if (b
=== 0.0) {\n    return 1.0;\n  }\n  return (round(mod(b, 2.0)) !== 1) ?\n    pow(abs(a), b) : sign(a) * pow(abs(a),
b);\n`;\n\nconst POW_PACKED = \n  // isModRound1 has 1 for components with round(mod(b, 2.0)) === 1, 0

```



```
'webgl',\n kernelFunc: relu as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, Relu6} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\nimport {CHECK_NAN_SNIPPET} from './unaryop_gpu';\n\nconst RELU6 = CHECK_NAN_SNIPPET + `\n return (x < 0.0) ? 0.0 : min(6.0, x);\n`;\n\nconst RELU6_PACKED = `\n vec4 result = min(x, vec4(6.)) * vec4(greaterThanEqual(x, vec4(0.0)));\n bvec4 isNaN = isnan(x);\n\n result.r = isNaN.r ? x.r : result.r;\n result.g = isNaN.g ? x.g : result.g;\n result.b = isNaN.b ? x.b : result.b;\n result.a = isNaN.a ? x.a : result.a;\n\n return result;\n`;\n\nexport const relu6 =\n unaryKernelFunc({opSnippet: RELU6, packedOpSnippet: RELU6_PACKED});\n\nexport const relu6Config: KernelConfig = {\n kernelName: Relu6,\n backendName: 'webgl',\n kernelFunc: relu6 as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ResizeBilinearProgram implements GPGPUProgram {\n variableNames = ['A'];\n outputShape: number[] = [];\n userCode: string;\n\n constructor(\n inputShape: [number, number, number, number], newHeight: number,\n newWidth: number, alignCorners: boolean, halfPixelCenters: boolean) {\n const [batch, oldHeight, oldWidth, depth] = inputShape;\n this.outputShape = [batch, newHeight, newWidth, depth];\n\n const effectiveInSize: [number, number] = [\n (alignCorners && newHeight > 1) ? oldHeight - 1 : oldHeight,\n (alignCorners && newWidth > 1) ? oldWidth - 1 : oldWidth\n ];\n\n const effectiveOutSize: [number, number] = [\n (alignCorners && newHeight > 1) ? newHeight - 1 : newHeight,\n (alignCorners && newWidth > 1) ? newWidth - 1 : newWidth\n ];\n\n let sourceFracIndexRC: string;\n if (halfPixelCenters) {\n sourceFracIndexRC =\n `(vec2(yRC) + vec2(0.5)) * effectiveInputOverOutputRatioRC` +\n ` - vec2(0.5)`;\n } else {\n sourceFracIndexRC = `vec2(yRC) * effectiveInputOverOutputRatioRC`;\n }\n\n this.userCode = `\n const vec2 effectiveInputOverOutputRatioRC = vec2(\n ${effectiveInSize[0] / effectiveOutSize[0]},\n ${effectiveInSize[1] / effectiveOutSize[1]});\n const vec2 inputShapeRC = vec2(${oldHeight}.0,\n ${oldWidth}.0);\n\n void main() {\n ivec4 coords = getOutputCoords();\n int b = coords[0];\n int d = coords[3];\n ivec2 yRC = coords.yz;\n // Fractional source index.\n vec2 sourceFracIndexRC = ${sourceFracIndexRC};\n // Compute the four integer indices.\n ivec2 sourceFloorRC = ivec2(max(sourceFracIndexRC, vec2(0.0)));\n ivec2 sourceCeilRC = ivec2(\n min(inputShapeRC - 1.0, ceil(sourceFracIndexRC)));\n\n float topLeft = getA(b, sourceFloorRC.x, sourceFloorRC.y, d);\n float bottomLeft = getA(b, sourceCeilRC.x, sourceFloorRC.y, d);\n float topRight = getA(b, sourceFloorRC.x, sourceCeilRC.y, d);\n float bottomRight = getA(b, sourceCeilRC.x, sourceCeilRC.y, d);\n\n vec2 fracRC = sourceFracIndexRC - vec2(sourceFloorRC);\n\n float top = topLeft + (topRight - topLeft) * fracRC.y;\n float bottom = bottomLeft + (bottomRight - bottomLeft) * fracRC.y;\n\n float newValue = top + (bottom - top) * fracRC.x;\n\n setOutput(newValue);\n }\n `;\n }\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
```

<http://www.apache.org/licenses/LICENSE-2.0> * Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ResizeBilinearPackedProgram implements
GPGPUProgram {\n  variableNames = ['A'];\n  packedInputs = true;\n  packedOutput = true;\n  outputShape:
number[] = [];\n  userCode: string;\n\n  constructor(\n    inputShape: [number, number, number, number],
newHeight: number,\n    newWidth: number, alignCorners: boolean, halfPixelCenters: boolean) {\n    const [batch,
oldHeight, oldWidth, depth] = inputShape;\n    this.outputShape = [batch, newHeight, newWidth, depth];\n\n    const effectiveInSize: [number, number] = [\n      (alignCorners && newHeight > 1) ? oldHeight - 1 : oldHeight,\n      (alignCorners && newWidth > 1) ? oldWidth - 1 : oldWidth\n    ];\n\n    const effectiveOutSize: [number, number]
= [\n      (alignCorners && newHeight > 1) ? newHeight - 1 : newHeight,\n      (alignCorners && newWidth > 1) ?
newWidth - 1 : newWidth\n    ];\n\n    let sourceFracIndexRC: string;\n    if (halfPixelCenters) {\n      sourceFracIndexRC = `(vec3(yRC) + vec3(0.5)) * ` +\n      `effectiveInputOverOutputRatioRC - vec3(0.5)`;\n    }
else {\n      sourceFracIndexRC = `vec3(yRC) * effectiveInputOverOutputRatioRC`;\n    }\n\n    this.userCode = `\n      const vec3 effectiveInputOverOutputRatioRC = vec3(\n        ${effectiveInSize[0] / effectiveOutSize[0]},\n        ${effectiveInSize[1] / effectiveOutSize[1]},\n        ${effectiveInSize[1] / effectiveOutSize[1]});\n      const vec3
inputShapeRC = vec3(${oldHeight}.0, ${oldWidth}.0,\n        ${oldWidth}.0);\n\n      float
getAValue(int b, int r, int c, int d) {\n        return getChannel(getA(b, r, c, d), vec2(c, d));\n      }\n\n      void main()
{\n        ivec4 coords = getOutputCoords();\n        int b = coords[0];\n        int d = coords[3];\n        // Calculate
values for next column in yRC.z.\n        ivec3 yRC = coords.yzz + ivec3(0, 0, 1);\n        // Fractional source
index.\n        vec3 sourceFracIndexRC = ${sourceFracIndexRC};\n        // Compute the four integer indices.\n        ivec3 sourceFloorRC = ivec3(max(sourceFracIndexRC, vec3(0.0)));\n        ivec3 sourceCeilRC = ivec3(\n          min(inputShapeRC - 1.0, ceil(sourceFracIndexRC)));\n        // Should we calculate next column and row elements
in 2x2 packed cell.\n        bool hasNextCol = d < ${depth} - 1;\n        bool hasNextRow = coords.z < ${newWidth} -
1);\n        // In parallel, construct four corners for all four components in\n        // packed 2x2 cell.\n        vec4
topLeft = vec4(\n          getAValue(b, sourceFloorRC.x, sourceFloorRC.y, d),\n          hasNextCol ? getAValue(b,
sourceFloorRC.x, sourceFloorRC.y, d + 1)\n            : 0.0,\n          hasNextRow ? getAValue(b,
sourceFloorRC.x, sourceFloorRC.z, d)\n            : 0.0,\n          (hasNextRow && hasNextCol) ?\n          getAValue(b, sourceFloorRC.x, sourceFloorRC.z, d + 1) : 0.0);\n        vec4 bottomLeft = vec4(\n          getAValue(b, sourceCeilRC.x, sourceFloorRC.y, d),\n          hasNextCol ? getAValue(b, sourceCeilRC.x,
sourceFloorRC.y, d + 1)\n            : 0.0,\n          hasNextRow ? getAValue(b, sourceCeilRC.x, sourceFloorRC.z,
d)\n            : 0.0,\n          (hasNextRow && hasNextCol) ?\n          getAValue(b, sourceCeilRC.x,
sourceFloorRC.z, d + 1) : 0.0);\n        vec4 topRight = vec4(\n          getAValue(b, sourceFloorRC.x,
sourceCeilRC.y, d),\n          hasNextCol ? getAValue(b, sourceFloorRC.x, sourceCeilRC.y, d + 1)\n            :
0.0,\n          hasNextRow ? getAValue(b, sourceFloorRC.x, sourceCeilRC.z, d)\n            : 0.0,\n          (hasNextRow && hasNextCol) ?\n          getAValue(b, sourceFloorRC.x, sourceCeilRC.z, d + 1) : 0.0);\n        vec4 bottomRight = vec4(\n          getAValue(b, sourceCeilRC.x, sourceCeilRC.y, d),\n          hasNextCol ?
getAValue(b, sourceCeilRC.x, sourceCeilRC.y, d + 1)\n            : 0.0,\n          hasNextRow ? getAValue(b,
sourceCeilRC.x, sourceCeilRC.z, d)\n            : 0.0,\n          (hasNextRow && hasNextCol) ?\n          getAValue(b, sourceCeilRC.x, sourceCeilRC.z, d + 1) : 0.0);\n\n        vec3 fracRC = sourceFracIndexRC -
vec3(sourceFloorRC);\n        vec4 top = mix(topLeft, topRight, fracRC.yzz);\n        vec4 bottom =
mix(bottomLeft, bottomRight, fracRC.yzz);\n        vec4 newValue = mix(top, bottom, fracRC.x);\n        setOutput(newValue);\n      }\n    `;\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0 * Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {env, KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {ResizeBilinearProgram} from '../resize_bilinear_gpu';\nimport {ResizeBilinearPackedProgram} from '../resize_bilinear_packed_gpu';\n\nexport function resizeBilinear(args: {\n  inputs: ResizeBilinearInputs,\n  backend: MathBackendWebGL,\n  attrs: ResizeBilinearAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {images} = inputs;\n  const {alignCorners, halfPixelCenters, size} = attrs;\n  const [newHeight, newWidth] = size;\n  const program = env().getBool('WEBGL_PACK_IMAGE_OPERATIONS') ?\n    new ResizeBilinearPackedProgram(\n      images.shape as [number, number, number, number], newHeight,\n      newWidth,\n      alignCorners, halfPixelCenters) : \n    new ResizeBilinearProgram(\n      images.shape as [number, number, number, number], newHeight, newWidth,\n      alignCorners, halfPixelCenters);\n  return backend.runWebGLProgram(program, [images], 'float32');\n}\n\nexport const resizeBilinearConfig: KernelConfig = {\n  kernelName: ResizeBilinear,\n  backendName: 'webgl',\n  kernelFunc: resizeBilinear as KernelFunc\n};\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\n\nexport class ResizeBilinearBackpropProgram implements GPGPUProgram {\n  variableNames = ['dy'];\n  outputShape: number[] = [];\n  userCode: string;\n  constructor(\n    dyShape: [number, number, number, number],\n    inputShape: [number, number, number, number],\n    alignCorners: boolean) {\n    this.outputShape = inputShape;\n    const [, xHeight, xWidth, ] = inputShape;\n    const [, yHeight, yWidth] = dyShape;\n\n    // In the backwards pass, we want to find the pixels that were generated for\n    // each pixel in the input image the forward pass and add the corresponding\n    // coefficient from dy to the gradient (with some interpolation).\n\n    const effectiveXSize: [number, number] = [\n      (alignCorners && yHeight > 1) ? xHeight - 1 : xHeight,\n      (alignCorners && yWidth > 1) ? xWidth - 1 : xWidth\n    ];\n\n    const effectiveYSize: [number, number] = [\n      (alignCorners && yHeight > 1) ? yHeight - 1 : yHeight,\n      (alignCorners && yWidth > 1) ? yWidth - 1 : yWidth\n    ];\n\n    const heightScale = effectiveXSize[0] / effectiveYSize[0];\n    const widthScale = effectiveXSize[1] / effectiveYSize[1];\n\n    const invHeightScale = 1 / heightScale;\n    const invWidthScale = 1 / widthScale;\n\n    // This defines the size of the window of values around a particular\n    // index in dy that we want to search for contributions to dx.\n    const winHeight = (Math.ceil(invHeightScale) * 2) + 2;\n    const winWidth = (Math.ceil(invWidthScale) * 2) + 2;\n\n    this.userCode = `\n      void main() {\n        ivec4 coords = getOutputCoords();\n        int b = coords[0];\n        int d = coords[3];\n        int r = coords[1];\n        int c = coords[2];\n\n        float accumulator = 0.0;\n\n        const float heightScale = float(${heightScale});\n        const float widthScale = float(${widthScale});\n\n        const float invHeightScale = float(${invHeightScale});\n        const float invWidthScale = float(${invWidthScale});\n\n        const int winHeight = int(${winHeight});\n        const int winWidth = int(${winWidth});\n\n        // Compute bounds for where in dy we will look\n        float startRLerp = floor(float(r) * invHeightScale);\n        int startDyR = int(startRLerp - float(winHeight / 2));\n        float startCLerp = floor(float(c) * invWidthScale);\n        int startDyC = int(startCLerp - float(winWidth / 2));\n\n        // Loop over dy\n        for (int dyROffset = 0; dyROffset < winHeight; dyROffset++) {\n          int dyR = dyROffset + startDyR;\n\n          // Guard against the window exceeding the bounds of dy\n          if (dyR < 0 || dyR >= ${yHeight}) {\n            continue;\n          }\n\n          for (int dyCOffset = 0; dyCOffset < winWidth; dyCOffset++)\n
```

```

{\n      int dyC = dyCOffset + startDyC;\n\n      // Guard against the window exceeding the bounds of dy\n      if (dyC < 0 || dyC >= ${yWidth}) {\n          continue;\n      }\n      float dxR = float(dyR) * heightScale;\n      int topDxRIndex = int(floor(dxR));\n      int bottomDxRIndex = int(min(ceil(dxR), ${xHeight - 1}.0));\n      float dxRLerp = dxR - float(topDxRIndex);\n      float inverseDxRLerp = 1.0 - dxRLerp;\n      float dxC = float(dyC) * widthScale;\n      int leftDxCIndex = int(floor(dxC));\n      int rightDxCIndex = int(min(ceil(dxC), ${xWidth - 1}.0));\n      float dxCLerp = dxC - float(leftDxCIndex);\n      float inverseDxClerp = 1.0 - dxCLerp;\n      if (r == topDxRIndex && c == leftDxCIndex) {\n          // topLeft\n          accumulator +=\n              getDy(b, dyR, dyC, d) * inverseDxRLerp * inverseDxClerp;\n      }\n      if (r == topDxRIndex && c == rightDxCIndex) {\n          // topRight\n          accumulator +=\n              getDy(b, dyR, dyC, d) * inverseDxRLerp * dxCLerp;\n      }\n      if (r == bottomDxRIndex && c == leftDxCIndex) {\n          // bottomLeft\n          accumulator +=\n              getDy(b, dyR, dyC, d) * dxRLerp * inverseDxClerp;\n      }\n      if (r == bottomDxRIndex && c == rightDxCIndex) {\n          // bottomRight\n          accumulator +=\n              getDy(b, dyR, dyC, d) * dxRLerp * dxCLerp;\n      }\n      }\n      // End loop over dy\n      setOutput(accumulator);\n  }\n  `;\n}\n}\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {KernelConfig, KernelFunc, ResizeBilinearGrad, ResizeBilinearGradAttrs, ResizeBilinearGradInputs, TensorInfo} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {ResizeBilinearBackpropProgram} from '../resize_bilinear_backprop_gpu';\n\nexport function\nresizeBilinearGrad(args: {\n  inputs: ResizeBilinearGradInputs,\n  backend: MathBackendWebGL,\n  attrs: ResizeBilinearGradAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {images, dy} = inputs;\n  const {alignCorners} = attrs;\n\n  const program = new ResizeBilinearBackpropProgram(\n    dy.shape as [number, number, number, number],\n    images.shape as [number, number, number, number],\n    alignCorners);\n\n  return\n  backend.runWebGLProgram(program, [dy], dy.dtype);\n}\n\nexport const resizeBilinearGradConfig: KernelConfig\n= {\n  kernelName: ResizeBilinearGrad,\n  backendName: 'webgl',\n  kernelFunc: resizeBilinearGrad as\n  KernelFunc\n};\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {GPGPUProgram} from '../gpgpu_math';\n\nexport class ResizeNearestNeighborProgram implements\nGPGPUProgram {\n  variableNames = ['A'];\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(\n    inputShape: [number, number, number, number],\n    newHeight: number,\n    newWidth: number,\n    alignCorners: boolean,\n    halfPixelCenters: boolean) {\n    const [batch, oldHeight, oldWidth, depth] = inputShape;\n    this.outputShape = [batch, newHeight, newWidth, depth];\n    const effectiveInSize: [number, number] = [\n      (alignCorners && newHeight > 1) ? oldHeight - 1 : oldHeight,\n      (alignCorners && newWidth > 1) ? oldWidth - 1 : oldWidth\n    ];\n    const effectiveOutSize: [number, number] = [\n      (alignCorners && newHeight > 1) ?\n      newHeight - 1 : newHeight,\n      (alignCorners && newWidth > 1) ?\n      newWidth - 1 : newWidth\n    ];\n    // When align corners is false, we rounds the value with floor.\n    const roundBase = alignCorners ? '0.5' : '0.0';\n    let\n    sourceFracIndexRC: string;\n    if (halfPixelCenters) {\n      sourceFracIndexRC =\n        `max((vec2(yRC) +`

```

```

vec2(0.5)) * effectiveInputOverOutputRatioRC` +\n      `, vec2(0.0));\n  } else {\n    sourceFracIndexRC =
`vec2(yRC) * effectiveInputOverOutputRatioRC`; \n  }\n  this.userCode = `\n    const vec2
effectiveInputOverOutputRatioRC = vec2(\n      ${effectiveInSize[0] / effectiveOutSize[0]},\n
${effectiveInSize[1] / effectiveOutSize[1]});\n    const vec2 inputShapeRC = vec2(${oldHeight}.0,
${oldWidth}.0);\n\n    void main() {\n      ivec4 coords = getOutputCoords();\n      int b = coords[0];\n      int d
= coords[3];\n      ivec2 yRC = coords.yz;\n\n      // Fractional source index.\n      vec2 sourceFracIndexRC =
${sourceFracIndexRC};\n\n      // Compute the coordinators of nearest neighbor point.\n      ivec2
sourceNearestRC = ivec2(\n        min(inputShapeRC - 1.0, floor(sourceFracIndexRC + ${roundBase}));\n
float newValue = getA(b, sourceNearestRC.x, sourceNearestRC.y, d);\n\n      setOutput(newValue);\n    }\n  `;\n
}\n}\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
===== \n
*\n\nimport { KernelConfig, KernelFunc, ResizeNearestNeighbor, ResizeNearestNeighborAttrs,
ResizeNearestNeighborInputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { MathBackendWebGL } from
'./backend_webgl';\n\nimport { ResizeNearestNeighborProgram } from './resize_nearest_neighbor_gpu';\n\nexport
function resizeNearestNeighbor(args: {\n  inputs: ResizeNearestNeighborInputs,\n  backend:
MathBackendWebGL,\n  attrs: ResizeNearestNeighborAttrs\n}): TensorInfo {\n  const { inputs, backend, attrs } =
args;\n  const { images } = inputs;\n  const { alignCorners, halfPixelCenters, size } = attrs;\n\n  const [newHeight,
newWidth] = size;\n\n  const program = new ResizeNearestNeighborProgram(\n    images.shape as [number,
number, number, number], newHeight, newWidth,\n    alignCorners, halfPixelCenters);\n  return
backend.runWebGLProgram(program, [images], images.dtype);\n}\n\nexport const resizeNearestNeighborConfig:
KernelConfig = {\n  kernelName: ResizeNearestNeighbor,\n  backendName: 'webgl',\n  kernelFunc:
resizeNearestNeighbor as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
===== \n
*\n\nimport { GPGPUProgram } from './gpgpu_math';\n\nexport class ResizeNearestNeighborBackpropProgram
implements GPGPUProgram {\n  variableNames = ['dy'];\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(\n    dyShape: [number, number, number, number],\n    inputShape: [number, number, number,
number], alignCorners: boolean) {\n    this.outputShape = inputShape;\n    const [ xHeight, xWidth, ] =
inputShape;\n    const [ yHeight, yWidth ] = dyShape;\n\n    // In the backwards pass, we want to find the pixels that
were generated for\n    // each pixel in the input image the forward pass and add the corresponding\n    // coefficient
from dy to the gradient (with some interpolation).\n\n    const effectiveXSize: [number, number] = [\n
(alignCorners && yHeight > 1) ? xHeight - 1 : xHeight,\n    (alignCorners && yWidth > 1) ? xWidth - 1 :
xWidth\n  ];\n\n    const effectiveYSize: [number, number] = [\n    (alignCorners && yHeight > 1) ? yHeight - 1 :
yHeight,\n    (alignCorners && yWidth > 1) ? yWidth - 1 : yWidth\n  ];\n\n    const heightScale =
effectiveXSize[0] / effectiveYSize[0];\n    const widthScale = effectiveXSize[1] / effectiveYSize[1];\n\n    const
invHeightScale = 1 / heightScale;\n    const invWidthScale = 1 / widthScale;\n\n    // This defines the size of the
window of values around a particular\n    // index in dy that we want to search for contributions to dx.\n    const
winHeight = (Math.ceil(invHeightScale) * 2) + 2;\n    const winWidth = (Math.ceil(invWidthScale) * 2) + 2;\n\n

```

```

this.userCode = `
    void main() {
        ivec4 coords = getOutputCoords();
        int b = coords[0];
        int d =
        coords[3];
        int r = coords[1];
        int c = coords[2];
        float accumulator = 0.0;
        const float
        heightScale = float(${heightScale});
        const float widthScale = float(${widthScale});
        const float
        invHeightScale = float(${invHeightScale});
        const float invWidthScale = float(${invWidthScale});
        const int winHeight = int(${winHeight});
        const int winWidth = int(${winWidth});
        // Compute bounds
        for where in dy we will look
        float startRLerp = floor(float(r) * invHeightScale);
        int startDyR =
        int(floor(startRLerp - float(winHeight / 2)));
        float startCLerp = floor(float(c) * invWidthScale);
        int
        startDyC = int(floor(startCLerp - float(winWidth / 2)));
        // Loop over dy
        for (int dyROffset = 0;
        dyROffset < winHeight; dyROffset++) {
            int dyR = dyROffset + startDyR;
            // Guard against the
            window exceeding the bounds of dy
            if (dyR < 0 || dyR >= ${yHeight}) {
                continue;
            }
            for (int dyCOffset = 0; dyCOffset < winWidth; dyCOffset++) {
                int dyC = dyCOffset + startDyC;
                // Guard against the window exceeding the bounds of dy
                if (dyC < 0 || dyC >= ${yWidth}) {
                    continue;
                }
                float sourceFracRow =
                float(${effectiveXSize[0]}) *
                (float(dyR) / float(${effectiveYSize[0]}));
                float sourceFracCol =
                float(${effectiveXSize[1]})
                *
                (float(dyC) / float(${effectiveYSize[1]}));
                int sourceNearestRow = int(min(
                float(int(${xHeight}) - 1),
                ${alignCorners} ? float(round(sourceFracRow)) :
                float(floor(sourceFracRow)));
                int sourceNearestCol = int(min(
                float(int(${xWidth}) - 1),
                ${alignCorners} ? float(round(sourceFracCol)) :
                float(floor(sourceFracCol)));
                if (r == sourceNearestRow && c == sourceNearestCol) {
                    accumulator += getDy(b, dyR, dyC, d);
                }
            }
        }
        // End loop over dy
        setOutput(accumulator);
    }
`;
}

@license
* Copyright 2020 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version
2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a
copy of the License at
* http://www.apache.org/licenses/LICENSE-2.0
* Unless required by applicable
law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
*
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for
the specific language governing permissions and
* limitations under the License.

=====

*/
import {KernelConfig, KernelFunc, ResizeNearestNeighborGrad, ResizeNearestNeighborGradAttrs,
ResizeNearestNeighborGradInputs, TensorInfo} from '@tensorflow/tfjs-core';
import {MathBackendWebGL}
from './backend_webgl';
import {ResizeNearestNeighborBackpropProgram} from
'./resize_nearest_neighbor_backprop_gpu';
export function resizeNearestNeighborGrad(args: {
inputs:
ResizeNearestNeighborGradInputs,
backend: MathBackendWebGL,
attrs:
ResizeNearestNeighborGradAttrs}): TensorInfo {
const {inputs, backend, attrs} = args;
const {images, dy} =
inputs;
const {alignCorners} = attrs;
const program = new ResizeNearestNeighborBackpropProgram(
dy.shape as [number, number, number, number],
images.shape as [number, number, number, number],
alignCorners);
return backend.runWebGLProgram(program, [dy], dy.dtype);
}
export const
resizeNearestNeighborGradConfig: KernelConfig = {
kernelName: ResizeNearestNeighborGrad,
backendName: 'webgl',
kernelFunc: resizeNearestNeighborGrad as {} as KernelFunc
};
}

@license
* Copyright 2017 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the
"License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the
License at
* http://www.apache.org/licenses/LICENSE-2.0
* Unless required by applicable law or
agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
*
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for
the specific language governing permissions and
* limitations under the License.

=====

*/
import {GPGPUProgram} from './gpgpu_math';
import {getCoordsDataType} from
'./shader_compiler';
export class ReverseProgram implements GPGPUProgram {
variableNames = ['x'];
outputShape: number[];
userCode: string;
constructor(xShape: number[], axis: number[]) {
const rank =

```

```
xShape.length;\n if (rank > 4) {\n   throw new Error(\n     `WebGL backend: Reverse of rank-${rank} tensor\n     is not yet supported`);\n }\n this.outputShape = xShape;\n\n if (rank === 1) {\n   this.userCode = `\n\n void main() {\n   int coord = getOutputCoords();\n   setOutput(getX(${xShape[0]} - coord - 1));\n }\n`;\n   return;\n }\n const getInCoord = (i: number) => {\n   if (axis.indexOf(i) !== -1 && xShape[i] !== 1)\n   {\n     return `${xShape[i]} - coords[${i]} - 1`;\n   }\n   return `coords[${i}]`;\n };\n const inCoords =\n xShape.map( (_, i) => getInCoord(i)).join(',');\n const type = getCoordsDataType(rank);\n\n this.userCode = `\n\n void main() {\n   ${type} coords = getOutputCoords();\n   setOutput(getX(${inCoords}));\n }\n`;\n\n }\n\n", /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache\n License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You\n may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required\n by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n License for the specific language governing permissions and\n * limitations under the License.\n *

```

```
=====\n\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getChannels} from './packing_util';\nimport\n {getCoordsDataType} from './shader_compiler';\n\nexport class ReversePackedProgram implements\n GPGPUProgram {\n  variableNames = ['x'];\n  outputShape: number[];\n  userCode: string;\n  packedInputs =\n true;\n  packedOutput = true;\n\n  constructor(xShape: number[], axis: number[]) {\n    const rank =\n xShape.length;\n    if (rank > 4) {\n      throw new Error(\n        `WebGL backend: Reverse of rank-${rank} tensor\n        is not yet supported`);\n    }\n    this.outputShape = xShape;\n    const channels = getChannels('rc', rank);\n    const\n nextColumn =\n     `${channels[rank - 1]} + 1 < ${this.outputShape[rank - 1]}`;\n    const nextRow =\n     `${channels[rank - 2]} + 1 < ${this.outputShape[rank - 2]}`;\n    const type = getCoordsDataType(rank);\n    if (rank\n === 1) {\n      this.userCode = `\n\n void main() {\n   int rc = getOutputCoords();\n   vec4 result =\n vec4(0.);\n   result.r = getChannel(getX(${xShape[0]} - rc - 1),\n     ${xShape[0]} - rc - 1);\n\n   if (${nextColumn}) {\n     result.g = getChannel(getX(${xShape[0]} - (rc + 1) - 1),\n       ${xShape[0]} -\n (rc + 1) - 1);\n     }\n   setOutput(result);\n }\n`;\n   } else {\n     this.userCode = `\n\n void\n main() {\n   ${type} rc = getOutputCoords();\n   vec4 result = vec4(0.);\n   result.r =\n ${getR(channels.slice())};\n   if (${nextColumn}) {\n     result.g = ${getG(channels.slice())};\n   }\n\n   if (${nextRow}) {\n     result.b = ${getB(channels.slice())};\n     if (${nextColumn}) {\n       result.a =\n ${getA(channels.slice())};\n     }\n     }\n   setOutput(result);\n }\n`;\n   }\n\n }\n\n\n function\n getR(channels: string[]): string {\n   return getChannel(channels);\n }\n\n function getG(channels: string[]):\n string {\n   channels[rank - 1] = '(' + channels[rank - 1] + ` + 1`);\n   return getChannel(channels);\n }\n\n\n function getB(channels: string[]): string {\n   channels[rank - 2] = '(' + channels[rank - 2] + ` + 1`);\n   return\n getChannel(channels);\n }\n\n\n function getA(channels: string[]): string {\n   channels[rank - 1] = '(' +\n channels[rank - 1] + ` + 1`;\n   channels[rank - 2] = '(' + channels[rank - 2] + ` + 1`);\n   return\n getChannel(channels);\n }\n\n\n function getChannel(channels: string[]): string {\n   const inCoordsArray =\n xShape.map( (_, i) => getInCoord(i, channels));\n   const inCoords = inCoordsArray.join(',');\n   const innerDims\n = inCoordsArray.slice(-2).join(',');\n   return `getChannel(getX(${inCoords}), vec2(${innerDims}))`;\n }\n\n\n function getInCoord(i: number, channels1: string[]): string {\n   if (axis.indexOf(i) !== -1 && xShape[i] !== 1) {\n     return `${xShape[i]} - ${channels1[i]} - 1`;\n   } else {\n     return `${channels1[i]}`;\n   }\n }\n\n }\n\n", /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache\n License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You\n may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required\n by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n License for the specific language governing permissions and\n * limitations under the License.\n *

```

```
=====\n\n*\n\nimport {env, KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from

```



```

'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from '../backend_webgl';\nimport {ReverseProgram}
from '../reverse_gpu';\nimport {ReversePackedProgram} from '../reverse_packed_gpu';\n\nimport {identity} from
'./Identity';\n\nexport function reverse(args: {\n  inputs: ReverseInputs,\n  backend: MathBackendWebGL,\n  attrs:
ReverseAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {dims} =
attrs;\n\n  const xRank = x.shape.length;\n\n  const $dims = util.parseAxisParam(dims, x.shape);\n  if (xRank === 0)
{\n    return identity({inputs: {x}, backend});\n  }\n\n  const program =
env().getBool('WEBGL_PACK_ARRAY_OPERATIONS') ?\n    new ReversePackedProgram(x.shape, $dims) :\n    new ReverseProgram(x.shape, $dims);\n\n  return backend.runWebGLProgram(program, [x],
x.dtype);\n}\n\nexport const reverseConfig: KernelConfig = {\n  kernelName: Reverse,\n  backendName: 'webgl',\n  kernelFunc: reverse as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class RotateProgram implements GPGPUProgram {\n  variableNames = ['Image'];\n  outputShape: number[] = [];\n  userCode: string;\n\n  constructor(\n    imageShape: [number, number, number,
number],\n    radians: number,\n    fillValue: number|[number, number, number],\n    center: number|[number,
number]) {\n    const imageHeight = imageShape[1];\n    const imageWidth = imageShape[2];\n    const sinFactor =
Math.sin(radians).toFixed(3);\n    const cosFactor = Math.cos(radians).toFixed(3);\n    this.outputShape =
imageShape;\n\n    const [centerX, centerY] =\n      backend_util.getImageCenter(center, imageHeight,
imageWidth);\n    const centerXString = centerX.toFixed(3);\n    const centerYString = centerY.toFixed(3);\n\n    let
fillSnippet = ";\n    if (typeof fillValue === 'number') {\n      fillSnippet = `float outputValue =
${fillValue.toFixed(2)};`\n    } else {\n      fillSnippet = `\n      vec3 fill = vec3(${fillValue.join(',')});\n      float
outputValue = fill[coords[3]];`\n    }\n\n    this.userCode = `\n      void main() {\n        ivec4 coords =
getOutputCoords();\n        int x = coords[2];\n        int y = coords[1];\n        float coordXFloat = (float(x) -
${centerXString}) * ${\n          cosFactor} - (float(y) - ${centerYString}) * ${sinFactor};\n        float coordYFloat =
(float(x) - ${centerXString}) * ${\n          sinFactor} + (float(y) - ${centerYString}) * ${cosFactor};\n        int
coordX = int(round(coordXFloat + ${centerXString}));\n        int coordY = int(round(coordYFloat +
${centerYString}));\n        ${fillSnippet}\n        if(coordX >= 0 && coordX < ${imageWidth} && coordY >= 0
&& coordY < ${\n          imageHeight}) {\n          outputValue = getImage(coords[0], coordY, coordX, coords[3]);\n
        }\n        setOutput(outputValue);\n      }\n    `;\n  }\n}\n\n"/**\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, Tensor4D} from '@tensorflow/tfjs-core';\nimport {RotateWithOffset,
RotateWithOffsetAttrs, RotateWithOffsetInputs} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL}
from '../backend_webgl';\nimport {RotateProgram} from './rotate_gpu';\n\nexport const rotateWithOffsetConfig:
KernelConfig = {\n  kernelName: RotateWithOffset,\n  backendName: 'webgl',\n  kernelFunc: ({inputs, attrs,
backend}) => {\n    const {image} = inputs as RotateWithOffsetInputs;\n    const {radians, fillValue, center} = attrs
as {\n    } as RotateWithOffsetAttrs;\n    const webglBackend = backend as MathBackendWebGL;\n\n    const program

```

```

= new RotateProgram(\n      (image as Tensor4D).shape, radians, fillValue, center);\n  const output =
webglBackend.runWebGLProgram(program, [image], image.dtype);\n  return output;\n };\n", "/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';\n\nconst ROUND = \n // OpenGL ES does not support round function.\n // The
algorithm is based on banker's rounding.\n float base = floor(x);\n if ((x - base) < 0.5) {\n   return floor(x);\n }
else if ((x - base) > 0.5) {\n   return ceil(x);\n } else {\n   if (mod(base, 2.0) === 0.0) {\n     return base;\n   }
else {\n     return base + 1.0;\n   }\n }\n};\n\nexport const round = unaryKernelFunc({opSnippet: ROUND});\n\nexport
const roundConfig: KernelConfig = {\n  kernelName: Round,\n  backendName: 'webgl',\n  kernelFunc:
round,\n};\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from
'./shader_compiler';\n\nexport class ScatterProgram implements GPGPUProgram {\n  variableNames = ['updates',
'indices', 'defaultValue'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    updateSize: number,
sliceDim: number, indicesRank: number,\n    updatesRank: number, strides: number[], shape: number[],\n    summingDupeIndex = true) {\n    this.outputShape = shape;\n    const stridesType =
getCoordsDataType(strides.length);\n    const dtype = getCoordsDataType(shape.length);\n    let indicesString = ";\n
if (indicesRank === 1) {\n      indicesString = 'i';\n    } else if (indicesRank === 2) {\n      indicesString = 'i, j';\n
}\n    const indicesSnippet = `getIndices(${indicesString})`; \n\n    let updatesString = ";\n    if (updatesRank === 1)
{\n      updatesString = 'i';\n    } else if (updatesRank === 2) {\n      updatesString = 'i, coords[1]';\n    }\n
const updatesSnippet = `getUpdates(${updatesString})`; \n\n    const strideString = sliceDim > 1 ? 'strides[j]': 'strides';\n
this.userCode = \n    ${stridesType} strides = ${stridesType}(${strides});\n\n    void main() {\n      ${dtype}
coords = getOutputCoords();\n      float sum = 0.0;\n      bool found = false;\n      for (int i = 0; i <
${updateSize}; i++) {\n        int flattenedIndex = 0;\n        for (int j = 0; j < ${sliceDim}; j++) {\n          int
index = round(${indicesSnippet});\n          flattenedIndex += index * ${strideString};\n        }\n        if
(flattenedIndex == coords[0]) {\n          sum += ${updatesSnippet};\n          found = true;\n        }\n        setOutput(mix(getDefaultValue(), sum, float(found)));\n      }\n    }\n";\n  }\n}\n", "/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util, KernelConfig, KernelFunc, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo}
from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport

```

```

{ScatterProgram} from './scatter_gpu';\nimport {reshape} from './Reshape';\n\nexport function scatterNd(args: {\n
inputs: ScatterNdInputs,\n backend: MathBackendWebGL,\n attrs: ScatterNdAttrs\n}): TensorInfo {\n const
{inputs, backend, attrs} = args;\n const {indices, updates} = inputs;\n const {shape} = attrs;\n\n const {sliceRank,
numUpdates, sliceSize, strides, outputSize} =\n backend_util.calculateShapes(updates, indices, shape);\n\n const
flattenShape = [outputSize / sliceSize, sliceSize];\n\n if (outputSize === 0) {\n return
backend.makeTensorInfo(shape, indices.dtype);\n }\n\n const flattenIndices = reshape(\n {inputs: {x: indices},
backend, attrs: {shape: [numUpdates, sliceRank]}});\n const flattenX = reshape(\n {inputs: {x: updates},
backend, attrs: {shape: [numUpdates, sliceSize]}});\n\n const defaultValue = backend.makeTensorInfo(\n [],
'float32', new Float32Array([0])); // scalar(0)\n const program = new ScatterProgram(\n numUpdates,
sliceRank, flattenIndices.shape.length, flattenX.shape.length,\n strides, flattenShape);\n const res =
backend.runWebGLProgram(\n program, [flattenX, flattenIndices, defaultValue], flattenX.dtype);\n\n const
reshaped = reshape({inputs: {x: res}, backend, attrs: {shape}});\n\n
backend.disposeIntermediateTensorInfo(flattenIndices);\n backend.disposeIntermediateTensorInfo(flattenX);\n
backend.disposeIntermediateTensorInfo(res);\n backend.disposeIntermediateTensorInfo(defaultValue);\n\n return
reshaped;\n}\n\nexport const scatterNdConfig: KernelConfig = {\n kernelName: ScatterNd,\n backendName:
'webgl',\n kernelFunc: scatterNd as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2017 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from
 './shader_compiler';\n\nexport class SelectProgram implements GPGPUProgram {\n variableNames = ['c', 'a', 'b'];\n
outputShape: number[];\n userCode: string;\n\n constructor(cRank: number, shape: number[], rank: number) {\n
this.outputShape = shape;\n\n let cCoords;\n let abCoords;\n if (rank > 4) {\n throw Error('Where for rank
${rank} is not yet supported');\n }\n\n if (rank === 1) {\n abCoords = `resRC`;\n cCoords = `resRC`;\n
} else {\n const currentCoords = ['resRC.x', 'resRC.y', 'resRC.z', 'resRC.w'];\n const cCoordVars = [];\n
const abCoordVars = [];\n for (let i = 0; i < shape.length; i++) {\n
abCoordVars.push(`${currentCoords[i]}`);\n if (i < cRank) {\n
cCoordVars.push(`${currentCoords[i]}`);\n }\n }\n cCoords = cCoordVars.join();\n abCoords =
abCoordVars.join();\n }\n\n const dtype = getCoordsDataType(rank);\n\n this.userCode = `\n void main(\n
${dtype} resRC = getOutputCoords();\n float cVal = getC(${cCoords});\n if (cVal >= 1.0) {\n
setOutput(getA(${abCoords}));\n } else {\n setOutput(getB(${abCoords}));\n }\n }\n`;\n
}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport {KernelConfig, KernelFunc, Select, SelectInputs, TensorInfo, upcastType} from '@tensorflow/tfjs-
core';\n\nimport {MathBackendWebGL} from './backend_webgl';\nimport {SelectProgram} from
 './select_gpu';\n\nexport function select(args: {inputs: SelectInputs, backend: MathBackendWebGL}):\n
TensorInfo {\n const {inputs, backend} = args;\n const {condition, t, e} = inputs;\n\n const program =\n new
SelectProgram(condition.shape.length, t.shape, t.shape.length);\n return backend.runWebGLProgram(\n
program, [condition, t, e], upcastType(t.dtype, e.dtype));\n}\n\nexport const selectConfig: KernelConfig = {\n

```

kernelName: Select,\n backendName: 'webgl',\n kernelFunc: select as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, KernelConfig, Selu} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n './kernel_utils/kernel_funcs_utils';\nconst SELU =`\n // Stable and Attracting Fixed Point (0, 1) for Normalized\n Weights.\n // see: https://arxiv.org/abs/1706.02515\n float scaleAlpha =\n ${backend_util.SELU_SCALEALPHA};\n float scale = ${backend_util.SELU_SCALE};\n return (x >= 0.0) ?\n scale * x : scaleAlpha * (exp(x) - 1.0);\n\nexport const selu = unaryKernelFunc({opSnippet: SELU});\nexport\n const seluConfig: KernelConfig = {\n kernelName: Selu,\n backendName: 'webgl',\n kernelFunc:\n selu,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n*\n\nimport {KernelConfig, Sigmoid} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n './kernel_utils/kernel_funcs_utils';\nconst SIGMOID =`return 1.0 / (1.0 + exp(-1.0 * x));`\n\nexport const sigmoid = unaryKernelFunc({opSnippet: SIGMOID});\nexport const sigmoidConfig: KernelConfig = {\n kernelName: Sigmoid,\n backendName: 'webgl',\n kernelFunc: sigmoid,\n};\n", "/*\n * @license\n * Copyright\n 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, Sign} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from\n './kernel_utils/kernel_funcs_utils';\n\n// Sign does not propagate NaNs.\nconst SIGN =`\n if (isnan(x)) { return\n 0.0; }\n return sign(x);\n`\n\nexport const sign = unaryKernelFunc({opSnippet: SIGN});\nexport const\n signConfig: KernelConfig = {\n kernelName: Sign,\n backendName: 'webgl',\n kernelFunc: sign,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, Sin} from '@tensorflow/tfjs-core';\nimport {CHECK_NAN_SNIPPET_UNARY,\n unaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\nconst SIN = CHECK_NAN_SNIPPET_UNARY +\n`\n return sin(x);\n`\n\nexport const sin = unaryKernelFunc({opSnippet: SIN});\nexport const sinConfig:\n KernelConfig = {\n kernelName: Sin,\n backendName: 'webgl',\n kernelFunc: sin,\n};\n", "/*\n * @license\n *
```

Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, Sinh} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from  
 './kernel_utils/kernel_funcs_utils';\n\nconst SINH = `float e2x = exp(x);\n return (e2x - 1.0 / e2x) /  
 2.0`;\n\nexport const sinh = unaryKernelFunc({opSnippet: SINH});\n\nexport const sinhConfig: KernelConfig =  
 {\n  kernelName: Sinh,\n  backendName: 'webgl',\n  kernelFunc: sinh,\n};\n\n"/**\n * @license\n * Copyright 2020  
 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you  
 may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES  
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
 governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {KernelConfig, Softplus} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from  
 './kernel_utils/kernel_funcs_utils';\n\nconst SOFTPLUS = `float epsilon = 1.1920928955078125e-7;\n float  
 threshold = log(epsilon) + 2.0;\n bool too_large = x > -threshold;\n bool too_small = x < threshold;\n\n float  
 result;\n float exp_x = exp(x);\n\n if (too_large){\n   result = x;\n } else if (too_small){\n   result = exp_x;\n }\n else{\n   result = log(exp_x + 1.0);\n }\n return result`;\n\nexport const softplus =  
 unaryKernelFunc({opSnippet: SOFTPLUS});\n\nexport const softplusConfig: KernelConfig = {\n  kernelName:  
 Softplus,\n  backendName: 'webgl',\n  kernelFunc: softplus,\n};\n\n"/**\n * @license\n * Copyright 2020 Google  
 LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not  
 use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES  
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
 governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {backend_util, KernelConfig, KernelFunc, SpaceToBatchND, SpaceToBatchNDAttrs,  
 SpaceToBatchNDInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from  
 './backend_webgl';\nimport {padV2} from './PadV2';\nimport {reshape} from './Reshape';\nimport {transpose}  
 from './Transpose';\n\nexport const spaceToBatchND = (args: {\n  inputs: SpaceToBatchNDInputs,\n  backend:  
 MathBackendWebGL,\n  attrs: SpaceToBatchNDAttrs\n}): TensorInfo => {\n  const {inputs, backend, attrs} =  
 args;\n  const {x} = inputs;\n  const {blockShape, paddings} = attrs;\n\n  util.assert(x.shape.length <= 4,\n    () => 'spaceToBatchND for rank > 4 with a WebGL backend not ' +  
      'implemented yet');\n\n  const prod =  
 blockShape.reduce((a, b) => a * b);\n\n  const completePaddings: Array<[number, number]> = [[0, 0];\n  completePaddings.push(...paddings as Array<[number, number]>);\n  for (let i = 1 + blockShape.length; i <  
 x.shape.length; ++i) {\n    completePaddings.push([0, 0]);\n  }\n\n  const toDispose = [];\n  const paddedX =  
 padV2({\n    inputs: {x},\n    backend,\n    attrs: {paddings: completePaddings, constantValue: 0}\n  });\n\n  const  
 reshapedPaddedShape =\n    backend_util.getReshaped(paddedX.shape, blockShape, prod, false);\n\n  const  
 permutedReshapedPaddedPermutation =  
 backend_util.getPermuted(\n    reshapedPaddedShape.length,  
 blockShape.length, false);\n\n  const  
 flattenShape =\n    backend_util.getReshapedPermuted(paddedX.shape,  
 blockShape, prod, false);\n\n  const  
 reshapedPaddedX =  
 reshape(\n    {inputs: {x: paddedX}, backend, attrs:  
 {shape: reshapedPaddedShape}});\n\n  const  
 paddedXT =  
 transpose({\n    inputs: {x: reshapedPaddedX},\n
```

```

backend,\n  attrs: {perm: permutedReshapedPaddedPermutation}\n });\n\n const result =\n  reshape({inputs:
{x: paddedXT}, backend, attrs: {shape: flattenShape}});\n\n toDispose.push(paddedX);\n
toDispose.push(reshapedPaddedX);\n\n toDispose.push(paddedXT);\n\n\n toDispose.forEach(t =>
backend.disposeIntermediateTensorInfo(t));\n\n\n return result;\n};\n\n\nexport const spaceToBatchNDConfig:
KernelConfig = {\n  kernelName: SpaceToBatchND,\n  backendName: 'webgl',\n  kernelFunc: spaceToBatchND as
{} as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, SparseToDense, SparseToDenseAttrs,
SparseToDenseInputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from
'./backend_webgl';\n\nimport {ScatterProgram} from './scatter_gpu';\n\nimport {reshape} from './Reshape';\n\nexport
function sparseToDense(args: {\n  inputs: SparseToDenseInputs,\n  backend: MathBackendWebGL,\n  attrs:
SparseToDenseAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {sparseIndices,
sparseValues, defaultValue} = inputs;\n  const {outputShape} = attrs;\n\n  const {sliceRank, numUpdates, strides,
outputSize} =\n    backend_util.calculateShapes(sparseValues, sparseIndices, outputShape);\n\n  const
sumDupeIndices = false;\n  const program = new ScatterProgram(\n    numUpdates, sliceRank,
sparseIndices.shape.length,\n    sparseValues.shape.length, strides, [outputSize, 1], sumDupeIndices);\n\n  const res
= backend.runWebGLProgram(\n    program, [sparseValues, sparseIndices, defaultValue],
sparseValues.dtype);\n\n  const reshaped =\n    reshape({inputs: {x: res}, backend, attrs: {shape:
outputShape}});\n\n  backend.disposeIntermediateTensorInfo(res);\n  return reshaped;\n}\n\n\nexport const
sparseToDenseConfig: KernelConfig = {\n  kernelName: SparseToDense,\n  backendName: 'webgl',\n  kernelFunc:
sparseToDense as {} as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {MathBackendWebGL} from './backend_webgl';\n\nimport {slice} from
'./Slice';\n\nexport function splitV(\n  args:\n    {\n      inputs: SplitVInputs, backend: MathBackendWebGL, attrs:
SplitVAttrs\n    }):\n  TensorInfo[] {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const
{numOrSizeSplits, axis} = attrs;\n\n    const $axis = util.parseAxisParam(axis, x.shape)[0];\n    const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n\n    const xRank = x.shape.length;\n    const begin = new
Array(xRank).fill(0);\n    const size = x.shape.slice();\n\n    return splitSizes.map(s => {\n      const sliceSize =
[...size];\n      sliceSize[$axis] = s;\n      const sliceT =\n        slice({inputs: {x}, backend, attrs: {begin, size:
sliceSize}});\n      begin[$axis] += s;\n      return sliceT;\n    });\n\n\nexport const splitVConfig: KernelConfig = {\n
kernelName: SplitV,\n  backendName: 'webgl',\n  kernelFunc: splitV as {} as KernelFunc\n};\n", "/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Sqrt} from '@tensorflow/tfjs-core';\nimport {UnaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\n\nconst Sqrt = `return sqrt(x);`\n\nexport const sqrt = unaryKernelFunc({opSnippet: Sqrt});\n\nexport const sqrtConfig: KernelConfig = {\n  kernelName: Sqrt,\n  backendName: 'webgl',\n  kernelFunc: sqrt as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n*\n\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {UnaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\n\nconst Square = `return x * x;`\n\nexport const square = unaryKernelFunc({opSnippet: SQUARE});\n\nexport const squareConfig: KernelConfig = {\n  kernelName: Square,\n  backendName: 'webgl',\n  kernelFunc: square,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Step, StepAttrs, TensorInfo, UnaryInputs} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {CHECK_NAN_SNIPPET, UnaryOpProgram} from './unaryop_gpu';\n\nexport function step(\n  inputs: UnaryInputs,\n  attrs: StepAttrs,\n  backend: MathBackendWebGL):\n  TensorInfo {\n  const {x} = inputs;\n  const opSnippet = CHECK_NAN_SNIPPET + `\n  return x > 0.0 ? 1.0 : float(${attrs.alpha});`\n  const program = new UnaryOpProgram(x.shape, opSnippet);\n  return backend.runWebGLProgram(program, [x], x.dtype);\n}\n\nexport const stepConfig: KernelConfig = {\n  kernelName: Step,\n  backendName: 'webgl',\n  kernelFunc: step as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class StridedSliceProgram implements GPGPUProgram {\n  variableNames = ['x'];\n  outputShape: number[];\n  userCode: string;\n\n  constructor(\n    begin: number[],\n    strides: number[],\n    size: number[]) {\n    this.outputShape = size;\n    const rank = size.length;\n    const inputDtype = getCoordsDataType(size.length);\n    const dtype = getCoordsDataType(size.length);\n    let newCoords = `;\n    if (rank === 1) {\n      newCoords = 'coords * strides + begin';\n    } else {\n      let outputAxis = 0;\n      newCoords =\n        size.map((_, i) => {\n          outputAxis++;\n          return size.length === 1 ?\n            `coords * strides[${i}] + begin[${i}]`\n            : `coords[${outputAxis - 1}] * strides[${i}] + begin[${i}]`; \n        })\n        .join(',')\n    }\n  }\n\n
```

```

this.userCode = `
  ${inputDtype} begin = ${inputDtype}(${begin});
  ${inputDtype} strides =
  ${inputDtype}(${strides});
  void main() {
    ${dtype} coords = getOutputCoords();
    setOutput(getX(${newCoords}));
  }
`;
}
}
}
"/**
 * @license
 * Copyright 2020 Google LLC. All
 * Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this
 * file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
 * OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
 * governing permissions and
 * limitations under the License.
 */

=====

*/
import {buffer, KernelConfig, KernelFunc, Rank, slice_util, StridedSlice, StridedSliceAttrs,
StridedSliceInputs, TensorBuffer, TensorInfo, TypedArray} from '@tensorflow/tfjs-core';
import
{MathBackendWebGL} from './backend_webgl';
import {stridedSliceImplCPU} from
'./kernel_utils/shared';
import {StridedSliceProgram} from './strided_slice_gpu';
import {reshape} from
'./Reshape';
import {slice} from './Slice';
export function stridedSlice(args: {
  inputs: StridedSliceInputs,
  backend: MathBackendWebGL,
  attrs: StridedSliceAttrs
}): TensorInfo {
  const {inputs, backend, attrs} =
  args;
  const {x} = inputs;
  const {begin, end, strides, beginMask, endMask,
  ellipsisMask, newAxisMask, shrinkAxisMask} = attrs;
  const {nonStrided, $begin, $strides, size,
  newShape, outShape} = slice_util.sliceInfo(x.shape, begin, end, strides, beginMask, endMask,
  ellipsisMask, newAxisMask, shrinkAxisMask);
  const $x = reshape({inputs: {x}, backend, attrs: {shape:
  newShape}});
  let result;
  if (nonStrided) {
    const sliced = slice({inputs: {x: $x}, backend, attrs:
    {begin: $begin, size}});
    result = reshape({inputs: {x: sliced}, backend, attrs: {shape: outShape}});
  } else if (outShape.some(axis => axis === 0)) {
    result =
    backend.makeTensorInfo(outShape, x.dtype, []);
  } else {
    const shouldExecuteOnCPU =
    backend.shouldExecuteOnCPU($x);
    if (shouldExecuteOnCPU) {
      const xTexData =
      backend.texData.get($x.dataId);
      const values = xTexData.values as TypedArray;
      const xBuf =
      buffer($x.shape, $x.dtype, values) as TensorBuffer<Rank>;
      const resultValues =
      stridedSliceImplCPU(outShape, xBuf, $strides, $begin);
      result = backend.makeTensorInfo(outShape, $x.dtype,
      resultValues.values);
    } else {
      const program = new StridedSliceProgram($begin, $strides, outShape);
      result = backend.runWebGLProgram(program, [$x], $x.dtype);
    }
  }
  const resultReshaped =
  reshape({inputs: {x: result}, backend, attrs: {shape: outShape}});
  backend.disposeIntermediateTensorInfo($x);
  backend.disposeIntermediateTensorInfo(result);
  return
  resultReshaped;
}
export const stridedSliceConfig: KernelConfig = {
  kernelName: StridedSlice,
  backendName: 'webgl',
  kernelFunc: stridedSlice as {} as KernelFunc
};
"/**
 * @license
 * Copyright
 * 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
 * OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
 * governing permissions and
 * limitations under the License.
 */

=====

*/
import {KernelConfig, Tan} from '@tensorflow/tfjs-core';
import {unaryKernelFunc} from
'./kernel_utils/kernel_funcs_utils';
const TAN = `return tan(x);`;
export const tan =
unaryKernelFunc({opSnippet: TAN});
export const tanConfig: KernelConfig = {
  kernelName: Tan,
  backendName: 'webgl',
  kernelFunc: tan,
};
"/**
 * @license
 * Copyright 2020 Google LLC. All Rights
 * Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file
 * except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,

```


software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\nimport {unaryKernelFunc} from './kernel_utils/kernel_funcs_utils';\n\nconst TANH = `float e2x = exp(-2.0 * abs(x));\nreturn sign(x) * (1.0 - e2x) / (1.0 + e2x);`\n\nexport const tanh = unaryKernelFunc({opSnippet: TANH});\n\nexport const tanhConfig: KernelConfig = {\n  kernelName: Tanh,\n  backendName: 'webgl',\n  kernelFunc: tanh,\n};\n\n"/**\n * @license\n * Copyright 2017 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n\n=====\n\n\n
```

```
=====\n*\n\nimport {GPGPUProgram} from './gpgpu_math';\nimport {getCoordsDataType} from './shader_compiler';\n\nexport class TileProgram implements GPGPUProgram {\n  variableNames = ['A'];\n  outputShape: number[];\n  userCode: string;\n  rank: number;\n\n  constructor(aShape: number[], reps: number[]) {\n    const outputShape: number[] = new Array(aShape.length);\n    for (let i = 0; i < outputShape.length; i++) {\n      outputShape[i] = aShape[i] * reps[i];\n    }\n    this.outputShape = outputShape;\n    this.rank = outputShape.length;\n    const dtype = getCoordsDataType(this.rank);\n    const sourceCoords = getSourceCoords(aShape);\n\n    this.userCode = `\n    void main() {\n      ${dtype} resRC = getOutputCoords();\n      setOutput(getA(${sourceCoords}));\n    }\n  `;\n\n  function getSourceCoords(aShape: number[]): string {\n    const rank = aShape.length;\n    if (rank > 5) {\n      throw Error(`Tile for rank ${rank} is not yet supported`);\n    }\n    if (rank === 1) {\n      return `imod(resRC, ${aShape[0]}`;\n    }\n\n    const currentCoords = ['resRC.x', 'resRC.y', 'resRC.z', 'resRC.w', 'resRC.u'];\n    const sourceCoords = [];\n    for (let i = 0; i < aShape.length; i++) {\n      sourceCoords.push(`imod(${currentCoords[i]}, ${aShape[i]}`);\n    }\n    return sourceCoords.join();\n  }\n\n  "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n\n=====\n\n\n
```

```
=====\n*\n\nimport {buffer, KernelConfig, KernelFunc, TensorInfo, Tile, TileAttrs, TileInputs, util} from '@tensorflow/tfjs-core';\nimport {MathBackendWebGL} from './backend_webgl';\nimport {tileImplCPU} from './kernel_utils/shared';\nimport {TileProgram} from './tile_gpu';\n\nexport function tile(\n  params: {\n    inputs: TileInputs,\n    backend: MathBackendWebGL,\n    attrs: TileAttrs,\n  }):\n  TensorInfo {\n  const {inputs, backend, attrs} = params;\n  const {x} = inputs;\n  const {reps} = attrs;\n\n  if (x.dtype === 'string') {\n    // Even though string tensor is always on CPU, just to be consistent on how\n    // to access tensor data.\n    const data = backend.readSync(x.dataId) as Uint8Array[];\n    const decodedData = data.map(d => util.decodeString(d));\n    const buf = buffer(x.shape, x.dtype, decodedData);\n    const outBuf = tileImplCPU(buf, reps);\n    return backend.makeTensorInfo(outBuf.shape, outBuf.dtype, outBuf.values);\n  }\n\n  const program = new TileProgram(x.shape, reps);\n  const output = backend.runWebGLProgram(program, [x], x.dtype);\n\n  return output;\n}\n\nexport const tileConfig: KernelConfig = {\n  kernelName: Tile,\n  backendName: 'webgl',\n  kernelFunc: tile as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *\n=====\n\n\n
```

<http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*  
import { KernelConfig, KernelFunc, NumericDataType, TensorInfo, TopK, TopKAttrs, TopKInputs, TypedArray } from '@tensorflow/tfjs-core';  
import { MathBackendWebGL } from '../backend_webgl';  
import { topKImplCPU } from '../kernel_utils/shared';  
export function topK({ inputs: TopKInputs, backend: MathBackendWebGL, attrs: TopKAttrs }): TensorInfo[] {  
  const { inputs, backend, attrs } = args;  
  const { x } = inputs;  
  const { k, sorted } = attrs;  
  const xVals = backend.readSync(x.dataId) as TypedArray;  
  const [allTopKVals, allTopKIndices] = topKImplCPU(xVals, x.shape, x.dtype as NumericDataType, k, sorted);  
  return [backend.makeTensorInfo(allTopKVals.shape, allTopKVals.dtype, allTopKVals.values),  
    backend.makeTensorInfo(allTopKIndices.shape, allTopKIndices.dtype, allTopKIndices.values)];  
}  
export const topKConfig: KernelConfig = {  
  kernelName: TopK,  
  backendName: 'webgl',  
  kernelFunc: topK as { } as KernelFunc;  
};  
/**  
 * @license  
 * Copyright 2020 Google LLC. All Rights Reserved.  
 * Licensed under the Apache License, Version 2.0 (the License);  
 * you may not use this file except in compliance with the License.  
 * You may obtain a copy of the License at  
 */
```

<http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an AS IS BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*  
import { KernelConfig, KernelFunc, TensorInfo, Unique, UniqueAttrs, UniqueInputs } from '@tensorflow/tfjs-core';  
import { MathBackendWebGL } from '../backend_webgl';  
import { uniqueImplCPU } from '../kernel_utils/shared';  
import { assertNotComplex } from '../webgl_util';  
export function unique({ inputs: UniqueInputs, attrs: UniqueAttrs, backend: MathBackendWebGL }): TensorInfo[] {  
  const { inputs, attrs, backend } = args;  
  const { axis } = attrs;  
  const { x } = inputs;  
  assertNotComplex(x, 'unique');  
  // For now, always forward calculation to the CPU backend.  
  console.warn('WARNING: ', 'UI might be locked temporarily as data is being downloaded');  
  const values = backend.readSync(x.dataId);  
  const { outputValues, outputShape, indices } = uniqueImplCPU(values, axis, x.shape, x.dtype);  
  return [backend.makeTensorInfo(outputShape, x.dtype, outputValues),  
    backend.makeTensorInfo([indices.length, 'int32', indices), indices)];  
}  
export const uniqueConfig: KernelConfig = {  
  kernelName: Unique,  
  backendName: 'webgl',  
  kernelFunc: unique as { } as KernelFunc;  
};  
/**  
 * @license  
 * Copyright 2020 Google LLC. All Rights Reserved.  
 * Licensed under the Apache License, Version 2.0 (the "License");  
 * you may not use this file except in compliance with the License.  
 * You may obtain a copy of the License at  
 */
```

<http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*  
import { KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs } from '@tensorflow/tfjs-core';  
import { MathBackendWebGL } from '../backend_webgl';  
import { reshape } from '../Reshape';  
import { slice } from '../Slice';  
export function unpack({ inputs: UnpackInputs, backend: MathBackendWebGL, attrs: UnpackAttrs }): TensorInfo[] {  
  const { inputs, backend, attrs } = args;  
  const { value } = inputs;  
  let { axis } = attrs;  
  if (axis < 0) {  
    axis += value.shape.length;  
  }  
  const x = value;  
  const xRank = x.shape.length;  
  const num = value.shape[axis];  
  const outShape: number[] = new Array(xRank - 1);  
  let outIndex = 0;  
  for (let i = 0; i < xRank; i++) {  
    if (i !== axis) {  
      outShape[outIndex++] = x.shape[i];  
    }  
  }  
  const toDispose = [];  
  const begin = new
```

```

Array(xRank).fill(0);\n const size = x.shape.slice();\n size[axis] = 1;\n const res: TensorInfo[] = new
Array(num);\n for (let i = 0; i < res.length; i++) {\n begin[axis] = i;\n const sliced = slice({inputs: {x}, backend,
attrs: {begin, size}});\n const reshaped =\n reshape({inputs: {x: sliced}, backend, attrs: {shape:
outShape}});\n res[i] = reshaped;\n\n toDispose.push(sliced);\n }\n\n toDispose.forEach(t =>
backend.disposeIntermediateTensorInfo(t);\n return res;\n}\n\nexport const unpackConfig: KernelConfig = {\n
kernelName: Unpack,\n backendName: 'webgl',\n kernelFunc: unpack as {} as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {GPGPUProgram} from
'./gpgpu_math';\n\nexport class SegmentOpProgram implements GPGPUProgram {\n variableNames = ['x',
'segmentIds'];\n outputShape: number[];\n userCode: string;\n\n constructor(\n segOpInfo:
backend_util.segment_util.SegOpInfo,\n segOpType: 'unsortedSegmentSum') {\n const windowSize =
segOpInfo.windowSize;\n const batchSize = segOpInfo.batchSize;\n const inSize = segOpInfo.inSize;\n const
numSegments = segOpInfo.numSegments;\n const outSize = numSegments * Math.ceil(inSize / windowSize);\n
this.outputShape = [batchSize, outSize];\n\n const initializationValue = '0.0';\n const returnValue =
`sumValue`;\n\n const windowSizeNearestVec4 = Math.floor(windowSize / 4) * 4;\n const
windowSizeVec4Remainder = windowSize % 4;\n\n const updateSnippet = `\n sumValue += dot(values,
segFilter);\n `;\n\n let checkValueOutOfBounds = ";\n if (inSize % windowSize > 0) {\n
checkValueOutOfBounds = `\n if (inIdx < 0 || inIdx >= ${inSize}) {\n return initializationValue;\n }\n
`;\n }\n\n let checkSegmentIdOutOfBounds = ";\n if (inSize % windowSize > 0) {\n
checkSegmentIdOutOfBounds = `\n if (inIdx < 0 || inIdx >= ${inSize}) {\n return -1.0;\n }\n `;\n
}\n\n this.userCode = `\n const float initializationValue = ${initializationValue};\n\n float getValue(int
batch, int inIdx) {\n ${checkValueOutOfBounds}\n return getX(batch, inIdx);\n }\n\n float
getSegmentIdAtIndex(int inIdx) {\n ${checkSegmentIdOutOfBounds}\n return getSegmentIds(inIdx);\n
}\n\n void main() {\n ivec2 coords = getOutputCoords();\n int batch = coords[0];\n int outIdx =
coords[1];\n int inOffset = int(floor(float(outIdx) / float(\n ${numSegments})) * float(${windowSize}));\n
int currentSeg = int(mod(float(outIdx), float(${numSegments}))); \n\n float sumValue = 0.0;\n\n for (int
i = 0; i < ${windowSizeNearestVec4}; i += 4) {\n int inIdx = inOffset + i;\n vec4 values = vec4(\n
getValue(batch, inIdx),\n getValue(batch, inIdx + 1),\n getValue(batch, inIdx + 2),\n
getValue(batch, inIdx + 3)\n );\n\n vec4 segFilter = vec4(\n int(getSegmentIdAtIndex(inIdx)) ==
currentSeg ? 1 : 0,\n int(getSegmentIdAtIndex(inIdx + 1)) == currentSeg ? 1 : 0,\n
int(getSegmentIdAtIndex(inIdx + 2)) == currentSeg ? 1 : 0,\n int(getSegmentIdAtIndex(inIdx + 3)) ==
currentSeg ? 1 : 0\n );\n\n ${updateSnippet}\n }\n\n int inIdx = inOffset +
${windowSizeNearestVec4};\n if (${windowSizeVec4Remainder} === 1) {\n vec4 values = vec4(\n
getValue(batch, inIdx),\n initializationValue,\n initializationValue,\n initializationValue\n
);\n\n int inIdxSeg = int(getSegmentIdAtIndex(inIdx));\n\n vec4 segFilter = vec4(\n
int(getSegmentIdAtIndex(inIdx)) == currentSeg ? 1 : 0,\n 0,\n 0,\n 0\n );\n\n
${updateSnippet}\n } else if (${windowSizeVec4Remainder} === 2) {\n vec4 values = vec4(\n
getValue(batch, inIdx),\n getValue(batch, inIdx + 1),\n initializationValue,\n
initializationValue\n );\n\n vec4 segFilter = vec4(\n int(getSegmentIdAtIndex(inIdx)) ==
currentSeg ? 1 : 0,\n int(getSegmentIdAtIndex(inIdx + 1)) == currentSeg ? 1 : 0,\n 0,\n 0\n
);\n\n ${updateSnippet}\n } else if (${windowSizeVec4Remainder} === 3) {\n vec4 values =
vec4(\n getValue(batch, inIdx),\n getValue(batch, inIdx + 1),\n getValue(batch, inIdx + 2),\n
0\n

```

```

    initializationValue\n    );\n    vec4 segFilter = vec4(\n        int(getSegmentIdAtIndex(inIdx)) ==
currentSeg ? 1 : 0,\n        int(getSegmentIdAtIndex(inIdx + 1)) == currentSeg ? 1 : 0,\n        int(getSegmentIdAtIndex(inIdx + 2)) == currentSeg ? 1 : 0,\n        0\n    );\n    ${updateSnippet}\n
}\n    setOutput(${returnValue});\n    }\n    `;\n    }\n}\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport { backend_util, DataType, KernelConfig, KernelFunc, sumOutType, TensorInfo,
UnsortedSegmentSum, UnsortedSegmentSumAttrs, UnsortedSegmentSumInputs, util } from '@tensorflow/tfjs-
core';\n\nimport { MathBackendWebGL } from '../backend_webgl';\nimport { SegmentOpProgram } from
'./segment_gpu';\nimport { range } from './Range';\nimport { reshape } from './Reshape';\nimport { tile } from
'./Tile';\nimport { transpose } from './Transpose';\n\nexport function unsortedSegmentSum(args: {\n inputs:
UnsortedSegmentSumInputs,\n backend: MathBackendWebGL,\n attrs: UnsortedSegmentSumAttrs\n}):
TensorInfo {\n const { inputs, backend, attrs } = args;\n const { x, segmentIds } = inputs;\n const { numSegments } =
attrs;\n\n const xRank = x.shape.length;\n\n const toDispose = [];\n\n let axis = 0;\n const permutation =
backend_util.getAxesPermutation([axis], xRank);\n let permutedX = x;\n if (permutation != null) {\n permutedX
= transpose({ inputs: { x }, backend, attrs: { perm: permutation } });\n toDispose.push(permutedX);\n axis =
backend_util.getInnerMostAxes(1, xRank)[0];\n }\n\n const outShape =
backend_util.segment_util.computeOutShape(\n permutedX.shape, axis, numSegments);\n const inSize =
util.sizeFromShape([permutedX.shape[axis]]);\n const a2D =\n reshape({ inputs: { x: permutedX }, backend, attrs:
{ shape: [-1, inSize] } });\n toDispose.push(a2D);\n\n const outputDType = sumOutType(x.dtype);\n\n const
segOpCompute =\n (x: TensorInfo, segOpType: 'unsortedSegmentSum', segmentIds: TensorInfo,\n dtype:
DataType, numSegments: number): TensorInfo => {\n const batchSize = x.shape[0];\n const inSize =
x.shape[1];\n const windowSize =\n backend_util.segment_util.segOpComputeOptimalWindowSize(\n
inSize, numSegments);\n const segOpInfo = { windowSize, inSize, batchSize, numSegments }; \n
const program = new SegmentOpProgram(segOpInfo, segOpType);\n const output =
backend.compileAndRun(program, [x, segmentIds], dtype);\n toDispose.push(output);\n // No need to run
another GPGPU program.\n if (output.shape[1] === numSegments) {\n return output;\n }\n\n const
rangeInfo = range({\n backend,\n attrs: { start: 0, stop: numSegments, step: 1, dtype: 'float32' }\n });\n
const tileInfo = tile({\n inputs: { x: rangeInfo },\n backend,\n attrs: { reps: [inSize /
windowSize] }\n });\n\n toDispose.push(rangeInfo);\n toDispose.push(tileInfo);\n\n const result =\n segOpCompute(output, segOpType, tileInfo, dtype, numSegments);\n return result;\n }; \n\n const
segOpResult = segOpCompute(\n a2D, 'unsortedSegmentSum', segmentIds, outputDType, numSegments);\n\n
const reshaped =\n reshape({ inputs: { x: segOpResult }, backend, attrs: { shape: outShape } });\n let result =
reshaped;\n if (permutation != null) {\n toDispose.push(reshaped);\n const perm =
backend_util.getUndoAxesPermutation(permutation);\n result = transpose({ inputs: { x: result }, backend, attrs:
{ perm } });\n }\n\n toDispose.forEach(t => backend.disposeIntermediateTensorInfo(t));\n return
result;\n }\n\nexport const unsortedSegmentSumConfig: KernelConfig = {\n kernelName: UnsortedSegmentSum,\n backendName: 'webgl',\n kernelFunc: unsortedSegmentSum as {} as KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

```

the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {_fusedMatMulConfig} from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {acosConfig} from './kernels/Acos';\nimport {acoshConfig} from './kernels/Acosh';\nimport {addConfig} from './kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport {anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {argMinConfig} from './kernels/ArgMin';\nimport {asinConfig} from './kernels/Asin';\nimport {asinhConfig} from './kernels/Asinh';\nimport {atanConfig} from './kernels/Atan';\nimport {atan2Config} from './kernels/Atan2';\nimport {atanhConfig} from './kernels/Atanh';\nimport {avgPoolConfig} from './kernels/AvgPool';\nimport {avgPool3DConfig} from './kernels/AvgPool3D';\nimport {avgPoolGrad3DConfig} from './kernels/AvgPool3DGrad';\nimport {avgPoolGradConfig} from './kernels/AvgPoolGrad';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport {batchNormConfig} from './kernels/BatchNorm';\nimport {batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {bincountConfig} from './kernels/Bincount';\nimport {castConfig} from './kernels/Cast';\nimport {ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport {complexConfig} from './kernels/Complex';\nimport {complexAbsConfig} from './kernels/ComplexAbs';\nimport {concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport {conv2DBackpropFilterConfig} from './kernels/Conv2DBackpropFilter';\nimport {conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {conv3DConfig} from './kernels/Conv3D';\nimport {conv3DBackpropFilterV2Config} from './kernels/Conv3DBackpropFilterV2';\nimport {conv3DBackpropInputConfig} from './kernels/Conv3DBackpropInputV2';\nimport {cosConfig} from './kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from './kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {denseBincountConfig} from './kernels/DenseBincount';\nimport {depthToSpaceConfig} from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from './kernels/DepthwiseConv2dNative';\nimport {depthwiseConv2dNativeBackpropFilterConfig} from './kernels/DepthwiseConv2dNativeBackpropFilter';\nimport {depthwiseConv2dNativeBackpropInputConfig} from './kernels/DepthwiseConv2dNativeBackpropInput';\nimport {diagConfig} from './kernels/Diag';\nimport {dilation2DConfig} from './kernels/Dilation2D';\nimport {eluConfig} from './kernels/Elu';\nimport {eluGradConfig} from './kernels/EluGrad';\nimport {equalConfig} from './kernels/Equal';\nimport {erfConfig} from './kernels/Erf';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from './kernels/ExpandDims';\nimport {expm1Config} from './kernels/Expm1';\nimport {fftConfig} from './kernels/FFT';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from './kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from './kernels/FloorDiv';\nimport {fromPixelsConfig} from './kernels/FromPixels';\nimport {fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from './kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport {gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport {greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport {ifftConfig} from './kernels/IFFT';\nimport {imagConfig} from './kernels/Imag';\nimport {isFiniteConfig} from './kernels/IsFinite';\nimport {isInfConfig} from './kernels/IsInf';\nimport {isNaNConfig} from './kernels/IsNaN';\nimport {leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport {lessEqualConfig} from './kernels/LessEqual';\nimport {linSpaceConfig} from './kernels/LinSpace';\nimport {logConfig} from './kernels/Log';\nimport {log1pConfig} from './kernels/Log1p';\nimport {logicalAndConfig} from './kernels/LogicalAnd';\nimport {logicalNotConfig} from './kernels/LogicalNot';\nimport {logicalOrConfig} from './kernels/LogicalOr';\nimport {LRNConfig} from './kernels/LRN';\nimport {LRNGradConfig} from './kernels/LRNGrad';\nimport {maxConfig} from './kernels/Max';\nimport {maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';
```

```

./kernels/MaxPool';\nimport {maxPool3DConfig} from './kernels/MaxPool3D';\nimport {maxPoolGrad3DConfig}
from './kernels/MaxPool3DGrad';\nimport {maxPoolGradConfig} from './kernels/MaxPoolGrad';\nimport
{maxPoolWithArgmaxConfig} from './kernels/MaxPoolWithArgmax';\nimport {meanConfig} from
./kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
./kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {modConfig} from
./kernels/Mod';\nimport {multinomialConfig} from './kernels/Multinomial';\nimport {multiplyConfig} from
./kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
./kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
./kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
./kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
./kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
./kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
{rangeConfig} from './kernels/Range';\nimport {realConfig} from './kernels/Real';\nimport {realDivConfig} from
./kernels/RealDiv';\nimport {reciprocalConfig} from './kernels/Reciprocal';\nimport {reluConfig} from
./kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
./kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport
{resizeBilinearGradConfig} from './kernels/ResizeBilinearGrad';\nimport {resizeNearestNeighborConfig} from
./kernels/ResizeNearestNeighbor';\nimport {resizeNearestNeighborGradConfig} from
./kernels/ResizeNearestNeighborGrad';\nimport {reverseConfig} from './kernels/Reverse';\nimport
{rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig} from
./kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
./kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {seluConfig} from
./kernels/Selu';\nimport {sigmoidConfig} from './kernels/Sigmoid';\nimport {signConfig} from
./kernels/Sign';\nimport {sinConfig} from './kernels/Sin';\nimport {sinhConfig} from './kernels/Sinh';\nimport
{sliceConfig} from './kernels/Slice';\nimport {softmaxConfig} from './kernels/Softmax';\nimport {softplusConfig}
from './kernels/Softplus';\nimport {spaceToBatchNDConfig} from './kernels/SpaceToBatchND';\nimport
{sparseToDenseConfig} from './kernels/SparseToDense';\nimport {splitVConfig} from './kernels/SplitV';\nimport
{sqrtConfig} from './kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport
{squaredDifferenceConfig} from './kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport
{stridedSliceConfig} from './kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig}
from './kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transposeConfig} from
./kernels/Transpose';\nimport {uniqueConfig} from './kernels/Unique';\nimport {unpackConfig} from
./kernels/Unpack';\nimport {unsortedSegmentSumConfig} from './kernels/UnsortedSegmentSum';\nimport
{zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst kernelConfigs:
KernelConfig[] = [\n  LRNConfig,\n  LRNGradConfig,\n  _fusedMatMulConfig,\n  absConfig,\n  acosConfig,\n  acoshConfig,\n  addConfig,\n  addNConfig,\n  allConfig,\n  anyConfig,\n  argMaxConfig,\n  argMinConfig,\n  asinConfig,\n  asinhConfig,\n  atan2Config,\n  atanConfig,\n  atanhConfig,\n  avgPool3DConfig,\n  avgPoolConfig,\n  avgPoolGrad3DConfig,\n  avgPoolGradConfig,\n  batchMatMulConfig,\n  batchNormConfig,\n  batchToSpaceNDConfig,\n  bincountConfig,\n  castConfig,\n  ceilConfig,\n  clipByValueConfig,\n  complexAbsConfig,\n  complexConfig,\n  concatConfig,\n  conv2DBackpropFilterConfig,\n  conv2DBackpropInputConfig,\n  conv2DConfig,\n  conv3DBackpropFilterV2Config,\n  conv3DBackpropInputConfig,\n  conv3DConfig,\n  cosConfig,\n  coshConfig,\n  cropAndResizeConfig,\n  cumsumConfig,\n  denseBincountConfig,\n  depthToSpaceConfig,\n  depthwiseConv2dNativeBackpropFilterConfig,\n  depthwiseConv2dNativeBackpropInputConfig,\n  depthwiseConv2dNativeConfig,\n  diagConfig,\n  dilation2DConfig,\n  eluConfig,\n  eluGradConfig,\n  equalConfig,\n  erfConfig,\n  expConfig,\n  expandDimsConfig,\n  expm1Config,\n  fftConfig,\n  fillConfig,\n

```

```

flipLeftRightConfig,\n floorConfig,\n floorDivConfig,\n fromPixelsConfig,\n fusedConv2DConfig,\n
fusedDepthwiseConv2DConfig,\n gatherNdConfig,\n gatherV2Config,\n greaterConfig,\n greaterEqualConfig,\n
identityConfig,\n ifftConfig,\n imagConfig,\n isFiniteConfig,\n isInfConfig,\n isNaNConfig,\n
leakyReluConfig,\n lessConfig,\n lessEqualConfig,\n linSpaceConfig,\n log1pConfig,\n logConfig,\n
logicalAndConfig,\n logicalNotConfig,\n logicalOrConfig,\n maxConfig,\n maxPool3DConfig,\n
maxPoolConfig,\n maxPoolGrad3DConfig,\n maxPoolGradConfig,\n maxPoolWithArgmaxConfig,\n
maximumConfig,\n meanConfig,\n minConfig,\n minimumConfig,\n mirrorPadConfig,\n modConfig,\n
multinomialConfig,\n multiplyConfig,\n negConfig,\n nonMaxSuppressionV3Config,\n
nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n
onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n
realConfig,\n realDivConfig,\n reciprocalConfig,\n relu6Config,\n reluConfig,\n reshapeConfig,\n
resizeBilinearConfig,\n resizeBilinearGradConfig,\n resizeNearestNeighborConfig,\n
resizeNearestNeighborGradConfig,\n reverseConfig,\n rotateWithOffsetConfig,\n roundConfig,\n rsqrtConfig,\n
scatterNdConfig,\n selectConfig,\n seluConfig,\n sigmoidConfig,\n signConfig,\n sinConfig,\n sinhConfig,\n
sliceConfig,\n softmaxConfig,\n softplusConfig,\n spaceToBatchNDConfig,\n sparseToDenseConfig,\n
splitVConfig,\n sqrtConfig,\n squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n
subConfig,\n sumConfig,\n tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transposeConfig,\n
uniqueConfig,\n unpackConfig,\n unsortedSegmentSumConfig,\n zerosLikeConfig\n];\n\nfor (const kernelConfig
of kernelConfigs) {\n registerKernel(kernelConfig);\n}\n",/*\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n * \n *

```

```

=====\n
*\n\n/* tslint:disable *\n\n/** Properties of an Any. *\n\nexport declare interface IAny {\n /** Any typeUrl *\n typeUrl?: (string|null);\n\n /** Any value *\n value?: (Uint8Array|null);\n}\n\n/** DataType enum. *\n\nexport
enum DataType {\n 'DT_INVALID' = 0,\n 'DT_FLOAT' = 1,\n 'DT_DOUBLE' = 2,\n 'DT_INT32' = 3,\n
'DT_UINT8' = 4,\n 'DT_INT16' = 5,\n 'DT_INT8' = 6,\n 'DT_STRING' = 7,\n 'DT_COMPLEX64' = 8,\n
'DT_INT64' = 9,\n 'DT_BOOL' = 10,\n 'DT_QINT8' = 11,\n 'DT_QUINT8' = 12,\n 'DT_QINT32' = 13,\n
'DT_BFLOAT16' = 14,\n 'DT_FLOAT_REF' = 101,\n 'DT_DOUBLE_REF' = 102,\n 'DT_INT32_REF' = 103,\n
'DT_UINT8_REF' = 104,\n 'DT_INT16_REF' = 105,\n 'DT_INT8_REF' = 106,\n 'DT_STRING_REF' = 107,\n
'DT_COMPLEX64_REF' = 108,\n 'DT_INT64_REF' = 109,\n 'DT_BOOL_REF' = 110,\n 'DT_QINT8_REF' =
111,\n 'DT_QUINT8_REF' = 112,\n 'DT_QINT32_REF' = 113,\n 'DT_BFLOAT16_REF' = 114\n}\n\n/**
Properties of a TensorShape. *\n\nexport declare interface ITensorShape {\n /** TensorShape dim *\n dim?:
(TensorShape.IDim[]|null);\n\n /** TensorShape unknownRank *\n unknownRank?: (boolean|null);\n}\n\nexport
namespace TensorShape {\n /** Properties of a Dim. *\n\n export declare interface IDim {\n /** Dim size *\n
size?: (number|string|null);\n\n /** Dim name *\n name?: (string|null);\n }\n}\n\n/** Properties of a Tensor.
*\n\nexport declare interface ITensor {\n /** Tensor dtype *\n dtype?: (DataType|null);\n\n /** Tensor tensorShape
*\n tensorShape?: (ITensorShape|null);\n\n /** Tensor versionNumber *\n versionNumber?: (number|null);\n\n
/** Tensor tensorContent *\n tensorContent?: (Uint8Array|null);\n\n /** Tensor floatVal *\n floatVal?:
(number[]|null);\n\n /** Tensor doubleVal *\n doubleVal?: (number[]|null);\n\n /** Tensor intVal *\n intVal?:
(number[]|null);\n\n /** Tensor stringVal *\n stringVal?: (Uint8Array[]|null);\n\n /** Tensor scomplexVal *\n
scomplexVal?: (number[]|null);\n\n /** Tensor int64Val *\n int64Val?: ((number | string)[]|null);\n\n /** Tensor
boolVal *\n boolVal?: (boolean[]|null);\n\n /** Tensor uint32Val *\n uint32Val?: (number[]|null);\n\n /**
Tensor uint64Val *\n uint64Val?: ((number | string)[]|null);\n}\n\n/** Properties of an AttrValue. *\n\nexport
declare interface IAttrValue {\n /** AttrValue list *\n list?: (AttrValue.IListValue|null);\n\n /** AttrValue s *\n

```

```

s?: (string|null);\n\n /** AttrValue i */\n i?: (number|string|null);\n\n /** AttrValue f */\n f?: (number|null);\n\n /** AttrValue b */\n b?: (boolean|null);\n\n /** AttrValue type */\n type?: (DataType|null);\n\n /** AttrValue shape */\n shape?: (ITensorShape|null);\n\n /** AttrValue tensor */\n tensor?: (ITensor|null);\n\n /** AttrValue placeholder */\n placeholder?: (string|null);\n\n /** AttrValue func */\n func?: (INameAttrList|null);\n\n\nexport namespace AttrValue {\n /** Properties of a ListValue. */\n export declare interface IListValue {\n /** ListValue s */\n s?: (string[])|null);\n\n /** ListValue i */\n i?: ((number | string)[])|null);\n\n /** ListValue f */\n f?: (number[])|null);\n\n /** ListValue b */\n b?: (boolean[])|null);\n\n /** ListValue type */\n type?: (DataType[])|null);\n\n /** ListValue shape */\n shape?: (ITensorShape[])|null);\n\n /** ListValue tensor */\n tensor?: (ITensor[])|null);\n\n /** ListValue func */\n func?: (INameAttrList[])|null);\n }\n}\n\n/** Properties of a NameAttrList. */\nexport declare interface INameAttrList {\n /** NameAttrList name */\n name?: (string|null);\n\n /** NameAttrList attr */\n attr?: ({[k: string]: IAttrValue}|null);\n }\n}\n\n/** Properties of a NodeDef. */\nexport declare interface INodeDef {\n /** NodeDef name */\n name?: (string|null);\n\n /** NodeDef op */\n op?: (string|null);\n\n /** NodeDef input */\n input?: (string[])|null);\n\n /** NodeDef device */\n device?: (string|null);\n\n /** NodeDef attr */\n attr?: ({[k: string]: IAttrValue}|null);\n }\n}\n\n/** Properties of a VersionDef. */\nexport declare interface IVersionDef {\n /** VersionDef producer */\n producer?: (number|null);\n\n /** VersionDef minConsumer */\n minConsumer?: (number|null);\n\n /** VersionDef badConsumers */\n badConsumers?: (number[])|null);\n }\n}\n\n/** Properties of a GraphDef. */\nexport declare interface IGraphDef {\n /** GraphDef node */\n node?: (INodeDef[])|null);\n\n /** GraphDef versions */\n versions?: (IVersionDef|null);\n\n /** GraphDef library */\n library?: (IFunctionDefLibrary|null);\n }\n}\n\n/** Properties of a CollectionDef. */\nexport declare interface ICollectionDef {\n /** CollectionDef nodeList */\n nodeList?: (CollectionDef.INodeList|null);\n\n /** CollectionDef bytesList */\n bytesList?: (CollectionDef.IBytesList|null);\n\n /** CollectionDef int64List */\n int64List?: (CollectionDef.IInt64List|null);\n\n /** CollectionDef floatList */\n floatList?: (CollectionDef.IFloatList|null);\n\n /** CollectionDef anyList */\n anyList?: (CollectionDef.IAnyList|null);\n }\n}\n\nexport namespace CollectionDef {\n /** Properties of a NodeList. */\n export declare interface INodeList {\n /** NodeList value */\n value?: (string[])|null);\n }\n\n /** Properties of a BytesList. */\n export declare interface IBytesList {\n /** BytesList value */\n value?: (Uint8Array[])|null);\n }\n\n /** Properties of an Int64List. */\n export declare interface IInt64List {\n /** Int64List value */\n value?: ((number | string)[])|null);\n }\n\n /** Properties of a FloatList. */\n export declare interface IFloatList {\n /** FloatList value */\n value?: (number[])|null);\n }\n\n /** Properties of an AnyList. */\n export declare interface IAnyList {\n /** AnyList value */\n value?: (IAny[])|null);\n }\n}\n\n/** Properties of a SaverDef. */\nexport declare interface ISaverDef {\n /** SaverDef filenameTensorName */\n filenameTensorName?: (string|null);\n\n /** SaverDef saveTensorName */\n saveTensorName?: (string|null);\n\n /** SaverDef restoreOpName */\n restoreOpName?: (string|null);\n\n /** SaverDef maxToKeep */\n maxToKeep?: (number|null);\n\n /** SaverDef sharded */\n sharded?: (boolean|null);\n\n /** SaverDef keepCheckpointEveryNHours */\n keepCheckpointEveryNHours?: (number|null);\n\n /** SaverDef version */\n version?: (SaverDef.CheckpointFormatVersion|null);\n }\n}\n\nexport namespace SaverDef {\n /** CheckpointFormatVersion enum. */\n export enum CheckpointFormatVersion {\n 'LEGACY' = 0, 'V1' = 1, 'V2' = 2\n }\n}\n\n/** Properties of a TensorInfo. */\nexport declare interface ITensorInfo {\n /** TensorInfo name */\n name?: (string|null);\n\n /** TensorInfo cooSparse */\n cooSparse?: (TensorInfo.ICooSparse|null);\n\n /** TensorInfo dtype */\n dtype?: (DataType|null);\n\n /** TensorInfo tensorShape */\n tensorShape?: (ITensorShape|null);\n }\n}\n\nexport namespace TensorInfo {\n /** Properties of a CooSparse. */\n export declare interface ICooSparse {\n /** CooSparse valuesTensorName */\n valuesTensorName?: (string|null);\n\n /** CooSparse indicesTensorName */\n indicesTensorName?: (string|null);\n\n /** CooSparse denseShapeTensorName */\n denseShapeTensorName?: (string|null);\n }\n}\n\n/** Properties of a SignatureDef. */\nexport declare interface ISignatureDef {\n /** SignatureDef inputs */\n inputs?: ({[k: string]: ITensorInfo}|null);\n\n /** SignatureDef outputs */\n outputs?: ({[k: string]: ITensorInfo}|null);\n\n /** SignatureDef methodName */\n methodName?: (string|null);\n }\n}\n\n/** Properties of an AssetFileDef. */\nexport declare interface IAssetFileDef {\n /** AssetFileDef tensorInfo */\n tensorInfo?:

```



```

(ITensorInfo|null);\n\n /** AssetFileDef filename *\n filename?: (string|null);\n}\n\n/** Properties of an OpDef.
*\nexport declare interface IOpDef {\n /** OpDef name *\n name?: (string|null);\n /** OpDef inputArg *\n
inputArg?: (OpDef.IArgDef[]|null);\n\n /** OpDef outputArg *\n outputArg?: (OpDef.IArgDef[]|null);\n\n /**
OpDef attr *\n attr?: (OpDef.IAttrDef[]|null);\n\n /** OpDef deprecation *\n deprecation?:
(OpDef.IOpDeprecation|null);\n\n /** OpDef summary *\n summary?: (string|null);\n\n /** OpDef description
*\n description?: (string|null);\n\n /** OpDef isCommutative *\n isCommutative?: (boolean|null);\n\n /** OpDef
isAggregate *\n isAggregate?: (boolean|null);\n\n /** OpDef isStateful *\n isStateful?: (boolean|null);\n\n /**
OpDef allowsUninitializedInput *\n allowsUninitializedInput?: (boolean|null);\n}\n\nexport namespace OpDef {\n
/** Properties of an ArgDef. *\n export declare interface IArgDef {\n /** ArgDef name *\n name?:
(string|null);\n\n /** ArgDef description *\n description?: (string|null);\n\n /** ArgDef type *\n type?:
(DataType|null);\n\n /** ArgDef typeAttr *\n typeAttr?: (string|null);\n\n /** ArgDef numberAttr *\n
numberAttr?: (string|null);\n\n /** ArgDef typeListAttr *\n typeListAttr?: (string|null);\n\n /** ArgDef isRef
*\n isRef?: (boolean|null);\n }\n\n /** Properties of an AttrDef. *\n export declare interface IAttrDef {\n /**
AttrDef name *\n name?: (string|null);\n\n /** AttrDef type *\n type?: (string|null);\n\n /** AttrDef
defaultValue *\n defaultValue?: (IAttrValue|null);\n\n /** AttrDef description *\n description?:
(string|null);\n\n /** AttrDef hasMinimum *\n hasMinimum?: (boolean|null);\n\n /** AttrDef minimum *\n
minimum?: (number|string|null);\n\n /** AttrDef allowedValues *\n allowedValues?: (IAttrValue|null);\n }\n\n
/** Properties of an OpDeprecation. *\n export declare interface IOpDeprecation {\n /** OpDeprecation version
*\n version?: (number|null);\n\n /** OpDeprecation explanation *\n explanation?: (string|null);\n }\n}\n\n/**
Properties of an OpList. *\nexport declare interface IOpList {\n /** OpList op *\n op?: (IOpDef[]|null);\n}\n\n/**
Properties of a MetaGraphDef. *\nexport declare interface IMetaGraphDef {\n /** MetaGraphDef metaInfoDef
*\n metaInfoDef?: (MetaGraphDef.IMetaInfoDef|null);\n\n /** MetaGraphDef graphDef *\n graphDef?:
(IGraphDef|null);\n\n /** MetaGraphDef saverDef *\n saverDef?: (ISaverDef|null);\n\n /** MetaGraphDef
collectionDef *\n collectionDef?: ({[k: string]: ICollectionDef}|null);\n\n /** MetaGraphDef signatureDef *\n
signatureDef?: ({[k: string]: ISignatureDef}|null);\n\n /** MetaGraphDef assetFileDef *\n assetFileDef?:
(IAssetFileDef[]|null);\n}\n\nexport namespace MetaGraphDef {\n /** Properties of a MetaInfoDef. *\n export
declare interface IMetaInfoDef {\n /** MetaInfoDef metaGraphVersion *\n metaGraphVersion?:
(string|null);\n\n /** MetaInfoDef strippedOpList *\n strippedOpList?: (IOpList|null);\n\n /** MetaInfoDef
anyInfo *\n anyInfo?: (IAny|null);\n\n /** MetaInfoDef tags *\n tags?: (string[]|null);\n\n /** MetaInfoDef
tensorflowVersion *\n tensorflowVersion?: (string|null);\n\n /** MetaInfoDef tensorflowGitVersion *\n
tensorflowGitVersion?: (string|null);\n }\n}\n\n/** Properties of a SavedModel. *\nexport declare interface
ISavedModel {\n /** SavedModel savedModelSchemaVersion *\n savedModelSchemaVersion?:
(number|string|null);\n\n /** SavedModel metaGraphs *\n metaGraphs?: (IMetaGraphDef[]|null);\n}\n\n/**
Properties of a FunctionDefLibrary. *\nexport declare interface IFunctionDefLibrary {\n /** FunctionDefLibrary
function *\n 'function': (IFunctionDef[]|null);\n\n /** FunctionDefLibrary gradient *\n gradient?:
(IGradientDef[]|null);\n}\n\n/** Properties of a FunctionDef. *\nexport declare interface IFunctionDef {\n /**
FunctionDef signature *\n signature?: (IOpDef|null);\n\n /** FunctionDef attr *\n attr?: ({[k: string]:
IAttrValue}|null);\n\n /** FunctionDef nodeDef *\n nodeDef?: (INodeDef[]|null);\n\n /** FunctionDef ret *\n
ret?: ({[k: string]: string}|null);\n}\n\n/** Properties of a GradientDef. *\nexport declare interface IGradientDef {\n
/** GradientDef functionName *\n functionName?: (string|null);\n\n /** GradientDef gradientFunc *\n
gradientFunc?: (string|null);\n}\n\n", "\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====

```

```

*\n\nimport { OpExecutor, OpMapper} from './types';\n\nconst CUSTOM_OPS: {[key: string]: OpMapper} =
{};\n\n/**\n * Register an Op for graph model executor. This allow you to register\n * TensorFlow custom op or
override existing op.\n *\n * Here is an example of registering a new MatMul Op.\n * ``js\n * const customMatmul
= (node) =>\n *   tf.matMul(\n *     node.inputs[0], node.inputs[1],\n *     node.attrs['transpose_a'],
node.attrs['transpose_b']);\n *\n * tf.registerOp('MatMul', customMatmul);\n * ``\n * The inputs and attrs of the
node object is based on the TensorFlow op\n * registry.\n *\n * @param name The Tensorflow Op name.\n *
@param opFunc An op function which is called with the current graph node\n * during execution and needs to
return a tensor or a list of tensors. The node\n * has the following attributes:\n *   - attr: A map from attribute name
to its value\n *   - inputs: A list of input tensors\n *\n * @doc {heading: 'Models', subheading: 'Op Registry'}\n
*\nexport function registerOp(name: string, opFunc: OpExecutor) {\n  const opMapper: OpMapper = {\n
tfOpName: name,\n  category: 'custom',\n  inputs: [],\n  attrs: [],\n  customExecutor: opFunc\n  };\n
CUSTOM_OPS[name] = opMapper;\n}\n\n/**\n * Retrieve the OpMapper object for the registered op.\n *\n *
@param name The Tensorflow Op name.\n *\n * @doc {heading: 'Models', subheading: 'Op Registry'}\n
*\nexport function getRegisteredOp(name: string): OpMapper {\n  return CUSTOM_OPS[name];\n}\n\n/**\n * Deregister the
Op for graph model executor.\n *\n * @param name The Tensorflow Op name.\n *\n * @doc {heading: 'Models',
subheading: 'Op Registry'}\n
*\nexport function deregisterOp(name: string) {\n  delete
CUSTOM_OPS[name];\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { clone, Tensor, util } from '@tensorflow/tfjs-core';\n\nimport { NamedTensorsMap } from
'../data/types';\n\nimport { ExecutionContext } from '../executor/execution_context';\n\nimport { ResourceManager }
from '../executor/resource_manager';\n\nimport { Node, ValueType } from './types';\n\nexport function
getParamValue(\n  paramName: string, node: Node, tensorMap: NamedTensorsMap,\n  context:
ExecutionContext, resourceManager?: ResourceManager): ValueType {\n  const inputParam =
node.inputParams[paramName];\n  if (inputParam && inputParam.inputIndexStart !== undefined) {\n    const start
= inputParam.inputIndexStart;\n    const end = inputParam.inputIndexEnd === 0 ?\n      undefined :\n      (inputParam.inputIndexEnd === undefined ? start + 1 :\n      inputParam.inputIndexEnd);\n    if (inputParam.type === 'tensor') {\n      return getTensor(\n
node.inputNames[inputParam.inputIndexStart], tensorMap, context,\n      resourceManager);\n    }\n    if
(inputParam.type === 'tensors') {\n      const inputs = node.inputNames.slice(start, end);\n      return inputs.map(\n
name => getTensor(name, tensorMap, context, resourceManager));\n    }\n    const tensor = getTensor(\n
node.inputNames.slice(start)[0], tensorMap, context, resourceManager);\n    const data = tensor.dataSync();\n
return inputParam.type === 'number' ?\n      data[0] :\n      util.toNestedArray(tensor.shape, data);\n  }\n  const
attrParam = node.attrParams[paramName];\n  return attrParam && attrParam.value;\n}\n\n/**\n * Retrieve the
tensor from tensorsMap based on input name.\n *\n * @param name Node input name\n * @param tensorsMap Tensors
map keyed by the node\n * @param context contains tensors and information for running the current node.\n *
@param resourceManager Optional. Contains global resources of the model.\n
*\nexport function getTensor(\n  name: string, tensorsMap: NamedTensorsMap, context: ExecutionContext,\n  resourceManager?:
ResourceManager): Tensor {\n  const [nodeName, index] = parseNodeName(name);\n  if (resourceManager !=
null) {\n    const tensor = resourceManager.getHashTableHandleByName(nodeName);\n    if (tensor != null) {\n
return tensor;\n    }\n  }\n  const contextId = context.currentContextIds.find(contextId => {\n    return
!!tensorsMap[getNodeNameWithContextId(nodeName, contextId)];\n  });\n  return contextId !== undefined ?\n    tensorsMap[getNodeNameWithContextId(nodeName, contextId)][index] :\n    undefined;\n}\n\n/**\n * Retrieve

```

```

the tensors based on input name for current context.\n * @param name Node input name\n * @param tensorsMap
Tensors map keyed by the node\n */\nexport function getTensorsForCurrentContext(\n  name: string, tensorsMap:
NamedTensorsMap,\n  context: ExecutionContext): Tensor[] {\n  return
tensorsMap[getNodeNameWithContextId(name, context.currentContextId)];\n}\n\n/**\n * Returns the node name
and index from the Node input name.\n * @param inputName The input name of the node, in format of\n *
node_name:output_index, i.e. MatMul:0, if the output_index is not set, it is\n * default to 0.\n */\nexport function
getNodeNameAndIndex(\n  inputName: string, context?: ExecutionContext): [string, number] {\n  const
[nodeName, index] = parseNodeName(inputName);\n  return [\n    getNodeNameWithContextId(nodeName,
context && context.currentContextId),\n    index\n  ];\n}\n\nfunction getNodeNameWithContextId(name: string,
contextId?: string): string {\n  return `!!contextId ? `-${name}-${contextId}` : name;\n}\n\nexport function
parseNodeName(name: string): [string, number] {\n  const parts = name.split(':');\n  if (parts.length === 1) {\n
return [name, 0];\n  }\n  const nodeName = parts[0];\n  return [nodeName, Number(parts[parts.length -
1])];\n}\n\nexport function split(arr: number[], size: number) {\n  const res = [];\n  for (let i = 0; i < arr.length; i +=
size) {\n    res.push(arr.slice(i, i + size));\n  }\n  return res;\n}\n\nexport function getPadding(\n  node: Node,
tensorMap: NamedTensorsMap,\n  context: ExecutionContext): ValueType {\n  let pad = getParamValue('pad',
node, tensorMap, context);\n  if (pad === 'explicit') {\n    // This is 1d array, we need to convert it to 2d array\n
pad = getParamValue('explicitPaddings', node, tensorMap, context);\n    const explicitPadding: [\n      [number,
number], [number, number], [number, number], [number, number]\n    ] = [[0, 0], [0, 0], [0, 0], [0, 0]];
for (let i = 0; i < 4; i++) {\n      explicitPadding[i][0] = (pad as number[])[i * 2];\n      explicitPadding[i][1] = (pad as
number[])[i * 2 + 1];\n    }\n    return explicitPadding;\n  }\n  return pad;\n}\n\n/**\n * Reuse the tensor if it is
marked as keep, otherwise clone the tensor to\n * avoid disposal. This is important for TensorArray and TensorList
ops, since\n * internally they use a tensor as the id for TensorArray and TensorList, and\n * to simplify lookup, they
also use Tensor.id as the key to the internal map.\n * These id tensors have been marked as kept in the backend, we
need avoid clone\n * them in order to create new Tensor.id.\n * @param tensor\n */\nexport function
cloneTensor(tensor: Tensor): Tensor {\n  return tensor.kept ? tensor : clone(tensor);\n}\n\n", "/*\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*\n\nimport { OpMapper } from '../types';\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'Add',\n
'category': 'arithmetic',\n    'inputs': [\n      {'start': 0, 'name': 'a', 'type': 'tensor'},\n      {'start': 1, 'name': 'b', 'type':
'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ],\n    {\n
'tfOpName': 'AddV2',\n    'category': 'arithmetic',\n    'inputs': [\n      {'start': 0, 'name': 'a', 'type': 'tensor'},\n
      {'start': 1, 'name': 'b', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype',
'notSupported': true}\n    ],\n    {\n    'tfOpName': 'AddN',\n    'category': 'arithmetic',\n    'inputs': [{ 'start': 0, 'end':
0, 'name': 'tensors', 'type': 'tensors'}]\n    },\n    {\n    'tfOpName': 'BiasAdd',\n    'category': 'arithmetic',\n    'inputs': [\n
      {'start': 0, 'name': 'a', 'type': 'tensor'},\n      {'start': 1, 'name': 'b', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName':
'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true},\n      {\n        'tfName': 'data_format',\n        'name': 'dataFormat',\n
        'type': 'string',\n        'notSupported': true\n      }\n    ],\n    {\n    'tfOpName': 'Sub',\n    'category': 'arithmetic',\n
    'inputs': [\n      {'start': 0, 'name': 'a', 'type': 'tensor'},\n      {'start': 1, 'name': 'b', 'type': 'tensor'},\n    ],\n    'attrs': [\n
      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ],\n    {\n    'tfOpName': 'RealDiv',\n
    'category': 'arithmetic',\n    'inputs': [\n      {'start': 0, 'name': 'a', 'type': 'tensor'},\n      {'start': 1, 'name': 'b', 'type':
'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ],\n    {\n
'tfOpName': 'Div',\n    'category': 'arithmetic',\n    'inputs': [\n      {'start': 0, 'name': 'a', 'type': 'tensor'},\n      {'start': 1,
'name': 'b', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n
    ]\n  }\n]

```



```

'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensorArrayId', 'type': 'tensor'},\n {'start': 1, 'name':
'index', 'type': 'number'},\n {'start': 2, 'name': 'flowIn', 'type': 'number'},\n ],\n 'attrs': [{\n 'tfName':
'dtype',\n 'name': 'dtype',\n 'type': 'dtype',\n 'notSupported': true\n }]\n },\n {\n 'tfOpName':
'TensorArrayGatherV3',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensorArrayId', 'type':
'tensor'},\n {'start': 1, 'name': 'indices', 'type': 'number[]'},\n {'start': 2, 'name': 'flowIn', 'type': 'number'},\n
],\n 'attrs': [\n {'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'},\n {'tfName': 'element_shape', 'name':
'elementShape', 'type': 'shape'}\n ]\n },\n {\n 'tfOpName': 'TensorArrayScatterV3',\n 'category': 'control',\n
'inputs': [\n {'start': 0, 'name': 'tensorArrayId', 'type': 'tensor'},\n {'start': 1, 'name': 'indices', 'type':
'number[]'},\n {'start': 2, 'name': 'tensor', 'type': 'tensor'},\n {'start': 3, 'name': 'flowIn', 'type': 'number'},\n
],\n 'attrs': [{\n 'tfName': 'T', 'name': 'dtype', 'type': 'dtype'}]\n },\n {\n 'tfOpName': 'TensorArrayConcatV3',\n
'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensorArrayId', 'type': 'tensor'},\n {'start': 1, 'name':
'flowIn', 'type': 'number'},\n ],\n 'attrs': [\n {'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'},\n {\n 'tfName':
'element_shape_except0',\n 'name': 'elementShapeExcept0',\n 'type': 'shape',\n 'notSupported': true\n
}]\n },\n {\n 'tfOpName': 'TensorArraySplitV3',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name':
'tensorArrayId', 'type': 'tensor'},\n {'start': 1, 'name': 'tensor', 'type': 'tensor'},\n {'start': 2, 'name': 'lengths',
'type': 'number[]'},\n {'start': 3, 'name': 'flowIn', 'type': 'number'},\n ],\n 'attrs': [{\n 'tfName': 'T', 'name': 'dtype',
'type': 'dtype'}]\n },\n {\n 'tfOpName': 'TensorArraySizeV3',\n 'category': 'control',\n 'inputs': [\n {'start': 0,
'name': 'tensorArrayId', 'type': 'tensor'},\n {'start': 1, 'name': 'flowIn', 'type': 'number'}\n ]\n },\n {\n
'tfOpName': 'TensorArrayCloseV3',\n 'category': 'control',\n 'inputs': [{\n 'start': 0, 'name': 'tensorArrayId', 'type':
'tensor'}]\n },\n {\n 'tfOpName': 'StatelessIf',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'cond',
'type': 'tensor'},\n {'start': 1, 'end': 0, 'name': 'args', 'type': 'tensors'}\n ],\n 'attrs': [\n {'tfName':
'then_branch', 'name': 'thenBranch', 'type': 'func'},\n {'tfName': 'else_branch', 'name': 'elseBranch', 'type': 'func'}\n
]\n },\n {\n 'tfOpName': 'If',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'cond', 'type': 'tensor'},\n
{'start': 1, 'end': 0, 'name': 'args', 'type': 'tensors'}\n ],\n 'attrs': [\n {'tfName': 'then_branch', 'name':
'thenBranch', 'type': 'func'},\n {'tfName': 'else_branch', 'name': 'elseBranch', 'type': 'func'}\n ]\n },\n {\n
'tfOpName': 'StatelessWhile',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'end': 0, 'name': 'args', 'type':
'tensors'},\n ],\n 'attrs': [\n {'tfName': 'cond', 'name': 'cond', 'type': 'func'},\n {'tfName': 'body', 'name':
'body', 'type': 'func'}\n ]\n },\n {\n 'tfOpName': 'While',\n 'category': 'control',\n 'inputs': [\n {'start': 0,
'end': 0, 'name': 'args', 'type': 'tensors'},\n ],\n 'attrs': [\n {'tfName': 'cond', 'name': 'cond', 'type': 'func'},\n
{'tfName': 'body', 'name': 'body', 'type': 'func'}\n ]\n },\n {\n 'tfOpName': 'TensorListScatter',\n 'category':
'control',\n 'inputs': [\n {'start': 0, 'name': 'tensor', 'type': 'tensor'},\n {'start': 1, 'name': 'indices', 'type':
'number[]'},\n {'start': 2, 'name': 'elementShape', 'type': 'shape'}\n ],\n 'attrs':\n [{\n 'tfName':
'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n 'tfOpName': 'TensorListScatterV2',\n
'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensor', 'type': 'tensor'},\n {'start': 1, 'name': 'indices',
'type': 'number[]'},\n {'start': 2, 'name': 'elementShape', 'type': 'shape'},\n {'start': 3, 'name': 'numElements',
'type': 'number'},\n ],\n 'attrs':\n [{\n 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n
{\n 'tfOpName': 'TensorListGather',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensorListId',
'type': 'tensor'},\n {'start': 1, 'name': 'indices', 'type': 'number[]'},\n {'start': 2, 'name': 'elementShape', 'type':
'shape'},\n ],\n 'attrs':\n [{\n 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n
'tfOpName': 'TensorListGetItem',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensorListId', 'type':
'tensor'},\n {'start': 1, 'name': 'index', 'type': 'number'},\n {'start': 2, 'name': 'elementShape', 'type': 'shape'},\n
],\n 'attrs':\n [{\n 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n 'tfOpName':
'TensorListSetItem',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'tensorListId', 'type': 'tensor'},\n
{'start': 1, 'name': 'index', 'type': 'number'},\n {'start': 2, 'name': 'tensor', 'type': 'tensor'},\n ],\n 'attrs':\n
[{\n 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n 'tfOpName':
'TensorListReserve',\n 'category': 'control',\n 'inputs': [\n {'start': 0, 'name': 'elementShape', 'type': 'shape'},\n
{'start': 1, 'name': 'numElements', 'type': 'number'},\n ],\n 'attrs':\n [{\n 'tfName': 'element_dtype', 'name':
'elementDType', 'type': 'dtype'}]\n },\n {\n 'tfOpName': 'TensorListFromTensor',\n 'category': 'control',\n

```

```

'inputs': [\n  {'start': 0, 'name': 'tensor', 'type': 'tensor'},\n  {'start': 1, 'name': 'elementShape', 'type': 'shape'}\n ],\n 'attrs':\n  [{ 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n  'tfOpName': 'TensorListStack',\n  'category': 'control',\n  'inputs': [\n    {'start': 0, 'name': 'tensorListId', 'type': 'tensor'},\n    {'start': 1, 'name': 'elementShape', 'type': 'shape'},\n    ],\n  'attrs': [\n    {'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'},\n    {'tfName': 'num_elements', 'name': 'numElements', 'type': 'dtype'}\n  ]\n },\n {\n  'tfOpName': 'TensorListSplit',\n  'category': 'control',\n  'inputs': [\n    {'start': 0, 'name': 'tensor', 'type': 'tensor'},\n    {'start': 1, 'name': 'elementShape', 'type': 'shape'},\n    {'start': 2, 'name': 'lengths', 'type': 'number[]'}\n  ],\n  'attrs':\n    [{ 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n  'tfOpName': 'TensorListConcat',\n  'category': 'control',\n  'inputs': [\n    {'start': 0, 'name': 'tensorListId', 'type': 'tensor'},\n    ],\n  'attrs': [\n    {'tfName': 'element_shape', 'name': 'elementShape', 'type': 'shape'},\n    {'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}\n  ]\n },\n {\n  'tfOpName': 'TensorListPopBack',\n  'category': 'control',\n  'inputs': [\n    {'start': 0, 'name': 'tensorListId', 'type': 'tensor'},\n    {'start': 1, 'name': 'elementShape', 'type': 'shape'},\n    ],\n  'attrs':\n    [{ 'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}]\n },\n {\n  'tfOpName': 'TensorListPushBack',\n  'category': 'control',\n  'inputs': [\n    {'start': 0, 'name': 'tensorListId', 'type': 'tensor'},\n    {'start': 1, 'name': 'tensor', 'type': 'tensor'},\n    ],\n  'attrs': [\n    {'tfName': 'element_dtype', 'name': 'elementDType', 'type': 'dtype'}\n  ]\n }];\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*/\n\nimport {OpMapper} from './types';\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'AvgPool',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'},\n      {'tfName': 'data_format', 'name': 'dataFormat', 'type': 'string', 'notSupported': true},\n      {'tfName': 'ksize', 'name': 'kernelSize', 'type': 'number[]'},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'MaxPool',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'},\n      {'tfName': 'data_format', 'name': 'dataFormat', 'type': 'string', 'notSupported': true},\n      {'tfName': 'ksize', 'name': 'kernelSize', 'type': 'number[]'},\n      {'tfName': 'explicit_paddings', 'name': 'explicitPaddings', 'type': 'number[]', 'defaultValue': [], 'notSupported': true},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'MaxPoolWithArgmax',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'},\n      {'tfName': 'ksize', 'name': 'kernelSize', 'type': 'number[]'},\n      {'tfName': 'include_batch_in_index', 'name': 'includeBatchInIndex', 'type': 'bool'},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'AvgPool3D',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'},\n      {'tfName': 'data_format', 'name': 'dataFormat', 'type': 'string', 'notSupported': true},\n      {'tfName': 'ksize', 'name': 'kernelSize', 'type': 'number[]'},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'MaxPool3D',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'},\n      {'tfName': 'data_format', 'name': 'dataFormat', 'type': 'string', 'notSupported': true},\n      {'tfName': 'ksize', 'name': 'kernelSize', 'type': 'number[]'},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'Conv1D',\n
```



```

'category': 'convolution',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'filter', 'type':
'tensor'},\n ],\n 'attrs': [\n {'tfName': 'stride', 'name': 'stride', 'type': 'number'},\n {'tfName': 'padding', 'name':
'pad', 'type': 'string'}, {\n 'tfName': 'data_format',\n 'name': 'dataFormat',\n 'type': 'string',\n
'defaultValue': 'NWC'\n },\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}, {\n
'tfName': 'dilation',\n 'name': 'dilation',\n 'type': 'number',\n 'defaultValue': 1\n }],\n {\n
'tfOpName': 'Conv2D',\n 'category': 'convolution',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n
{'start': 1, 'name': 'filter', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype',
'notSupported': true},\n {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n {'tfName': 'padding', 'name':
'pad', 'type': 'string'},\n {'tfName': 'useCudnnOnGpu', 'name': 'useCudnnOnGpu', 'type': 'bool'}, {\n 'tfName':
'data_format',\n 'name': 'dataFormat',\n 'type': 'string',\n 'defaultValue': 'NHWC'\n },\n {\n
'tfName': 'explicit_paddings',\n 'name': 'explicitPaddings',\n 'type': 'number[]',\n 'defaultValue': []\n
},\n {'tfName': 'dilations', 'name': 'dilations', 'type': 'number[]'}\n ]\n },\n {\n 'tfOpName': '_FusedConv2D',\n
'category': 'convolution',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'filter',
'type': 'tensor'},\n {'start': 2, end: 0, 'name': 'args', 'type': 'tensors'},\n ],\n 'attrs': [\n {'tfName': 'num_args',
'name': 'numArgs', 'type': 'number'},\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true},\n
{'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n {'tfName': 'padding', 'name': 'pad', 'type': 'string'}, {\n
'tfName': 'explicit_paddings',\n 'name': 'explicitPaddings',\n 'type': 'number[]',\n 'defaultValue': []\n
},\n {\n 'tfName': 'use_cudnn_on_gpu',\n 'name': 'useCudnnOnGpu',\n 'type': 'bool',\n
'defaultValue': true\n },\n {\n 'tfName': 'data_format',\n 'name': 'dataFormat',\n 'type': 'string',\n
'defaultValue': 'NHWC'\n },\n {\n 'tfName': 'dilations',\n 'name': 'dilations',\n 'type': 'number[]',\n
'defaultValue': [1, 1, 1, 1]\n },\n {\n 'tfName': 'fused_ops',\n 'name': 'fusedOps',\n 'type':
'string[]',\n 'defaultValue': []\n },\n {\n 'tfName': 'epsilon',\n 'name': 'epsilon',\n 'type':
'number',\n 'defaultValue': 0.0001\n },\n {\n 'tfName': 'leakyrelu_alpha',\n 'name':
'leakyreluAlpha',\n 'type': 'number'\n }]\n },\n {\n 'tfOpName': 'Conv2DBackpropInput',\n
'category': 'convolution',\n 'inputs': [\n {'start': 2, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'filter', 'type':
'tensor'},\n {'start': 0, 'name': 'outputShape', 'type': 'number[]'},\n ],\n 'attrs': [\n {'tfName': 'strides', 'name':
'strides', 'type': 'number[]'},\n {'tfName': 'padding', 'name': 'pad', 'type': 'string'}, {\n 'tfName': 'data_format',\n
'name': 'dataFormat',\n 'type': 'string',\n 'notSupported': true\n },\n {\n 'tfName':
'explicit_paddings',\n 'name': 'explicitPaddings',\n 'type': 'number[]',\n 'defaultValue': []\n },\n {\n
'tfName': 'dilations',\n 'name': 'dilations',\n 'type': 'number[]',\n 'notSupported': true\n }]\n
},\n {\n 'tfOpName': 'DepthwiseConv2d',\n 'category': 'convolution',\n 'inputs': [\n {'start': 0, 'name': 'input',
'type': 'tensor'},\n {'start': 1, 'name': 'filter', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'strides', 'name':
'strides', 'type': 'number[]'},\n {'tfName': 'padding', 'name': 'pad', 'type': 'string'}, {\n 'tfName': 'data_format',\n
'name': 'dataFormat',\n 'type': 'string',\n 'defaultValue': 'NHWC'\n },\n {\n 'tfName':
'explicit_paddings',\n 'name': 'explicitPaddings',\n 'type': 'number[]',\n 'defaultValue': []\n },\n
{'tfName': 'dilations', 'name': 'dilations', 'type': 'number[]'}\n ]\n },\n {\n 'tfOpName':
'DepthwiseConv2dNative',\n 'category': 'convolution',\n 'inputs': [\n {'start': 0, 'name': 'input', 'type':
'tensor'},\n {'start': 1, 'name': 'filter', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'strides', 'name': 'strides',
'type': 'number[]'},\n {'tfName': 'padding', 'name': 'pad', 'type': 'string'}, {\n 'tfName': 'data_format',\n
'name': 'dataFormat',\n 'type': 'string',\n 'defaultValue': 'NHWC'\n },\n {\n 'tfName':
'explicit_paddings',\n 'name': 'explicitPaddings',\n 'type': 'number[]',\n 'defaultValue': []\n },\n
{'tfName': 'dilations', 'name': 'dilations', 'type': 'number[]'}\n ]\n },\n {\n 'tfOpName':
'FusedDepthwiseConv2dNative',\n 'category': 'convolution',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type':
'tensor'},\n {'start': 1, 'name': 'filter', 'type': 'tensor'},\n {'start': 2, end: 0, 'name': 'args', 'type': 'tensors'},\n
],\n 'attrs': [\n {'tfName': 'num_args', 'name': 'numArgs', 'type': 'number'},\n {'tfName': 'T', 'name': 'dtype', 'type':
'dtype', 'notSupported': true},\n {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n {'tfName': 'padding',
'name': 'pad', 'type': 'string'}, {\n 'tfName': 'data_format',\n 'name': 'dataFormat',\n 'type': 'string',\n
'defaultValue': 'NHWC'\n },\n {\n 'tfName': 'dilations',\n 'name': 'dilations',\n 'type': 'number[]',\n

```

```

'defaultValue': [1, 1, 1, 1]\n    },\n    {\n      'tfName': 'fused_ops',\n      'name': 'fusedOps',\n      'type': 'string[]',\n      'defaultValue': []\n    },\n    {\n      'tfName': 'explicit_paddings',\n      'name': 'explicitPaddings',\n      'type': 'number[]',\n      'defaultValue': []\n    }\n  ],\n  {\n    'tfOpName': 'Conv3D',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      {'start': 1, 'name': 'filter', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'},\n      {'tfName': 'data_format', 'name': 'dataFormat', 'type': 'string'},\n      {'tfName': 'dilations', 'name': 'dilations', 'type': 'number[]'}\n    ]\n  },\n  {\n    'tfOpName': 'Dilation2D',\n    'category': 'convolution',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      {'start': 1, 'name': 'filter', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'strides', 'name': 'strides', 'type': 'number[]'},\n      {'tfName': 'rates', 'name': 'dilations', 'type': 'number[]'},\n      {'tfName': 'padding', 'name': 'pad', 'type': 'string'}\n    ]\n  }\n];\n\n", "import {OpMapper} from './types';\n\n**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'Fill',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'shape', 'type': 'number[]'},\n      {'start': 1, 'name': 'value', 'type': 'number'},\n    ],\n    'attrs': [{\n      'tfName': 'T', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'LinSpace',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'start', 'type': 'number'},\n      {'start': 1, 'name': 'stop', 'type': 'number'},\n      {'start': 2, 'name': 'num', 'type': 'number'},\n    ],\n    'attrs': [\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'OneHot',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'indices', 'type': 'tensor'},\n      {'start': 1, 'name': 'depth', 'type': 'number'},\n      {'start': 2, 'name': 'onValue', 'type': 'number', 'defaultValue': 1},\n      {'start': 3, 'name': 'offValue', 'type': 'number', 'defaultValue': 0},\n    ],\n    'attrs': [\n      {'tfName': 'axis', 'name': 'axis', 'type': 'number', 'notSupported': true},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'Ones',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'shape', 'type': 'number[]'},\n    ],\n    'attrs': [{\n      'tfName': 'T', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'OnesLike',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n    ],\n    'attrs': [{\n      'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'RandomUniform',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'shape', 'type': 'number[]'},\n    ],\n    'attrs': [\n      {'tfName': 'minval', 'name': 'minval', 'type': 'number', 'defaultValue': 0},\n      {'tfName': 'maxval', 'name': 'maxval', 'type': 'number', 'defaultValue': 1},\n      {'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'},\n      {'tfName': 'seed', 'name': 'seed', 'type': 'number', 'defaultValue': 0},\n      {'tfName': 'seed2', 'name': 'seed2', 'type': 'number', 'defaultValue': 0, 'notSupported': true},\n      {'tfName': 'T', 'name': 'T', 'type': 'number', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'Range',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'start', 'type': 'number'},\n      {'start': 1, 'name': 'stop', 'type': 'number'},\n      {'start': 2, 'name': 'step', 'type': 'number', 'defaultValue': 0},\n    ],\n    'attrs': [{\n      'tfName': 'Tidx', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'TruncatedNormal',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'shape', 'type': 'number[]'},\n    ],\n    'attrs': [\n      {'tfName': 'means', 'name': 'mean', 'type': 'number', 'defaultValue': 0.0},\n      {'tfName': 'stddev', 'name': 'stdDev', 'type': 'number', 'defaultValue': 1.0},\n      {'tfName': 'seed', 'name': 'seed', 'type': 'number'},\n      {'tfName': 'seed2', 'name': 'seed2', 'type': 'number', 'defaultValue': 0, 'notSupported': true},\n      {'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'},\n      {'tfName': 'T', 'name': 'T', 'type': 'number', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'Zeros',\n    'category': 'creation',\n    'inputs': [\n      {'start': 0, 'name': 'shape', 'type': 'number[]'},\n    ],\n    'attrs': [{\n      'tfName': 'T', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'ZerosLike',\n    'category': 'creation',\n

```

```

'inputs': [\n  {'start': 0, 'name': 'x', 'type': 'tensor'},\n ],\n 'attrs': [{ 'tfName': 'T', 'name': 'dtype', 'type': 'dtype'}]\n
},\n {\n 'tfOpName': 'Multinomial',\n 'category': 'creation',\n 'inputs': [\n  {'start': 0, 'name': 'logits', 'type':
'tensor'},\n  {'start': 1, 'name': 'numSamples', 'type': 'number'},\n ],\n 'attrs': [\n  {'tfName': 'seed', 'name':
'seed', 'type': 'number'},\n  {'tfName': 'seed2', 'name': 'seed2', 'type': 'number'},\n  {'tfName': 'T', 'name': 'dtype',
'type': 'dtype'},\n  {'tfName': 'output_dtype', 'name': 'output_dtype', 'type': 'dtype'}\n ]\n }];\n", "import
{OpMapper} from '../types';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nexport const json: OpMapper[] = [\n {\n 'tfOpName': 'NonMaxSuppressionV2',\n 'category': 'dynamic',\n
'inputs': [\n  {'start': 0, 'name': 'boxes', 'type': 'tensor'},\n  {'start': 1, 'name': 'scores', 'type': 'tensor'},\n  {'start':
2, 'name': 'maxOutputSize', 'type': 'number'},\n  {'start': 3, 'name': 'iouThreshold', 'type': 'number'}\n ]\n },\n {\n '\n
'tfOpName': 'NonMaxSuppressionV3',\n 'category': 'dynamic',\n 'inputs': [\n  {'start': 0, 'name': 'boxes', 'type':
'tensor'},\n  {'start': 1, 'name': 'scores', 'type': 'tensor'},\n  {'start': 2, 'name': 'maxOutputSize', 'type': 'number'},\n
  {'start': 3, 'name': 'iouThreshold', 'type': 'number'},\n  {'start': 4, 'name': 'scoreThreshold', 'type': 'number'}\n ]\n
},\n {\n 'tfOpName': 'NonMaxSuppressionV4',\n 'category': 'dynamic',\n 'inputs': [\n  {'start': 0, 'name':
'boxes', 'type': 'tensor'},\n  {'start': 1, 'name': 'scores', 'type': 'tensor'},\n  {'start': 2, 'name': 'maxOutputSize',
'type': 'number'},\n  {'start': 3, 'name': 'iouThreshold', 'type': 'number'},\n  {'start': 4, 'name': 'scoreThreshold',
'type': 'number'}\n ],\n 'attrs': [\n  {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}, {\n
'tfName': 'T_threshold',\n 'name': 'threshold',\n 'type': 'dtype',\n 'notSupported': true\n },\n {\n
'tfName': 'pad_to_max_output_size',\n 'name': 'padToMaxOutputSize',\n 'type': 'bool'\n }]\n },\n {\n 'tfOpName': 'NonMaxSuppressionV5',\n
'category': 'dynamic',\n 'inputs': [\n  {'start': 0, 'name': 'boxes', 'type': 'tensor'},\n  {'start': 1, 'name': 'scores', 'type': 'tensor'},\n
  {'start': 2, 'name': 'maxOutputSize', 'type': 'number'},\n  {'start': 3, 'name': 'iouThreshold', 'type': 'number'},\n  {'start': 4, 'name': 'scoreThreshold', 'type':
'number'},\n  {'start': 5, 'name': 'softNmsSigma', 'type': 'number'}\n ]\n },\n {\n 'tfOpName': 'Where',\n
'category': 'dynamic',\n 'inputs': [\n  {'start': 0, 'name': 'condition', 'type': 'tensor'},\n ],\n 'attrs': [\n
  {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'ListDiff',\n
'category': 'dynamic',\n 'inputs': [\n  {'start': 0, 'name': 'x', 'type': 'tensor'},\n  {'start': 1, 'name': 'y', 'type':
'tensor'},\n ],\n 'attrs': [{\n 'tfName': 'T',\n 'name': 'dtype',\n 'type': 'dtype',\n 'notSupported': true\n
}]\n }];\n", "import {OpMapper} from '../types';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nexport const json: OpMapper[] = [\n {\n 'tfOpName': 'TopKV2',\n 'category': 'evaluation',\n 'inputs': [\n
  {'start': 0, 'name': 'x', 'type': 'tensor'},\n  {'start': 1, 'name': 'k', 'type': 'number'},\n ],\n 'attrs': [{ 'tfName':
'sorted', 'name': 'sorted', 'type': 'bool'}]\n },\n {\n 'tfOpName': 'Unique',\n 'category': 'evaluation',\n 'inputs': [\n
  {'start': 0, 'name': 'x', 'type': 'tensor'},\n ],\n },\n {\n 'tfOpName': 'UniqueV2',\n 'category': 'evaluation',\n
'inputs': [\n  {'start': 0, 'name': 'x', 'type': 'tensor'},\n  {'start': 1, 'name': 'axis', 'type': 'number'},\n ],\n
},\n ];\n", "import {OpMapper} from '../types';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file

```

except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'PlaceholderWithDefault',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'default', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'shape', 'name': 'shape', 'type': 'shape'},\n      {'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'Placeholder',\n    'category': 'graph',\n    'attrs': [\n      {'tfName': 'shape', 'name': 'shape', 'type': 'shape'},\n      {'tfName': 'dtype', 'name': 'dtype', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'Const',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'Identity',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'IdentityN',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'end': 0, 'name': 'x', 'type': 'tensors'}\n    ]\n  },\n  {\n    'tfOpName': 'Snapshot',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'Rank',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'Size',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'Shape',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'ShapeN',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'end': 0, 'name': 'x', 'type': 'tensors'}\n    ]\n  },\n  {\n    'tfOpName': 'Print',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      {'start': 1, 'name': 'data', 'type': 'tensors'}\n    ],\n    'attrs': [\n      {'tfName': 'message', 'name': 'message', 'type': 'string'},\n      {'tfName': 'first_n', 'name': 'firstN', 'type': 'number', 'notSupported': true},\n      {'tfName': 'summarize', 'name': 'summarize', 'type': 'number', 'defaultValue': 3}\n    ]\n  },\n  {\n    'tfOpName': 'NoOp',\n    'category': 'graph',\n    'inputs': []\n  },\n  {\n    'tfOpName': 'StopGradient',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'}\n    ]\n  },\n  {\n    'tfOpName': 'FakeQuantWithMinMaxVars',\n    'category': 'graph',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'min', 'name': 'min', 'type': 'number'},\n      {'tfName': 'max', 'name': 'max', 'type': 'number'}\n    ]\n  }\n];\n\n**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {OpMapper} from '../types';\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'HashTable',\n    'category': 'hash_table',\n    'inputs': [],\n    'attrs': [\n      {'tfName': 'shared_name', 'name': 'sharedName', 'type': 'string'},\n      {'tfName': 'use_node_name_sharing', 'name': 'useNodeNameSharing', 'type': 'bool'},\n      {'tfName': 'key_dtype', 'name': 'keyDType', 'type': 'dtype'},\n      {'tfName': 'value_dtype', 'name': 'valueDType', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'HashTableV2',\n    'category': 'hash_table',\n    'inputs': [],\n    'attrs': [\n      {'tfName': 'shared_name', 'name': 'sharedName', 'type': 'string'},\n      {'tfName': 'use_node_name_sharing', 'name': 'useNodeNameSharing', 'type': 'bool'},\n      {'tfName': 'key_dtype', 'name': 'keyDType', 'type': 'dtype'},\n      {'tfName': 'value_dtype', 'name': 'valueDType', 'type': 'dtype'}\n    ]\n  },\n  {\n    'tfOpName': 'LookupTableImport',\n    'category': 'hash_table',\n    'inputs': [\n      {'start': 0, 'name': 'tableHandle', 'type': 'tensor'},\n      {'start': 1, 'name': 'keys', 'type': 'tensor'},\n      {'start': 2, 'name': 'values', 'type': 'tensor'}\n    ],\n    'attrs': [\n      {'tfName': 'Tin', 'name': 'tIn', 'type': 'dtype', 'notSupported': true},\n      {'tfName': 'Tout', 'name': 'tOut', 'type': 'dtype', 'notSupported': true}\n    ]\n  },\n  {\n    'tfOpName': 'LookupTableImportV2',\n    'category': 'hash_table',\n    'inputs': [\n      {'start': 0, 'name': 'tableHandle', 'type': 'tensor'},\n      {'start': 1, 'name': 'keys', 'type': 'tensor'},\n      {'start': 2, 'name': 'values', 'type': 'tensor'}\n    ],\n    'attrs': [\n      {'tfName': 'Tin', 'name': 'tIn', 'type': 'dtype', 'notSupported': true},\n      {'tfName': 'Tout', 'name': 'tOut', 'type': 'dtype', 'notSupported': true}\n    ]\n  }\n];
```

```
'tOut',\n  'type': 'dtype',\n  'notSupported': true\n  }\n  ],\n  {\n    'tfOpName': 'LookupTableFind',\n    'category': 'hash_table',\n    'inputs': [\n      {'start': 0, 'name': 'tableHandle', 'type': 'tensor'},\n      {'start': 1, 'name': 'keys', 'type': 'tensor'},\n      {'start': 2, 'name': 'defaultValue', 'type': 'tensor'}\n    ],\n    'attrs': [\n      {'tfName': 'Tin', 'name': 'tIn', 'type': 'dtype', 'notSupported': true},\n      {'tfName': 'Tout', 'name': 'tOut', 'type': 'dtype',\n        'notSupported': true\n      }\n    ],\n    {\n      'tfOpName': 'LookupTableFindV2',\n      'category': 'hash_table',\n      'inputs': [\n        {'start': 0, 'name': 'tableHandle', 'type': 'tensor'},\n        {'start': 1, 'name': 'keys', 'type': 'tensor'},\n        {'start': 2, 'name': 'defaultValue', 'type': 'tensor'}\n      ],\n      'attrs': [\n        {'tfName': 'Tin', 'name': 'tIn', 'type': 'dtype',\n          'notSupported': true},\n        {'tfName': 'Tout', 'name': 'tOut', 'type': 'dtype',\n          'notSupported': true\n        }\n      ]\n    ]\n  ]\n];\n", "import {OpMapper} from './types';\n\n**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'ResizeBilinear',\n    'category': 'image',\n    'inputs': [\n      {'start': 0, 'name': 'images', 'type': 'tensor'},\n      {'start': 1, 'name': 'size', 'type': 'number[]'},\n    ],\n    'attrs': [\n      {'tfName': 'align_corners', 'name': 'alignCorners', 'type': 'bool'},\n      {'tfName': 'half_pixel_centers', 'name': 'halfPixelCenters',\n        'type': 'bool'},\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported':\n        true\n      }\n    ],\n    {\n      'tfOpName': 'ResizeNearestNeighbor',\n      'category': 'image',\n      'inputs': [\n        {'start': 0, 'name': 'images', 'type': 'tensor'},\n        {'start': 1, 'name': 'size', 'type': 'number[]'},\n      ],\n      'attrs': [\n        {'tfName': 'align_corners', 'name': 'alignCorners', 'type': 'bool'},\n        {'tfName': 'half_pixel_centers', 'name': 'halfPixelCenters',\n          'type': 'bool'},\n        {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported':\n          true\n        }\n      ]\n    },\n    {\n      'tfOpName': 'CropAndResize',\n      'category': 'image',\n      'inputs': [\n        {'start': 0, 'name': 'image', 'type': 'tensor'},\n        {'start': 1, 'name': 'boxes', 'type': 'tensor'},\n        {'start': 2, 'name': 'boxInd', 'type': 'tensor'},\n        {'start': 3, 'name': 'cropSize', 'type': 'number[]'},\n      ],\n      'attrs': [\n        {'tfName': 'method', 'name': 'method', 'type': 'string'},\n        {'tfName': 'extrapolation_value', 'name': 'extrapolationValue',\n          'type': 'number'}\n      ]\n    ]\n  ]\n];\n", "import {OpMapper} from './types';\n\n**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'Equal',\n    'category': 'logical',\n    'inputs': [\n      {'start': 0, 'name': 'a', 'type': 'tensor'},\n      {'start': 1, 'name': 'b', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n    ],\n    {\n      'tfOpName': 'NotEqual',\n      'category': 'logical',\n      'inputs': [\n        {'start': 0, 'name': 'a', 'type': 'tensor'},\n        {'start': 1, 'name': 'b', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n      ]\n    },\n    {\n      'tfOpName': 'Greater',\n      'category': 'logical',\n      'inputs': [\n        {'start': 0, 'name': 'a', 'type': 'tensor'},\n        {'start': 1, 'name': 'b', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n      ]\n    },\n    {\n      'tfOpName': 'GreaterEqual',\n      'category': 'logical',\n      'inputs': [\n        {'start': 0, 'name': 'a', 'type': 'tensor'},\n        {'start': 1, 'name': 'b', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {'tfName': 'T', 'name': 'dtype', 'type': 'dtype',\n          'notSupported': true\n        }\n      ]\n    },\n    {\n      'tfOpName': 'Less',\n      'category': 'logical',\n      'inputs': [\n        {'start': 0, 'name': 'a', 'type': 'tensor'},\n        {'start': 1, 'name': 'b', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n      ]\n    },\n    {\n      'tfOpName': 'LessEqual',\n      'category': 'logical',\n
```

```

'inputs': [\n  {'start': 0, 'name': 'a', 'type': 'tensor'},\n  {'start': 1, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'LogicalAnd',\n 'category': 'logical',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n {'start': 1, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'LogicalNot',\n 'category': 'logical',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'LogicalOr',\n 'category': 'logical',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n {'start': 1, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'Select',\n 'category': 'logical',\n 'inputs': [\n {'start': 0, 'name': 'condition', 'type': 'tensor'},\n {'start': 1, 'name': 'a', 'type': 'tensor'},\n {'start': 2, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'SelectV2',\n 'category': 'logical',\n 'inputs': [\n {'start': 0, 'name': 'condition', 'type': 'tensor'},\n {'start': 1, 'name': 'a', 'type': 'tensor'},\n {'start': 2, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [{\n 'tfName': 'T',\n 'name': 'dtype',\n 'type': 'dtype',\n 'notSupported': true\n }]\n }]\n };\n";\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {OpMapper} from '../types';\n\nexport const json: OpMapper[] = [\n {\n 'tfOpName': '_FusedMatMul',\n 'category': 'matrices',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n {'start': 1, 'name': 'b', 'type': 'tensor'},\n {'start': 2, end: 0, 'name': 'args', 'type': 'tensors'},\n ],\n 'attrs': [\n {'tfName': 'num_args', 'name': 'numArgs', 'type': 'number'},\n {\n 'tfName': 'fused_ops',\n 'name': 'fusedOps',\n 'type': 'string[]',\n 'defaultValue': []\n },\n {\n 'tfName': 'epsilon',\n 'name': 'epsilon',\n 'type': 'number',\n 'defaultValue': 0.0001\n },\n {\n 'tfName': 'transpose_a',\n 'name': 'transposeA',\n 'type': 'bool',\n 'defaultValue': false\n },\n {\n 'tfName': 'transpose_b',\n 'name': 'transposeB',\n 'type': 'bool',\n 'defaultValue': false\n },\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'MatMul',\n 'category': 'matrices',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n {'start': 1, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {\n 'tfName': 'transpose_a',\n 'name': 'transposeA',\n 'type': 'bool',\n 'defaultValue': false\n },\n {\n 'tfName': 'transpose_b',\n 'name': 'transposeB',\n 'type': 'bool',\n 'defaultValue': false\n },\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'BatchMatMul',\n 'category': 'matrices',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n {'start': 1, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {\n 'tfName': 'adj_x',\n 'name': 'transposeA',\n 'type': 'bool',\n 'defaultValue': false\n },\n {\n 'tfName': 'adj_y',\n 'name': 'transposeB',\n 'type': 'bool',\n 'defaultValue': false\n },\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'BatchMatMulV2',\n 'category': 'matrices',\n 'inputs': [\n {'start': 0, 'name': 'a', 'type': 'tensor'},\n {'start': 1, 'name': 'b', 'type': 'tensor'},\n ],\n 'attrs': [\n {\n 'tfName': 'adj_x',\n 'name': 'transposeA',\n 'type': 'bool',\n 'defaultValue': false\n },\n {\n 'tfName': 'adj_y',\n 'name': 'transposeB',\n 'type': 'bool',\n 'defaultValue': false\n },\n {'tfName': 'T', 'name': 'dtype', 'type': 'dtype', 'notSupported': true}\n ]\n },\n {\n 'tfOpName': 'Transpose',\n 'category': 'matrices',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'perm', 'type': 'number[]'},\n ],\n 'attrs': [{\n 'tfName': 'T',\n 'name': 'dtype',\n 'type': 'dtype',\n 'notSupported': true\n }]\n }]\n };\n";\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or

```

agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'FusedBatchNorm',\n    'category': 'normalization',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      {'start': 1, 'name': 'scale', 'type': 'tensor'},\n      {'start': 2, 'name': 'offset', 'type': 'tensor'},\n      {'start': 3, 'name': 'mean', 'type': 'tensor'},\n      {'start': 4, 'name': 'variance', 'type': 'tensor'},\n    ],\n    'attrs': [\n      {\n        'tfName': 'epsilon',\n        'name': 'epsilon',\n        'type': 'number',\n        'defaultValue': 0.001\n      },\n      {\n        'tfName': 'data_format',\n        'name': 'dataFormat',\n        'type': 'string',\n        'notSupported': true\n      }\n    ],\n    {\n      'tfOpName': 'FusedBatchNormV2',\n      'category': 'normalization',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n        {'start': 1, 'name': 'scale', 'type': 'tensor'},\n        {'start': 2, 'name': 'offset', 'type': 'tensor'},\n        {'start': 3, 'name': 'mean', 'type': 'tensor'},\n        {'start': 4, 'name': 'variance', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'epsilon',\n          'name': 'epsilon',\n          'type': 'number',\n          'defaultValue': 0.001\n        },\n        {\n          'tfName': 'data_format',\n          'name': 'dataFormat',\n          'type': 'string',\n          'notSupported': true\n        }\n      ],\n    },\n    {\n      'tfOpName': 'FusedBatchNormV3',\n      'category': 'normalization',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n        {'start': 1, 'name': 'scale', 'type': 'tensor'},\n        {'start': 2, 'name': 'offset', 'type': 'tensor'},\n        {'start': 3, 'name': 'mean', 'type': 'tensor'},\n        {'start': 4, 'name': 'variance', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'epsilon',\n          'name': 'epsilon',\n          'type': 'number',\n          'defaultValue': 0.001\n        },\n        {\n          'tfName': 'data_format',\n          'name': 'dataFormat',\n          'type': 'string',\n          'notSupported': true\n        }\n      ],\n    },\n    {\n      'tfOpName': 'LRN',\n      'category': 'normalization',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'depth_radius',\n          'name': 'radius',\n          'type': 'number',\n          'defaultValue': 5\n        },\n        {\n          'tfName': 'bias',\n          'name': 'bias',\n          'type': 'number',\n          'defaultValue': 1.0\n        },\n        {\n          'tfName': 'alpha',\n          'name': 'alpha',\n          'type': 'number',\n          'defaultValue': 1.0\n        },\n        {\n          'tfName': 'beta',\n          'name': 'beta',\n          'type': 'number',\n          'defaultValue': 0.5\n        }\n      ],\n    },\n    {\n      'tfOpName': 'Softmax',\n      'category': 'normalization',\n      'inputs': [{\n        'start': 0, 'name': 'x', 'type': 'tensor'\n      }]\n    },\n    {\n      'tfOpName': 'LogSoftmax',\n      'category': 'normalization',\n      'inputs': [{\n        'start': 0, 'name': 'x', 'type': 'tensor'\n      }]\n    },\n    {\n      'tfOpName': 'SparseToDense',\n      'category': 'normalization',\n      'inputs': [\n        {'start': 0, 'name': 'sparseIndices', 'type': 'tensor'},\n        {'start': 1, 'name': 'outputShape', 'type': 'number[]'},\n        {'start': 2, 'name': 'sparseValues', 'type': 'tensor'},\n        {'start': 3, 'name': 'defaultValue', 'type': 'tensor'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'validate_indices',\n          'name': 'validateIndices',\n          'type': 'bool',\n          'defaultValue': true,\n          'notSupported': true\n        }\n      ]\n    }\n  ];\n\n\"import {OpMapper} from '../types';\n\n\"**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nexport const json: OpMapper[] = [\n  {\n    'tfOpName': 'Bincount',\n    'category': 'reduction',\n    'inputs': [\n      {'start': 0, 'name': 'x', 'type': 'tensor'},\n      {'start': 1, 'name': 'size', 'type': 'number'},\n      {'start': 2, 'name': 'weights', 'type': 'tensor'}\n    ],\n    {\n      'tfOpName': 'DenseBincount',\n      'category': 'reduction',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n        {'start': 1, 'name': 'size', 'type': 'number'},\n        {'start': 2, 'name': 'weights', 'type': 'tensor'}\n      ],\n      'attrs': [\n        {\n          'tfName': 'binary_output',\n          'name': 'binaryOutput',\n          'type': 'bool'\n        }\n      ],\n    },\n    {\n      'tfOpName': 'Max',\n      'category': 'reduction',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n        {'start': 1, 'name': 'axis', 'type': 'number[]'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'keep_dims',\n          'name': 'keepDims',\n          'type': 'bool'\n        }\n      ],\n    },\n    {\n      'tfOpName': 'Mean',\n      'category': 'reduction',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n        {'start': 1, 'name': 'axis', 'type': 'number[]'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'keep_dims',\n          'name': 'keepDims',\n          'type': 'bool'\n        }\n      ],\n    },\n    {\n      'tfOpName': 'Min',\n      'category': 'reduction',\n      'inputs': [\n        {'start': 0, 'name': 'x', 'type': 'tensor'},\n        {'start': 1, 'name': 'axis', 'type': 'number[]'},\n      ],\n      'attrs': [\n        {\n          'tfName': 'keep_dims',\n          'name': 'keepDims',\n          'type': 'bool'\n        }\n      ],\n    },\n  ];\n\n\"import {OpMapper} from '../types';\n\n\"**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```

'tensor'},\n  {'start': 1, 'name': 'axis', 'type': 'number[]'},\n ],\n 'attrs': [{'tfName': 'keep_dims', 'name':
'keepDims', 'type': 'bool'}]\n },\n {\n 'tfOpName': 'Sum',\n 'category': 'reduction',\n 'inputs': [\n {'start': 0,
'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number[]'},\n ],\n 'attrs': [{'tfName': 'keep_dims',
'name': 'keepDims', 'type': 'bool'}]\n },\n {\n 'tfOpName': 'All',\n 'category': 'reduction',\n 'inputs': [\n
{'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number[]'},\n ],\n 'attrs': [{'tfName':
'keep_dims', 'name': 'keepDims', 'type': 'bool'}]\n },\n {\n 'tfOpName': 'Any',\n 'category': 'reduction',\n
'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number[]'},\n ],\n 'attrs':
[{'tfName': 'keep_dims', 'name': 'keepDims', 'type': 'bool'}]\n },\n {\n 'tfOpName': 'ArgMax',\n 'category':
'reduction',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number'}]\n
]\n },\n {\n 'tfOpName': 'ArgMin',\n 'category': 'reduction',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type':
'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number'}]\n ],\n {\n 'tfOpName': 'Prod',\n 'category':
'reduction',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type':
'number[]'},\n ],\n 'attrs': [{'tfName': 'keep_dims', 'name': 'keepDims', 'type': 'bool'}]\n },\n {\n 'tfOpName':
'Cumsum',\n 'category': 'reduction',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name':
'axis', 'type': 'number'}]\n },\n 'attrs': [\n {'tfName': 'exclusive', 'name': 'exclusive', 'type': 'bool'},\n
{'tfName': 'reverse', 'name': 'reverse', 'type': 'bool'}]\n ]\n };\n","import {OpMapper} from './types';\n\n/**\n *
@license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====

```

```

*\n\nexport const json: OpMapper[] = [\n {\n 'tfOpName': 'ConcatV2',\n 'category': 'slice_join',\n 'inputs': [\n
{'start': 0, 'end': -1, 'name': 'tensors', 'type': 'tensors'},\n {'start': -1, 'name': 'axis', 'type': 'number'}]\n
],\n 'attrs':\n   [{'tfName': 'N', 'name': 'n', 'type': 'number', 'defaultValue': 2}]\n },\n {\n 'tfOpName': 'Concat',\n
'category': 'slice_join',\n 'inputs': [\n {'start': 1, 'end': 0, 'name': 'tensors', 'type': 'tensors'},\n {'start': 0, 'name':
'axis', 'type': 'number'}]\n },\n 'attrs': [{'tfName': 'N', 'name': 'n', 'type': 'number', 'defaultValue': 2}]\n },\n {\n
'tfOpName': 'GatherV2',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n
{'start': 1, 'name': 'indices', 'type': 'tensor'},\n {'start': 2, 'name': 'axis', 'type': 'number', 'defaultValue': 0}\n
],\n 'attrs': [{\n 'tfName': 'batch_dims',\n 'name': 'batchDims',\n 'type': 'number',\n 'defaultValue': 0\n }]\n
},\n {\n 'tfOpName': 'Gather',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n
{'start': 1, 'name': 'indices', 'type': 'tensor'},\n ],\n 'attrs': [{\n 'tfName': 'validate_indices',\n 'name':
'validateIndices',\n 'type': 'bool',\n 'notSupported': true\n }]\n },\n {\n 'tfOpName': 'Reverse',\n
'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'dims',
'type': 'bool[]'}]\n },\n {\n 'tfOpName': 'ReverseV2',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name':
'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number[]'}]\n },\n {\n 'tfOpName': 'Slice',\n
'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'begin',
'type': 'number[]'},\n {'start': 2, 'name': 'size', 'type': 'number[]'}]\n },\n {\n 'tfOpName': 'StridedSlice',\n
'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'begin',
'type': 'number[]'},\n {'start': 2, 'name': 'end', 'type': 'number[]'},\n {'start': 3, 'name': 'strides', 'type': 'number[]'},\n
],\n 'attrs': [\n {\n 'tfName': 'begin_mask',\n 'name': 'beginMask',\n 'type': 'number',\n
'defaultValue': 0\n },\n {\n 'tfName': 'end_mask',\n 'name': 'endMask',\n 'type': 'number',\n
'defaultValue': 0\n },\n {\n 'tfName': 'new_axis_mask',\n 'name': 'newAxisMask',\n 'type':
'number',\n 'defaultValue': 0\n },\n {\n 'tfName': 'ellipsis_mask',\n 'name': 'ellipsisMask',\n
'type': 'number',\n 'defaultValue': 0\n },\n {\n 'tfName': 'shrink_axis_mask',\n 'name':
'shrinkAxisMask',\n 'type': 'number',\n 'defaultValue': 0\n }]\n },\n {\n 'tfOpName': 'Pack',\n
'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'end': 0, 'name': 'tensors', 'type': 'tensors'},\n ],\n 'attrs': [\n

```



```
{'tfName': 'axis', 'name': 'axis', 'type': 'number', 'defaultValue': 0}\n ]\n },\n {\n 'tfOpName': 'Unpack',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'tensor', 'type': 'tensor'},\n ],\n 'attrs': [\n {'tfName': 'axis', 'name': 'axis', 'type': 'number', 'defaultValue': 0}, {\n 'tfName': 'num',\n 'name': 'num',\n 'type': 'number',\n 'defaultValue': 0,\n 'notSupported': true\n }\n ]\n },\n {\n 'tfOpName': 'Tile',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'reps', 'type': 'number[]'}\n ]\n },\n {\n 'tfOpName': 'Split',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'axis', 'type': 'number', 'defaultValue': 0},\n {'start': 1, 'name': 'x', 'type': 'tensor'},\n ],\n 'attrs': [{\n 'tfName': 'num_split',\n 'name': 'numOrSizeSplits',\n 'type': 'number',\n 'defaultValue': 1\n }]\n },\n {\n 'tfOpName': 'SplitV',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'numOrSizeSplits', 'type': 'number[]'},\n {'start': 2, 'name': 'axis', 'type': 'number', 'defaultValue': 0}\n ]\n },\n {\n 'tfOpName': 'ScatterNd',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'indices', 'type': 'tensor'},\n {'start': 1, 'name': 'values', 'type': 'tensor'},\n {'start': 2, 'name': 'shape', 'type': 'number[]'}\n ]\n },\n {\n 'tfOpName': 'GatherNd',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'indices', 'type': 'tensor'}\n ]\n },\n {\n 'tfOpName': 'SparseToDense',\n 'category': 'slice_join',\n 'inputs': [\n {'start': 0, 'name': 'sparseIndices', 'type': 'tensor'},\n {'start': 1, 'name': 'outputShape', 'type': 'number[]'},\n {'start': 2, 'name': 'sparseValues', 'type': 'tensor'},\n {'start': 3, 'name': 'defaultValue', 'type': 'tensor'}\n ],\n 'attrs': [{\n 'tfName': 'validate_indices',\n 'name': 'validateIndices',\n 'type': 'bool',\n 'defaultValue': false,\n 'notSupported': true\n }]\n }]\n };\n\n","import {OpMapper} from './types';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nexport const json: OpMapper[] = [\n {\n 'tfOpName': 'FFT',\n 'category': 'spectral',\n 'inputs': [{\n 'start': 0,\n 'name': 'x',\n 'type': 'tensor'}]\n },\n {\n 'tfOpName': 'IFFT',\n 'category': 'spectral',\n 'inputs': [{\n 'start': 0, 'name': 'x',\n 'type': 'tensor'}]\n },\n {\n 'tfOpName': 'RFFT',\n 'category': 'spectral',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {\n 'start': 1,\n 'name': 'fft_length',\n 'type': 'number',\n 'notSupported': true\n }\n ]\n },\n {\n 'tfOpName': 'IRFFT',\n 'category': 'spectral',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {\n 'start': 1,\n 'name': 'fft_length',\n 'type': 'number',\n 'notSupported': true\n }\n ]\n }\n ];\n\n","import {OpMapper} from './types';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nexport const json: OpMapper[] = [\n {\n 'tfOpName': 'Cast',\n 'category': 'transformation',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n ],\n 'attrs': [\n {\n 'tfName': 'SrcT',\n 'name': 'sdtype',\n 'type': 'dtype',\n 'notSupported': true\n },\n {\n 'tfName': 'DstT',\n 'name': 'dtype',\n 'type': 'dtype'}\n ]\n },\n {\n 'tfOpName': 'ExpandDims',\n 'category': 'transformation',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'axis', 'type': 'number'}\n ]\n },\n {\n 'tfOpName': 'MirrorPad',\n 'category': 'transformation',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'padding', 'type': 'number[]'},\n ],\n 'attrs': [{\n 'tfName': 'mode',\n 'name': 'mode',\n 'type': 'string'}]\n },\n {\n 'tfOpName': 'Pad',\n 'category': 'transformation',\n 'inputs': [\n {'start': 0, 'name': 'x', 'type': 'tensor'},\n {'start': 1, 'name': 'padding',
```

```
'type': 'number[]'],\n ],\n 'attrs': [{\n   'tfName': 'constant_value',\n   'name': 'constantValue',\n   'type': 'number',\n   'defaultValue': 0\n }],\n {\n   'tfOpName': 'PadV2',\n   'category': 'transformation',\n   'inputs': [\n     {'start': 0, 'name': 'x', 'type': 'tensor'},\n     {'start': 1, 'name': 'padding', 'type': 'number[]'},\n     {\n       'start': 2,\n       'name': 'constantValue',\n       'type': 'number',\n       'defaultValue': 0\n     }\n   ],\n   {\n     'tfOpName': 'Reshape',\n     'category': 'transformation',\n     'inputs': [\n       {'start': 0, 'name': 'x', 'type': 'tensor'},\n       {'start': 1, 'name': 'shape', 'type': 'number[]'}\n     ]\n   },\n   {\n     'tfOpName': 'Squeeze',\n     'category': 'transformation',\n     'inputs': [\n       {'start': 0, 'name': 'x', 'type': 'tensor'},\n       ],\n     'attrs': [{\n       'tfName': 'axis',\n       'tfDeprecatedName': 'squeeze_dims',\n       'name': 'axis',\n       'type': 'number[]'\n     }],\n     {\n       'tfOpName': 'SpaceToBatchND',\n       'category': 'transformation',\n       'inputs': [\n         {'start': 0, 'name': 'x', 'type': 'tensor'},\n         {'start': 1, 'name': 'blockShape', 'type': 'number[]'},\n         {'start': 2, 'name': 'paddings', 'type': 'number[]'}\n       ]\n     },\n     {\n       'tfOpName': 'BatchToSpaceND',\n       'category': 'transformation',\n       'inputs': [\n         {'start': 0, 'name': 'x', 'type': 'tensor'},\n         {'start': 1, 'name': 'blockShape', 'type': 'number[]'},\n         {'start': 2, 'name': 'crops', 'type': 'number[]'}\n       ]\n     },\n     {\n       'tfOpName': 'DepthToSpace',\n       'category': 'transformation',\n       'inputs': [\n         {'start': 0, 'name': 'x', 'type': 'tensor'},\n         ],\n       'attrs': [\n         {'tfName': 'block_size', 'name': 'blockSize', 'type': 'number'},\n         {'tfName': 'data_format', 'name': 'dataFormat', 'type': 'string'}\n       ]\n     },\n     {\n       'tfOpName': 'BroadcastTo',\n       'category': 'transformation',\n       'inputs': [\n         {'start': 0, 'name': 'x', 'type': 'tensor'},\n         {'start': 1, 'name': 'shape', 'type': 'number[]'},\n         ],\n       'attrs': [\n         ]\n     }\n   ],\n   'attrs': [\n     ]\n   ];\n };\n * license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n *\n\nimport {DataType, env} from '@tensorflow/tfjs-core';\nimport * as tensorflow from './data/compiled_api';\nimport {getRegisteredOp} from './custom_op/register';\nimport {getNodeNameAndIndex} from './executors/utils';\nimport * as arithmetic from './op_list/arithmetic';\nimport * as basicMath from './op_list/basic_math';\nimport * as control from './op_list/control';\nimport * as convolution from './op_list/convolution';\nimport * as creation from './op_list/creation';\nimport * as dynamic from './op_list/dynamic';\nimport * as evaluation from './op_list/evaluation';\nimport * as graph from './op_list/graph';\nimport * as hashTable from './op_list/hash_table';\nimport * as image from './op_list/image';\nimport * as logical from './op_list/logical';\nimport * as matrices from './op_list/matrices';\nimport * as normalization from './op_list/normalization';\nimport * as reduction from './op_list/reduction';\nimport * as sliceJoin from './op_list/slice_join';\nimport * as spectral from './op_list/spectral';\nimport * as transformation from './op_list/transformation';\nimport {Graph, InputParamValue, Node, OpMapper, ParamValue} from './types';\n\nexport class OperationMapper {\n  private static _instance: OperationMapper;\n  private opMappers: {[key: string]: OpMapper};\n\n  // Singleton instance for the mapper\n  public static get Instance() {\n    return this._instance || (this._instance = new this());\n  }\n\n  // Loads the op mapping from the JSON file.\n  private constructor() {\n    const ops = [\n      arithmetic, basicMath, control, convolution, creation, dynamic,\n      evaluation, logical, image, graph, matrices, normalization, reduction,\n      sliceJoin, spectral, transformation, hashTable\n    ];\n    const mappersJson: OpMapper[] = [].concat(...ops.map(op => op.json));\n    this.opMappers = mappersJson.reduce<{[key: string]: OpMapper}>(\n      (map, mapper: OpMapper) => {\n        map[mapper.tfOpName] = mapper;\n        return map;\n      },\n      {});\n  }\n\n  // Converts the model inference graph from Tensorflow GraphDef to local\n  // representation for TensorFlow.js API\n  transformGraph(\n    graph: tensorflow.IGraphDef,\n    signature: tensorflow.ISignatureDef = {}): Graph {\n    const tfNodes = graph.node;\n    const placeholders: Node[] = [];\n    const weights: Node[] = [];\n    const initNodes: Node[] = [];\n    const nodes = tfNodes.reduce<{[key: string]: Node}>((map, node) => {\n      map[node.name] = this.mapNode(node);\n      if (node.op.startsWith('Placeholder')) {\n        placeholders.push(map[node.name]);\n      } else if (node.op === 'Const')\n
```

```

{\n    weights.push(map[node.name]);\n    } else if (node.input == null || node.input.length === 0) {\n
initNodes.push(map[node.name]);\n    }\n    return map;\n    }, {});\n\n let inputs: Node[] = [];\n const outputs:
Node[] = [];\n let inputNodeNameToKey: {[key: string]: string} = {};\n let outputNodeNameToKey: {[key:
string]: string} = {};\n if (signature != null) {\n    inputNodeNameToKey =
this.mapSignatureEntries(signature.inputs);\n    outputNodeNameToKey =
this.mapSignatureEntries(signature.outputs);\n    }\n    const allNodes = Object.keys(nodes);\n
allNodes.forEach(key => {\n    const node = nodes[key];\n    node.inputNames.forEach(name => {\n    const
[nodeName, ] = getNodeNameAndIndex(name);\n    node.inputs.push(nodes[nodeName]);\n
nodes[nodeName].children.push(node);\n    });\n    });\n\n // if signature has not outputs set, add any node that
does not have\n // outputs.\n if (Object.keys(outputNodeNameToKey).length === 0) {\n
allNodes.forEach(key => {\n    const node = nodes[key];\n    if (node.children.length === 0) {\n
outputs.push(node);\n    }\n    });\n    } else {\n    Object.keys(outputNodeNameToKey).forEach(name => {\n
const [nodeName, ] = getNodeNameAndIndex(name);\n    const node = nodes[nodeName];\n    if (node !=
null) {\n    node.signatureKey = outputNodeNameToKey[name];\n    outputs.push(node);\n    }\n    });\n
}\n\n if (Object.keys(inputNodeNameToKey).length > 0) {\n
Object.keys(inputNodeNameToKey).forEach(name => {\n    const [nodeName, ] =
getNodeNameAndIndex(name);\n    const node = nodes[nodeName];\n    if (node) {\n    node.signatureKey
= inputNodeNameToKey[name];\n    inputs.push(node);\n    }\n    });\n    } else {\n    inputs =
placeholders;\n    }\n\n let functions = {};\n if (graph.library != null && graph.library.function != null) {\n
functions = graph.library.function.reduce((functions, func) => {\n    functions[func.signature.name] =
this.mapFunction(func);\n    return functions;\n    }, {} as {[key: string]: Graph});\n    }\n\n const result: Graph
=> {\n    {nodes, inputs, outputs, weights, placeholders, signature, functions};\n\n if (initNodes.length > 0) {\n
result.initNodes = initNodes;\n    }\n\n return result;\n    }\n\n private mapSignatureEntries(entries: {[k: string]:
tensorflow.ITensorInfo}) {\n    return Object.keys(entries || {}).reduce<{[key: string]: string}>((prev, curr)
=> {\n    prev[entries[curr].name] = curr;\n    return prev;\n    }, {});\n    }\n\n private mapNode(node:
tensorflow.INodeDef): Node {\n    // Unsupported ops will cause an error at run-time (not parse time), since\n //
they may not be used by the actual execution subgraph.\n    const mapper => getRegisteredOp(node.op) ||
this.opMappers[node.op] || {} as OpMapper;\n    if (node.attr == null) {\n    node.attr = {};\n    }\n\n const
newNode: Node = {\n    name: node.name,\n    op: node.op,\n    category: mapper.category,\n    inputNames:\n    (node.input ||\n    []).map(input => input.startsWith('^') ? input.substr(1) : input),\n    inputs: [],\n
children: [],\n    inputParams: {},\n    attrParams: {},\n    rawAttrs: node.attr\n    }; \n\n if (mapper.inputs !=
null) {\n    newNode.inputParams => mapper.inputs.reduce<{[key: string]: InputParamValue}>(\n
(map, param) => {\n    map[param.name] = {\n    type: param.type,\n    inputIndexStart:
param.start,\n    inputIndexEnd: param.end\n    };\n    return map;\n    },\n    {});\n    }\n    if (mapper.attrs != null) {\n    newNode.attrParams => mapper.attrs.reduce<{[key: string]:
ParamValue}>((map, param) => {\n    const type = param.type;\n    let value = undefined;\n    switch
(param.type) {\n    case 'string':\n    value = getStringParam(\n    node.attr, param.tfName,
param.defaultValue as string);\n    if (value === undefined && !!param.tfDeprecatedName) {\n
value = getStringParam(\n    node.attr, param.tfDeprecatedName,\n    param.defaultValue as
string);\n    }\n    break;\n    case 'string[]':\n    value = getStringArrayParam(\n
node.attr, param.tfName, param.defaultValue as string[]);\n    if (value === undefined &&
!!param.tfDeprecatedName) {\n    value = getStringArrayParam(\n    node.attr,
param.tfDeprecatedName,\n    param.defaultValue as string[]);\n    }\n    break;\n    case 'number':\n    value = getNumberParam(\n    node.attr, param.tfName,\n
(param.defaultValue || 0) as number);\n    if (value === undefined && !!param.tfDeprecatedName) {\n
value = getNumberParam(\n    node.attr, param.tfDeprecatedName,\n
param.defaultValue as number);\n    }\n    break;\n    case 'number[]':\n    value =
getNumericArrayParam(\n    node.attr, param.tfName, param.defaultValue as number[]);\n    if

```

```

(value === undefined && !param.tfDeprecatedName) {\n          value = getNumericArrayParam(\n
node.attr, param.tfDeprecatedName,\n          param.defaultValue as number[]);\n          }\n
break;\n      case 'bool':\n          value = getBoolParam(\n          node.attr, param.tfName,\n          param.defaultValue as boolean);\n          if (value === undefined && !param.tfDeprecatedName) {\n
value = getBoolParam(\n          node.attr, param.tfDeprecatedName,\n          param.defaultValue as\n          boolean);\n          }\n          break;\n      case 'bool[]':\n          value = getBoolArrayParam(\n          node.attr, param.tfName, param.defaultValue as boolean[]);\n          if (value === undefined &&\n          !param.tfDeprecatedName) {\n          value = getBoolArrayParam(\n          node.attr,\n          param.tfDeprecatedName,\n          param.defaultValue as boolean[]);\n          }\n          break;\n      case 'shape':\n          value = getTensorShapeParam(\n          node.attr, param.tfName, param.defaultValue\n          as number[]);\n          if (value === undefined && !param.tfDeprecatedName) {\n          value =\n          getTensorShapeParam(\n          node.attr, param.tfDeprecatedName,\n          param.defaultValue as\n          number[]);\n          }\n          break;\n      case 'shape[]':\n          value =\n          getTensorShapeArrayParam(\n          node.attr, param.tfName, param.defaultValue as number[][]);\n          if (value === undefined && !param.tfDeprecatedName) {\n          value = getTensorShapeArrayParam(\n          node.attr, param.tfDeprecatedName,\n          param.defaultValue as number[][]);\n          }\n          break;\n      case 'dtype':\n          value = getDtypeParam(\n          node.attr, param.tfName,\n          param.defaultValue as DataType);\n          if (value === undefined && !param.tfDeprecatedName) {\n
value = getDtypeParam(\n          node.attr, param.tfDeprecatedName,\n          param.defaultValue as\n          DataType);\n          }\n          break;\n      case 'dtype[]':\n          value = getDtypeArrayParam(\n          node.attr, param.tfName, param.defaultValue as DataType[]);\n          if (value === undefined &&\n          !param.tfDeprecatedName) {\n          value = getDtypeArrayParam(\n          node.attr,\n          param.tfDeprecatedName,\n          param.defaultValue as DataType[]);\n          }\n          break;\n      case 'func':\n          value = getFuncParam(\n          node.attr, param.tfName, param.defaultValue as\n          string);\n          if (value === undefined && !param.tfDeprecatedName) {\n          value = getFuncParam(\n          node.attr, param.tfDeprecatedName,\n          param.defaultValue as string);\n          }\n          break;\n      case 'tensor':\n      case 'tensors':\n          break;\n      default:\n          throw new\n          Error(\n          `Unsupported param type: ${param.type} for op: ${node.op}`);\n          }\n
map[param.name] = {value, type};\n      return map;\n      }, {});\n      }\n      return newNode;\n      }\n      // map\n      the TFunctionDef to TFJS graph object\n      private mapFunction(functionDef: tensorflow.IFunctionDef): Graph {\n
const tfNodes = functionDef.nodeDef;\n      const placeholders: Node[] = [];\n      const weights: Node[] = [];\n      let\n      nodes: {[key: string]: Node} = {};\n      if (tfNodes != null) {\n      nodes = tfNodes.reduce<[key: string]:\n      Node>((map, node) => {\n      map[node.name] = this.mapNode(node);\n      if (node.op === 'Const') {\n
weights.push(map[node.name]);\n      }\n      return map;\n      }, {});\n      }\n      const inputs: Node[] = [];\n      const\n      outputs: Node[] = [];\n      functionDef.signature.inputArg.forEach(arg => {\n      const [nodeName, ] =\n      getNodeNameAndIndex(arg.name);\n      const node: Node = {\n      name: nodeName,\n      op: 'Placeholder',\n      inputs: [],\n      inputNames: [],\n      category: 'graph',\n      inputParams: {},\n      attrParams: {dtype: {value:\n      parseDtypeParam(arg.type), type: 'dtype'}},\n      children: []\n      };\n      node.signatureKey = arg.name;\n      inputs.push(node);\n      nodes[nodeName] = node;\n      });\n      const allNodes = Object.keys(nodes);\n      allNodes.forEach(key => {\n      const node = nodes[key];\n      node.inputNames.forEach(name => {\n      const\n      [nodeName, ] = getNodeNameAndIndex(name);\n      node.inputs.push(nodes[nodeName]);\n      nodes[nodeName].children.push(node);\n      });\n      });\n      const returnNodeMap = functionDef.ret;\n      functionDef.signature.outputArg.forEach(output => {\n      const [nodeName, index] =\n      getNodeNameAndIndex(returnNodeMap[output.name]);\n      const node = nodes[nodeName];\n      if (node != null)\n      {\n      node.defaultOutput = index;\n      outputs.push(node);\n      }\n      });\n      const signature =\n      this.mapArgsToSignature(functionDef);\n      return {nodes, inputs, outputs, weights, placeholders, signature};\n      }\n      }\n      private mapArgsToSignature(functionDef: tensorflow.IFunctionDef):\n      tensorflow.ISignatureDef {\n      return {\n      methodName: functionDef.signature.name,\n      inputs: functionDef.signature.inputArg.reduce(\n

```

```
(map, arg) => {\n    map[arg.name] = this.mapArgToTensorInfo(arg);\n    return map;\n },\n {\n as {[key: string]: tensorflow.ITensorInfo}),\n outputs: functionDef.signature.outputArg.reduce(\n (map,\n arg) => {\n    map[arg.name] = this.mapArgToTensorInfo(arg, functionDef.ret);\n    return map;\n },\n {\n } as {[key: string]: tensorflow.ITensorInfo}),\n );\n}\n\n private mapArgToTensorInfo(\n arg:\n tensorflow.OpDef.IArgDef,\n nameMap?: {[key: string]: string}): tensorflow.ITensorInfo {\n let name =\n arg.name;\n if (nameMap != null) {\n name = nameMap[name];\n }\n return {name, dtype: arg.type};\n }\n\n\n\nexport function decodeBase64(text: string): string {\n const global = env().global;\n if (typeof global.atob\n !== 'undefined') {\n return global.atob(text);\n } else if (typeof Buffer !== 'undefined') {\n return new\n Buffer(text, 'base64').toString();\n } else {\n throw new Error(\n 'Unable to decode base64 in this\n environment. ' +\n 'Missing built-in atob() or Buffer()');\n }\n }\n\n\n\nexport function parseStringParam(s: []string,\n keepCase: boolean): string {\n const value = \n Array.isArray(s) ? String.fromCharCode.apply(null, s) :\n decodeBase64(s);\n return keepCase ? value : value.toLowerCase();\n }\n\n\n\nexport function getStringParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def: string,\n keepCase = false): string {\n const param\n = attrs[name];\n if (param != null) {\n return parseStringParam(param.s, keepCase);\n }\n return\n def;\n }\n\n\n\nexport function getBoolParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def:\n boolean): boolean {\n const param = attrs[name];\n return param ? param.b : def;\n }\n\n\n\nexport function\n getNumberParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def: number): number {\n\n const param = attrs[name] || {};\n const value = \n param['i'] != null ? param['i'] : (param['f'] != null ? param['f'] :\n def);\n return (typeof value === 'number') ? value : parseInt(value, 10);\n }\n\n\n\nexport function\n parseDtypeParam(value: string|tensorflow.DataType): DataType {\n if (typeof (value) === 'string') {\n //\n tslint:disable-next-line:no-any\n value = tensorflow.DataType[value as any];\n }\n switch (value) {\n case\n tensorflow.DataType.DT_FLOAT:\n return 'float32';\n case tensorflow.DataType.DT_INT32:\n case\n tensorflow.DataType.DT_INT64:\n case tensorflow.DataType.DT_INT8:\n case\n tensorflow.DataType.DT_UINT8:\n return 'int32';\n case tensorflow.DataType.DT_BOOL:\n return 'bool';\n case\n tensorflow.DataType.DT_DOUBLE:\n return 'float32';\n case tensorflow.DataType.DT_STRING:\n return 'string';\n default:\n // Unknown dtype error will happen at runtime (instead of parse time),\n // since\n these nodes might not be used by the actual subgraph execution.\n return null;\n }\n }\n }\n\n\n\nexport function\n getFuncParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def: string): string {\n const\n param = attrs[name];\n if (param && param.func) {\n return param.func.name;\n }\n return def;\n }\n\n\n\nexport\n function getDtypeParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def: DataType):\n DataType {\n const param = attrs[name];\n if (param && param.type) {\n return\n parseDtypeParam(param.type);\n }\n return def;\n }\n\n\n\nexport function getDtypeArrayParam(\n attrs: {[key:\n string]: tensorflow.IAttrValue}, name: string, def: DataType[]): DataType[] {\n const param = attrs[name];\n if\n (param && param.list && param.list.type) {\n return param.list.type.map(v => parseDtypeParam(v));\n }\n\n return def;\n }\n\n\n\nexport function parseTensorShapeParam(shape: tensorflow.ITensorShape): number[]|\n undefined {\n if (shape.unknownRank) {\n return undefined;\n }\n if (shape.dim != null) {\n return\n shape.dim.map(\n dim => \n (typeof dim.size === 'number') ? dim.size : parseInt(dim.size, 10));\n }\n\n return [];\n }\n\n\n\nexport function getTensorShapeParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name:\n string, def?: number[]): number[]|undefined {\n const param = attrs[name];\n if (param && param.shape) {\n\n return parseTensorShapeParam(param.shape);\n }\n return def;\n }\n\n\n\nexport function\n getNumericArrayParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def: number[]): number[] {\n const param =\n attrs[name];\n if (param) {\n return ((param.list.f && param.list.f.length ? param.list.f :\n\n param.list.i) ||\n [])\n .map(v => (typeof v === 'number') ? v : parseInt(v, 10));\n }\n\n return\n def;\n }\n\n\n\nexport function\n getStringArrayParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name: string, def:\n string[], keepCase = false): string[] {\n const param = attrs[name];\n if (param && param.list && param.list.s)\n {\n return param.list.s.map((v) => {\n return parseStringParam(v, keepCase);\n });\n }\n\n return\n def;\n }\n\n\n\nexport function\n getTensorShapeArrayParam(\n attrs: {[key: string]: tensorflow.IAttrValue}, name:\n string, def: number[][]): number[][] {\n const param = attrs[name];\n if (param && param.list &&
```

```

param.list.shape) {\n  return param.list.shape.map((v) => {\n    return parseTensorShapeParam(v);\n  });\n }\n
return def;\n}\n\nexport function getBoolArrayParam(\n  attrs: {[key: string]: tensorflow.IAttrValue}, name:
string,\n  def: boolean[]): boolean[] {\n  const param = attrs[name];\n  if (param && param.list && param.list.b)
{\n    return param.list.b;\n  }\n  return def;\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {DataType, Tensor} from '@tensorflow/tfjs-core';\n\nimport {NamedTensorsMap} from
'../data/types';\nimport {ExecutionContext} from '../executor/execution_context';\nimport {getTensor} from
'../executors/utils';\nimport {getBoolArrayParam, getBoolParam, getDtypeArrayParam, getDtypeParam,
getNumberParam, getNumericArrayParam, getStringArrayParam, getStringParam, getTensorShapeArrayParam,
getTensorShapeParam} from './operation_mapper';\nimport {GraphNode, Node, ValueType} from
'./types';\n\n/**\n * Helper class for lookup inputs and params for nodes in the model graph.\n */\nexport class
NodeValueImpl implements GraphNode {\n  public readonly inputs: Tensor[] = [];\n  public readonly attrs: {[key:
string]: ValueType} = {};\n  constructor(\n    private node: Node, private tensorMap: NamedTensorsMap,\n    private context: ExecutionContext) {\n    this.inputs = node.inputNames.map(name => this.getInput(name));\n    if
(node.rawAttrs != null) {\n      this.attrs = Object.keys(node.rawAttrs)\n        .reduce((attrs: {[key: string]:
ValueType}, key) => {\n          attrs[key] = this.getAttr(key);\n          return attrs;\n        }, {});\n    }\n  }\n\n  /**\n * Return the value of the attribute or input param.\n * @param name String: name of
attribute or input param.\n */\n  private getInput(name: string): Tensor {\n    return getTensor(name,
this.tensorMap, this.context);\n  }\n\n  /**\n * Return the value of the attribute or input param.\n * @param name
String: name of attribute or input param.\n */\n  private getAttr(name: string, defaultValue?: ValueType):
ValueType {\n    const value = this.node.rawAttrs[name];\n    if (value.tensor != null) {\n      return getTensor(name,
this.tensorMap, this.context);\n    }\n    if (value.i != null || value.f != null) {\n      return
getNumberParam(this.node.rawAttrs, name, defaultValue as number);\n    }\n    if (value.s != null) {\n      return
getStringParam(this.node.rawAttrs, name, defaultValue as string);\n    }\n    if (value.b != null) {\n      return
getBoolParam(this.node.rawAttrs, name, defaultValue as boolean);\n    }\n    if (value.shape != null) {\n      return
getTensorShapeParam(\n        this.node.rawAttrs, name, defaultValue as number[]);\n    }\n    if (value.type != null)
{\n      return getDtypeParam(this.node.rawAttrs, name, defaultValue as DataType);\n    }\n    if (value.list != null)
{\n      if (value.list.i != null || value.list.f != null) {\n        return getNumericArrayParam(\n
this.node.rawAttrs, name, defaultValue as number[]);\n      }\n      if (value.list.s != null) {\n        return
getStringArrayParam(\n          this.node.rawAttrs, name, defaultValue as string[]);\n      }\n      if (value.list.shape
!= null) {\n        return getTensorShapeArrayParam(\n          this.node.rawAttrs, name, defaultValue as
number[][]);\n      }\n      if (value.list.b != null) {\n        return getBoolArrayParam(\n          this.node.rawAttrs,
name, defaultValue as boolean[]);\n      }\n      if (value.list.type != null) {\n        return getDtypeArrayParam(\n
this.node.rawAttrs, name, defaultValue as DataType[]);\n      }\n    }\n    return defaultValue;\n  }\n}\n\n"/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *
=====
*\n\n/**\n * This file exports ops used by the converters executors. By default it\n * re-exports all ops. In a custom

```

build this is aliased to a file that will only exports ops for a given model.json.
/* only exports ops for a given model.json.
*/
@license
Copyright 2018 Google LLC. All Rights Reserved.
Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS"
BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

```
=====  
import {Tensor} from '@tensorflow/tfjs-core';  
// tslint:disable-next-line: no-imports-from-dist  
import * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';  
import {NamedTensorsMap} from '../data/types';  
import {ExecutionContext} from '../executor/execution_context';  
import {InternalOpExecutor, Node} from '../types';  
import {getParamValue} from './utils';  
export const executeOp: InternalOpExecutor =  
(node: Node, tensorMap: NamedTensorsMap, context: ExecutionContext): Tensor[] => {  
  switch (node.op) {  
    case 'BiasAdd':  
    case 'AddV2':  
    case 'Add':  
      return [tfOps.add(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'AddN':  
      return [tfOps.addN(  
        getParamValue('tensors', node, tensorMap, context) as Tensor[])];  
    case 'FloorMod':  
    case 'Mod':  
      return [tfOps.mod(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'Mul':  
      return [tfOps.mul(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'RealDiv':  
    case 'Div':  
      return [tfOps.div(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'DivNoNaN':  
      return [tfOps.divNoNaN(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'FloorDiv':  
      return [tfOps.floorDiv(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'Sub':  
      return [tfOps.sub(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'Minimum':  
      return [tfOps.minimum(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'Maximum':  
      return [tfOps.maximum(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'Pow':  
      return [tfOps.pow(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    case 'SquaredDifference':  
      return [tfOps.squaredDifference(  
        getParamValue('a', node, tensorMap, context) as Tensor,  
        getParamValue('b', node, tensorMap, context) as Tensor)];  
    default:  
      throw TypeError(`Node type ${node.op} is not implemented`);  
  }  
};  
export const CATEGORY = 'arithmetic';  
/*  
@license  
Copyright 2018 Google LLC. All Rights Reserved.  
Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at  
http://www.apache.org/licenses/LICENSE-2.0  
Unless required by applicable law or agreed to in writing,  
software distributed under the License is distributed on an "AS IS"  
BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.
```

```
=====  
import {Tensor} from '@tensorflow/tfjs-core';  
// tslint:disable-next-line: no-imports-from-dist  
import * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';  
import {NamedTensorsMap} from '../data/types';  
import {ExecutionContext} from '../executor/execution_context';  
import {InternalOpExecutor, Node} from '../types';  
import {getParamValue, getTensor} from './utils';  
export const executeOp: InternalOpExecutor =  
(node: Node, tensorMap: NamedTensorsMap, context: ExecutionContext): Tensor[]
```

```

=> {\n  switch (node.op) {\n    case 'Abs':\n      return [tfOps.abs(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Acos':\n      return [tfOps.acos(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Acosh':\n      return [tfOps.acosh(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Asin':\n      return [tfOps.asin(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Asinh':\n      return [tfOps.asinh(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Atan':\n      return [tfOps.atan(\n        getParamValue('x', node, tensorMap, context) as Tensor,\n        getParamValue('y', node, tensorMap, context) as\n        Tensor)];\n    case 'Atanh':\n      return [tfOps.atanh(\n        getParamValue('x', node, tensorMap, context) as\n        Tensor)];\n    case 'Ceil':\n      return [tfOps.ceil(\n        getParamValue('x', node, tensorMap, context) as\n        Tensor)];\n    case 'Complex':\n      return [tfOps.complex(\n        getParamValue('real', node, tensorMap,\n        context) as Tensor,\n        getParamValue('imag', node, tensorMap, context) as Tensor)];\n    case 'Cos':\n      return [tfOps.cos(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Cosh':\n      return [tfOps.cosh(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Elu':\n      return [tfOps.elu(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Erf':\n      return [tfOps.erf(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Exp':\n      return [tfOps.exp(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Expml': {\n      return [tfOps.expml(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case\n    'Floor':\n      return [tfOps.floor(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case\n    'Log':\n      return [tfOps.log(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case\n    'Log1p': {\n      return [tfOps.log1p(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case 'Imag':\n      return [tfOps.imag(\n        getParamValue('x', node, tensorMap, context) as\n        Tensor)];\n    case 'Neg':\n      return [tfOps.neg(\n        getParamValue('x', node, tensorMap, context) as\n        Tensor)];\n    case 'Reciprocal': {\n      return [tfOps.reciprocal(\n        getParamValue('x', node, tensorMap,\n        context) as Tensor)];\n    }\n    case 'Real':\n      return [tfOps.real(\n        getParamValue('x', node,\n        tensorMap, context) as Tensor)];\n    case 'Relu':\n      return [tfOps.relu(\n        getParamValue('x', node,\n        tensorMap, context) as Tensor)];\n    case 'Round': {\n      return [tfOps.round(\n        getParamValue('x',\n        node, tensorMap, context) as Tensor)];\n    }\n    case 'Selu':\n      return [tfOps.selu(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Sigmoid':\n      return [tfOps.sigmoid(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Sin':\n      return [tfOps.sin(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case 'Sign': {\n      return [tfOps.sign(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case 'Sinh': {\n      return [tfOps.sinh(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case 'Softplus': {\n      return\n      [tfOps.softplus(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case 'Sqrt': {\n      return [tfOps.sqrt(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case\n    'Square': {\n      return [tfOps.square(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    }\n    case 'Tanh': {\n      return [tfOps.tanh(\n        getParamValue('x', node, tensorMap, context) as\n        Tensor)];\n    }\n    case 'Tan':\n      return [tfOps.tan(\n        getParamValue('x', node, tensorMap,\n        context) as Tensor)];\n    case 'ClipByValue':\n      return [tfOps.clipByValue(\n        getParamValue('x',\n        node, tensorMap, context) as Tensor,\n        getParamValue('clipValueMin', node, tensorMap, context) as\n        number,\n        getParamValue('clipValueMax', node, tensorMap, context) as\n        number)];\n    case\n    'Relu6':\n      return [tfOps.relu6(\n        getParamValue('x', node, tensorMap, context) as Tensor)];\n    case\n    'Rsqrt':\n      return [tfOps.rsqrt(\n        getTensor(node.inputNames[0], tensorMap, context))];\n    case\n    'Prod':\n      return [tfOps.prod(\n        getParamValue('x', node, tensorMap, context) as Tensor,\n        getParamValue('axes', node, tensorMap, context) as number[])];\n    case 'LeakyRelu':\n      return\n      [tfOps.leakyRelu(\n        getParamValue('x', node, tensorMap, context) as Tensor,\n        getParamValue('alpha', node, tensorMap, context) as number)];\n    case 'Prelu':\n      return [tfOps.prelu(\n        getParamValue('x', node, tensorMap, context) as Tensor,\n        getParamValue('alpha', node, tensorMap,

```



```

context) as Tensor]);\n      default:\n        throw TypeError(`Node type ${node.op} is not implemented`);\n      }\n    };\n\nexport const CATEGORY = 'basic_math';\n","/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n * =====\n *\n * This differs from util.assertShapesMatch in that it allows values of\n * negative one, an undefined size of a dimension, in a shape to match\n * anything.\n *\n */\nimport {Tensor, util} from '@tensorflow/tfjs-core';\n\n/**\n * Used by TensorList and TensorArray to verify if elementShape matches, support\n * negative value as the dim shape.\n *\n * @param shapeA\n * @param shapeB\n * @param errorMessagePrefix\n */\nexport function\nassertShapesMatchAllowUndefinedSize(\n  shapeA: number|number[], shapeB: number|number[],\n  errorMessagePrefix = "): void {\n  // constant shape means unknown rank\n  if (typeof shapeA === 'number' || typeof\n  shapeB === 'number') {\n    return;\n  }\n  util.assert(\n    shapeA.length === shapeB.length,\n    () =>\n    errorMessagePrefix + `Shapes ${shapeA} and ${shapeB} must match`);\n  for (let i = 0; i < shapeA.length; i++) {\n    const dim0 = shapeA[i];\n    const dim1 = shapeB[i];\n    util.assert(\n      dim0 < 0 || dim1 < 0 || dim0 === dim1,\n      () =>\n      errorMessagePrefix + `Shapes ${shapeA} and ${shapeB} must match`);\n  }\n}\n\nexport\nfunction fullDefinedShape(elementShape: number|number[]): boolean {\n  if (typeof elementShape === 'number' ||\n  elementShape.some(dim => dim < 0)) {\n    return false;\n  }\n  return true;\n}\n\n/**\n * Generate the output element\n shape from the list elementShape, list tensors\n * and input param.\n *\n * @param listElementShape\n * @param\n tensors\n * @param elementShape\n */\nexport function inferElementShape(\n  listElementShape:\n  number|number[], tensors: Tensor[],\n  elementShape: number|number[]): number[] {\n  let partialShape =\n  mergeElementShape(listElementShape, elementShape);\n  const notfullDefinedShape =\n  !fullDefinedShape(partialShape);\n  if (notfullDefinedShape && tensors.length === 0) {\n    throw new Error(\n    `Tried to calculate elements of an empty list` +\n    ` with non-fully-defined elementShape: ${partialShape}`);\n  }\n  if (notfullDefinedShape) {\n    tensors.forEach(tensor => {\n      partialShape =\n      mergeElementShape(tensor.shape, partialShape);\n    });\n  }\n  if (!fullDefinedShape(partialShape)) {\n    throw\n    new Error(`Non-fully-defined elementShape: ${partialShape}`);\n  }\n  return partialShape as\n  number[];\n}\n\nexport function mergeElementShape(\n  elementShapeA: number|number[], elementShapeB:\n  number|number[]): number|\n  number[] {\n  if (typeof elementShapeA === 'number') {\n    return\n    elementShapeB;\n  }\n  if (typeof elementShapeB === 'number') {\n    return elementShapeA;\n  }\n  if\n  (elementShapeA.length !== elementShapeB.length) {\n    throw new Error(`Incompatible ranks during merge:\n  ${elementShapeA} vs. ${\n    elementShapeB}`);\n  }\n  const result: number[] = [];\n  for (let i = 0; i <\n  elementShapeA.length; ++i) {\n    const dim0 = elementShapeA[i];\n    const dim1 = elementShapeB[i];\n    if (dim0\n  >= 0 && dim1 >= 0 && dim0 !== dim1) {\n      throw new Error(`Incompatible shape during merge:\n  ${elementShapeA} vs. ${\n    elementShapeB}`);\n    }\n    result[i] = dim0 >= 0 ? dim0 : dim1;\n  }\n  return\n  result;\n}\n","/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *\n * =====\n *\n */\nimport {concat, DataType, keep, reshape, scalar, slice, stack, Tensor, tensor, tidy, unstack} from\n '@tensorflow/tfjs-core';\nimport {assertShapesMatchAllowUndefinedSize} from './tensor_utils';\nexport

```

```

interface TensorWithState {\n  tensor?: Tensor;\n  written?: boolean;\n  read?: boolean;\n  cleared?:
boolean;\n}\n/**\n * The TensorArray object keeps an array of Tensors. It\n * allows reading from the array and
writing to the array.\n */\nexport class TensorArray {\n  private tensors: TensorWithState[] = [];\n  private closed_ =
false;\n  readonly idTensor: Tensor;\n  constructor(\n    readonly name: string, readonly dtype: DataType, private
maxSize: number,\n    private elementShape: number[], readonly identicalElementShapes: boolean,\n    readonly dynamicSize: boolean, readonly clearAfterRead: boolean) {\n    this.idTensor = scalar(0);\n    keep(this.idTensor);\n  }\n  get id() {\n    return this.idTensor.id;\n  }\n  get closed() {\n    return this.closed_;\n  }\n  /**\n * Dispose
the tensors and idTensor and mark the TensorArray as closed.\n */\n  clearAndClose(keepIds?: Set<number>) {\n
this.tensors.forEach(tensor => {\n    if (keepIds == null || !keepIds.has(tensor.tensor.id)) {\n
tensor.tensor.dispose();\n    }\n  });\n  this.tensors = [];\n  this.closed_ = true;\n  this.idTensor.dispose();\n
}\n  size(): number {\n    return this.tensors.length;\n  }\n  /**\n * Read the value at location index in the
TensorArray.\n * @param index Number the index to read from.\n */\n  read(index: number): Tensor {\n    if
(this.closed_) {\n      throw new Error(`TensorArray ${this.name} has already been closed.`);\n    }\n    if (index <
0 || index >= this.size()) {\n      throw new Error(`Tried to read from index ${index}, but array size is: ${\n
this.size()}`);\n    }\n    const tensorWithState = this.tensors[index];\n    if (tensorWithState.cleared) {\n      throw
new Error(\n      `TensorArray ${this.name}: Could not read index ${\n        index} twice because it was
cleared after a previous read` +\n      `(perhaps try setting clear_after_read = false?);`);\n    }\n    if
(this.clearAfterRead) {\n      tensorWithState.cleared = true;\n    }\n    tensorWithState.read = true;\n    return
tensorWithState.tensor;\n  }\n  /**\n * Helper method to read multiple tensors from the specified indices.\n */\n
readMany(indices: number[]): Tensor[] {\n    return indices.map(index => this.read(index));\n  }\n  /**\n * Write
value into the index of the TensorArray.\n * @param index number the index to write to.\n * @param tensor\n
*/\n  write(index: number, tensor: Tensor) {\n    if (this.closed_) {\n      throw new Error(`TensorArray ${this.name}
has already been closed.`);\n    }\n    if (index < 0 || !this.dynamicSize && index >= this.maxSize) {\n      throw
new Error(`Tried to write to index ${\n      index}, but array is not resizeable and size is: ${this.maxSize}`);\n
}\n    const t = this.tensors[index] || {};\n    if (tensor.dtype !== this.dtype) {\n      throw new Error(`TensorArray
${\n      this.name}: Could not write to TensorArray index ${index},\n      because the value dtype is ${\n
tensor.dtype}, but TensorArray dtype is ${this.dtype}.`);\n    }\n    // Set the shape for the first time write to
unknown shape tensor array\n    if (this.size() === 0 &&\n      (this.elementShape == null || this.elementShape.length
=== 0)) {\n      this.elementShape = tensor.shape;\n    }\n    assertShapesMatchAllowUndefinedSize(\n
this.elementShape, tensor.shape,\n    `TensorArray ${this.name}: Could not write to TensorArray index ${\n
index}.`);\n    if (t.read) {\n      throw new Error(\n      `TensorArray ${this.name}: Could not write to
TensorArray index ${\n        index}, because it has already been read.`);\n    }\n    if (t.written) {\n      throw
new Error(\n      `TensorArray ${this.name}: Could not write to TensorArray index ${\n        index}, because
it has already been written.`);\n    }\n    t.tensor = tensor;\n    keep(tensor);\n    t.written = true;\n    this.tensors[index] = t;\n  }\n  /**\n * Helper method to write multiple tensors to the specified indices.\n */\n
writeMany(indices: number[], tensors: Tensor[]) {\n    if (indices.length !== tensors.length) {\n      throw new
Error(\n      `TensorArray ${this.name}: could not write multiple tensors,` +\n      `because the index size: ${\n
indices.length} is not the same as tensors size: ${\n      tensors.length}.`);\n    }\n    indices.forEach((i,
index) => this.write(i, tensors[index]));\n  }\n  /**\n * Return selected values in the TensorArray as a packed
Tensor. All of\n * selected values must have been written and their shapes must all match.\n * @param [indices]
number[] Optional. Taking values in [0, max_value). If the\n * TensorArray is not dynamic, max_value=size(). If
not specified returns\n * all tensors in the original order.\n * @param [dtype]\n */\n  gather(indices?: number[],
dtype?: DataType): Tensor {\n    if (!dtype && dtype !== this.dtype) {\n      throw new Error(`TensorArray dtype is
${\n      this.dtype} but gather requested dtype ${dtype}`);\n    }\n    if (!indices) {\n      indices = [];\n      for (let
i = 0; i < this.size(); i++) {\n        indices.push(i);\n      }\n    } else {\n      indices = indices.slice(0, this.size());\n
}\n    if (indices.length === 0) {\n      return tensor([], [0].concat(this.elementShape));\n    }\n    // Read all the
PersistentTensors into a vector to keep track of\n    // their memory.\n    const tensors = this.readMany(indices);\n    assertShapesMatchAllowUndefinedSize(\n
this.elementShape, tensors[0].shape, "TensorArray shape mismatch:

```

```

);
return stack(tensors, 0);
}

/**
 * Return the values in the TensorArray as a concatenated Tensor.
 */
concat(dtype?: DataType): Tensor {
  if (!dtype && dtype !== this.dtype) {
    throw new Error(`TensorArray dtype is ${this.dtype} but concat requested dtype ${dtype}`);
  }
  if (this.size() === 0) {
    return tensor([], [0].concat(this.elementShape));
  }
  const indices = [];
  for (let i = 0; i < this.size(); i++) {
    indices.push(i);
  }
  // Collect all the tensors from the tensors array.
  const tensors = this.readMany(indices);
  assertShapesMatchAllowUndefinedSize(this.elementShape, tensors[0].shape, `TensorArray shape mismatch: tensor array shape (${this.elementShape}) vs first tensor shape (${tensors[0].shape})`);
  return concat(tensors, 0);
}

/**
 * Scatter the values of a Tensor in specific indices of a TensorArray.
 * @param indices nummber[] values in [0, max_value). If the TensorArray is not dynamic, max_value=size().
 * @param tensor Tensor input tensor.
 */
scatter(indices: number[], tensor: Tensor) {
  if (tensor.dtype !== this.dtype) {
    throw new Error(`TensorArray dtype is ${this.dtype} but tensor has dtype ${tensor.dtype}`);
  }
  if (indices.length !== tensor.shape[0]) {
    throw new Error(`Expected len(indices) == tensor.shape[0], but saw: ${indices.length} vs. ${tensor.shape[0]}`);
  }
  const maxIndex = Math.max(...indices);
  if (!this.dynamicSize && maxIndex >= this.maxSize) {
    throw new Error(`Max index must be < array size (${maxIndex} vs. ${this.maxSize})`);
  }
  this.writeMany(indices, unstack(tensor, 0));
}

/**
 * Split the values of a Tensor into the TensorArray.
 * @param length number[] with the lengths to use when splitting value along its first dimension.
 * @param tensor Tensor, the tensor to split.
 */
split(length: number[], tensor: Tensor) {
  if (tensor.dtype !== this.dtype) {
    throw new Error(`TensorArray dtype is ${this.dtype} but tensor has dtype ${tensor.dtype}`);
  }
  let totalLength = 0;
  const cumulativeLengths = length.map(len => {
    totalLength += len;
    return totalLength;
  });
  if (totalLength !== tensor.shape[0]) {
    throw new Error(`Expected sum of lengths to be equal to tensor.shape[0], but sum of lengths is ${totalLength}, and tensor's shape is: ${tensor.shape}`);
  }
  if (!this.dynamicSize && length.length !== this.maxSize) {
    throw new Error(`TensorArray's size is not equal to the size of lengths (${this.maxSize} vs. ${length.length}), and the TensorArray is not marked as dynamically resizable`);
  }
  const elementPerRow = totalLength === 0 ? 0 : tensor.size / totalLength;
  const tensors: Tensor[] = [];
  tidy(() => {
    tensor = reshape(tensor, [1, totalLength, elementPerRow]);
    for (let i = 0; i < length.length; ++i) {
      const previousLength = (i === 0) ? 0 : cumulativeLengths[i - 1];
      const indices = [0, previousLength, 0];
      const sizes = [1, length[i], elementPerRow];
      tensors[i] = reshape(slice(tensor, indices, sizes), this.elementShape);
    }
    return tensors;
  });
  const indices = [];
  for (let i = 0; i < length.length; i++) {
    indices[i] = i;
  }
  this.writeMany(indices, tensors);
}
}

/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
=====
import {concat, DataType, keep, reshape, scalar, slice, stack, Tensor, tensor, tidy, unstack} from
'@tensorflow/tfjs-core';
import {assertShapesMatchAllowUndefinedSize, inferElementShape, mergeElementShape} from './tensor_utils';

/**
 * TensorList stores a container of `tf.Tensor` objects, which are accessible via tensors field.
 * In order to get a copy of the underlying list, use the copy method:
 * TensorList b = a.copy();
 * b.tensors().pushBack(t); // This does not modify a.tensors().
 * Note that this is not a deep copy: the memory locations of the underlying tensors will still point to the same locations of the corresponding tensors in the original.
 */
export class TensorList {
  readonly idTensor: Tensor;
  maxNumElements: number;
  get id() {
    return this.idTensor.id;
  }
  /**
   * @param tensors list of tensors
   * @param elementShape shape of each tensor, this can be a single number (any shape is allowed) or partial shape (dim = -1).
   * @param elementDtype data type of each tensor
   * @param maxNumElements The

```

```

maximum allowed size of `tensors`. Defaults to -1\n * meaning that the size of `tensors` is unbounded.\n *\n
constructor(\n  readonly tensors: Tensor[], readonly elementShape: number|number[],\n  readonly
elementDtype: DataType, maxNumElements = -1) {\n  if (tensors != null) {\n    tensors.forEach(tensor => {\n
if (elementDtype !== tensor.dtype) {\n      throw new Error(`Invalid data types; op elements ${\n
elementDtype}, but list elements ${tensor.dtype}`);\n    }\n    assertShapesMatchAllowUndefinedSize(\n
elementShape, tensor.shape, 'TensorList shape mismatch: ');\n    keep(tensor);\n  });\n  }\n  this.idTensor =
scalar(0);\n  this.maxNumElements = maxNumElements;\n  keep(this.idTensor);\n }\n\n /**\n * Get a new
TensorList containing a copy of the underlying tensor container.\n *\n copy(): TensorList {\n  return new
TensorList(\n    [...this.tensors], this.elementShape, this.elementDtype);\n }\n\n /**\n * Dispose the tensors and
idTensor and clear the tensor list.\n *\n clearAndClose(keepIds?: Set<number>) {\n  this.tensors.forEach(tensor
=> {\n    if (keepIds == null || !keepIds.has(tensor.id)) {\n      tensor.dispose();\n    }\n  });\n  this.tensors.length = 0;\n  this.idTensor.dispose();\n }\n\n /**\n * The size of the tensors in the tensor list.\n *\n size() {\n  return this.tensors.length;\n }\n\n /**\n * Return a tensor that stacks a list of rank-R tf.Tensors into
one rank-(R+1)\n * tf.Tensor.\n * @param elementShape shape of each tensor\n * @param elementDtype data
type of each tensor\n * @param numElements the number of elements to stack\n *\n stack(elementShape:
number[], elementDtype: DataType, numElements = -1):\n  Tensor {\n  if (elementDtype !== this.elementDtype)
{\n    throw new Error(`Invalid data types; op elements ${\n      elementDtype}, but list elements
${this.elementDtype}`);\n  }\n  if (numElements !== -1 && this.tensors.length !== numElements) {\n    throw
new Error(`Operation expected a list with ${\n      numElements} elements but got a list with ${\n
this.tensors.length} elements.`);\n  }\n  assertShapesMatchAllowUndefinedSize(\n    elementShape,
this.elementShape, 'TensorList shape mismatch: ');\n  const outputElementShape =\n    inferElementShape(this.elementShape, this.tensors, elementShape);\n  return tidy(() => {\n    const
reshapedTensors =\n      this.tensors.map(tensor => reshape(tensor, outputElementShape));\n    return
stack(reshapedTensors, 0);\n  });\n }\n\n /**\n * Pop a tensor from the end of the list.\n * @param
elementShape shape of the tensor\n * @param elementDtype data type of the tensor\n *\n popBack(elementShape: number[], elementDtype: DataType): Tensor {\n  if (elementDtype !==
this.elementDtype) {\n    throw new Error(`Invalid data types; op elements ${\n      elementDtype}, but list
elements ${this.elementDtype}`);\n  }\n\n  if (this.size() === 0) {\n    throw new Error('Trying to pop from an
empty list.);\n  }\n  const outputElementShape =\n    inferElementShape(this.elementShape, this.tensors,
elementShape);\n  const tensor = this.tensors.pop();\n  assertShapesMatchAllowUndefinedSize(\n    tensor.shape, elementShape, 'TensorList shape mismatch: ');\n  return reshape(tensor, outputElementShape);\n }\n\n /**\n * Push a tensor to the end of the list.\n * @param tensor Tensor to be pushed.\n *\n pushBack(tensor: Tensor) {\n  if (tensor.dtype !== this.elementDtype) {\n    throw new Error(`Invalid data types;
op elements ${\n      tensor.dtype}, but list elements ${this.elementDtype}`);\n  }\n\n  assertShapesMatchAllowUndefinedSize(\n    tensor.shape, this.elementShape, 'TensorList shape mismatch: ');\n  if (this.maxNumElements === this.size()) {\n    throw new Error('Trying to push element into a full list.);\n  }\n  keep(tensor);\n  this.tensors.push(tensor);\n }\n\n /**\n * Update the size of the list.\n * @param size the new
size of the list.\n *\n resize(size: number) {\n  if (size < 0) {\n    throw new Error(\n      `TensorListResize
expects size to be non-negative. Got: ${size}`);\n  }\n\n  if (this.maxNumElements !== -1 && size >
this.maxNumElements) {\n    throw new Error(`TensorListResize input size ${\n      size} is greater
maxNumElement ${this.maxNumElements}.`);\n  }\n  this.tensors.length = size;\n }\n\n /**\n * Retrieve the
element at the provided index\n * @param elementShape shape of the tensor\n * @param elementDtype dtype of
the tensor\n * @param elementIndex index of the tensor\n *\n getItem(elementIndex: number, elementShape:
number[], elementDtype: DataType):\n  Tensor {\n  if (elementDtype !== this.elementDtype) {\n    throw new
Error(`Invalid data types; op elements ${\n      elementDtype}, but list elements ${this.elementDtype}`);\n  }\n
if (elementIndex < 0 || elementIndex > this.tensors.length) {\n    throw new Error(`Trying to access element ${\n
    elementIndex} in a list with ${this.tensors.length} elements.`);\n  }\n\n  if (this.tensors[elementIndex] == null)
{\n    throw new Error(`element at index ${elementIndex} is null.);\n  }\n\n

```

```

assertShapesMatchAllowUndefinedSize(\n    this.tensors[elementIndex].shape, elementShape,\n    'TensorList\n    shape mismatch: ');
\n    const outputElementShape =\n        inferElementShape(this.elementShape, this.tensors,\n        elementShape);
\n    return reshape(this.tensors[elementIndex], outputElementShape);
\n }
\n /**
\n  * Set the\n  * tensor at the index
\n  * @param elementIndex index of the tensor
\n  * @param tensor the tensor to be inserted into\n  * the list
\n  */
\n setItem(elementIndex: number, tensor: Tensor) {\n    if (tensor.dtype !== this.elementDtype) {\n        throw new Error(`Invalid data types; op elements ${\n            tensor.dtype}, but list elements\n            ${this.elementDtype}`);
\n    }
\n    if (elementIndex < 0 ||\n        this.maxNumElements !== -1 && elementIndex\n        >= this.maxNumElements) {\n        throw new Error(`Trying to set element ${\n            elementIndex} in a list with\n            max ${this.maxNumElements} elements.`);
\n    }
\n    assertShapesMatchAllowUndefinedSize(\n        this.elementShape, tensor.shape, 'TensorList shape mismatch: ');
\n    keep(tensor);
\n    this.tensors[elementIndex] =\n        tensor;
\n }
\n /**
\n  * Return selected values in the TensorList as a stacked Tensor. All of\n  * selected values\n  * must have been written and their shapes must all match.
\n  * @param indices indices of tensors to gather
\n  * @param elementDtype output tensor dtype
\n  * @param elementShape output tensor element shape
\n  */
\n gather(indices: number[], elementDtype: DataType, elementShape: number[]):\n    Tensor {\n    if (elementDtype\n    !== this.elementDtype) {\n        throw new Error(`Invalid data types; op elements ${\n            elementDtype}, but list\n            elements ${this.elementDtype}`);
\n    }
\n    assertShapesMatchAllowUndefinedSize(\n        this.elementShape,\n        elementShape, 'TensorList shape mismatch: ');
\n    // When indices is greater than the size of the list, indices\n    // beyond the\n    // size of the list are ignored.
\n    indices = indices.slice(0, this.size());
\n    const outputElementShape\n    =\n        inferElementShape(this.elementShape, this.tensors, elementShape);
\n    if (indices.length === 0) {\n        return tensor([], [0].concat(outputElementShape));
\n    }
\n    return tidy(() => {\n        const tensors =\n        indices.map(i => reshape(this.tensors[i], outputElementShape));
\n        return stack(tensors, 0);
\n    });
\n }
\n /**
\n  * Return the values in the TensorList as a concatenated Tensor.
\n  * @param elementDtype output tensor dtype
\n  * @param elementShape output tensor element shape
\n  */
\n concat(elementDtype: DataType, elementShape:\n    number[]): Tensor {\n    if (!elementDtype && elementDtype !== this.elementDtype) {\n        throw new\n        Error(`TensorList dtype is ${\n            this.elementDtype} but concat requested dtype ${elementDtype}`);
\n    }
\n    assertShapesMatchAllowUndefinedSize(\n        this.elementShape, elementShape, 'TensorList shape mismatch: ');
\n    const outputElementShape =\n        inferElementShape(this.elementShape, this.tensors, elementShape);
\n    if\n    (this.size() === 0) {\n        return tensor([], [0].concat(outputElementShape));
\n    }
\n    return tidy(() => {\n        const\n        tensors = this.tensors.map(t => reshape(t, outputElementShape));
\n        return concat(tensors, 0);
\n    });
\n }
\n /**
\n  * Creates a TensorList which, when stacked, has the value of tensor.
\n  * @param tensor from tensor
\n  * @param elementShape output tensor element shape
\n  */
\n export function fromTensor(\n    tensor: Tensor,\n    elementShape: number[], elementDtype: DataType) {\n    const dtype = tensor.dtype;
\n    if (tensor.shape.length < 1)\n    {\n        throw new Error(`Tensor must be at least a vector, but saw shape: ${tensor.shape}`);
\n    }
\n    if\n    (tensor.dtype !== elementDtype) {\n        throw new Error(`Invalid data types; op elements ${\n            tensor.dtype}, but\n            list elements ${elementDtype}`);
\n    }
\n    const tensorElementShape = tensor.shape.slice(1);
\n    assertShapesMatchAllowUndefinedSize(\n        tensorElementShape, elementShape, 'TensorList shape mismatch:\n        ');
\n    const tensorList: Tensor[] = unstack(tensor);
\n    return new TensorList(tensorList, elementShape,\n        dtype);
\n }
\n /**
\n  * Return a TensorList of the given size with empty elements.
\n  * @param elementShape the\n  * shape of the future elements of the list
\n  * @param elementDtype the desired type of elements in the list
\n  * @param numElements the number of elements to reserve
\n  */
\n export function reserve(\n    elementShape:\n    number[], elementDtype: DataType, numElements: number) {\n    return new TensorList([], elementShape,\n        elementDtype, numElements);
\n }
\n /**
\n  * Put tensors at specific indices of a stacked tensor into a TensorList.
\n  * @param indices list of indices on how to scatter the tensor.
\n  * @param tensor input tensor.
\n  * @param\n  * elementShape the shape of the future elements of the list
\n  * @param numElements the number of elements to\n  * scatter
\n  */
\n export function scatter(\n    tensor: Tensor, indices: number[], elementShape: number[],\n    numElements?: number): TensorList {\n    if (indices.length !== tensor.shape[0]) {\n        throw new Error(`Expected\n        len(indices) == tensor.shape[0], but saw: ${\n            indices.length} vs. ${tensor.shape[0]}`);
\n    }
\n    const maxIndex\n    = Math.max(...indices);
\n    if (numElements != null && numElements !== -1 && maxIndex >= numElements) {\n

```

```

throw new Error(`Max index must be < array size (${maxIndex} vs. ${numElements})`);
}
const list = new TensorList([], elementShape, tensor.dtype, numElements);
const tensors = unstack(tensor, 0);
indices.forEach((value, index) => {
  list.setItem(value, tensors[index]);
});
return list;
}

/**
 * Split the values of a Tensor into a TensorList.
 * @param length the lengths to use when splitting value along
 * its first dimension.
 * @param tensor the tensor to split.
 * @param elementShape the shape of the future elements of the list
 */
export function split(
  tensor: Tensor, length: number[], elementShape: number[]) {
  let totalLength = 0;
  const cumulativeLengths = length.map(len => {
    totalLength += len;
    return totalLength;
  });
  if (totalLength !== tensor.shape[0]) {
    throw new Error(`Expected sum of lengths to be equal to ${
      tensor.shape[0]}, but sum of lengths is ${totalLength}, and tensor's shape is: ${
        tensor.shape}`);
  }
  const shapeWithoutFirstDim = tensor.shape.slice(1);
  const outputElementShape = mergeElementShape(shapeWithoutFirstDim, elementShape);
  const elementPerRow = totalLength === 0 ? 0 : tensor.size / totalLength;
  const tensors: Tensor[] = tidy(() => {
    const tensors = [];
    tensor = reshape(tensor, [1, totalLength, elementPerRow]);
    for (let i = 0; i < length.length; ++i) {
      const previousLength = (i === 0) ? 0 : cumulativeLengths[i - 1];
      const indices = [0, previousLength, 0];
      const sizes = [1, length[i], elementPerRow];
      tensors[i] = reshape(slice(tensor, indices, sizes), outputElementShape as number[]);
      tensor.dispose();
    }
    return tensors;
  });
  const list = new TensorList([], elementShape, tensor.dtype, length.length);
  for (let i = 0; i < tensors.length; i++) {
    list.setItem(i, tensors[i]);
  }
  return list;
}

"/**
 * @license
 * Copyright 2018 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */

```

```

=====
*/
import {DataType, scalar, Tensor} from '@tensorflow/tfjs-core';
import {NamedTensorsMap} from '../data/types';
import {ExecutionContext} from '../executor/execution_context';
import {TensorArray} from '../executor/tensor_array';
import {fromTensor, reserve, scatter, split} from '../executor/tensor_list';
import {InternalOpAsyncExecutor, Node} from './types';
import {cloneTensor, getParamValue, getTensor} from './utils';
export const executeOp: InternalOpAsyncExecutor = async(
  node: Node, tensorMap: NamedTensorsMap,
  context: ExecutionContext): Promise<Tensor[]> => {
  switch (node.op) {
    case 'If':
    case 'StatelessIf': {
      const thenFunc = getParamValue('thenBranch', node, tensorMap, context) as string;
      const elseFunc = getParamValue('elseBranch', node, tensorMap, context) as string;
      const cond = getParamValue('cond', node, tensorMap, context) as Tensor;
      const args = getParamValue('args', node, tensorMap, context) as Tensor[];
      const condValue = await cond.data();
      if (condValue[0]) {
        return context.functionMap[thenFunc].executeFunctionAsync(
          args, context.tensorArrayMap, context.tensorListMap);
      } else {
        return context.functionMap[elseFunc].executeFunctionAsync(
          args, context.tensorArrayMap, context.tensorListMap);
      }
    }
    case 'While':
    case 'StatelessWhile': {
      const bodyFunc = getParamValue('body', node, tensorMap, context) as string;
      const condFunc = getParamValue('cond', node, tensorMap, context) as string;
      const args = getParamValue('args', node, tensorMap, context) as Tensor[];
      // Calculate the condition of the loop
      const condResult = (await context.functionMap[condFunc].executeFunctionAsync(
        args, context.tensorArrayMap, context.tensorListMap));
      const argIds = args.map(tensor => tensor.id);
      let condValue = await condResult[0].data();
      // Dispose the intermediate tensors for condition function
      condResult.forEach(tensor => {
        if (!tensor.kept && argIds.indexOf(tensor.id) === -1) {
          tensor.dispose();
        }
      });
      let result: Tensor[] = args;
      while (condValue[0]) {
        // Record the previous result for intermediate tensor tracking
        const origResult = result;
        // Execution the body of the loop
        result = await context.functionMap[bodyFunc].executeFunctionAsync(
          result, context.tensorArrayMap, context.tensorListMap);
        const resultIds = result.map(tensor => tensor.id);
        // Dispose the intermediate

```

```

tensor for body function that is not global\n    // kept, not input/output of the body function\n
origResult.forEach(tensor => {\n    if (!tensor.kept && argIds.indexOf(tensor.id) === -1 &&\n
resultIds.indexOf(tensor.id) === -1) {\n        tensor.dispose();\n    }\n});\n\n    // Recalculate the
condition of the loop using the latest results.\n    const condResult =\n        (await
context.functionMap[condFunc].executeFunctionAsync(\n        result, context.tensorArrayMap,
context.tensorListMap));\n    condValue = await condResult[0].data();\n    // Dispose the intermediate tensors
for condition function\n    condResult.forEach(tensor => {\n    if (!tensor.kept && argIds.indexOf(tensor.id)
=== -1 &&\n        resultIds.indexOf(tensor.id) === -1) {\n        tensor.dispose();\n    }\n});\n\n    return result;\n  }\n  case 'LoopCond': {\n    const pred = getParamValue('pred', node, tensorMap, context) as
Tensor;\n    return [cloneTensor(pred)];\n  }\n  case 'Switch': {\n    const pred = getParamValue('pred', node,
tensorMap, context) as Tensor;\n    let data = getParamValue('data', node, tensorMap, context) as Tensor;\n    if
(!data.kept) {\n    data = cloneTensor(data);\n    }\n    // Outputs nodes :0 => false, :1 => true\n    return (await
pred.data())[0] ? [undefined, data] : [data, undefined];\n  }\n  case 'Merge': {\n    const inputName =
node.inputNames.find(\n    name => getTensor(name, tensorMap, context) !== undefined);\n    if (inputName)
{\n    const data = getTensor(inputName, tensorMap, context);\n    return [cloneTensor(data)];\n    }\n    return
undefined;\n  }\n  case 'Enter': {\n    const frameId =\n        getParamValue('frameName', node,
tensorMap, context) as string;\n    const data = getParamValue('tensor', node, tensorMap, context) as Tensor;\n
context.enterFrame(frameId);\n    return [cloneTensor(data)];\n  }\n  case 'Exit': {\n    const data =
getParamValue('tensor', node, tensorMap, context) as Tensor;\n    context.exitFrame();\n    return
[cloneTensor(data)];\n  }\n  case 'NextIteration': {\n    const data = getParamValue('tensor', node, tensorMap,
context) as Tensor;\n    context.nextIteration();\n    return [cloneTensor(data)];\n  }\n  case 'TensorArrayV3':
{\n    const size = getParamValue('size', node, tensorMap, context) as number;\n    const dtype =\n        getParamValue('dtype', node, tensorMap, context) as DataType;\n    const elementShape =\n        getParamValue('elementShape', node, tensorMap, context) as number[];\n    const dynamicSize =\n        getParamValue('dynamicSize', node, tensorMap, context) as boolean;\n    const clearAfterRead =\n        getParamValue('clearAfterRead', node, tensorMap, context) as boolean;\n    const identicalElementShapes =\n        getParamValue('identicalElementShapes', node, tensorMap, context) as\n        boolean;\n    const name =
getParamValue('name', node, tensorMap, context) as string;\n    const tensorArray = new TensorArray(\n    name, dtype, size, elementShape, identicalElementShapes, dynamicSize,\n        clearAfterRead);\n    context.addTensorArray(tensorArray);\n    return [tensorArray.idTensor, scalar(1.0)];\n  }\n  case
'TensorArrayWriteV3': {\n    const id =\n        getParamValue('tensorArrayId', node, tensorMap, context) as
Tensor;\n    const index = getParamValue('index', node, tensorMap, context) as number;\n    const writeTensor =\n        getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const writeTensorArray =
context.getTensorArray(id.id);\n    writeTensorArray.write(index, writeTensor);\n    return
[writeTensorArray.idTensor];\n  }\n  case 'TensorArrayReadV3': {\n    const readId =\n        getParamValue('tensorArrayId', node, tensorMap, context) as Tensor;\n    const readIndex =\n        getParamValue('index', node, tensorMap, context) as number;\n    const readTensorArray =
context.getTensorArray(readId.id);\n    return [readTensorArray.read(readIndex)];\n  }\n  case
'TensorArrayGatherV3': {\n    const gatherId =\n        getParamValue('tensorArrayId', node, tensorMap, context)
as Tensor;\n    const gatherIndices =\n        getParamValue('indices', node, tensorMap, context) as number[];\n    const gatherDtype =\n        getParamValue('dtype', node, tensorMap, context) as DataType;\n    const
gatherTensorArray = context.getTensorArray(gatherId.id);\n    return [gatherTensorArray.gather(gatherIndices,
gatherDtype)];\n  }\n  case 'TensorArrayScatterV3': {\n    const scatterId =\n        getParamValue('tensorArrayId', node, tensorMap, context) as Tensor;\n    const scatterIndices =\n        getParamValue('indices', node, tensorMap, context) as number[];\n    const scatterTensor =\n        getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const scatterTensorArray =
context.getTensorArray(scatterId.id);\n    scatterTensorArray.scatter(scatterIndices, scatterTensor);\n    return
[scatterTensorArray.idTensor];\n  }\n  case 'TensorArrayConcatV3': {\n    const concatId =\n

```

```

getParamValue('tensorArrayId', node, tensorMap, context) as Tensor;\n    const concatTensorArray =
context.getTensorArray(concatId.id);\n    const concatDtype =\n        getParamValue('dtype', node, tensorMap,
context) as DataType;\n    return [concatTensorArray.concat(concatDtype)];\n } \n case 'TensorArraySplitV3':
{\n    const splitId =\n        getParamValue('tensorArrayId', node, tensorMap, context) as Tensor;\n    const
splitTensor =\n        getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const lengths =\n        getParamValue('lengths', node, tensorMap, context) as number[];\n    const splitTensorArray =
context.getTensorArray(splitId.id);\n    splitTensorArray.split(lengths, splitTensor);\n    return
[splitTensorArray.idTensor];\n } \n case 'TensorArraySizeV3': {\n    const sizeId =\n        getParamValue('tensorArrayId', node, tensorMap, context) as Tensor;\n    const sizeTensorArray =
context.getTensorArray(sizeId.id);\n    return [scalar(sizeTensorArray.size(), 'int32')];\n } \n case
'TensorArrayCloseV3': {\n    const closeId =\n        getParamValue('tensorArrayId', node, tensorMap, context) as
Tensor;\n    const closeTensorArray = context.getTensorArray(closeId.id);\n
closeTensorArray.clearAndClose();\n    return [closeTensorArray.idTensor];\n } \n case 'TensorListSetItem': {\n
    const idTensor =\n        getParamValue('tensorListId', node, tensorMap, context) as Tensor;\n    const index =
getParamValue('index', node, tensorMap, context) as number;\n    const writeTensor =\n        getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const tensorList =
context.getTensorList(idTensor.id);\n    tensorList.setItem(index, writeTensor);\n    return [tensorList.idTensor];\n
} \n case 'TensorListGetItem': {\n    const idTensor =\n        getParamValue('tensorListId', node, tensorMap,
context) as Tensor;\n    const readIndex =\n        getParamValue('index', node, tensorMap, context) as number;\n    const elementShape =\n        getParamValue('elementShape', node, tensorMap, context) as number[];\n\n    const
elementDType =\n        getParamValue('elementDType', node, tensorMap, context) as DataType;\n    const
tensorList = context.getTensorList(idTensor.id);\n    return [tensorList.getItem(readIndex, elementShape,
elementDType)];\n } \n case 'TensorListScatterV2':\n case 'TensorListScatter': {\n    const scatterIndices =\n        getParamValue('indices', node, tensorMap, context) as number[];\n    const scatterTensor =\n        getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const elementShape =\n        getParamValue('elementShape', node, tensorMap, context) as number[];\n    const numElements =\n        getParamValue('numElements', node, tensorMap, context) as number;\n    const tensorList =\n        scatter(scatterTensor, scatterIndices, elementShape, numElements);\n    context.addTensorList(tensorList);\n    return [tensorList.idTensor];\n } \n case 'TensorListReserve':\n case 'EmptyTensorList': {\n    const
elementShape =\n        getParamValue('elementShape', node, tensorMap, context) as number[];\n    const
elementDtype =\n        getParamValue('elementDType', node, tensorMap, context) as DataType;\n    let
numElementsParam;\n\n    if (node.op === 'TensorListReserve') {\n        numElementsParam = 'numElements';\n
} else {\n        numElementsParam = 'maxNumElements';\n    }\n\n    const numElements =\n        getParamValue(numElementsParam, node, tensorMap, context) as number;\n\n    const tensorList =
reserve(elementShape, elementDtype, numElements);\n    context.addTensorList(tensorList);\n    return
[tensorList.idTensor];\n } \n case 'TensorListGather': {\n    const gatherId =\n        getParamValue('tensorListId', node, tensorMap, context) as Tensor;\n    const gatherIndices =\n        getParamValue('indices', node, tensorMap, context) as number[];\n    const elementShape =\n        getParamValue('elementShape', node, tensorMap, context) as number[];\n    const elementDtype =\n        getParamValue('elementDType', node, tensorMap, context) as DataType;\n    const tensorList =
context.getTensorList(gatherId.id);\n    return [tensorList.gather(gatherIndices, elementDtype, elementShape)];\n
} \n case 'TensorListStack': {\n    const idTensor =\n        getParamValue('tensorListId', node, tensorMap,
context) as Tensor;\n    const elementShape =\n        getParamValue('elementShape', node, tensorMap, context) as
number[];\n    const elementDtype =\n        getParamValue('elementDType', node, tensorMap, context) as
DataType;\n    const numElements =\n        getParamValue('numElements', node, tensorMap, context) as
number;\n    const tensorList = context.getTensorList(idTensor.id);\n    return [tensorList.stack(elementShape,
elementDtype, numElements)];\n } \n case 'TensorListFromTensor': {\n    const tensor =\n        getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const elementShape =\n

```



```

getParamValue('elementShape', node, tensorMap, context) as number[];\n    const elementDtype =\n
getParamValue('elementDType', node, tensorMap, context) as DataType;\n    const tensorList =
fromTensor(tensor, elementShape, elementDtype);\n    context.addTensorList(tensorList);\n    return
[tensorList.idTensor];\n  }\n  case 'TensorListConcat': {\n    const concatId =\n
getParamValue('tensorListId', node, tensorMap, context) as Tensor;\n    const tensorList =
context.getTensorList(concatId.id);\n    const concatDtype =\n      getParamValue('dtype', node, tensorMap,
context) as DataType;\n    const elementShape =\n      getParamValue('elementShape', node, tensorMap, context)
as number[];\n    return [tensorList.concat(concatDtype, elementShape)];\n  }\n  case 'TensorListPushBack': {\n
const idTensor =\n      getParamValue('tensorListId', node, tensorMap, context) as Tensor;\n    const
writeTensor =\n      getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const tensorList =
context.getTensorList(idTensor.id);\n    tensorList.pushBack(writeTensor);\n    return [tensorList.idTensor];\n
  }\n  case 'TensorListPopBack': {\n    const idTensor =\n      getParamValue('tensorListId', node, tensorMap,
context) as Tensor;\n    const elementShape =\n      getParamValue('elementShape', node, tensorMap, context) as
number[];\n    const elementDType =\n      getParamValue('elementDType', node, tensorMap, context) as
DataType;\n    const tensorList = context.getTensorList(idTensor.id);\n    return
[tensorList.popBack(elementShape, elementDType)];\n  }\n  case 'TensorListSplit': {\n    const splitTensor =\n
getParamValue('tensor', node, tensorMap, context) as Tensor;\n    const elementShape =\n
getParamValue('elementShape', node, tensorMap, context) as number[];\n    const lengths =\n
getParamValue('lengths', node, tensorMap, context) as number[];\n\n    const tensorList = split(splitTensor, lengths,
elementShape);\n    context.addTensorList(tensorList);\n    return [tensorList.idTensor];\n  }\n  default:\n
throw TypeError(`Node type ${node.op} is not implemented`);\n  };\n};\n\nexport const CATEGORY =
'control';\n", "/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {Rank, Tensor, Tensor3D, Tensor4D, Tensor5D} from '@tensorflow/tfjs-core';\n// tslint:disable-next-
line: no-imports-from-dist\nimport * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\n\nimport
{NamedTensorsMap} from '../data/types';\nimport {ExecutionContext} from
'../executor/execution_context';\nimport {InternalOpExecutor, Node} from '../types';\n\nimport {getPadding,
getParamValue} from './utils';\n\nfunction fusedConvAndDepthWiseParams(\n  node: Node, tensorMap:
NamedTensorsMap, context: ExecutionContext) {\n  const [extraOp, activationFunc] =\n
(getParamValue('fusedOps', node, tensorMap, context) as string[]);\n\n  const isBiasAdd = extraOp === 'biasadd';\n
const isPrelu = activationFunc === 'prelu';\n  const isBatchNorm = extraOp === 'fusedbatchnorm';\n\n  const
numArgs =\n    (getParamValue('numArgs', node, tensorMap, context) as number);\n  if (isBiasAdd) {\n    if
(isPrelu && numArgs !== 2) {\n      throw new Error(\n        'FusedConv2d and DepthwiseConv2d with BiasAdd
and Prelu ' +\n        'must have two extra arguments: bias and alpha.);\n    }\n    if (!isPrelu && numArgs !== 1) {\n
throw new Error(\n        'FusedConv2d and DepthwiseConv2d with BiasAdd must have ' +\n        'one extra
argument: bias.);\n    }\n  }\n  if (isBatchNorm) {\n    throw new Error(\n        'FusedConv2d and DepthwiseConv2d
with FusedBatchNorm is not supported.);\n  }\n  const stride = getParamValue('strides', node, tensorMap, context)
as number[];\n  const pad = getPadding(node, tensorMap, context);\n  const dataFormat =\n
(getParamValue('dataFormat', node, tensorMap, context) as string)\n    .toUpperCase();\n  const dilations =\n
getParamValue('dilations', node, tensorMap, context) as number[];\n  const [biasArg, preluArg] =\n
getParamValue('args', node, tensorMap, context) as Tensor[];\n  const leakyreluAlpha =\n
getParamValue('leakyreluAlpha', node, tensorMap, context) as number;\n\n  return {\n    stride,\n    pad,\n

```

```

dataFormat,\n dilations,\n biasArg,\n preluArg,\n activationFunc,\n leakyreluAlpha\n };\n}\n\nexport const
executeOp: InternalOpExecutor =\n (node: Node, tensorMap: NamedTensorsMap,\n context:
ExecutionContext): Tensor[] => {\n switch (node.op) {\n case 'Conv1D': {\n const stride =\n getParamValue('stride', node, tensorMap, context) as number;\n const pad = getParamValue('pad', node,
tensorMap, context);\n const dataFormat =\n (getParamValue('dataFormat', node, tensorMap, context)
as string)\n .toUpperCase();\n const dilation =\n getParamValue('dilation', node, tensorMap,
context) as number;\n return [tfOps.conv1d(\n getParamValue('x', node, tensorMap, context) as
Tensor3D,\n getParamValue('filter', node, tensorMap, context) as Tensor3D,\n stride, pad as 'valid' |
'same', dataFormat as 'NWC' | 'NCW',\n dilation)];\n }\n case 'Conv2D': {\n const stride =\n getParamValue('strides', node, tensorMap, context) as number[];\n const pad = getPadding(node,
tensorMap, context);\n const dataFormat =\n (getParamValue('dataFormat', node, tensorMap, context)
as string)\n .toUpperCase();\n const dilations =\n getParamValue('dilations', node,
tensorMap, context) as number[];\n return [tfOps.conv2d(\n getParamValue('x', node, tensorMap,
context) as Tensor3D | \n Tensor4D,\n getParamValue('filter', node, tensorMap, context) as
Tensor4D,\n [stride[1], stride[2]], pad as 'valid' | 'same',\n dataFormat as 'NHWC' | 'NCHW',
[dilations[1], dilations[2]])];\n }\n case '_FusedConv2D': {\n const {\n stride,\n pad,\n
dataFormat,\n dilations,\n biasArg,\n preluArg,\n activationFunc,\n
leakyreluAlpha\n } = fusedConvAndDepthWiseParams(node, tensorMap, context);\n\n return
[tfOps.fused.conv2d({\n x: getParamValue('x', node, tensorMap, context) as Tensor3D | \n
Tensor4D,\n filter: getParamValue('filter', node, tensorMap, context) as \n Tensor4D,\n
strides: [stride[1], stride[2]],\n pad: pad as 'valid' | 'same',\n dataFormat: dataFormat as 'NHWC' |
'NCHW',\n dilations: [dilations[1], dilations[2]],\n bias: biasArg,\n activation: activationFunc as
tfOps.fused.Activation,\n preluActivationWeights: preluArg,\n leakyreluAlpha\n }));\n }\n\n
case 'FusedDepthwiseConv2dNative': {\n const {\n stride,\n pad,\n dataFormat,\n
dilations,\n biasArg,\n preluArg,\n activationFunc,\n leakyreluAlpha,\n } =
fusedConvAndDepthWiseParams(node, tensorMap, context);\n\n return [tfOps.fused.depthwiseConv2d({\n
x: getParamValue('x', node, tensorMap, context) as Tensor3D | \n Tensor4D,\n filter:
getParamValue('filter', node, tensorMap, context) as \n Tensor4D,\n strides: [stride[1], stride[2]],\n
pad: pad as 'valid' | 'same',\n dataFormat: dataFormat as 'NHWC' | 'NCHW',\n dilations:
[dilations[1], dilations[2]],\n bias: biasArg,\n activation: activationFunc as tfOps.fused.Activation,\n
preluActivationWeights: preluArg,\n leakyreluAlpha\n }));\n }\n\n case
'Conv2DBackpropInput':\n case 'Conv2dTranspose': {\n const shape = getParamValue(\n
'outputShape', node, tensorMap,\n context) as [number, number, number] | \n [number,
number, number, number];\n const stride =\n getParamValue('strides', node, tensorMap, context) as
number[];\n const pad = getPadding(node, tensorMap, context);\n return [tfOps.conv2dTranspose(\n
getParamValue('x', node, tensorMap, context) as Tensor3D | \n Tensor4D,\n
getParamValue('filter', node, tensorMap, context) as Tensor4D,\n shape, [stride[1], stride[2]], pad as 'valid' |
'same')];\n }\n case 'DepthwiseConv2dNative':\n case 'DepthwiseConv2d': {\n const stride =\n
getParamValue('strides', node, tensorMap, context) as number[];\n const pad = getPadding(node,
tensorMap, context);\n const dilations =\n getParamValue('dilations', node, tensorMap, context) as
number[];\n const dataFormat =\n (getParamValue('dataFormat', node, tensorMap, context) as string)\n
.toUpperCase();\n\n return [tfOps.depthwiseConv2d(\n getParamValue('input', node,
tensorMap, context) as Tensor3D | \n Tensor4D,\n getParamValue('filter', node, tensorMap,
context) as Tensor4D,\n [stride[1], stride[2]], pad as 'valid' | 'same',\n dataFormat as 'NHWC' |
'NCHW', [dilations[1], dilations[2]]);\n }\n case 'Conv3D': {\n const stride =\n
getParamValue('strides', node, tensorMap, context) as number[];\n const pad = getParamValue('pad', node,
tensorMap, context);\n const dataFormat =\n (getParamValue('dataFormat', node, tensorMap, context)
as string)\n .toUpperCase();\n const dilations =\n getParamValue('dilations', node,

```

```
tensorMap, context) as number[];\n        return [tfOps.conv3d(\n            getParamValue('x', node, tensorMap,\n            context) as Tensor4D |\n                Tensor<Rank.R5>,\n            getParamValue('filter', node, tensorMap, context)\n            as\n                Tensor<Rank.R5>,\n            [stride[1], stride[2], stride[3]], pad as 'valid' | 'same',\n            dataFormat as 'NDHWC' | 'NCDHW',\n            [dilations[1], dilations[2], dilations[3]]);\n        }\n        case\n        'AvgPool': {\n            const stride =\n                getParamValue('strides', node, tensorMap, context) as number[];\n            const pad = getParamValue('pad', node, tensorMap, context);\n            const kernelSize =\n                getParamValue('kernelSize', node, tensorMap, context) as number[];\n            return [tfOps.avgPool(\n                getParamValue('x', node, tensorMap, context) as Tensor3D |\n                    Tensor4D,\n                [kernelSize[1],\n                kernelSize[2]], [stride[1], stride[2]],\n                pad as 'valid' | 'same');\n            }\n        case 'MaxPool': {\n            const\n            stride =\n                getParamValue('strides', node, tensorMap, context) as number[];\n            const pad =\n                getParamValue('pad', node, tensorMap, context);\n            const kernelSize =\n                getParamValue('kernelSize',\n                node, tensorMap, context) as number[];\n            return [tfOps.maxPool(\n                getParamValue('x', node,\n                tensorMap, context) as Tensor3D |\n                    Tensor4D,\n                [kernelSize[1], kernelSize[2]], [stride[1],\n                stride[2]],\n                pad as 'valid' | 'same');\n            }\n        case 'MaxPoolWithArgmax': {\n            const stride =\n                getParamValue('strides', node, tensorMap, context) as number[];\n            const pad = getParamValue('pad', node,\n            tensorMap, context);\n            const kernelSize =\n                getParamValue('kernelSize', node, tensorMap, context) as\n            number[];\n            const includeBatchInIndex =\n                getParamValue('includeBatchInIndex', node, tensorMap,\n            context) as\n                boolean;\n            const {result, indexes} = tfOps.maxPoolWithArgmax(\n                getParamValue('x', node, tensorMap, context) as Tensor4D,\n                [kernelSize[1], kernelSize[2]], [stride[1],\n                stride[2]],\n                pad as 'valid' | 'same', includeBatchInIndex);\n            return [result, indexes];\n        }\n        case\n        'AvgPool3D': {\n            const stride =\n                getParamValue('strides', node, tensorMap, context) as number[];\n            const pad = getParamValue('pad', node, tensorMap, context);\n            const kernelSize =\n                getParamValue('kernelSize', node, tensorMap, context) as number[];\n            return [tfOps.avgPool3d(\n                getParamValue('x', node, tensorMap, context) as Tensor5D,\n                [kernelSize[1], kernelSize[2],\n                kernelSize[3]],\n                [stride[1], stride[2], stride[3]], pad as 'valid' | 'same');\n            }\n        }\n        case 'MaxPool3D':\n        {\n            const stride =\n                getParamValue('strides', node, tensorMap, context) as number[];\n            const pad\n            = getParamValue('pad', node, tensorMap, context);\n            const kernelSize =\n                getParamValue('kernelSize',\n                node, tensorMap, context) as number[];\n            return [tfOps.maxPool3d(\n                getParamValue('x', node,\n                tensorMap, context) as Tensor5D,\n                [kernelSize[1], kernelSize[2], kernelSize[3]],\n                [stride[1],\n                stride[2], stride[3]], pad as 'valid' | 'same');\n            }\n        }\n        case 'Dilation2D': {\n            const strides =\n                getParamValue('strides', node, tensorMap, context) as number[];\n            const pad = getParamValue('pad', node,\n            tensorMap, context);\n            const dilations =\n                getParamValue('dilations', node, tensorMap, context) as\n            number[];\n            // strides: [1, stride_height, stride_width, 1].\n            const strideHeight = strides[1];\n            const\n            strideWidth = strides[2];\n            // dilations: [1, dilation_height, dilation_width, 1].\n            const dilationHeight =\n                dilations[1];\n            const dilationWidth = dilations[2];\n            return [tfOps.dilation2d(\n                getParamValue('x', node, tensorMap, context) as Tensor3D |\n                    Tensor4D,\n                getParamValue('filter', node, tensorMap, context) as Tensor3D,\n                [strideHeight, strideWidth], pad as 'valid' |\n                'same',\n                [dilationHeight, dilationWidth], 'NHWC' /* dataFormat */);\n            }\n        }\n        default:\n            throw\n            TypeError(`Node type ${node.op} is not implemented`);\n        }\n    };\n    \nextport const CATEGORY =\n    'convolution';\n    /**\n    * @license\n    * Copyright 2018 Google LLC. All Rights Reserved.\n    * Licensed under the\n    Apache License, Version 2.0 (the "License");\n    * you may not use this file except in compliance with the\n    License.\n    * You may obtain a copy of the License at\n    * http://www.apache.org/licenses/LICENSE-2.0\n    * Unless required by applicable law or agreed to in writing, software\n    * distributed under the License is distributed\n    on an "AS IS" BASIS,\n    * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n    implied.\n    * See the License for the specific language governing permissions and\n    * limitations under the\n    License.\n    *\n    *\n    *\n    */\n    // =====\n    *\n    import {DataType, Tensor, Tensor1D} from '@tensorflow/tfjs-core';\n    // tslint:disable-next-line: no-imports-
```

```

from-dist\nimport * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\n\nimport
{NamedTensorsMap} from '../data/types';\nimport {ExecutionContext} from
'../executor/execution_context';\nimport {InternalOpExecutor, Node} from './types';\n\nimport {getParamValue}
from './utils';\n\nexport const executeOp: InternalOpExecutor =\n (node: Node, tensorMap: NamedTensorsMap,\n
context: ExecutionContext): Tensor[] => {\n  switch (node.op) {\n    case 'Fill': {\n      const shape =\n        getParamValue('shape', node, tensorMap, context) as number[];\n      const dtype =\n        getParamValue('dtype', node, tensorMap, context) as DataType;\n      const value =\n        getParamValue('value', node, tensorMap, context) as number;\n      return [tfOps.fill(shape, value, dtype)];\n    }\n    case 'LinSpace': {\n      const start =\n        getParamValue('start', node, tensorMap, context) as
number;\n      const stop =\n        getParamValue('stop', node, tensorMap, context) as number;\n      const
num = getParamValue('num', node, tensorMap, context) as number;\n      return [tfOps.linspace(start, stop,
num)];\n    }\n    case 'Multinomial': {\n      const logits =\n        getParamValue('logits', node, tensorMap,
context) as Tensor1D;\n      const numSamples =\n        getParamValue('numSamples', node, tensorMap,
context) as number;\n      const seed =\n        getParamValue('seed', node, tensorMap, context) as number;\n      return [tfOps.multinomial(logits, numSamples, seed)];\n    }\n    case 'OneHot': {\n      const indices =\n        getParamValue('indices', node, tensorMap, context) as Tensor1D;\n      const depth =\n        getParamValue('depth', node, tensorMap, context) as number;\n      const onValue =\n        getParamValue('onValue', node, tensorMap, context) as number;\n      const offValue =\n        getParamValue('offValue', node, tensorMap, context) as number;\n      return [tfOps.oneHot(indices, depth,
onValue, offValue)];\n    }\n    case 'Ones': {\n      return [tfOps.ones(\n        getParamValue('shape',
node, tensorMap, context) as number[],\n        getParamValue('dtype', node, tensorMap, context) as
DataType)];\n    }\n    case 'OnesLike': {\n      return [tfOps.onesLike(\n        getParamValue('x', node,
tensorMap, context) as Tensor)];\n    }\n    case 'RandomUniform': {\n      return [tfOps.randomUniform(\n
        getParamValue('shape', node, tensorMap, context) as any,\n
        getParamValue('minval', node, tensorMap, context) as number,\n
        getParamValue('maxval', node,
tensorMap, context) as number,\n
        getParamValue('dtype', node, tensorMap, context) as DataType)];\n    }\n    case 'Range': {\n      const start =\n        getParamValue('start', node, tensorMap, context) as number;\n      const stop =\n        getParamValue('stop', node, tensorMap, context) as number;\n      const step =\n        getParamValue('step', node, tensorMap, context) as number;\n      return [tfOps.range(\n        start, stop,
step,\n        getParamValue('dtype', node, tensorMap, context) as 'float32' | 'int32')];\n    }\n    case 'TruncatedNormal': {\n      const shape =\n        getParamValue('shape', node, tensorMap, context) as
number[];\n      const mean =\n        getParamValue('mean', node, tensorMap, context) as number;\n      const stdDev =\n        getParamValue('stdDev', node, tensorMap, context) as number;\n      const seed =\n        getParamValue('seed', node, tensorMap, context) as number;\n      return [tfOps.truncatedNormal(\n
        shape, mean, stdDev,\n        getParamValue('dtype', node, tensorMap, context) as 'float32' | 'int32',\n
        seed)];\n    }\n    case 'Zeros': {\n      return [tfOps.zeros(\n        getParamValue('shape', node,
tensorMap, context) as number[],\n        getParamValue('dtype', node, tensorMap, context) as DataType)];\n    }\n    case 'ZerosLike': {\n      return [tfOps.zerosLike(\n        getParamValue('x', node, tensorMap, context)
as Tensor)];\n    }\n    default:\n      throw TypeError(`Node type ${node.op} is not implemented`);\n    }\n  };\n\nexport const CATEGORY = 'creation';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *  

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *  

=====\n
*/\n\nimport {Tensor, Tensor1D, Tensor2D} from '@tensorflow/tfjs-core';\n// tslint:disable-next-line: no-imports-

```

```

from-dist\nimport * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\n\nimport
{NamedTensorsMap} from '../data/types';\nimport {ExecutionContext} from
'../executor/execution_context';\nimport {InternalOpAsyncExecutor, Node} from './types';\nimport
{getParamValue} from './utils';\n\nfunction nmsParams(\n  node: Node, tensorMap: NamedTensorsMap, context:
ExecutionContext) {\n  const boxes = getParamValue('boxes', node, tensorMap, context) as Tensor;\n  const scores
= getParamValue('scores', node, tensorMap, context) as Tensor;\n  const maxOutputSize =\n  getParamValue('maxOutputSize', node, tensorMap, context) as number;\n  const iouThreshold =\n  getParamValue('iouThreshold', node, tensorMap, context) as number;\n  const scoreThreshold =\n  getParamValue('scoreThreshold', node, tensorMap, context) as number;\n  const softNmsSigma =\n  getParamValue('softNmsSigma', node, tensorMap, context) as number;\n\n  return {\n    boxes,\n    scores,\n    maxOutputSize,\n    iouThreshold,\n    scoreThreshold,\n    softNmsSigma\n  };}\n\nexport const executeOp:
InternalOpAsyncExecutor = async(\n  node: Node, tensorMap: NamedTensorsMap,\n  context:
ExecutionContext): Promise<Tensor[]> => {\n  switch (node.op) {\n    case 'NonMaxSuppressionV5': {\n      const
{\n        boxes,\n        scores,\n        maxOutputSize,\n        iouThreshold,\n        scoreThreshold,\n        softNmsSigma\n      } = nmsParams(node, tensorMap, context);\n      const result = await
tfOps.image.nonMaxSuppressionWithScoreAsync(\n        boxes as Tensor2D, scores as Tensor1D, maxOutputSize,\n        iouThreshold,\n        scoreThreshold, softNmsSigma);\n      return [result.selectedIndices,\n        result.selectedScores];\n    }\n    case 'NonMaxSuppressionV4': {\n      const {boxes, scores, maxOutputSize,\n      iouThreshold, scoreThreshold} =\n        nmsParams(node, tensorMap, context);\n      const padToMaxOutputSize
=\n        getParamValue('padToMaxOutputSize', node, tensorMap, context) as\n        boolean;\n      const result
= await tfOps.image.nonMaxSuppressionPaddedAsync(\n        boxes as Tensor2D, scores as Tensor1D,\n        maxOutputSize, iouThreshold,\n        scoreThreshold, padToMaxOutputSize);\n      return [result.selectedIndices,\n        result.validOutputs];\n    }\n    case 'NonMaxSuppressionV3':\n    case 'NonMaxSuppressionV2': {\n      const
{boxes, scores, maxOutputSize, iouThreshold, scoreThreshold} =\n        nmsParams(node, tensorMap,\n        context);\n      return [await tfOps.image.nonMaxSuppressionAsync(\n        boxes as Tensor2D, scores as
Tensor1D, maxOutputSize, iouThreshold,\n        scoreThreshold)];\n    }\n    case 'Where': {\n      const condition =
tfOps.cast(\n        (getParamValue('condition', node, tensorMap, context) as Tensor),\n        'bool');\n      const
result = [await tfOps.whereAsync(condition)];\n      condition.dispose();\n      return result;\n    }\n    case 'ListDiff':
{\n      return tfOps.setdiff1dAsync(\n        getParamValue('x', node, tensorMap, context) as Tensor,\n        getParamValue('y', node, tensorMap, context) as Tensor);\n    }\n    default:\n      throw TypeError(`Node type
${node.op} is not implemented`);\n    }\n  }\n};\n\nexport const CATEGORY = 'dynamic';\n\n"/**\n * @license\n *
Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n\n*\nimport {Tensor} from '@tensorflow/tfjs-core';\n// tslint:disable-next-line: no-imports-from-dist\nimport * as
tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\nimport {NamedTensorsMap} from
'../data/types';\nimport {ExecutionContext} from '../executor/execution_context';\nimport {InternalOpExecutor,\nNode} from './types';\nimport {getParamValue} from './utils';\n\nexport const executeOp: InternalOpExecutor =\n(node: Node, tensorMap: NamedTensorsMap, context: ExecutionContext):\n  Tensor[] => {\n  switch\n(node.op) {\n    case 'TopKV2': {\n      const x = getParamValue('x', node, tensorMap, context) as\n      Tensor;\n      const k = getParamValue('k', node, tensorMap, context) as number;\n      const sorted =\n        getParamValue('sorted', node, tensorMap, context) as boolean;\n      const result = tfOps.topk(x, k,\n        sorted);\n      return [result.values, result.indices];\n    }\n    case 'Unique': {\n      const x =\n        getParamValue('x', node, tensorMap, context) as Tensor;\n      const result = tfOps.unique(x);\n      return

```

```

[result.values, result.indices];\n      }\n      case 'UniqueV2': {\n          const x = getParamValue('x', node,\n          tensorMap, context) as Tensor;\n          const axis =\n          getParamValue('axis', node, tensorMap, context)\n          as number;\n          const result = tfOps.unique(x, axis);\n          return [result.values, result.indices];\n      }\n      default:\n          throw TypeError(`Node type ${node.op} is not implemented`);\n      }\n};\n\nexport const CATEGORY = 'evaluation';\n\n/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n *=====\n *\nimport {Tensor} from '@tensorflow/tfjs-core';\n// tslint:disable-next-line: no-imports-from-dist\nimport * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\nimport {NamedTensorsMap} from\n'../data/types';\nimport {ExecutionContext} from '../executor/execution_context';\nimport {InternalOpExecutor,\nNode} from '../types';\nimport {cloneTensor, getParamValue, getTensor} from './utils';\n\nexport const executeOp:\nInternalOpExecutor =\n(node: Node, tensorMap: NamedTensorsMap,\n context: ExecutionContext): Tensor[]\n=> {\n  switch (node.op) {\n    case 'Const': {\n      return tensorMap[node.name];\n    }\n    case\n'PlaceholderWithDefault':\n      const def =\n          getParamValue('default', node, tensorMap, context) as\n          Tensor;\n      return [getTensor(node.name, tensorMap, context) || def];\n    case 'Placeholder':\n      return\n[getTensor(node.name, tensorMap, context)];\n    case 'Identity':\n    case 'StopGradient':\n    case\n'FakeQuantWithMinMaxVars': { // This op is currently ignored.\n      const data = getParamValue('x', node,\n          tensorMap, context) as Tensor;\n      return [cloneTensor(data)];\n    }\n    case 'IdentityN':\n      return\n(getParamValue('x', node, tensorMap, context) as Tensor[])\n          .map((t: Tensor) => cloneTensor(t));\n    case 'Snapshot':\n      const snapshot =\n          (getParamValue('x', node, tensorMap, context) as Tensor);\n      return [cloneTensor(snapshot)];\n    case 'Shape':\n      return [tfOps.tensor1d(\n          (getParamValue('x',\n          node, tensorMap, context) as Tensor).shape,\n          'int32')];\n    case 'ShapeN':\n      return\n(getParamValue('x', node, tensorMap, context) as Tensor[])\n          .map((t: Tensor) =>\n          tfOps.tensor1d(t.shape));\n    case 'Size':\n      return [tfOps.scalar(\n          (getParamValue('x', node,\n          tensorMap, context) as Tensor).size,\n          'int32')];\n    case 'Rank':\n      return [tfOps.scalar(\n          (getParamValue('x', node, tensorMap, context) as Tensor).rank,\n          'int32')];\n    case 'NoOp':\n      return\n[tfOps.scalar(1)];\n    case 'Print':\n      const input = getParamValue('x', node, tensorMap, context) as Tensor;\n      const data =\n          getParamValue('data', node, tensorMap, context) as Tensor[];\n      const message =\n          getParamValue('message', node, tensorMap, context) as string;\n      const summarize =\n          getParamValue('summarize', node, tensorMap, context) as number;\n      console.warn(\n          'The graph has a\n          tf.print() operation,\n          ' usually used for debugging, which slows down performance.);\n      console.log(message);\n      for (let i = 0; i < data.length; i++) {\n          console.log(Array.prototype.slice.call(data[i].dataSync())\n          .slice(0, summarize));\n      }\n      return [input];\n    }\n    default:\n      throw TypeError(`Node type ${node.op} is not implemented`);\n    }\n};\n\nexport const CATEGORY = 'graph';\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n *=====\n *\nimport {DataType, keep, scalar, stack, Tensor, tidy, unstack, util} from '@tensorflow/tfjs-core';\n\n/**\n *

```

```

Hashtable contains a set of tensors, which can be accessed by key.\n */\nexport class Hashtable {\n  readonly\n  handle: Tensor;\n\n  // tslint:disable-next-line: no-any\n  private tensorMap: Map<any, Tensor>;\n\n  get id() {\n    return this.handle.id;\n  }\n\n  /**\n   * Constructor of Hashtable. Creates a hash table.\n   * @param\n   keyDType `dtype` of the table keys.\n   * @param valueDType `dtype` of the table values.\n   */\n  constructor(readonly keyDType: DataType, readonly valueDType: DataType) {\n    this.handle = scalar(0);\n    // tslint:disable-next-line: no-any\n    this.tensorMap = new Map<any, Tensor>();\n\n    keep(this.handle);\n  }\n\n  /**\n   * Dispose the tensors and handle and clear the hashtable.\n   */\n  clearAndClose() {\n    this.tensorMap.forEach(value => value.dispose());\n    this.tensorMap.clear();\n    this.handle.dispose();\n  }\n\n  /**\n   * The number of items in the hash table.\n   */\n  size(): number {\n    return this.tensorMap.size;\n  }\n\n  /**\n   * Replaces the contents of the table with the specified keys and values.\n   * @param keys Keys to store in\n   the hashtable.\n   * @param values Values to store in the hashtable.\n   */\n  async import(keys: Tensor, values:\n  Tensor): Promise<Tensor> {\n    this.checkKeyAndValueTensor(keys, values);\n\n    // We only store the primitive\n    values of the keys, this allows lookup\n    // to be O(1).\n    const $keys = await keys.data();\n\n    // Clear the\n    hashTable before inserting new values.\n    this.tensorMap.forEach(value => value.dispose());\n\n    this.tensorMap.clear();\n\n    return tidy(() => {\n      const $values = unstack(values);\n\n      const keysLength =\n      $keys.length;\n      const valuesLength = $values.length;\n\n      util.assert(\n        keysLength === valuesLength,\n        () => `The number of elements doesn't match, keys has ` +\n          `${keysLength} elements, the values has\n      ${valuesLength} ` +\n          `elements.`);\n\n      for (let i = 0; i < keysLength; i++) {\n        const key =\n        $keys[i];\n        const value = $values[i];\n\n        keep(value);\n        this.tensorMap.set(key, value);\n      }\n\n      return this.handle;\n    });\n  }\n\n  /**\n   * Looks up keys in a hash table, outputs the corresponding values.\n   */\n  * Performs batch lookups, for every element in the key tensor, `find`\n  * stacks the corresponding value into the\n  return tensor.\n  * If an element is not present in the table, the given `defaultValue` is\n  * used.\n  * @param keys Keys to look up. Must have the same type as the keys of the\n  * table.\n  * @param defaultValue\n  The scalar `defaultValue` is the value output for keys\n  * not present in the table. It must also be of the same\n  type as the\n  * table values.\n  */\n  async find(keys: Tensor, defaultValue: Tensor): Promise<Tensor> {\n    this.checkKeyAndValueTensor(keys, defaultValue);\n\n    const $keys = await keys.data();\n\n    return tidy(() =>\n    {\n      const result: Tensor[] = [];\n\n      for (let i = 0; i < $keys.length; i++) {\n        const key = $keys[i];\n\n        const value = this.findWithDefault(key, defaultValue);\n        result.push(value);\n      }\n\n      return stack(result);\n    }\n  );\n\n  // tslint:disable-next-line: no-any\n  private findWithDefault(key: any, defaultValue: Tensor): Tensor\n  {\n    const result = this.tensorMap.get(key);\n\n    return result != null ? result : defaultValue;\n  }\n\n  private\n  checkKeyAndValueTensor(key: Tensor, value: Tensor) {\n    if (key.dtype !== this.keyDType) {\n      throw new\n      Error(\n        `Expect key dtype ${this.keyDType}, but got ` +\n        `${key.dtype}`);\n    }\n\n    if (value.dtype\n    !== this.valueDType) {\n      throw new Error(\n        `Expect value dtype ${this.valueDType}, but got ` +\n        `${value.dtype}`);\n    }\n  }\n\n  /**\n   * @license\n   * Copyright 2020 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in\n   compliance with the License.\n   * You may obtain a copy of the License at\n   *  

http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing,\n   software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES\n   OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language\n   governing permissions and\n   * limitations under the License.\n   */\n  =====\n\n  */\n  import {DataType, Tensor} from '@tensorflow/tfjs-core';\n  import {NamedTensorsMap} from\n  './../data/types';\n  import {ExecutionContext} from './../executor/execution_context';\n  import {Hashtable} from\n  './../executor/hash_table';\n  import {ResourceManager} from './../executor/resource_manager';\n  import\n  {InternalOpAsyncExecutor, Node} from './types';\n  import {getParamValue} from './utils';\n\n  next export const\n  executeOp: InternalOpAsyncExecutor = async(\n    node: Node, tensorMap: NamedTensorsMap, context:\n    ExecutionContext,\n    resourceManager: ResourceManager): Promise<Tensor[]> => {\n    switch (node.op) {\n      case 'Hashtable':\n      case 'HashtableV2': {\n        const keyDType =\n        getParamValue('keyDType', node,\n

```

```

tensorMap, context) as DataType;\n    const valueDType =\n        getParamValue('valueDType', node, tensorMap,
context) as DataType;\n\n    const hashTable = new HashTable(keyDType, valueDType);\nresourceManager.addHashTable(node.name, hashTable);\n    return [hashTable.handle];\n  }\n  case
'LookupTableImport':\n    case 'LookupTableImportV2': {\n      const handle = getParamValue(\n
'tableHandle', node, tensorMap, context,\n          resourceManager) as Tensor;\n      const keys =
getParamValue('keys', node, tensorMap, context) as Tensor;\n      const values =\n        getParamValue('values',
node, tensorMap, context) as Tensor;\n      const hashTable = resourceManager.getHashTableById(handle.id);\n
      return [await hashTable.import(keys, values)];\n    }\n    case 'LookupTableFind':\n    case 'LookupTableFindV2':
{\n      const handle = getParamValue(\n
'tableHandle', node, tensorMap, context,\n          resourceManager) as Tensor;\n      const keys = getParamValue('keys', node, tensorMap, context) as Tensor;\n
const defaultValue =\n        getParamValue('defaultValue', node, tensorMap, context) as Tensor;\n\n      const
hashTable = resourceManager.getHashTableById(handle.id);\n      return [await hashTable.find(keys,
defaultValue)];\n    }\n    default:\n      throw TypeError(`Node type ${node.op} is not implemented`);\n
  }\n};\n\nexport const CATEGORY = 'hash_table';\n", "/*\n * @license\n * Copyright 2018 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {Tensor, Tensor1D, Tensor2D, Tensor3D, Tensor4D} from '@tensorflow/tfjs-core';\n// tslint:disable-
next-line: no-imports-from-dist\nimport * as tfOps from '@tensorflow/tfjs-
core/dist/ops/ops_for_converter';\nimport {NamedTensorsMap} from '../data/types';\nimport
{ExecutionContext} from '../executor/execution_context';\nimport {InternalOpExecutor, Node} from
'../types';\nimport {getParamValue} from './utils';\n\nexport const executeOp: InternalOpExecutor =\n  (node:
Node, tensorMap: NamedTensorsMap, context: ExecutionContext): Tensor[] => {\n    switch (node.op) {\n
case 'ResizeBilinear': {\n      const images =\n        getParamValue('images', node, tensorMap, context) as
Tensor;\n      const size =\n        getParamValue('size', node, tensorMap, context) as number[];\n      const
alignCorners =\n        getParamValue('alignCorners', node, tensorMap, context) as\n          boolean;\n      const
halfPixelCenters =\n        getParamValue('halfPixelCenters', node, tensorMap, context) as\n          boolean;\n      return [tfOps.image.resizeBilinear(\n
images as Tensor3D | Tensor4D, [size[0], size[1]],
alignCorners,\n          halfPixelCenters)];\n    }\n    case 'ResizeNearestNeighbor': {\n      const images =\n
getParamValue('images', node, tensorMap, context) as Tensor;\n      const size =\n
getParamValue('size', node, tensorMap, context) as number[];\n      const alignCorners =\n
getParamValue('alignCorners', node, tensorMap, context) as\n          boolean;\n      const halfPixelCenters =\n
getParamValue('halfPixelCenters', node, tensorMap, context) as\n          boolean;\n      return
[tfOps.image.resizeNearestNeighbor(\n
images as Tensor3D | Tensor4D, [size[0], size[1]], alignCorners,\n
halfPixelCenters)];\n    }\n    case 'CropAndResize': {\n      const image =\n
getParamValue('image', node, tensorMap, context) as Tensor;\n      const boxes =\n
getParamValue('boxes', node, tensorMap, context) as Tensor;\n      const boxInd =\n
getParamValue('boxInd', node, tensorMap, context) as Tensor;\n      const cropSize =\n
getParamValue('cropSize', node, tensorMap, context) as number[];\n      const method =\n
getParamValue('method', node, tensorMap, context) as string;\n      const extrapolationValue =\n
getParamValue('extrapolationValue', node, tensorMap, context) as\n          number;\n      return
[tfOps.image.cropAndResize(\n
image as Tensor4D, boxes as Tensor2D, boxInd as Tensor1D,\n
cropSize as [number, number], method as 'bilinear' | 'nearest',\n          extrapolationValue)];\n    }\n    default:\n      throw TypeError(`Node type ${node.op} is not implemented`);\n
  }\n  }\n};\n\nexport const

```


CATEGORY = 'image';\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { Tensor } from '@tensorflow/tfjs-core';\n// tslint:disable-next-line: no-imports-from-dist\nimport * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\nimport { NamedTensorsMap } from\n'../../data/types';\nimport { ExecutionContext } from '../../executor/execution_context';\nimport { InternalOpExecutor,\nNode } from './types';\nimport { getParamValue } from './utils';\n\nexport const executeOp: InternalOpExecutor =\n(node: Node, tensorMap: NamedTensorsMap,\n context: ExecutionContext): Tensor[] => {\n  switch\n(node.op) {\n    case 'Equal': {\n      return [tfOps.equal(\n        getParamValue('a', node, tensorMap,\ncontext) as Tensor,\n        getParamValue('b', node, tensorMap, context) as Tensor)];\n    }\n    case\n'NotEqual': {\n      return [tfOps.notEqual(\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b', node, tensorMap, context) as Tensor)];\n    }\n    case 'Greater': {\n      return\n[tfOps.greater(\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b',\nnode, tensorMap, context) as Tensor)];\n    }\n    case 'GreaterEqual': {\n      return [tfOps.greaterEqual(\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b', node, tensorMap, context)\nas Tensor)];\n    }\n    case 'Less': {\n      return [tfOps.less(\n        getParamValue('a', node, tensorMap,\ncontext) as Tensor,\n        getParamValue('b', node, tensorMap, context) as Tensor)];\n    }\n    case\n'LessEqual': {\n      return [tfOps.lessEqual(\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b', node, tensorMap, context) as Tensor)];\n    }\n    case 'LogicalAnd': {\n      return\n[tfOps.logicalAnd(\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b',\nnode, tensorMap, context) as Tensor)];\n    }\n    case 'LogicalNot': {\n      return [tfOps.logicalNot(\n        getParamValue('a', node, tensorMap, context) as Tensor)];\n    }\n    case 'LogicalOr': {\n      return\n[tfOps.logicalOr(\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b',\nnode, tensorMap, context) as Tensor)];\n    }\n    case 'Select':\n    case 'SelectV2': {\n      return\n[tfOps.where(\n        getParamValue('condition', node, tensorMap, context) as Tensor,\n        getParamValue('a', node, tensorMap, context) as Tensor,\n        getParamValue('b', node, tensorMap, context) as\nTensor)];\n    }\n    default:\n      throw TypeError(`Node type ${node.op} is not implemented`);\n    }\n  };\n\nexport const CATEGORY = 'logical';\n", "/*\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\nsoftware\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { Tensor, Tensor2D } from '@tensorflow/tfjs-core';\n// tslint:disable-next-line: no-imports-from-dist\nimport * as tfOps from '@tensorflow/tfjs-core/dist/ops/ops_for_converter';\nimport { NamedTensorsMap } from\n'../../data/types';\nimport { ExecutionContext } from '../../executor/execution_context';\nimport\n{ InternalOpExecutor, Node } from './types';\nimport { getParamValue } from './utils';\n\nexport const executeOp:\nInternalOpExecutor =\n(node: Node, tensorMap: NamedTensorsMap,\n context: ExecutionContext): Tensor[]\n=> {\n  switch (node.op) {\n    case 'BatchMatMul':\n    case 'BatchMatMulV2':\n    case 'MatMul':\n    case 'MatMulV2':\n      return [tfOps.matMul(\n        getParamValue('a', node, tensorMap, context) as Tensor2D,\n        getParamValue('b', node, tensorMap, context) as Tensor2D,\n        getParamValue('transposeA', node,
```


on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport * as tfc from '@tensorflow/tfjs-core';\nimport {NamedTensorsMap} from './data/types';\nimport {ExecutionContext} from './executor/execution_context';\nimport {ResourceManager} from './executor/resource_manager';\nimport {NodeValueImpl} from './custom_op/node_value_impl';\nimport {getRegisteredOp} from './custom_op/register';\nimport * as arithmetic from './executors/arithmetic_executor';\nimport * as basicMath from './executors/basic_math_executor';\nimport * as control from './executors/control_executor';\nimport * as convolution from './executors/convolution_executor';\nimport * as creation from './executors/creation_executor';\nimport * as dynamic from './executors/dynamic_executor';\nimport * as evaluation from './executors/evaluation_executor';\nimport * as graph from './executors/graph_executor';\nimport * as hashTable from './executors/hash_table_executor';\nimport * as image from './executors/image_executor';\nimport * as logical from './executors/logical_executor';\nimport * as matrices from './executors/matrices_executor';\nimport * as normalization from './executors/normalization_executor';\nimport * as reduction from './executors/reduction_executor';\nimport * as sliceJoin from './executors/slice_join_executor';\nimport * as spectral from './executors/spectral_executor';\nimport * as transformation from './executors/transformation_executor';\nimport {Node} from './types';\n\n/**\n * Executes the op defined by the node object.\n * @param node\n * @param tensorMap contains tensors for executed nodes and weights\n * @param context contains tensors and information for running the current node.\n * @param resourceManager Optional. Contains global resources of the model.\n */\nexport function executeOp(\n  node: Node, tensorMap: NamedTensorsMap, context: ExecutionContext,\n  resourceManager?: ResourceManager):\n  tfc.Tensor[] | Promise<tfc.Tensor[]> {\n  const value = (\n    (node: Node, tensorMap: NamedTensorsMap, context: ExecutionContext) => {\n      switch (node.category) {\n        case 'arithmetic':\n          return tfc.tidy(\n            () => arithmetic.executeOp(node, tensorMap, context));\n        case 'basic_math':\n          return tfc.tidy(\n            () => basicMath.executeOp(node, tensorMap, context));\n        case 'control':\n          return control.executeOp(node, tensorMap, context);\n        case 'convolution':\n          return tfc.tidy(\n            () => convolution.executeOp(node, tensorMap, context));\n        case 'creation':\n          return tfc.tidy(() => creation.executeOp(node, tensorMap, context));\n        case 'dynamic':\n          return dynamic.executeOp(node, tensorMap, context);\n        case 'evaluation':\n          return tfc.tidy(\n            () => evaluation.executeOp(node, tensorMap, context));\n        case 'image':\n          return tfc.tidy(() => image.executeOp(node, tensorMap, context));\n        case 'graph':\n          return tfc.tidy(() => graph.executeOp(node, tensorMap, context));\n        case 'logical':\n          return tfc.tidy(() => logical.executeOp(node, tensorMap, context));\n        case 'matrices':\n          return tfc.tidy(() => matrices.executeOp(node, tensorMap, context));\n        case 'normalization':\n          return tfc.tidy(\n            () => normalization.executeOp(node, tensorMap, context));\n        case 'reduction':\n          return tfc.tidy(\n            () => reduction.executeOp(node, tensorMap, context));\n        case 'slice_join':\n          return tfc.tidy(\n            () => sliceJoin.executeOp(node, tensorMap, context));\n        case 'spectral':\n          return tfc.tidy(() => spectral.executeOp(node, tensorMap, context));\n        case 'transformation':\n          return tfc.tidy(\n            () => transformation.executeOp(node, tensorMap, context));\n        case 'hash_table':\n          return hashTable.executeOp(\n            node, tensorMap, context, resourceManager);\n        case 'custom':\n          const opMapper = getRegisteredOp(node.op);\n          if (opMapper && opMapper.customExecutor) {\n            return opMapper.customExecutor(\n              new NodeValueImpl(node, tensorMap, context));\n          } else {\n            throw TypeError(`Custom op ${node.op} is not registered.`);\n          }\n          default:\n            throw\n              TypeError(\n                `Unknown op '${node.op}'. File an issue at ` +\n                  `https://github.com/tensorflow/tfjs/issues so we can add it` +\n                  `, or register a custom execution with\n                  tf.registerOp()`);\n          }\n      })(node, tensorMap, context);\n    if (tfc.util.isPromise(value)) {\n      return (value as Promise<tfc.Tensor>).then((data) => [].concat(data));\n    }\n    return [].concat(value);\n  }\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
```

\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

=====
*\nimport {Tensor} from '@tensorflow/tfjs-core';\n\nimport {NamedTensorsMap, TensorArrayMap,
TensorListMap} from './data/types';\n\nimport {TensorArray} from './tensor_array';\n\nimport {TensorList} from './tensor_list';\n\nimport {FunctionExecutor} from './types';\n\nexport interface ExecutionContextInfo {\n  id: number;\n  // the unique id of the context info\n  frameName: string; // The frame name of the loop, this comes from\n  // the TensorFlow NodeDef.\n  iterationId: number; // The iteration id of the loop\n}\n\n/**\n * ExecutionContext captures the runtime environment of the node. It keeps\n * track of the current frame and iteration for the control flow ops.\n * For example, typical Dynamic RNN model may contain loops, for which\n * TensorFlow will generate graphs with Enter/Exit nodes to control the\n * current execution frame, and NextIteration Nodes for iteration id increment.\n * For model with branch logic, TensorFlow will generate Switch/Merge ops.\n */\nexport class ExecutionContext {\n  private rootContext = {id: 0, frameName: '', iterationId: 0};\n  private contexts: ExecutionContextInfo[] = [this.rootContext];\n  private lastId = 0;\n  private _currentContextIds: string[];\n\n  constructor(\n    readonly weightMap: NamedTensorsMap = {},\n    readonly tensorArrayMap: TensorArrayMap = {},\n    readonly tensorListMap: TensorListMap = {},\n    readonly functionMap: {[key: string]: FunctionExecutor} = {})\n    {\n      this.generateCurrentContextIds();\n    }\n\n  private newFrame(id: number, frameName: string) {\n    return {id, frameName, iterationId: 0};\n  }\n\n  /**\n   * Set the current context\n   * @param contexts: ExecutionContextInfo[] the current path of execution\n   * frames\n   */\n  set currentContext(contexts: ExecutionContextInfo[]) {\n    if (this.contexts !== contexts) {\n      this.contexts = contexts;\n      this.generateCurrentContextIds();\n    }\n  }\n\n  get currentContext(): ExecutionContextInfo {\n    return this.contexts;\n  }\n\n  /**\n   * Returns the current context in string format.\n   */\n  get currentContextId(): string {\n    return this._currentContextIds[0];\n  }\n\n  /**\n   * Returns the current context and all parent contexts in string format.\n   * This allow access to the nodes in the current and parent frames.\n   */\n  get currentContextIds(): string[] {\n    return this._currentContextIds;\n  }\n\n  private generateCurrentContextIds() {\n    const names = [];\n    for (let i = 0; i < this.contexts.length - 1; i++) {\n      const contexts = this.contexts.slice(0, this.contexts.length - i);\n      names.push(this.contextIdforContexts(contexts));\n    }\n    names.push('');\n    this._currentContextIds = names;\n  }\n\n  private contextIdforContexts(contexts: ExecutionContextInfo[]) {\n    return contexts\n      .map(\n        context => (context.id === 0 && context.iterationId === 0)\n      )\n      .join('/')\n      .join('');\n  }\n\n  /**\n   * Enter a new frame, a new context is pushed on the current context list.\n   * @param frameId new frame id\n   */\n  enterFrame(frameId: string) {\n    if (this.contexts) {\n      this.lastId++;\n      this.contexts = this.contexts.slice();\n      this.contexts.push(this.newFrame(this.lastId, frameId));\n      this._currentContextIds.unshift(this.contextIdforContexts(this.contexts));\n    }\n  }\n\n  /**\n   * Exit the current frame, the last context is removed from the current\n   * context list.\n   */\n  exitFrame() {\n    if (this.contexts && this.contexts.length > 1) {\n      this.contexts = this.contexts.slice();\n      this.contexts.splice(-1);\n      this.currentContextIds.shift();\n    } else {\n      throw new Error('Cannot exit frame, the context is empty');\n    }\n  }\n\n  /**\n   * Enter the next iteration of a loop, the iteration id of last context is\n   * increased.\n   */\n  nextIteration() {\n    if (this.contexts && this.contexts.length > 0) {\n      this.contexts = this.contexts.slice();\n      this.lastId++;\n      const context =\n        Object.assign({}, this.contexts[this.contexts.length - 1]);\n      context.iterationId += 1;\n      context.id = this.lastId;\n      this.contexts.splice(-1, 1, context);\n      this._currentContextIds.splice(\n        0, 1, this.contextIdforContexts(this.contexts);\n      );\n    } else {\n      throw new Error('Cannot increase frame iteration, the context is empty');\n    }\n  }\n\n  getWeight(name: string): Tensor[] {\n    return this.weightMap[name];\n  }\n\n  addTensorArray(tensorArray: TensorArray) {\n    this.tensorArrayMap[tensorArray.id] = tensorArray;\n  }\n\n  getTensorArray(id: number): TensorArray {\n    return

```



```

this.tensorArrayMap[id];\n }\n\n addTensorList(tensorList: TensorList) {\n  this.tensorListMap[tensorList.id] =
tensorList;\n }\n\n getTensorList(id: number): TensorList {\n  return this.tensorListMap[id];\n }\n\n
dispose(keepIds: Set<number>) {\n  for (const key in this.tensorArrayMap) {\n
this.tensorArrayMap[key].clearAndClose(keepIds);\n  }\n\n  for (const key in this.tensorListMap) {\n
this.tensorListMap[key].clearAndClose(keepIds);\n  }\n }\n\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {NamedTensorMap} from '@tensorflow/tfjs-core';\n\nimport {NamedTensorsMap} from
'./data/types';\n\nimport {parseNodeName} from './operations/executors/utils';\n\nimport {Graph, Node} from
'./operations/types';\n\nexport interface ExecutionInfo {\n  inputs: NamedTensorMap;\n  outputs: Node[];\n
usedNodes: Set<string>;\n  missingInputs: string[];\n  dynamicNode: Node;\n  syncInputs: string[];\n }\n\n/*\n *
Given graph inputs and desired outputs, find the minimal set of nodes\n * to execute in order to compute the outputs.
In addition return other useful\n * info such:\n * - Missing inputs needed to compute the output.\n * - Whether the
subgraph contains dynamic ops (control flow, dynamic shape).\n * - Alternative inputs in order to avoid async
(dynamic op) execution.\n */\n\nexport function getExecutionSubgraph(\n  inputs: NamedTensorMap, outputs:
Node[], weightMap: NamedTensorsMap,\n  initNodes?: Node[]): ExecutionInfo {\n  const usedNodes = new
Set<string>();\n  const missingInputs: string[] = [];\n  let dynamicNode: Node = null;\n  let syncInputs: string[] =
null;\n\n  // Start with the outputs, going backwards and find all the nodes that are\n // needed to compute those
outputs.\n  const seen = new Set<string>();\n  const inputNodeNames =\n    Object.keys(inputs).map(name =>
parseNodeName(name)[0]);\n\n  let initNodeNames: string[] = [];\n  if (initNodes != null) {\n    initNodeNames =
initNodes.map(node => parseNodeName(node.name)[0]);\n  }\n\n  const frontier = [...outputs];\n  while
(frontier.length > 0) {\n    const node = frontier.pop();\n    if (isControlFlow(node) || isDynamicShape(node) ||
isHashTable(node)) {\n      if (dynamicNode == null) {\n        dynamicNode = node;\n        syncInputs =
dynamicNode.children.map(child => child.name)\n          .filter(name => usedNodes.has(name));\n      }\n
}\n    usedNodes.add(node.name);\n\n    // Weights are dead end since we already have their values.\n    if
(weightMap[node.name] != null) {\n      continue;\n    }\n    // This node is a dead end since it's one of the user-
provided inputs.\n    if (inputNodeNames.indexOf(node.name) !== -1) {\n      continue;\n    }\n    // This node is a
dead end since it doesn't have any inputs.\n    if (initNodeNames.indexOf(node.name) !== -1) {\n      continue;\n
}\n    if (node.inputs.length === 0) {\n      missingInputs.push(node.name);\n      continue;\n    }\n    node.inputs.forEach(input => {\n      // Don't add to the frontier if it is already there.\n      if (seen.has(input.name))
{\n        return;\n      }\n      seen.add(input.name);\n      frontier.push(input);\n    });\n  }\n  return {inputs, outputs,
usedNodes, missingInputs, dynamicNode, syncInputs};\n }\n\n/*\n * Given the execution info, return a list of nodes
in topological order that\n * need to be executed to compute the output.\n */\n\nexport function
getNodesInTopologicalOrder(\n  graph: Graph, weightMap: NamedTensorsMap,\n  executionInfo:
ExecutionInfo): Node[] {\n  const {usedNodes, inputs} = executionInfo;\n  const frontier: Node[] = [];\n  const
inputNodes = Object.keys(inputs)\n    .map(name => parseNodeName(name)[0])\n
.map(name => graph.nodes[name]);\n  const initNodes = graph.initNodes;\n\n  inputNodes.forEach(input => {\n  if
(usedNodes.has(input.name)) {\n    frontier.push(input);\n  }\n });\n  graph.weights.forEach(weight => {\n  if
(usedNodes.has(weight.name)) {\n    frontier.push(weight);\n  }\n });\n  if (initNodes != null) {\n
initNodes.forEach(node => {\n  if (usedNodes.has(node.name)) {\n    frontier.push(node);\n  }\n });\n }\n
const seen = new Set<string>();\n  const orderedNodes: Node[] = [];\n  while (frontier.length > 0) {\n    const node =
frontier.pop();\n    seen.add(node.name);\n    if (!weightMap[node.name]) {\n      orderedNodes.push(node);\n    }\n
node.children.forEach(child => {\n    if (!seen.has(child.name) && usedNodes.has(child.name) &&\n

```

```

child.inputs.every(input => seen.has(input.name))) {\n    frontier.push(child);\n    }\n  });\n }\n return
orderedNodes;\n}\n\nconst CONTROL_FLOW_OPS = [\n 'Switch', 'Merge', 'Enter', 'Exit', 'NextIteration',
'StatelessIf',\n 'StatelessWhile', 'if', 'While'\n];\nconst DYNAMIC_SHAPE_OPS = [\n 'NonMaxSuppressionV2',
'NonMaxSuppressionV3', 'NonMaxSuppressionV5', 'Where'\n];\nconst HASH_TABLE_OPS = [\n 'HashTable',
'HashTableV2', 'LookupTableImport', 'LookupTableImportV2',\n 'LookupTableFind',
'LookupTableFindV2'\n];\n\nexport function isControlFlow(node: Node) {\n return
CONTROL_FLOW_OPS.indexOf(node.op) >= 0;\n}\n\nexport function isDynamicShape(node: Node) {\n return
DYNAMIC_SHAPE_OPS.indexOf(node.op) >= 0;\n}\n\nexport function isHashTable(node: Node) {\n return
HASH_TABLE_OPS.indexOf(node.op) >= 0;\n}\n}\n\n"/**\n * @license\n * Copyright 2018 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {DataType, NamedTensorMap, Tensor, tidy, util} from '@tensorflow/tfjs-core';\n\nimport
{ISignatureDef} from '../data/compiled_api';\n\nimport {NamedTensorsMap, TensorArrayMap, TensorInfo,
TensorListMap} from '../data/types';\n\nimport {getNodeNameAndIndex, getParamValue, getTensor,
getTensorsForCurrentContext, parseNodeName} from '../operations/executors/utils';\n\nimport {executeOp} from
 '../operations/operation_executor';\n\nimport {Graph, Node} from '../operations/types';\n\nimport {ExecutionContext,
ExecutionContextInfo} from './execution_context';\n\nimport {getExecutionSubgraph, getNodesInTopologicalOrder,
isControlFlow} from './model_analysis';\n\nimport {ResourceManager} from './resource_manager';\n\nimport
{FunctionExecutor} from './types';\n\ninterface NodeWithContexts {\n contexts: ExecutionContextInfo[];\n node:
Node;\n}\n\nexport class GraphExecutor implements FunctionExecutor {\n private compiledMap: Map<string,
Node[]> = new Map();\n private _weightMap: NamedTensorsMap = {};\n private _weightIds: number[];\n private
_signature: ISignatureDef;\n private _inputs: Node[];\n private _outputs: Node[];\n private _initNodes: Node[]; //
Internal init nodes to start initialization.\n private SEPERATOR = ',';\n private _functions: {[key: string]: Graph} =
{};\n private _functionExecutorMap: {[key: string]: FunctionExecutor} = {};\n private _resourceManager:
ResourceManager;\n\n get weightIds(): number[] {\n return this.parent ? this.parent.weightIds : this._weightIds;\n
}\n\n get functionExecutorMap(): {[key: string]: FunctionExecutor} {\n return this.parent ?
this.parent.functionExecutorMap :\n this._functionExecutorMap;\n }\n\n get weightMap():
NamedTensorsMap {\n return this.parent ? this.parent.weightMap : this._weightMap;\n }\n\n set
weightMap(weightMap: NamedTensorsMap) {\n const weightIds = Object.keys(weightMap).map(\n key =>
weightMap[key].map(tensor => tensor.id);\n this._weightIds = [].concat(...weightIds);\n this._weightMap =
weightMap;\n }\n\n /**\n * Set `ResourceManager` shared by executors of a model.\n * @param
resourceManager: `ResourceManager` of the `GraphModel`.\n */\n set resourceManager(resourceManager:
ResourceManager) {\n this._resourceManager = resourceManager;\n }\n\n get inputs(): TensorInfo[] {\n return
this._inputs.map(node => {\n return {\n name: node.name,\n shape: node.attrParams['shape'] ?\n
node.attrParams['shape'].value as number[] :\n undefined,\n dtype: node.attrParams['dtype'] ?\n
node.attrParams['dtype'].value as DataType :\n undefined\n };n });\n }\n\n get outputs(): TensorInfo[]
{\n return this._outputs.map(node => {\n return {\n name: node.name,\n shape:
node.attrParams['shape'] ?\n node.attrParams['shape'].value as number[] :\n undefined,\n dtype:
node.attrParams['dtype'] ?\n node.attrParams['dtype'].value as DataType :\n undefined\n };n });\n
}\n\n get inputNodes(): string[] {\n return this._inputs.map(node => node.signatureKey || node.name);\n }\n\n
get outputNodes(): string[] {\n return this._outputs.map((node) => {\n const name = node.signatureKey ||
node.name;\n return node.defaultOutput ? (`${name}:${node.defaultOutput}`) : name;\n });\n }\n\n get
functions(): {[key: string]: ISignatureDef} {\n return Object.keys(this._functions).reduce((map, key) => {\n

```

```

map[key] = this._functions[key].signature;\n    return map;\n  }, { } as {[key: string]: ISignatureDef});\n }\n\n/**\n * @param graph Graph the model or function graph to be executed.\n * @param parent When building\n function executor you need to set the parent\n * executor. Since the weights and function executor maps are set at\n parant\n * level, that function executor can access the function maps and weight maps\n * through the parent.\n */\n constructor(private graph: Graph, private parent?: GraphExecutor) {\n  this._outputs = graph.outputs;\n  this._inputs = graph.inputs;\n  this._initNodes = graph.initNodes;\n  this._signature = graph.signature;\n  this._functions = graph.functions;\n  // create sub-graph executors\n  if (graph.functions != null) {\n    Object.keys(graph.functions).forEach(name => {\n      this._functionExecutorMap[name] =\n        new\n        GraphExecutor(graph.functions[name], this);\n    });\n  }\n\n  private getCompilationKey(inputs: Node[],\n    outputs: Node[]): string {\n    const sortedInputs = inputs.map(node => node.name).sort();\n    const sortedOutputs =\n    outputs.map(node => node.name).sort();\n    return sortedInputs.join(this.SEPERATOR) + '--' +\n    sortedOutputs.join(this.SEPERATOR);\n  }\n\n  /**\n   * Compiles the inference graph and returns the minimal set\n   of nodes that are\n   * required for execution, in the correct execution order.\n   */\n  private compile(inputs:\n    NamedTensorMap, outputs: Node[]): Node[] {\n    const executionInfo =\n      getExecutionSubgraph(inputs,\n    outputs, this.weightMap, this._initNodes);\n    const {missingInputs, dynamicNode, syncInputs} = executionInfo;\n    if (dynamicNode != null) {\n      throw new Error(\n        `This execution contains the node\n        '${dynamicNode.name}', which has\n        `the dynamic op '${dynamicNode.op}'. Please use\n        `model.executeAsync() instead. Alternatively, to avoid the\n        `dynamic ops, specify the inputs\n        [${syncInputs}]`);\n    }\n    if (missingInputs.length > 0) {\n      const outNames = outputs.map(n => n.name);\n      const inNames = Object.keys(inputs);\n      throw new Error(\n        `Cannot compute the outputs [${outNames}]\n        from the provided inputs\n        [${inNames}]. Missing the following inputs: [${missingInputs}]`);\n    }\n    return getNodesInTopologicalOrder(\n      this.graph, this.weightMap, executionInfo);\n  }\n\n  /**\n   * Executes\n   the inference for given input tensors.\n   * @param inputs Tensor map for the model inputs, keyed by the input\n   node\n   * names.\n   * @param outputs Optional. output node name from the Tensorflow model, if\n   * no outputs\n   are specified, the default outputs of the model would be used.\n   * You can inspect intermediate nodes of the model\n   by adding them to the\n   * outputs array.\n   */\n  execute(inputs: NamedTensorMap, outputs?: string[]): Tensor[]\n  {\n    inputs = this.mapInputs(inputs);\n    const names = Object.keys(inputs).sort();\n    this.checkInputs(inputs);\n    this.checkInputShapeAndType(inputs);\n    outputs = this.mapOutputs(outputs);\n    this.checkOutputs(outputs);\n    const inputNodes =\n      names.map(name => this.graph.nodes[parseNodeName(name)[0]]);\n    const\n    outputNodeNames = outputs.map(name => parseNodeName(name)[0]);\n    let outputNodes =\n    outputNodeNames.map(name => this.graph.nodes[name]);\n    // If no outputs are specified, then use the default\n    outputs of the model.\n    if (outputNodes.length === 0) {\n      outputNodes = this._outputs;\n    }\n    const\n    compilationKey = this.getCompilationKey(inputNodes, outputNodes);\n    // Do nothing if the compiled graph\n    cache contains the input.\n    let orderedNodes = this.compiledMap.get(compilationKey);\n    if (orderedNodes ==\n    null) {\n      orderedNodes = this.compile(inputs, outputNodes);\n      this.compiledMap.set(compilationKey,\n    orderedNodes);\n    }\n    const tensorArrayMap: TensorArrayMap = {};\n    const tensorListMap: TensorListMap\n    = {};\n    return tidy(() => {\n      const context = new ExecutionContext(\n        this.weightMap,\n    tensorArrayMap, tensorListMap,\n        this.functionExecutorMap);\n      const tensorsMap: NamedTensorsMap =\n    {...this.weightMap};\n      Object.keys(inputs).forEach(name => {\n        const [nodeName, index] =\n        parseNodeName(name);\n        const tensors: Tensor[] = [];\n        tensors[index] = inputs[name];\n        tensorsMap[nodeName] = tensors;\n      });\n      const tensorsToKeep = this.getFrozenTensorIds(tensorsMap);\n      const intermediateTensorConsumerCount: {[key: number]: number} = {};\n      for (let i = 0; i <\n    orderedNodes.length; i++) {\n        const node = orderedNodes[i];\n        if (!tensorsMap[node.name]) {\n          const\n          tensors =\n            executeOp(node, tensorsMap, context, this._resourceManager) as\n            Tensor[];\n          if\n          (util.isPromise(tensors)) {\n            throw new Error(\n              `The execution of the op '${node.op}' returned a\n              promise.\n              `Please use model.executeAsync() instead.`);\n          }\n          tensorsMap[node.name] =\n          tensors;\n          this.checkTensorForDisposal(\n            node.name, node, tensorsMap, context, tensorsToKeep,\n            outputNodeNames, intermediateTensorConsumerCount);\n        }\n      }\n      // dispose the context for the root

```

```

executor\n    if (this.parent == null) {\n        context.dispose(tensorsToKeep);\n    }\n    return outputs.map(name
=> getTensor(name, tensorsMap, context));\n    });\n    }\n\n    private getFrozenTensorIds(tensorMap:
NamedTensorsMap): Set<number> {\n        const ids = [].concat.apply(\n            [],\n            Object.keys(tensorMap)\n                .map(key => tensorMap[key])\n                .map(tensors => tensors.map(tensor => tensor.id));\n        return new
Set(ids);\n    }\n\n    private checkTensorForDisposal(\n        nodeName: string, node: Node, tensorMap:
NamedTensorsMap,\n        context: ExecutionContext, tensorsToKeep: Set<number>,\n        outputNames: string[],\n        intermediateTensorConsumerCount: {[key: string]: number}) {\n        // Skip output nodes and any control flow
nodes, since its dependency is\n        // tricky to track correctly.\n        if (node.category === 'control' ||
outputNames.indexOf(nodeName) !== -1) {\n            return;\n        }\n        tensorMap[nodeName].forEach(tensor => {\n
if (tensor != null) {\n            intermediateTensorConsumerCount[tensor.id] =\n
(intermediateTensorConsumerCount[tensor.id] || 0) +\n                node.children.length;\n            }\n        });\n        node.inputs.forEach(input => {\n            // Skip any control flow nodes, since its dependency is tricky to track\n            //
correctly.\n            if (input.category !== 'control') {\n                const tensors =\n
getTensorsForCurrentContent(input.name, tensorMap, context);\n                if (tensors != null) {\n
tensors.forEach(tensor => {\n                    if (tensor && !tensorsToKeep.has(tensor.id)) {\n                        const count =
intermediateTensorConsumerCount[tensor.id];\n                        if (count === 1) {\n                            tensor.dispose();\n
delete intermediateTensorConsumerCount[tensor.id];\n                        } else if (count != null) {\n                            // only
intermediate nodes has count set, inputs and weights are\n                            // not.\n
intermediateTensorConsumerCount[tensor.id]--;\n                        }\n                    });\n                });\n            });\n        });\n    }\n\n    /**\n     * Executes the inference for given input tensors in Async fashion.\n     * @param inputs Tensor map for the
model inputs, keyed by the input node\n     * names.\n     * @param outputs output node name from the Tensorflow
model, if no outputs\n     * are specified, the default outputs of the model would be used. You can\n     * inspect
intermediate nodes of the model by adding them to the outputs\n     * array.\n     * ^\n     * async executeAsync(inputs:
NamedTensorMap, outputs?: string[]):\n     * Promise<Tensor[]> {\n     * return this._executeAsync(inputs, outputs);\n     * }\n     * }\n\n     * Executes the inference for given input tensors in Async fashion.\n     * @param inputs Tensor map for
the model inputs, keyed by the input node\n     * names.\n     * @param outputs Optional. output node name from the
Tensorflow model,\n     * if no outputs are specified, the default outputs of the model would be\n     * used. You can
inspect intermediate nodes of the model by adding them to the\n     * outputs array.\n     * @param
isFunctionExecution Optional. Flag for executing a function.\n     * @param tensorArrayMap Optional, global
TensorArray map by id. Used for\n     * function execution.\n     * @param tensorArrayMap Optinal global TensorList
map by id. Used for\n     * function execution.\n     * ^\n     * private async _executeAsync(\n     * inputs: NamedTensorMap,
outputs?: string[], isFunctionExecution = false,\n     * tensorArrayMap: TensorArrayMap = {},\n     * tensorListMap:
TensorListMap = {}): Promise<Tensor[]> {\n     * if (!isFunctionExecution) {\n     * inputs = this.mapInputs(inputs);\n
this.checkInputs(inputs);\n     * this.checkInputShapeAndType(inputs);\n     * outputs = this.mapOutputs(outputs);\n
this.checkOutputs(outputs);\n     * }\n     * }\n     * const context = new ExecutionContext(\n     * this.weightMap,
tensorArrayMap, tensorListMap,\n     * this.functionExecutorMap);\n     * }\n     * // Graph with control flow op requires
runtime evaluation of the execution\n     * // order, while without control flow the execution order is pre-determined\n
// in the compile method.\n     * const tensorMap = await this.executeWithControlFlow(\n     * inputs, context, outputs,
isFunctionExecution);\n     * const results = outputs.map(name => getTensor(name, tensorMap, context));\n     * }\n     * //
dispose all the intermediate tensors\n     * const outputIds = results.map(t => t.id);\n     * const inputIds =
Object.keys(inputs).map(name => inputs[name].id);\n     * const keepIds =\n     * new Set<number>([...outputIds,
...inputIds, ...this.weightIds]);\n     * Object.keys(tensorMap).forEach(key => {\n     * const tensorArray =
tensorMap[key];\n     * tensorArray.forEach(tensor => {\n     * if (tensor && !tensor.isDisposed &&
!keepIds.has(tensor.id)) {\n     * tensor.dispose();\n     * }\n     * });\n     * });\n     * // dispose the context for the root
executor\n     * if (this.parent == null) {\n     * context.dispose(keepIds);\n     * }\n     * return results;\n     * }\n     * }\n     * async
executeFunctionAsync(\n     * inputs: Tensor[], tensorArrayMap: TensorArrayMap,\n     * tensorListMap:
TensorListMap): Promise<Tensor[]> {\n     * const mappedInputs = inputs.reduce((map, tensor, index) => {\n     * map[this.inputs[index].name] = tensor;\n
return map;\n     * }, {} as NamedTensorMap);\n     * }\n     * return

```

```

this._executeAsync(\n    mappedInputs, this.outputNodes, true, tensorArrayMap, tensorListMap);\n } \n /**\n *
When there are control flow nodes in the graph, the graph execution use\n * ExecutionContext to keep track of the
frames and loop iterators.\n * @param inputs placeholder tensors for the graph.\n * @param context the execution
context object for current execution.\n * @param outputNames Optional. output node name from the Tensorflow
model,\n * if no outputs are specified, the default outputs of the model would be\n * used. You can inspect
intermediate nodes of the model by adding them to the\n * outputs array.\n * @param isFunctionExecution Flag
for executing a function.\n */\n private async executeWithControlFlow(\n    inputs: NamedTensorMap, context:
ExecutionContext, outputNames?: string[],\n    isFunctionExecution?: boolean): Promise<NamedTensorsMap> {\n
    const names = Object.keys(inputs);\n    const inputNodes =\n        names.map(name =>
this.graph.nodes[parseNodeName(name)[0]);\n    const outputNodeNames = outputNames.map(name =>
parseNodeName(name)[0]);\n    let outputNodes = outputNodeNames.map(name => this.graph.nodes[name]);\n\n
// If no outputs are specified, then use the default outputs of the model.\n    if (outputNodes.length === 0) {\n
outputNodes = this._outputs;\n    }\n\n    const {usedNodes, missingInputs, dynamicNode, syncInputs} =\n        getExecutionSubgraph(\n            inputs, outputNodes, this.weightMap, this._initNodes);\n\n    // First nodes to
execute include inputNodes, weights, and initNodes.\n    const stack: NodeWithContexts[] = [\n        ...inputNodes,
...this.graph.weights, ...(this._initNodes || [])\n    ].map(node => {\n        return {node, contexts:
context.currentContext};\n    });\n    const tensorsMap: NamedTensorsMap = {...this.weightMap};\n
Object.keys(inputs).forEach(name => {\n        const [nodeName, index] = parseNodeName(name);\n        const
tensors: Tensor[] = [];\n        tensors[index] = inputs[name];\n        tensorsMap[nodeName] = tensors;\n    });\n    const
intermediateTensorConsumerCount: {[key: number]: number} = {};\n    const tensorsToKeep =
this.getFrozenTensorIds(tensorsMap);\n    const added: {[key: string]: boolean} = {};\n    while (stack.length > 0)
{\n        const promises = this.processStack(\n            inputNodes, stack, context, tensorsMap, added, tensorsToKeep,\n
            outputNodeNames, intermediateTensorConsumerCount, usedNodes);\n        await Promise.all(promises);\n    }\n
    if (dynamicNode == null && !isFunctionExecution) {\n        console.warn(\n            `This model execution did not
contain any nodes with control flow ` +\n            `or dynamic output shapes. You can use model.execute()
instead.`);\n    }\n    const missingOutputs =\n        outputNodes\n            .filter(\n                node =>
!isControlFlow(node) &&\n                    !getTensor(node.name, tensorsMap, context))\n            .map(node =>
node.name);\n    if (missingOutputs.length > 0) {\n        let alternativeMsg = `;\n        if (dynamicNode != null) {\n
alternativeMsg =\n            `Alternatively, to avoid the dynamic ops, use model.execute() ` +\n            `and specify
the inputs [${syncInputs}]`;\n        }\n        throw new Error(\n            `Cannot compute the outputs [${missingOutputs}]
from the provided ` +\n            `inputs [${names}]. Consider providing the following inputs: ` +\n
            `${missingInputs}. ${alternativeMsg}`);\n    }\n    return tensorsMap;\n }\n\n private processStack(\n
inputNodes: Node[], stack: NodeWithContexts[], context: ExecutionContext,\n    tensorMap: NamedTensorsMap,
added: {[key: string]: boolean},\n    tensorsToKeep: Set<number>, outputNames: string[],\n
intermediateTensorConsumerCount: {[key: number]: number},\n    usedNodes: Set<string>) {\n    const promises:
Array<Promise<Tensor[]>> = [];\n    while (stack.length > 0) {\n        const item = stack.pop();\n
context.currentContext = item.contexts;\n        let nodeName = `;\n        // The tensor of the Enter op with isConstant
set should be set\n        // in the parent scope, so it will be available as constant for the\n        // whole loop.\n        if
(item.node.op === 'Enter' &&\n            getParamValue('isConstant', item.node, tensorMap, context)) {\n
[nodeName] = getNodeNameAndIndex(item.node.name, context);\n        }\n\n        // only process nodes that are not in
the tensorMap yet, this include\n        // inputNodes and internal initNodes.\n        if (tensorMap[item.node.name] ==
null) {\n            const tensors =\n                executeOp(item.node, tensorMap, context, this._resourceManager);\n            if
(!nodeName) {\n                [nodeName] = getNodeNameAndIndex(item.node.name, context);\n            }\n            const
currentContext = context.currentContext;\n            if (util.isPromise(tensors)) {\n                promises.push((tensors as
Promise<Tensor[]>).then(t => {\n                    tensorMap[nodeName] = t;\n                    context.currentContext =
currentContext;\n                    this.checkTensorForDisposal(\n                        nodeName, item.node, tensorMap, context,
tensorsToKeep,\n                        outputNames, intermediateTensorConsumerCount);\n                    this.processChildNodes(\n
                        item.node, stack, context, tensorMap, added, usedNodes);\n                    return t;\n                }));\n            } else {\n

```

```

tensorMap[nodeName] = tensors as Tensor[];
this.checkTensorForDisposal(\n      nodeName,
item.node, tensorMap, context, tensorsToKeep,\n      outputNames, intermediateTensorConsumerCount);\n
this.processChildNodes(\n      item.node, stack, context, tensorMap, added, usedNodes);\n  }\n  } else {\n
    this.processChildNodes(\n      item.node, stack, context, tensorMap, added, usedNodes);\n  }\n }\n
return promises;\n }\n\n private processChildNodes(\n  node: Node, stack: NodeWithContexts[], context:
ExecutionContext,\n  tensorMap: NamedTensorsMap, added: {[key: string]: boolean},\n  usedNodes:
Set<string>) {\n  node.children.forEach((childNode) => {\n  const [nodeName, ] =
getNodeNameAndIndex(childNode.name, context);\n  if (added[nodeName] || !usedNodes.has(childNode.name))
{\n  return;\n  }\n  // Merge op can be pushed if any of its inputs has value.\n  if (childNode.op ===
'Merge') {\n  if (childNode.inputNames.some(name => {\n  return !!getTensor(name, tensorMap,
context);\n  })) {\n  added[nodeName] = true;\n  stack.push({ contexts: context.currentContext,
node: childNode});\n  }\n  } else // Otherwise all inputs must to have value.\n  if
(childNode.inputNames.every(name => {\n  return !!getTensor(name, tensorMap, context);\n  }))
{\n  added[nodeName] = true;\n  stack.push({ contexts: context.currentContext, node: childNode});\n  }\n
});\n }\n\n /**\n * Releases the memory used by the weight tensors.\n */\n dispose() {\n
Object.keys(this.weightMap)\n  .forEach(\n    key => this.weightMap[key].forEach(tensor =>
tensor.dispose());\n }\n\n private checkInputShapeAndType(inputs: NamedTensorMap) {\n
Object.keys(inputs).forEach(name => {\n  const input = inputs[name];\n  const [nodeName, ] =
parseNodeName(name);\n  const node = this.graph.nodes[nodeName];\n  if (node.attrParams['shape'] &&
node.attrParams['shape'].value) {\n  const shape = node.attrParams['shape'].value as number[];\n  const
match = shape.length === input.shape.length &&\n  input.shape.every(\n    (dim, index) =>
shape[index] === -1 || shape[index] === dim);\n  util.assert(\n    match,\n    () => `The shape of
dict['${node.name}'] provided in ` +\n    `model.execute(dict) must be [${shape}], but was ` +\n
`${input.shape}`);\n  }\n  if (node.attrParams['dtype'] && node.attrParams['dtype'].value) {\n
util.assert(\n    input.dtype === node.attrParams['dtype'].value as string,\n    () => `The dtype of
dict['${node.name}'] provided in ` +\n    `model.execute(dict) must be ` +\n
`${node.attrParams['dtype'].value}, but was ${input.dtype}`);\n  }\n  });\n }\n\n private mapInputs(inputs:
NamedTensorMap) {\n  const result: NamedTensorMap = {};\n  for (const inputName in inputs) {\n  if
(this._signature !== null && this._signature.inputs !== null &&\n  this._signature.inputs[inputName] !== null) {\n
const tensor = this._signature.inputs[inputName];\n  result[tensor.name] = inputs[inputName];\n  } else {\n
result[inputName] = inputs[inputName];\n  }\n  }\n  return result;\n }\n\n private checkInputs(inputs:
NamedTensorMap) {\n  const notInGraph = Object.keys(inputs).filter(name => {\n  const [nodeName] =
parseNodeName(name);\n  return this.graph.nodes[nodeName] == null;\n  });\n  if (notInGraph.length > 0) {\n
throw new Error(\n    `The dict provided in model.execute(dict) has ` +\n    `keys: [${notInGraph}] that are
not part of graph`);\n  }\n  }\n\n private mapOutputs(outputs: string[]) {\n  return outputs.map(name => {\n  if
(this._signature !== null && this._signature.outputs !== null &&\n  this._signature.outputs[name] !== null) {\n
const tensor = this._signature.outputs[name];\n  return tensor.name;\n  }\n  return name;\n  }, {});\n }\n\n
private checkOutputs(outputs: string[]): void {\n  outputs.forEach(name => {\n  const [normalizedName] =
parseNodeName(name);\n  if (!this.graph.nodes[normalizedName]) {\n  throw new Error(`The output
'${name}' is not found in the graph`);\n  }\n  });\n }\n }\n\n", "/*\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */\n\n
=====
*/\nimport {HashMap, NamedTensorMap} from './data/types';\nimport {HashMap} from

```

```

'./hash_table';\n\n/**\n * Contains global resources of a model.\n */\nexport class ResourceManager {\n
  constructor(\n    readonly hashTableNameToHandle: NamedTensorMap = {},\n    readonly hashTableMap:\n
  HashTableMap = {}) {\n\n    /**\n     * Register a `HashTable` in the resource manager.\n     *\n     * The `HashTable`\n
  can be retrieved by `resourceManager.getHashTableById`,\n     * where id is the table handle tensor's id.\n     *\n     *\n
  @param name Op node name that creates the `HashTable`.\n     * @param hashTable The `HashTable` to be added to\n
  resource manager.\n     */\n    addHashTable(name: string, hashTable: HashTable) {\n\n
  this.hashTableNameToHandle[name] = hashTable.handle;\n    this.hashTableMap[hashTable.id] = hashTable;\n
  }\n\n    /**\n     * Get the table handle by node name.\n     *\n     * @param name Op node name that creates the `HashTable`.\n
  This name is also\n     * used in the inputs list of lookup and import `HashTable` ops.\n     */\n
  getHashTableHandleByName(name: string) {\n    return this.hashTableNameToHandle[name];\n  }\n\n    /**\n     * Get the actual `HashTable` by its handle tensor's id.\n     *\n     * @param id The id of the handle tensor.\n     */\n
  getHashTableById(id: number): HashTable {\n    return this.hashTableMap[id];\n  }\n\n    /**\n     * Dispose\n
  `ResourceManager`, including its hashTables and tensors in them.\n     */\n    dispose() {\n    for (const key in\n
  this.hashTableMap) {\n      this.hashTableMap[key].clearAndClose();\n      delete this.hashTableMap[key];\n    }\n\n
  for (const name in this.hashTableNameToHandle) {\n      this.hashTableNameToHandle[name].dispose();\n
  delete this.hashTableNameToHandle[name];\n    }\n  }\n\n  },\n  /**\n   * @license\n   * Copyright 2018 Google LLC.\n
  All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the `License`);\n   * you may not use this\n
  file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * \n
  http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,\n
  software\n   * distributed under the License is distributed on an `AS IS` BASIS,\n   * WITHOUT WARRANTIES\n
  OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language\n
  governing permissions and\n   * limitations under the License.\n   */\n  }\n\n  =====\n
  *\n  \nimport {InferenceModel, io, ModelPredictConfig, NamedTensorMap, Tensor} from '@tensorflow/tfjs-\n
  core';\nimport * as tensorflow from './data/compiled_api';\nimport {NamedTensorsMap, TensorInfo} from\n
  './data/types';\nimport {OperationMapper} from './operations/operation_mapper';\nimport {GraphExecutor} from\n
  './graph_executor';\nimport {ResourceManager} from './resource_manager';\n\nexport const\n
  TFHUB_SEARCH_PARAM = '?tfjs-format=file';\nexport const DEFAULT_MODEL_NAME =\n
  'model.json';\n\n/**\n * A `tf.GraphModel` is a directed, acyclic graph built from a\n * SavedModel GraphDef and\n
  allows inference execution.\n * \n * A `tf.GraphModel` can only be created by loading from a model converted\n
  from\n * a [TensorFlow SavedModel](https://www.tensorflow.org/guide/saved_model) using\n * the command line\n
  converter tool and loaded via `tf.loadGraphModel`.\n * \n * @doc {heading: 'Models', subheading: 'Classes'}\n
  *\n  \nexport class GraphModel implements InferenceModel {\n  private executor: GraphExecutor;\n  private version =\n
  'n/a';\n  private handler: io.IOHandler;\n  private artifacts: io.ModelArtifacts;\n  private initializer: GraphExecutor;\n
  private resourceManager: ResourceManager;\n  private signature: tensorflow.ISignatureDef;\n\n  // Returns the\n
  version information for the tensorflow model GraphDef.\n  get modelVersion(): string {\n    return this.version;\n
  }\n\n  get inputNodes(): string[] {\n    return this.executor.inputNodes;\n  }\n\n  get outputNodes(): string[] {\n
  return this.executor.outputNodes;\n  }\n\n  get inputs(): TensorInfo[] {\n    return this.executor.inputs;\n  }\n\n
  get outputs(): TensorInfo[] {\n    return this.executor.outputs;\n  }\n\n  get weights(): NamedTensorsMap {\n    return\n
  this.executor.weightMap;\n  }\n\n  get metadata(): {} {\n    return this.artifacts.userDefinedMetadata;\n  }\n\n
  get modelSignature(): {} {\n    return this.signature;\n  }\n\n  /**\n   * @param modelUrl url for the model, or an\n
  `io.IOHandler`.\n   * @param weightManifestUrl url for the weight file generated by\n   * scripts/convert.py\n
  script.\n   * @param requestOptions options for Request, which allows to send credentials\n   * and custom\n
  headers.\n   * @param onProgress Optional, progress callback function, fired periodically\n   * before the load is\n
  completed.\n   */\n  constructor(\n    private modelUrl: string|io.IOHandler,\n    private loadOptions:\n
  io.LoadOptions = {}) {\n    if (loadOptions == null) {\n      this.loadOptions = {};\n    }\n\n    this.resourceManager =\n
  new ResourceManager();\n  }\n\n  private findIOHandler() {\n    const path = this.modelUrl;\n    if ((path as\n
  io.IOHandler).load != null) {\n      // Path is an IO Handler.\n      this.handler = path as io.IOHandler;\n    } else if

```

```

(this.loadOptions.requestInit != null) {\n    this.handler = io.browserHTTPRequest(path as string,
this.loadOptions);\n  } else {\n    const handlers = io.getLoadHandlers(path as string, this.loadOptions);\n    if
(handlers.length === 0) {\n      // For backward compatibility: if no load handler can be found,\n      // assume it is
a relative http path.\n      handlers.push(io.browserHTTPRequest(path as string, this.loadOptions));\n    } else if
(handlers.length > 1) {\n      throw new Error(\n        `Found more than one (${handlers.length}) load handlers
for ` +\n        `URL '${path}'`);\n    }\n    this.handler = handlers[0];\n  }\n}\n\n/**\n * Loads the model
and weight files, construct the in memory weight map and\n * compile the inference graph.\n */\n async load():
Promise<boolean> {\n  this.findIOHandler();\n  if (this.handler.load == null) {\n    throw new Error(\n
'Cannot proceed with model loading because the IOHandler provided ' +\n    'does not have the `load` method
implemented.);\n  }\n  const artifacts = await this.handler.load();\n  return this.loadSync(artifacts);\n}\n\n
/**\n * Synchronously construct the in memory weight map and\n * compile the inference graph. Also initialize
hashtable if any.\n */\n * @doc {heading: 'Models', subheading: 'Classes', ignoreCI: true}\n */\n
loadSync(artifacts: io.ModelArtifacts) {\n  this.artifacts = artifacts;\n  const graph = this.artifacts.modelTopology
as tensorflow.IGraphDef;\n\n  let signature;\n  if (this.artifacts.userDefinedMetadata != null &&\n
this.artifacts.userDefinedMetadata.signature != null) {\n    signature = // tslint:disable-next-line:no-any\n
(this.artifacts.userDefinedMetadata as any).signature as\n    tensorflow.ISignatureDef;\n  } else {\n    signature
= this.artifacts.signature;\n  }\n  this.signature = signature;\n\n  this.version =
`${graph.versions.producer}.${graph.versions.minConsumer}`;\n  const weightMap =\n
io.decodeWeights(this.artifacts.weightData, this.artifacts.weightSpecs);\n  this.executor = new GraphExecutor(\n
  OperationMapper.Instance.transformGraph(graph, this.signature);\n  this.executor.weightMap =
this.convertTensorMapToTensorsMap(weightMap);\n  // Attach a model-level resourceManager to each executor
to share resources,\n  // such as `HashTable`\n  this.executor.resourceManager = this.resourceManager;\n\n  if
(artifacts.modelInitializer != null &&\n    (artifacts.modelInitializer as tensorflow.IGraphDef).node != null) {\n
const initializer =\n    OperationMapper.Instance.transformGraph(artifacts.modelInitializer);\n    this.initializer
= new GraphExecutor(initializer);\n    this.initializer.weightMap = this.executor.weightMap;\n    // Attach a
model-level resourceManager to the initializer, the\n    // hashTables created from when executing the initializer
will be stored\n    // in the resourceManager.\n    this.initializer.resourceManager = this.resourceManager;\n
this.initializer.executeAsync({}, []);\n  }\n\n  return true;\n}\n\n/**\n * Save the configuration and/or weights
of the GraphModel.\n */\n * An `IOHandler` is an object that has a `save` method of the proper\n * signature
defined. The `save` method manages the storing or\n * transmission of serialized data ("artifacts") that represent
the\n * model's topology and weights onto or via a specific medium, such as\n * file downloads, local storage,
IndexedDB in the web browser and HTTP\n * requests to a server. TensorFlow.js provides `IOHandler`\n *
implementations for a number of frequently used saving mediums, such as\n * `tf.io.browserDownloads` and
`tf.io.browserLocalStorage`. See `tf.io`\n * for more details.\n */\n * This method also allows you to refer to
certain types of `IOHandler`s\n * as URL-like string shortcuts, such as `localStorage://` and\n * `indexeddb://`.\n
*\n * Example 1: Save `model`'s topology and weights to browser [local\n *
storage](https://developer.mozilla.org/en-US/docs/Web/API/Window/LocalStorage);\n * then load it back.\n *\n
* ```js\n * const modelUrl =\n *   'https://storage.googleapis.com/tfjs-
models/savedmodel/mobilenet_v2_1.0_224/model.json';\n * const model = await tf.loadGraphModel(modelUrl);\n
* const zeros = tf.zeros([1, 224, 224, 3]);\n * model.predict(zeros).print();\n *\n * const saveResults = await
model.save('localStorage://my-model-1');\n *\n * const loadedModel = await
tf.loadGraphModel('localStorage://my-model-1');\n * console.log('Prediction from loaded model:');\n *
model.predict(zeros).print();\n * ```\n *\n * @param handlerOrURL An instance of `IOHandler` or a URL-
like,\n * scheme-based string shortcut for `IOHandler`.\n * @param config Options for saving the model.\n *
@returns A `Promise` of `SaveResult`, which summarizes the result of\n * the saving, such as byte sizes of the
saved artifacts for the model's\n * topology and weight values.\n */\n * @doc {heading: 'Models', subheading:
'Classes', ignoreCI: true}\n */\n async save(handlerOrURL: io.IOHandler|string, config?: io.SaveConfig):
Promise<io.SaveResult> {\n  if (typeof handlerOrURL === 'string') {\n    const handlers =

```



```

io.getSaveHandlers(handlerOrURL);\n    if (handlers.length === 0) {\n        throw new Error(\n            `Cannot find\n            any save handlers for URL '${handlerOrURL}'`);\n    } else if (handlers.length > 1) {\n        throw new Error(\n            `Found more than one (${handlers.length}) save handlers for `+\n            `URL '${handlerOrURL}'`);\n    }\n    handlerOrURL = handlers[0];\n }\n if (handlerOrURL.save === null) {\n    throw new Error(\n        'GraphModel.save() cannot proceed because the IOHandler ' +\n        'provided does not have the `save` attribute\n        defined.);\n }\n\n return handlerOrURL.save(this.artifacts);\n }\n\n /**\n  * Execute the inference for the input\n  tensors.\n  *\n  * @param input The input tensors, when there is single input for the model,\n  * inputs param\n  should be a `tf.Tensor`. For models with mutliple inputs,\n  * inputs params should be in either `tf.Tensor[]` if the\n  input order is\n  * fixed, or otherwise NamedTensorMap format.\n  *\n  * For model with multiple inputs, we\n  recommend you use NamedTensorMap as the\n  * input type, if you use `tf.Tensor[]`, the order of the array needs\n  to\n  * follow the\n  * order of inputNodes array. @see {@link GraphModel.inputNodes}\n  *\n  * You can also\n  feed any intermediate nodes using the NamedTensorMap as the\n  * input type. For example, given the graph\n  * InputNode => Intermediate => OutputNode,\n  * you can execute the subgraph Intermediate => OutputNode by\n  calling\n  * model.execute('IntermediateNode' : tf.tensor(...));\n  *\n  * This is useful for models that uses\n  tf.dynamic_rnn, where the intermediate\n  * state needs to be fed manually.\n  *\n  * For batch inference\n  execution, the tensors for each input need to be\n  * concatenated together. For example with mobilenet, the\n  required input shape\n  * is [1, 244, 244, 3], which represents the [batch, height, width, channel].\n  * If we are\n  provide a batched data of 100 images, the input tensor should be\n  * in the shape of [100, 244, 244, 3].\n  *\n  *\n  * @param config Prediction configuration for specifying the batch size and\n  * output node names. Currently the\n  batch size option is ignored for graph\n  * model.\n  *\n  * @returns Inference result tensors. The output would be\n  single `tf.Tensor`\n  * if model has single output node, otherwise Tensor[] or NamedTensorMap[]\n  * will be\n  returned for model with multiple outputs.\n  *\n  * @doc {heading: 'Models', subheading: 'Classes'}\n  */\n\n predict(inputs: Tensor|Tensor[]|NamedTensorMap, config?: ModelPredictConfig):\n  Tensor|Tensor[]|NamedTensorMap {\n    return this.execute(inputs, this.outputNodes);\n  }\n\n private\n  normalizeInputs(inputs: Tensor|Tensor[]|NamedTensorMap): NamedTensorMap {\n    if (!(inputs\n    instanceof Tensor) && !Array.isArray(inputs)) {\n      // The input is already a NamedTensorMap.\n      return\n      inputs;\n    }\n    inputs = Array.isArray(inputs) ? inputs : [inputs];\n    if (inputs.length !== this.inputNodes.length)\n    {\n      throw new Error(\n        `Input tensor count mismatch, `+\n        `the graph model has\n        ${this.inputNodes.length} placeholders, `+\n        `while there are ${inputs.length} input tensors.`);\n    }\n    return this.inputNodes.reduce((map, inputName, i) => {\n      map[inputName] = (inputs as Tensor[])[i];\n      return\n      map;\n    }, {} as NamedTensorMap);\n  }\n\n private normalizeOutputs(outputs: string|string[]): string[] {\n    outputs = outputs || this.outputNodes;\n    return !Array.isArray(outputs) ? [outputs] : outputs;\n  }\n\n /**\n  * Executes inference for the model for given input tensors.\n  * @param inputs tensor, tensor array or tensor map of\n  the inputs for the\n  * model, keyed by the input node names.\n  * @param outputs output node name from the\n  Tensorflow model, if no\n  * outputs are specified, the default outputs of the model would be used.\n  * You can\n  inspect intermediate nodes of the model by adding them to the\n  * outputs array.\n  *\n  * @returns A single\n  tensor if provided with a single output or no outputs\n  * are provided and there is only one default output,\n  otherwise return a\n  * tensor array. The order of the tensor array is the same as the outputs\n  * if provided,\n  otherwise the order of outputNodes attribute of the model.\n  *\n  * @doc {heading: 'Models', subheading:\n  'Classes'}\n  */\n\n execute(inputs: Tensor|Tensor[]|NamedTensorMap, outputs?: string|string[]):\n  Tensor|Tensor[] {\n    inputs = this.normalizeInputs(inputs);\n    outputs = this.normalizeOutputs(outputs);\n    const\n    result = this.executor.execute(inputs, outputs);\n    return result.length > 1 ? result : result[0];\n  }\n\n /**\n  * Executes inference for the model for given input tensors in async\n  * fashion, use this method when your model\n  contains control flow ops.\n  * @param inputs tensor, tensor array or tensor map of the inputs for the\n  * model,\n  keyed by the input node names.\n  * @param outputs output node name from the Tensorflow model, if no outputs\n  * are specified, the default outputs of the model would be used. You can\n  * inspect intermediate nodes of the\n  model by adding them to the outputs\n  * array.\n  *\n  * @returns A Promise of single tensor if provided with a\n  single output or\n  * no outputs are provided and there is only one default output, otherwise\n  * return a tensor

```

```

map.\n * \n * @doc {heading: 'Models', subheading: 'Classes'}\n * \n async executeAsync(\n inputs:
Tensor[Tensor[]]NamedTensorMap,\n outputs?: string|string[]): Promise<Tensor[Tensor[]]> {\n inputs =
this.normalizeInputs(inputs);\n outputs = this.normalizeOutputs(outputs);\n const result = await
this.executor.executeAsync(inputs, outputs);\n return result.length > 1 ? result : result[0];\n }\n\n private
convertTensorMapToTensorsMap(map: NamedTensorMap): NamedTensorsMap {\n return
Object.keys(map).reduce((newMap: NamedTensorsMap, key) => {\n newMap[key] = [map[key]];\n return
newMap;\n }, {});\n }\n\n /**\n * Releases the memory used by the weight tensors and resourceManager.\n
*\n * @doc {heading: 'Models', subheading: 'Classes'}\n * \n dispose() {\n this.executor.dispose();\n\n if
(this.initializer) {\n this.initializer.dispose();\n }\n\n this.resourceManager.dispose();\n }\n}\n\n/**\n * Load
a graph model given a URL to the model definition.\n *\n * Example of loading MobileNetV2 from a URL and
making a prediction with a\n *\n zeros input:\n *\n * ```js\n * const modelUrl =\n *
'https://storage.googleapis.com/tfjs-models/savedmodel/mobilenet_v2_1.0_224/model.json';\n * const model = await
tf.loadGraphModel(modelUrl);\n * const zeros = tf.zeros([1, 224, 224, 3]);\n * model.predict(zeros).print();\n * ```\n
*\n * Example of loading MobileNetV2 from a TF Hub URL and making a prediction with\n * a zeros input:\n *\n
* ```js\n * const modelUrl =\n * 'https://tfhub.dev/google/imagenet/mobilenet_v2_140_224/classification/2';\n *
const model = await tf.loadGraphModel(modelUrl, {fromTFHub: true});\n * const zeros = tf.zeros([1, 224, 224,
3]);\n * model.predict(zeros).print();\n * ```\n *\n * @param modelUrl The url or an `io.IOHandler` that loads the
model.\n *\n * @param options Options for the HTTP request, which allows to send credentials\n * and custom
headers.\n *\n * @doc {heading: 'Models', subheading: 'Loading'}\n * \n\nexport async function loadGraphModel(\n
modelUrl: string|io.IOHandler,\n options: io.LoadOptions = {}): Promise<GraphModel> {\n if (modelUrl ==
null) {\n throw new Error(\n 'modelUrl in loadGraphModel() cannot be null. Please provide a url ' +\n 'or
an IOHandler that loads the model');\n }\n if (options == null) {\n options = {};\n }\n\n if (options.fromTFHub)
{\n if ((modelUrl as io.IOHandler).load == null) {\n if (!(modelUrl as string).endsWith('/')) {\n modelUrl =
(modelUrl as string) + '/;\n }\n modelUrl =
`${modelUrl}${DEFAULT_MODEL_NAME}${TFHUB_SEARCH_PARAM}`;\n }\n }\n\n const model = new
GraphModel(modelUrl, options);\n await model.load();\n return
model;\n }\n\n",null,null,null,null,null,null,null,null,null,null,null,null,null,null,null,null,null,"/**\n * dat-gui
JavaScript Controller Library\n * http://code.google.com/p/dat-gui\n *\n * Copyright 2011 Data Arts Team, Google
Creative Lab\n *\n * Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n\nimport Color from './color/Color';\nimport math from
'./color/math';\nimport interpret from './color/interpret';\n\nimport Controller from './controllers/Controller';\nimport
BooleanController from './controllers/BooleanController';\nimport OptionController from
'./controllers/OptionController';\nimport StringController from './controllers/StringController';\nimport
NumberController from './controllers/NumberController';\nimport NumberControllerBox from
'./controllers/NumberControllerBox';\nimport NumberControllerSlider from
'./controllers/NumberControllerSlider';\nimport FunctionController from './controllers/FunctionController';\nimport
ColorController from './controllers/ColorController';\n\nimport domImport from './dom/dom';\nimport GUIImport
from './gui/GUI';\n\nexport const color = {\n Color: Color,\n math: math,\n interpret: interpret;\n};\n\nexport const
controllers = {\n Controller: Controller,\n BooleanController: BooleanController,\n OptionController:
OptionController,\n StringController: StringController,\n NumberController: NumberController,\n
NumberControllerBox: NumberControllerBox,\n NumberControllerSlider: NumberControllerSlider,\n
FunctionController: FunctionController,\n ColorController: ColorController;\n};\n\nexport const dom = { dom:
domImport };;\n\nexport const gui = { GUI: GUIImport };;\n\nexport const GUI = GUIImport;\n\nexport default {\n
color,\n controllers,\n dom,\n gui,\n GUI;\n};\n","/**\n * dat-gui JavaScript Controller Library\n *
http://code.google.com/p/dat-gui\n *\n * Copyright 2011 Data Arts Team, Google Creative Lab\n *\n * Licensed
under the Apache License, Version 2.0 (the `License`);\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n

```

```

*\n\nexport default function(color, forceCSSHex) {\n  const colorFormat =
color.__state.conversionName.toString();\n\n  const r = Math.round(color.r);\n  const g = Math.round(color.g);\n  const b = Math.round(color.b);\n  const a = color.a;\n  const h = Math.round(color.h);\n  const s =
color.s.toFixed(1);\n  const v = color.v.toFixed(1);\n\n  if (forceCSSHex || (colorFormat ===
'THREE_CHAR_HEX') || (colorFormat === 'SIX_CHAR_HEX')) {\n    let str = color.hex.toString(16);\n    while
(str.length < 6) {\n      str = '0' + str;\n    }\n    return '#' + str;\n  } else if (colorFormat === 'CSS_RGB') {\n    return
'rgb(' + r + ',' + g + ',' + b + ')';\n  } else if (colorFormat === 'CSS_RGBA') {\n    return 'rgba(' + r + ',' + g + ',' + b +
',' + a + ')';\n  } else if (colorFormat === 'HEX') {\n    return '0x' + color.hex.toString(16);\n  } else if (colorFormat
=== 'RGB_ARRAY') {\n    return '[' + r + ',' + g + ',' + b + ']';\n  } else if (colorFormat === 'RGBA_ARRAY') {\n    return
 '[' + r + ',' + g + ',' + b + ',' + a + ']';\n  } else if (colorFormat === 'RGB_OBJ') {\n    return '{r:' + r + ',g:' + g +
',b:' + b + ')';\n  } else if (colorFormat === 'RGBA_OBJ') {\n    return '{r:' + r + ',g:' + g + ',b:' + b + ',a:' + a + ')';\n
  } else if (colorFormat === 'HSV_OBJ') {\n    return '{h:' + h + ',s:' + s + ',v:' + v + ')';\n  } else if (colorFormat ===
'HSVA_OBJ') {\n    return '{h:' + h + ',s:' + s + ',v:' + v + ',a:' + a + ')';\n  }\n\n  return 'unknown
format';\n}\n\n", "/*\n * dat-gui JavaScript Controller Library\n * http://code.google.com/p/dat-gui\n *\n * Copyright
2011 Data Arts Team, Google Creative Lab\n *\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n\nconst ARR_EACH =
Array.prototype.forEach;\nconst ARR_SLICE = Array.prototype.slice;\n\n/*\n * Band-aid methods for things that
should be a lot easier in JavaScript.\n * Implementation and structure inspired by underscore.js\n *
http://documentcloud.github.com/underscore/\n *\n\nconst Common = {\n  BREAK: {},\n\n  extend:
function(target) {\n    this.each(ARR_SLICE.call(arguments, 1), function(obj) {\n      const keys = this.isObject(obj)
? Object.keys(obj) : [];\n      keys.forEach(function(key) {\n        if (!this.isUndefined(obj[key])) {\n
target[key] = obj[key];\n        }\n      }.bind(this));\n    }, this);\n\n    return target;\n  },\n\n  defaults: function(target)
{\n    this.each(ARR_SLICE.call(arguments, 1), function(obj) {\n      const keys = this.isObject(obj) ?
Object.keys(obj) : [];\n      keys.forEach(function(key) {\n        if (this.isUndefined(target[key])) {\n          target[key]
= obj[key];\n        }\n      }.bind(this));\n    }, this);\n\n    return target;\n  },\n\n  compose: function() {\n    const
toCall = ARR_SLICE.call(arguments);\n    return function() {\n      let args = ARR_SLICE.call(arguments);\n      for
(let i = toCall.length - 1; i >= 0; i--) {\n        args = [toCall[i].apply(this, args)];\n      }\n      return args[0];\n    };
\n  },\n\n  each: function(obj, itr, scope) {\n    if (!obj) {\n      return;\n    }\n\n    if (ARR_EACH && obj.forEach &&
obj.forEach === ARR_EACH) {\n      obj.forEach(itr, scope);\n    } else if (obj.length === obj.length + 0) { // Is
number but not NaN\n      let key;\n      let l;\n      for (key = 0, l = obj.length; key < l; key++) {\n        if (key in obj
&& itr.call(scope, obj[key], key) === this.BREAK) {\n          return;\n        }\n      }\n    } else {\n      for (const key
in obj) {\n        if (itr.call(scope, obj[key], key) === this.BREAK) {\n          return;\n        }\n      }\n    },\n\n  defer: function(fnc) {\n    setTimeout(fnc, 0);\n  },\n\n  // if the function is called repeatedly, wait until threshold
passes until we execute the function\n  debounce: function(func, threshold, callImmediately) {\n    let timeout;\n\n    return function() {\n      const obj = this;\n      const args = arguments;\n      function delayed() {\n        timeout =
null;\n        if (!callImmediately) func.apply(obj, args);\n      }\n\n      const callNow = callImmediately ||
!timeout;\n      clearTimeout(timeout);\n      timeout = setTimeout(delayed, threshold);\n\n      if (callNow) {\n        func.apply(obj, args);\n      }\n    },\n\n  toArray: function(obj) {\n    if (obj.toArray) return obj.toArray();\n    return
ARR_SLICE.call(obj);\n  },\n\n  isUndefined: function(obj) {\n    return obj === undefined;\n  },\n\n  isNull:
function(obj) {\n    return obj === null;\n  },\n\n  isNaN: function(obj) {\n    return isNaN(obj);\n  },\n\n  isArray:
Array.isArray || function(obj) {\n    return obj.constructor === Array;\n  },\n\n  isObject: function(obj) {\n    return
obj === Object(obj);\n  },\n\n  isNumber: function(obj) {\n    return obj === obj + 0;\n  },\n\n  isString:
function(obj) {\n    return obj === obj + '';\n  },\n\n  isBoolean: function(obj) {\n    return obj === false || obj ===
true;\n  },\n\n  isFunction: function(obj) {\n    return Object.prototype.toString.call(obj) === '[object Function]';\n
  }\n\n};\n\nexport default Common;\n\n", "/*\n * dat-gui JavaScript Controller Library\n *\n * Copyright
2011 Data Arts Team, Google Creative Lab\n *\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the

```

```

License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n
*\n\nimport toString from './toString';\nimport common from './utils/common';\n\nconst INTERPRETATIONS =
[\n // Strings\n {\n litmus: common.isString,\n conversions: {\n THREE_CHAR_HEX: {\n read:
function(original) {\n const test = original.match(/^[A-F0-9]([A-F0-9])([A-F0-9])$/i);\n if (test ===
null) {\n return false;\n }\n return {\n space: 'HEX',\n hex: parseInt(\n '0x'
+\n test[1].toString() + test[1].toString() +\n test[2].toString() + test[2].toString() +\n
test[3].toString() + test[3].toString(), 0)\n };,\n write: toString\n },\n SIX_CHAR_HEX:
{\n read: function(original) {\n const test = original.match(/^[A-F0-9]{6}$/i);\n if (test === null)
{\n return false;\n }\n return {\n space: 'HEX',\n hex: parseInt('0x' +
test[1].toString(), 0)\n };,\n write: toString\n },\n CSS_RGB: {\n read:
function(original) {\n const test = original.match(/^(rgb|(\s*(.)\s*|\s*(.)\s*|\s*(.)\s*\))/);\n if (test
=== null) {\n return false;\n }\n return {\n space: 'RGB',\n r: parseFloat(test[1]),\n
g: parseFloat(test[2]),\n b: parseFloat(test[3])\n };,\n write: toString\n },\n
CSS_RGBA: {\n read: function(original) {\n const test =
original.match(/^(rgba|(\s*(.)\s*|\s*(.)\s*|\s*(.)\s*|\s*(.)\s*\))/);\n if (test === null) {\n return
false;\n }\n return {\n space: 'RGB',\n r: parseFloat(test[1]),\n g:
parseFloat(test[2]),\n b: parseFloat(test[3]),\n a: parseFloat(test[4])\n };,\n write:
toString\n }\n },\n // Numbers\n {\n litmus: common.isNumber,\n conversions: {\n HEX: {\n
read: function(original) {\n return {\n space: 'HEX',\n hex: original,\n
conversionName: 'HEX'\n };,\n write: function(color) {\n return color.hex;\n }\n
}\n },\n // Arrays\n {\n litmus: common.isArray,\n conversions: {\n RGB_ARRAY: {\n
read: function(original) {\n if (original.length !== 3) {\n return false;\n }\n return {\n
space: 'RGB',\n r: original[0],\n g: original[1],\n b: original[2]\n };,\n write:
function(color) {\n return [color.r, color.g, color.b];\n }\n },\n RGBA_ARRAY: {\n read:
function(original) {\n if (original.length !== 4) return false;\n return {\n space: 'RGB',\n r:
original[0],\n g: original[1],\n b: original[2],\n a: original[3]\n };,\n write:
function(color) {\n return [color.r, color.g, color.b, color.a];\n }\n }\n },\n // Objects\n {\n
litmus: common.isObject,\n conversions: {\n RGBA_OBJ: {\n read: function(original) {\n if
(common.isNumber(original.r) &&\n common.isNumber(original.g) &&\n
common.isNumber(original.b) &&\n common.isNumber(original.a)) {\n return {\n space:
'RGB',\n r: original.r,\n g: original.g,\n b: original.b,\n a: original.a\n };,\n
}\n return false;\n },\n write: function(color) {\n return {\n r: color.r,\n g:
color.g,\n b: color.b,\n a: color.a\n };,\n }\n },\n RGB_OBJ: {\n read:
function(original) {\n if (common.isNumber(original.r) &&\n common.isNumber(original.g) &&\n
common.isNumber(original.b)) {\n return {\n space: 'RGB',\n r: original.r,\n g:
original.g,\n b: original.b\n };,\n }\n return false;\n },\n write: function(color)
{\n return {\n r: color.r,\n g: color.g,\n b: color.b\n };,\n }\n },\n
HSVA_OBJ: {\n read: function(original) {\n if (common.isNumber(original.h) &&\n
common.isNumber(original.s) &&\n common.isNumber(original.v) &&\n
common.isNumber(original.a)) {\n return {\n space: 'HSV',\n h: original.h,\n s:
original.s,\n v: original.v,\n a: original.a\n };,\n }\n return false;\n },\n
write: function(color) {\n return {\n h: color.h,\n s: color.s,\n v: color.v,\n a:
color.a\n };,\n }\n },\n HSV_OBJ: {\n read: function(original) {\n if
(common.isNumber(original.h) &&\n common.isNumber(original.s) &&\n
common.isNumber(original.v)) {\n return {\n space: 'HSV',\n h: original.h,\n s:
original.s,\n v: original.v\n };,\n }\n return false;\n },\n write: function(color) {\n
return {\n h: color.h,\n s: color.s,\n v: color.v\n };,\n }\n }\n }\n }\n ]\n\nlet
result;\nlet toReturn;\n\nconst interpret = function() {\n toReturn = false;\n\n const original = arguments.length > 1

```

```

? common.toArray(arguments) : arguments[0];
common.each(INTERPRETATIONS, function(family) {
  (family.litmus(original)) {
    common.each(family.conversions, function(conversion, conversionName) {
      result = conversion.read(original);
      if (toReturn === false && result !== false) {
        toReturn = result;
        result.conversionName = conversionName;
        result.conversion = conversion;
        return
      }
    });
  });
  return common.BREAK;
});
return toReturn;
};
export default interpret;
"/**
 * dat-gui JavaScript Controller Library
 * http://code.google.com/p/dat-gui
 *
 * Copyright 2011 Data Arts Team, Google Creative Lab
 * Licensed under the Apache License, Version 2.0 (the
 * "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the
 * License at
 * http://www.apache.org/licenses/LICENSE-2.0
 */
let tmpComponent;
const ColorMath = {
  hsv_to_rgb: function(h, s, v) {
    const hi = Math.floor(h / 60) % 6;
    const f = h / 60 - Math.floor(h / 60);
    const p = v * (1.0 - s);
    const q = v * (1.0 - (f * s));
    const t = v * (1.0 - ((1.0 - f) * s));
    const c = [
      [v, t, p],
      [q, v, p],
      [p, v, t],
      [p, q, v],
      [t, p, v],
      [v, p, q]
    ][hi];
    return {
      r: c[0] * 255,
      g: c[1] * 255,
      b: c[2] * 255
    };
  },
  rgb_to_hsv: function(r, g, b) {
    const min = Math.min(r, g, b);
    const max = Math.max(r, g, b);
    const delta = max - min;
    let h;
    let s;
    if (max !== 0) {
      s = delta / max;
    } else {
      return {
        h: NaN,
        s: 0,
        v: 0
      };
    }
    if (r === max) {
      h = (g - b) / delta;
    } else if (g === max) {
      h = 2 + (b - r) / delta;
    } else {
      h = 4 + (r - g) / delta;
    }
    h /= 6;
    if (h < 0) {
      h += 1;
    }
    return {
      h: h * 360,
      s: s,
      v: max / 255
    };
  },
  rgb_to_hex: function(r, g, b) {
    let hex = this.hex_with_component(0, 2, r);
    hex = this.hex_with_component(hex, 1, g);
    hex = this.hex_with_component(hex, 0, b);
    return hex;
  },
  component_from_hex: function(hex, componentIndex) {
    return (hex >> (componentIndex * 8)) & 0xFF;
  },
  hex_with_component: function(hex, componentIndex, value) {
    return value << (tmpComponent = componentIndex * 8) | (hex & ~(0xFF << tmpComponent));
  }
};
export default ColorMath;
"/**
 * dat-gui JavaScript Controller Library
 * http://code.google.com/p/dat-gui
 *
 * Copyright 2011 Data Arts Team,
 * Google Creative Lab
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use
 * this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 */
import interpret from './interpret';
import math from './math';
import colorToString from './toString';
import common from './utils/common';
class Color {
  constructor() {
    this.__state = interpret.apply(this, arguments);
    if (this.__state === false) {
      throw new Error('Failed to interpret color arguments');
    }
    this.__state.a = this.__state.a || 1;
  }
  toString() {
    return colorToString(this);
  }
  toHexString() {
    return colorToString(this, true);
  }
  toOriginal() {
    return this.__state.conversion.write(this);
  }
  function defineRGBComponent(target, component, componentHexIndex) {
    Object.defineProperty(target, component, {
      get: function() {
        if (this.__state.space === 'RGB') {
          return this.__state[component];
        }
        Color.recalculateRGB(this, component, componentHexIndex);
        return this.__state[component];
      },
      set: function(v) {
        if (this.__state.space !== 'RGB') {
          Color.recalculateRGB(this, component, componentHexIndex);
        }
        this.__state.space = 'RGB';
        this.__state[component] = v;
      }
    });
  }
  function defineHSVComponent(target, component) {
    Object.defineProperty(target, component, {
      get: function() {
        if (this.__state.space === 'HSV') {
          return this.__state[component];
        }
        Color.recalculateHSV(this);
        return this.__state[component];
      },
      set: function(v) {
        if (this.__state.space !== 'HSV') {
          Color.recalculateHSV(this);
          this.__state.space = 'HSV';
        }
        this.__state[component] = v;
      }
    });
  }
  Color.recalculateRGB = function(color, component, componentHexIndex) {
    if (color.__state.space === 'HEX') {
      color.__state[component] = math.component_from_hex(color.__state.hex, componentHexIndex);
    } else if (color.__state.space === 'HSV') {
      common.extend(color.__state, math.hsv_to_rgb(color.__state.h, color.__state.s, color.__state.v));
    } else {
      throw new Error('Corrupted color state');
    }
  }
  Color.recalculateHSV = function(color) {
    const result = math.rgb_to_hsv(color.r, color.g, color.b);
    common.extend(color.__state, {
      s: result.s,
      v: result.v
    });
    if (!common.isNaN(result.h)) {
      color.__state.h = result.h;
    } else if (common.isUndefined(color.__state.h)) {
      color.__state.h = 0;
    }
  }
  Color.COMPONENTS = ['r', 'g', 'b', 'h',

```



```

= selectable ? function() {\n    return false;\n } : function() {\n };\n\n elem.style.MozUserSelect = selectable ?
'auto' : 'none';\n elem.style.KhtmlUserSelect = selectable ? 'auto' : 'none';\n elem.unselectable = selectable ? 'on' :
'off';\n },\n\n /**\n *\n * @param elem\n * @param horizontal\n * @param vert\n */\n makeFullscreen:
function(elem, hor, vert) {\n    let vertical = vert;\n    let horizontal = hor;\n\n    if (common.isUndefined(horizontal))
{\n        horizontal = true;\n    }\n\n    if (common.isUndefined(vertical)) {\n        vertical = true;\n    }\n\n    elem.style.position = 'absolute';\n\n    if (horizontal) {\n        elem.style.left = 0;\n        elem.style.right = 0;\n    }\n    if
(vertical) {\n        elem.style.top = 0;\n        elem.style.bottom = 0;\n    }\n},\n\n /**\n *\n * @param elem\n *
@param eventType\n * @param params\n */\n fakeEvent: function(elem, eventType, pars, aux) {\n    const
params = pars || {};\n    const className = EVENT_MAP_INV[eventType];\n    if (!className) {\n        throw new
Error('Event type ' + eventType + ' not supported.);\n    }\n    const evt = document.createEvent(className);\n
switch (className) {\n        case 'MouseEvents':\n            {\n                const clientX = params.x || params.clientX || 0;\n
                const clientY = params.y || params.clientY || 0;\n                evt.initMouseEvent(eventType, params.bubbles || false,\n                    params.cancelable || true, window, params.clickCount || 1,\n                        0, // screen X\n                        0, // screen Y\n                        clientX, // client X\n                        clientY, // client Y\n                        false, false, false, false, 0, null);\n                break;\n            }\n        case 'KeyboardEvents':\n            {\n                const init = evt.initKeyboardEvent || evt.initKeyEvent; // webkit || moz\n
                common.defaults(params, {\n                    cancelable: true,\n                    ctrlKey: false,\n                    altKey: false,\n
                    shiftKey: false,\n                    metaKey: false,\n                    keyCode: undefined,\n                    charCode: undefined\n                });\n                init(eventType, params.bubbles || false,\n                    params.cancelable, window,\n                    params.ctrlKey,\n
                    params.altKey,\n                    params.shiftKey, params.metaKey,\n                    params.keyCode, params.charCode);\n                break;\n            }\n        default:\n            {\n                evt.initEvent(eventType, params.bubbles || false, params.cancelable ||
                true);\n                break;\n            }\n    }\n    common.defaults(evt, aux);\n    elem.dispatchEvent(evt);\n },\n\n /**\n *\n * @param elem\n * @param event\n * @param func\n * @param bool\n */\n bind: function(elem, event, func,
newBool) {\n    const bool = newBool || false;\n    if (elem.addEventListener) {\n        elem.addEventListener(event,
func, bool);\n    } else if (elem.attachEvent) {\n        elem.attachEvent('on' + event, func);\n    }\n    return dom;\n
},\n\n /**\n *\n * @param elem\n * @param event\n * @param func\n * @param bool\n */\n unbind:
function(elem, event, func, newBool) {\n    const bool = newBool || false;\n    if (elem.removeEventListener) {\n
elem.removeEventListener(event, func, bool);\n    } else if (elem.detachEvent) {\n        elem.detachEvent('on' + event,
func);\n    }\n    return dom;\n },\n\n /**\n *\n * @param elem\n * @param className\n */\n addClass:
function(elem, className) {\n    if (elem.className === undefined) {\n        elem.className = className;\n    } else
if (elem.className !== className) {\n        const classes = elem.className.split(/ +/);\n        if
(classes.indexOf(className) === -1) {\n            classes.push(className);\n            elem.className = classes.join('
').replace(/^\s+/, "").replace(/\s+$/, "");\n        }\n    }\n    return dom;\n },\n\n /**\n *\n * @param elem\n *
@param className\n */\n removeClass: function(elem, className) {\n    if (className) {\n        if
(elem.className === className) {\n            elem.removeAttribute('class');\n        } else {\n            const classes =
elem.className.split(/ +/);\n            const index = classes.indexOf(className);\n            if (index !== -1) {\n
classes.splice(index, 1);\n            elem.className = classes.join(' ');\n        }\n    }\n    } else {\n        elem.className
= undefined;\n    }\n    return dom;\n },\n\n hasClass: function(elem, className) {\n    return new
RegExp('(?:^|\\s+)' + className + '(?:\\s+|$)').test(elem.className) || false;\n },\n\n /**\n *\n * @param
elem\n */\n getWidth: function(elem) {\n    const style = getComputedStyle(elem);\n\n    return
cssValueToPixels(style['border-left-width']) +\n        cssValueToPixels(style['border-right-width']) +\n
cssValueToPixels(style['padding-left']) +\n        cssValueToPixels(style['padding-right']) +\n
cssValueToPixels(style.width);\n },\n\n /**\n *\n * @param elem\n */\n getHeight: function(elem) {\n    const
style = getComputedStyle(elem);\n\n    return cssValueToPixels(style['border-top-width']) +\n
cssValueToPixels(style['border-bottom-width']) +\n        cssValueToPixels(style['padding-top']) +\n
cssValueToPixels(style['padding-bottom']) +\n        cssValueToPixels(style.height);\n },\n\n /**\n *\n * @param
el\n */\n getOffset: function(el) {\n    let elem = el;\n    const offset = { left: 0, top: 0 };\n    if (elem.offsetParent)
{\n        do {\n            offset.left += elem.offsetLeft;\n            offset.top += elem.offsetTop;\n            elem =
elem.offsetParent;\n        } while (elem);\n    }\n    return offset;\n },\n\n //

```

```

http://stackoverflow.com/posts/2684561/revisions\n /**\n *\n * @param elem\n *\n isActive: function(elem)
{\n return elem === document.activeElement && (elem.type || elem.href);\n }\n};\n\nexport default
dom;\n", "/**\n * dat-gui JavaScript Controller Library\n * http://code.google.com/p/dat-gui\n *\n * Copyright 2011
Data Arts Team, Google Creative Lab\n *\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n\nimport Controller from './Controller';\nimport dom from
'./dom/dom';\n\n/**\n * @class Provides a checkbox input to alter the boolean property of an object.\n *\n *
@extends dat.controllers.Controller\n *\n * @param {Object} object The object to be manipulated\n *\n * @param
{string} property The name of the property to be manipulated\n *\n\nclass BooleanController extends Controller {\n
constructor(object, property) {\n super(object, property);\n\n const _this = this;\n this.__prev =
this.getValue();\n\n this.__checkbox = document.createElement('input');\n this.__checkbox.setAttribute('type',
'checkbox');\n\n function onChange() {\n _this.setValue(!_this.__prev);\n }\n\n dom.bind(this.__checkbox,
'change', onChange, false);\n\n this.domElement.appendChild(this.__checkbox);\n\n // Match original value\n
this.updateDisplay();\n }\n\n setValue(v) {\n const toReturn = super.setValue(v);\n if (this.__onFinishChange)
{\n this.__onFinishChange.call(this, this.getValue());\n }\n this.__prev = this.getValue();\n return
toReturn;\n }\n\n updateDisplay() {\n if (this.getValue() === true) {\n this.__checkbox.setAttribute('checked',
'checked');\n this.__checkbox.checked = true;\n this.__prev = true;\n } else {\n this.__checkbox.checked
= false;\n this.__prev = false;\n }\n\n return super.updateDisplay();\n }\n}\n\nexport default
BooleanController;\n", "/**\n * dat-gui JavaScript Controller Library\n * http://code.google.com/p/dat-gui\n *\n *
Copyright 2011 Data Arts Team, Google Creative Lab\n *\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n\nimport Controller from
'./Controller';\nimport dom from './dom/dom';\nimport common from './utils/common';\n\n/**\n * @class Provides
a select input to alter the property of an object, using a\n *\n * list of accepted values.\n *\n * @extends
dat.controllers.Controller\n *\n * @param {Object} object The object to be manipulated\n *\n * @param {string}
property The name of the property to be manipulated\n *\n * @param {Object|string[]} options A map of labels to
acceptable values, or\n *\n * a list of acceptable string values.\n *\n\nclass OptionController extends Controller {\n
constructor(object, property, opts) {\n super(object, property);\n\n let options = opts;\n\n const _this = this;\n\n
/**\n * The drop down menu\n * @ignore\n *\n this.__select = document.createElement('select');\n\n if
(common.isArray(options)) {\n const map = {};\n common.each(options, function(element) {\n
map[element] = element;\n });\n options = map;\n }\n\n common.each(options, function(value, key) {\n
const opt = document.createElement('option');\n opt.innerHTML = key;\n opt.setAttribute('value', value);\n
_this.__select.appendChild(opt);\n });\n\n // Acknowledge original value\n this.updateDisplay();\n\n
dom.bind(this.__select, 'change', function() {\n const desiredValue = this.options[this.selectedIndex].value;\n
_this.setValue(desiredValue);\n });\n\n this.domElement.appendChild(this.__select);\n }\n\n setValue(v) {\n
const toReturn = super.setValue(v);\n\n if (this.__onFinishChange) {\n this.__onFinishChange.call(this,
this.getValue());\n }\n\n return toReturn;\n }\n\n updateDisplay() {\n if (dom.isActive(this.__select)) return
this; // prevent number from updating if user is trying to manually update\n this.__select.value = this.getValue();\n
return super.updateDisplay();\n }\n}\n\nexport default OptionController;\n", "/**\n * dat-gui JavaScript Controller
Library\n * http://code.google.com/p/dat-gui\n *\n * Copyright 2011 Data Arts Team, Google Creative Lab\n *\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n\nimport Controller from './Controller';\nimport dom from
'./dom/dom';\n\n/**\n * @class Provides a text input to alter the string property of an object.\n *\n * @extends
dat.controllers.Controller\n *\n * @param {Object} object The object to be manipulated\n *\n * @param {string}
property The name of the property to be manipulated\n *\n\nclass StringController extends Controller {\n
constructor(object, property) {\n super(object, property);\n\n const _this = this;\n\n function onChange() {\n
_this.setValue(_this.__input.value);\n }\n\n function onBlur() {\n if (_this.__onFinishChange) {\n

```



```

* @param {Number} [params.min] Minimum allowed value\n * @param {Number} [params.max] Maximum
allowed value\n * @param {Number} [params.step] Increment by which to change value\n */\n\nclass
NumberControllerBox extends NumberController {\n  constructor(object, property, params) {\n    super(object,
property, params);\n\n    this.__truncationSuspended = false;\n\n    const _this = this;\n\n    /**\n     * {Number}
Previous mouse y position\n     * @ignore\n     */\n    let prevY;\n\n    function onChange() {\n      const attempted =
parseFloat(_this.__input.value);\n      if (!common.isNaN(attempted)) {\n        _this.setValue(attempted);\n      }\n\n    }\n\n    function onFinish() {\n      if (_this.__onFinishChange) {\n        _this.__onFinishChange.call(_this,
_this.getValue());\n      }\n    }\n\n    function onBlur() {\n      onFinish();\n    }\n\n    function onMouseDrag(e) {\n      const diff = prevY - e.clientY;\n      _this.setValue(_this.getValue() + diff * _this.__impliedStep);\n\n      prevY =
e.clientY;\n    }\n\n    function onMouseUp() {\n      dom.unbind(window, 'mousemove', onMouseDrag);\n      dom.unbind(window, 'mouseup', onMouseUp);\n      onFinish();\n    }\n\n    function onMouseDown(e) {\n      dom.bind(window, 'mousemove', onMouseDrag);\n      dom.bind(window, 'mouseup', onMouseUp);\n      prevY =
e.clientY;\n    }\n\n    this.__input = document.createElement('input');\n    this.__input.setAttribute('type', 'text');\n\n    // Makes it so manually specified values are not truncated.\n    dom.bind(this.__input, 'change', onChange);\n    dom.bind(this.__input, 'blur', onBlur);\n    dom.bind(this.__input, 'mousedown', onMouseDown);\n    dom.bind(this.__input, 'keydown', function(e) {\n      // When pressing enter, you can be as precise as you want.\n      if (e.keyCode === 13) {\n        _this.__truncationSuspended = true;\n        this.blur();\n        _this.__truncationSuspended = false;\n        onFinish();\n      }\n    });\n\n    this.updateDisplay();\n\n    this.domElement.appendChild(this.__input);\n  }\n\n  updateDisplay() {\n    this.__input.value =
this.__truncationSuspended ? this.getValue() : roundToDecimal(this.getValue(), this.__precision);\n    return
super.updateDisplay();\n  }\n}\n\nexport default NumberControllerBox;\n", "/*\n * dat-gui JavaScript Controller
Library\n * http://code.google.com/p/dat-gui\n * Copyright 2011 Data Arts Team, Google Creative Lab\n * \n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n */\n\nimport NumberController from './NumberController';\nimport
dom from './dom/dom';\n\nfunction map(v, i1, i2, o1, o2) {\n  return o1 + (o2 - o1) * ((v - i1) / (i2 - i1));\n}\n\n/**\n
 * @class Represents a given property of an object that is a number, contains\n * a minimum and maximum, and
provides a slider element with which to\n * manipulate it. It should be noted that the slider element is made up of\n
 * <code>&lt;div&gt;</code> tags, <strong>not</strong> the html5\n * <code>&lt;slider&gt;</code> element.\n * \n
 * @extends dat.controllers.Controller\n * @extends dat.controllers.NumberController\n * \n * @param {Object}
object The object to be manipulated\n * @param {string} property The name of the property to be manipulated\n *
 * @param {Number} minValue Minimum allowed value\n * @param {Number} maxValue Maximum allowed
value\n * @param {Number} stepValue Increment by which to change value\n */\n\nclass NumberControllerSlider
extends NumberController {\n  constructor(object, property, min, max, step) {\n    super(object, property, { min:
min, max: max, step: step });\n\n    const _this = this;\n\n    this.__background = document.createElement('div');\n
    this.__foreground = document.createElement('div');\n\n    dom.bind(this.__background, 'mousedown',
onMouseDown);\n    dom.bind(this.__background, 'touchstart', onTouchStart);\n\n    dom.addClass(this.__background, 'slider');\n    dom.addClass(this.__foreground, 'slider-fg');\n\n    function
onMouseDown(e) {\n      document.activeElement.blur();\n      dom.bind(window, 'mousemove', onMouseDrag);\n      dom.bind(window, 'mouseup', onMouseUp);\n\n      onMouseDrag(e);\n    }\n\n    function onMouseDrag(e) {\n      e.preventDefault();\n\n      const bgRect = _this.__background.getBoundingClientRect();\n\n      _this.setValue(\n
        map(e.clientX, bgRect.left, bgRect.right, _this.__min, _this.__max)\n      );\n\n      return false;\n    }\n\n    function
onMouseUp() {\n      dom.unbind(window, 'mousemove', onMouseDrag);\n      dom.unbind(window, 'mouseup',
onMouseUp);\n      if (_this.__onFinishChange) {\n        _this.__onFinishChange.call(_this, _this.getValue());\n      }\n    }\n\n    function onTouchStart(e) {\n      if (e.touches.length !== 1) { return; }\n      dom.bind(window,
'touchmove', onTouchMove);\n      dom.bind(window, 'touchend', onTouchEnd);\n      onTouchMove(e);\n    }\n\n    function onTouchMove(e) {\n      const clientX = e.touches[0].clientX;\n      const bgRect =
_this.__background.getBoundingClientRect();\n\n      _this.setValue(\n        map(clientX, bgRect.left, bgRect.right,

```



```

});\n\n common.extend(this.__saturation_field.style, {\n width: '100px',\n height: '100px',\n border: '1px\n solid #555',\n marginRight: '3px',\n display: 'inline-block',\n cursor: 'pointer'\n });\n\n common.extend(valueField.style, {\n width: '100%',\n height: '100%',\n background: 'none'\n });\n\n linearGradient(valueField, 'top', 'rgba(0,0,0,0)', '#000');\n\n common.extend(this.__hue_field.style, {\n width:\n '15px',\n height: '100px',\n border: '1px solid #555',\n cursor: 'ns-resize',\n position: 'absolute',\n top:\n '3px',\n right: '3px'\n });\n\n hueGradient(this.__hue_field);\n\n common.extend(this.__input.style, {\n outline: 'none',\n // width: '120px',\n textAlign: 'center',\n // padding: '4px',\n // marginBottom: '6px',\n color: '#fff',\n border: 0,\n fontWeight: 'bold',\n textShadow: this.__input_textShadow + 'rgba(0,0,0,0.7)'\n });\n\n dom.bind(this.__saturation_field, 'mousedown', fieldDown);\n dom.bind(this.__saturation_field,\n 'touchstart', fieldDown);\n\n dom.bind(this.__field_knob, 'mousedown', fieldDown);\n\n dom.bind(this.__field_knob, 'touchstart', fieldDown);\n\n dom.bind(this.__hue_field, 'mousedown',\n fieldDownH);\n dom.bind(this.__hue_field, 'touchstart', fieldDownH);\n\n function fieldDown(e) {\n setSV(e);\n dom.bind(window, 'mousemove', setSV);\n dom.bind(window, 'touchmove', setSV);\n dom.bind(window, 'mouseup', fieldUpSV);\n dom.bind(window, 'touchend', fieldUpSV);\n }\n\n function\n fieldDownH(e) {\n setH(e);\n dom.bind(window, 'mousemove', setH);\n dom.bind(window, 'touchmove',\n setH);\n dom.bind(window, 'mouseup', fieldUpH);\n dom.bind(window, 'touchend', fieldUpH);\n }\n\n function fieldUpSV() {\n dom.unbind(window, 'mousemove', setSV);\n dom.unbind(window, 'touchmove',\n setSV);\n dom.unbind(window, 'mouseup', fieldUpSV);\n dom.unbind(window, 'touchend', fieldUpSV);\n\n onFinish();\n }\n\n function fieldUpH() {\n dom.unbind(window, 'mousemove', setH);\n dom.unbind(window, 'touchmove', setH);\n dom.unbind(window, 'mouseup', fieldUpH);\n dom.unbind(window, 'touchend', fieldUpH);\n\n onFinish();\n }\n\n function onBlur() {\n const i =\n interpret(this.value);\n if (i !== false) {\n __this.__color.__state = i;\n __this.setValue(__this.__color.toOriginal());\n } else {\n this.value = __this.__color.toString();\n }\n }\n\n function onFinish() {\n if (__this.__onFinishChange) {\n __this.__onFinishChange.call(__this,\n __this.__color.toOriginal());\n }\n }\n\n this.__saturation_field.appendChild(valueField);\n\n this.__selector.appendChild(this.__field_knob);\n this.__selector.appendChild(this.__saturation_field);\n\n this.__selector.appendChild(this.__hue_field);\n this.__hue_field.appendChild(this.__hue_knob);\n\n this.domElement.appendChild(this.__input);\n this.domElement.appendChild(this.__selector);\n\n this.updateDisplay();\n\n function setSV(e) {\n if (e.type.indexOf('touch') === -1) { e.preventDefault(); }\n\n const fieldRect = __this.__saturation_field.getBoundingClientRect();\n const { clientX, clientY } = (e.touches &&\n e.touches[0]) || e;\n let s = (clientX - fieldRect.left) / (fieldRect.right - fieldRect.left);\n let v = 1 - (clientY -\n fieldRect.top) / (fieldRect.bottom - fieldRect.top);\n\n if (v > 1) {\n v = 1;\n } else if (v < 0) {\n v =\n 0;\n }\n\n if (s > 1) {\n s = 1;\n } else if (s < 0) {\n s = 0;\n }\n\n __this.__color.v = v;\n __this.__color.s = s;\n __this.setValue(__this.__color.toOriginal());\n\n return false;\n }\n\n function\n setH(e) {\n if (e.type.indexOf('touch') === -1) { e.preventDefault(); }\n\n const fieldRect =\n __this.__hue_field.getBoundingClientRect();\n const { clientY } = (e.touches && e.touches[0]) || e;\n let h = 1\n - (clientY - fieldRect.top) / (fieldRect.bottom - fieldRect.top);\n\n if (h > 1) {\n h = 1;\n } else if (h < 0)\n {\n h = 0;\n }\n\n __this.__color.h = h * 360;\n __this.setValue(__this.__color.toOriginal());\n\n return false;\n }\n\n }\n\n updateDisplay() {\n const i = interpret(this.getValue());\n\n if (i !== false) {\n let\n mismatch = false;\n\n // Check for mismatch on the interpreted value.\n\n\n common.each(Color.COMPONENTS, function(component) {\n if (!common.isUndefined(i[component]) &&\n !common.isUndefined(this.__color.__state[component]) &&\n i[component] !==\n this.__color.__state[component]) {\n mismatch = true;\n return {}; // break\n }\n }, this);\n\n // If nothing diverges, we keep our previous values\n // for statefulness, otherwise we recalculate fresh\n\n if\n (mismatch) {\n common.extend(this.__color.__state, i);\n }\n\n\n common.extend(this.__temp.__state,\n this.__color.__state);\n\n this.__temp.a = 1;\n\n const flip = (this.__color.v < 0.5 || this.__color.s > 0.5) ? 255 :\n 0;\n const _flip = 255 - flip;\n\n common.extend(this.__field_knob.style, {\n marginLeft: 100 * this.__color.s\n - 7 + 'px',\n marginTop: 100 * (1 - this.__color.v) - 7 + 'px',\n backgroundColor: this.__temp.toHexString(),\n
```

```

border: this.__field_knob_border + 'rgb(' + flip + ',' + flip + ',' + flip + ')\n  });\n\n
this.__hue_knob.style.marginTop = (1 - this.__color.h / 360) * 100 + 'px';\n\n this.__temp.s = 1;\n this.__temp.v
= 1;\n\n linearGradient(this.__saturation_field, 'left', '#fff', this.__temp.toHexString());\n\n this.__input.value =
this.__color.toString();\n\n common.extend(this.__input.style, {\n  backgroundColor:
this.__color.toHexString(),\n  color: 'rgb(' + flip + ',' + flip + ',' + flip + ');\n  textShadow:
this.__input_textShadow + 'rgba(' + _flip + ',' + _flip + ',' + _flip + ',.7)\n  });\n };\n\n\nconst vendors = ['-moz-', '-
o-', '-webkit-', '-ms-', ''];\n\nfunction linearGradient(elem, x, a, b) {\n  elem.style.background = ";\n
common.each(vendors, function(vendor) {\n  elem.style.cssText += 'background: ' + vendor + 'linear-gradient(' + x
+ ', ' + a + ' 0%, ' + b + ' 100%);';\n });\n}\n\nfunction hueGradient(elem) {\n  elem.style.background = ";\n
elem.style.cssText += 'background: -moz-linear-gradient(top, #ff0000 0%, #ff00ff 17%, #0000ff 34%, #00ffff 50%,
#00ff00 67%, #ffff00 84%, #ff0000 100%);';\n  elem.style.cssText += 'background: -webkit-linear-gradient(top,
#ff0000 0%, #ff00ff 17%, #0000ff 34%, #00ffff 50%, #00ff00 67%, #ffff00 84%, #ff0000 100%);';\n
elem.style.cssText += 'background: -o-linear-gradient(top, #ff0000 0%, #ff00ff 17%, #0000ff 34%, #00ffff
50%, #00ff00 67%, #ffff00 84%, #ff0000 100%);';\n  elem.style.cssText += 'background: -ms-linear-gradient(top,
#ff0000 0%, #ff00ff 17%, #0000ff 34%, #00ffff 50%, #00ff00 67%, #ffff00 84%, #ff0000 100%);';\n
elem.style.cssText += 'background: linear-gradient(top, #ff0000 0%, #ff00ff 17%, #0000ff 34%, #00ffff 50%, #00ff00
67%, #ffff00 84%, #ff0000 100%);';\n }\n\n\nexport default ColorController;\n\n", /**\n * dat-gui JavaScript Controller
Library\n * http://code.google.com/p/dat-gui/\n * Copyright 2011 Data Arts Team, Google Creative Lab\n * \n *
Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n\nconst css = {\n  load: function(url, indoc) {\n  const doc =
indoc || document;\n  const link = doc.createElement('link');\n  link.type = 'text/css';\n  link.rel = 'stylesheet';\n
link.href = url;\n  doc.getElementsByTagName('head')[0].appendChild(link);\n  },\n\n  inject: function(cssContent,
indoc) {\n  const doc = indoc || document;\n  const injected = document.createElement('style');\n  injected.type =
'text/css';\n  injected.innerHTML = cssContent;\n  const head = doc.getElementsByTagName('head')[0];\n  try
{\n  head.appendChild(injected);\n  } catch (e) { // Unable to inject CSS, probably because of a Content Security
Policy\n  }\n  }\n\n\nexport default css;\n\n", const saveDialogContent = `<div id="dg-save" class="dg
dialogue">\n\n Here's the new load parameter for your <code>GUI</code>'s constructor:\n\n <textarea id="dg-
new-constructor"></textarea>\n\n <div id="dg-save-locally">\n\n   <input id="dg-local-storage"
type="checkbox"/> Automatically save\n  values to <code>localStorage</code> on exit.\n\n   <div id="dg-local-
explain">The values saved to <code>localStorage</code> will\n  override those passed to
<code>dat.GUI</code>'s constructor. This makes it\n  easier to work incrementally, but
<code>localStorage</code> is fragile,\n  and your friends may not see the same values you do.\n\n   </div>\n\n
</div>\n\n</div>`;\n\n\nexport default saveDialogContent;\n\n", /**\n * dat-gui JavaScript Controller Library\n *
http://code.google.com/p/dat-gui/\n * Copyright 2011 Data Arts Team, Google Creative Lab\n * \n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n
*\n\nimport OptionController from './OptionController';\nimport NumberControllerBox from
 './NumberControllerBox';\nimport NumberControllerSlider from './NumberControllerSlider';\nimport
StringController from './StringController';\nimport FunctionController from './FunctionController';\nimport
BooleanController from './BooleanController';\nimport common from './utils/common';\n\nconst ControllerFactory
= function(object, property) {\n  const initialValue = object[property];\n\n  // Providing options?\n  if
(common.isArray(arguments[2]) || common.isObject(arguments[2])) {\n  return new OptionController(object,
property, arguments[2]);\n  }\n\n  // Providing a map?\n  if (common.isNumber(initialValue)) {\n  // Has min and
max? (slider)\n  if (common.isNumber(arguments[2]) && common.isNumber(arguments[3])) {\n  // has step?\n
if (common.isNumber(arguments[4])) {\n  return new NumberControllerSlider(object, property,\n
arguments[2], arguments[3], arguments[4]);\n  }\n\n  return new NumberControllerSlider(object, property,
arguments[2], arguments[3]);\n  }\n\n  // number box\n  if (common.isNumber(arguments[4])) { // has step\n

```

```

return new NumberControllerBox(object, property, { min: arguments[2], max: arguments[3], step:
arguments[4] });\n } \n return new NumberControllerBox(object, property, { min: arguments[2], max:
arguments[3] });\n } \n\n if (common.isString(initialValue)) {\n return new StringController(object, property);\n
}\n\n if (common.isFunction(initialValue)) {\n return new FunctionController(object, property, "");\n } \n\n if
(common.isBoolean(initialValue)) {\n return new BooleanController(object, property);\n } \n\n return
null;\n};\n\nexport default ControllerFactory;\n", "/*\n * dat-gui JavaScript Controller Library\n *
http://code.google.com/p/dat-gui\n * Copyright 2011 Data Arts Team, Google Creative Lab\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n
*/\n\nfunction requestAnimationFrame(callback) {\n setTimeout(callback, 1000 / 60);\n}\n\nexport default
window.requestAnimationFrame ||\n window.webkitRequestAnimationFrame ||\n
window.mozRequestAnimationFrame ||\n window.oRequestAnimationFrame ||\n
window.msRequestAnimationFrame ||\n requestAnimationFrame;\n", "/*\n * dat-gui JavaScript Controller
Library\n * http://code.google.com/p/dat-gui\n * Copyright 2011 Data Arts Team, Google Creative Lab\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n
*/\n\nimport dom from './dom/dom';\nimport common from
'./utils/common';\n\nclass CenteredDiv {\n constructor() {\n this.backgroundElement =
document.createElement('div');\n common.extend(this.backgroundElement.style, {\n backgroundColor:
'rgba(0,0,0,0.8)',\n top: 0,\n left: 0,\n display: 'none',\n zIndex: '1000',\n opacity: 0,\n
WebkitTransition: 'opacity 0.2s linear',\n transition: 'opacity 0.2s linear'\n });\n\n
dom.makeFullscreen(this.backgroundElement);\n this.backgroundElement.style.position = 'fixed';\n\n
this.domElement = document.createElement('div');\n common.extend(this.domElement.style, {\n position:
'fixed',\n display: 'none',\n zIndex: '1001',\n opacity: 0,\n WebkitTransition: '-webkit-transform 0.2s
ease-out, opacity 0.2s linear',\n transition: 'transform 0.2s ease-out, opacity 0.2s linear'\n });\n\n\n
document.body.appendChild(this.backgroundElement);\n document.body.appendChild(this.domElement);\n\n
const _this = this;\n dom.bind(this.backgroundElement, 'click', function() {\n _this.hide();\n });\n }\n\n
show() {\n const _this = this;\n\n this.backgroundElement.style.display = 'block';\n\n
this.domElement.style.display = 'block';\n this.domElement.style.opacity = 0;\n// this.domElement.style.top =
'52%';\n this.domElement.style.webkitTransform = 'scale(1.1)';\n\n this.layout();\n\n common.defer(function()
{\n _this.backgroundElement.style.opacity = 1;\n _this.domElement.style.opacity = 1;\n
_this.domElement.style.webkitTransform = 'scale(1)';\n });\n }\n\n /*\n * Hide centered div\n */\n hide() {\n
const _this = this;\n\n const hide = function() {\n _this.domElement.style.display = 'none';\n
_this.backgroundElement.style.display = 'none';\n\n dom.unbind(_this.domElement, 'webkitTransitionEnd',
hide);\n dom.unbind(_this.domElement, 'transitionend', hide);\n dom.unbind(_this.domElement,
'oTransitionEnd', hide);\n });\n\n dom.bind(this.domElement, 'webkitTransitionEnd', hide);\n
dom.bind(this.domElement, 'transitionend', hide);\n dom.bind(this.domElement, 'oTransitionEnd', hide);\n\n
this.backgroundElement.style.opacity = 0;\n// this.domElement.style.top = '48%';\n\n
this.domElement.style.opacity = 0;\n this.domElement.style.webkitTransform = 'scale(1.1)';\n }\n\n layout() {\n
this.domElement.style.left = window.innerWidth / 2 - dom.getWidth(this.domElement) / 2 + 'px';\n\n
this.domElement.style.top = window.innerHeight / 2 - dom.getHeight(this.domElement) / 2 + 'px';\n }\n}\n\nexport
default CenteredDiv;\n", "/*\n * dat-gui JavaScript Controller Library\n * http://code.google.com/p/dat-gui\n *
Copyright 2011 Data Arts Team, Google Creative Lab\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n */\n\nimport css from './utils/css';\nimport
saveDialogueContents from './saveDialogue.html';\nimport ControllerFactory from
'./controllers/ControllerFactory';\nimport Controller from './controllers/Controller';\nimport BooleanController
from './controllers/BooleanController';\nimport FunctionController from './controllers/FunctionController';\nimport

```

```

NumberControllerBox from './controllers/NumberControllerBox';\nimport NumberControllerSlider from
'./controllers/NumberControllerSlider';\nimport ColorController from './controllers/ColorController';\nimport
requestAnimationFrame from './utils/requestAnimationFrame';\nimport CenteredDiv from
'./dom/CenteredDiv';\nimport dom from './dom/dom';\nimport common from './utils/common';\n\nimport
styleSheet from './style.scss'; // CSS to embed in build\nncss.inject(styleSheet);\n\n/** @ignore Outer-most
className for GUI's *\nconst CSS_NAMESPACE = 'dg';\nconst HIDE_KEY_CODE = 72;\n\n/** @ignore The
only value shared between the JS and SCSS. Use caution. *\nconst CLOSE_BUTTON_HEIGHT = 20;\nconst
DEFAULT_DEFAULT_PRESET_NAME = 'Default';\nconst SUPPORTS_LOCAL_STORAGE = (function() {\n
try {\n  return !!window.localStorage;\n } catch (e) {\n  return false;\n }\n})();\n\nlet
SAVE_DIALOGUE;\n\n/** @ignore Have we yet to create an autoPlace GUI? *\nlet autoPlaceVirgin =
true;\n\n/** @ignore Fixed position div that auto place GUI's go inside *\nlet autoPlaceContainer;\n\n/** @ignore
Are we hiding the GUI's ? *\nlet hide = false;\n\n/** @private GUI's which should be hidden *\nconst
hideableGuis = [];\n\n/**\n * @class A lightweight controller library for JavaScript. It allows you to easily\n *
manipulate variables and fire functions on the fly.\n * \n * @typicalname gui\n * \n * @example\n * // Creating a
GUI with options.\n * var gui = new dat.GUI({name: 'My GUI'});\n * \n * @example\n * // Creating a GUI and a
subfolder.\n * var gui = new dat.GUI();\n * var folder1 = gui.addFolder('Flow Field');\n * \n * @param {Object}
[params]\n * @param {String} [params.name] The name of this GUI.\n * @param {Object} [params.load] JSON
object representing the saved state of\n * this GUI.\n * @param {dat.gui.GUI} [params.parent] The GUI I'm nested
in.\n * @param {Boolean} [params.autoPlace=true]\n * @param {Boolean} [params.hideable=true] If true, GUI is
shown/hidden by <kbd>h</kbd> keypress.\n * @param {Boolean} [params.closed=false] If true, starts closed\n *
@param {Boolean} [params.closeOnTop=false] If true, close/open button shows on top of the GUI\n *\nconst GUI
= function(pars) {\n  const _this = this;\n  let params = pars || {};\n  /**\n   * Outermost DOM Element\n   *
@type {DOMElement}\n   * \n   this.domElement = document.createElement('div');\n   this.__ul =
document.createElement('ul');\n   this.domElement.appendChild(this.__ul);\n   dom.addClass(this.domElement,
CSS_NAMESPACE);\n   /**\n   * Nested GUI's by name\n   * @ignore\n   * \n   this.__folders = {};\n   \n
this.__controllers = [];\n   /**\n   * List of objects I'm remembering for save, only used in top level GUI\n   *
@ignore\n   * \n   this.__rememberedObjects = [];\n   /**\n   * Maps the index of remembered objects to a map of
controllers, only used\n   * in top level GUI.\n   * \n   * @private\n   * @ignore\n   * \n   * @example\n   * [\n   *
{ \n   *   propertyName: Controller,\n   *   anotherPropertyName: Controller\n   * },\n   * {\n   *   propertyName:
Controller\n   * }\n   * ]\n   * \n   this.__rememberedObjectIndecesToControllers = [];\n   \n   this.__listening = [];\n   \n
// Default parameters\n   params = common.defaults(params, {\n   closeOnTop: false,\n   autoPlace: true,\n   width:
GUI.DEFAULT_WIDTH\n   });\n   \n   params = common.defaults(params, {\n   resizable: params.autoPlace,\n
hideable: params.autoPlace\n   });\n   \n   if (!common.isUndefined(params.load)) {\n   // Explicit preset\n   if
(params.preset) {\n   params.load.preset = params.preset;\n   }\n   } else {\n   params.load = { preset:
DEFAULT_DEFAULT_PRESET_NAME };\n   }\n   \n   if (common.isUndefined(params.parent) &&
params.hideable) {\n   hideableGuis.push(this);\n   }\n   \n   // Only root level GUI's are resizable.\n   params.resizable =
common.isUndefined(params.parent) && params.resizable;\n   \n   if (params.autoPlace &&
common.isUndefined(params.scrollable)) {\n   params.scrollable = true;\n   }\n   // params.scrollable =
common.isUndefined(params.parent) && params.scrollable === true;\n   \n   // Not part of params because I don't
want people passing this in via\n   // constructor. Should be a 'remembered' value.\n   let useLocalStorage =\n   SUPPORTS_LOCAL_STORAGE &&\n   localStorage.getItem(getLocalStorageHash(this, 'isLocal')) ===
'true';\n   \n   let saveToLocalStorage;\n   let titleRow;\n   \n   Object.defineProperties(this, {\n   /** @lends GUI.prototype
*\n   * \n   /**\n   * The parent <code>GUI</code>\n   * @type dat.gui.GUI\n   * \n   parent: {\n
get: function() {\n   return params.parent;\n   }\n   },\n   \n   scrollable: {\n   get: function() {\n
return params.scrollable;\n   }\n   },\n   \n   /**\n   * Handles <code>GUI</code>'s element placement for
you\n   * @type Boolean\n   * \n   autoPlace: {\n   get: function() {\n   return params.autoPlace;\n
}\n   },\n   \n   /**\n   * Handles <code>GUI</code>'s position of open/close button\n   * @type Boolean\n   *
\n   closeOnTop: {\n   get: function() {\n   return params.closeOnTop;\n   }\n   },\n   \n   /**\n   *

```

```

The identifier for a set of saved values\n
 * @type String\n
 */\n
 preset: {\n
   get: function() {\n
     if\n
     (_this.parent) {\n
       return _this.getRoot().preset;\n
     }\n
     return params.load.preset;\n
   },\n
   set: function(v) {\n
     if (_this.parent) {\n
       _this.getRoot().preset = v;\n
     } else {\n
       params.load.preset = v;\n
     }\n
     setPresetSelectIndex(this);\n
     _this.revert();\n
   },\n
   /**\n
    * The width of <code>GUI</code> element\n
    * @type Number\n
    */\n
   width: {\n
     get:\n
     function() {\n
       return params.width;\n
     },\n
     set: function(v) {\n
       params.width = v;\n
     }\n
   },\n
   setWidth(_this, v);\n
 },\n
 /**\n
  * The name of <code>GUI</code>. Used for folders. i.e\n
  * a folder's name\n
  * @type String\n
  */\n
  name: {\n
    get: function() {\n
      return params.name;\n
    },\n
    set: function(v) {\n
      // TODO Check for collisions among sibling folders\n
      params.name = v;\n
      if (titleRow) {\n
        titleRow.innerHTML = params.name;\n
      }\n
    },\n
    /**\n
     * Whether\n
     the <code>GUI</code> is collapsed or not\n
     * @type Boolean\n
     */\n
    closed: {\n
      get: function() {\n
        return params.closed;\n
      },\n
      set: function(v) {\n
        params.closed = v;\n
        if (params.closed) {\n
          dom.addClass(_this.__ul, GUI.CLASS_CLOSED);\n
        } else {\n
          dom.removeClass(_this.__ul,\n
          GUI.CLASS_CLOSED);\n
        }\n
        // For browsers that aren't going to respect the CSS transition,\n
        // Lets just check our height against the window height right off\n
        // the bat.\n
        this.onResize();\n
      }\n
    },\n
    (_this.__closeButton) {\n
      _this.__closeButton.innerHTML = v ? GUI.TEXT_OPEN :\n
      GUI.TEXT_CLOSED;\n
    },\n
    /**\n
     * Contains all presets\n
     * @type Object\n
     */\n
    load: {\n
      get: function() {\n
        return params.load;\n
      },\n
      /**\n
       * Determines\n
       whether or not to use <a href="https://developer.mozilla.org/en/DOM/Storage#localStorage">localStorage</a> as\n
       the means for\n
       * <code>remember</code>ing\n
       * @type Boolean\n
       */\n
      useLocalStorage: {\n
        get: function() {\n
          return useLocalStorage;\n
        },\n
        set: function(bool) {\n
          if\n
          (SUPPORTS_LOCAL_STORAGE) {\n
            useLocalStorage = bool;\n
            if (bool) {\n
              dom.bind(window, 'unload', saveToLocalStorage);\n
            } else {\n
              dom.unbind(window, 'unload',\n
              saveToLocalStorage);\n
            }\n
            localStorage.setItem(getLocalStorageHash(_this, 'isLocal'), bool);\n
          }\n
        },\n
        // Are we a root level GUI?\n
        if (common.isUndefined(params.parent)) {\n
          this.closed = params.closed || false;\n
          dom.addClass(this.domElement, GUI.CLASS_MAIN);\n
          dom.makeSelectable(this.domElement, false);\n
          // Are we supposed to be loading locally?\n
          if\n
          (SUPPORTS_LOCAL_STORAGE) {\n
            if (useLocalStorage) {\n
              _this.useLocalStorage = true;\n
              const\n
              savedGui = localStorage.getItem(getLocalStorageHash(this, 'gui'));\n
              if (savedGui) {\n
                params.load =\n
                JSON.parse(savedGui);\n
              }\n
            }\n
            this.__closeButton = document.createElement('div');\n
            this.__closeButton.innerHTML = GUI.TEXT_CLOSED;\n
            dom.addClass(this.__closeButton,\n
            GUI.CLASS_CLOSE_BUTTON);\n
            if (params.closeOnTop) {\n
              dom.addClass(this.__closeButton,\n
              GUI.CLASS_CLOSE_TOP);\n
              this.domElement.insertBefore(this.__closeButton,\n
              this.domElement.childNodes[0]);\n
            } else {\n
              dom.addClass(this.__closeButton,\n
              GUI.CLASS_CLOSE_BOTTOM);\n
              this.domElement.appendChild(this.__closeButton);\n
            }\n
            dom.bind(this.__closeButton, 'click', function() {\n
              _this.closed = !_this.closed;\n
            });\n
            // Oh, you're a nested\n
            GUI!\n
          } else {\n
            if (params.closed === undefined) {\n
              params.closed = true;\n
            }\n
            const titleRowName\n
            = document.createTextNode(params.name);\n
            dom.addClass(titleRowName, 'controller-name');\n
            titleRow =\n
            addRow(_this, titleRowName);\n
            const onClickTitle = function(e) {\n
              e.preventDefault();\n
              _this.closed =\n
              !_this.closed;\n
              return false;\n
            };\n
            dom.addClass(this.__ul, GUI.CLASS_CLOSED);\n
            dom.addClass(titleRow, 'title');\n
            dom.bind(titleRow, 'click', onClickTitle);\n
            if (!params.closed) {\n
              this.closed = false;\n
            }\n
          }\n
          if (params.autoPlace) {\n
            if (common.isUndefined(params.parent)) {\n
              if\n
              (autoPlaceVirgin) {\n
                autoPlaceContainer = document.createElement('div');\n
                dom.addClass(autoPlaceContainer, CSS_NAMESPACE);\n
                dom.addClass(autoPlaceContainer,\n
                GUI.CLASS_AUTO_PLACE_CONTAINER);\n
                document.body.appendChild(autoPlaceContainer);\n
                autoPlaceVirgin = false;\n
              }\n
              // Put it in the dom for you.\n
              autoPlaceContainer.appendChild(this.domElement);\n
              // Apply the auto styles\n
              dom.addClass(this.domElement, GUI.CLASS_AUTO_PLACE);\n
            }\n
            // Make it not elastic.\n
            if

```



```

(!this.parent) {\n  setWidth(_this, params.width);\n };\n\n this.__resizeHandler = function() {\n
  _this.onResizeDebounce();\n };;\n\n dom.bind(window, 'resize', this.__resizeHandler);\n dom.bind(this.__ul,\n
'webkitTransitionEnd', this.__resizeHandler);\n dom.bind(this.__ul, 'transitionend', this.__resizeHandler);\n
dom.bind(this.__ul, 'oTransitionEnd', this.__resizeHandler);\n this.onResize();\n\n if (params.resizable) {\n
  addResizeHandle(this);\n }\n\n saveToLocalStorage = function() {\n  if (SUPPORTS_LOCAL_STORAGE &&\n
  localStorage.getItem(getLocalStorageHash(_this, 'isLocal')) === 'true') {\n
    localStorage.setItem(getLocalStorageHash(_this, 'gui'), JSON.stringify(_this.getSaveObject()));\n  }\n };\n\n //\n
  expose this method publicly\n  this.saveToLocalStorageIfPossible = saveToLocalStorage;\n\n  function resetWidth()\n
  {\n    const root = _this.getRoot();\n    root.width += 1;\n    common.defer(function() {\n      root.width -= 1;\n
    });\n  }\n\n  if (!params.parent) {\n    resetWidth();\n  }\n\n  GUI.toggleHide = function() {\n    hide = !hide;\n
    common.each(hideableGuis, function(gui) {\n      gui.domElement.style.display = hide ? 'none' : '';\n
    });\n  }\n\n  GUI.CLASS_AUTO_PLACE = 'a';\n  GUI.CLASS_AUTO_PLACE_CONTAINER =\n
  'ac';\n  GUI.CLASS_MAIN = 'main';\n  GUI.CLASS_CONTROLLER_ROW = 'cr';\n  GUI.CLASS_TOO_TALL =\n
  'taller-than-window';\n  GUI.CLASS_CLOSED = 'closed';\n  GUI.CLASS_CLOSE_BUTTON = 'close-\n
  button';\n  GUI.CLASS_CLOSE_TOP = 'close-top';\n  GUI.CLASS_CLOSE_BOTTOM = 'close-\n
  bottom';\n  GUI.CLASS_DRAG = 'drag';\n\n  GUI.DEFAULT_WIDTH = 245;\n  GUI.TEXT_CLOSED = 'Close\n
  Controls';\n  GUI.TEXT_OPEN = 'Open Controls';\n\n  GUI._keydownHandler = function(e) {\n    if\n
  (document.activeElement.type !== 'text' &&\n    (e.which === HIDE_KEY_CODE || e.keyCode ===\n
  HIDE_KEY_CODE)) {\n      GUI.toggleHide();\n    }\n  };\n\n  ndom.bind(window, 'keydown', GUI._keydownHandler,\n
  false);\n\n  common.extend(\n    GUI.prototype,\n    /** @lends GUI.prototype */\n    {\n\n      /**\n
      * Adds a new\n      { @link Controller } to the GUI. The type of controller created\n      * is inferred from the initial value of\n
      <code>object[property]</code>. For\n      * color properties, see { @link addColor }.  

      * @param {Object}\n      object The object to be manipulated  

      * @param {String} property The name of the property to be manipulated  

      * @param {Number} [min] Minimum allowed value  

      * @param {Number} [max] Maximum allowed value  

      * @param {Number} [step] Increment by which to change value  

      * @returns {Controller} The controller that\n      was added to the GUI.  

      * @instance  

      * @example  

      * // Add a string controller.  

      * var person =\n      { name: 'Sam' };  

      * gui.add(person, 'name');  

      * @example  

      * // Add a number controller slider.  

      * var person = { age: 45 };  

      * gui.add(person, 'age', 0, 100);  

      * ^\n      add: function(object, property) {\n        return\n
      add(\n        this,\n        object,\n        property,\n        {\n          factoryArgs: Array.prototype.slice.call(arguments, 2)\n
        }\n      );\n      },\n      /**\n      * Adds a new color controller to the GUI.  

      * @param object  

      * @param property  

      * @returns {Controller} The controller that was added to the GUI.  

      * @instance  

      * @example  

      * var palette = {\n      *   color1: '#FF0000', // CSS string  

      *   color2: [ 0, 128, 255 ], // RGB\n      array  

      *   color3: [ 0, 128, 255, 0.3 ], // RGB with alpha  

      *   color4: { h: 350, s: 0.9, v: 0.3 } // Hue,\n      saturation, value  

      * };\n      * gui.addColor(palette, 'color1');  

      * gui.addColor(palette, 'color2');  

      * gui.addColor(palette, 'color3');  

      * gui.addColor(palette, 'color4');  

      * ^\n      addColor: function(object, property)\n      {\n        return add(\n          this,\n          object,\n          property,\n          {\n            color: true\n          }\n        );\n      },\n      /**\n
      * Removes the given controller from the GUI.  

      * @param {Controller} controller  

      * @instance  

      * ^\n      remove: function(controller) {\n        // TODO listening?\n        this.__ul.removeChild(controller.__li);\n
        this.__controllers.splice(this.__controllers.indexOf(controller), 1);\n        const _this = this;\n
        common.defer(function() {\n          _this.onResize();\n        });\n      },\n      /**\n
      * Removes the root GUI from the\n      document and unbinds all event listeners.  

      * For subfolders, use `gui.removeFolder(folder)` instead.  

      * @instance  

      * ^\n      destroy: function() {\n        if (this.parent) {\n          throw new Error(\n            'Only the root GUI\n
          should be removed with .destroy(). ' +\n            'For subfolders, use gui.removeFolder(folder) instead.\n          );\n
        }\n        if (this.autoPlace) {\n          autoPlaceContainer.removeChild(this.domElement);\n        }\n        const _this =\n        this;\n        common.each(this.__folders, function(subfolder) {\n          _this.removeFolder(subfolder);\n        });\n
        dom.unbind(window, 'keydown', GUI._keydownHandler, false);\n        removeListeners(this);\n      },\n      /**\n
      * Creates a new subfolder GUI instance.  

      * @param name  

      * @returns {dat.gui.GUI} The new folder.  

      * @throws {Error} if this GUI already has a folder by the specified  

      * name  

      * @instance  

      * ^\n

```

```

addFolder: function(name) {\n    // We have to prevent collisions on names in order to have a key\n    // by which
to remember saved values\n    if (this.__folders[name] !== undefined) {\n        throw new Error("You already have
a folder in this GUI by the' +\n        ' name \'' + name + '\");\n    }\n    const newGuiParams = { name: name,
parent: this };\n    // We need to pass down the autoPlace trait so that we can\n    // attach event listeners to
open/close folder actions to\n    // ensure that a scrollbar appears if the window is too short.\n    newGuiParams.autoPlace = this.autoPlace;\n    // Do we have saved appearance data for this folder?\n    if
(this.load && // Anything loaded?\n    this.load.folders && // Was my parent a dead-end?\n    this.load.folders[name]) {\n        // Did daddy remember me?\n        // Start me closed if I was closed\n    }
newGuiParams.closed = this.load.folders[name].closed;\n    // Pass down the loaded data\n    newGuiParams.load = this.load.folders[name];\n    }\n    const gui = new GUI(newGuiParams);\n    this.__folders[name] = gui;\n    const li = addRow(this, gui.domElement);\n    dom.addClass(li, 'folder');\n    return gui;\n },\n    /**\n     * Removes a subfolder GUI instance.\n     * @param {dat.gui.GUI} folder The
folder to remove.\n     * @instance\n     */\n    removeFolder: function(folder) {\n
this.__ul.removeChild(folder.domElement.parentElement);\n    delete this.__folders[folder.name];\n    // Do
we have saved appearance data for this folder?\n    if (this.load && // Anything loaded?\n    this.load.folders &&
// Was my parent a dead-end?\n    this.load.folders[folder.name]) {\n        delete this.load.folders[folder.name];\n
    }\n    removeListeners(folder);\n    const _this = this;\n    common.each(folder.__folders,
function(subfolder) {\n        folder.removeFolder(subfolder);\n    });\n    common.defer(function() {\n
_this.onResize();\n    });\n },\n    /**\n     * Opens the GUI.\n     */\n    open: function() {\n    this.closed =
false;\n    },\n    /**\n     * Closes the GUI.\n     */\n    close: function() {\n    this.closed = true;\n    },\n    /**\n
     * Hides the GUI.\n     */\n    hide: function() {\n    this.domElement.style.display = 'none';\n    },\n    /**\n
     * Shows the GUI.\n     */\n    show: function() {\n    this.domElement.style.display = '';\n    },\n    onResize:
function() {\n    // we debounce this function to prevent performance issues when rotating on tablet/mobile\n
const root = this.getRoot();\n    if (root.scrollable) {\n        const top = dom.getOffset(root.__ul).top;\n        let h =
0;\n        common.each(root.__ul.childNodes, function(node) {\n            if (!root.autoPlace && node ===
root.__save_row)) {\n                h += dom.getHeight(node);\n            }\n        });\n        if (window.innerHeight - top -
CLOSE_BUTTON_HEIGHT < h) {\n            dom.addClass(root.domElement, GUI.CLASS_TOO_TALL);\n            root.__ul.style.height = window.innerHeight - top - CLOSE_BUTTON_HEIGHT + 'px';\n        } else {\n
            dom.removeClass(root.domElement, GUI.CLASS_TOO_TALL);\n            root.__ul.style.height = 'auto';\n        }\n    }\n    if (root.__resize_handle) {\n        common.defer(function() {\n            root.__resize_handle.style.height =
root.__ul.offsetHeight + 'px';\n        });\n    }\n    if (root.__closeButton) {\n        root.__closeButton.style.width =
root.width + 'px';\n    }\n    },\n    onResizeDebounce: common.debounce(function() { this.onResize(); },
50),\n    /**\n     * Mark objects for saving. The order of these objects cannot change as\n     * the GUI grows.
When remembering new objects, append them to the end\n     * of the list.\n     * @param {...Object}
objects\n     * @throws {Error} if not called on a top level GUI.\n     * @instance\n     * @ignore\n     */\n    remember: function() {\n    if (common.isUndefined(SAVE_DIALOGUE)) {\n        SAVE_DIALOGUE = new
CenteredDiv();\n        SAVE_DIALOGUE.domElement.innerHTML = saveDialogueContents;\n    }\n    if
(this.parent) {\n        throw new Error("You can only call remember on a top level GUI.");\n    }\n    const _this =
this;\n    common.each(Array.prototype.slice.call(arguments), function(object) {\n        if
(!_this.__rememberedObjects.length === 0) {\n            addSaveMenu(_this);\n        }\n        if
(!_this.__rememberedObjects.indexOf(object) === -1) {\n            _this.__rememberedObjects.push(object);\n        }\n    });\n    if (this.autoPlace) {\n        // Set save row width\n        setWidth(this, this.width);\n    }\n },\n    /**\n
     * @returns {dat.gui.GUI} the topmost parent GUI of a nested GUI.\n     * @instance\n     */\n    getRoot:
function() {\n    let gui = this;\n    while (gui.parent) {\n        gui = gui.parent;\n    }\n    return gui;\n },\n    /**\n
     * @returns {Object} a JSON object representing the current state of\n     * this GUI as well as its
remembered properties.\n     * @instance\n     */\n    getSaveObject: function() {\n    const toReturn = this.load;\n    toReturn.closed = this.closed;\n    // Am I remembering any values?\n    if (this.__rememberedObjects.length >
0) {\n        toReturn.preset = this.preset;\n    }\n    if (!toReturn.remembered) {\n        toReturn.remembered = {};\n    }\n
}

```

```

    }
    toReturn.remembered[this.preset] = getCurrentPreset(this);
    toReturn.folders = {};
    common.each(this.__folders, function(element, key) {
        toReturn.folders[key] = element.getSaveObject();
    });
    return toReturn;
},
save: function() {
    if (!this.load.remembered) {
        this.load.remembered = {};
        this.load.remembered[this.preset] = getCurrentPreset(this);
        markPresetModified(this, false);
        this.saveToLocalStorageIfPossible();
    },
saveAs:
function(presetName) {
    if (!this.load.remembered) {
        // Retain default values upon first save
        this.load.remembered = {};
        this.load.remembered[DEFAULT_DEFAULT_PRESET_NAME] =
            getCurrentPreset(this, true);
        this.load.remembered[presetName] = getCurrentPreset(this);
        this.preset = presetName;
        addPresetOption(this, presetName, true);
        this.saveToLocalStorageIfPossible();
    },
revert: function(gui) {
    common.each(this.__controllers, function(controller) {
        // Make revert
        work on Default
        if (!this.getRoot().load.remembered) {
            controller.setValue(controller.initialValue);
        } else {
            recallSavedValue(gui || this.getRoot(), controller);
        }
        // fire onFinishChange
        callback
        if (controller.__onFinishChange) {
            controller.__onFinishChange.call(controller,
            controller.getValue());
        }
    }, this);
    common.each(this.__folders, function(folder) {
        folder.revert(folder);
    });
    if (!gui) {
        markPresetModified(this.getRoot(), false);
    }
},
listen: function(controller) {
    const init = this.__listening.length === 0;
    this.__listening.push(controller);
    if (init) {
        updateDisplays(this.__listening);
    },
updateDisplay: function() {
    common.each(this.__controllers, function(controller) {
        controller.updateDisplay();
    });
    common.each(this.__folders, function(folder) {
        folder.updateDisplay();
    });
},
Add
a row to the end of the GUI or before another row.
@param gui
@param [newDom] If specified, inserts
the dom content in the new row
@param [liBefore] If specified, places the new row before another row
@param
@ignore
^function addRow(gui, newDom, liBefore) {
    const li = document.createElement('li');
    if
(newDom) {
        li.appendChild(newDom);
    }
    if (liBefore) {
        gui.__ul.insertBefore(li, liBefore);
    } else
{
        gui.__ul.appendChild(li);
    }
    gui.onResize();
    return li;
}
function removeListeners(gui) {
    dom.unbind(window, 'resize', gui.__resizeHandler);
    if (gui.saveToLocalStorageIfPossible) {
        dom.unbind(window, 'unload', gui.saveToLocalStorageIfPossible);
    }
}
function markPresetModified(gui,
modified) {
    const opt = gui.__preset_select[gui.__preset_select.selectedIndex];
    if (modified) {
        opt.innerHTML = opt.value + '*';
    } else {
        opt.innerHTML = opt.value;
    }
}
function
augmentController(gui, li, controller) {
    controller.__li = li;
    controller.__gui = gui;
}
common.extend(controller, /** @lends Controller.prototype */ {
    /**
     * @param {Array|Object} options
     * @return {Controller}
     */
    options: function(options) {
        if (arguments.length > 1) {
            const
            nextSibling = controller.__li.nextElementSibling;
            controller.remove();
            return add(
                gui,
                controller.object,
                controller.property,
                {
                    before: nextSibling,
                    factoryArgs:
                    [common.toArray(arguments)]
                },
                );
        }
        if (common.isArray(options) ||
        common.isObject(options)) {
            const nextSibling = controller.__li.nextElementSibling;
            controller.remove();
            return add(
                gui,
                controller.object,
                controller.property,
                {
                    before: nextSibling,
                    factoryArgs: [options]
                },
                );
        }
        /**
         * Sets the
         name of the controller.
         * @param {string} name
         * @return {Controller}
         */
        name: function(name) {
            controller.__li.firstChild.firstChild.innerHTML = name;
            return controller;
        },
        /**
         * Sets controller to listen for changes on its underlying object.
         * @return {Controller}
         */
        listen:
        function() {
            controller.__gui.listen(controller);
            return controller;
        },
        /**
         * Removes the
         controller from its parent GUI.
         * @return {Controller}
         */
        remove: function() {
            controller.__gui.remove(controller);
            return controller;
        }
    });
    // All sliders should be accompanied by a
    box.
    if (controller instanceof NumberControllerSlider) {
        const box = new
        NumberControllerBox(controller.object, controller.property,
        {
            min: controller.__min, max: controller.__max,
            step: controller.__step
        });
        common.each(['updateDisplay', 'onChange', 'onFinishChange', 'step', 'min', 'max'],
        function(method) {
            const pc = controller[method];
            const pb = box[method];
            controller[method] =
            box[method] = function() {
                const args = Array.prototype.slice.call(arguments);
                pb.apply(box, args);
            }
        }
    }
}

```

```

return pc.apply(controller, args);\n    };\n    });\n\n    dom.addClass(li, 'has-slider');\n    controller.domElement.insertBefore(box.domElement, controller.domElement.firstChild);\n  } else if\n  (controller instanceof NumberControllerBox) {\n    const r = function(returned) {\n      // Have we defined both\n      boundaries?\n      if (common.isNumber(controller.__min) && common.isNumber(controller.__max)) {\n        //\n        Well, then lets just replace this with a slider.\n        // lets remember if the old controller had a specific name or\n        was listening\n        const oldName = controller.__li.firstChild.firstChild.innerHTML;\n        const\n        wasListening = controller.__gui.__listening.indexOf(controller) > -1;\n        controller.remove();\n        const\n        newController = add(\n          gui,\n          controller.object,\n          controller.property,\n          {\n            before:\n            controller.__li.nextElementSibling,\n            factoryArgs: [controller.__min, controller.__max, controller.__step]\n          });\n        newController.name(oldName);\n        if (wasListening) newController.listen();\n        return\n        newController;\n      }\n      return returned;\n    };\n\n    controller.min = common.compose(r, controller.min);\n    controller.max = common.compose(r, controller.max);\n  } else if (controller instanceof BooleanController) {\n    dom.bind(li, 'click', function() {\n      dom.fakeEvent(controller.__checkbox, 'click');\n    });\n\n    dom.bind(controller.__checkbox, 'click', function(e) {\n      e.stopPropagation(); // Prevents double-toggle\n    });\n  } else if (controller instanceof FunctionController) {\n    dom.bind(li, 'click', function() {\n      dom.fakeEvent(controller.__button, 'click');\n    });\n\n    dom.bind(li, 'mouseover', function() {\n      dom.addClass(controller.__button, 'hover');\n    });\n\n    dom.bind(li, 'mouseout', function() {\n      dom.removeClass(controller.__button, 'hover');\n    });\n  } else if (controller instanceof ColorController) {\n    dom.addClass(li, 'color');\n    controller.updateDisplay = common.compose(function(val) {\n      li.style.borderColor = controller.__color.toString();\n      return val;\n    }, controller.updateDisplay);\n\n    controller.updateDisplay();\n  }\n\n  controller.setValue = common.compose(function(val) {\n    if\n    (gui.getRoot().__preset_select && controller.isModified()) {\n      markPresetModified(gui.getRoot(), true);\n    }\n\n    return val;\n  }, controller.setValue);\n\n  function recallSavedValue(gui, controller) {\n    // Find the\n    topmost GUI, that's where remembered objects live.\n    const root = gui.getRoot();\n\n    // Does the object we're\n    controlling match anything we've been told to\n    // remember?\n    const matchedIndex =\n    root.__rememberedObjects.indexOf(controller.object);\n\n    // Why yes, it does!\n    if (matchedIndex !== -1) {\n      // Let me fetch a map of controllers for thcommon.isObject.\n      let controllerMap =\n      root.__rememberedObjectIndecesToControllers[matchedIndex];\n\n      // Ohp, I believe this is the first controller\n      we've created for this\n      // object. Lets make the map fresh.\n      if (controllerMap === undefined) {\n        controllerMap = {};\n        root.__rememberedObjectIndecesToControllers[matchedIndex] =\n        controllerMap;\n      }\n\n      // Keep track of this controller\n      controllerMap[controller.property] = controller;\n\n      // Okay, now have\n      we saved any values for this controller?\n      if (root.load && root.load.remembered) {\n        const presetMap =\n        root.load.remembered;\n\n        // Which preset are we trying to load?\n        let preset;\n\n        if\n        (presetMap[gui.preset]) {\n          preset = presetMap[gui.preset];\n        } else if\n        (presetMap[DEFAULT_DEFAULT_PRESET_NAME]) {\n          // Uhh, you can have the default instead?\n          preset = presetMap[DEFAULT_DEFAULT_PRESET_NAME];\n        } else {\n          // Nada.\n          return;\n        }\n\n        // Did the loaded object remember thcommon.isObject? && Did we remember this particular property?\n        if\n        (preset[matchedIndex] && preset[matchedIndex][controller.property] !== undefined) {\n          // We did remember\n          something for this guy ...\n          const value = preset[matchedIndex][controller.property];\n\n          // And that's what\n          it is.\n          controller.initialValue = value;\n          controller.setValue(value);\n        }\n      }\n\n      function\n      add(gui, object, property, params) {\n        if (object[property] === undefined) {\n          throw new Error(`Object\n          \"${object}\" has no property \"${property}\"`);\n        }\n\n        let controller;\n\n        if (params.color) {\n          controller = new\n          ColorController(object, property);\n        } else {\n          const factoryArgs = [object,\n          property].concat(params.factoryArgs);\n          controller = ControllerFactory.apply(gui, factoryArgs);\n        }\n\n        if\n        (params.before instanceof Controller) {\n          params.before = params.before.__li;\n        }\n\n        recallSavedValue(gui,\n        controller);\n\n        dom.addClass(controller.domElement, 'c');\n        const name = document.createElement('span');\n        dom.addClass(name, 'property-name');\n        name.innerHTML = controller.property;\n        const container =\n        document.createElement('div');\n        container.appendChild(name);\n      }\n    }\n  }\n}

```

```

container.appendChild(controller.domElement);\n\n const li = addRow(gui, container, params.before);\n\n dom.addClass(li, GUI.CLASS_CONTROLLER_ROW);\n if (controller instanceof ColorController) {\n
dom.addClass(li, 'color');\n } else {\n  dom.addClass(li, typeof controller.getValue());\n }\n\n augmentController(gui, li, controller);\n\n gui.__controllers.push(controller);\n\n return controller;\n}\n\nfunction
getLocalStorageHash(gui, key) {\n // TODO how does this deal with multiple GUI's?\n return
document.location.href + '.' + key;\n}\n\nfunction addPresetOption(gui, name, setSelected) {\n const opt =
document.createElement('option');\n opt.innerHTML = name;\n opt.value = name;\n
gui.__preset_select.appendChild(opt);\n if (setSelected) {\n  gui.__preset_select.selectedIndex =
gui.__preset_select.length - 1;\n }\n}\n\nfunction showHideExplain(gui, explain) {\n explain.style.display =
gui.useLocalStorage ? 'block' : 'none';\n}\n\nfunction addSaveMenu(gui) {\n const div = gui.__save_row =
document.createElement('li');\n\n dom.addClass(gui.domElement, 'has-save');\n\n gui.__ul.insertBefore(div,
gui.__ul.firstChild);\n\n dom.addClass(div, 'save-row');\n\n const gears = document.createElement('span');\n
gears.innerHTML = '&nbsp;';\n dom.addClass(gears, 'button gears');\n\n // TODO replace with
FunctionController\n const button = document.createElement('span');\n button.innerHTML = 'Save';\n
dom.addClass(button, 'button');\n dom.addClass(button, 'save');\n\n const button2 =
document.createElement('span');\n button2.innerHTML = 'New';\n dom.addClass(button2, 'button');\n
dom.addClass(button2, 'save-as');\n\n const button3 = document.createElement('span');\n button3.innerHTML =
'Revert';\n dom.addClass(button3, 'button');\n dom.addClass(button3, 'revert');\n\n const select =
gui.__preset_select = document.createElement('select');\n\n if (gui.load && gui.load.remembered) {\n
common.each(gui.load.remembered, function(value, key) {\n  addPresetOption(gui, key, key === gui.preset);\n
});\n } else {\n  addPresetOption(gui, DEFAULT_DEFAULT_PRESET_NAME, false);\n }\n\n dom.bind(select,
'change', function() {\n  for (let index = 0; index < gui.__preset_select.length; index++) {\n
gui.__preset_select[index].innerHTML = gui.__preset_select[index].value;\n  }\n\n  gui.preset = this.value;\n
});\n\n div.appendChild(select);\n div.appendChild(gears);\n div.appendChild(button);\n
div.appendChild(button2);\n div.appendChild(button3);\n\n if (SUPPORTS_LOCAL_STORAGE) {\n const
explain = document.getElementById('dg-local-explain');\n  const localStorageCheckBox =
document.getElementById('dg-local-storage');\n  const saveLocally = document.getElementById('dg-save-
locally');\n\n  saveLocally.style.display = 'block';\n\n  if (localStorage.getItem(getLocalStorageHash(gui,
'isLocal')) === 'true') {\n  localStorageCheckBox.setAttribute('checked', 'checked');\n }\n\n
showHideExplain(gui, explain);\n\n // TODO: Use a boolean controller, fool!\n
dom.bind(localStorageCheckBox, 'change', function() {\n  gui.useLocalStorage = !gui.useLocalStorage;\n
showHideExplain(gui, explain);\n });\n }\n\n const newConstructorTextArea = document.getElementById('dg-
new-constructor');\n\n dom.bind(newConstructorTextArea, 'keydown', function(e) {\n  if (e.metaKey && (e.which
=== 67 || e.keyCode === 67)) {\n  SAVE_DIALOGUE.hide();\n }\n });\n\n dom.bind(gears, 'click', function()
{\n  newConstructorTextArea.innerHTML = JSON.stringify(gui.getSaveObject(), undefined, 2);\n
SAVE_DIALOGUE.show();\n newConstructorTextArea.focus();\n newConstructorTextArea.select();\n });\n\n
dom.bind(button, 'click', function() {\n  gui.save();\n });\n\n dom.bind(button2, 'click', function() {\n const
presetName = prompt('Enter a new preset name.);\n  if (presetName) {\n  gui.saveAs(presetName);\n }\n
});\n\n dom.bind(button3, 'click', function() {\n  gui.revert();\n });\n\n //
div.appendChild(button2);\n}\n\nfunction addResizeHandle(gui) {\n let pmouseX;\n\n gui.__resize_handle =
document.createElement('div');\n\n common.extend(gui.__resize_handle.style, {\n\n  width: '6px',\n  marginLeft:
'-3px',\n  height: '200px',\n  cursor: 'ew-resize',\n  position: 'absolute'\n // border: '1px solid blue'\n\n });\n\n
function drag(e) {\n  e.preventDefault();\n\n  gui.width += pmouseX - e.clientX;\n  gui.onResize();\n  pmouseX
= e.clientX;\n\n  return false;\n }\n\n function dragStop() {\n  dom.removeClass(gui.__closeButton,
GUI.CLASS_DRAG);\n  dom.unbind(window, 'mousemove', drag);\n  dom.unbind(window, 'mouseup',
dragStop);\n }\n\n function dragStart(e) {\n  e.preventDefault();\n\n  pmouseX = e.clientX;\n\n
dom.addClass(gui.__closeButton, GUI.CLASS_DRAG);\n  dom.bind(window, 'mousemove', drag);\n
dom.bind(window, 'mouseup', dragStop);\n\n  return false;\n }\n\n dom.bind(gui.__resize_handle, 'mousedown',

```

```

dragStart);\n dom.bind(gui.__closeButton, 'mousedown', dragStart);\n\n
gui.domElement.insertBefore(gui.__resize_handle, gui.domElement.firstChild);\n\n\nfunction
setWidth(gui, w) {\n  gui.domElement.style.width = w + 'px';\n  // Auto placed save-rows are position fixed, so we
have to\n  // set the width manually if we want it to bleed to the edge\n  if (gui.__save_row && gui.autoPlace) {\n
  gui.__save_row.style.width = w + 'px';\n  }\n  if (gui.__closeButton) {\n  gui.__closeButton.style.width = w +
'px';\n  }\n}\n\nfunction getCurrentPreset(gui, useInitialValues) {\n  const toReturn = {};\n  // For each object I'm
remembering\n  common.each(gui.__rememberedObjects, function(val, index) {\n  const savedValues = {};\n  \n
  // The controllers I've made for thcommon.isObject by property\n  const controllerMap =\n
  gui.__rememberedObjectIndecesToControllers[index];\n  // Remember each value for each property\n
  common.each(controllerMap, function(controller, property) {\n  savedValues[property] = useInitialValues ?
  controller.initialValue : controller.getValue();\n  });\n  // Save the values for thcommon.isObject\n
  toReturn[index] = savedValues;\n  });\n  \n  return toReturn;\n  }\n}\n\nfunction setPresetSelectIndex(gui) {\n
  for (let index = 0; index < gui.__preset_select.length; index++) {\n  if (gui.__preset_select[index].value ===
  gui.preset)\n  {\n  gui.__preset_select.selectedIndex = index;\n  }\n  }\n}\n\nfunction updateDisplays(controllerArray) {\n  if
  (controllerArray.length !== 0) {\n  requestAnimationFrame.call(window, function() {\n
  updateDisplays(controllerArray);\n  });\n  }\n  \n  common.each(controllerArray, function(c) {\n
  c.updateDisplay();\n  });\n  }\n}\n\nexport default GUI;\n", "// stats.js -
http://github.com/mrdoob/stats.js\n(function(f,e){\n  "object"===typeof exports&&"undefined"!==typeof
  module?module.exports=e(\\function\\"===typeof define&&define.amd?define(e):f.Stats=e)})(this,function(){\n
  var f=function(){\n  function e(a){c.appendChild(a.dom);return a}\n  function u(a){\n  for(var
  d=0;d<c.children.length;d++)c.children[d].style.display=d===a?"block\\":\\"none\\";l=a\n  var l=0,c=document.createElement("\\div\\");c.style.cssText=\\position:fixed;top:0;left:0;cursor:pointer;opacity:0.9;z-
  index:10000\\");c.addEventListener("\\click\\",function(a){a.preventDefault();\n  nu(+++1%c.children.length)},!1);\n
  var k=(performance||Date).now(),g=k,a=0,r=e(new f.Panel("\\FPS\\",\\"#0ff\\",\\"#002\\")),h=e(new
  f.Panel("\\MS\\",\\"#0f0\\",\\"#020\\"));if(self.performance&&self.performance.memory)var t=e(new
  f.Panel("\\MB\\",\\"#f08\\",\\"#201\\"));u(0);return {REVISION:16,dom:c,addPanel:e,showPanel:u,begin:function(){k=(p
  erformance||Date).now(),end:function(){a++;var c=(performance||Date).now();h.update(c-
  k,200);if(c>g+1E3&&(r.update(1E3*a/(c-g),100),g=c,a=0,t)){\n
  d=performance.memory;t.update(d.usedJSHeapSize/1048576,d.jsHeapSizeLimit/1048576)}\n  return
  c},update:function(){k=this.end(),domElement:c,setName:u}};f.Panel=function(e,f,l){\n  var
  c=Infinity,k=0,g=Math.round,a=g(window.devicePixelRatio|1),r=80*a,h=48*a,t=3*a,v=2*a,d=3*a,m=15*a,n=74*a
  ,p=30*a,q=document.createElement("\\canvas\\");q.width=r;q.height=h;q.style.cssText=\\width:80px;height:48px\\";v
  ar b=q.getContext("\\2d\\");b.font=\\bold \\"+9*a+\\px Helvetica,Arial,sans-
  serif\\";b.textBaseline=\\top\\";b.fillStyle=l;b.fillRect(0,0,r,h);b.fillStyle=f;b.fillText(e,t,v);nb.fillRect(d,m,n,p);b.fill
  Style=l;b.globalAlpha=.9;b.fillRect(d,m,n,p);return {dom:q,update:function(h,w){c=Math.min(c,h);k=Math.max(k,h)
  );b.fillStyle=l;b.globalAlpha=1;b.fillRect(0,0,r,m);b.fillStyle=f;b.fillText(g(h)+\\ \\"+e+\\ \\"+g(c)+\\ "-
  \\"+g(k)+\\ \\",t,v);b.drawImage(q,d+a,m,n-a,p,d,m,n-a,p);b.fillRect(d+n-
  a,m,a,p);b.fillStyle=l;b.globalAlpha=.9;b.fillRect(d+n-a,m,a,g((1-h/w)*p))}};\n  return f});\n  },\n  /**\n
  * @license\n
  * Copyright 2019 Google LLC. All Rights Reserved.\n
  * Licensed under the Apache License, Version 2.0 (the
  \\License\\");\n
  * you may not use this file except in compliance with the License.\n
  * You may obtain a copy of
  the License at\n
  * http://www.apache.org/licenses/LICENSE-2.0\n
  * Unless required by applicable
  law or agreed to in writing, software\n
  * distributed under the License is distributed on an \\AS IS\\ BASIS,\n
  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n
  * See the License
  for the specific language governing permissions and\n
  * limitations under the License.\n
  *
  =====\n
  *\n  import*as tf from\\"@tensorflow/tfjs-
  core\\";import {util,tidy,div,sub,buffer,Tensor,browser,pad3d,scalar,concat,tensor2d,tensor} from\\"@tensorflow/tfjs-
  core\\";import {loadGraphModel} from\\"@tensorflow/tfjs-converter\\";var

```

```

VALID_OUTPUT_STRIDES=[8,16,32];function assertValidOutputStride(e){util.assert(\`number\`===typeof
e,function(){return\`outputStride is not a
number\`}),util.assert(VALID_OUTPUT_STRIDES.indexOf(e)>=0,function(){return\`outputStride of \"+e+" is
invalid. It must be either 8, 16, or 32\`})}function assertValidResolution(e,t){util.assert(\`number\`===typeof
e,function(){return\`resolution is not a number\`}),util.assert((e-1)%t===0,function(){return\`resolution of \"+e+" is
invalid for output stride \"+t+\`.\`})}function toFloatIfInt(e){return
tidy(function(){return\`int32\`===e.dtype&&(e=e.toFloat()),e=div(e,127.5),sub(e,1)})}var
MobileNet=function(){function e(e,t){this.model=e;var r=this.model.inputs[0].shape;util.assert(-1===r[1]&&-
1===r[2],function(){return\`Input shape [\"+r[1]+\", \"+r[2]+\"] must both be -1\`}),this.outputStride=t}return
e.prototype.predict=function(e){var t=this;return tidy(function(){var
r=toFloatIfInt(e).expandDims(0),n=t.model.predict(r),o=n[0],i=n[1],s=n[2],a=n[3];return{heatmapScores:i.squeeze(
),sigmoid(),offsets:o.squeeze(),displacementFwd:s.squeeze(),displacementBwd:a.squeeze()}}),e.prototype.dispose
=function(){this.model.dispose(),e}();function half(e){return Math.floor(e/2)}var MaxHeap=function(){function
e(e,t){this.priorityQueue=new Array(e),this.numberOfElements=-1,this.getElementValue=t}return
e.prototype.enqueue=function(e){this.priorityQueue[++this.numberOfElements]=e,this.swim(this.numberOfElemen
ts)},e.prototype.dequeue=function(){var e=this.priorityQueue[0];return this.exchange(0,this.numberOfElements--
),this.sink(0),this.priorityQueue[this.numberOfElements+1]=null,e},e.prototype.empty=function(){return-
1===this.numberOfElements},e.prototype.size=function(){return
this.numberOfElements+1},e.prototype.all=function(){return
this.priorityQueue.slice(0,this.numberOfElements+1)},e.prototype.max=function(){return
this.priorityQueue[0]},e.prototype.swim=function(e){for(;e>0&&this.less(half(e),e);)this.exchange(e,half(e)),e=half
(e)},e.prototype.sink=function(e){for(;2*e<=this.numberOfElements;)var
t=2*e;if(t<this.numberOfElements&&this.less(t,t+1)&&t++,!this.less(e,t))break;this.exchange(e,t),e=t}},e.prototype
.getValueAt=function(e){return this.getElementValue(this.priorityQueue[e])},e.prototype.less=function(e,t){return
this.getValueAt(e)<this.getValueAt(t)},e.prototype.exchange=function(e,t){var
r=this.priorityQueue[e];this.priorityQueue[e]=this.priorityQueue[t],this.priorityQueue[t]=r,e}();function
scoreIsMaximumInLocalWindow(e,t,r,n,o,i){for(var s=i.shape,a=s[0],u=s[1],l=!0,f=Math.max(r-
o,0),c=Math.min(r+o+1,a),d=f;d<c;++d){for(var p=Math.max(n-
o,0),h=Math.min(n+o+1,u),m=p;m<h;++m)if(i.get(d,m,e)>t){l=!1;break}if(!l)break}return l}function
buildPartWithScoreQueue(e,t,r){for(var n=r.shape,o=n[0],i=n[1],s=n[2],a=new MaxHeap(o*i*s,function(e){return
e.score}),u=0;u<o;++u)for(var l=0;l<i;++l)for(var f=0;f<s;++f){var
c=r.get(u,l,f);c<e||scoreIsMaximumInLocalWindow(f,c,u,l,t,r)&&a.enqueue({score:c,part:{heatmapY:u,heatmapX:l,
id:f}})}return a}var
partNames=[\`nose\`,\`leftEye\`,\`rightEye\`,\`leftEar\`,\`rightEar\`,\`leftShoulder\`,\`rightShoulder\`,\`leftElbow\`,
\`rightElbow\`,\`leftWrist\`,\`rightWrist\`,\`leftHip\`,\`rightHip\`,\`leftKnee\`,\`rightKnee\`,\`leftAnkle\`,\`rightAn
kle\`],NUM_KEYPOINTS=partNames.length,partIds=partNames.reduce(function(e,t,r){return
e[t]=r,e},{}),connectedPartNames=[[\`leftHip\`,\`leftShoulder\`],[\`leftElbow\`,\`leftShoulder\`],[\`leftElbow\`,\`lef
tWrist\`],[\`leftHip\`,\`leftKnee\`],[\`leftKnee\`,\`leftAnkle\`],[\`rightHip\`,\`rightShoulder\`],[\`rightElbow\`,\`righ
tShoulder\`],[\`rightElbow\`,\`rightWrist\`],[\`rightHip\`,\`rightKnee\`],[\`rightKnee\`,\`rightAnkle\`],[\`leftShould
er\`,\`rightShoulder\`],[\`leftHip\`,\`rightHip\`]],poseChain=[[\`nose\`,\`leftEye\`],[\`leftEye\`,\`leftEar\`],[\`nose\`,
\`rightEye\`],[\`rightEye\`,\`rightEar\`],[\`nose\`,\`leftShoulder\`],[\`leftShoulder\`,\`leftElbow\`],[\`leftElbow\`,\`lef
tWrist\`],[\`leftShoulder\`,\`leftHip\`],[\`leftHip\`,\`leftKnee\`],[\`leftKnee\`,\`leftAnkle\`],[\`nose\`,\`rightShould
er\`],[\`rightShoulder\`,\`rightElbow\`],[\`rightElbow\`,\`rightWrist\`],[\`rightShoulder\`,\`rightHip\`],[\`rightHip\`,
\`rightKnee\`],[\`rightKnee\`,\`rightAnkle\`]],connectedPartIndices=connectedPartNames.map(function(e){var
t=e[0],r=e[1];return[partIds[t],partIds[r]]}),partChannels=[\`left_face\`,\`right_face\`,\`right_upper_leg_front\`,\`rig
ht_lower_leg_back\`,\`right_upper_leg_back\`,\`left_lower_leg_front\`,\`left_upper_leg_front\`,\`left_upper_leg_ba
ck\`,\`left_lower_leg_back\`,\`right_feet\`,\`right_lower_leg_front\`,\`left_feet\`,\`torso_front\`,\`torso_back\`,\`rig
ht_upper_arm_front\`,\`right_upper_arm_back\`,\`right_lower_arm_back\`,\`left_lower_arm_front\`,\`left_upper_ar

```

```

m_front\","left_upper_arm_back\","left_lower_arm_back\","right_hand\","right_lower_arm_front\","left_hand\");
function getOffsetPoint(e,t,r,n){return{y:n.get(e,t,r),x:n.get(e,t,r+NUM_KEYPOINTS)}}function
getImageCoords(e,t,r){var
n=getOffsetPoint(e.heatmapY,e.heatmapX,e.id,r),o=n.y,i=n.x;return{x:e.heatmapX*t+i,y:e.heatmapY*t+o}}function
clamp(e,t,r){return e<t?t:e>r?r:e}function squaredDistance(e,t,r,n){var o=r-e,i=n-t;return o*o+i*i}function
addVectors(e,t){return{x:e.x+t.x,y:e.y+t.y}}var parentChildrenTuples=poseChain.map(function(e){var
t=e[0],r=e[1];return[partIds[t],partIds[r]]}),parentToChildEdges=parentChildrenTuples.map(function(e){return
e[1]}),childToParentEdges=parentChildrenTuples.map(function(e){return e[0]});function
getDisplacement(e,t,r){var n=r.shape[2]/2;return{y:r.get(t.y,t.x,e),x:r.get(t.y,t.x,n+e)}}function
getStridedIndexNearPoint(e,t,r,n){return{y:clamp(Math.round(e.y/t),0,r-1),x:clamp(Math.round(e.x/t),0,n-
1)}}function traverseToTargetKeypoint(e,t,r,n,o,i,s,a){void 0===a&&(a=2);for(var
u=n.shape,l=u[0],f=u[1],c=getDisplacement(e,getStridedIndexNearPoint(t.position,i,l,f),s),d=addVectors(t.position,c
),p=0;p<a;p++){var
h=getStridedIndexNearPoint(d,i,l,f),m=getOffsetPoint(h.y,h.x,r,o);d=addVectors({x:h.x*i,y:h.y*i},{x:m.x,y:m.y})}
var g=getStridedIndexNearPoint(d,i,l,f),_=n.get(g.y,g.x,r);return{position:d,part:partNames[r],score:_}}function
decodePose(e,t,r,n,o,i){var s=t.shape[2],a=parentToChildEdges.length,u=new
Array(s),l=e.part,f=e.score,c=getImageCoords(l,n,r);u[l.id]={score:f,part:partNames[l.id],position:c};for(var d=a-
1;d>=0;--d){var
p=parentToChildEdges[d],h=childToParentEdges[d];u[p]&&!u[h]&&(u[h]=traverseToTargetKeypoint(d,u[p],h,t,r,n
,i))}for(d=0;d<a;++d){p=childToParentEdges[d],h=parentToChildEdges[d];u[p]&&!u[h]&&(u[h]=traverseToTarge
tKeypoint(d,u[p],h,t,r,n,o))}return u}function withinNmsRadiusOfCorrespondingPoint(e,t,r,n){var o=r.x,i=r.y;return
e.some(function(e){var r=e.keypoints[n].position;return squaredDistance(i,o,r.y,r.x)<=t})}function
getInstanceScore(e,t,r){return r.reduce(function(r,n,o){var i=n.position,s=n.score;return
withinNmsRadiusOfCorrespondingPoint(e,t,i,o)||(r+=s),r},0)/r.length}var kLocalMaximumRadius=1;function
decodeMultiplePoses(e,t,r,n,o,i,s,a){void 0===s&&(s=.5),void 0===a&&(a=20);for(var
u=[],l=buildPartWithScoreQueue(s,kLocalMaximumRadius,e),f=a*a,u.length<i&&!l.empty()){var
c=l.dequeue();if(!withinNmsRadiusOfCorrespondingPoint(u,f.getImageCoords(c.part,o,t),c.part.id)){var
d=decodePose(c,e,t,o,r,n),p=getInstanceScore(u,f,d);u.push({keypoints:d,score:p})}}return u}var
__assign=function(){return(__assign=Object.assign||function(e){for(var t,r=1,n=arguments.length;r<n;r++)for(var o
in t=arguments[r])Object.prototype.hasOwnProperty.call(t,o)&&(e[o]=t[o]);return
e}).apply(this,arguments)};function __awaiter(e,t,r,n){return new(r||(r=Promise))(function(o,i){function
s(e){try{u(n.next(e))}catch(e){i(e)}}function a(e){try{u(n.throw(e))}catch(e){i(e)}}function
u(e){e.done?o(e.value):new r(function(t){t(e.value)}).then(s,a)}u((n=n.apply(e,t||[])).next())})}function
__generator(e,t){var r,n,o,i,s={label:0,sent:function(){if(1&o[0])throw o[1];return o[1]},trys:[],ops:[]};return
i={next:a(0),throw:a(1),return:a(2)},"function"==typeof Symbol&&(i[Symbol.iterator]=function(){return
this}),i;function a(i){return function(a){return function(i){if(r)throw new TypeError("Generator is already
executing.");for(;s;try{if(r=1,n&&(o=2&i[0]?n.return:i[0]?n.throw||((o=n.return)&&o.call(n),0):n.next)&&!o.o.c
all(n,i[1])).done)return o;switch(n=0,o&&(i=[2&i[0],o.value]),i[0]){case 0:case 1:o=i;break;case 4:return
s.label++,{value:i[1],done:!1};case 5:s.label++,n=i[1],i=[0];continue;case
7:i=s.ops.pop(),s.trys.pop();continue;default:if(!(o=(o=s.trys).length>0&&o[o.length-
1])&&(6===i[0]||2===i[0])){s=0;continue}if(3===i[0]&&(!o[i[1]]>o[0]&&i[1]<o[3])){s.label=i[1];break}if(6===i[
0]&&s.label<o[1]){s.label=o[1],o=i;break}if(o&&s.label<o[2]){s.label=o[2],s.ops.push(i);break}o[2]&&s.ops.pop(
),s.trys.pop();continue}i=t.call(e,s)}catch(e){i=[6,e],n=0}finally{r=o=0}if(5&i[0])throw
i[1];return{value:i[0]?i[1]:void 0,done:!0}}([i,a])}}function eitherPointDoesntMeetConfidence(e,t,r){return
e<r||t<r}function getAdjacentKeyPoints(e,t){return connectedPartIndices.reduce(function(r,n){var
o=n[0],i=n[1];return eitherPointDoesntMeetConfidence(e[o].score,e[i].score,t)?r:(r.push([e[o],e[i]]),r),[])}var
NEGATIVE_INFINITY=Number.NEGATIVE_INFINITY,POSITIVE_INFINITY=Number.POSITIVE_INFINITY
;function getBoundingBox(e){return e.reduce(function(e,t){var

```



```

r=e.maxX,n=e.maxY,o=e.minX,i=e.minY,s=t.position,a=s.x,u=s.y;return{maxX:Math.max(r,a),maxY:Math.max(n,
u),minX:Math.min(o,a),minY:Math.min(i,u)},,{maxX:NEGATIVE_INFINITY,maxY:NEGATIVE_INFINITY,min
X:POSITIVE_INFINITY,minY:POSITIVE_INFINITY}}function getBoundingBoxPoints(e){var
t=getBoundingBox(e),r=t.minX,n=t.minY,o=t.maxX,i=t.maxY;return[{x:r,y:n},{x:o,y:n},{x:o,y:i},{x:r,y:i}]functi
on toTensorBuffer(e,t){return void 0===t&&(t="float32"),__awaiter(this,void 0,void 0,function(){var r;return
__generator(this,function(n){switch(n.label){case 0:return[4,e.data()];case 1:return
r=n.sent(),[2,buffer(e.shape,t,r)]}})}}function toTensorBuffers3D(e){return __awaiter(this,void 0,void
0,function(){return __generator(this,function(t){return[2,Promise.all(e.map(function(e){return
toTensorBuffer(e,"float32"))}]))}})}}function scalePose(e,t,r,n,o){return void 0===n&&(n=0),void
0===o&&(o=0),{score:e.score,keypoints:e.keypoints.map(function(e){var
i=e.score,s=e.part,a=e.position;return{score:i,part:s,position:{x:a.x*r+o,y:a.y*t+n}}}})}function
scalePoses(e,t,r,n,o){return void 0===n&&(n=0),void
0===o&&(o=0),l===r&&l===t&&0===n&&0===o?e:e.map(function(e){return scalePose(e,t,r,n,o)}})function
flipPoseHorizontal(e,t){return{score:e.score,keypoints:e.keypoints.map(function(e){var
r=e.score,n=e.part,o=e.position;return{score:r,part:n,position:{x:t-1-o.x,y:o.y}}}})}function
flipPosesHorizontal(e,t){return t<=0?e:e.map(function(e){return flipPoseHorizontal(e,t)}})function
getInputTensorDimensions(e){return e instanceof Tensor?[e.shape[0],e.shape[1]],[e.height,e.width]}function
toInputTensor(e){return e instanceof Tensor?e.browser.fromPixels(e)}function padAndResizeTo(e,t){var
r=t[0],s=t[1],o=getInputTensorDimensions(e),i=o[0],s=o[1],a=n/r,u=[0,0,0,0],l=u[0],f=u[1],c=u[2],d=u[3];return
s/i<a?(l=0,f=0,c=Math.round(.5*(a*i-s)),d=Math.round(.5*(a*i-s)):(l=Math.round(.5*(1/a*s-
i)),f=Math.round(.5*(1/a*s-i)),c=0,d=0),{resized:tidy(function(){var
t=toInputTensor(e);return(t=pad3d(t,[l,f],[c,d],[0,0]))).resizeBilinear([r,n]),padding:{top:l,left:c,right:d,bottom:f}
}})function scaleAndFlipPoses(e,t,r,n,o){var
i=t[0],s=t[1],a=r[0],u=r[1],l=scalePoses(e,(i+n.top+n.bottom)/a,(s+n.left+n.right)/u,-n.top,-n.left);return
o?flipPosesHorizontal(l,s):l}function mod(e,t){return tidy(function(){var r=e.div(scalar(t,"int32"));return
e.sub(r.mul(scalar(t,"int32")))}function argmax2d(e){var t=e.shape,r=t[0],n=t[1],o=t[2];return
tidy(function(){var
t=e.reshape([r*n,o]).argMax(0),i=t.div(scalar(n,"int32")).expandDims(1),s=mod(t,n).expandDims(1);return
concat([i,s],1)}function getPointsConfidence(e,t){for(var r=t.shape[0],n=new Float32Array(r),o=0;o<r;o++){var
i=t.get(o,0),s=t.get(o,1);n[o]=e.get(i,s,o)}return n}function
getOffsetPoint$(e,t,r,n){return{y:n.get(e,t,r),x:n.get(e,t,r+NUM_KEYPOINTS)}function
getOffsetVectors(e,t){for(var r=[],n=0;n<NUM_KEYPOINTS;n++){var
o=getOffsetPoint$(e.get(n,0).valueOf(),e.get(n,1).valueOf(),n,t),i=o.x,s=o.y;r.push(s),r.push(i)}return
tensor2d(r,[NUM_KEYPOINTS,2])}function getOffsetPoints(e,t,r){return tidy(function(){var
n=getOffsetVectors(e,r);return e.toTensor().mul(scalar(t,"int32")).toFloat().add(n)}function
decodeSinglePose(e,t,r){return __awaiter(this,void 0,void 0,function(){var n,o,i,s,a,u,l,f,c,d;return
__generator(this,function(p){switch(p.label){case 0:return
n=0,o=argmax2d(e),[4,Promise.all([toTensorBuffer(e),toTensorBuffer(t),toTensorBuffer(o,"int32")]);case
1:return i=p.sent(),s=i[0],a=i[1],u=i[2],[4,toTensorBuffer(l=getOffsetPoints(u,r,a));case 2:return
f=p.sent(),c=Array.from(getPointsConfidence(s,u)),d=c.map(function(e,t){return
n+=e,{position:{y:f.get(t,0),x:f.get(t,1)},part:partNames[t],score:e}),o.dispose(),l.dispose(),[2,{keypoints:d,score:n
/d.length}]}))}}var MOBILENET_BASE_URL="https://storage.googleapis.com/tfjs-
models/savedmodel/posenet/mobilenet/",RESNET50_BASE_URL="https://storage.googleapis.com/tfjs-
models/savedmodel/posenet/resnet50/";function resNet50Checkpoint(e,t){var r="model-stride"+e+".json";return
4===t?RESNET50_BASE_URL+"float/"+r:RESNET50_BASE_URL+"quant/"+t+"/"+r}function
mobileNetCheckpoint(e,t,r){var n={1:"100",.75:"075",.5:"050"},o="model-stride"+e+".json";return
4===r?MOBILENET_BASE_URL+"float/"+n[t]+"/"+o:MOBILENET_BASE_URL+"quant/"+r+"/"+n[t]+"/"+o}function toFloatIfInt$(e){return tidy(function(){return e.dtype==="int32"===e.dtype&&(e=e.toFloat());var t=tensor([-123.15,-

```

```

115.9,-103.06));return e.add(t)}}var ResNet=function(){function e(e,t){this.model=e;var
r=this.model.inputs[0].shape;util.assert(-1===r[1]&&-1===r[2],function(){return`Input shape [${r[1]}+`,
`${r[2]}+`] must both be equal to or -1`}),this.outputStride=t}return e.prototype.predict=function(e){var
t=this;return tidy(function(){var
r=toFloatIfInt$(e).expandDims(0),n=t.model.predict(r),o=n[0],i=n[1],s=n[2];return{heatmapScores:n[3].squeeze().
sigmoid(),offsets:s.squeeze(),displacementFwd:o.squeeze(),displacementBwd:i.squeeze()}}),e.prototype.dispose=f
unction(){this.model.dispose(),e},MOBILENET_V1_CONFIG={architecture:`MobileNetV1`,outputStride:16,
multiplier:.75,inputResolution:257},VALID_ARCHITECTURE=[`MobileNetV1`,`ResNet50`],VALID_STRID
E={MobileNetV1:[8,16,32],ResNet50:[32,16]},VALID_INPUT_RESOLUTION=[161,193,257,289,321,353,385,41
7,449,481,513,801],VALID_MULTIPLIER={MobileNetV1:[.5,.75,1],ResNet50:[1]},VALID_QUANT_BYTES=[1
,2,4];function
validateModelConfig(e){if(null==(e=e||MOBILENET_V1_CONFIG).architecture&&(e.architecture=`MobileNetV
1`),VALID_ARCHITECTURE.indexOf(e.architecture)<0)throw new Error(`Invalid architecture
`${e.architecture}`. Should be one of
`${VALID_ARCHITECTURE}`);if(null==(e.inputResolution&&(e.inputResolution=257),VALID_INPUT_RESOLU
TION.indexOf(e.inputResolution)<0)throw new Error(`Invalid inputResolution `${e.inputResolution}`. Should be
one of
`${VALID_INPUT_RESOLUTION}`);if(null==(e.outputStride&&(e.outputStride=16),VALID_STRIDE[e.architectur
e].indexOf(e.outputStride)<0)throw new Error(`Invalid outputStride `${e.outputStride}`. Should be one of
`${VALID_STRIDE[e.architecture]}+` for architectre
`${e.architecture}`.`);if(null==(e.multiplier&&(e.multiplier=1),VALID_MULTIPLIER[e.architecture].indexOf(e.
multiplier)<0)throw new Error(`Invalid multiplier `${e.multiplier}`. Should be one of
`${VALID_MULTIPLIER[e.architecture]}+` for architectre
`${e.architecture}`.`);if(null==(e.quantBytes&&(e.quantBytes=4),VALID_QUANT_BYTES.indexOf(e.quantByte
s)<0)throw new Error(`Invalid quantBytes `${e.quantBytes}`. Should be one of `${VALID_QUANT_BYTES}`
for architectre `${e.architecture}`.`);return e}var
SINGLE_PERSON_INFERENCE_CONFIG={flipHorizontal:!1},MULTI_PERSON_INFERENCE_CONFIG={fli
pHorizontal:!1,maxDetections:5,scoreThreshold:.5,nmsRadius:20};function validateMultiPersonInputConfig(e){var
t=e.maxDetections,r=e.scoreThreshold,n=e.nmsRadius;if(t<=0)throw new Error(`Invalid maxDetections `${t}`.
Should be > 0`);if(r<0||r>1)throw new Error(`Invalid scoreThreshold `${r}`. Should be in range [0.0,
1.0]`);if(n<=0)throw new Error(`Invalid nmsRadius `${n}`.`)}var PoseNet=function(){function
e(e,t){this.baseModel=e,this.inputResolution=t}return e.prototype.estimateMultiplePoses=function(e,t){return void
0===t&&(t=MULTI_PERSON_INFERENCE_CONFIG),__awaiter(this,void 0,void 0,function(){var
r,n,o,i,s,a,u,l,f,c,d,p,h,m,g,_,I,E,v,N,y;return __generator(this,function(T){switch(T.label){case 0:return
r=__assign({},MULTI_PERSON_INFERENCE_CONFIG,t),validateMultiPersonInputConfig(t),n=this.baseModel.
outputStride,o=this.inputResolution,assertValidOutputStride(n),assertValidResolution(this.inputResolution,n),i=getI
nputTensorDimensions(e),s=i[0],a=i[1],u=padAndResizeTo(e,[o,o]),l=u.resized,f=u.padding,c=this.baseModel.predi
ct(l),d=c.heatmapScores,p=c.offsets,h=c.displacementFwd,m=c.displacementBwd,[4,toTensorBuffers3D([d,p,h,m])]
);case 1:return
g=T.sent(),_=g[0],I=g[1],E=g[2],v=g[3],[4,decodeMultiplePoses(_ ,I,E,v,n,r.maxDetections,r.scoreThreshold,r.nmsR
adius)];case 2:return
N=T.sent(),y=scaleAndFlipPoses(N,[s,a],[o,o],f,r.flipHorizontal),d.dispose(),p.dispose(),h.dispose(),m.dispose(),l.di
spose(),[2,y]}})}),e.prototype.estimateSinglePose=function(e,t){return void
0===t&&(t=SINGLE_PERSON_INFERENCE_CONFIG),__awaiter(this,void 0,void 0,function(){var
r,n,o,i,s,a,u,l,f,c,d,p,h,m,g,_;return __generator(this,function(I){switch(I.label){case 0:return
r=__assign({},SINGLE_PERSON_INFERENCE_CONFIG,t),n=this.baseModel.outputStride,o=this.inputResolutio
n,assertValidOutputStride(n),assertValidResolution(o,n),i=getInputTensorDimensions(e),s=i[0],a=i[1],u=padAndRe
sizeTo(e,[o,o]),l=u.resized,f=u.padding,c=this.baseModel.predict(l),d=c.heatmapScores,p=c.offsets,h=c.displacemen

```

```

tFwd,m=c.displacementBwd,[4,decodeSinglePose(d,p,n)];case 1:return
g=I.sent(),_=scaleAndFlipPoses([g],[s,a],[o,o],f,r.flipHorizontal),d.dispose(),p.dispose(),h.dispose(),m.dispose(),l.di
spose(),[2,_[0]]}]})),e.prototype.estimatePoses=function(e,t){return __awaiter(this,void 0,void 0,function(){return
__generator(this,function(r){switch(r.label){case 0:return"single-
person"!=t.decodingMethod?[3,2]:[4,this.estimateSinglePose(e,t)];case 1:return[2,[r.sent()]];case
2:return[2,this.estimateMultiplePoses(e,t)]}})}},e.prototype.dispose=function(){this.baseModel.dispose()}},e);fun
ction loadMobileNet(e){return __awaiter(this,void 0,void 0,function(){var t,r,n,o,i,s;return
__generator(this,function(a){switch(a.label){case
0:if(t=e.outputStride,r=e.quantBytes,n=e.multiplier,null==tf)throw new Error("Cannot find TensorFlow.js. If you
are using a <script> tag, please also include @tensorflow/tfjs on the page before using this\\n
model.");return
o=mobileNetCheckpoint(t,n,r,[4,loadGraphModel(e.modelUrl||o)];case 1:return i=a.sent(),s=new
MobileNet(i,t,[2,new PoseNet(s,e.inputResolution)]}})}function loadResNet(e){return __awaiter(this,void 0,void
0,function(){var t,r,n,o,i;return __generator(this,function(s){switch(s.label){case
0:if(t=e.outputStride,r=e.quantBytes,null==tf)throw new Error("Cannot find TensorFlow.js. If you are using a
<script> tag, please also include @tensorflow/tfjs on the page before using this\\n
model.");return
n=resNet50Checkpoint(t,r,[4,loadGraphModel(e.modelUrl||n)];case 1:return o=s.sent(),i=new ResNet(o,t,[2,new
PoseNet(i,e.inputResolution)]}})}function load(e){return void
0===e&&(e=MOBILENET_V1_CONFIG),__awaiter(this,void 0,void 0,function(){return
__generator(this,function(t){return"ResNet50"===e.validateModelConfig(e).architecture?[2,loadResNet(e)]:"M
obileNetV1"===e.architecture?[2,loadMobileNet(e)]:[2,null]}})}export {decodeMultiplePoses,decodeSinglePose,
MobileNet,partChannels,partIds,partNames,poseChain,load,PoseNet,VALID_INPUT_RESOLUTION,getAdjacent
KeyPoints,getBoundingBox,getBoundingBoxPoints,scalePose};\n","/**\n * @license\n * Copyright 2019 Google
Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
https://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\\n
*/\nimport * as posenet from '@tensorflow-models/posenet';\nimport * as tf from '@tensorflow/tfjs-core';\n\nconst
COLOR = 'aqua';\nconst BOUNDING_BOX_COLOR = 'red';\nconst LINE_WIDTH = 2;\n\nexport const
TRY_RESNET_BUTTON_NAME = 'tryResNetButton';\nexport const TRY_RESNET_BUTTON_TEXT = '[New]
Try ResNet50';\nconst TRY_RESNET_BUTTON_TEXT_CSS = 'width:100%;text-decoration:underline;'\nconst
TRY_RESNET_BUTTON_BACKGROUND_CSS = 'background:#e61d5f;'\n\nfunction isAndroid() {\n return
/Android/i.test(navigator.userAgent);\n}\n\nfunction isiOS() {\n return
/iPhone|iPad|iPod/i.test(navigator.userAgent);\n}\n\nexport function isMobile() {\n return isAndroid() ||
isiOS();\n}\n\nfunction setDatGuiPropertyCss(propertyText, liCssString, spanCssString = "") {\n var spans =
document.getElementsByClassName('property-name');\n for (var i = 0; i < spans.length; i++) {\n var text =
spans[i].textContent || spans[i].innerText;\n if (text == propertyText) {\n spans[i].parentNode.parentNode.style
= liCssString;\n if (spanCssString !== "") {\n spans[i].style = spanCssString;\n }\n }\n}\n}\n\nexport
function updateTryResNetButtonDatGuiCss() {\n setDatGuiPropertyCss(\n TRY_RESNET_BUTTON_TEXT,\n
TRY_RESNET_BUTTON_BACKGROUND_CSS,\n TRY_RESNET_BUTTON_TEXT_CSS);\n}\n}\n\n/**\n *
Toggles between the loading UI and the main canvas UI.\n */\nexport function toggleLoadingUI(\n
showLoadingUI, loadingDivId = 'loading', mainDivId = 'main') {\n if (showLoadingUI) {\n
document.getElementById(loadingDivId).style.display = 'block';\n
document.getElementById(mainDivId).style.display = 'none';\n } else {\n
document.getElementById(loadingDivId).style.display = 'none';\n
document.getElementById(mainDivId).style.display = 'block';\n }\n}\n\nexport function drawPoint(ctx, y, x, r,

```

```
color) {\n ctx.beginPath();\n ctx.arc(x, y, r, 0, 2 * Math.PI);\n ctx.fillStyle = color;\n ctx.fill();\n}\n\n**\n\nDraws a line on a canvas, i.e. a joint\n *^\nexport function drawSegment([ay, ax], [by, bx], color, scale, ctx) {\n\nctx.beginPath();\n ctx.moveTo(ax * scale, ay * scale);\n ctx.lineTo(bx * scale, by * scale);\n ctx.lineWidth =\nLINE_WIDTH;\n ctx.strokeStyle = color;\n ctx.stroke();\n}\n\n**\n\nDraws a pose skeleton by looking up all\nadjacent keypoints/joints\n *^\nexport function drawSkeleton(keypoints, minConfidence, ctx, scale = 1) {\n const\nadjacentKeyPoints =\n poseNet.getAdjacentKeyPoints(keypoints, minConfidence);\n\n function toTuple({y, x})\n {\n return [y, x];\n }\n\n adjacentKeyPoints.forEach((keypoints) => {\n drawSegment(\n toTuple(keypoints[0].position), toTuple(keypoints[1].position), COLOR,\n scale, ctx);\n });\n}\n\n**\n\nDraw pose keypoints onto a canvas\n *^\nexport function drawKeypoints(keypoints, minConfidence, ctx, scale = 1)\n {\n for (let i = 0; i < keypoints.length; i++) {\n const keypoint = keypoints[i];\n\n if (keypoint.score <\nminConfidence) {\n continue;\n }\n\n const {y, x} = keypoint.position;\n drawPoint(ctx, y * scale, x *\nscale, 3, COLOR);\n }\n}\n\n**\n\nDraw the bounding box of a pose. For example, for a whole person standing\n * in an image, the bounding box will begin at the nose and extend to one of\n * ankles\n *^\nexport function\n drawBoundingBox(keypoints, ctx) {\n const boundingBox = poseNet.getBoundingBox(keypoints);\n\n ctx.rect(\n boundingBox.minX, boundingBox.minY, boundingBox.maxX - boundingBox.minX,\n boundingBox.maxY -\nboundingBox.minY);\n\n ctx.strokeStyle = boundingBoxColor;\n ctx.stroke();\n}\n\n**\n\nConverts an array of\npixel data into an ImageData object\n *^\nexport async function renderToCanvas(a, ctx) {\n const [height, width] =\na.shape;\n const imageData = new ImageData(width, height);\n\n const data = await a.data();\n\n for (let i = 0; i <\nheight * width; ++i) {\n const j = i * 4;\n const k = i * 3;\n\n imageData.data[j + 0] = data[k + 0];\n\nimageData.data[j + 1] = data[k + 1];\n imageData.data[j + 2] = data[k + 2];\n imageData.data[j + 3] = 255;\n\n}\n\n ctx.putImageData(imageData, 0, 0);\n}\n\n**\n\nDraw an image on a canvas\n *^\nexport function\n renderImageToCanvas(image, size, canvas) {\n canvas.width = size[0];\n canvas.height = size[1];\n\n const ctx =\ncanvas.getContext('2d');\n\n ctx.drawImage(image, 0, 0);\n}\n\n**\n\nDraw heatmap values, one of the model\noutputs, on to the canvas\n * Read our blog post for a description of PoseNet's heatmap outputs\n *  
https://medium.com/tensorflow/real-time-human-pose-estimation-in-the-browser-with-tensorflow-js-7dd0bc881cd5\n *^\nexport function drawHeatMapValues(heatMapValues, outputStride, canvas) {\n const ctx =\ncanvas.getContext('2d');\n\n const radius = 5;\n const scaledValues = heatMapValues.mul(tf.scalar(outputStride,\n'int32'));\n\n drawPoints(ctx, scaledValues, radius, COLOR);\n}\n\n**\n\nUsed by the drawHeatMapValues\nmethod to draw heatmap points on to\n * the canvas\n *^\nfunction drawPoints(ctx, points, radius, color) {\n const\ndata = points.buffer().values;\n\n for (let i = 0; i < data.length; i += 2) {\n const pointY = data[i];\n const pointX\n= data[i + 1];\n\n if (pointX !== 0 && pointY !== 0) {\n ctx.beginPath();\n ctx.arc(pointX, pointY, radius,\n0, 2 * Math.PI);\n ctx.fillStyle = color;\n ctx.fill();\n }\n }\n}\n\n**\n\nDraw offset vector values, one of\nthe model outputs, on to the canvas\n * Read our blog post for a description of PoseNet's offset vector outputs\n *  
https://medium.com/tensorflow/real-time-human-pose-estimation-in-the-browser-with-tensorflow-js-7dd0bc881cd5\n *^\nexport function drawOffsetVectors(\n heatMapValues, offsets, outputStride, scale = 1, ctx)\n {\n const offsetPoints =\n poseNet.singlePose.getOffsetPoints(heatMapValues, outputStride, offsets);\n\n const\nheatmapData = heatMapValues.buffer().values;\n const offsetPointsData = offsetPoints.buffer().values;\n\n for (let\ni = 0; i < heatmapData.length; i += 2) {\n const heatmapY = heatmapData[i] * outputStride;\n const heatmapX =\nheatmapData[i + 1] * outputStride;\n const offsetPointY = offsetPointsData[i];\n const offsetPointX =\noffsetPointsData[i + 1];\n\n drawSegment(\n [heatmapY, heatmapX], [offsetPointY, offsetPointX], COLOR,\nscale, ctx);\n }\n}\n\n**\n\n@license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under\nthe Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\nLicense.\n * You may obtain a copy of the License at\n *^\n * https://www.apache.org/licenses/LICENSE-2.0\n *^\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\non an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\nimplied.\n * See the License for the specific language governing permissions and\n * limitations under the\nLicense.\n *  
=====\n *^\n//
```

color schemes generated using d3-scale-chromatic:\n// https://github.com/d3/d3-scale-chromatic\n\nexport const rainbow = [\n [110, 64, 170], [143, 61, 178], [178, 60, 178], [210, 62, 167],\n [238, 67, 149], [255, 78, 125], [255, 94, 99], [255, 115, 75],\n [255, 140, 56], [239, 167, 47], [217, 194, 49], [194, 219, 64],\n [175, 240, 91], [135, 245, 87], [96, 247, 96], [64, 243, 115],\n [40, 234, 141], [28, 219, 169], [26, 199, 194], [33, 176, 213],\n [47, 150, 224], [65, 125, 224], [84, 101, 214], [99, 81, 195]\n];\n\nexport const warm = [\n [110, 64, 170], [106, 72, 183], [100, 81, 196], [92, 91, 206],\n [84, 101, 214], [75, 113, 221], [66, 125, 224], [56, 138, 226],\n [48, 150, 224], [40, 163, 220], [33, 176, 214], [29, 188, 205],\n [26, 199, 194], [26, 210, 182], [28, 219, 169], [33, 227, 155],\n [41, 234, 141], [51, 240, 128], [64, 243, 116], [79, 246, 105],\n [96, 247, 97], [115, 246, 91], [134, 245, 88], [155, 243, 88]\n];\n\nexport const spectral = [\n [158, 1, 66], [181, 26, 71], [202, 50, 74], [219, 73, 74],\n [232, 94, 73], [242, 117, 75], [248, 142, 83], [251, 167, 96],\n [253, 190, 112], [254, 210, 129], [254, 227, 149], [254, 240, 166],\n [251, 248, 176], [243, 249, 172], [231, 245, 163], [213, 238, 159],\n [190, 229, 160], [164, 218, 163], [137, 207, 165], [110, 192, 168],\n [86, 173, 174], [70, 150, 179], [67, 127, 180], [77, 103, 173]\n];\n";\n\n/*\n * @license\n * Copyright 2019 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * https://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

=====
*\nimport '@tensorflow/tfjs-backend-webgl';\nimport * as bodyPix from '@tensorflow-models/body-pix';\nimport dat from 'dat.gui';\nimport Stats from 'stats.js';\nimport {drawKeypoints, drawSkeleton, toggleLoadingUI, TRY_RESNET_BUTTON_NAME, TRY_RESNET_BUTTON_TEXT, updateTryResNetButtonDatGuiCss} from './demo_util';\nimport * as partColorScales from './part_color_scales';\n\nconst stats = new Stats();\nconst state = {\n  video: null,\n  stream: null,\n  net: null,\n  videoConstraints: {},\n  // Triggers the TensorFlow model to reload\n  changingArchitecture: false,\n  changingMultiplier: false,\n  changingStride: false,\n  changingResolution: false,\n  changingQuantBytes: false,\n};\n\nfunction isAndroid() {\n  return /Android/i.test(navigator.userAgent);\n}\n\nfunction isiOS() {\n  return /iPhone|iPod/i.test(navigator.userAgent);\n}\n\nfunction isMobile() {\n  return isAndroid() || isiOS();\n}\n\nasync function getVideoInputs() {\n  if (!navigator.mediaDevices || !navigator.mediaDevices.enumerateDevices) {\n    console.log('enumerateDevices() not supported.);\n    return [];\n  }\n\n  const devices = await navigator.mediaDevices.enumerateDevices();\n  const videoDevices = devices.filter(device => device.kind === 'videoinput');\n  return videoDevices;\n}\n\nfunction stopExistingVideoCapture() {\n  if (state.video && state.video.srcObject) {\n    state.video.srcObject.getTracks().forEach(track => {\n      track.stop();\n    });\n    state.video.srcObject = null;\n  }\n}\n\nasync function getDeviceIdForLabel(cameraLabel) {\n  const videoInputs = await getVideoInputs();\n  for (let i = 0; i < videoInputs.length; i++) {\n    const videoInput = videoInputs[i];\n    if (videoInput.label === cameraLabel) {\n      return videoInput.deviceId;\n    }\n  }\n  return null;\n}\n\n// on mobile, facing mode is the preferred way to select a camera.\n// Here we use the camera label to determine if its the environment or\n// user facing camera\nfunction getFacingMode(cameraLabel) {\n  if (!cameraLabel) {\n    return 'user';\n  }\n  if (cameraLabel.toLowerCase().includes('back')) {\n    return 'environment';\n  }\n  return 'user';\n}\n\nasync function getConstraints(cameraLabel) {\n  let deviceId;\n  let facingMode;\n\n  if (cameraLabel) {\n    deviceId = await getDeviceIdForLabel(cameraLabel);\n    // on mobile, use the facing mode based on the camera.\n    facingMode = isMobile() ? getFacingMode(cameraLabel) : null;\n  }\n  return {deviceId, facingMode};\n}\n\n/*\n * Loads a the camera to be used in the demo\n */\nasync function setupCamera(cameraLabel) {\n  if (!navigator.mediaDevices || !navigator.mediaDevices.getUserMedia) {\n    throw new Error(\n      'Browser API navigator.mediaDevices.getUserMedia not available');\n  }\n  const videoElement = document.getElementById('video');\n  stopExistingVideoCapture();\n  const videoConstraints = await getConstraints(cameraLabel);\n  const stream = await navigator.mediaDevices.getUserMedia({\n    'audio': false,

```

```

'video': videoConstraints});\n videoElement.srcObject = stream;\n\n return new Promise((resolve) => {\n
videoElement.onloadedmetadata = () => {\n  videoElement.width = videoElement.videoWidth;\n
videoElement.height = videoElement.videoHeight;\n  resolve(videoElement);\n  });\n});\n\n\nasync function
loadVideo(cameraLabel) {\n try {\n  state.video = await setupCamera(cameraLabel);\n } catch (e) {\n let info =
document.getElementById('info');\n info.textContent = 'this browser does not support video capture,' +\n 'or
this device does not have a camera';\n info.style.display = 'block';\n throw e;\n }}\n\n
state.video.play();\n});\n\n\nconst defaultQuantBytes = 2;\n\nconst defaultMobileNetMultiplier = isMobile() ? 0.50 :
0.75;\n\nconst defaultMobileNetStride = 16;\n\nconst defaultMobileNetInternalResolution = 'medium';\n\nconst
defaultResNetMultiplier = 1.0;\n\nconst defaultResNetStride = 16;\n\nconst defaultResNetInternalResolution =
'low';\n\nconst guiState = {\n algorithm: 'multi-person-instance',\n estimate: 'partmap',\n camera: null,\n
flipHorizontal: true,\n input: {\n architecture: 'MobileNetV1',\n outputStride: 16,\n internalResolution: 'low',\n
multiplier: 0.50,\n quantBytes: 2\n },\n multiPersonDecoding: {\n maxDetections: 5,\n scoreThreshold:
0.3,\n nmsRadius: 20,\n numKeypointForMatching: 17,\n refineSteps: 10\n },\n segmentation: {\n
segmentationThreshold: 0.7,\n effect: 'mask',\n maskBackground: true,\n opacity: 0.7,\n
backgroundBlurAmount: 3,\n maskBlurAmount: 0,\n edgeBlurAmount: 3\n },\n partMap: {\n colorScale:
'rainbow',\n effect: 'partMap',\n segmentationThreshold: 0.5,\n opacity: 0.9,\n blurBodyPartAmount: 3,\n
bodyPartEdgeBlurAmount: 3\n },\n showFps: !isMobile()\n};\n\n\nfunction toCameraOptions(cameras) {\n const
result = {default: null};\n\n cameras.forEach(camera => {\n result[camera.label] = camera.label;\n });\n\n return
result;\n});\n\n\n/**\n * Sets up dat.gui controller on the top-right of the window\n */\n\nfunction setupGui(cameras) {\n
const gui = new dat.GUI({width: 300});\n\n let architectureController = null;\n
guiState[TRY_RESNET_BUTTON_NAME] = function() {\n  architectureController.setValue('ResNet50')\n };
gui.add(guiState, TRY_RESNET_BUTTON_NAME).name(TRY_RESNET_BUTTON_TEXT);\n
updateTryResNetButtonDatGuiCss();\n\n gui.add(guiState, 'camera', toCameraOptions(cameras))\n
.onChange(async function(cameraLabel) {\n  state.changingCamera = true;\n\n  await
loadVideo(cameraLabel);\n\n  state.changingCamera = false;\n  });\n\n gui.add(guiState, 'flipHorizontal');\n\n
// There are two algorithms 'person' and 'multi-person-instance'.\n // The 'person' algorithm returns one single
segmentation mask (or body\n // part map) for all people in the image. The 'multi-person-instance'\n // algorithm
returns an array of segmentation mask (or body part map).\n // Each element in the array corresponding to one of
the people. In other\n // words, 'multi-person-instance' algorithm does instance-level person\n // segmentation and
body part segmentation for every person in the image.\n const algorithmController =\n  gui.add(guiState,
'algorithm', ['person', 'multi-person-instance']);\n\n // Architecture: there are a few BodyPix models varying in size
and\n // accuracy.\n // The input parameters have the most effect on accuracy and speed of the\n // network\n let
input = gui.addFolder('Input');\n\n // Updates outputStride\n // Output stride: Internally, this parameter affects the
height and width\n // of the layers in the neural network. The lower the value of the output\n // stride the higher the
accuracy but slower the speed, the higher the\n // value the faster the speed but lower the accuracy.\n let
outputStrideController = null;\n function updateGuiOutputStride(outputStride, outputStrideArray) {\n  if
(outputStrideController) {\n  outputStrideController.remove();\n  }\n  guiState.input.outputStride =
outputStride;\n  outputStrideController =\n  input.add(guiState.input, 'outputStride', outputStrideArray);\n
outputStrideController.onChange(function(outputStride) {\n  state.changingStride = true;\n
guiState.input.outputStride = +outputStride;\n  });\n  });\n\n // Updates internal resolution\n // Internal resolution:
Internally, this parameter affects the height and\n // width of the layers in the neural network. The higher the value
of the\n // internal resolution the better the accuracy but slower the speed.\n let internalResolutionController =
null;\n function updateGuiInternalResolution(\n  internalResolution,\n  internalResolutionArray,\n ) {\n  if
(internalResolutionController) {\n  internalResolutionController.remove();\n  }\n  guiState.input.internalResolution =
internalResolution;\n  internalResolutionController = input.add(\n
guiState.input, 'internalResolution', internalResolutionArray);\n
internalResolutionController.onChange(function(internalResolution) {\n  guiState.input.internalResolution =
internalResolution;\n  });\n  });\n\n // Updates depth multiplier\n // Multiplier: this parameter affects the number of

```

```

feature map channels\n // in the MobileNet. The higher the value, the higher the accuracy but\n // slower the speed,
the lower the value the faster the speed but lower\n // the accuracy.\n let multiplierController = null;\n function
updateGuiMultiplier(multiplier, multiplierArray) {\n if (multiplierController) {\n
multiplierController.remove();\n }\n guiState.input.multiplier = multiplier;\n multiplierController =\n
input.add(guiState.input, 'multiplier', multiplierArray);\n multiplierController.onChange(function(multiplier) {\n
state.changingMultiplier = true;\n guiState.input.multiplier = +multiplier;\n });\n }\n\n // updates quantBytes\n
// QuantBytes: this parameter affects weight quantization in the ResNet50\n // model. The available options are 1
byte, 2 bytes, and 4 bytes. The\n // higher the value, the larger the model size and thus the longer the\n // loading
time, the lower the value, the shorter the loading time but\n // lower the accuracy.\n let quantBytesController =
null;\n function updateGuiQuantBytes(quantBytes, quantBytesArray) {\n if (quantBytesController) {\n
quantBytesController.remove();\n }\n guiState.quantBytes = +quantBytes;\n guiState.input.quantBytes =
+quantBytes;\n quantBytesController =\n input.add(guiState.input, 'quantBytes', quantBytesArray);\n
quantBytesController.onChange(function(quantBytes) {\n state.changingQuantBytes = true;\n
guiState.input.quantBytes = +quantBytes;\n });\n }\n\n function updateGuiInputSection() {\n if
(guiState.input.architecture === 'MobileNetV1') {\n updateGuiInternalResolution(\n
defaultMobileNetInternalResolution,\n ['low', 'medium', 'high', 'full']);\n
updateGuiOutputStride(defaultMobileNetStride, [8, 16]);\n updateGuiMultiplier(defaultMobileNetMultiplier,
[0.50, 0.75, 1.0])\n } else { // guiState.input.architecture === 'ResNet50'\n updateGuiInternalResolution(\n
defaultResNetInternalResolution, ['low', 'medium', 'high', 'full']);\n
updateGuiOutputStride(defaultResNetStride, [32, 16]);\n updateGuiMultiplier(defaultResNetMultiplier, [1.0]);\n
}\n updateGuiQuantBytes(defaultQuantBytes, [1, 2, 4]);\n }\n\n // Architecture: there are a few PoseNet models
varying in size and\n // accuracy. 1.01 is the largest, but will be the slowest. 0.50 is the\n // fastest, but least
accurate.\n architectureController =\n input.add(guiState.input, 'architecture', ['ResNet50', 'MobileNetV1']);\n
guiState.architecture = guiState.input.architecture;\n architectureController.onChange(function(architecture) {\n //
if architecture is ResNet50, then show ResNet50 options\n state.changingArchitecture = true;\n
guiState.input.architecture = architecture;\n updateGuiInputSection();\n });\n\n updateGuiInputSection();\n
input.open()\n\n const estimateController =\n gui.add(guiState, 'estimate', ['segmentation', 'partmap']);\n\n let
segmentation = gui.addFolder('Segmentation');\n segmentation.add(guiState.segmentation, 'segmentationThreshold',
0.0, 1.0);\n const segmentationEffectController =\n segmentation.add(guiState.segmentation, 'effect', ['mask',
'bokeh']);\n\n let multiPersonDecoding = gui.addFolder('MultiPersonDecoding');\n multiPersonDecoding.add(\n
guiState.multiPersonDecoding, 'maxDetections', 0, 20, 1);\n multiPersonDecoding.add(\n
guiState.multiPersonDecoding, 'scoreThreshold', 0.0, 1.0);\n
multiPersonDecoding.add(guiState.multiPersonDecoding, 'nmsRadius', 0, 30, 1);\n multiPersonDecoding.add(\n
guiState.multiPersonDecoding, 'numKeypointForMatching', 1, 17, 1);\n multiPersonDecoding.add(\n
guiState.multiPersonDecoding, 'refineSteps', 1, 10, 1);\n multiPersonDecoding.open();\n\n
algorithmController.onChange(function(value) {\n switch (guiState.algorithm) {\n case 'single-person':\n
multiPersonDecoding.close();\n singlePersonDecoding.open();\n break;\n case 'multi-person':\n
singlePersonDecoding.close();\n multiPersonDecoding.open();\n break;\n }\n });\n\n let
darknessLevel;\n let bokehBlurAmount;\n let edgeBlurAmount;\n let maskBlurAmount;\n let
maskBackground;\n\n segmentationEffectController.onChange(function(effectType) {\n if (effectType ===
'mask') {\n if (bokehBlurAmount) {\n bokehBlurAmount.remove();\n }\n if (edgeBlurAmount) {\n
edgeBlurAmount.remove();\n }\n darknessLevel =\n segmentation.add(guiState.segmentation, 'opacity',
0.0, 1.0);\n maskBlurAmount = segmentation.add(guiState.segmentation, 'maskBlurAmount')\n
.min(0)\n .max(20)\n .step(1);\n maskBackground =\n
segmentation.add(guiState.segmentation, 'maskBackground');\n } else if (effectType === 'bokeh') {\n if
(darknessLevel) {\n darknessLevel.remove();\n }\n if (maskBlurAmount) {\n
maskBlurAmount.remove();\n }\n if (maskBackground) {\n maskBackground.remove();\n }\n
bokehBlurAmount = segmentation\n .add(\n guiState.segmentation,\n

```

```

        'backgroundBlurAmount',\n                )\n                .min(1)\n                .max(20)\n                .step(1);\n        edgeBlurAmount = segmentation.add(guiState.segmentation, 'edgeBlurAmount')\n        .min(0)\n        .max(20)\n        .step(1);\n    }\n    // manually set the effect so
that the options are shown.\n    segmentationEffectController.setValue(guiState.segmentation.effect);\n\n    let partMap
= gui.addFolder('Part Map');\n    partMap.add(guiState.partMap, 'segmentationThreshold', 0.0, 1.0);\n    partMap.add(\n        guiState.partMap, 'effect', ['partMap', 'pixelation', 'blurBodyPart']);\n    partMap.add(guiState.partMap, 'opacity', 0.0, 1.0);\n    partMap.add(guiState.partMap, 'colorScale',
Object.keys(partColorScales))\n        .onChange(colorScale => {\n            setShownPartColorScales(colorScale);\n
        });\n    setShownPartColorScales(guiState.partMap.colorScale);\n    partMap.add(guiState.partMap,
'blurBodyPartAmount').min(1).max(20).step(1);\n    partMap.add(guiState.partMap, 'bodyPartEdgeBlurAmount')\n        .min(1)\n        .max(20)\n        .step(1);\n    partMap.open();\n\n    estimateController.onChange(function(estimationType)
{\n        if (estimationType === 'segmentation') {\n            segmentation.open();\n            partMap.close();\n
document.getElementById('colors').style.display = 'none';\n        } else {\n            segmentation.close();\n
partMap.open();\n            document.getElementById('colors').style.display = 'inline-block';\n        }\n    });\n\n    gui.add(guiState, 'showFps').onChange(showFps => {\n        if (showFps) {\n
document.body.appendChild(stats.dom);\n        } else {\n            document.body.removeChild(stats.dom);\n        }\n
    });\n\n    function setShownPartColorScales(colorScale) {\n        const colors = document.getElementById('colors');\n
colors.innerHTML = '';\n        const partColors = partColorScales[colorScale];\n        const partNames =
bodyPix.PART_CHANNELS;\n        for (let i = 0; i < partColors.length; i++) {\n            const partColor = partColors[i];\n
const child = document.createElement('li');\n            child.innerHTML = `<div class='color' style='background-
color:rgb(${partColor[0]},${partColor[1]},${partColor[2]})' ></div>` + ` ${partNames[i]}`;\n            colors.appendChild(child);\n        }\n    }\n\n    // * Sets up a frames per second panel on the top-left of the window\n
*\n    function setupFPS() {\n        stats.showPanel(0); // 0: fps, 1: ms, 2: mb, 3+: custom\n        if (guiState.showFps) {\n
document.body.appendChild(stats.dom);\n        }\n    }\n\n    async function estimateSegmentation() {\n        let
multiPersonSegmentation = null;\n        switch (guiState.algorithm) {\n            case 'multi-person-instance':\n                return await
state.net.segmentMultiPerson(state.video, {\n                    internalResolution: guiState.input.internalResolution,\n
segmentationThreshold: guiState.segmentation.segmentationThreshold,\n                    maxDetections:
guiState.multiPersonDecoding.maxDetections,\n                    scoreThreshold:
guiState.multiPersonDecoding.scoreThreshold,\n                    nmsRadius: guiState.multiPersonDecoding.nmsRadius,\n
numKeypointForMatching: guiState.multiPersonDecoding.numKeypointForMatching,\n                    refineSteps:
guiState.multiPersonDecoding.refineSteps\n                });\n            case 'person':\n                return await
state.net.segmentPerson(state.video, {\n                    internalResolution: guiState.input.internalResolution,\n
segmentationThreshold: guiState.segmentation.segmentationThreshold,\n                    maxDetections:
guiState.multiPersonDecoding.maxDetections,\n                    scoreThreshold:
guiState.multiPersonDecoding.scoreThreshold,\n                    nmsRadius: guiState.multiPersonDecoding.nmsRadius,\n
                });\n            default:\n                break;\n        }\n        return multiPersonSegmentation;\n    }\n\n    async function
estimatePartSegmentation() {\n        switch (guiState.algorithm) {\n            case 'multi-person-instance':\n                return await
state.net.segmentMultiPersonParts(state.video, {\n                    internalResolution: guiState.input.internalResolution,\n
segmentationThreshold: guiState.segmentation.segmentationThreshold,\n                    maxDetections:
guiState.multiPersonDecoding.maxDetections,\n                    scoreThreshold:
guiState.multiPersonDecoding.scoreThreshold,\n                    nmsRadius: guiState.multiPersonDecoding.nmsRadius,\n
numKeypointForMatching: guiState.multiPersonDecoding.numKeypointForMatching,\n                    refineSteps:
guiState.multiPersonDecoding.refineSteps\n                });\n            case 'person':\n                return await
state.net.segmentPersonParts(state.video, {\n                    internalResolution: guiState.input.internalResolution,\n
segmentationThreshold: guiState.segmentation.segmentationThreshold,\n                    maxDetections:
guiState.multiPersonDecoding.maxDetections,\n                    scoreThreshold:
guiState.multiPersonDecoding.scoreThreshold,\n                    nmsRadius: guiState.multiPersonDecoding.nmsRadius,\n
                });\n            default:\n                break;\n        }\n        return multiPersonPartSegmentation;\n    }\n\n    function

```



```

drawPoses(personOrPersonPartSegmentation, flipHorizontally, ctx) {\n if
(Array.isArray(personOrPersonPartSegmentation)) {\n
personOrPersonPartSegmentation.forEach(personSegmentation => {\n let pose = personSegmentation.pose;\n
if (flipHorizontally) {\n pose = bodyPix.flipPoseHorizontal(pose, personSegmentation.width);\n }}\n
drawKeypoints(pose.keypoints, 0.1, ctx);\n drawSkeleton(pose.keypoints, 0.1, ctx);\n });\n } else {\n
personOrPersonPartSegmentation.allPoses.forEach(pose => {\n if (flipHorizontally) {\n pose =
bodyPix.flipPoseHorizontal(\n pose, personOrPersonPartSegmentation.width);\n })\n
drawKeypoints(pose.keypoints, 0.1, ctx);\n drawSkeleton(pose.keypoints, 0.1, ctx);\n })\n })\n\n
async function loadBodyPix() {\n toggleLoadingUI(true);\n state.net = await bodyPix.load({\n architecture:
guiState.input.architecture,\n outputStride: guiState.input.outputStride,\n multiplier: guiState.input.multiplier,\n
quantBytes: guiState.input.quantBytes\n });\n toggleLoadingUI(false);\n }\n\n
/**\n * Feeds an image to BodyPix to
estimate segmentation - this is where the\n * magic happens. This function loops with a requestAnimationFrame
method.\n */\nfunction segmentBodyInRealTime() {\n const canvas = document.getElementById('output');\n //
since images are being fed from a webcam\n\n async function bodySegmentationFrame() {\n // if changing the
model or the camera, wait a second for it to complete\n // then try again.\n if (state.changingArchitecture ||
state.changingMultiplier ||\n state.changingCamera || state.changingStride ||\n state.changingQuantBytes)
{\n console.log('load model...');\n loadBodyPix();\n state.changingArchitecture = false;\n
state.changingMultiplier = false;\n state.changingStride = false;\n state.changingQuantBytes = false;\n
}\n\n
// Begin monitoring code for frames per second\n stats.begin();\n\n const flipHorizontally =
guiState.flipHorizontal;\n\n switch (guiState.estimate) {\n case 'segmentation':\n const
multiPersonSegmentation = await estimateSegmentation();\n switch (guiState.segmentation.effect) {\n
case 'mask':\n const ctx = canvas.getContext('2d');\n const foregroundColor = {r: 255, g: 255, b: 255,
a: 255};\n const backgroundColor = {r: 0, g: 0, b: 0, a: 255};\n const mask = bodyPix.toMask(\n
multiPersonSegmentation, foregroundColor, backgroundColor,\n true);\n bodyPix.drawMask(\n
canvas, state.video, mask, guiState.segmentation.opacity,\n
guiState.segmentation.maskBlurAmount, flipHorizontally);\n drawPoses(multiPersonSegmentation,
flipHorizontally, ctx);\n break;\n case 'bokeh':\n bodyPix.drawBokehEffect(\n canvas,
state.video, multiPersonSegmentation,\n +guiState.segmentation.backgroundBlurAmount,\n
guiState.segmentation.edgeBlurAmount, flipHorizontally);\n break;\n }\n\n break;\n case
'partmap':\n const ctx = canvas.getContext('2d');\n const multiPersonPartSegmentation = await
estimatePartSegmentation();\n const coloredPartImageData = bodyPix.toColoredPartMask(\n
multiPersonPartSegmentation,\n partColorScales[guiState.partMap.colorScale]);\n\n const
maskBlurAmount = 0;\n switch (guiState.partMap.effect) {\n case 'pixelation':\n const
pixelCellWidth = 10.0;\n\n bodyPix.drawPixelatedMask(\n canvas, state.video,
coloredPartImageData,\n guiState.partMap.opacity, maskBlurAmount, flipHorizontally,\n
pixelCellWidth);\n break;\n case 'partMap':\n bodyPix.drawMask(\n canvas,
state.video, coloredPartImageData, guiState.opacity,\n maskBlurAmount, flipHorizontally);\n
break;\n case 'blurBodyPart':\n const blurBodyPartIds = [0, 1];\n bodyPix.blurBodyPart(\n
canvas, state.video, multiPersonPartSegmentation,\n blurBodyPartIds,
guiState.partMap.blurBodyPartAmount,\n guiState.partMap.edgeBlurAmount, flipHorizontally);\n }\n
drawPoses(multiPersonPartSegmentation, flipHorizontally, ctx);\n break;\n default:\n break;\n
}\n\n
// End monitoring code for frames per second\n stats.end();\n\n
requestAnimationFrame(bodySegmentationFrame);\n }\n\n bodySegmentationFrame();\n }\n\n
/**\n * Kicks off the
demo.\n */\nexport async function bindPage() {\n // Load the BodyPix model weights with architecture 0.75\n
await loadBodyPix();\n document.getElementById('loading').style.display = 'none';\n
document.getElementById('main').style.display = 'inline-block';\n\n await loadVideo(guiState.camera);\n\n let
cameras = await getVideoInputs();\n\n setupFPS();\n setupGui(cameras);\n\n
segmentBodyInRealTime();\n }\n\n\nnavigator.getUserMedia = navigator.getUserMedia ||\n

```

```
navigator.webkitGetUserMedia || navigator.mozGetUserMedia;\n// kick off the demo\nbindPage();\n"}]
```

Found in path(s):

```
* /opt/cola/permits/1234600288_1638275149.74/0/tensorflow-models-zip/@tensorflow-models/body-pix/demos/dist/demos.ab0c720b.js.map
```

1.179 xorg-randr 1.5.0

1.179.1 Available under license :

Copyright 2000, Compaq Computer Corporation,
Copyright 2002, Hewlett Packard, Inc.

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Compaq or HP not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. HP makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

HP DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL HP BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright 2000 Compaq Computer Corporation, Inc.
Copyright 2002 Hewlett-Packard Company, Inc.
Copyright 2006 Intel Corporation
Copyright 2008 Red Hat, Inc.
Copyright 2011 Dave Airlie

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holders not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. The copyright holders make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THE COPYRIGHT HOLDERS DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO

EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright 2000 Compaq Computer Corporation, Inc.

Copyright 2002 Hewlett Packard Company, Inc.

Copyright 2006 Keith Packard

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holders not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. The copyright holders make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THE COPYRIGHT HOLDERS DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

1.180 @tensorflow/tfjs-backend-wasm 3.11.0

1.180.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"GatherNd.js","sourceRoot":"","sources":["../src/kernels/GatherNd.ts"],"names":[],"mappings":
"AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,WAAW,EAAE,QAAQ,EAA2C,MAAM,uBAAuB,CAAC;AAItG,
OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,YAGI,CAAC;AAET,SAAS,KAAK,CAAC,OA
AoB;IACjC,YAAy,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,CAAC,QAAQ,EAAE;
QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,
QAAQ,CAAG,QAAQ;KACpB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CAAC,IAAoD;IAEpE,MAAM
,EAAC,OAAO,EAAE,MAAM,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,
GAAG,MAAM,CAAC;IAEjC,MAAM,CAAC,WAAW,EAAE,SAAS,EAAE,SAAS,EAAE,OAAO,CAAC,GAC9C,
WAAW,CAAC,kBAakB,CAAC,MAAM,EAAE,OAAO,CAAC,CAAC;IAEpD,MAAM,GAAG,GAAG,OAAO,CA
AC,UAAU,CAAC,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;IAC1D,IAAI,SAAS,KAAK,CAAC,EAA
E;QACnB,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,YAAy,GAAG,OAAO,CAAC,KAAK,CAAC;IACnC,MA
AM,SAAS,GAAG,YAAy,CAAC,YAAy,CAAC,MAAM,GAAG,CAAC,CAAC,CAAC;IAExD,MAAM,KAAK,G
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;IACnD,MAAM,GAAG,
GAAG,KAAK,CAAC,EAAE,CAAC;IACfB,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
```

OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,MAA
M,YAAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,
MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,
CAAC;IACnD,YAAAY,CACR,GAAG,EAAE,QAAQ,CAAC,MAAM,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,S
AAS,EAAE,SAAS,EAAE,SAAS,EACvE,YAAAY,EAAE,KAAK,CAAC,CAAC;IAEzB,OAAO,GAAG,CAAC;AA
Cb,CAAC;AAED,MAAM,CAAC,MAAM,cAAc,GAAiB;IAC1C,UAAU,EAAE,QAAQ;IACpB,WAAW,EAAE,M
AAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,QAAQ;CACrB,CAAC", "sourcesContent":["/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo } from '@tensorflow/tfjs-  
core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from './types';\n\nlet  
wasmGatherNd: (\n  xId: number, dtype: CppDType, indicesId: number, numSlices: number,\n  sliceRank:  
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n  void;\n\nfunction setup(backend:  
BackendWasm): void {\n  wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n    'number', // xId\n    'number', // dtype\n    'number', // indicesId\n    'number', // numSlices\n    'number', // sliceRank\n    'number', //  
sliceSize\n    'array', // strides\n    'number' // outId\n  ]);\n\n  function gatherNd(args: { backend: BackendWasm,  
inputs: GatherNdInputs}): TensorInfo {\n    const { backend, inputs } = args;\n    const { params, indices } =  
inputs;\n\n    const [resultShape, numSlices, sliceSize, strides] =\n      gather_util.prepareAndValidate(params,  
indices);\n\n    const out = backend.makeOutput(resultShape, params.dtype);\n    if (numSlices === 0) {\n      return  
out;\n    }\n\n    const indicesShape = indices.shape;\n    const sliceRank = indicesShape[indicesShape.length - 1];\n\n    const xData = backend.dataIdMap.get(params.dataId);\n    const xId = xData.id;\n    const indicesData =  
backend.dataIdMap.get(indices.dataId);\n    const indicesId = indicesData.id;\n\n    const stridesBytes = new  
Uint8Array(new Int32Array(strides).buffer);\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmGatherNd(\n      xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n      stridesBytes,  
outId);\n\n    return out;\n  }\n\n  export const gatherNdConfig: KernelConfig = {\n    kernelName: GatherNd,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: gatherNd\n  };\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/GatherNd.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Concat.js","sourceRoot":"","sources":["../../src/kernels/Concat.ts"],"names":[],"mappings":"AA  
AA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAAY,EAAE,MAAM,EAAuD,IAAI,EAAC,MAAM,uBAAuB,CAAC;  
AAGtH,OAAO,EAAC,aAAa,EAAC,MAAM,wBAAwB,CAAC;AACrD,OAAO,EAAC,QAAQ,EAAC,MAAM,YA  
AY,CAAC;AACpC,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AAEiC,MAAM,UAAU,MAAM,CACI  
B,IAAsE;IACxE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAE/B,MAAM,IAAI,GAAG,I  
AAI,CAAC,cAAc,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,  
CAAC,CAAC,CAAC,CAAC,CAAC;IAEtE,IAAI,QAAQ,GAAG,YAAAY,CAAC,eAAe,CAAC,MAAM,CAAC,GA  
AG,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,IAAI,CAAC,CAAC;IAE5E,sEAAeE  
;IACtE,MAAM,OAAO,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,aAAa,C  
AAC,CAAC,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC,CAAC;IACpE,IAAI,OAAO,CAAC,MAAM,KAAK,CA  
AC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,CAAC,CAAC,CA
```



```

concat(\n  args: {inputs: ConcatInputs, backend: BackendWasm, attrs: ConcatAttrs}) {\n  const {inputs, backend}
= args;\n\n  const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n  let outShape =
backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n\n  // Keep only non-empty tensors (ignore tensors
with 0 in their shape).\n  const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n  if ($inputs.length ===
1) {\n    return identity({inputs: {x: $inputs[0]}, backend});\n  }\n\n  const out = backend.makeOutput(outShape,
inputs[0].dtype);\n\n  if (util.sizeFromShape(outShape) === 0) {\n    return out;\n  }\n\n  const shapes =
$inputs.map(t => t.shape);\n  backend_util.assertParamsConsistent(shapes, axis);\n\n  if ($inputs[0].dtype ===
'string') {\n    // Any concat of n-dimensional tensors across any axis can be reduced to\n    // a concatenation of two-
dimensional tensors across the axis 1 by first\n    // partitioning the axes of the original tensors into those less than
the\n    // axis to be concatenated and the rest. Then reshape the tensors\n    // into a two-dimensional tensor by
collapsing these two sets of axes and\n    // concatenate the resulting matrices across the axis 1, finally reshaping\n
// the result to have the proper shape.\n    const inputs2D = $inputs.map(t => {\n      const innerSize =
util.sizeFromShape(t.shape.slice(axis));\n      const shape = [-1, innerSize];\n      return reshape({inputs: {x: t},
backend, attrs: {shape}});\n    });\n\n    const inputsValShapes = inputs2D.map(t => {\n      return {vals:
backend.readSync(t.dataId), shape: t.shape};\n    });\n\n    // Concat 2d tensors along axis=1.\n    outShape =\nbackend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);\n    const simplyConcat =
inputs2D[0].shape[0] === 1;\n    const outVals = concatImplCPU(\n      inputsValShapes, outShape,
inputs[0].dtype,\n      simplyConcat) as string[];\n\n    const finalOutShape =\nbackend_util.computeOutShape($inputs.map(t => t.shape), axis);\n\n    out.shape = finalOutShape;\n    const
outData = backend.dataIdMap.get(out.dataId);\n    outData.stringBytes =
backend_util.fromStringArrayToUint8(outVals);\n\n    inputs2D.forEach(t => backend.disposeData(t.dataId));\n\n
return out;\n  }\n\n  const batchSize = util.sizeFromShape($inputs[0].shape.slice(0, axis));\n  let sumInnerDims =
0;\n  const innerDims = $inputs.map(input => {\n    const innerDim = util.sizeFromShape(input.shape.slice(axis));\n
sumInnerDims += innerDim;\n    return innerDim;\n  });\n  const inVals = $inputs.map(input =>
backend.typedArrayFromHeap(input));\n  const outVals = backend.typedArrayFromHeap(out);\n  for (let b = 0; b <
batchSize; b++) {\n    let outOffset = b * sumInnerDims;\n    for (let i = 0; i < inVals.length; i++) {\n      const
innerDim = innerDims[i];\n      const inOffset = b * innerDim;\n      const vals = inVals[i].subarray(inOffset,
inOffset + innerDim);\n      outVals.set(vals, outOffset);\n      outOffset += innerDim;\n    }\n  }\n  return
out;\n}\n\nexport const concatConfig: KernelConfig = {\n  kernelName: Concat,\n  backendName: 'wasm',\n
kernelFunc: concat as {} as KernelFunc,\n};\n}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Concat.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"Select.js","sourceRoot":"","sources":["../../src/kernels/Select.ts"],"names":[],"mappings":"AAA
A;:::;GAEg;AAEH,OAAO,EAA2B,MAAM,EAAGB,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI3F,IAAI,U
AEsB,CAAC;AAE3B,SAAS,KAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,C
AAC,UAAU,EAAE,IAAI,EAAE;QACHd,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;K
ACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,MAAM,CAAC,IAAkD;IACHe,MAAM,EAAC,MAAM,EAAE,OA
AO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,SAAS,EAAE,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM
,CAAC;IAEjC,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC
,CAAC,EAAE,CAAC;IAC/D,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,
MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,
CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,KAAK,GAAG,OAAO,CAAC,
SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,KAAK,GAAG,

```

SAAS,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B,MAAM,MAAM,GAAG,KAAK,KAAK,CAAC,IAAI,KAAK,GAAG,CAAC,IAAI,KAAK,KAAK,CAAC,CAAC,CAAC;QACpD,CAAC,CAAC,CAAC;QACH,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IAEzC,UAAU,CAAC,WAAW,EAAE,GAAG,EAAE,GAAG,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;IACjD,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,YAAAY,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;IACtC,SAAS,EAAE,KAAK;CACjB,CAAC", "sourcesContent": ["/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Select, SelectInputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmSelect: (\n  conditionId: number, tId: number, eId: number, offset: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmSelect = backend.wasm.cwrap('SelectV2', null, [\n    'number', // conditionId\n    'number', // tId\n    'number', // eId\n    'number', // offset\n    'number', // outId\n  ]);\n\n  function select(args: { inputs: SelectInputs, backend: BackendWasm }) {\n    const { inputs, backend } = args;\n    const { condition, t, e } = inputs;\n    const conditionId = backend.dataIdMap.get(condition.dataId).id;\n    const tId = backend.dataIdMap.get(t.dataId).id;\n    const eId = backend.dataIdMap.get(e.dataId).id;\n    const out = backend.makeOutput(t.shape, t.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const cRank = condition.shape.length;\n    const tRank = t.shape.length;\n    const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n      1 : 0;\n    util.sizeFromShape(t.shape.slice(1));\n    wasmSelect(conditionId, tId, eId, offset, outId);\n    return out;\n  }\n\n  export const selectConfig: KernelConfig = {\n    kernelName: Select,\n    backendName: 'wasm',\n    kernelFunc: select as KernelFunc,\n    setupFunc: setup\n  };"}\n\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Select.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"index_test.js","sourceRoot":"","sources":["../src/index_test.ts"],"names":[],"mappings":"AAAA; ;;;;;;;;;GAeG;AAEH,OAAO,KAAK,EAAE,MAAM,uBAAuB,CAAC;AAC5C,OAAO,EAAC,eAAe,EAAE,aAA a,EAAE,SAAS,EAAE,IAAI,EAAC,MAAM,uBAAuB,CAAC;AACtF,gDAAgD;AAChD,OAAO,EAAC,QAAQ,EA AE,YAAAY,EAAE,iBAAiB,EAAC,MAAM,yCAAyC,CAAC;AAEIG,OAAO,EAAC,IAAI,EAAE,aAAa,EAAC,MA AM,gBAAgB,CAAC;AACnD,OAAO,EAAC,WAAW,EAAE,WAAW,EAAE,YAAAY,EAAC,MAAM,SAAS,CAA C;AAE/D;;;GAIG;AACH,iBAAiB,CAAC,iBAAiB,EAAE,QAAQ,EAAE,GAAG,EAAE;IACID,EAAE,CAAC,uB AAuB,EAAE,KAAK,IAAI,EAAE;QACrC,MAAM,CAAC,GAAG,EAAE,CAAC,QAAQ,CAAC,CAAC,EA AE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;QACjC,SAAS,CAAC,iBAAiB,CAAC,CAAC,CAAC,EAAE,CAA C,EAAE,CAAC,CAAC,EAAE,MAAM,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC;IACzD,CAAC,CAAC,CAAC;I AEH,EAAE,CAAC,uDAAuD,EAAE,GAAG,EAAE;QAC/D,MAAM,OAAO,GAAG,EAAE,CAAC,OAAO,EAiB ,CAAC;QAC5C,MAAM,IAAI,GAAG,GAAG,CAAC;QACjB,qEAAqE;QACrE,MAAM,EAAE,GAAG,EAAE,CA AC,KAAK,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC;QAC5B,MAAM,UAAU,GAAG,OAAO,CAAC,eAAe,CAA C,EAAE,CAAC,MAAM,CAAC,CAAC;QACtD,EAAE,CAAC,OAAO,EAAE,CAAC;QAEb,2EAA2E;QAC3E,MA AM,EAAE,GAAG,EAAE,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC;QAC5B,MAAM,UAAU,GA AG,OAAO,CAAC,eAAe,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC;QACtD,6CAA6C;QAC7C,MAAM,CAAC,
```

UAAU,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,CAAC;IACtC,CAAC,CAAC,CAAC;IAEH,EAAE,CAAC,oCA
AoC,EAAE,KAAK,IAAI,EAAE;QACID,MAAM,IAAI,GAAG,CAAC,CAAC,GAAG,EAAE,GAAG,EAAE,IAAI,
CAAC,CAAC;QAC/B,MAAM,MAAM,GAAG,IAAI,WAAW,CAAC,EAAE,CAAC,CAAC;QACnC,MAAM,IAAI
,GAAG,IAAI,YAA Y,CAAC,MAAM,EAAE,CAAC,EAAE,IAAI,CAAC,MAAM,CAAC,CAAC;QAEtD,0BAA0B;
QAC1B,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,EAAE,CAAC,EA
AE;YACpC,IAAI,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;SACnB;QAED,MAAM,CAA
C,GAAG,EAAE,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC;QAC1B,8BAA8B;QAC9B,SAAS,CAAC,iBAAiB,C
AAC,MAAM,CAAC,CAAC,IAAI,EAAE,EAAE,IAAI,CAAC,CAAC;IACpD,CAAC,CAAC,CAAC;AACL,CAAC
,CAAC,CAAC;AAEH,iBAAiB,CAAC,WAAW,EAAE,YAA Y,EAAE,GAAG,EAAE;IAChD,UAAU,CAAC,GAA
G,EAAE;QACd,eAAe,CAAC,WAAW,EAAE,KAAK,IAAI,EAAE;YACtC,MAAM,EAAC,IAAI,EAAC,GAAG,M
AAM,IAAI,EAAE,CAAC;YAC5B,OAAO,IAAI,WAAW,CAAC,IAAI,CAAC,CAAC;QAC/B,CAAC,EAAE,GAA
G,CAAC,CAAC;QAER,0CAA0C;QAC1C,KAAK,CAAC,OAAO,EAAE,MAAM,CAAC,CAAC;QACvB,KAAK,C
AAC,OAAO,EAAE,KAAK,CAAC,CAAC;IACxB,CAAC,CAAC,CAAC;IAEH,SAAS,CAAC,GAAG,EAAE;QAC
b,aAAa,EAAE,CAAC;QACHb,aAAa,CAAC,WAAW,CAAC,CAAC;IAC7B,CAAC,CAAC,CAAC;IAEH,EAAE,C
AAC,6CAA6C,EAAE,KAAK,IAAI,EAAE;QAC3D,WAAW,CAAC,cAAc,CAAC,CAAC;QAC5B,IAAI,QAAgB,C
AAC;QACrB,MAAM,SAAS,GAAG,KAAK,CAAC;QACxB,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,CAAC,G
AAG,CAAC,QAAQ,CAAC,CAAC,IAAY,EAAE,EAAE;YACjD,QAAQ,GAAG,IAAI,CAAC;YACHb,OAAO,SA
AS,CAAC,IAAI,CAAC,CAAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAAC,UAA
U,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC;QACrD,MAAM,CAAC,QAAQ,CAA
C,CAAC,IAAI,CAAC,cAAc,CAAC,CAAC;IACxC,CAAC,CAAC,CAAC;IAEH,EAAE,CAAC,sDAAsD;QACID,
mBAAmB,EACvB,KAAK,IAAI,EAAE;QACT,YAA Y,CAAC,iBAAiB,CAAC,CAAC;QACHc,IAAI,QAAgB,CA
AC;QACrB,MAAM,SAAS,GAAG,KAAK,CAAC;QACxB,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,CAAC,GA
AG,CAAC,QAAQ,CAAC,CAAC,IAAY,EAAE,EAAE;YACjD,QAAQ,GAAG,IAAI,CAAC;YACHb,OAAO,SA
AS,CAAC,IAAI,CAAC,CAAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAAC,UAAU
,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC;QACrD,MAAM,CAAC,QAAQ,CAAC,
CAAC,SAAS,CAAC,gBAAgB,CAAC,CAAC;IAC/C,CAAC,CAAC,CAAC;IAEN,EAAE,CAAC,sDAAsD;QACID
,oBAAoB,EACxB,KAAK,IAAI,EAAE;QACT,YAA Y,CAAC;YACX,wBAAwB,EAAE,cAAc;YACxC,6BAA6B,E
AAE,cAAc;YAC7C,sCAAsC,EAAE,cAAc;SACvD,CAAC,CAAC;QACH,IAAI,cAAsB,CAAC;QAC3B,MAAM,S
AAS,GAAG,KAAK,CAAC;QACxB,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,CAAC,GAAG,CAAC,QAAQ,CA
AC,CAAC,IAAY,EAAE,EAAE;YACjD,cAAc,GAAG,IAAI,CAAC;YACtB,OAAO,SAAS,CAAC,IAAI,CAAC,C
AAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,
CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC;QACrD,MAAM,CAAC,cAAc,CAAC,CAAC,IAAI,CAAC,cAA
c,CAAC,CAAC;IAC9C,CAAC,CAAC,CAAC;IAEN,EAAE,CAAC,sEAA sE;QACIE,aAAa,EACjB,KAAK,IAAI,E
AAE;QACT,MAAM,CAAC,GAAG,EAAE;YACV,YAA Y,CAAC;gBACX,wBAAwB,EAAE,uCAAuC;aACIE,CA
AC,CAAC;QACL,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC;IACf,CAAC,CAAC,CAAC;IAEN,EAAE,CAAC,k
EAAkE,EACIE,KAAK,IAAI,EAAE;QACT,MAAM,gBAAgB,GAAG,IAAI,CAAC;QAC9B,MAAM,WAAW,GA
AG,iBAAiB,CAAC;QACtC,YAA Y,CAAC,WAAW,EAAE,gBAAgB,CAAC,CAAC;QAC5C,IAAI,QAAgB,CAAC;
QACrB,MAAM,SAAS,GAAG,IAAI,CAAC,KAAK,CAAC;QAC7B,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,C
AAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAY,EAAE,EAAE;YACjD,QAAQ,GAAG,IAAI,CAAC;YACHb,OA
AO,SAAS,CAAC,IAAI,CAAC,CAAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAA
C,UAAU,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC;QACpD,MAAM,UAAU,GAAG
,IAAI,GAAG,CAAC;YACzB,WAAW,GAAG,wBAAwB;YACtC,WAAW,GAAG,6BAA6B;YAC3C,WAAW,GA
AG,sCAAsC;SACrD,CAAC,CAAC;QACH,MAAM,CAAC,UAAU,CAAC,CAAC,SAAS,CAAC,QAAQ,CAAC,C
AAC;IACzC,CAAC,CAAC,CAAC;IAEN,EAAE,CAAC,oEAAoE;QACHe,sBAAsB,EAC1B,KAAK,IAAI,EAAE;
QACT,MAAM,gBAAgB,GAAG,IAAI,CAAC;QAC9B,MAAM,WAAW,GAAG,iBAAiB,CAAC;QACtC,YAA Y,C
ACR;YACE,wBAAwB,EAAE,uCAAuC;YACjE,6BAA6B,EACzB,4CAA4C;YACHD,sCAAsC,EACIC,qDAAqD;S
AC1D,EACD,gBAAgB,CAAC,CAAC;QACtB,IAAI,QAAgB,CAAC;QACrB,MAAM,SAAS,GAAG,IAAI,CAAC,
KAAK,CAAC;QAC7B,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IA

AY,EAAE,EAAE;YACjD,QAAQ,GAAG,IAAI,CAAC;YAChB,OAAO,SAAS,CAAC,IAAI,CAAC,CAAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC;QACpD,MAAM,UAAU,GAAG,IAAI,GAAG,CAAC;YACzB,WAAW,GAAG,wBAAwB;YACtC,WAAW,GAAG,6BAA6B;YAC3C,WAAW,GAAG,sCAAsC;SACrD,CAAC,CAAC;QACH,MAAM,CAAC,UAAU,CAAC,CAAC,SAAS,CAAC,QAAQ,CAAC,CAAC;IACzC,CAAC,CAAC,CAAC;IAEN,EAAE,CAAC,kEAAkE,EACIE,KAAK,IAAI,EAAE;QACT,MAAM,gBAAgB,GAAG,IAAI,CAAC;QAC9B,MAAM,SAAS,GAAG,uCAAuC,CAAC;QAC1D,WAAW,CAAC,SAAS,EAAE,gBAAgB,CAAC,CAAC;QACzC,IAAI,QAAgB,CAAC;QACrB,MAAM,SAAS,GAAG,IAAI,CAAC,KAAK,CAAC;QAC7B,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAY,EAAE,EAAE;YACjD,QAAQ,GAAG,IAAI,CAAC;YACChB,OAAO,SAAS,CAAC,IAAI,CAAC,CAAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC;QACpD,MAAM,CAAC,QAAQ,CAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC;IACnC,CAAC,CAAC,CAAC;IAEN,iEAAiE;IACjE,gCAAgC;IAChC,GAAG,CAAC,oEAAoE,EACpE,KAAK,IAAI,EAAE;QACT,MAAM,gBAAgB,GAAG,IAAI,CAAC;QAC9B,WAAW,CAAC,cAAc,EAAE,gBAAgB,CAAC,CAAC;QAC9C,IAAI,QAAgB,CAAC;QACrB,MAAM,SAAS,GAAG,IAAI,CAAC,KAAK,CAAC;QAC7B,KAAK,CAAC,IAAI,EAAE,OAAO,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAY,EAAE,EAAE;YACjD,QAAQ,GAAG,IAAI,CAAC;YACChB,OAAO,SAAS,CAAC,IAAI,CAAC,CAAC;QACzB,CAAC,CAAC,CAAC;QACH,MAAM,CAAC,MAAM,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC;QACrD,MAAM,CAAC,QAAQ,CAAC,CAAC,IAAI,CAAC,cAAc,CAAC,CAAC;IACxC,CAAC,CAAC,CAAC;IAEP,EAAE,CAAC,yCAAyC,EAAE,KAAK,IAAI,EAAE;QACvD,MAAM,CAAC,MAAM,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC;IACtD,CAAC,CAAC,CAAC;IAEH,EAAE,CAAC,6BAA6B,EAAE,KAAK,IAAI,EAAE;QAC3C,uBAAuB;QACvB,WAAW,CAAC,cAAc,CAAC,CAAC;QAC5B,MAAM,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,CAAC;QAEjC,6BAA6B;QAC7B,MAAM,CAAC,GAAG,EAAE,CAAC,WAAW,CAAC,UAAU,CAAC,CAAC;aAChC,YAAyC,CAAC,qDAAqD,CAAC,CAAC;IAC3E,CAAC,CAAC,CAAC;AAcL,CAAC,CAAC,CAAC

","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport * as tf from '@tensorflow/tfjs-core';\nimport {registerBackend, removeBackend, test_util, util} from '@tensorflow/tfjs-core';\n// tslint:disable-next-line:no-imports-from-dist\nimport {ALL_ENVS, BROWSER_ENVS, describeWithFlags} from '@tensorflow/tfjs-core/dist/jasmine_util';\nimport {init, resetWasmPath} from './backend_wasm';\nimport {BackendWasm, setWasmPath, setWasmPaths} from './index';\n\n/* Tests specific to the wasm backend. The name of these tests must start with\n * 'wasm' so that they are always included in the test runner. See\n * `env.specFilter` in `setup_test.ts` for details.\n */\ndescribeWithFlags('wasm read/write', ALL_ENVS, () => {\n  it('write and read values', async () => {\n    const x = tf.tensor1d([1, 2, 3]);\n    test_util.expectArraysClose([1, 2, 3], await x.data());\n  });\n\n  it('allocate repetitively and confirm reuse of heap space', () => {\n    const backend = tf.backend() as BackendWasm;\n    const size = 100;\n    // Allocate for the first time, record the memory offset and dispose.\n    const t1 = tf.zeros([size]);\n    const memOffset1 = backend.getMemoryOffset(t1.dataId);\n    t1.dispose();\n\n    // Allocate again and make sure the offset is the same (memory was reused).\n    const t2 = tf.zeros([size]);\n    const memOffset2 = backend.getMemoryOffset(t2.dataId);\n\n    // This should fail in case of a memory leak.\n    expect(memOffset1).toBe(memOffset2);\n  });\n\n  it('allocates buffers with byteOffsets', async () => {\n    const data = [-0.5, 0.5, 3.14];\n    const buffer = new ArrayBuffer(32);\n    const view = new Float32Array(buffer, 8, data.length);\n\n    // Write values to buffer.\n    for (let i = 0; i < data.length; ++i) {\n      view[i] = data[i];\n    }\n  });\n});
```

```

const t = tf.tensor(view);\n // Tensor values should match.\n test_util.expectArraysClose(await t.data(), view);\n
});\n});\n\nndescribeWithFlags('wasm init', BROWSER_ENVS, () => {\n beforeEach(() => {\n
registerBackend('wasm-test', async () => {\n const {wasm} = await init();\n return new
BackendWasm(wasm);\n }, 100);\n\n // Silences backend registration warnings.\n spyOn(console, 'warn');\n
spyOn(console, 'log');\n });\n\n afterEach(() => {\n resetWasmPath();\n removeBackend('wasm-test');\n });\n\n
it('backend init fails when the path is invalid', async () => {\n setWasmPath('invalid/path');\n let wasmPath:
string;\n const realFetch = fetch;\n spyOn(self, 'fetch').and.callFake((path: string) => {\n wasmPath = path;\n
return realFetch(path);\n });\n expect(await tf.setBackend('wasm-test')).toBe(false);\n
expect(wasmPath).toBe('invalid/path');\n });\n\n it('backend init fails when setWasmPaths is called with ' +\n
'an invalid prefix',\n async () => {\n setWasmPaths('invalid/prefix/');\n let wasmPath: string;\n const
realFetch = fetch;\n spyOn(self, 'fetch').and.callFake((path: string) => {\n wasmPath = path;\n return
realFetch(path);\n });\n expect(await tf.setBackend('wasm-test')).toBe(false);\n
expect(wasmPath).toContain('invalid/prefix');\n });\n\n it('backend init fails when setWasmPaths is called with '
+\n 'an invalid fileMap',\n async () => {\n setWasmPaths({\n 'tfjs-backend-wasm.wasm':
'invalid/path',\n 'tfjs-backend-wasm-simd.wasm': 'invalid/path',\n 'tfjs-backend-wasm-threaded-
simd.wasm': 'invalid/path'\n });\n let wasmPathPrefix: string;\n const realFetch = fetch;\n spyOn(self,
'fetch').and.callFake((path: string) => {\n wasmPathPrefix = path;\n return realFetch(path);\n });\n
expect(await tf.setBackend('wasm-test')).toBe(false);\n expect(wasmPathPrefix).toBe('invalid/path');\n });\n\n
it('setWasmPaths throws error when called without specifying a path for ' +\n 'each binary',\n async () => {\n
expect(() => {\n setWasmPaths({\n 'tfjs-backend-wasm.wasm': '/base/wasm-out/tfjs-backend-
wasm.wasm'\n });\n }).toThrow();\n });\n\n it('backend init works when the path is valid and use
platform fetch',\n async () => {\n const usePlatformFetch = true;\n const validPrefix = '/base/wasm-out/';\n
setWasmPaths(validPrefix, usePlatformFetch);\n let wasmPath: string;\n const realFetch = util.fetch;\n
spyOn(util, 'fetch').and.callFake((path: string) => {\n wasmPath = path;\n return realFetch(path);\n
});\n expect(await tf.setBackend('wasm-test')).toBe(true);\n const validPaths = new Set([\n validPrefix +
'tfjs-backend-wasm.wasm',\n validPrefix + 'tfjs-backend-wasm-simd.wasm',\n validPrefix + 'tfjs-backend-
wasm-threaded-simd.wasm',\n ]);\n expect(validPaths).toContain(wasmPath);\n });\n\n it('backend init
works when the wasm paths overrides map is valid and ' +\n 'using platform fetch',\n async () => {\n
const usePlatformFetch = true;\n const validPrefix = '/base/wasm-out/';\n setWasmPaths(\n {\n
'tfjs-backend-wasm.wasm': '/base/wasm-out/tfjs-backend-wasm.wasm',\n 'tfjs-backend-wasm-simd.wasm':\n
'/base/wasm-out/tfjs-backend-wasm-simd.wasm',\n 'tfjs-backend-wasm-threaded-simd.wasm':\n
'/base/wasm-out/tfjs-backend-wasm-threaded-simd.wasm'\n },\n usePlatformFetch);\n let
wasmPath: string;\n const realFetch = util.fetch;\n spyOn(util, 'fetch').and.callFake((path: string) => {\n
wasmPath = path;\n return realFetch(path);\n });\n expect(await tf.setBackend('wasm-
test')).toBe(true);\n const validPaths = new Set([\n validPrefix + 'tfjs-backend-wasm.wasm',\n
validPrefix + 'tfjs-backend-wasm-simd.wasm',\n validPrefix + 'tfjs-backend-wasm-threaded-simd.wasm',\n
]);\n expect(validPaths).toContain(wasmPath);\n });\n\n it('backend init works when the path is valid and use
platform fetch',\n async () => {\n const usePlatformFetch = true;\n const validPath = '/base/wasm-out/tfjs-
backend-wasm.wasm';\n setWasmPath(validPath, usePlatformFetch);\n let wasmPath: string;\n const
realFetch = util.fetch;\n spyOn(util, 'fetch').and.callFake((path: string) => {\n wasmPath = path;\n
return realFetch(path);\n });\n expect(await tf.setBackend('wasm-test')).toBe(true);\n
expect(wasmPath).toBe(validPath);\n });\n\n // Disabling this test because it intermittently times out on CI.\n //
tslint:disable-next-line: ban\n it('backend init fails when the path is invalid and use platform fetch',\n async ()
=> {\n const usePlatformFetch = true;\n setWasmPath('invalid/path', usePlatformFetch);\n let
wasmPath: string;\n const realFetch = util.fetch;\n spyOn(util, 'fetch').and.callFake((path: string) => {\n
wasmPath = path;\n return realFetch(path);\n });\n expect(await tf.setBackend('wasm-
test')).toBe(false);\n expect(wasmPath).toBe('invalid/path');\n });\n\n it('backend init succeeds with default
path', async () => {\n expect(await tf.setBackend('wasm-test')).toBe(true);\n });\n\n it('setWasmPath called too

```

```
late', async () => {\n // Set an invalid path.\n setWasmPath('invalid/path');\n await tf.setBackend('wasm-  
test');\n\n // Setting the path too late.\n expect(() => setWasmPath('too/late'))\n .toThrowError(/The WASM  
backend was already initialized. Make sure/);\n });\n}"}]}

```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/index_test.js.map  
No license file was found, but licenses were detected in source scan.
```

```
{ "version": 3, "file": "Fill.js", "sourceRoot": "", "sources": [ "../src/kernels/Fill.ts" ], "names": [], "mappings": "AAAA;::;::;::;::;::;::;::;GAeG;AAGH,OAAO,EAAC,IAAI,EAAY,MAAM,uBAAuB,CAAC;AAItD,MAAM,UAAU,IAAI,CAAC,IA  
A8C;IACjE,MAAM,EAAC,KAAK,EAAE,EAAC,KAAK,EAAE,KAAK,EAAE,KAAK,EAAC,EAAE,OAAO,EA  
AC,GAAG,IAAI,CAAC;IACrD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,KAAK,CAA  
C,CAAC;IAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IACrD,MAAM,CAAC,IAAI,CAAC,KAAe,CAAC,CAAC;IAC9B,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MA  
AM,UAAU,GAAiB;IACtC,UAAU,EAAE,IAAI;IACbB,WAaw,EAae,MAAM;IACnB,UAAU,EAAE,IAAwB;C  
ACrC,CAAC", "sourcesContent": [ "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n *  
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in  
compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *\n * =====\n *\n * \n\nimport { KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { Fill, FillAttrs } from  
'@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\n\nexport function fill(args: { attrs:  
FillAttrs, backend: BackendWasm }) {\n  const { attrs: { shape, value, dtype }, backend } = args;\n  const out =  
backend.makeOutput(shape, dtype);\n  const outVals = backend.toArrayFromHeap(out);\n  outVals.fill(value as  
number);\n  return out;\n}\n\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName:  
'wasm',\n  kernelFunc: fill as { } as KernelFunc,\n};\n"}]}

```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-  
wasm/dist/kernels/Fill.js.map  
No license file was found, but licenses were detected in source scan.
```

```
/**  
* @license  
* Copyright 2018 Google LLC. All Rights Reserved.  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* http://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and
```

* limitations under the License.

* =====
*/

Found in path(s):

- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/test_node.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/test_node.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/test_node.js

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"FusedBatchNorm.js","sourceRoot":"","sources":["../src/kernels/FusedBatchNorm.ts"],"names":
:[],"mappings":"AAAA;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,cAAc,EAAMF,IAAI,EAAC,MAAM,uBAAB,CA
AC;AAI5I,IAAI,aAEgE,CAAC;AAErE,SAAS,KAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,C
AAC,KAAK,CAC9B,cAAc,EAAE,IAAI,CAAC,UAAU,EAC/B,CAAC,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAA
E,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,CAAC,CAAC,CAAC;AAC9E,CAAC;AAED,SAAS,cAAc,
CAAC,IAIvB;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MA
AM,EAAC,eAAe,EAAC,GAAG,KAAK,CAAC;IAChC,MAAM,EAAC,CAAC,EAAE,IAAI,EAAE,QAAQ,EAAE,
MAAM,EAAE,KAAK,EAAC,GAAG,MAAM,CAAC;IACID,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC
,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,MAAM,GAAG,OAAO,CAA
C,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACrD,MAAM,UAAU,GAAG,
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC7D,MAAM,
QAAQ,GAAG,MAAM,IAAI,IAAI,CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CA
AC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;IAC9E,MAAM,OAAO,GAAG,KAAK,IA
AI,IAAI,CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,
EAAE,CAAC,CAAC,CAAC,CAAC,CAAC;IAE3E,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,
CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,oCAAoC;IACpC,IAAI,IAAI,CAAC,aAAa,CA
AC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,KA
AK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE
nD,aAAa,CACT,GAAG,EAAE,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,OAAO,EAAE,eAAe,EAAE,KAAK,
CAAC,CAAC;IACxE,OAAO,GAAG,CAAC;AAcB,CAAC;AAED,MAAM,CAAC,MAAM,oBAAoB,GAAiB;IAC
hD,UAAU,EAAE,cAAc;IAC1B,WAaw,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACkB,UAAU,EAAE,cAA
kC;CAC/C,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc,
TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet
wasmBatchNorm: (\n  xId: number, meanId: number, varianceId: number, offsetId: number,\n  scaleId: number,
varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmBatchNorm = backend.wasm.cwrap(\n  FusedBatchNorm, null /* void */,\n  ['number', 'number',
'number', 'number', 'number', 'number', 'number'];\n)\n\nfunction fusedBatchNorm(args: {\n  backend:
BackendWasm,\n  inputs: FusedBatchNormInputs,\n  attrs: FusedBatchNormAttrs\n}): TensorInfo {\n  const
{backend, inputs, attrs} = args;\n  const {varianceEpsilon} = attrs;\n  const {x, mean, variance, offset, scale} =
inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const meanId =

```

```
backend.dataIdMap.get(mean.dataId).id;\n const varianceId = backend.dataIdMap.get(variance.dataId).id;\n const\noffsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n const scaleId = scale != null ?\nbackend.dataIdMap.get(scale.dataId).id : 0;\n\n const out = backend.makeOutput(x.shape, x.dtype);\n // Short-\ncircuit zero-sized tensors.\n if (util.sizeFromShape(x.shape) === 0) {\n return out;\n }\n\n const outId =\nbackend.dataIdMap.get(out.dataId).id;\n\n wasmBatchNorm(\n xId, meanId, varianceId, offsetId, scaleId,\nvarianceEpsilon, outId);\n return out;\n}\n\nexport const fusedBatchNormConfig: KernelConfig = {\n kernelName:\nFusedBatchNorm,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchNorm as { } as\nKernelFunc\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-\nwasm/dist/kernels/FusedBatchNorm.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"shared.js","sourceRoot":"","sources":["../../src/kernel_utils/shared.ts"],"names":[],"mappings":\nAAAA;:::;;GAEg;AAEH,uEAAuE;AACvE,gBAAgB;AAChB,iDAAiD;AACjD,OAAO,EAAC,UAAU,IAAI,\naAAa,EAAC,MAAM,0CAA0C,CAAC;AACrF,iDAAiD;AACjD,OAAO,EAAC,SAAS,IAAI,YAAY,EAAC,MAA\nM,0CAA0C,CAAC;AACnF,iDAAiD;AACjD,OAAO,EAAC,SAAS,IAAI,YAAY,EAAC,MAAM,0CAA0C,CAAC;\nAAEnF,OAAO,EAAC,aAAa,EAAE,YAAY,EAAE,YAAY,EAAC,CAAC","sourcesContent":["/*\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *\n *=====\n *\n * Import shared functionality from tfjs-backend-cpu without triggering\n * side effects.\n * tslint:disable-next-\n * line: no-imports-from-dist\n * import {concatImpl as concatImplCPU} from '@tensorflow/tfjs-backend-\ncpu/dist/shared';\n * tslint:disable-next-line: no-imports-from-dist\n * import {sliceImpl as sliceImplCPU} from\n * '@tensorflow/tfjs-backend-cpu/dist/shared';\n * tslint:disable-next-line: no-imports-from-dist\n * import {rangeImpl as\n * rangeImplCPU} from '@tensorflow/tfjs-backend-cpu/dist/shared';\n * export {concatImplCPU, rangeImplCPU,\n * sliceImplCPU};\n *"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-\nwasm/dist/kernel_utils/shared.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"FusedConv2D.js","sourceRoot":"","sources":["../../src/kernels/FusedConv2D.ts"],"names":[],"m\nappings": "AAAA;:::;;GAEg;AAEH,OAAO,EAAC,YAAY,EAAE,WAAW,EAA0E,MAAM,uBAAuB,CAAC\n;AAIzI,OAAO,EAAC,iBAAiB,EAAC,MAAM,SAAS,CAAC;AAEiC,IAAI,eAQQ,CAAC;AAEb,SAAS,KAAK,C\nAAC,OAAoB;IACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,WAAW,EAAE,IAAI,CAAC,UAA\nU,EAAE;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAA\nQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAA\nQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAA\nQ;QACR,QAAQ;KACT,CAAC,CAAC;AAEL,CAAC;AAED,SAAS,WAAW,CAAC,IAIpB;IACC,MAAM,EAAC,\nMAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAE,MAAM,E\nAAE,IAAI,EAAE,sBAAsB,EAAC,GAAG,MAAM,CAAC;IACzD,MAAM,EACJ,OAAO,EACP,GAAG,EACH,SA
```

AS,EACT,UAAU,EACV,eAAe,EACf,UAAU,EACV,cAAc,EACf,GAAG,KAAK,CAAC;IAEV,MAAM,QAAQ,G
AAG,YAAY,CAAC,iBAaIB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EAAE
,SAAS,EACrE,GAAG,EAAE,eAAe,CAAC,CAAC;IAE1B,MAAM,eAAe,GACjB,iBAaIB,CAAC,UAAkD,CAAC,
CAAC;IAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;QAC3B,MAAM,IAAI,KAAK,CACX,GAAG,UAAU,gDAAGD;YA
C7D,sBAAsB,CAAC,CAAC;KAC7B;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,
GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,cAAc,GAAG,QAAQ,CAAC,
WAAW,CAAC;IAE5C,IAAI,MAAM,GAAG,CAAC,CAAC;IACf,IAAI,IAAI,IAAI,IAAI,EAAE;QACHB,MAAM,
QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;QACpD,IAAI,QA
AQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;YAC/B,MAAM,IAAI,KAAK,CACX,gDAAGD;gBACHD
,QAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,CAAC;SACvC;QACD,IAAI,QAAQ,CAAC,KAAK,
CAAC,CAAC,CAAC,KAAK,cAAc,EAAE;YACxC,MAAM,IAAI,KAAK,CACX,2BAA2B,QAAQ,CAAC,KAAK,
aAAa;gBACtD,wCAAwC,cAAc,GAAG,CAAC,CAAC;SACHe;QACD,MAAM,GAAG,QAAQ,CAAC,EAAE,CA
AC;KACtB;IAED,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,
CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MA
AM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,O
AAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,M
AAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,MAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7
C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,C
AAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,MAAM,SAAS,GAAG,QAAQ,CAAC,O
AAO,CAAC,IAAI,KAAK,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC;IAC3D,MA
AM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;IACrC,MAAM,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC;IAC
nC,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC;IAEjC,IAAI,UAAU,KAAK,MAAM,EAAE;QACzB,MA
AM,IAAI,KAAK,CACX,wDAAwD;YACxD,GAAG,UAAU,uBAAuB,CAAC,CAAC;KAC3C;IAED,MAAM,GA
AG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,MAAM,KA
AK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC
nD,MAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI,CAAC,CAAC;QAC7D,CAAC,CAAC,CAAC;QACH,OAAO,C
AAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE5D,eAAe,CACX,G
AAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,YAAY,EAAE,WAAW,EACtE,MAAM,EA
AE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE,YAAY,E
AAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EAAE,KAA
K,CAAC,CAAC;IAE3E,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,iBAaIB,GAAiB;IA
C7C,UAAU,EAAE,WAAW;IACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACHB,UAAU,EAAE,
WAA+B;CAC5C,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
<http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

=====
*\n\nimport {backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc,
Tensor4D} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{FusableActivation} from './types';\n\nlet wasmFusedConv2d:\n  (xId: number, batchSize: number, inputHeight:
number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number,\n  biasId: number,
padTop: number, padRight: number, padBottom: number,\n  padLeft: number, isSamePad: number,
dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels: number, activation: number,\n  preluActivationWeightsId: number,

```

```

leakyreluAlpha: number, outId: number) =>\n    void;\n\nfunction setup(backend: BackendWasm) {\n
wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', //
inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n ]);\n\nfunction
fusedConv2d(args: {\n inputs: FusedConv2DInputs,\n backend: BackendWasm,\n attrs: FusedConv2DAttrs\n})
{\n const {inputs, attrs, backend} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const {\n
strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } =
attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as
Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode);\n\n const fusedActivation =\n
FusableActivation[activation as {}] as keyof typeof FusableActivation;\n\n if (fusedActivation == null) {\n throw
new Error(\n ` ${activation} activation not yet supported for FusedConv2D ` +\n `in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if
(bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `FusedConv2D only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}.`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not ` +\n `match the number of output channels
(${outputChannels})`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedConv2D does not support
dataFormat:` +\n ` ${dataFormat}'. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n kernelName: FusedConv2D,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/FusedConv2D.js.map

```

No license file was found, but licenses were detected in source scan.

```

/**

```

```

* @license

```

```

* Copyright 2020 Google LLC. All Rights Reserved.

```

```

* Licensed under the Apache License, Version 2.0 (the "License");

```

* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
* =====
*/

Found in path(s):

- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernel_utils/shared.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Pack.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Mean.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/OneHot.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Identity.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cumsum.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/register_all_kernels.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/SplitV.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Neg.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/OnesLike.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ZerosLike.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Neg.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Select.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Prod.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Prod.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Step.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV4.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Pack.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/base.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Equal.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/flags_wasm.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Floor.d.ts
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Range.js
- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-

wasm/dist/kernels/Conv2DBackpropInput.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Cumsum.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sqrt.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/OnesLike.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/flags_wasm.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Conv2DBackpropInput.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Prod.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Step.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/base.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Fill.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Range.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Neg.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Reverse.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NotEqual.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SplitV.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Floor.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Softmax.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/flags_wasm.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Mean.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Identity.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sqrt.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/NonMaxSuppressionV4.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ZerosLike.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/TopK.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/TopK.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Select.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Select.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Softmax.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/NotEqual.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/TopK.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Sqrt.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/base.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/ZerosLike.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-

wasm/dist/kernels/OneHot.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/OnesLike.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Conv2DBackpropInput.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Floor.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Step.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernel_utils/shared.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/register_all_kernels.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Fill.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Softmax.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Mean.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Reverse.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NotEqual.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/wasm-out/tfjs-backend-wasm-threaded-simd.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV4.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Equal.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Pack.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Equal.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SplitV.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Reverse.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Range.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernel_utils/shared.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Fill.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cumsum.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Identity.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/OneHot.ts
No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Tile.js","sourceRoot":"","sources":["../../src/kernels/Tile.ts"],"names":[],"mappings":"AAAA;;;;
;GAEg;AAEH,OAAO,EAA2B,IAAI,EAAwB,MAAM,uBAAuB,CAAC;AAI5F,OAAO,EAAC,QAAQ,EAA
C,MAAM,SAAS,CAAC;AAEjC,IAAI,QAE2D,CAAC;AAEhE,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAA
G,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,CAAC,UAAU,EAAE;QACnD,QAAQ;QACR,OA
AO;QACP,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ,CAAG,SAAS;KACrB,CAAC,CAAC;AACL,CAA
C;AAED,SAAS,IAAI,CACT,IAAkE;IACpE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,I
AAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,
CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,EAAC,I
AAI,EAAC,GAAG,KAAK,CAAC;IAErB,MAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAA
```

C,MAAM,CAAC,CAAC;IACrD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;KACpC;IACD,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,MAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IAEtE,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,aAAa,EAAE,QAAQ,CAAC,MAAM,EACHe,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IACHC,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,UAAU,GAAiB;IACtC,UAAU,EAAE,IAAI;IACHb,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACHb,UAAU,EAAE,IAAwB;CACrC,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\n\nlet wasmTile: (n xId: number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array, newShapeSize: number, dtype: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTile = backend.wasm.cwrap(Tile, null /* void */, [\n    'number', // x_id\n    'array', // x_shape\n    'number', // x_shape.length\n    'array', // new_shape\n    'number', // new_shape.length\n    'number' // out_id\n  ]);\n\n  function tile(\n    args: { inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs }) {\n    const { inputs, backend, attrs } = args;\n    const { x } = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const { reps } = attrs;\n\n    const newShape: number[] = new Array(x.shape.length);\n    for (let i = 0; i < newShape.length; i++) {\n      newShape[i] = x.shape[i] * reps[i];\n    }\n\n    const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n    const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n\n    const out = backend.makeOutput(newShape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmTile(xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length, CppDType[out.dtype], outId);\n\n    return out;\n  }\n\n  export const tileConfig: KernelConfig = {\n    kernelName: Tile,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: tile as {} as KernelFunc\n  };\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tile.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"LogicalAnd.js","sourceRoot":"","sources":["../../src/kernels/LogicalAnd.ts"],"names":[],"mappings":"AAAA;:::;;GAEg;AACH,OAAO,EAAe,UAAU,EAAC,MAAM,uBAAuB,CAAC;AAE/D,OAAO,EAAc,wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAAM,gBAAgB,GACzB,wBAAwB,CAAC,UAAU,EAAE,qBAAqB,EAAE,MAAM,CAAC,CAAC","sourceContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
```

License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\n createBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LogicalAnd.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Equal.js","sourceRoot":"","sources":["../../src/kernels/Equal.ts"],"names":[],"mappings":"AAA\nA;;;;;;;;;;;;;GAeG;AACH,OAAO,EAAC,KAAK,EAAe,MAAM,uBAAuB,CAAC;AAE1D,OAAO,EAAC,wBAAw\nB,EAAC,MAAM,iBAAiB,CAAC;AAEzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAA\nM,WAAW,GACpB,wBAAwB,CAAC,KAAK,EAAE,qBAAqB,EAAE,MAAM,CAAC,CAAC","sourcesContent":["\n\n*\n @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License,\n * Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may\n * obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by\n * applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the\n * License for the specific language governing permissions and\n * limitations under the License.\n *"]}
```

```
=====\n*\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const equalConfig: KernelConfig =\n createBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Equal.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Ceil.js","sourceRoot":"","sources":["../../src/kernels/Ceil.ts"],"names":[],"mappings":"AAAA;;;;\n;;;;;;;;;;;;;GAeG;AACH,OAAO,EAAe,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAEzD,OAAO,EAAC,uBAAuB,EAA\nC,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC,CAAC\n","sourcesContent":["\n\n*\n @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under\n * the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by\n * applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *"]}
```

```
=====\n*\nimport {KernelConfig, Ceil} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Ceil.js.map

No license file was found, but licenses were detected in source scan.

```
 {"version":3,"file":"Reverse.js","sourceRoot":"","sources":["../../src/kernels/Reverse.ts"],"names":[],"mappings":"AAA;:::;;;GAG;AAEH,OAAO,EAA2B,OAAO,EAA2C,IAAI,EAAC,MAAM,uBAuB,CAAC;AAIvH,OAAO,EAAC,QAAQ,EAAC,MAAM,YAAY,CAAC;AACpC,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AAEIC,IAAI,WAE8C,CAAC;AAEnD,SAAS,KAAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,EAAE;QAC9C,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ,CAAG,SAAS;KACrB,CAAC,CAAC;AACL,CAAC;AAED,MAAM,UAAU,OAAO,CAACnB,IAAwE;IAEIE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,IAAI,EAAC,GAAG,KAAK,CAAC;IAErB,MAAM,IAAI,GAAG,IAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAEHd,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;KACzC;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9D,MAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAErE,WAAW,CACP,GAAG,EAAE,SAAS,EAAE,IAAI,CAAC,MAAM,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IAEvE,MAAM,QAAQ,GACV,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,GAAG,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;IAEIE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAChC,OAAO,QAAQ,CAAC;AACIB,CAAC;AAED,MAAM,CAAC,MAAM,aAAa,GAAiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,OAA2B;IACvC,SAAS,EAAE,KAAK;CACjB,CAAC", "sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n *\n\nimport { KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { identity } from './Identity';\nimport { reshape } from './Reshape';\n\nlet wasmReverse: (\n  xId: number, axes: Uint8Array, axesLength: number, outShape: Uint8Array, outShapeLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmReverse = backend.wasm.cwrap(Reverse, null, [\n    'number', // x_id\n    'array', // axes\n    'number', // axes_length\n    'array', // out_shape\n    'number', // out_shape_length\n    'number', // out_id\n  ]);\n\n  export function reverse(\n    args: { inputs: ReverseInputs, backend: BackendWasm, attrs: ReverseAttrs }):\n    TensorInfo {\n    const { inputs, backend, attrs } = args;\n    const { x } = inputs;\n    const { dims } = attrs;\n\n    const axes = util.parseAxisParam(dims, x.shape);\n\n    if (x.shape.length === 0) {\n      return identity({ inputs: { x }, backend });\n    }\n\n    const out = backend.makeOutput(x.shape, x.dtype);\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const axesBytes = new Uint8Array(new Int32Array(axes).buffer);\n    const outShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n    wasmReverse(\n      xId, axesBytes, axes.length, outShapeBytes, x.shape.length, outId);\n\n    const reshaped =\n      reshape({ inputs: { x: out }, attrs: { shape: x.shape }, backend);\n\n    backend.disposeData(out.dataId);\n    return reshaped;\n  }\n\n  export const reverseConfig: KernelConfig = {\n    kernelName: Reverse,\n    backendName: 'wasm',\n    kernelFunc: reverse as {} as KernelFunc,\n    setupFunc:
```

```
setup\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Reverse.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Exp.js","sourceRoot":"","sources":["../../src/kernels/Exp.ts"],"names":[],"mappings":"AAAA;;;;;GAG;AACH,OAAO,EAAC,GAAG,EAAe,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,SAAS,GAaiB,uBAAuB,CAAC,GAAG,EAAE,SAAS,CAAC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Exp.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"base.js","sourceRoot":"","sources":["../../src/base.ts"],"names":[],"mappings":"AAAA;;;;;GAG;AAEH,OAAO,cAAc,CAAC;AAEtB,OAAO,EAAC,eAAe,EAAC,MAAM,uBAAuB,CAAC;AAEtD,OAAO,EAAC,WAAW,EAAE,IAAI,EAAC,MAAM,gBAAgB,CAAC;AAEjD,OAAO,EAAC,WAAW,EAAE,eAAe,EAAC,eAAe,EAAC,WAAW,EAAE,YAAY,EAAC,MAAM,gBAAgB,CAAC;AACxG,OAAO,EAAC,OAAO,IAAI,YAAY,EAAC,MAAM,WAAW,CAAC;AAEiD,MAAM,aAAa,GAAG,CAAC,CAAC;AACxB,eAAe,CAAC,MAAM,EAAE,KAAK,IAAI,EAAE;IACjC,MAAM,EAAC,IAAI,EAAC,GAAG,MAAM,IAAI,EAAE,CAAC;IAC5B,OAAO,IAAI,WAAW,CAAC,IAAI,CAAC,CAAC;AAC/B,CAAC,EAAE,aAAa,CAAC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport './flags_wasm';\nimport {registerBackend} from '@tensorflow/tfjs-core';\nimport {BackendWasm, init} from './backend_wasm';\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath, setWasmPaths} from './backend_wasm';\nexport {version as version_wasm} from './version';\nconst WASM_PRIORITY = 2;\nregisterBackend('wasm', async () => {\n  const {wasm} = await init();\n  return new BackendWasm(wasm);\n}, WASM_PRIORITY);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/base.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Greater.js","sourceRoot":"","sources":["../../src/kernels/Greater.ts"],"names":[],"mappings":"AA
AA;;;;;;;;;;;;;GAeG;AACH,OAAO,EAAC,OAAO,EAeE,MAAM,uBAAuB,CAAC;AAE5D,OAAO,EAAC,wBAA
wB,EAAC,MAAM,iBAAiB,CAAC;AAEzD,MAAM,qBAAqB,GAAG,KAAC,CAAC;AACpC,MAAM,CAAC,MA
AM,aAAa,GACtB,wBAAwB,CAAC,OAAO,EAeE,qBAAqB,EAeE,MAAM,CAAC,CAAC","sourcesContent":["/
**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License,
Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by
applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
*\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\ncreateBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Greater.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"NonMaxSuppression_util.js","sourceRoot":"","sources":["../../src/kernels/NonMaxSuppression_
util.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;;;;GAeG;AAWH;;GAGG;AACH,MAAM,UAAU,iBAAiB,CAC7B
,OAAoB,EAeE,SAAiB;IACzC,MAAM,MAAM,GAAG,IAAI,UAAU,CAAC,OAAO,CAAC,IAAI,CAAC,MAAM,
CAAC,MAAM,EAeE,SAAS,EAeE,CAAC,CAAC,CAAC;IACxE,MAAM,gBAAgB,GAAG,MAAM,CAAC,CAA
C,CAAC,CAAC;IACnC,MAAM,YAAY,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IAC/B,MAAM,eAAe,GAA
G,MAAM,CAAC,CAAC,CAAC,CAAC;IACIC,MAAM,aAAa,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IAC
hC,oEAAoE;IACpE,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC;IAC9B,OAAO,EAAC,gBAA
gB,EAeE,YAAY,EAeE,eAAe,EAeE,aAAa,EAAC,CAAC;AAC1E,CAAC","sourcesContent":["/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
*\n\nimport {BackendWasm} from '../backend_wasm';\n\n// Analogous to `struct Result` in
`non_max_suppression_impl.h`\n\ninterface Result {\n  pSelectedIndices: number;\n  selectedSize: number;\n  pSelectedScores: number;\n  pValidOutputs: number;\n}\n\n/**\n * Parse the result of the c++ method, which has the
shape equivalent to\n * `Result`\n *\nexport function parseResultStruct(\n  backend: BackendWasm, resOffset:
number): Result {\n  const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n  const
pSelectedIndices = result[0];\n  const selectedSize = result[1];\n  const pSelectedScores = result[2];\n  const
pValidOutputs = result[3];\n  // Since the result was allocated on the heap, we have to delete it.\n  backend.wasm._free(resOffset);\n  return {pSelectedIndices, selectedSize, pSelectedScores,
pValidOutputs};\n}\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppression_util.js.map

No license file was found, but licenses were detected in source scan.

```
 {"version":3,"file":"Abs.js","sourceRoot":"","sources":["../../src/kernels/Abs.ts"],"names":[],"mappings":"AAAA;::::;  
 ::::::::::;GAeG;AACH,OAAO,EAAE,GAAG,EAAe,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAE,uBAAuB,EA  
 AC,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,SAAS,GAaiB,uBAAuB,CAAC,GAAG,CAAC,CA  
 AC","sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed  
 under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
 License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
 on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
 implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
 License.\n *  
 =====\n *\nimport { Abs, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from  
 './unary_kernel';\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Abs.js.map

No license file was found, but licenses were detected in source scan.

```
 {"version":3,"file":"Conv2DBackpropInput.js","sourceRoot":"","sources":["../../src/kernels/Conv2DBackpropInput.t  
 s"],"names":[],"mappings":"AAAA;::::;:::GAeG;AAEH,OAAO,EAAE,YAAE,EAAE,mBAAmB,EAA6F,IAAI,  
 EAAE,MAAM,uBAAuB,CAAC;AAIzK,IAAI,uBAQ8C,CAAC;AAEnD,SAAS,KAAK,CAAC,OAAoB;IACjC,uB  
 AAuB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,mBAAmB,EAAE,IAAI,EAAE;QACtE,QAAQ;QACR,Q  
 AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;Q  
 ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q  
 AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;Q  
 ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AAEL,CAAC;AAED,SAAS,mBAAmB,CAAC,I  
 AI5B;IACC,MAAM,EAAE,OAAO,EAAE,MAAM,EAAE,KAAK,EAAE,GAAG,IAAI,CAAC;IACtC,MAAM,EA  
 AC,EAAE,EAAE,MAAM,EAAE,GAAG,MAAM,CAAC;IAC5B,MAAM,EAAE,OAAO,EAAE,GAAG,EAAE,UA  
 AU,EAAE,eAAe,EAAE,UAAU,EAAE,GAAG,KAAK,CAAC;IAEtE,MAAM,SAAS,GAAG,CAAC,CAAC;IAEpB  
 ,MAAM,WAAW,GAAG,YAAE,CAAC,uBAAuB,CAAC,UAAU,CAAC,CAAC;IACrE,MAAM,QAAQ,GAAG,Y  
 AAY,CAAC,iBAAiB,CAC3C,UAAU,EAAE,MAAM,CAAC,KAAyC,EAAE,OAAO,EACrE,SAAS,EAAE,GAAG,  
 EAAE,eAAe,EAAE,KAAK,CAAC,eAAe,EAAE,WAAW,CAAC,CAAC;IACzE,MAAM,EACJ,SAAS,EACT,YAA  
 Y,EACZ,WAAW,EACX,UAAU,EACV,QAAQ,EACR,OAAO,EACP,WAAW,EACX,SAAS,EACT,QAAQ,EACR,  
 YAAE,EACZ,WAAW,EACZ,GAAG,QAAQ,CAAC;IAEb,MAAM,MAAM,GAAG,YAAE,GAAG,CAAC,GAAG,  
 QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACvD,MAAM,OAAO,GAAG,WAAW,GAAG,CAAC,GAAG,QAA  
 Q,CAAC,OAAO,CAAC,IAAI,CAAC;IAExD,MAAM,cAAc,GAAG,QAAQ,CAAC,UAAU,KAAK,cAAc,CAAC;I  
 AC9D,MAAM,SAAS,GAAG,IAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC;IACxD,MAAM,SA  
 AS,GAAG,IAAI,CAAC,cAAc,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC;IACbD,MAAM,CAAC,KAAK,EAAE,  
 KAAK,EAAE,KAAK,CAAC,GAAG,IAAI,CAAC,cAAc,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC;IACbE,MA  
 AM,YAAE,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACIC,MAAM,UAAU,GAAG,cAAc,CAAC,CAAC,CAA  
 C,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC;IACbE,MAAM,UAAU,  
 GAAG,cAAc,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC;IACrD,MA  
 AM,cAAc,GAAG,cAAc,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC;I
```


ACzD,MAAM,YAAy,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACiC,MAAM,UAAU,GAAG,cAAc,CAAC,C
AAC,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC;IACHe,MAA
M,UAAU,GAAG,cAAc,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC;I
ACrD,MAAM,cAAc,GAAG,cAAc,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAA
C,CAAC;IAEzD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,SAAS,CAA
C,CAAC;IAC5D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CA
AC,CAAC,EAAE,CAAC;IACnD,MAAM,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,EAAE,CAAC
,MAAM,CAAC,CAAC,EAAE,CAAC;IACjD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,uBAAuB,CACnB,IAAI,EAAE,QAAQ,EAAE,SAAS,
EAAE,YAAy,EAAE,WAAW,EAAE,QAAQ,EAAE,OAAO,EACvE,UAAU,EAAE,SAAS,EAAE,QAAQ,EAAE,W
AAW,EAAE,YAAy,EAAE,WAAW,EACvE,MAAM,EAAE,OAAO,EAAE,KAAK,EAAE,KAAK,EAAE,KAAK,
EAAE,YAAy,EAAE,UAAU,EAC9D,UAAU,EAAE,cAAc,EAAE,YAAy,EAAE,UAAU,EAAE,UAAU,EACHe,c
AAc,EAAE,KAAK,CAAC,CAAC;IAC3B,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,y
BAAyB,GAaiB;IACrD,UAAU,EAAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IA
ChB,UAAU,EAAE,mBAAuB;CACpD,CAAC", "sourcesContent": ["/*\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n *\n\nimport { backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n outHeight: number, outWidth: number, outChannels: number,\n strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n xRowStride: number, xColStride: number, xChannelStride: number,\n yBatchStride: number, yRowStride:
number, yColStride: number,\n yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n 'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n 'number', //
filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n 'number', //
outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number', //
fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number', //
yChannelStride\n 'number', // outId\n]);\n\nfunction conv2DBackpropInput(args: {\n backend:
BackendWasm,\n inputs: Conv2DBackpropInputInputs,\n attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n const { backend, inputs, attrs } = args;\n const { dy, filter } = inputs;\n const { strides, pad, dataFormat,
dimRoundingMode, inputShape } = attrs;\n\n const dilations = 1;\n const \$dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
false /* depthwise */, \$dataFormat);\n const {\n batchSize,\n filterHeight,\n filterWidth,\n inChannels,\n inHeight,\n inWidth,\n outChannels,\n outHeight,\n outWidth,\n strideHeight,\n strideWidth\n } =
convInfo;\n\n const topPad = filterHeight - 1 - convInfo.padInfo.top;\n const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n const dxStrides =
util.computeStrides(convInfo.inShape);\n const dyStrides = util.computeStrides(dy.shape);\n const [fltS0, fltS1,

```

fltS2] = util.computeStrides(filter.shape);\n const xBatchStride = dxStrides[0];\n const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n const xColStride = isChannelsLast ? dxStrides[2] : 1;\n const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n const yBatchStride = dyStrides[0];\n const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n const yColStride = isChannelsLast ? dyStrides[2] : 1;\n const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n const out = backend.makeOutput(convInfo.inShape,
'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const dyId =
backend.dataIdMap.get(dy.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
wasmConv2DBackpropInput(\n  dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n  topPad, leftPad, fltS0, fltS1, fltS2,\n xBatchStride, xRowStride,\n  xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n yChannelStride, outId);\n return out;\n}\n\nexport const conv2DBackpropInputConfig: KernelConfig = {\n
kernelName: Conv2DBackpropInput,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Conv2DBackpropInput.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"ArgMax.js","sourceRoot":"","sources":["../../src/kernels/ArgMax.ts"],"names":[],"mappings":":A
AAA;,,,,,;;GAEg;AAEH,OAAO,EAAC,MAAM,EAAuD,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIxG,OAA
O,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AACvD,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;
AAEjC,IAAI,QAESb,CAAC;AAE3B,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,C
AAC,KAAK,CAAC,MAAM,EAAE,IAAI,CAAC,UAAU,EAAE;QACrD,QAAQ;QACR,QAAQ;QACR,QAAQ;QA
CR,QAAQ;QACR,QAAQ,CAAG,SAAS;KACrB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,MAAM,CACX,IAA
sE;IACxE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAA
C,IAAI,EAAC,GAAG,KAA0B,CAAC;IAC1C,MAAM,EAAC,CAAC,EAAC,GAAG,MAA4B,CAAC;IACzC,MA
AM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CA
AC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,U
AAU,EAAE,IAAI,EAAE,kBAakB,EAAC,GACxC,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,C
AAC;IAE9C,IAAI,kBAakB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,U
AAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GAAG,EAAE;YACxB,6DAA6D;
YAC7D,oBAAoB;YACpB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;SACxB;KACF;I
AED,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,C
AAC;IAC1C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;IACID,M
AAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,C
AAC;IACnD,MAAM,SAAS,GAAG,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC;IAChD,MA
AM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;IACvC,QAAQ,CAAC
,OAAO,EAAE,QAAQ,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,KAAK,CAAC,CA
AC;IAEtE,IAAI,kBAakB,EAAE;QACtB,oCAAoC;QACpC,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAA
M,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,YAAY,GA
AiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;IACtC,SAAS,
EAAE,KAAK;CACjB,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

```

governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\nlet wasmFunc: (\n  xId: number, dtype: number, outerSize: number, innerSize: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // outer_size\n    'number', // inner_size\n    'number' // out_id\n  ]);\n\n  function argmax(\n    args: {\n      inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs\n    }) {\n    const { backend, inputs, attrs } = args;\n    const { axis } = attrs as {} as ArgMaxAttrs;\n    const { x } = inputs as {} as ArgMaxInputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const { transposed, axes, inputWasTransposed } =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId !== xId) {\n        // transpose was not a no-op. We will need to dispose of this\n        // once we are done.\n        input = transposed;\n        inputId = transposedId;\n      }\n    }\n\n    const outShape = input.shape.slice(0, -1);\n    const out = backend.makeOutput(outShape, 'int32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const outerSize = util.sizeFromShape(out.shape);\n    const innerSize = input.shape[axes[0]];\n    wasmFunc(inputId, CppDType[input.dtype], outerSize, innerSize, outId);\n\n    if (inputWasTransposed) {\n      // dispose of the transposed tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    return out;\n  }\n\n  export const argMaxConfig: KernelConfig = {\n    kernelName: ArgMax,\n    backendName: 'wasm',\n    kernelFunc: argmax as {} as KernelFunc,\n    setupFunc: setup\n  };"}\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ArgMax.js.map

No license file was found, but licenses were detected in source scan.

```
/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n * =====\n */
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Any.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SpaceToBatchND.js

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/BatchToSpaceND.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/All.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/BatchToSpaceND.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.fesm.min.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/SpaceToBatchND.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Round.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Ceil.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/All.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Tan.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Transform.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tan.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/BatchToSpaceND.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Elu.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Cosh.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Transform.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/MirrorPad.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Transform.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Any.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SpaceToBatchND.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Ceil.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Elu.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/StridedSlice.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/StridedSlice.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Any.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/StridedSlice.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.es2017.min.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Round.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/All.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tan.d.ts
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/MirrorPad.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.min.js

OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { FusableActivation } from './types';\n\nlet wasmFusedMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number, bShape: Uint8Array, bShapeSize: number, transposeA: boolean, transposeB: boolean, activation: number, biasId: number, preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul, null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n    'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n    'number', // activation\n    'number', // biasId\n    'number', // preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number' // out_id\n  ]);\n\n  function fusedBatchMatMul(args: {\n    inputs: _FusedMatMulInputs, backend: BackendWasm, attrs: _FusedMatMulAttrs\n  }) {\n    const { inputs, backend, attrs } = args;\n    const { a, b, bias, preluActivationWeights } = inputs;\n\n    if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n      throw new Error(`_FusedMatMul for non non-float32 tensors not yet supported.`);\n    }\n\n    const { transposeA, transposeB, activation, leakyreluAlpha } = attrs;\n    const aId = backend.dataIdMap.get(a.dataId).id;\n    const bId = backend.dataIdMap.get(b.dataId).id;\n\n    let biasId = 0;\n    if (bias !== null) {\n      const biasData = backend.dataIdMap.get(bias.dataId);\n      if (biasData.shape.length !== 1) {\n        throw new Error(`_FusedMatMul only supports rank-1 bias but got ` +\n          ` ` +\n          `rank ${biasData.shape.length}.`);\n      }\n      biasId = biasData.id;\n    }\n    const preluActivationWeightsId = preluActivationWeights === null ?\n      0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n    const fusedActivation =\n      FusableActivation[activation as { } as keyof typeof FusableActivation];\n    if (fusedActivation === null) {\n      throw new Error(` ${activation} activation not yet supported for FusedConv2D ` +\n        ` ` +\n        `in the wasm backend.`);\n    }\n    const leftDim = transposeA ? a.shape[2] : a.shape[1];\n    const rightDim = transposeB ? b.shape[1] : b.shape[2];\n    const batchDim = a.shape[0];\n\n    const out = backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n    const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n    wasmFusedMatMul(\n      aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length, transposeA, transposeB, fusedActivation, biasId, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n    return out;\n  }\n\n  export const fusedMatMulConfig: KernelConfig = {\n    kernelName: _FusedMatMul, backendName: 'wasm', setupFunc: setup, kernelFunc: fusedBatchMatMul as { } as KernelFunc\n  };\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/_FusedMatMul.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"test_node.js","sourceRoot":"","sources":["../src/test_node.ts"],"names":[],"mappings":"AAAA;;;GAG;AAEH,6BAA6B;AAC7B,OAAO,SAAS,CAAC;AAEjB,iDAAiD;AACjD,OAAO,EAAC,WAAW,EAAC,MAAM,yCAAyC,CAAC;AACpE,OAAO,OAAO,MAAM,SAAS,CAAC;AAE9B,KAAK,CAAC,eAAe,GAA G,QAAQ,CAAC;AAEjC,OAAO,CAAC,EAAE,CAAC,oBAAoB,EAAE,CAAC,CAAC,EAAE;IACnC,MAAM,CAAC,CAAC;AACV,CAAC,CAAC,CAAC;AAEH,WAAW,CAAC,CAAC,EAAC,IAAI,EAAE,WAAW,EAAE,WAAW,EAAE,MAAM,EAAE,UAAU,EAAE,IAAI,EAAC,CAAC,CAAC,CAAC;AAEIE,MAAM,MAAM,GAAG,IAAI,OAAO,CAAC,EAAE,CAAC,CAAC;AAC/B,MAAM,CAAC,UAAU,CAAC,EAAC,UAAU,EAAE,CAAC,kBAAB,CAAC,EAAE,MAAM,EAAE,KAAK,EAAC,CAAC,CAAC;AAErE,IAAI,OAAO,CAAC,GAAG,CAAC,YAAY,EAAE;IAC5B,MAAM,CAAC,IAAI,CAAC,OAAO,CAAC,GAAG,CAAC,YAAY,CAAC,CAAC;CACvC;AAED,
```


copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/
import { backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';
import { BackendWasm } from './backend_wasm';
import { permuteAxesAndTranspose } from './kernel_utils';
import { CppDType } from './types';
let wasmMin: (xId: number, dtype: number, reduceSize: number, outId: number) => void;
function setup(backend: BackendWasm): void {
  wasmMin = backend.wasm.cwrap(Min, null /*void*/, [
    'number', // x_id
    'number', // dtype
    'number', // reduce_size
    'number', // out_id
  ]);
  function min(args: { backend: BackendWasm, inputs: MinInputs, attrs: MinAttrs }): TensorInfo {
    const { backend, inputs, attrs } = args;
    const { axis, keepDims } = attrs;
    const { x } = inputs;
    const xId = backend.dataIdMap.get(x.dataId).id;
    let inputId = xId;
    let input = x;
    const { transposed, axes, originalAxes, inputWasTransposed } =
    permuteAxesAndTranspose(x, axis, backend);
    if (inputWasTransposed) {
      const transposedId = backend.dataIdMap.get(transposed.dataId).id;
      if (transposedId !== xId) {
        // transpose was not a no-op. We will need to dispose of this
        // once we are done.
        input = transposed;
        inputId = transposedId;
      }
    }
    const inputRank = input.shape.length;
    backend_util.assertAxesAreInnerMostDims('min', axes, inputRank);
    const [outShape, reduceShape] = backend_util.computeOutAndReduceShapes(input.shape, axes);
    const reduceSize = util.sizeFromShape(reduceShape);
    const out = backend.makeOutput(outShape, input.dtype);
    if (util.sizeFromShape(input.shape) !== 0) {
      const outId = backend.dataIdMap.get(out.dataId).id;
      wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);
    }
    if (inputWasTransposed) {
      // dispose of the transposed tensor.
      backend.disposeData(transposed.dataId);
    }
    if (keepDims) {
      // reshape
      const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);
      out.shape = newShape;
    }
    return out;
  }
  export const minConfig: KernelConfig = {
    kernelName: Min,
    backendName: 'wasm',
    setupFunc: setup,
    kernelFunc: min as KernelFunc
  };
}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Min.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"ExpandDims.js","sourceRoot":"","sources":["../../src/kernels/ExpandDims.ts"],"names":[],"map pings":"AAAA;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,UAAU,EAA+D,IAAI,EAAC,MAAM,uBAAuB,CAAC;AA GpH,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AAEIC,MAAM,UAAU,UAAU,CAAC,IAIIB;IACC, MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,KAAK,E AAC,GAAG,MAAM,CAAC;IACvB,MAAM,EAAC,GAAG,EAAC,GAAG,KAAK,CAAC;IAEpB,MAAM,SAAS, GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAA C,KAAK,EAAE,CAAC;IACrC,IAAI,IAAI,GAAG,GAAG,CAAC;IACf,IAAI,GAAG,GAAG,CAAC,EAAE;QACX ,mDAAmD;QACnD,IAAI,CAAC,MAAM,CACP,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,EACv B,GAAG,EAAE,CAAC,iCAAiC,CAAE,CAAC,SAAS,GAAG,CAAC,CAAC,KACpD,SAAS,GAAG,CAAC,CAA C;QACtB,IAAI,GAAG,SAAS,GAAG,GAAG,GAAG,CAAC,CAAC;KAC5B;IACD,QAAQ,CAAC,MAAM,CAAC ,IAAI,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;IAE5B,OAAO,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CA AC,EAAE,KAAK,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC ,CAAC;AACIE,CAAC;AAED,MAAM,CAAC,MAAM,gBAAgB,GAAiB;IAC5C,UAAU,EAAE,UAAU;IACtB,W AAW,EAAE,MAAM;IACnB,UAAU,EAAE,UAA8B;CAC3C,CAAC","sourcesContent":["/**
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the
 * "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the
```


License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {reshape} from
'./Reshape';\n\nexport function expandDims(args: {\n  inputs: ExpandDimsInputs,\n  attrs: ExpandDimsAttrs,\n  backend: BackendWasm\n}) {\n  const {inputs, attrs, backend} = args;\n  const {input} = inputs;\n  const {dim} =
attrs;\n\n  const inputRank = input.shape.length;\n  const newShape = input.shape.slice();\n  let $dim = dim;\n  if
(dim < 0) {\n    // Negative value is counted from the tail of rank.\n    util.assert(\n      -(inputRank + 1) <= dim,\n      () => `Axis must be in the interval [${-(inputRank + 1)}, ${\n        inputRank}]);\n    $dim = inputRank + dim
+ 1;\n  }\n  newShape.splice($dim, 0, 1);\n  return reshape({inputs: {x: input}, backend, attrs: {shape:
newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'wasm',\n  kernelFunc: expandDims as {} as KernelFunc,\n};\n}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ExpandDims.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Tanh.js","sourceRoot":"","sources":["../../src/kernels/Tanh.ts"],"names":[],"mappings":"AAAA;
;;;;;;;;;;GAeG;AACH,OAAO,EAAe,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAEzD,OAAO,EAAC,uBAAuB,EA
AC,MAAM,gBAAgB,CAAC;AACvD,MAAM,CAAC,MAAM,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC,CA
AC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */
```

```
=====
*\n\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tanh.js.map
```

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
```

*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.

* =====

*/

/**

* @deprecated Use `setWasmPaths` instead.
* Sets the path to the `wasm` file which will be fetched when the wasm
* backend is initialized. See
* <https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers>
* for more details.
* @param path wasm file path or url
* @param usePlatformFetch optional boolean to use platform fetch to download
* the wasm file, default to false.

* @doc {heading: 'Environment', namespace: 'wasm'}
*/

Found in path(s):

- * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/backend_wasm.ts
 - * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/backend_wasm.d.ts
 - * /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/backend_wasm.js
- No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"unary_kernel.js","sourceRoot":"","sources":["../src/kernels/unary_kernel.ts"],"names":[],"map pings":"AAAA;;;;;;;;;;;GAeG;AAEH,OAAO,EAakD,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI5F,OAAO,EA AC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,MAAM,UAAU,uBAAuB,CACnC,UAAkB,EAAE,OAAkB;IACx C,IAAI,QAA6D,CAAC;IAEIE,SAAS,SAAS,CAAC,OAAoB;QACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC, KAAK,CAAC,UAAU,EAAE,IAAI,CAAC,UAAU,EAAE;YACzD,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,C AAC,CAAC;IACL,CAAC;IAED,SAAS,UAAU,CAAC,IAAI;QAEEnE,MAAM,EAAC,OAAO,EAAE,MAAM,EA AE,EAAC,CAAC,EAAC,EAAC,GAAG,IAAI,CAAC;QACpC,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAA C,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,MAAM,GAAG,GAAG,OAAO,CA AC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,OAAO,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC;QAC5D,MAA M,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAA C;QAEEnD,oCAAoC;QACpC,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE ;YACvC,OAAO,GAAG,CAAC;SACZ;QAED,QAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK, CAAC,EAAE,KAAK,CAAC,CAAC;QACxC,OAAO,GAAG,CAAC;IACb,CAAC;IAED,OAAO,EAAC,UAAU,EA AE,WAAW,EAAE,MAAM,EAAE,SAAS,EAAE,UAAU,EAAC,CAAC;AACIE,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```

=====\\n
*\\n\\nimport {DataType, KernelConfig, TensorInfo, UnaryInputs, util} from '@tensorflow/tfjs-core';\\n\\nimport
{BackendWasm} from './backend_wasm';\\n\\nimport {CppType} from './types';\\n\\nexport function
createUnaryKernelConfig(\\n  kernelName: string, outType?: DataType): KernelConfig {\\n  let wasmFunc: (xId:
number, dtype: number, outId: number) => void;\\n\\n  function setupFunc(backend: BackendWasm): void {\\n
wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\\n  'number', // x_id\\n  'number', // dtype\\n
'number', // out_id\\n  ]);\\n  }\\n\\n  function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}):\\n
TensorInfo {\\n  const {backend, inputs: {x}} = args;\\n  const xId = backend.dataIdMap.get(x.dataId).id;\\n  const
out = backend.makeOutput(x.shape, outType || x.dtype);\\n  const outId = backend.dataIdMap.get(out.dataId).id;\\n\\n
  // Short-circuit zero-sized tensors.\\n  if (util.sizeFromShape(out.shape) === 0) {\\n  return out;\\n  }\\n\\n
wasmFunc(xId, CppDType[x.dtype], outId);\\n  return out;\\n  }\\n\\n  return {kernelName, backendName: 'wasm',
setupFunc, kernelFunc};\\n}\\n"}

```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/unary_kernel.js.map

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"CropAndResize.js","sourceRoot":"","sources":["../../src/kernels/CropAndResize.ts"],"names":[],
"mappings":"AAAA;:::GAeG;AAEH,OAAO,EAAC,aAAa,EAAGF,MAAM,uBAAuB,CAAC;AAInI,OAAO
,EAAC,IAAI,EAAC,MAAM,QAAQ,CAAC;AAE5B,sCAAsC;AACtC,IAAK,mBAGJ;AAHD,WAAK,mBAAMb;I
ACtB,qEAAy,CAAA;IACZ,mEAAW,CAAA;AACb,CAAC,EAHI,mBAAMb,KAAmB,mBAAMb,QAGvB;AAED
,IAAI,iBAGkE,CAAC;AAEvE,SAAS,KAAK,CAAC,OAAoB;IACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,CAAC,
KAAK,CAAC,aAAa,EAAE,IAAI,CAAC,QAAQ,EAAE;QACnE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QA
AQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ,CAAG,SAAS;KAC
rB,CAAC,CAAC;AAcL,CAAC;AAED,SAAS,aAAa,CAAC,IAItB;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,E
AAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,MAAM,EAAE,kBAakB,EAAE,QAAQ,EAAC,G
AAG,KAAK,CAAC;IACrD,MAAM,EAAC,KAAK,EAAE,KAAK,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;I
AEtC,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAEhC,MAAM,CAAC,UAAU,
EAAE,SAAS,CAAC,GAAG,QAA4B,CAAC;IAC7D,MAAM,QAAQ,GAAG,CAAC,QAAQ,EAAE,UAAU,EAAE,
SAAS,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IAEnE,IAAI,UAAU,GAAG,OAAO,CA
AC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACrD,IAAI,UAAU,CAAC;IACf,IAAI,K
AAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,UAAU,GAAG,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EA
AE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,
CAAC;QAC5E,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;
KACvD;IAED,MAAM,QAAQ,GAAG,UAAU,CAAC,EAAE,CAAC;IAC/B,MAAM,OAAO,GAAG,OAAO,CAAC
,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,MAAM,QAAQ,GAAG
,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM
,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,MAAM,KAAK,GAAG,
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,
gBAAGb,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,C
AAC;IAE5E,iBAAiB,CACb,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,QAAQ,EAAE,gBAAGb,EAAE,UAAU,E
ACnE,SAAS,EACT,mBAAMb,CAAC,MAAGd,CAAC,EACrE,kBAakB,EAAE,KAAK,CAAC,CAAC;IAE/B,IA
AI,UAAU,IAAI,IAAI,EAAE;QACtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACx
C;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,mBAAMb,GAAiB;IAC/C,UAAU,E
AAE,aAAa;IACzB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,aAAiC;CAC9C,C
AAC","sourcesContent":["/**\\n * @license\\n * Copyright 2019 Google LLC. All Rights Reserved.\\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\\n * you may not use this file except in compliance with the

```

License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { cast } from './Cast';\n\n// Must match enum in CropAndResize.cc\nenum InterpolationMethod {\n  bilinear = 0,\n  nearest = 1\n}\n\nlet wasmCropAndResize: (\n  imagesId: number, boxesId: number, boxIndId: number, numBoxes: number,\n  imagesShape: Uint8Array, cropHeight: number, cropWidth: number,\n  method: number, extrapolationValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n    'number', // imagesId\n    'number', // boxesId\n    'number', // boxIndId\n    'number', // numBoxes\n    'array', // images shape\n    'number', // cropHeight\n    'number', // cropWidth\n    'number', // method\n    'number', // extrapolation value\n    'number', // out id\n  ]);\n\n  function cropAndResize(args: {\n    backend: BackendWasm,\n    inputs: CropAndResizeInputs,\n    attrs: CropAndResizeAttrs\n  }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { method, extrapolationValue, cropSize } = attrs;\n    const { image, boxes, boxInd } = inputs;\n    const numBoxes = boxes.shape[0];\n    const [cropHeight, cropWidth] = cropSize as [number, number];\n    const outShape = [numBoxes, cropHeight, cropWidth, image.shape[3]];\n    let imagesData = backend.dataIdMap.get(image.dataId);\n    let castedData;\n    if (image.dtype !== 'float32') {\n      castedData = cast({ backend, inputs: { x: image }, attrs: { dtype: 'float32' }});\n      imagesData = backend.dataIdMap.get(castedData.dataId);\n    }\n    const imagesId = imagesData.id;\n    const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n    const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n    const out = backend.makeOutput(outShape, 'float32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n    wasmCropAndResize(\n      imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,\n      cropWidth,\n      InterpolationMethod[method as {}] as keyof typeof InterpolationMethod,\n      extrapolationValue, outId);\n    if (castedData !== null) {\n      backend.disposeData(castedData.dataId);\n    }\n    return out;\n  }\n\n  export const cropAndResizeConfig: KernelConfig = {\n    kernelName: CropAndResize,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: cropAndResize as {} as KernelFunc\n  };
}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/CropAndResize.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "NonMaxSuppressionV3.js", "sourceRoot": "", "sources": [ "../src/kernels/NonMaxSuppressionV3.ts" ], "names": [], "mappings": "AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,mBAAmB,EAAkE,MAAM,uBAAuB,CAAC;AAIrJ,OAAO,EAAC,iBAAiB,EAAC,MAAM,0BAA0B,CAAC;AAE3D,IAAI,QAEuD,CAAC;AAE5D,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzB,mBAAmB,EACnB,QAAQ,EAAG,UAAU;IACrB;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,UAAU,CAAC,IAInB;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAEE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EAAE,cAAc,EAAC,GAAG,KAAK,CAAC;IAC5D,MAAM,EAAC,KAAK,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;IAE/B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAEE,CAAC;IAEzD,MAAM,SAAS,GACX,QAAQ,CAAC,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE
```

,cAAc,CAAC,CAAC;IAE7E,MAAM,EAAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,GACIE,iB
AAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;IAE1C,4EAA4E;IAC5E,OAAO,CAAC,IAAI,CAAC,KAAC,C
AAC,eAAe,CAAC,CAAC;IACpC,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,aAAa,CAAC,CAAC;IAEIC,MAAM
,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CA
AC;IAEIE,OAAO,qBAAqB,CAAC;AAC/B,CAAC;AAED,MAAM,CAAC,MAAM,yBAAyB,GAAiB;IACrD,UAA
U,EAAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IACHb,UAAU,EAAE,UAA8B;
CAC3C,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
<http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====

```
\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,  
NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from  
 './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n  boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number)  
=> number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(\n    NonMaxSuppressionV3,\n    'number', // Result*\n    [\n      'number', // boxesId\n      'number', // scoresId\n      'number', // maxOutputSize\n      'number', // iouThreshold\n      'number', // scoreThreshold\n    ]);\n\n  function kernelFunc(args: {\n    backend: BackendWasm,\n    inputs: NonMaxSuppressionV3Inputs,\n    attrs:  
NonMaxSuppressionV3Attrs\n  }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { iouThreshold,  
maxOutputSize, scoreThreshold } = attrs;\n    const { boxes, scores } = inputs;\n    const boxesId =  
backend.dataIdMap.get(boxes.dataId).id;\n    const scoresId = backend.dataIdMap.get(scores.dataId).id;\n    const  
resOffset =\n    wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n    const  
{ pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n    parseResultStruct(backend, resOffset);\n    // Since we are not using scores for V3, we have to delete it from the heap.\n    backend.wasm._free(pSelectedScores);\n    backend.wasm._free(pValidOutputs);\n    const selectedIndicesTensor  
=\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n    return  
selectedIndicesTensor;\n  }\n\n  export const nonMaxSuppressionV3Config: KernelConfig = {\n    kernelName:  
NonMaxSuppressionV3,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: kernelFunc as { } as  
KernelFunc,\n  };\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV3.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "Transpose.js", "sourceRoot": "", "sources": ["../../src/kernels/Transpose.ts"], "names": [], "mappings"  
: "AAAA;:::;;:::;;GAeG;AAEH,OAAO,EAAuC,SAAS,EAAkC,MAAM,uBAAuB,CAAC;AAiVH,OAAO,EAAC,  
QAAQ,EAAC,MAAM,YAAY,CAAC;AACpC,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,  
aAE4D,CAAC;AAEjE,SAAS,KAAC,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,C  
AAC,SAAS,EAAE,IAAI,CAAC,UAAU,EAAE;QAC7D,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QA  
CR,QAAQ;QACR,OAAO;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,MAAM,UAAU,SAAS,CAC  
rB,IAC0E;IAE5E,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,4EAA  
4E;IAC5E,+CAA+C;IAC/C,MAAM,CAAC,YAAY,EAAE,IAAI,CAAC,GAAG,iBAAiB,CAAC,MAAM,CAAC,C  
AAC,CAAC,KAAC,EAAE,KAAC,CAAC,IAAI,CAAC,CAAC;IAE3E,IAAI,UAAU,GAAG,IAAI,CAAC;IACtB,K
```

AAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACp
C,IAAI,IAAI,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACjB,UAAU,GAAG,KAAK,CAAC;SACpB;KACf;I
ACD,MAAM,QAAQ,GAAG,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,EAAE,KAAK,CAAC,IAAI,CA
AC,CAAC;IAC7D,MAAM,CAAC,GAAG;QACR,MAAM,EAAE,MAAM,CAAC,CAAC,CAAC,MAAM;QACvB,
KAAK,EAAE,YAAY;QACnB,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,KAAK;KACtB,CAAC;IAEF,IAAI,U
AAU,EAAE;QACd,MAAM,MAAM,GAAG,QAAQ,CAAC,EAAC,MAAM,EAAE,OAAO,EAAC,CAAC,CAAC;Q
AC3C,MAAM,CAAC,KAAK,GAAG,QAAQ,CAAC;QACxB,OAAO,MAAM,CAAC;KACf;IAED,MAAM,GAAG
,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,MAAM,GAAG,
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,M
AAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,C
AAC;IACnD,MAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC
,CAAC;IAC9D,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,C
AAC,MAAM,CAAC,CAAC;IAEnE,aAAa,CACT,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,M
AAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,EAAE,SAAS,EACrE,IAAI,CAAC,MAA
M,CAAC,CAAC;IACjB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,eAAe,CAAC,OAAiB,EAAE,IAAc;IA
CxD,MAAM,QAAQ,GAAG,IAAI,KAAK,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC3C,KAAK,IAAI,CA
AC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACxC,QAAQ,CA
AC,CAAC,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;KAChC;IACD,OAAO,QAA
Q,CAAC;AACiB,CAAC;AAED,SAAS,iBAAiB,CACtB,KAAe,EAAE,IAAc;IACjC,MAAM,QAAQ,GAAa,EAAE,
CAAC;IAC9B,MAAM,OAAO,GAAa,EAAE,CAAC;IAC7B,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,G
AAG,KAAK,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QACrC,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CA
AC,EAAE;YACiB,QAAQ,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;SACzB;QACD,IAAI,
KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACxB,OAAO,CAAC,IAAI,CAAC,IA
I,CAAC,CAAC,CAAC,CAAC,CAAC;SACvB;KACf;IACD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,G
AAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QACvC,IAAI,SAAS,GAAG,CAAC,CAAC,CAAC;QA
CnB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAA
E;YACvC,IAAI,OAAO,CAAC,CAAC,CAAC,IAAI,CAAC;gBACf,CAAC,SAAS,KAAK,CAAC,CAAC,IAAI,OA
AO,CAAC,SAAS,CAAC,GAAG,OAAO,CAAC,CAAC,CAAC,CAAC,EAAE;gBACzD,SAAS,GAAG,CAAC,CA
AC;aACf;SACF;QACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC;KACxB;IACD,OAAO,CAAC,QAAQ,
EAAE,OAAO,CAAC,CAAC;AAC7B,CAAC;AAED,MAAM,CAAC,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE
,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAE,KAAK;CACjB,CAAC
", "sourcesContent": ["**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs} from  
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {identity} from  
'./Identity';\nimport {CppType} from './types';\n\nlet wasmTranspose: (\n  xId: number, xShape: Uint8Array,  
xShapeLength: number, dtype: CppDType,\n  outId: number, perm: Uint8Array, permLength: number) =>  
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTranspose = backend.wasm.cwrap(Transpose, null /*  
void*/, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // dtype\n    'number', // outId\n    'array', // perm\n    'number', // perm.length\n  ]);\n\n  export function transpose(\n    args:\n    {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs});\n  TensorInfo {\n    const {inputs,  
backend, attrs} = args;\n    // Reduce any dimensions with size one. Lower-rank transpose kernel performs\n    // better
```

```

due to simpler memory access pattern.\n const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,
attrs.perm);\n\n let permIsNoOp = true;\n for (let i = 0; i < perm.length; i++) {\n  if (perm[i] !== i) {\n
permIsNoOp = false;\n  }\n }\n const outShape = computeOutShape(inputs.x.shape, attrs.perm);\n const x = {\n
dataId: inputs.x.dataId,\n  shape: reducedShape,\n  dtype: inputs.x.dtype\n }; \n\n if (permIsNoOp) {\n  const
cloned = identity({inputs, backend});\n  cloned.shape = outShape;\n  return cloned;\n }\n\n const out =
backend.makeOutput(outShape, x.dtype);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const outId =
backend.dataIdMap.get(out.dataId).id;\n const permBytes = new Uint8Array(new Int32Array(perm).buffer);\n
const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n wasmTranspose(\n  xId,
xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\n  perm.length);\n return
out;\n}\n\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\n  const outShape = new
Array(inShape.length);\n  for (let i = 0; i < outShape.length; i++) {\n    outShape[i] = inShape[perm[i]];\n  }\n
return outShape;\n}\n\nfunction removeOneSizeDims(\n  shape: number[], perm: number[]): [number[], number[]]
{\n  const newShape: number[] = [];\n  const newPerm: number[] = [];\n  for (let i = 0; i < shape.length; ++i) {\n
  if (shape[i] !== 1) {\n    newShape.push(shape[i]);\n  }\n  if (shape[perm[i]] !== 1) {\n
newPerm.push(perm[i]);\n  }\n }\n  for (let i = 0; i < newPerm.length; ++i) {\n    let minValIdx = -1;\n    for (let j =
0; j < newPerm.length; ++j) {\n      if (newPerm[j] >= i && (minValIdx === -1 || newPerm[minValIdx] >
newPerm[j])) {\n        minValIdx = j;\n      }\n    }\n    newPerm[minValIdx] = i;\n  }\n  return [newShape,
newPerm];\n}\n\nexport const transposeConfig: KernelConfig = {\n  kernelName: Transpose,\n  backendName:
'wasm',\n  kernelFunc: transpose as {} as KernelFunc,\n  setupFunc: setup,\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Transpose.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"NonMaxSuppressionV4.js","sourceRoot":"","sources":["../../src/kernels/NonMaxSuppressionV4
.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,mBAAmB,EAAkE,MAAM,uBAAUb
,CAAC;AAIrJ,OAAO,EAAC,iBAAiB,EAAC,MAAM,0BAA0B,CAAC;AAE3D,IAAI,QAGsC,CAAC;AAE3C,SA
AS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzB,mBAAmB,EACnB,
QAAQ,EAAG,UAAU;IACrB;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,
MAAM;KACP,CAAC,CAAC;AACT,CAAC;AAED,SAAS,mBAAmB,CAAC,IAI5B;IACC,MAAM,EAAC,OAAO
,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EAAE,cA
Ac,EAAE,kBAAkB,EAAC,GACnE,KAAK,CAAC;IACV,MAAM,EAAC,KAAK,EAAE,MAAM,EAAC,GAAG,M
AAM,CAAC;IAE/B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,C
AAC,CAAC,EAAE,CAAC;IACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,C
AAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,SAAS,GAAG,QAAQ,CACtB,OAAO,EAAE,QAAQ,E
AAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,kBAAkB,CAAC,CAAC;IAExB,MAAM,EAAC,gBAAgB,EAAE,
YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,GACIE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;IAE1C,4E
AA4E;IAC5E,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,eAAe,CAAC,CAAC;IAEpC,MAAM,qBAAqB,GACvB,
OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;IAEIE,MAAM
,kBAAkB,GAAG,OAAO,CAAC,UAAU,CAAC,EAAE,EAAE,OAAO,EAAE,aAAa,CAAC,CAAC;IAEIE,OAAO,
CAAC,qBAAqB,EAAE,kBAAkB,CAAC,CAAC;AACrD,CAAC;AAED,MAAM,CAAC,MAAM,yBAAyB,GAAiB
;IACrD,UAAU,EAAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EA
AE,mBAAuC;CACpD,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES

```

OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs,
NonMaxSuppressionV4Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number,\n  padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc =
backend.wasm.cwrap(\n    NonMaxSuppressionV4,\n    'number', // Result*\n    [\n      'number', // boxesId\n      'number', // scoresId\n      'number', // maxOutputSize\n      'number', // iouThreshold\n      'number', //
scoreThreshold\n      'bool', // padToMaxOutputSize\n    ]);\n\n  function nonMaxSuppressionV4(args: {\n
backend: BackendWasm,\n  inputs: NonMaxSuppressionV4Inputs,\n  attrs: NonMaxSuppressionV4Attrs\n}):
TensorInfo[] {\n    const { backend, inputs, attrs } = args;\n    const { iouThreshold, maxOutputSize, scoreThreshold,
padToMaxOutputSize } =\n      attrs;\n    const { boxes, scores } = inputs;\n\n    const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n    const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n    const
resOffset = wasmFunc(\n      boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n      padToMaxOutputSize);\n\n    const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n      parseResultStruct(backend, resOffset);\n\n    // Since we are not using scores for V4, we have to delete it from the
heap.\n    backend.wasm._free(pSelectedScores);\n\n    const selectedIndicesTensor =\n      backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n    const validOutputsTensor =
      backend.makeOutput([], 'int32', pValidOutputs);\n\n    return [selectedIndicesTensor,\n      validOutputsTensor];\n  }\n\n  export const nonMaxSuppressionV4Config: KernelConfig = {\n    kernelName:
NonMaxSuppressionV4,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: nonMaxSuppressionV4 as {\n    as KernelFunc,\n  };
}\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV4.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"DepthToSpace.js","sourceRoot":"","sources":["../../src/kernels/DepthToSpace.ts"],"names":[],"
mappings":"AAAA;:::;;GAeG;AAEH,OAAO,EAAC,YAA Y,EAA+E,IAAI,EAAC,MAAM,uBAuB,CAAC;
AAItI,IAAI,gBAGuC,CAAC;AAE5C,SAAS,KAAK,CAAC,OAAoB;IACjC,gBAAGb,GAAG,OAAO,CAAC,IAAI,
CAAC,KAAK,CAAC,YAA Y,EAAE,IAAI,CAAC,QAAQ,EAAE;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;Q
ACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AA
CL,CAAC;AAED,MAAM,UAAU,YAA Y,CAAC,IAI5B;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KA
AK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EA
AC,SAAS,EAAE,UAAU,EAAC,GAAG,KAAK,CAAC;IAEtC,MAAM,SAAS,GAAG,CAAC,CAAC,KAAK,CAA
C,CAAC,CAAC,CAAC;IAC7B,MAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM,CAAC,CAAC,CAAC,CA
AC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAA
C,CAAC;IACtE,MAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAA
C,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACrE,
MAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC
,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAErE,MAAM,YAA Y,
GAAG,WAAW,GAAG,SAAS,CAAC;IAC7C,MAAM,WAAW,GAAG,UAAU,GAAG,SAAS,CAAC;IAC3C,MAA
M,WAAW,GAAG,UAAU,GAAG,CAAC,SAAS,GAAG,SAAS,CAAC,CAAC;IAEzD,MAAM,WAAW,GAAG,CA
AC,UAAU,KAAK,MAAM,CAAC,CAAC,CAAC;QACzC,CAAC,SAAS,EAAE,YAA Y,EAAE,WAAW,EAAE,W
AAW,CAAC,CAAC,CAAC;QACrD,CAAC,SAAS,EAAE,WAAW,EAAE,YAA Y,EAAE,WAAW,CAAC,CAAC;I
```


AExD,MAAM,GAAG,GAAG,OOAO,CAAC,UAAU,CAAC,WAAW,EAAE,SAAS,CAAC,CAAC;IAEvD,MAAM,KAAC,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9C,MAAM,GAAG,GAAG,KAAC,CAAC,EAAE,CAAC;IACrB,MAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAExE,MAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,CAAC;IAC5E,MAAM,eAAe,GACjB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,MAAM,KAAC,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,YAAy,GAAG,UAAU,KAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC;IACnD,gBAAgB,CACZ,GAAG,EAAE,SAAS,EAAE,YAAy,EAAE,aAAa,EAAE,CAAC,CAAC,KAAC,CAAC,MAAM,GAAG,CAAC,EAC/D,gBAAgB,EAAE,eAAe,EAAE,WAAW,CAAC,MAAM,EAAE,KAAC,CAAC,CAAC;IAEIE,OOAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,kBAakB,GAAiB;IAC9C,UAAU,EAAE,YAAy;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IACb,UAAU,EAAE,YAAgC;CAC7C,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace:\n  (\n    xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n    xStridesLength: number, outputShape: Uint8Array, outputStrides: Uint8Array,\n    outSize: number, outId: number) => void;\n\nfunction\n  setup(backend: BackendWasm): void {\n    wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null\n      /*void*/, [\n        'number', // xId\n        'number', // blockSize\n        'number', // channelsLast\n        'array', // xStrides\n        'number', // xStridesLength\n        'array', // outputShape\n        'array', // outputStrides\n        'number', // outSize\n        'number', // outId\n      ]);\n\n    export function depthToSpace(args: {\n      backend: BackendWasm,\n      inputs: DepthToSpaceInputs,\n      attrs: DepthToSpaceAttrs\n    }): TensorInfo {\n      const {backend, inputs, attrs} = args;\n      const {x} = inputs;\n      const {blockSize, dataFormat} = attrs;\n\n      const batchSize = x.shape[0];\n      const inputHeight = (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n      const inputWidth = (dataFormat === 'NHWC') ? x.shape[2] : x.shape[3];\n      const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n      const outputHeight = inputHeight * blockSize;\n      const outputWidth = inputWidth * blockSize;\n      const outputDepth = inputDepth / (blockSize * blockSize);\n\n      const outputShape = (dataFormat === 'NHWC') ?\n        [batchSize, outputHeight, outputWidth, outputDepth] :\n        [batchSize, outputDepth, outputHeight, outputWidth];\n\n      const out = backend.makeOutput(outputShape, 'float32');\n      const xData = backend.dataIdMap.get(x.dataId);\n      const xId = xData.id;\n      const xStridesBytes =\n        new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n      const outputShapeBytes = new Uint8Array(new Int32Array(outputShape).buffer);\n      const outStridesBytes =\n        new Uint8Array(new Int32Array(util.computeStrides(outputShape)).buffer);\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n      wasmDepthToSpace(\n        xId, blockSize, channelsLast, xStridesBytes, x.shape.length - 1,\n        outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n      return out;\n    }\n\n    export const depthToSpaceConfig: KernelConfig = {\n      kernelName: DepthToSpace,\n      backendName: 'wasm',\n      setupFunc: setup,\n      kernelFunc: depthToSpace as {} as KernelFunc\n    };
  }
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/DepthToSpace.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"tf-backend-  
wasm.js","sources":["../src/kernels/types.ts","../src/kernels/_FusedMatMul.ts","../src/kernels/unary_kernel.ts","../src/  
kernels/Abs.ts","../src/kernels/binary_kernel.ts","../src/kernels/Add.ts","../src/kernels/AddN.ts","../src/kernels/Identit  
y.ts","../src/kernels/Transpose.ts","../src/kernels/kernel_utils.ts","../src/kernels/All.ts","../src/kernels/Any.ts","../src/k  
ernels/ArgMax.ts","../src/kernels/AvgPool.ts","../src/kernels/Reshape.ts","../src/kernels/BatchMatMul.ts","../node_m  
odules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js","../node_modules/@tensorflow/tfjs-backend-  
cpu/dist/kernels/Range_impl.js","../node_modules/@tensorflow/tfjs-backend-  
cpu/dist/kernels/Slice.js","../src/kernels/Slice.ts","../src/kernels/BatchToSpaceND.ts","../src/kernels/Cast.ts","../src/k  
ernels/Ceil.ts","../src/kernels/ClipByValue.ts","../src/kernels/Concat.ts","../src/kernels/Conv2D.ts","../src/kernels/Co  
nv2DBackpropInput.ts","../src/kernels/Cos.ts","../src/kernels/Cosh.ts","../src/kernels/CropAndResize.ts","../src/kerne  
ls/Cumsum.ts","../src/kernels/DepthToSpace.ts","../src/kernels/DepthwiseConv2dNative.ts","../src/kernels/Elu.ts","..  
/src/kernels/Equal.ts","../src/kernels/Exp.ts","../src/kernels/ExpandDims.ts","../src/kernels/Fill.ts","../src/kernels/Flip  
LeftRight.ts","../src/kernels/Floor.ts","../src/kernels/FloorDiv.ts","../src/kernels/FusedBatchNorm.ts","../src/kernels/  
FusedConv2D.ts","../src/kernels/FusedDepthwiseConv2D.ts","../src/kernels/GatherNd.ts","../src/kernels/GatherV2.ts"  
","../src/kernels/Greater.ts","../src/kernels/GreaterEqual.ts","../src/kernels/LeakyRelu.ts","../src/kernels/Less.ts","../sr  
c/kernels/LessEqual.ts","../src/kernels/Log.ts","../src/kernels/LogicalAnd.ts","../src/kernels/Max.ts","../src/kernels/M  
aximum.ts","../src/kernels/MaxPool.ts","../src/kernels/Mean.ts","../src/kernels/Min.ts","../src/kernels/Minimum.ts",".  
/src/kernels/MirrorPad.ts","../src/kernels/Multiply.ts","../src/kernels/Neg.ts","../src/kernels/NonMaxSuppression_uti  
l.ts","../src/kernels/NonMaxSuppressionV3.ts","../src/kernels/NonMaxSuppressionV4.ts","../src/kernels/NonMaxSu  
ppressionV5.ts","../src/kernels/NotEqual.ts","../src/kernels/OneHot.ts","../src/kernels/OnesLike.ts","../src/kernels/Pa  
ck.ts","../src/kernels/PadV2.ts","../src/kernels/Pow.ts","../src/kernels/Prelu.ts","../src/kernels/Prod.ts","../src/kernels/  
Range.ts","../src/kernels/RealDiv.ts","../src/kernels/Relu.ts","../src/kernels/Relu6.ts","../src/kernels/ResizeBilinear.ts  
","../src/kernels/Reverse.ts","../src/kernels/RotateWithOffset.ts","../src/kernels/Round.ts","../src/kernels/Rsqrt.ts","../  
src/kernels/ScatterNd.ts","../src/kernels/Select.ts","../src/kernels/Sigmoid.ts","../src/kernels/Sin.ts","../src/kernels/Sof  
tmax.ts","../src/kernels/SpaceToBatchND.ts","../src/kernels/SplitV.ts","../src/kernels/Sqrt.ts","../src/kernels/Square.ts  
","../src/kernels/SquaredDifference.ts","../src/kernels/Step.ts","../src/kernels/StridedSlice.ts","../src/kernels/Sub.ts",".  
/src/kernels/Sum.ts","../src/kernels/Tan.ts","../src/kernels/Tanh.ts","../src/kernels/Tile.ts","../src/kernels/TopK.ts","../  
src/kernels/Transform.ts","../src/kernels/Unpack.ts","../src/kernels/ZerosLike.ts","../src/register_all_kernels.ts","../sr  
c/flags_wasm.ts","../wasm-out/tfjs-backend-wasm-threaded-simd.js","../wasm-out/tfjs-backend-wasm-threaded-  
simd.worker.js","../wasm-out/tfjs-backend-  
wasm.js","../src/backend_wasm.ts","../src/version.ts","../src/base.ts"],"sourcesContent":["/**\n * @license\n *  
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *  
=====\n *\n// This enum must align with the enum defined in cc/backend.h.\nexport enum CppDType {\n float32 = 0,\n int32 = 1,\n bool = 2,\n string = 3,\n complex64 = 4\n}\n// Must match enum in cc/fusable_activations.h.\nexport  
enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu  
= 6\n}\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache  
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You  
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required  
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"  
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
```

License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { FusibleActivation } from './types';\n\nlet wasmFusedMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number, bShape: Uint8Array, bShapeSize: number, transposeA: boolean, transposeB: boolean, activation: number, biasId: number, preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul, null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n    'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n    'number', // activation\n    'number', // biasId\n    'number', // preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number' // out_id\n  ]);\n\n  function fusedBatchMatMul(args: {\n    inputs: _FusedMatMulInputs,\n    backend: BackendWasm,\n    attrs: _FusedMatMulAttrs\n  }) {\n    const { inputs, backend, attrs } = args;\n    const { a, b, bias, preluActivationWeights } = inputs;\n\n    if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n      throw new Error(`_FusedMatMul for non non-float32 tensors not yet supported.`);\n    }\n\n    const { transposeA, transposeB, activation, leakyreluAlpha } = attrs;\n    const aId = backend.dataIdMap.get(a.dataId).id;\n    const bId = backend.dataIdMap.get(b.dataId).id;\n\n    let biasId = 0;\n    if (bias !== null) {\n      const biasData = backend.dataIdMap.get(bias.dataId);\n      if (biasData.shape.length !== 1) {\n        throw new Error(`_FusedMatMul only supports rank-1 bias but got ` +\n          `rank ${biasData.shape.length}.`);\n      }\n      biasId = biasData.id;\n    }\n\n    const preluActivationWeightsId = preluActivationWeights === null ? 0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n    const fusedActivation = FusibleActivation[activation as {} as keyof typeof FusibleActivation];\n    if (fusedActivation === null) {\n      throw new Error(`${activation} activation not yet supported for FusedConv2D ` +\n        `in the wasm backend.`);\n    }\n\n    const leftDim = transposeA ? a.shape[2] : a.shape[1];\n    const rightDim = transposeB ? b.shape[1] : b.shape[2];\n    const batchDim = a.shape[0];\n\n    const out = backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n    const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n    wasmFusedMatMul(\n      aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length, transposeA, transposeB, fusedActivation, biasId, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n    return out;\n  }\n\n  export const fusedMatMulConfig: KernelConfig = {\n    kernelName: _FusedMatMul,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: fusedBatchMatMul as {} as KernelFunc\n  }; \n}\n\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { DataType, KernelConfig, TensorInfo, UnaryInputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\n\nexport function createUnaryKernelConfig(\n  kernelName: string, outType?: DataType): KernelConfig {\n  let wasmFunc: (xId: number, dtype: number, outId: number) => void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n      'number', // x_id\n      'number', // dtype\n      'number', // out_id\n    ]);\n\n    function kernelFunc(args: {\n      backend: BackendWasm, inputs: UnaryInputs\n    }): TensorInfo {\n      const { backend, inputs: { x } } = args;\n      const xId = backend.dataIdMap.get(x.dataId).id;\n      const out = backend.makeOutput(x.shape, outType || x.dtype);\n      const outId = backend.dataIdMap.get(out.dataId).id;\n\n      // Short-circuit zero-sized tensors.\n      if (util.sizeFromShape(out.shape) === 0) {\n        return out;\n      }\n    }\n  }\n}
```

```
wasmFunc(xId, CppDType[x.dtype], outId);\n  return out;\n }\n\n return {kernelName, backendName: 'wasm',\n  setupFunc, kernelFunc};\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in\n  compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *
```

```
=====\n *\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n  License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n  agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n *\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-\n  core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppDType} from './types';\n\nexport\n  function createBinaryKernelConfig(\n    kernelName: string, supportsFullBroadcast: boolean,\n    dtype?:\n  DataType): KernelConfig {\n  let wasmFunc:\n    (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n  number,\n    bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n    void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /*\n  void */, [\n    'number', // a_id,\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n    'array', // b_shape\n    'number', // b_shape.length\n    'number', // dtype\n    'number' // out_id\n  ]);\n  }\n\n  function kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}):\n    TensorInfo {\n    const {backend,\n  inputs} = args;\n    const {a, b} = inputs;\n    const aId = backend.dataIdMap.get(a.dataId).id;\n    const bId =\n  backend.dataIdMap.get(b.dataId).id;\n\n    const outputType = dtype != null ? dtype : a.dtype;\n    const newShape =\n  backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n    const out = backend.makeOutput(newShape,\n  outputType);\n\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(newShape) === 0) {\n    return\n  out;\n    }\n\n    const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n    const bShapeBytes =\n  new Uint8Array(new Int32Array(b.shape).buffer);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const kernelFunc = () => wasmFunc(\n    aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n\n    CppDType[a.dtype], outId);\n\n    // Currently only some float operations support full broadcast.\n    if\n  (supportsFullBroadcast && a.dtype === 'float32') {\n    kernelFunc();\n    return out;\n    }\n\n    const\n  aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n    const bBroadcastDims =\n  backend_util.getBroadcastDims(b.shape, newShape);\n    const loopsOverAllOfA = aBroadcastDims.every((v, i) =>\n  v === i);\n    const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n    if (loopsOverAllOfA &&\n  loopsOverAllOfB) {\n    kernelFunc();\n    return out;\n    } else {\n    throw new Error(\n    `Broadcasting\n  along outer dims is not yet `+\n    `supported for ${a.dtype} ${kernelName}.`);\n    }\n  }\n\n  return\n  {kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n}\n", "/*\n * @license\n * Copyright 2019 Google\n  LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const addConfig: KernelConfig =\ncreateBinaryKernelConfig(Add, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmFunc:\n (inputIds:
Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\n\nfunction setupFunc(backend:
BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n
'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n ]);\n}\n\nfunction addn(args: {inputs:
TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =
backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n\n // Short-circuit zero-sized tensors.\n if
(util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n const inputIds = inputs.map(x =>
backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n
const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,
CppType[out.dtype], outId);\n\n return out;\n}\n\nexport const addNConfig: KernelConfig = {\n kernelName:
AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as {} as KernelFunc,\n};\n"/**\n * @license\n
* Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\n\nimport
{TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function
identity(args: {inputs: IdentityInputs, backend: BackendWasm}):\n TensorInfo {\n const {inputs: {x}, backend} =
args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const inVals = backend.typedArrayFromHeap(x);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\n\nexport const
identityConfig: KernelConfig = {\n kernelName: Identity,\n backendName: 'wasm',\n kernelFunc: identity as {} as
KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n
* Unless required by applicable law or agreed to in writing, software\n * distributed under the License is
distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {identity} from
 './Identity';\n\nimport {CppType} from './types';\n\nlet wasmTranspose: (\n xId: number, xShape: Uint8Array,
xShapeLength: number, dtype: CppDType,\n outId: number, perm: Uint8Array, permLength: number) =>

```

```

void;
function setup(backend: BackendWasm) {
  wasmTranspose = backend.wasm.cwrap(Transpose, null /*
void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // dtype\n
'number', // outId\n 'array', // perm\n 'number', // perm.length\n ]);
}
export function transpose(\n  args:\n
  {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs}):\n  TensorInfo {\n  const {inputs,
backend, attrs} = args;\n  // Reduce any dimensions with size one. Lower-rank transpose kernel performs\n  // better
due to simpler memory access pattern.\n  const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,
attrs.perm);\n  \n  let permIsNoOp = true;\n  for (let i = 0; i < perm.length; i++) {\n    if (perm[i] !== i) {\n
permIsNoOp = false;\n    }\n  }\n  const outShape = computeOutShape(inputs.x.shape, attrs.perm);\n  const x = {\n
dataId: inputs.x.dataId,\n  shape: reducedShape,\n  dtype: inputs.x.dtype\n };
\n  if (permIsNoOp) {\n  const
cloned = identity({inputs, backend});\n  cloned.shape = outShape;\n  return cloned;\n  }\n  \n  const out =
backend.makeOutput(outShape, x.dtype);\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  const permBytes = new Uint8Array(new Int32Array(perm).buffer);\n
const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n  wasmTranspose(\n  xId,
xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\n  perm.length);\n  return
out;\n}
function computeOutShape(inShape: number[], perm: number[]): number[] {\n  const outShape = new
Array(inShape.length);\n  for (let i = 0; i < outShape.length; i++) {\n    outShape[i] = inShape[perm[i]];\n  }
\n  return outShape;\n}
function removeOneSizeDims(\n  shape: number[], perm: number[]): [number[], number[]]
{\n  const newShape: number[] = [];\n  const newPerm: number[] = [];\n  for (let i = 0; i < shape.length; ++i) {\n
if
(shape[i] !== 1) {\n    newShape.push(shape[i]);\n  }\n  if (shape[perm[i]] !== 1) {\n
newPerm.push(perm[i]);\n  }\n  }\n  for (let i = 0; i < newPerm.length; ++i) {\n    let minValIdx = -1;\n    for (let j =
0; j < newPerm.length; ++j) {\n      if (newPerm[j] >= i &&\n        (minValIdx === -1 || newPerm[minValIdx] >
newPerm[j])) {\n        minValIdx = j;\n      }\n    }\n    newPerm[minValIdx] = i;\n  }\n  return [newShape,
newPerm];\n}
export const transposeConfig: KernelConfig = {\n  kernelName: Transpose,\n  backendName:
'wasm',\n  kernelFunc: transpose as {} as KernelFunc,\n  setupFunc: setup,\n};
"/**\n * @license\n * Copyright
2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\nimport {backend_util, TensorInfo, util} from '@tensorflow/tfjs-core';
import {BackendWasm} from
'./backend_wasm';
import {transpose} from './Transpose';
/**\n * Compute permutation axes and do a transpose
if necessary.\n *\n * Used by reduction ops.\n * @param x input TensorInfo\n * @param axis reduction axes\n *
@param backend wasm backend instance\n */
export function permuteAxesAndTranspose(\n  x: TensorInfo,
axis: number|number[], backend: BackendWasm): {\n  transposed: TensorInfo|null,\n  axes: number[],\n
originalAxes: number[],\n  inputWasTransposed: boolean\n } {\n  const xShape = x.shape;\n  const xRank =
x.shape.length;\n  const originalAxes = util.parseAxisParam(axis, xShape);\n  let axes = originalAxes;\n  const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n  let xTransposed = null;\n  let
inputWasTransposed = false;\n  if (permutedAxes !== null) {\n    const newShape: number[] = new Array(xRank);\n
for (let i = 0; i < newShape.length; i++) {\n      newShape[i] = xShape[permutedAxes[i]];\n    }\n    axes =
backend_util.getInnerMostAxes(axes.length, xRank);\n    xTransposed =\n      transpose({inputs: {x}, attrs: {perm:
permutedAxes}, backend});\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const transposedId =
backend.dataIdMap.get(xTransposed.dataId).id;\n    if (transposedId !== xId) {\n      inputWasTransposed = true;\n
}\n  }\n  return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}
"/**\n * @license\n * Copyright
2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or

```

agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\nlet wasmAll: (xId: number, reduceSize: number, outId:\n number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmAll = backend.wasm.cwrap(All, null\n /*void*/, ['number, number, number']);\n}\nfunction all(args: {backend: BackendWasm, inputs: AllInputs, attrs:\n AllAttrs}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x}\n = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n  const\n {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n  if\n (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input =\n transposed;\n    inputId = transposedId;\n  }\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n  const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =\n util.sizeFromShape(reduceShape);\n  const out = backend.makeOutput(outShape, x.dtype);\n  if\n (util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAll(inputId, reduceSize, outId);\n  }\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n  if (keepDims) {\n    // reshape\n    const newShape =\n backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n  return\n out;\n}\n\nexport const allConfig: KernelConfig = {\n  kernelName: All,\n  backendName: 'wasm',\n  setupFunc:\n setup,\n  kernelFunc: all as {} as KernelFunc\n};\n\n/**\n * @license\n * Copyright 2021 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n *http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n*\n\nimport { Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\nlet wasmAny: (xId: number, reduceSize: number, outId:\n number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmAny = backend.wasm.cwrap(Any,\n null /*void*/, ['number, number, number']);\n}\nfunction any(args: {backend: BackendWasm, inputs: AnyInputs,\n attrs: AnyAttrs}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x}\n = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n  const\n {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis,\n backend);\n  if\n (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input =\n transposed;\n    inputId = transposedId;\n  }\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n  const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =\n util.sizeFromShape(reduceShape);\n  const out = backend.makeOutput(outShape, x.dtype);\n  if\n (util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAny(inputId, reduceSize, outId);\n  }\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n  if (keepDims) {\n    // reshape\n    const newShape =\n backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n  return\n out;\n}\n\nexport const anyConfig: KernelConfig = {\n  kernelName: Any,\n  backendName: 'wasm',\n  setupFunc:\n
```

setup,\n kernelFunc: any as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmFunc: (\n  xId: number, dtype: number, outerSize: number, innerSize: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // outer_size\n    'number', // inner_size\n    'number' // out_id\n  ]);\n\n  function argmax(\n    args: { inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs }) {\n    const { backend, inputs, attrs } = args;\n    const { axis } = attrs as { } as ArgMaxAttrs;\n    const { x } = inputs as { } as ArgMaxInputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const { transposed, axes, inputWasTransposed } =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId !== xId) {\n        // transpose was not a no-op. We will need to dispose of this\n        // once we are done.\n        input = transposed;\n        inputId = transposedId;\n      }\n\n      const outShape = input.shape.slice(0, -1);\n      const out = backend.makeOutput(outShape, 'int32');\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      const outerSize = util.sizeFromShape(out.shape);\n      const innerSize = input.shape[axes[0]];\n      wasmFunc(inputId, CppDType[input.dtype], outerSize, innerSize, outId);\n\n      if (inputWasTransposed) {\n        // dispose of the transposed tensor.\n        backend.disposeData(transposed.dataId);\n      }\n\n      return out;\n    }\n\n    export const argMaxConfig: KernelConfig = {\n      kernelName: ArgMax,\n      backendName: 'wasm',\n      kernelFunc: argmax as { } as KernelFunc,\n      setupFunc: setup\n    };\n  }\n\n  "/*\n  * @license\n  * Copyright 2019 Google LLC. All Rights Reserved.\n  * Licensed under the Apache License, Version 2.0 (the \"License\");\n  * you may not use this file except in compliance with the License.\n  * You may obtain a copy of the License at\n  * \n  * http://www.apache.org/licenses/LICENSE-2.0\n  * \n  * Unless required by applicable law or agreed to in writing, software\n  * distributed under the License is distributed on an \"AS IS\" BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n  * See the License for the specific language governing permissions and\n  * limitations under the License.\n  */\n\n  }\n}
```

```
=====\n*\n\nimport { AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmAvgPool: (\n  xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth: number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, strideHeight: number,\n  strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // channels\n    'number', // outId\n  ]);\n\n  function avgPool(\n    args: { inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs }) {\n    const { inputs, attrs, backend } = args;\n\n    const x = inputs.x as Tensor4D;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n\n    const { filterSize, strides, pad, dimRoundingMode } = attrs;\n    const convInfo = backend_util.computePool2DInfo(\n      x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const padTop = convInfo.padInfo.top;\n    const
```



```

padRight = convInfo.padInfo.right;\n const paddingBottom = convInfo.padInfo.bottom;\n const padLeft =
convInfo.padInfo.left;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n
const channels = convInfo.inChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n  throw new Error(\n
`wasm backend does not support dataFormat:` +\n    `${convInfo.dataFormat}`. Please use 'channelsLast'.);\n
}\n\n if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n  throw new Error(\n    `was backend
only supports average pooling with dilation = [1, 1],` +\n    `got [${convInfo.dilationHeight},
${convInfo.dilationWidth}].`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const
outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmAvgPool(\n  xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n  padTop, padRight, paddingBottom, padLeft, strideHeight, strideWidth, channels,\n
outId);\n return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n kernelName: AvgPool,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: avgPool as { } as KernelFunc\n};\n", "/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nexport function reshape(\n  args: { inputs:
ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm }) {\n  const { inputs, attrs } = args;\n  const { x } =
inputs;\n  const { shape } = attrs;\n  const xSize = util.sizeFromShape(x.shape);\n  const $shape =
util.inferFromImplicitShape(shape, xSize);\n  util.assert(\n    xSize === util.sizeFromShape($shape),\n    () =>
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n    `shape must have the same number of
elements.`);\n  // Backend needs to track refCount for the dataId for reshape op\n  args.backend.incRef(x.dataId);\n
return { dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n
kernelName: Reshape,\n backendName: 'wasm',\n kernelFunc: reshape as { } as KernelFunc\n};\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the `License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { reshape } from
'./Reshape';\n\nlet wasmBatchMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n
bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n  transposeB: boolean, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,
null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n
'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n
'number' // out_id\n  ]);\n}\n\nfunction batchMatMul(args: {\n  inputs: BatchMatMulInputs,\n  backend:
BackendWasm,\n  attrs: BatchMatMulAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { a, b } = inputs;\n
const { transposeA, transposeB } = attrs;\n  if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n    throw new Error(\n
`BatchMatMul for non non-float32 tensors not yet supported.`);\n  }\n  const aRank = a.shape.length;\n  const
bRank = b.shape.length;\n  const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n  const
innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n  const outerShapeA = transposeA ?
a.shape[aRank - 1] : a.shape[aRank - 2];\n  const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank -

```



```

util.sizeFromShape(size_));\n } else {\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.set(\n    (xVals as TypedArray)\n    .subarray(flatOffset, flatOffset +\n  util.sizeFromShape(size_));\n  }\n  return out;\n }\n if (x.dtype === 'string') {\n  const res =\n  sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);\n  outData.stringBytes = res as Uint8Array[];\n  return\n  out;\n }\n const outVals = backend.typedArrayFromHeap(out);\n const rank = x.shape.length;\n if (rank === 2)\n {\n  slice2d(\n    xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],\n    size_ as\n    [number, number]);\n } else if (rank === 3) {\n  slice3d(\n    xVals as TypedArray, xStrides[0], xStrides[1],\n    outVals,\n    begin_ as [number, number, number], size_ as [number, number, number]);\n } else if (rank === 4)\n {\n  slice4d(\n    xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,\n    begin_ as [number,\n    number, number, number],\n    size_ as [number, number, number, number]);\n } else {\n  const res =\n  sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;\n  outVals.set(res);\n }\n return\n  out;\n }\n\nfunction slice2d(\n  xVals: backend_util.TypedArray, xStride: number,\n  outVals:\n  backend_util.TypedArray, begin: [number, number],\n  size: [number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const endI = beginI + size[0];\n  for (let i = beginI; i < endI;\n  i++) {\n    const xOffset = i * xStride + beginJ;\n    outVals.set(xVals.subarray(xOffset, xOffset + size[1]),\n  outOffset);\n    outOffset += size[1];\n  }\n}\n\nfunction slice3d(\n  xVals: backend_util.TypedArray, xStride1:\n  number, xStride2: number,\n  outVals: backend_util.TypedArray, begin: [number, number, number],\n  size:\n  [number, number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const beginK = begin[2];\n  const endI = beginI + size[0];\n  const endJ = beginJ + size[1];\n  for (let i = beginI; i <\n  endI; i++) {\n    for (let j = beginJ; j < endJ; j++) {\n      const xOffset = i * xStride1 + j * xStride2 + beginK;\n      outVals.set(xVals.subarray(xOffset, xOffset + size[2]), outOffset);\n      outOffset += size[2];\n    }\n  }\n}\n\nfunction slice4d(\n  xVals: backend_util.TypedArray, xStride1: number, xStride2: number,\n  xStride3:\n  number, outVals: backend_util.TypedArray,\n  begin: [number, number, number, number],\n  size: [number,\n  number, number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const beginK = begin[2];\n  const endI = beginI + size[0];\n  const endJ = beginJ + size[1];\n  const endK = beginK\n  + size[2];\n  const beginL = begin[3];\n  for (let i = beginI; i < endI; i++) {\n    for (let j = beginJ; j < endJ; j++)\n    {\n      for (let k = beginK; k < endK; k++) {\n        const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +\n        beginL;\n        outVals.set(xVals.subarray(xOffset, xOffset + size[3]), outOffset);\n        outOffset += size[3];\n      }\n    }\n  }\n}\n\nexport const sliceConfig: KernelConfig = {\n  kernelName: Slice,\n  backendName: 'wasm',\n  kernelFunc: slice as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights\n  Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n  except in compliance with the License.\n * You may obtain a copy of the License at\n *\n  http://www.apache.org/licenses/LICENSE-2.0\n *\n  Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *\n  =====\n\n  *\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,\nKernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport\n  { reshape } from './Reshape';\nimport { slice } from './Slice';\nimport { transpose } from './Transpose';\n\nfunction\n  batchToSpaceND(args: {\n  inputs: BatchToSpaceNDInputs,\n  backend: BackendWasm,\n  attrs:\n  BatchToSpaceNDAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { blockShape,\n  crops } = attrs;\n\n  const prod = blockShape.reduce((a, b) => a * b);\n  const reshaped =\n  backend_util.getReshaped(x.shape, blockShape, prod);\n  const permuted =\n  backend_util.getPermuted(reshaped.length, blockShape.length);\n  const reshapedPermuted =\n  backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n  const sliceBeginCoords =\n  backend_util.getSliceBeginCoords(crops, blockShape.length);\n  const sliceSize =\n  backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n  const xReshaped = reshape({ inputs:

```



```
{x}, backend, attrs: {shape: reshaped});\n const xTransposed =\n  transpose({inputs: {x: xReshaped}, backend,\n  attrs: {perm: permuted}});\n const xTransposedReshaped = reshape(\n  {inputs: {x: xTransposed}, backend,\n  attrs: {shape: reshapedPermuted}});\n const result = slice({\n  inputs: {x: xTransposedReshaped},\n  backend,\n  attrs: {begin: sliceBeginCoords, size: sliceSize}\n });\n\n backend.disposeData(xReshaped.dataId);\n backend.disposeData(xTransposed.dataId);\n backend.disposeData(xReshaped.dataId);\n\n return\n result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n  kernelName: BatchToSpaceND,\n  backendName: 'wasm',\n  kernelFunc: batchToSpaceND as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```

```
=====\n\n*/\n\nimport {Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport\n {TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nexport function\n cast(\n  args: {inputs: CastInputs, attrs: CastAttrs, backend: BackendWasm};\n  TensorInfo {\n    const {inputs:\n    {x}, attrs: {dtype}, backend} = args;\n    const out = backend.makeOutput(x.shape, dtype);\n    const inVals =\n    backend.toArrayFromHeap(x);\n    const outVals = backend.toArrayFromHeap(out);\n    outVals.set(inVals);\n    return out;\n  })\n\nexport const castConfig: KernelConfig = {\n  kernelName: Cast,\n  backendName: 'wasm',\n  kernelFunc: cast as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *

```

```
=====\n\n*/\n\nimport {KernelConfig, Ceil} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n '../unary_kernel';\n\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```

```
=====\n\n*/\n\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc} from\n '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmClip: (xId: number, min:\n number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmClip =\n  backend.wasm.cwrap(ClipByValue, null /* void */, [\n    'number', // x_id\n    'number', // min\n    'number', //\n    max\n    'number' // out_id\n  ]);\n\n  function clip(args: {\n    inputs: ClipByValueInputs,\n    backend:\n    BackendWasm,\n    attrs: ClipByValueAttrs\n  }) {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {clipValueMin, clipValueMax} = attrs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const out =\n    backend.makeOutput(x.shape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmClip(xId,\n    clipValueMin, clipValueMax, outId);\n    return out;\n  }\n\n  export const clipByValueConfig: KernelConfig = {\n    kernelName: ClipByValue,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: clip as {} as\n    KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the

```

Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*
import { backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util } from
 '@tensorflow/tfjs-core';
import { BackendWasm } from '../backend_wasm';
import { concatImplCPU } from
 '../kernel_utils/shared';
import { identity } from './Identity';
import { reshape } from './Reshape';
export function
concat(
  args: { inputs: ConcatInputs, backend: BackendWasm, attrs: ConcatAttrs }
) {
  const { inputs, backend }
= args;
  const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];
  let outShape =
backend_util.computeOutShape(inputs.map(t => t.shape), axis);
  // Keep only non-empty tensors (ignore tensors
with 0 in their shape).
  const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);
  if ($inputs.length ===
1) {
    return identity({ inputs: { x: $inputs[0] }, backend });
  }
  const out = backend.makeOutput(outShape,
inputs[0].dtype);
  if (util.sizeFromShape(outShape) === 0) {
    return out;
  }
  const shapes =
$inputs.map(t => t.shape);
  backend_util.assertParamsConsistent(shapes, axis);
  if ($inputs[0].dtype ===
'string') {
    // Any concat of n-dimensional tensors across any axis can be reduced to
    // a concatenation of two-
dimensional tensors across the axis 1 by first
    // partitioning the axes of the original tensors into those less than
    // axis to be concatenated and the rest. Then reshape the tensors
    // into a two-dimensional tensor by
collapsing these two sets of axes and
    // concatenate the resulting matrices across the axis 1, finally reshaping
    // the result to have the proper shape.
    const inputs2D = $inputs.map(t => {
      const innerSize =
util.sizeFromShape(t.shape.slice(axis));
      const shape = [-1, innerSize];
      return reshape({ inputs: { x: t },
backend, attrs: { shape } });
    });
    const inputsValShapes = inputs2D.map(t => {
      return { vals:
backend.readSync(t.dataId), shape: t.shape };
    });
    // Concat 2d tensors along axis=1.
    outShape =
backend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);
    const simplyConcat =
inputs2D[0].shape[0] === 1;
    const outVals = concatImplCPU(
      inputsValShapes, outShape,
inputs[0].dtype,
      simplyConcat) as string[];
    const finalOutShape =
backend_util.computeOutShape($inputs.map(t => t.shape), axis);
    out.shape = finalOutShape;
    const
outData = backend.dataIdMap.get(out.dataId);
    outData.stringBytes =
backend_util.fromStringArrayToUint8(outVals);
    inputs2D.forEach(t => backend.disposeData(t.dataId));
    return out;
  }
  const batchDim = util.sizeFromShape($inputs[0].shape.slice(0, axis));
  let sumInnerDims =
0;
  const innerDims = $inputs.map(input => {
    const innerDim = util.sizeFromShape(input.shape.slice(axis));
    sumInnerDims += innerDim;
    return innerDim;
  });
  const inVals = $inputs.map(input =>
backend.typedArrayFromHeap(input));
  const outVals = backend.typedArrayFromHeap(out);
  for (let b = 0; b <
batchDim; b++) {
    let outOffset = b * sumInnerDims;
    for (let i = 0; i < inVals.length; i++) {
      const
innerDim = innerDims[i];
      const inOffset = b * innerDim;
      const vals = inVals[i].subarray(inOffset,
inOffset + innerDim);
      outVals.set(vals, outOffset);
      outOffset += innerDim;
    }
  }
  return
out;
}
export const concatConfig: KernelConfig = {
  kernelName: Concat,
  backendName: 'wasm',
  kernelFunc: concat as { } as KernelFunc,
};
/**
 * @license
 * Copyright 2019 Google LLC. All Rights
Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file
except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
governing permissions and
 * limitations under the License.
 *
 */
=====
```

```
*
import { backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, KernelConfig, KernelFunc, Tensor4D } from
```

```

'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmConv2d: (\n  xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number,
filterWidth: number, padTop: number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad:
number,\n  dilationHeight: number, dilationWidth: number, strideHeight: number,\n  strideWidth: number,
inputChannels: number, outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n  wasmConv2d = backend.wasm.cwrap(Conv2D, null /* void */, [\n  'number', // xId\n
'number', // batchSize\n  'number', // inputHeight\n  'number', // inputWidth\n  'number', // filterId\n  'number', //
filterHeight\n  'number', // filterWidth\n  'number', // padTop\n  'number', // padRight\n  'number', //
padBottom\n  'number', // padLeft\n  'number', // isSamePad\n  'number', // dilationHeight\n  'number', //
dilationWidth\n  'number', // strideHeight\n  'number', // strideWidth\n  'number', // inputChannels\n  'number', //
outputChannels\n  'number', // outId\n  ]);\n\nfunction conv2d(\n  args: {inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs}) {\n  const {inputs, attrs, backend} = args;\n\n  const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n  const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n  const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n  pad, dimRoundingMode, false,
$dataFormat);\n\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const
padTop = convInfo.padInfo.top;\n  const padRight = convInfo.padInfo.right;\n  const padBottom =
convInfo.padInfo.bottom;\n  const padLeft = convInfo.padInfo.left;\n  const dilationHeight =
convInfo.dilationHeight;\n  const dilationWidth = convInfo.dilationWidth;\n  const strideHeight =
convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n  const inputChannels =
convInfo.inChannels;\n  const outputChannels = convInfo.outChannels;\n  const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n\n  if (convInfo.dataFormat !== 'channelsLast') {\n  throw new Error(\n    `wasm backend
Conv2D does not support dataFormat:` +\n    ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n  }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  wasmConv2d(\n    xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n    filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n    dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n    outputChannels, outId);\n  return out;\n}\n\nexport
const conv2DConfig: KernelConfig = {\n  kernelName: Conv2D,\n  backendName: 'wasm',\n  setupFunc: setup,\n
kernelFunc: conv2d as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n *
=====
*\n\nimport {backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n  dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n  filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n
outHeight: number, outWidth: number, outChannels: number,\n  strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n  fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n
xRowStride: number, xColStride: number, xChannelStride: number,\n  yBatchStride: number, yRowStride:
number, yColStride: number,\n  yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n  'number', // filterId\n  'number', // batchSize\n  'number', // filterHeight\n  'number', //
filterWidth\n  'number', // inHeight\n  'number', // inWidth\n  'number', // inChannels\n  'number', //

```

```

outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number',
// fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number',
// yChannelStride\n 'number', // outId\n );\n}\n\nfunction conv2DBackpropInput(args: {\n backend:
BackendWasm,\n inputs: Conv2DBackpropInputInputs,\n attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const {backend, inputs, attrs} = args;\n const {dy, filter} = inputs;\n const {strides, pad, dataFormat,
dimRoundingMode, inputShape} = attrs;\n\n const dilations = 1;\n\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n const {\n batchSize,\n filterHeight,\n filterWidth,\n inChannels,\n
inHeight,\n inWidth,\n outChannels,\n outHeight,\n outWidth,\n strideHeight,\n strideWidth\n } =
convInfo;\n\n const topPad = filterHeight - 1 - convInfo.padInfo.top;\n const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n const dxStrides =
util.computeStrides(convInfo.inShape);\n const dyStrides = util.computeStrides(dy.shape);\n const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n const xBatchStride = dxStrides[0];\n const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n const xColStride = isChannelsLast ? dxStrides[2] : 1;\n const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n const yBatchStride = dyStrides[0];\n const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n const yColStride = isChannelsLast ? dyStrides[2] : 1;\n const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n const out = backend.makeOutput(convInfo.inShape,
'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const dyId =
backend.dataIdMap.get(dy.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
wasmConv2DBackpropInput(\n dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n
inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n topPad, leftPad, fltS0, fltS1, fltS2,\n
xBatchStride, xRowStride,\n xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n
yChannelStride, outId);\n return out;\n}\n\nexport const conv2DBackpropInputConfig: KernelConfig = {\n
kernelName: Conv2DBackpropInput,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport {Cos, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const cosConfig: KernelConfig = createUnaryKernelConfig(Cos);\n", "/**\n * @license\n
* Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport {Cosh, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const coshConfig: KernelConfig = createUnaryKernelConfig(Cosh);\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a

```

copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*^
import {CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc,
TensorInfo} from '@tensorflow/tfjs-core';
import {BackendWasm} from '../backend_wasm';
import {cast} from './Cast';
// Must match enum in CropAndResize.cc
enum InterpolationMethod {
  bilinear = 0,
  nearest = 1
}
let wasmCropAndResize: (
  imagesId: number, boxesId: number, boxIndId: number, numBoxes:
  number,
  imagesShape: Uint8Array, cropHeight: number, cropWidth: number,
  method: number,
  extrapolationValue: number, outId: number) => void;
function setup(backend: BackendWasm): void {
  wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [
    'number', // imagesId
    'number', // boxesId
    'number', // boxIndId
    'number', // numBoxes
    'array', // images shape
    'number', // cropHeight
    'number', // cropWidth
    'number', // method
    'number', // extrapolation value
    'number' // out id
  ]);
  function cropAndResize(args: {
    backend: BackendWasm,
    inputs: CropAndResizeInputs,
    attrs: CropAndResizeAttrs
  }): TensorInfo {
    const {backend, inputs, attrs} = args;
    const {method, extrapolationValue, cropSize} = attrs;
    const {image, boxes, boxInd} = inputs;
    const numBoxes = boxes.shape[0];
    const [cropHeight, cropWidth] = cropSize as [number, number];
    const outShape = [numBoxes, cropHeight, cropWidth, image.shape[3]];
    let imagesData = backend.dataIdMap.get(image.dataId);
    let castedData;
    if (image.dtype !== 'float32') {
      castedData = cast({backend, inputs: {x: image}, attrs: {dtype: 'float32'}});
      imagesData = backend.dataIdMap.get(castedData.dataId);
    }
    const imagesId = imagesData.id;
    const boxesId = backend.dataIdMap.get(boxes.dataId).id;
    const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;
    const out = backend.makeOutput(outShape, 'float32');
    const outId = backend.dataIdMap.get(out.dataId).id;
    const imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);
    wasmCropAndResize(
      imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,
      cropWidth,
      InterpolationMethod[method as {} as keyof typeof InterpolationMethod],
      extrapolationValue, outId);
    if (castedData != null) {
      backend.disposeData(castedData.dataId);
    }
    return out;
  }
  export const cropAndResizeConfig: KernelConfig = {
    kernelName: CropAndResize,
    backendName: 'wasm',
    setupFunc: setup,
    kernelFunc: cropAndResize as {} as KernelFunc
  };
  /**
   * @license
   * Copyright 2020 Google LLC. All Rights Reserved.
   * Licensed under the Apache License, Version 2.0 (the "License");
   * you may not use this file except in compliance with the License.
   * You may obtain a copy of the License at
   * http://www.apache.org/licenses/LICENSE-2.0
   * Unless required by applicable law or agreed to in writing,
   * software distributed under the License is distributed on an "AS IS" BASIS,
   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   * See the License for the specific language governing permissions and
   * limitations under the License.
   */
}
=====
```

```
=====
*^
import {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';
import {BackendWasm} from '../backend_wasm';
import {CppType} from './types';
import {transpose} from './Transpose';
let wasmCumsum: (xId: number, exclusive: number, reverse:
number,
  finalDim: number, outId: number, dtype: CCppType) => void;
function setup(backend: BackendWasm) {
  wasmCumsum = backend.wasm.cwrap(Cumsum, null /*void*/, [
    'number', // x_id
    'number', // exclusive
    'number', // reverse
    'number', // final_dim
    'number', // out_id
    'number' // dtype
  ]);
  export function cumsum(
    args: {inputs: CumsumInputs, backend: BackendWasm, attrs: CumsumAttrs}):
    TensorInfo {
    const {inputs, backend, attrs} = args;
    const {x} = inputs;
    const {axis, exclusive, reverse} = attrs;
    const xRank = x.shape.length;
    util.assert(x.dtype === 'float32' || x.dtype === 'int32',
      () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);
    // permute required axis to inner most axis
    const permutation = backend_util.getAxesPermutation([axis], xRank);
    let permutedX = x;
  }
}
=====
```

```

if (permutation !== null) {\n  permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n }
const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];
backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n\n const permutedOut =
backend.makeOutput(permutedX.shape, permutedX.dtype);\n const finalDim = permutedX.shape[permutedAxis];\n
const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n const permutedOutId =
backend.dataIdMap.get(permutedOut.dataId).id;\n wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0,
finalDim,\n      permutedOutId, CppDType[x.dtype]);\n\n // transpose data back if permuted\n let out =
permutedOut;\n if (permutation !== null) {\n  const undoPermutation =
backend_util.getUndoAxesPermutation(permutation);\n  out = transpose(\n    {inputs: {x: permutedOut}, attrs:
{perm: undoPermutation}, backend});\n  backend.disposeData(permutedX.dataId);\n
backend.disposeData(permutedOut.dataId);\n }\n return out;\n}\n\nexport const cumsumConfig: KernelConfig =
{\n  kernelName: Cumsum,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: cumsum as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace:
(\n  xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n  xStridesLength: number,
outputShape: Uint8Array, outputStrides: Uint8Array,\n  outSize: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n  wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\n    'number', // xId\n    'number', // blockSize\n    'number', // channelsLast\n    'array', // xStrides\n
'number', // xStridesLength\n    'array', // outputShape\n    'array', // outputStrides\n    'number', // outSize\n
'number', // outId\n  ]);\n}\n\nexport function depthToSpace(args: {\n  backend: BackendWasm,\n  inputs:
DepthToSpaceInputs,\n  attrs: DepthToSpaceAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n  const {blockSize, dataFormat} = attrs;\n\n  const batchSize = x.shape[0];\n  const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n  const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n  const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n  const
outputHeight = inputHeight * blockSize;\n  const outputWidth = inputWidth * blockSize;\n  const outputDepth =
inputDepth / (blockSize * blockSize);\n\n  const outputShape = (dataFormat === 'NHWC') ?\n    [batchSize,
outputHeight, outputWidth, outputDepth] :\n    [batchSize, outputDepth, outputHeight, outputWidth];\n\n  const
out = backend.makeOutput(outputShape, 'float32');\n\n  const xData = backend.dataIdMap.get(x.dataId);\n  const
xId = xData.id;\n  const xStridesBytes =\n    new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n  const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n  const outStridesBytes =\n    new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n  wasmDepthToSpace(\n    xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n    outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n  return
out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n  kernelName: DepthToSpace,\n  backendName:
'wasm',\n  setupFunc: setup,\n  kernelFunc: depthToSpace as {} as KernelFunc\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. * See the License for the specific language governing permissions and * limitations under the License.

```
=====
*\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n  xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, padTop:
number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n  dilationHeight:
number, dilationWidth: number, strideHeight: number,\n  strideWidth: number, inputChannels: number,
outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmDepthwiseConv2d =\n  backend.wasm.cwrap(DepthwiseConv2dNative, null /* void */, [\n    'number', //
xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', //
filterId\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', //
padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', //
dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n
'number', // inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n\nfunction
depthwiseConv2d(args: {\n  inputs: DepthwiseConv2dNativeInputs,\n  backend: BackendWasm,\n  attrs:
DepthwiseConv2dNativeAttrs}) {\n  const {inputs, attrs, backend} = args;\n\n  const {x, filter} = inputs;\n
  const xId = backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n
  const
{strides, dilations, pad, dimRoundingMode} = attrs;\n\n  const $dilations = dilations == null ? [1, 1] : dilations;\n\n
  const convInfo = backend_util.computeConv2DInfo(\n    (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n    ($dilations as number | [number, number]), pad, dimRoundingMode,\n    true /* depthwise */);\n\n
  const filterHeight = convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop =
convInfo.padInfo.top;\n  const padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n
  const padLeft = convInfo.padInfo.left;\n  const dilationHeight = convInfo.dilationHeight;\n  const dilationWidth =
convInfo.dilationWidth;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth =
convInfo.strideWidth;\n  const inputChannels = convInfo.inChannels;\n  const outputChannels =
convInfo.outChannels;\n  const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n  if
(convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm backend DepthwiseConv2dNative
does not support dataFormat:` +\n      `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n  }\n\n  const out =
backend.makeOutput(convInfo.outShape, 'float32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
  wasmDepthwiseConv2d(\n    xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n    filterWidth,
padTop, padRight, padBottom, padLeft, isSamePad,\n    dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n    outputChannels, outId);\n  return out;\n}\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n  kernelName: DepthwiseConv2dNative,\n  backendName: 'wasm',\n  setupFunc: setup,\n
kernelFunc: depthwiseConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
```

```
*\n\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
```

agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const equalConfig: KernelConfig =\n  createBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\n\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {reshape} from './Reshape';\n\nexport function expandDims(args: {\n  inputs: ExpandDimsInputs,\n  attrs: ExpandDimsAttrs,\n  backend: BackendWasm\n}) {\n  const {inputs, attrs, backend} = args;\n  const {input} = inputs;\n  const {dim} = attrs;\n  const inputRank = input.shape.length;\n  const newShape = input.shape.slice();\n  let $dim = dim;\n  if (dim < 0) {\n    // Negative value is counted from the tail of rank.\n    util.assert(\n      -(inputRank + 1) <= dim,\n      () => `Axis must be in the interval [${-(inputRank + 1)}, ${inputRank}]`);\n    $dim = inputRank + dim + 1;\n  }\n  newShape.splice($dim, 0, 1);\n  return reshape({inputs: {x: input}, backend, attrs: {shape: newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'wasm',\n  kernelFunc: expandDims as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\n\nexport function fill(args: {attrs: FillAttrs, backend: BackendWasm}) {\n  const {attrs: {shape, value, dtype}, backend} = args;\n  const out = backend.makeOutput(shape, dtype);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.fill(value as number);\n  return out;\n}\n\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName: 'wasm',\n  kernelFunc: fill as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
```



```

({outputChannels});\n } \n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedConv2D does not support
dataFormat:` +\n `${dataFormat}`. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth, \n biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight, \n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels, \n fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n }\n\n\nexport const fusedConv2DConfig:
KernelConfig = {\n kernelName: FusedConv2D, \n backendName: 'wasm', \n setupFunc: setup, \n kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nimport {FusableActivation} from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n (xId: number, batchSize: number, inputHeight: number, inputWidth: number, \n
filterId: number, filterHeight: number, filterWidth: number, \n biasId: number, padTop: number, padRight:
number, padBottom: number, \n padLeft: number, isSamePad: number, dilationHeight: number, \n
dilationWidth: number, strideHeight: number, strideWidth: number, \n inputChannels: number, outputChannels:
number, activation: number, \n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedDepthwiseConv2d =\n backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
'number', // inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n ]);\n\n\nfunction
fusedDepthwiseConv2d(args: {\n inputs: FusedDepthwiseConv2DInputs, \n backend: BackendWasm, \n attrs:
FusedDepthwiseConv2DAttrs\n}) {\n const {inputs, attrs, backend} = args;\n const {x, filter, bias,
preluActivationWeights} = inputs;\n const {\n strides, \n pad, \n dilations, \n dataFormat, \n
dimRoundingMode, \n activation, \n leakyreluAlpha\n } = attrs;\n\n const convInfo =
backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations, \n
pad, dimRoundingMode, true /* depthwise */);\n\n const fusedActivation =\n FusableActivation[activation as {}
as keyof typeof FusableActivation];\n if (fusedActivation == null) {\n throw new Error(\n `${activation}
activation not yet supported for FusedDepthwiseConv2D`\n +\n `in the wasm backend.`);\n }\n\n const xId =

```

```

backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n const
outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if (bias != null) {\n const biasData =
backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n throw new Error(\n
`FusedDepthwiseConv2D only supports rank-1 bias but got ` +\n `rank ${biasData.shape.length}.`);\n }\n
if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n `FusedDepthwiseConv2D bias shape
(${biasData.shape}) does not ` +\n `match the number of output channels (${outputChannels})`);\n }\n
biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth =
convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const
padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedDepthwiseConv2D does not support
dataFormat:` +\n `${dataFormat}`. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedDepthwiseConv2d(\n xId, batchSize,
inHeight, inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft,
isSamePad, dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n
fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n kernelName: FusedDepthwiseConv2D,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: fusedDepthwiseConv2d as { } as KernelFunc\n};\n"/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { CppDType } from './types';\n\nlet
wasmGatherNd: (\n xId: number, dtype: CppDType, indicesId: number, numSlices: number,\n sliceRank:
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n 'number', // xId\n
'number', // dtype\n 'number', // indicesId\n 'number', // numSlices\n 'number', // sliceRank\n
'number', // sliceSize\n 'array', // strides\n 'number' // outId\n ]);\n}\n\nfunction gatherNd(args: { backend: BackendWasm,
inputs: GatherNdInputs }):\n TensorInfo {\n const { backend, inputs } = args;\n const { params, indices } =
inputs;\n\n const [resultShape, numSlices, sliceSize, strides] =\n gather_util.prepareAndValidate(params,
indices);\n\n const out = backend.makeOutput(resultShape, params.dtype);\n if (numSlices === 0) {\n return
out;\n }\n\n const indicesShape = indices.shape;\n const sliceRank = indicesShape[indicesShape.length - 1];\n\n
const xData = backend.dataIdMap.get(params.dataId);\n const xId = xData.id;\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmGatherNd(\n xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n stridesBytes,
outId);\n\n return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n kernelName: GatherNd,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherNd\n};\n"/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you

```

may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,  
TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from  
 './backend_wasm';\nimport {reshape} from './Reshape';\nimport {CppType} from './types';\n\nlet wasmGather:  
(\n  xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n  indicesId: number, batchSize:  
  number, outStrides: Uint8Array,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n    'number', // xId\n    'number', // dtype\n    'array', // xStrides\n    'number', // stridesSize\n    'number', // indicesId\n    'number', // batchSize\n    'array', // outStrides\n    'number' // outId\n  ]);\n\n  function gatherV2(\n    args: {backend: BackendWasm, inputs:  
    GatherV2Inputs, attrs: GatherV2Attrs}):  
    TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {x,  
    indices} = inputs;\n    const {axis, batchDims} = attrs;\n\n    // Throw error when any index is out of bound.\n    const parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n    const indicesVals = backend.readSync(indices.dataId) as  
    TypedArray;\n    const axisDim = x.shape[parsedAxis];\n    for (let i = 0; i < indicesVals.length; ++i) {\n      const index  
    = indicesVals[i];\n      util.assert(\n        index <= axisDim - 1 && index >= 0,\n        () =>\n          `GatherV2: the  
    index value ${index} is not in [0, ${axisDim - 1}]`);\n    }\n\n    const shapeInfo =  
    backend_util.segment_util.collectGatherOpShapeInfo(\n      x as Tensor, indices as Tensor, parsedAxis,  
    batchDims);\n\n    const flattenX = reshape({\n      inputs: {x},\n      attrs: {\n        shape: [\n          shapeInfo.batchSize,  
    shapeInfo.outerSize, shapeInfo.dimSize,\n          shapeInfo.sliceSize\n        ]\n      },\n      backend\n    });\n    const  
    indicesSize = util.sizeFromShape(indices.shape);\n    const flattenIndex = reshape({\n      inputs: {x: indices},\n      attrs:  
    {shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n      backend\n    });\n    const flattenOutputShape =  
    [\n      shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n      shapeInfo.sliceSize\n    ];\n\n    const out = backend.makeOutput(flattenOutputShape, x.dtype);\n    if (util.sizeFromShape(x.shape) === 0) {\n      return out;\n    }\n\n    const stridesSize = flattenX.shape.length - 1;\n    const xData =  
    backend.dataIdMap.get(flattenX.dataId);\n    const xId = xData.id;\n\n    const indicesData =  
    backend.dataIdMap.get(flattenIndex.dataId);\n    const indicesId = indicesData.id;\n\n    const outId =  
    backend.dataIdMap.get(out.dataId).id;\n\n    const xStridesBytes = new Uint8Array(\n      new  
    Int32Array(util.computeStrides(flattenX.shape)).buffer);\n    const outStridesBytes = new Uint8Array(\n      new  
    Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n    wasmGather(\n      xId, CppDType[x.dtype],  
    xStridesBytes, stridesSize, indicesId,\n      shapeInfo.batchSize, outStridesBytes, outId);\n\n    backend.disposeData(flattenX.dataId);\n    backend.disposeData(flattenIndex.dataId);\n\n    // reshape\n    out.shape =  
    shapeInfo.outputShape;\n    return out;\n  }\n\n  export const gatherV2Config: KernelConfig = {\n    kernelName:  
    GatherV2,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: gatherV2 as { } as KernelFunc\n  };}\n\n\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from  
 './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\n  createBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n\n\n * @license\n * Copyright 2019 Google  
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
```

use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport { GreaterEqual, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig }\nfrom './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from\n './types';\nlet wasmFunc: (\n  xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>\nvoid;\nfunction setupFunc(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(LeakyRelu,\n  null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // leakyrelu_alpha\n    'number', //\n    out_id\n  ]);\n}\nexport function leakyRelu(\n  args: {\n    inputs: LeakyReluInputs, attrs: LeakyReluAttrs,\n    backend: BackendWasm\n  }):\n  TensorInfo {\n    const { inputs: { x }, attrs: { alpha }, backend } = args;\n    const xId =\n    backend.dataIdMap.get(x.dataId).id;\n    // According to TF API, LeakyRelu returns float32 when input is either\n    float32\n    // or int32.\n    const out = backend.makeOutput(x.shape, 'float32');\n    if (util.sizeFromShape(x.shape)\n    !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmFunc(xId, CppDType[x.dtype], alpha,\n      outId);\n    }\n    return out;\n  }\n}\nexport const leakyReluConfig: KernelConfig = {\n  kernelName: LeakyRelu,\n  backendName: 'wasm',\n  setupFunc,\n  kernelFunc: leakyRelu as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { KernelConfig, Less } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, LessEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019
```

Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\ncreateBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\nlet wasmMax: (xId: number, dtype: number, reduceSize: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n  function max(args: {backend: BackendWasm, inputs: MaxInputs, attrs: MaxAttrs}): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {reductionIndices: axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n    const {transposed, axes, originalAxes, inputWasTransposed} =\n      permuteAxesAndTranspose(x, axis, backend);\n    if (inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      input = transposed;\n      inputId = transposedId;\n    }\n    const inputRank = input.shape.length;\n    backend_util.assertAxesAreInnerMostDims('max', axes, inputRank);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape, axes);\n    const reduceSize = util.sizeFromShape(reduceShape);\n    const out = backend.makeOutput(outShape, x.dtype);\n    if (util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmMax(inputId, CCppType[x.dtype], reduceSize, outId);\n    }\n    if (inputWasTransposed) {\n      // dispose of the transposed tensor.\n      backend.disposeData(transposed.dataId);\n    }\n    if (keepDims) {\n      // reshape\n      const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n    return out;\n  }\n  export const maxConfig: KernelConfig = {\n    kernelName: Max,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: max as {} as KernelFunc\n  };\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
```

use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Maximum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const maximumConfig: KernelConfig =\n createBinaryKernelConfig(Maximum, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util}\n from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nlet wasmMaxPool: (\n  xId:\n  number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:\n  number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:\n  number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n  wasmMaxPool =\n  backend.wasm.cwrap(MaxPool, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', //\n    inputHeight\n    'number', // inputWidth\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', //\n    padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', //\n    dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', //\n    inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n}\nfunction maxPool(\n  args:\n  {inputs: MaxPoolInputs, backend: BackendWasm, attrs: MaxPoolAttrs}) {\n  const {inputs, attrs, backend} =\n  args;\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  // TF API\n  supports int32 input. CPU and WebGL backend also support int32\n  // input. WASM backend doesn't support it\n  because it uses xnpack which only\n  // supports float32.\n  // Add the following assert only for the WASM\n  backend instead of at core op\n  // level.\n  // TODO: add support for int32 input.\n  util.assert(\n    x.dtype\n    === 'float32',\n    () =>\n    `Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);\n  const {filterSize, strides, pad, dimRoundingMode} = attrs;\n  const convInfo = backend_util.computePool2DInfo(\n    x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n  const filterHeight =\n  convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const\n  padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n  const padLeft =\n  convInfo.padInfo.left;\n  const dilationHeight = convInfo.dilationHeight;\n  const dilationWidth =\n  convInfo.dilationWidth;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth =\n  convInfo.strideWidth;\n  const inputChannels = convInfo.inChannels;\n  const outputChannels =\n  convInfo.outChannels;\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm\n      backend does not support dataFormat: ` +\n      `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n  }\n  const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const outId =\n  backend.dataIdMap.get(out.dataId).id;\n  wasmMaxPool(\n    xId, x.shape[0], x.shape[1], x.shape[2],\n    filterHeight, filterWidth,\n    padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,\n    strideHeight, strideWidth, inputChannels, outputChannels, outId);\n  return out;\n}\nexport const maxPoolConfig:\n KernelConfig = {\n  kernelName: MaxPool,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: maxPool\n  as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
```


under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*/nimport {backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util} from  
'@tensorflow/tfjs-core';nimport {BackendWasm} from './backend_wasm';nimport {cast} from './Cast';nimport  
{permuteAxesAndTranspose} from './kernel_utils';nlet wasmMean: (xId: number, reduceSize: number, outId:  
number) => void;nfunction setup(backend: BackendWasm): void {n  wasmMean =  
backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);n}nexport function mean(n  args:  
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs}):n  TensorInfo {n  const {backend, inputs,  
attrs} = args;n  const {axis, keepDims} = attrs;n  const {x} = inputs;n  const xId =  
backend.dataIdMap.get(x.dataId).id;n  let inputId = xId;n  let input = x;n  const {transposed, axes, originalAxes,  
inputWasTransposed} =n    permuteAxesAndTranspose(x, axis, backend);n  let reductionAxes = axes;n  if  
(inputWasTransposed) {n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;n    if (transposedId  
!== xId) {n      // transpose was not a no-op. We will need to dispose of this      // once we are done.      input =  
transposed;n      inputId = transposedId;n      reductionAxes = backend_util.getInnerMostAxes(n  
reductionAxes.length, input.shape.length);n    }n  }n  backend_util.assertAxesAreInnerMostDims(n  'mean',  
reductionAxes, input.shape.length);n  const [outShape, reduceShape] =n  
backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);n  const reduceSize =  
util.sizeFromShape(reduceShape);n  let castedInput = input;n  if (input.dtype !== 'float32') {n    castedInput =n  
cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});n    inputId =  
backend.dataIdMap.get(castedInput.dataId).id;n  }n  const out = backend.makeOutput(outShape, 'float32');n  if  
(util.sizeFromShape(input.shape) !== 0) {n    const outId = backend.dataIdMap.get(out.dataId).id;n  
wasmMean(inputId, reduceSize, outId);n  }n  if (inputWasTransposed) {n    // dispose of the transposed  
tensor.n    backend.disposeData(transposed.dataId);n  }n  if (keepDims) {n    // reshape      const newShape =  
backend_util.expandShapeToKeepDim(out.shape, originalAxes);n    out.shape = newShape;n  }n  if (input.dtype  
!== 'float32') {n    backend.disposeData(castedInput.dataId);n  }n  return out;n}nexport const meanConfig:  
KernelConfig = {n  kernelName: Mean,n  backendName: 'wasm',n  setupFunc: setup,n  kernelFunc: mean as {}  
as KernelFuncn};n"/**n * @licensen * Copyright 2019 Google LLC. All Rights Reserved.n * Licensed under  
the Apache License, Version 2.0 (the "License");n * you may not use this file except in compliance with the  
License.n * You may obtain a copy of the License atn *n * http://www.apache.org/licenses/LICENSE-2.0n *n *  
Unless required by applicable law or agreed to in writing, softwaren * distributed under the License is distributed  
on an "AS IS" BASIS,n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.n * See the License for the specific language governing permissions andn * limitations under the  
License.n *
```

```
=====  
*/nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from  
'@tensorflow/tfjs-core';nimport {BackendWasm} from './backend_wasm';nimport  
{permuteAxesAndTranspose} from './kernel_utils';nimport {CppType} from './types';nlet wasmMin: (xId:  
number, dtype: number, reduceSize: number, outId: number) => void;nfunction setup(backend:  
BackendWasm): void {n  wasmMin = backend.wasm.cwrap(Min, null /*void*/, [n  'number', // x_idn  
'number', // dtypen  'number', // reduce_sizen  'number', // out_idn  ]);n}nfunction min(args: {backend:  
BackendWasm, inputs: MinInputs, attrs: MinAttrs}):n  TensorInfo {n  const {backend, inputs, attrs} = args;n  
const {axis, keepDims} = attrs;n  const {x} = inputs;n  const xId = backend.dataIdMap.get(x.dataId).id;n  let  
inputId = xId;n  let input = x;n  const {transposed, axes, originalAxes, inputWasTransposed} =n
```

```

permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n  const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n  if (transposedId !== xId) {\n    // transpose was not a no-op. We
will need to dispose of this\n    // once we are done.\n    input = transposed;\n    inputId = transposedId;\n  }\n}\n\n const inputRank = input.shape.length;\n\n backend_util.assertAxesAreInnerMostDims('min', axes,
inputRank);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape,
axes);\n  const reduceSize = util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape,
input.dtype);\n  if (util.sizeFromShape(input.shape) !== 0) {\n    const outId =
backend.dataIdMap.get(out.dataId).id;\n    wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);\n  }\n}\n\n if
(inputWasTransposed) {\n  // dispose of the transposed tensor.\n  backend.disposeData(transposed.dataId);\n}\n\n if (keepDims) {\n  // reshape\n  const newShape = backend_util.expandShapeToKeepDim(out.shape,
originalAxes);\n  out.shape = newShape;\n}\n\n return out;\n}\n\nexport const minConfig: KernelConfig = {\n
kernelName: Min,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: min as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const minimumConfig: KernelConfig =\ncreateBinaryKernelConfig(Minimum, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2021 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\n// Must match
enum in MirrorPad.cc\nenum MirrorPaddingMode {\n  reflect = 0,\n  symmetric = 1\n}\n\nlet wasmMirrorPad: (\n
xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes:
Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n  outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n  wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n
'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-
paddings\n 'array', // post-paddings\n 'number', // mode\n 'number', // outId\n ]);\n}\n\nfunction
mirrorPad(args: {\n  inputs: MirrorPadInputs,\n  backend: BackendWasm,\n  attrs: MirrorPadAttrs\n}) {\n  const
{inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n  const outShape = paddings.map(\n    (p, i) => p[0] /*
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out =
backend.makeOutput(outShape, x.dtype);\n\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n  const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n  const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n    new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n  const
postPaddingsBytes =\n    new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n  wasmMirrorPad(\n
xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n  postPaddingsBytes,
MirrorPaddingMode[mode], outId);\n  return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n

```

kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as { } as KernelFunc,\n setupFunc:
setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```
=====\n*\n\nimport { KernelConfig, Multiply } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from  
 './binary_kernel';\n\nconst supportsFullBroadcast = true;\nexport const multiplyConfig: KernelConfig =\n createBinaryKernelConfig(Multiply, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2020 Google  
 LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not  
 use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,  
 software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
 governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Neg } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from  
 './unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
 \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
 License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or  
 agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
 the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { BackendWasm } from './backend_wasm';\n\n// Analogous to `struct Result` in  
 `non_max_suppression_impl.h`\n\ninterface Result {\n  pSelectedIndices: number;\n  selectedSize: number;\n  pSelectedScores: number;\n  pValidOutputs: number;\n}\n\n/*\n * Parse the result of the c++ method, which has the  
 shape equivalent to\n * `Result`\n */\n\nexport function parseResultStruct(\n  backend: BackendWasm, resOffset:  
 number): Result {\n  const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n  const  
 pSelectedIndices = result[0];\n  const selectedSize = result[1];\n  const pSelectedScores = result[2];\n  const  
 pValidOutputs = result[3];\n  // Since the result was allocated on the heap, we have to delete it.\n  backend.wasm._free(resOffset);\n  return { pSelectedIndices, selectedSize, pSelectedScores,  
 pValidOutputs};\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under  
 the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
 License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
 on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
 implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
 License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,  
 NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from  
 './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n  boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number)
```

```

=> number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(\n  NonMaxSuppressionV3,\n  'number', // Result*\n  [\n    'number', // boxesId\n    'number', // scoresId\n    'number', // maxOutputSize\n    'number', // iouThreshold\n    'number', // scoreThreshold\n  ]);\n}\n\nfunction kernelFunc(args: {\n  backend: BackendWasm,\n  inputs: NonMaxSuppressionV3Inputs,\n  attrs: NonMaxSuppressionV3Attrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {iouThreshold, maxOutputSize, scoreThreshold} = attrs;\n  const {boxes, scores} = inputs;\n\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n  const resOffset =\n    wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n\n  const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n    parseResultStruct(backend, resOffset);\n\n  // Since we are not using scores for V3, we have to delete it from the heap.\n  backend.wasm._free(pSelectedScores);\n  backend.wasm._free(pValidOutputs);\n\n  const selectedIndicesTensor =\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n  return selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n  kernelName: NonMaxSuppressionV3,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: kernelFunc as {\n  KernelFunc,\n  };\n}"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs, NonMaxSuppressionV4Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n  boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number,\n  padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(\n  NonMaxSuppressionV4,\n  'number', // Result*\n  [\n    'number', // boxesId\n    'number', // scoresId\n    'number', // maxOutputSize\n    'number', // iouThreshold\n    'number', // scoreThreshold\n    'bool', // padToMaxOutputSize\n  ]);\n}\n\nfunction nonMaxSuppressionV4(args: {\n  backend: BackendWasm,\n  inputs: NonMaxSuppressionV4Inputs,\n  attrs: NonMaxSuppressionV4Attrs\n}): TensorInfo[] {\n  const {backend, inputs, attrs} = args;\n  const {iouThreshold, maxOutputSize, scoreThreshold, padToMaxOutputSize} =\n    attrs;\n  const {boxes, scores} = inputs;\n\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n  const resOffset = wasmFunc(\n    boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n    padToMaxOutputSize);\n\n  const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n    parseResultStruct(backend, resOffset);\n\n  // Since we are not using scores for V4, we have to delete it from the heap.\n  backend.wasm._free(pSelectedScores);\n\n  const selectedIndicesTensor =\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n  const validOutputsTensor =\n    backend.makeOutput([], 'int32', pValidOutputs);\n\n  return [selectedIndicesTensor, validOutputsTensor];\n}\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n  kernelName: NonMaxSuppressionV4,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: nonMaxSuppressionV4 as {\n  KernelFunc,\n  };\n}"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

License.\n *

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,
NonMaxSuppressionV5Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc:\n
(boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number,
softNmsSigma: number) =>\n  number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc =
backend.wasm.cwrap(\n    NonMaxSuppressionV5,\n    'number', // Result*\n    [\n    'number', // boxesId\n
'number', // scoresId\n    'number', // maxOutputSize\n    'number', // iouThreshold\n    'number', //
scoreThreshold\n    'number', // softNmsSigma\n    ]);\n}\n\nfunction kernelFunc(args: {\n  backend:
BackendWasm,\n  inputs: NonMaxSuppressionV5Inputs,\n  attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[\n
{\n  const { backend, inputs, attrs } = args;\n  const { iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma
} = attrs;\n  const { boxes, scores } = inputs;\n\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const
scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n  const resOffset = wasmFunc(\n    boxesId, scoresId,
maxOutputSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n\n  const { pSelectedIndices, selectedSize,
pSelectedScores, pValidOutputs } =\n    parseResultStruct(backend, resOffset);\n\n  // Since we are not using
validOutputs for V5, we have to delete it from the\n  // heap.\n  backend.wasm._free(pValidOutputs);\n\n  const
selectedIndicesTensor =\n    backend.makeOutput([selectedSize, 'int32', pSelectedIndices);\n  const
selectedScoresTensor =\n    backend.makeOutput([selectedSize, 'float32', pSelectedScores);\n\n  return
[selectedIndicesTensor, selectedScoresTensor];\n}\n\nexport const nonMaxSuppressionV5Config: KernelConfig =
{\n  kernelName: NonMaxSuppressionV5,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: kernelFunc
} as KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, NotEqual } from '@tensorflow/tfjs-core';\n\nimport { createBinaryKernelConfig } from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const notEqualConfig: KernelConfig =\n  createBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n", "/**\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from './backend_wasm';\n\nlet wasmOneHot: (\n  indicesId: number, depth:
number, onValue: number, offValue: number,\n  outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n  wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n    'number', // indices_id\n
'number', // depth,\n    'number', // onValue\n    'number', // offValue\n    'number' // out_id\n  ]);\n}\n\nfunction
oneHot(\n  args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n  const {inputs,
backend, attrs} = args;\n  const {indices} = inputs;\n  const {depth, onValue, offValue} = attrs;\n\n  const out =
backend.makeOutput([...indices.shape, depth], 'int32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const indicesData = backend.dataIdMap.get(indices.dataId);\n  const indicesId = indicesData.id;\n\n}
```

```
wasmOneHot(indicesId, depth, onValue, offValue, outId);\n\n return out;\n}\n\nexport const oneHotConfig:
KernelConfig = {\n kernelName: OneHot,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: oneHot as
{ } as KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, OnesLike, OnesLikeInputs } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from '../backend_wasm';\n\nfunction onesLike(args: { inputs: OnesLikeInputs, backend:
BackendWasm }) {\n const { inputs: { x }, backend } = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.tensorArrayFromHeap(out);\n outVals.fill(1);\n return out;\n}\n\nexport const
onesLikeConfig: KernelConfig = {\n kernelName: OnesLike,\n backendName: 'wasm',\n kernelFunc: onesLike as
{ } as KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { concat } from './Concat';\n\nimport
{ expandDims } from './ExpandDims';\n\nexport function pack(\n args: { inputs: PackInputs, backend:
BackendWasm, attrs: PackAttrs }):\n TensorInfo {\n const { inputs, backend, attrs } = args;\n const { axis } =
attrs;\n\n if (inputs.length === 1) {\n return expandDims(\n { inputs: { input: inputs[0] }, backend, attrs: { dim:
axis }});\n }\n\n const shape = inputs[0].shape;\n const dtype = inputs[0].dtype;\n\n inputs.forEach(t => {\n
util.assertShapesMatch(\n shape, t.shape,\n 'All tensors passed to stack must have matching shapes');\n
util.assert(\n dtype === t.dtype,\n () => 'All tensors passed to stack must have matching dtypes');\n });\n\n
const intermediateTensorInfos: TensorInfo[] = [];\n const expandedTensors = inputs.map(t => {\n const
expandedT =\n expandDims({ inputs: { input: t }, backend, attrs: { dim: axis }});\n
intermediateTensorInfos.push(expandedT);\n return expandedT;\n });\n\n const result = concat({ inputs:
expandedTensors, backend, attrs: { axis }});\n\n intermediateTensorInfos.forEach(t =>
backend.disposeData(t.dataId));\n\n return result;\n}\n\nexport const packConfig: KernelConfig = {\n kernelName:
Pack,\n backendName: 'wasm',\n kernelFunc: pack as { } as KernelFunc,\n};\n", "/**\n * @license\n * Copyright
2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { fill } from './Fill';\n\nimport { CppDType }
from './types';\n\nlet wasmPadV2: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype:
number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n constantValue: number, outId:
```


License.\n * You may obtain a copy of the License at\n * <http://www.apache.org/licenses/LICENSE-2.0>\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\nlet wasmProd: (\n  xId: number, reduceSize: number,\n  dtype: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n    'number',\n    'number',\n    'number',\n    'number'\n  ]);\n\n  function prod(args: {\n    backend: BackendWasm,\n    inputs: ProdInputs,\n    attrs: ProdAttrs\n  }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { axis, keepDims } = attrs;\n    const { x } = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const { transposed, axes, originalAxes, inputWasTransposed } =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    let reductionAxes = axes;\n    if (inputWasTransposed) {\n      const transposedId =\n        backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId !== xId) {\n        // transpose was not a no-op. We will need to dispose of this\n        // once we are done.\n        input = transposed;\n        inputId = transposedId;\n        reductionAxes = backend_util.getInnerMostAxes(\n          reductionAxes.length, input.shape.length);\n      }\n    }\n\n    backend_util.assertAxesAreInnerMostDims(\n      'prod', reductionAxes, input.shape.length);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n    const reduceSize = util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape, input.dtype);\n    if (util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n    }\n\n    if (inputWasTransposed) {\n      // dispose of the transposed tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n      // reshape\n      const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n\n    return out;\n  }\n\n  export const prodConfig: KernelConfig = {\n    kernelName: Prod,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: prod as { } as KernelFunc\n  };n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { rangeImplCPU } from './kernel_utils/shared';\nexport const range = (\n  args: { backend: BackendWasm, attrs: RangeAttrs }): TensorInfo => {\n    const { backend, attrs } = args;\n    const { start, stop, step, dtype } = attrs;\n    const values = rangeImplCPU(start, stop, step, dtype);\n    const out = backend.makeOutput([values.length], dtype);\n    const outVals = backend.typedArrayFromHeap(out);\n    outVals.set(values);\n    return out;\n  };n\n\nexport const rangeConfig: KernelConfig = {\n  kernelName: Range,\n  backendName: 'wasm',\n  kernelFunc: range as { } as KernelFunc\n};n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the
```


License.\n *

```
=====\n
*\n\nimport { KernelConfig, RealDiv } from '@tensorflow/tfjs-core';\n\nimport { createBinaryKernelConfig } from
'./binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const realDivConfig: KernelConfig =\n
createBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, Relu } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'./unary_kernel';\n\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, Relu6 } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'./unary_kernel';\n\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,
util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport { cast } from
'./Cast';\n\nlet wasmResizeBilinear: (\n  xId: number, batch: number, oldHeight: number, oldWidth: number,\n  numChannels: number, newHeight: number, newWidth: number,\n  alignCorners: number, halfPixelCenters:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmResizeBilinear =
backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n    'number', // xId\n    'number', // batch\n    'number', //
oldHeight\n    'number', // oldWidth\n    'number', // numChannels\n    'number', // newHeight\n    'number', //
newWidth\n    'number', // alignCorners\n    'number', // halfPixelCenters\n    'number' // outId\n  ]);\n\n  function
resizeBilinear(args: {\n    backend: BackendWasm,\n    inputs: ResizeBilinearInputs,\n    attrs: ResizeBilinearAttrs\n}):
TensorInfo {\n    const { backend, inputs, attrs } = args;\n\n    const { images } = inputs;\n    const { alignCorners,
halfPixelCenters, size } = attrs;\n    const [newHeight, newWidth] = size;\n\n    const [batch, oldHeight, oldWidth,
numChannels] = images.shape;\n    const outShape = [batch, newHeight, newWidth, numChannels];\n\n    let xData =
backend.dataIdMap.get(images.dataId);\n    let castedData;\n    if (xData.dtype !== 'float32') {\n      castedData =\n
cast({ backend, inputs: { x: images }, attrs: { dtype: 'float32' }});\n      xData =
backend.dataIdMap.get(castedData.dataId);\n    }\n\n    const xId = xData.id;\n\n    const out =
backend.makeOutput(outShape, 'float32');\n    if (util.sizeFromShape(images.shape) === 0) {\n      return out;\n    }\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmResizeBilinear(\n      xId, batch, oldHeight,
oldWidth, numChannels, newHeight, newWidth,\n      alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n    if
```

```
(castedData != null) {\n  backend.disposeData(castedData.dataId);\n }\n\n return out;\n}\n\nexport const\nresizeBilinearConfig: KernelConfig = {\n  kernelName: ResizeBilinear,\n  backendName: 'wasm',\n  setupFunc:\n  setup,\n  kernelFunc: resizeBilinear as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC.\n All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *  
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *  
=====
```

```
\n*/\n\nimport { KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { identity } from\n './Identity';\nimport { reshape } from './Reshape';\n\nlet wasmReverse: (\n  xId: number, axes: Uint8Array,\n  axesLength: number, outShape: Uint8Array,\n  outShapeLength: number, outId: number) => void;\n\nfunction\n  setup(backend: BackendWasm) {\n  wasmReverse = backend.wasm.cwrap(Reverse, null, [\n    'number', // x_id\n    'array', // axes\n    'number', // axes_length\n    'array', // out_shape\n    'number', // out_shape_length\n    'number'\n    // out_id\n  ]);\n}\n\nexport function reverse(\n  args: { inputs: ReverseInputs, backend: BackendWasm, attrs:\n  ReverseAttrs }):\n  TensorInfo {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { dims } =\n  attrs;\n\n  const axes = util.parseAxisParam(dims, x.shape);\n\n  if (x.shape.length === 0) {\n    return\n    identity({ inputs: { x }, backend });\n  }\n\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const xId =\n  backend.dataIdMap.get(x.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const axesBytes =\n  new Uint8Array(new Int32Array(axes).buffer);\n  const outShapeBytes = new Uint8Array(new\n  Int32Array(x.shape).buffer);\n\n  wasmReverse(\n    xId, axesBytes, axes.length, outShapeBytes, x.shape.length,\n    outId);\n\n  const reshaped =\n  reshape({ inputs: { x: out }, attrs: { shape: x.shape }, backend);\n\n  backend.disposeData(out.dataId);\n  return reshaped;\n}\n\nexport const reverseConfig: KernelConfig = {\n  kernelName: Reverse,\n  backendName: 'wasm',\n  kernelFunc: reverse as { } as KernelFunc,\n  setupFunc:\n  setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *  
=====
```

```
\n*/\n\nimport { KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,\n TensorInfo } from '@tensorflow/tfjs-core';\nimport { backend_util } from '@tensorflow/tfjs-core';\nimport\n { BackendWasm } from '../backend_wasm';\n\nlet wasmRotate: (\n  xId: number, batch: number, imageHeight:\n  number, imageWidth: number,\n  numChannels: number, radians: number, centerX: number, centerY: number,\n  fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction\n  setup(backend: BackendWasm) {\n  wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n    'number', // xId\n    'number', //\n    batch\n    'number', // imageHeight\n    'number', // imageWidth\n    'number', // numChannels\n    'number', //\n    radians\n    'number', // centerX\n    'number', // centerY\n    'array', // fillBytes\n    'number', // fillLength\n    'number', // outId\n  ]);\n}\n\nexport function rotateWithOffset(\n  args: { inputs: RotateWithOffsetInputs,\n  backend: BackendWasm,\n  attrs: RotateWithOffsetAttrs }):\n  TensorInfo {\n  const { inputs, backend, attrs } =\n  args;\n  const { image } = inputs;\n  const { radians, fillValue, center } =\n  attrs;\n\n  const out =\n  backend.makeOutput(image.shape, image.dtype);\n  const imageId = backend.dataIdMap.get(image.dataId).id;\n  const outId =\n  backend.dataIdMap.get(out.dataId).id;\n\n  const [batch, imageHeight, imageWidth, numChannels] =\n  image.shape;\n\n  const [centerX, centerY] =\n  backend_util.getImageCenter(center, imageHeight,
```

```

imageWidth);\n\n const fillIsBlack = fillValue === 0;\n const fullOpacityValue = 255;\n\n const fillValues =
typeof fillValue === 'number' ?\n [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] :\n [...fillValue, fullOpacityValue];\n const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n\n wasmRotate(\n imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n centerY,\n fillBytes, fillValues.length, outId);\n return out;\n}\n\nexport const rotateWithOffsetConfig: KernelConfig = {\n kernelName: RotateWithOffset,\n backendName: 'wasm',\n kernelFunc: rotateWithOffset as {} as KernelFunc,\n setupFunc: setup\n};\n\n", "/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from
'/types';\n\nlet wasmScatterNd: (\n indicesId: number, updatesId: number, dtype: CppDType, sliceRank:
number,\n numUpdates: number, sliceSize: number, strides: Uint8Array,\n outputSize: number, outId: number)
=> void;\n\nfunction setup(backend: BackendWasm): void {\n wasmScatterNd = backend.wasm.cwrap(ScatterNd,
null /*void*/, [\n 'number', // indicesId\n 'number', // updatesId\n 'number', // dtype\n 'number', //
sliceRank\n 'number', // numUpdates\n 'number', // sliceSize\n 'array', // strides\n 'number', // outputSize\n
'number' // outId\n ]);\n\nfunction scatterNd(\n args:\n {backend: BackendWasm, inputs:
ScatterNdInputs, attrs: ScatterNdAttrs});\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {indices,
updates} = inputs;\n const {shape} = attrs;\n\n const out = backend.makeOutput(shape, updates.dtype);\n if
(util.sizeFromShape(shape) === 0) {\n return out;\n }\n\n const {sliceRank, numUpdates, sliceSize, strides,
outputSize} =\n scatter_util.calculateShapes(updates, indices, shape);\n\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const updatesData =
backend.dataIdMap.get(updates.dataId);\n const updatesId = updatesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
wasmScatterNd(\n indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n sliceSize,

```

```
stridesBytes, outputSize, outId);\n\n return out;\n}\n\nexport const scatterNdConfig: KernelConfig = {\n  kernelName: ScatterNd,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: scatterNd as {} as\n  KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */
```

```
=====\n*\nimport { KernelConfig, KernelFunc, Select, SelectInputs, util } from '@tensorflow/tfjs-core';\nimport\n{ BackendWasm } from '../backend_wasm';\nlet wasmSelect: (\n  conditionId: number, tId: number, eId: number,\n  offset: number,\n  outId: number) => void;\nfunction setup(backend: BackendWasm) {\n  wasmSelect =\n  backend.wasm.cwrap('SelectV2', null, [\n    'number', // conditionId\n    'number', // tId\n    'number', // eId\n    'number', // offset\n    'number', // outId\n  ]);\n}\nfunction select(args: { inputs: SelectInputs, backend:\n  BackendWasm }) {\n  const { inputs, backend } = args;\n  const { condition, t, e } = inputs;\n  const conditionId =\n  backend.dataIdMap.get(condition.dataId).id;\n  const tId = backend.dataIdMap.get(t.dataId).id;\n  const eId =\n  backend.dataIdMap.get(e.dataId).id;\n  const out = backend.makeOutput(t.shape, t.dtype);\n  const outId =\n  backend.dataIdMap.get(out.dataId).id;\n  const cRank = condition.shape.length;\n  const tRank =\n  t.shape.length;\n  const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n  1 : 0;\n  util.sizeFromShape(t.shape.slice(1));\n  wasmSelect(conditionId, tId, eId, offset, outId);\n  return out;\n}\n\nexport\nconst selectConfig: KernelConfig = {\n  kernelName: Select,\n  backendName: 'wasm',\n  kernelFunc: select as {} as\n  KernelFunc,\n  setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport { KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util } from '@tensorflow/tfjs-\ncore';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmFunc: (xId: number, outId: number) =>\nvoid;\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Sigmoid, null /*\n  void */,\n  ['number', 'number']);\n}\nfunction sigmoid(args: { backend: BackendWasm, inputs: SigmoidInputs }):\nTensorInfo {\n  const { backend, inputs: { x } } = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out\n  = backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  // Short-\ncircuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n  wasmFunc(xId,\n  outId);\n  return out;\n}\n\nexport const sigmoidConfig: KernelConfig = {\n  kernelName: 'Sigmoid',\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: sigmoid as {} as\n  KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport { KernelConfig, Sin } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n'./unary_kernel';\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n", "/*\n * @license\n * 
```

Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util } from  
 '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\n\nlet wasmFunc: (xId: number, outId:  
 number, channels: number, batch: number) =>\n void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n    'number', // xId\n    'number', // outId\n    'number', // channels\n    'number' // batch\n  ]);\n\n  function softmax(\n    args: { backend: BackendWasm,  
 inputs: SoftmaxInputs, attrs: SoftmaxAttrs }):\n    TensorInfo {\n    const { backend, inputs: { logits }, attrs: { dim } } =  
 args;\n    const xId = backend.dataIdMap.get(logits.dataId).id;\n    const out = backend.makeOutput(logits.shape,  
 logits.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const channels = logits.shape[dim];\n    const batch = util.sizeFromShape(logits.shape) / channels;\n\n    // Short-circuit zero-sized tensors.\n    if  
 (util.sizeFromShape(out.shape) === 0) {\n      return out;\n    }\n\n    wasmFunc(xId, outId, channels, batch);\n    return  
 out;\n  }\n\n  export const softmaxConfig: KernelConfig = {\n    kernelName: Softmax,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: softmax as {} as KernelFunc\n  };  
}\n\n/**\n * @license\n * Copyright 2021 Google  
 LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not  
 use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
 http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
 software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
 governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,  
 SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util } from  
 '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { padV2Config } from  
 './PadV2';\nimport { reshape } from './Reshape';\nimport { transpose } from './Transpose';\n\nfunction  
 spaceToBatchND(args: {\n  inputs: SpaceToBatchNDInputs,\n  backend: BackendWasm,\n  attrs:  
 SpaceToBatchNDAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { blockSize,  
 paddings } = attrs;\n\n  const prod = util.sizeFromShape(blockShape);\n  const completePaddings: Array<[number,  
 number]> = [[0, 0]];\n  completePaddings.push(...(paddings as Array<[number, number]>));\n  for (let i = 1 +  
 blockSize.length; i < x.shape.length; ++i) {\n    completePaddings.push([0, 0]);\n  }\n\n  const paddedX =  
 padV2Config.kernelFunc({\n    inputs: { x },\n    backend,\n    attrs: { paddings: completePaddings, constantValue:  
 0 }\n  }) as TensorInfo;\n\n  const reshapedPaddedShape =\n    backend_util.getReshaped(paddedX.shape,  
 blockSize, prod, false);\n\n  const permutedReshapedPaddedPermutation = backend_util.getPermuted(\n    reshapedPaddedShape.length, blockSize.length, false);\n\n  const flattenShape =\n    backend_util.getReshapedPermuted(paddedX.shape, blockSize, prod, false);\n\n  const reshapeInputs:  
 ReshapeInputs = { x: paddedX };\n  const reshapeAttrs: ReshapeAttrs = { shape: reshapedPaddedShape };\n  const  
 paddedXReshaped =\n    reshape({ inputs: reshapeInputs, backend, attrs: reshapeAttrs });\n  const transposeInputs:  
 TransposeInputs = { x: paddedXReshaped };\n  const transposeAttrs:\n    TransposeAttrs = { perm:  
 permutedReshapedPaddedPermutation };\n  const paddedXT =\n    transpose({ inputs: transposeInputs, backend,  
 attrs: transposeAttrs });\n\n  const resultReshapeInputs: ReshapeInputs = { x: paddedXT };\n  const  
 resultReshapeAttrs: ReshapeAttrs = { shape: flattenShape };\n  const result = reshape(\n    { inputs:  
 resultReshapeInputs, backend, attrs: resultReshapeAttrs });\n\n  backend.disposeData(paddedX.dataId);\n  backend.disposeData(paddedXReshaped.dataId);\n  backend.disposeData(paddedXT.dataId);\n  return
```

```
result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n  kernelName: SpaceToBatchND,\n  backendName: 'wasm',\n  kernelFunc: spaceToBatchND as {} as KernelFunc;\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util } from '@tensorflow/tfjs-core';\nimport { backend_util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { slice } from './Slice';\n\nexport function splitV(\n  args: { inputs: SplitVInputs, attrs: SplitVAttrs, backend: BackendWasm }) {\n  const { inputs, attrs, backend } = args;\n  const { x } = inputs;\n  const { numOrSizeSplits, axis } = attrs;\n\n  const $axis = util.parseAxisParam(axis, x.shape)[0];\n  const splitSizes = backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n  const begin = new Array(x.shape.length).fill(0);\n  const size = x.shape.slice();\n  return splitSizes.map(s => {\n    const xSliceSize = [...size];\n    xSliceSize[$axis] = s;\n    const xSlice =\n      slice({ inputs: { x }, attrs: { begin, size: xSliceSize }, backend});\n    begin[$axis] += s;\n    return xSlice;\n  });\n}\n\nexport const splitVConfig: KernelConfig = {\n  kernelName: SplitV,\n  backendName: 'wasm',\n  kernelFunc: splitV as {} as KernelFunc;\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport { KernelConfig, Sqrt } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport { KernelConfig, Square } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport { KernelConfig, SquaredDifference } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const squaredDifferenceConfig: KernelConfig =\n  createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright\n * 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n *
```

you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\nlet wasmStep:\n(xId: number, alpha: number, dtype: number, outId: number) =>\n  void;\nfunction setup(backend:\nBackendWasm): void {\n  wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n    'number', // x_id\n    'number', // alpha\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\nfunction step(\n  args: {\n    backend: BackendWasm,\n    inputs: StepInputs,\n    attrs: StepAttrs\n  }):\n  TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { alpha } = attrs;\n  const { x } = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out =\n    backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmStep(xId,\n    alpha, CppDType[x.dtype], outId);\n  return out;\n}\n\nexport const stepConfig: KernelConfig = {\n  kernelName: Step,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: step as {} as KernelFunc\n};\n"/**\n *\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo,\n  util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { reshape } from './Reshape';\nimport { slice } from './Slice';\nlet wasmStridedSlice: (\n  xId: number, xStridesBytes: Uint8Array,\n  xRank: number,\n  beginBytes: Uint8Array, endBytes: Uint8Array, stridesBytes: Uint8Array,\n  outShapeBytes: Uint8Array, outStridesBytes: Uint8Array,\n  outShapeLength: number, outId: number) => void;\nfunction\n  setup(backend: BackendWasm): void {\n  wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n    'number', // xId\n    'array', // xStrides\n    'number', // xRank\n    'array', // beginBytes\n    'array', // endBytes\n    'array', // stridesBytes\n    'array', // outShapeBytes\n    'array', // outStridesBytes\n    'number', //\n    outShapeLength\n    'number', // outId\n  ]);\n}\n\nexport function stridedSlice(args: {\n  backend: BackendWasm,\n  inputs: StridedSliceInputs,\n  attrs: StridedSliceAttrs\n}): TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { x } = inputs;\n  const {\n    begin,\n    end,\n    strides,\n    beginMask,\n    endMask,\n    ellipsisMask,\n    newAxisMask,\n    shrinkAxisMask\n  } = attrs;\n  const {\n    finalShapeSparse,\n    finalShape,\n    isIdentity,\n    sliceDim0,\n    isSimpleSlice,\n    begin: $begin,\n    end: $end,\n    strides: $strides\n  } =\n    slice_util.sliceInfo(\n      x.shape, begin, end, strides, beginMask, endMask, ellipsisMask,\n      newAxisMask, shrinkAxisMask);\n  let result;\n  if (isIdentity) {\n    // Optimization #1, slice is a no-op plus reshape\n    result = reshape({ inputs: { x },\n      backend, attrs: { shape: finalShape } });\n  } else if (sliceDim0 || isSimpleSlice) {\n    // Optimization #2, slice is\n    memory contiguous (only occurs in dim 0)\n    util.assert(\n      x.shape.length >= 1,\n      () => `Input must have\n      rank at least 1, got: ${x.shape.length}`);\n    const size = slice_util.computeOutShape($begin, $end, $strides);\n    // To tolerate begin[0] > end[0] (a 0-output slice), we min(begin, end).\n    const sliced = slice({ inputs: { x },\n      backend, attrs: { begin: $begin, size } });\n    result =\n      reshape({ inputs: { x: sliced }, backend, attrs: { shape:\n        finalShape } });\n    backend.disposeData(sliced.dataId);\n  } else {\n    const out =\n      backend.makeOutput(finalShapeSparse, 'float32');\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const\n      xStridesBytes =\n        new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n    const beginBytes\n      = new Uint8Array(new Int32Array($begin).buffer);\n    const endBytes = new Uint8Array(new\n      Int32Array($end).buffer);\n    const stridesBytes = new Uint8Array(new Int32Array($strides).buffer);\n    const
```

```

outputShapeBytes =\n    new Uint8Array(new Int32Array(finalShapeSparse).buffer);\n    const outStridesBytes =
new Uint8Array(\n    new Int32Array(util.computeStrides(finalShapeSparse)).buffer);\n    const outId =
backend.dataIdMap.get(out.dataId).id;\n\n    wasmStridedSlice(\n        xId, xStridesBytes, x.shape.length,
beginBytes, endBytes, stridesBytes,\n        outputShapeBytes, outStridesBytes, finalShapeSparse.length, outId);\n\n    result = reshape({inputs: {x: out}, backend, attrs: {shape: finalShape}});\n\n    backend.disposeData(out.dataId);\n\n    }\n\n    return result;\n\n\n\nexport const stridedSliceConfig: KernelConfig = {\n    kernelName: StridedSlice,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: stridedSlice as {} as KernelFunc\n};\n\n",/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = true;\nexport const subConfig: KernelConfig =\ncreateBinaryKernelConfig(Sub, supportsFullBroadcast);\n\n",/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util} from
 '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmSum: (xId:
number, reduceSize: number, dtype: number, outId: number) =>\n    void;\n\nfunction setup(backend:
BackendWasm): void {\n    wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n        'number', // input_id\n
        'number', // reduce_size\n        'number', // dtype\n        'number', // out_id\n    ]);\n\n    function sum(args: {backend:
BackendWasm, inputs: SumInputs, attrs: SumAttrs}): \n        TensorInfo {\n        const {backend, inputs, attrs} = args;\n
        const {axis, keepDims} = attrs;\n        const {x} = inputs;\n        const xId = backend.dataIdMap.get(x.dataId).id;\n
        let\n        inputId = xId;\n        let input = x;\n\n        const {transposed, axes, originalAxes, inputWasTransposed} =\n
        permuteAxesAndTranspose(x, axis, backend);\n\n        let reductionAxes = axes;\n        if (inputWasTransposed) {\n            const\n            transposedId = backend.dataIdMap.get(transposed.dataId).id;\n            if (transposedId !== xId) {\n                // transpose was
not a no-op. We will need to dispose of this\n                // once we are done.\n                input = transposed;\n                inputId =
transposedId;\n                reductionAxes = backend_util.getInnerMostAxes(\n                    reductionAxes.length,\n                    input.shape.length);\n            }\n        }\n        backend_util.assertAxesAreInnerMostDims(\n            'sum', reductionAxes,\n            input.shape.length);\n        const [outShape, reduceShape] =\n        backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n        const reduceSize =
        util.sizeFromShape(reduceShape);\n\n        const out = backend.makeOutput(outShape, input.dtype);\n        if
        (util.sizeFromShape(input.shape) !== 0) {\n            const outId = backend.dataIdMap.get(out.dataId).id;\n
            wasmSum(inputId, reduceSize, CCppType[out.dtype], outId);\n        }\n\n        if (inputWasTransposed) {\n            // dispose of
the transposed tensor.\n            backend.disposeData(transposed.dataId);\n        }\n\n        if (keepDims) {\n            // reshape\n            const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n            out.shape = newShape;\n        }\n\n        return out;\n    }\n\n    export const sumConfig: KernelConfig = {\n        kernelName: Sum,\n        backendName: 'wasm',\n        setupFunc: setup,\n        kernelFunc: sum as {} as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2021 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not

```


use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from  
 './unary_kernel';\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
 \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
 License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or  
 agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
 the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from  
 './unary_kernel';\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
 \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
 License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or  
 agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
 the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\nimport  
 {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmTile: (n  xId:  
 number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\n  newShapeSize: number, dtype:  
 number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n  wasmTile =  
 backend.wasm.cwrap(Tile, null /* void */, [\n    'number', // x_id\n    'array', // x_shape\n    'number', //  
 x_shape.length\n    'array', // new_shape\n    'number', // new_shape.length\n    'number' // out_id\n  ]);\n}\nfunction tile(\n  args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n  const {inputs,  
 backend, attrs} = args;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const {reps} =  
 attrs;\n  const newShape: number[] = new Array(x.shape.length);\n  for (let i = 0; i < newShape.length; i++) {\n    newShape[i] = x.shape[i] * reps[i];\n  }\n  const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n  const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n  const out =  
 backend.makeOutput(newShape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmTile(\n    xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n    CCppType[out.dtype], outId);\n  return  
 out;\n}\nexport const tileConfig: KernelConfig = {\n  kernelName: Tile,\n  backendName: 'wasm',\n  setupFunc:  
 setup,\n  kernelFunc: tile as {} as KernelFunc\n};\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights  
 Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file  
 except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs} from '@tensorflow/tfjs-  
core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmTopK:
```

```
(\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n  xDtype: CppDType, k: number, sorted:\n  boolean, outValuesId: number,\n  outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'number', // k\n    'bool', // sorted\n    'number', // outValuesId\n    'number', // outIndicesId\n  ]);\n\n  export const topk:\n    (args: {inputs: TopKInputs, backend: BackendWasm,\n    attrs: TopKAttrs}) =>\n    TensorInfo[] | TensorInfo = ({inputs, backend, attrs}) => {\n    const {x} = inputs;\n    const {k, sorted} = attrs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const xShapeBytes =\n    new Uint8Array(new Int32Array(x.shape).buffer);\n    const outputShape = x.shape.slice();\n    outputShape[outputShape.length - 1] = k;\n    const outValues = backend.makeOutput(outputShape, x.dtype);\n    const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n    const outIndices =\n    backend.makeOutput(outputShape, 'int32');\n    const outIndicesId =\n    backend.dataIdMap.get(outIndices.dataId).id;\n\n    wasmTopK(\n      xId, xShapeBytes, x.shape.length,\n      CppDType[x.dtype], k, sorted,\n      outValuesId, outIndicesId);\n\n    return [outValues, outIndices];\n  };\n\n  export const topKConfig: KernelConfig = {\n    kernelName: TopK,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: topk as {} as KernelFunc,\n  }; \n  /**\n   * @license\n   * Copyright 2021 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing,\n   * software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   */\n  =====\n  *\n  import {KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util} from\n  '@tensorflow/tfjs-core';\n  import {BackendWasm} from '../backend_wasm';\n  let wasmTransform: (\n    imageId:\n    number, transformsId: number, isBatchTransform: boolean,\n    batch: number, outHeight: number, outWidth:\n    number, numChannels: number,\n    imageWidth: number, imageHeight: number, strides: Uint8Array,\n    stridesLength: number, interpolationModeId: number, fillModeId: number,\n    fillValue: number, outId: number)\n    => void;\n\n  function setup(backend: BackendWasm): void {\n    wasmTransform = backend.wasm.cwrap(Transform,\n    null /*void*/, [\n      'number', // imageId\n      'number', // transformsId\n      'bool', // isBatchTransform\n      'number', // batch\n      'number', // outHeight\n      'number', // outWidth\n      'number', // numChannels\n      'number', // imageWidth\n      'number', // imageHeight\n      'array', // strides\n      'number', // stridesLength\n      'number', // interpolationModeId\n      'number', // fillModeId\n      'number', // fillValue\n      'number', // outId\n    ]);\n\n    function transform(\n      args:\n      {backend: BackendWasm, inputs: TransformInputs, attrs:\n      TransformAttrs}):\n      TensorInfo {\n      const {backend, inputs, attrs} = args;\n      const {image, transforms} = inputs;\n      const {interpolation, fillMode, fillValue, outputShape} = attrs;\n      const [batch, imageHeight, imageWidth,\n      numChannels] = image.shape;\n      const [outHeight, outWidth] =\n      outputShape != null ? outputShape :\n      [imageHeight, imageWidth];\n      const outShape =\n      [batch, outHeight, outWidth,\n      numChannels] as\n      [number, number, number, number];\n      const strides =\n      new Uint8Array(new\n      Int32Array(util.computeStrides(image.shape)).buffer);\n\n      const out = backend.makeOutput(outShape,\n      image.dtype);\n      const outId = backend.dataIdMap.get(out.dataId).id;\n\n      const imageData =\n      backend.dataIdMap.get(image.dataId);\n      const transformsData =\n      backend.dataIdMap.get(transforms.dataId);\n      const transformsId = transformsData.id;\n      const\n      interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n      let fillModeId;\n      switch (fillMode) {\n      case 'constant':\n      fillModeId = 1;\n      break;\n      case 'reflect':\n      fillModeId = 2;\n      break;\n      case 'wrap':\n      fillModeId = 3;\n      break;\n      case 'nearest':\n      fillModeId = 4;\n      break;\n      default:\n      fillModeId = 1;\n      break;\n      }\n\n      wasmTransform(\n      imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n      outWidth, numChannels, imageWidth, imageHeight, strides,\n      image.shape.length - 1, interpolationModeId,\n      fillModeId, fillValue,\n      outId);\n\n      return out;\n    }\n\n    export const transformConfig: KernelConfig = {\n
```

kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as { } as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs} from  
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {slice} from  
 './Slice';\nfunction unpack(\n  args: {inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs}):\n  TensorInfo[] {\n  const {inputs, backend, attrs} = args;\n  const {value} = inputs;\n  let {axis} = attrs;\n  if (axis <  
0) {\n  axis += value.shape.length;\n  }\n  const numOutputs = value.shape[axis];\n  const rank =  
value.shape.length;\n  const outShape: number[] = new Array(rank - 1);\n  let outIndex = 0;\n  for (let i = 0; i < rank;  
i++) {\n  if (i !== axis) {\n  outShape[outIndex++] = value.shape[i];\n  }\n  }\n  const outs: TensorInfo[] = new  
Array(numOutputs);\n  const begin = new Array(rank).fill(0);\n  const size = value.shape.slice();\n  size[axis] = 1;\n  for (let i = 0; i < outs.length; i++) {\n  begin[axis] = i;\n  outs[i] = slice({inputs: {x: value}, attrs: {begin, size},  
backend});\n  }\n  return outs.map(({dataId, dtype}) => ({dataId, dtype, shape: outShape}));\n  }\n\nexport const  
unpackConfig: KernelConfig = {\n  kernelName: Unpack,\n  backendName: 'wasm',\n  kernelFunc: unpack as { } as  
KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the  
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-core';\nimport  
{BackendWasm} from './backend_wasm';\nfunction zerosLike(args: {inputs: ZerosLikeInputs, backend:  
BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.fill(0);\n  return out;\n}\n\nexport const  
zerosLikeConfig: KernelConfig = {\n  kernelName: ZerosLike,\n  backendName: 'wasm',\n  kernelFunc: zerosLike  
as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed  
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *
```

```
=====\n*\n\nWe explicitly import the modular kernels so they get registered in the\n// global registry when we compile the  
library. A modular build would replace\n// the contents of this file and import only the kernels that are  
needed.\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {fusedMatMulConfig}  
from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {addConfig} from  
'./kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport  
{anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {avgPoolConfig}  
from './kernels/AvgPool';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport
```

```

{batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {castConfig} from './kernels/Cast';\nimport
{ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport
{concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport
{conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {cosConfig} from
'/kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from
'/kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {depthToSpaceConfig}
from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from
'/kernels/DepthwiseConv2dNative';\nimport {eluConfig} from './kernels/Elu';\nimport {equalConfig} from
'/kernels/Equal';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from
'/kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from
'/kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from
'/kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport
{fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from
'/kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport
{gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport
{greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport
{leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport
{lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport
{logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport
{maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport
{meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
'/kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from
'/kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
'/kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
'/kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
'/kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
'/kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
'/kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
{rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
'/kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
'/kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
'/kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
'/kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
'/kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
'/kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
'/kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
'/kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
'/kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
'/kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
'/kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n  absConfig,\n  addConfig,\n  addNConfig,\n  allConfig,\n  anyConfig,\n  argMaxConfig,\n  avgPoolConfig,\n  batchMatMulConfig,\n  batchToSpaceNDConfig,\n  castConfig,\n  ceilConfig,\n  clipByValueConfig,\n  concatConfig,\n  conv2DConfig,\n  conv2DBackpropInputConfig,\n

```

```

cosConfig,\n coshConfig,\n cropAndResizeConfig,\n cumsumConfig,\n depthToSpaceConfig,\n
depthwiseConv2dNativeConfig,\n eluConfig,\n equalConfig,\n expConfig,\n expandDimsConfig,\n fillConfig,\n
flipLeftRightConfig,\n floorConfig,\n floorDivConfig,\n fusedMatMulConfig,\n fusedBatchNormConfig,\n
fusedConv2DConfig,\n fusedDepthwiseConv2DConfig,\n gatherNdConfig,\n gatherV2Config,\n greaterConfig,\n
greaterEqualConfig,\n identityConfig,\n leakyReluConfig,\n lessConfig,\n lessEqualConfig,\n logConfig,\n
logicalAndConfig,\n maxConfig,\n maximumConfig,\n maxPoolConfig,\n meanConfig,\n minConfig,\n
minimumConfig,\n mirrorPadConfig,\n multiplyConfig,\n negConfig,\n nonMaxSuppressionV3Config,\n
nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n
onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n
realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n
rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n
sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n
squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n
tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n
zerosLikeConfig];\n\nfor (const kernelConfig of kernelConfigs) {\n  registerKernel(kernelConfig);\n}\n", "/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {env} from 'tensorflow/tfjs-core';\n\nconst ENV = env();\n\n/**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
Uint8Array([\n 0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n 2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
11\n ]));\n\n/**\n * True if threads are supported.\n *\n// From: https://github.com/GoogleChromeLabs/wasm-
feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n  return false;\n }\n\n try {\n //
Test for transferability of SABs (needed for Firefox)\n //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n  new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n  // This typed array is a WebAssembly
program containing threaded\n  // instructions.\n  return WebAssembly.validate(new Uint8Array([\n 0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
11\n ]));\n } catch (e) {\n  return false;\n }\n});\n\n", "\n\nvar WasmBackendModuleThreadedSimd = (function() {\n
var _scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n return
(\nfunction(WasmBackendModuleThreadedSimd) {\n  WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!==buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!==buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!==buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!==buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}

```

```

    })return HEAPU32}function
    GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer
    })return HEAPF64}var Module=typeof
    WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd:{};var
    readyPromiseResolve,readyPromiseReject;Module[\'"ready"\"]=new
    Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
    moduleOverrides={};var key;for(key in
    Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
    thisProgram=\.this.program";var quit_=function(status,toThrow){throw toThrow};var
    ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
    ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
    window==="object";ENVIRONMENT_IS_WORKER=typeof
    importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
    process.versions==="object"&&typeof
    process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
    ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
    ENVIRONMENT_IS_PTHREAD=Module[\'"ENVIRONMENT_IS_PTHREAD"\"]||false;if(ENVIRONMENT_IS_P
    THREAD){buffer=Module[\'"buffer"\"];var scriptDirectory="";function
    locateFile(path){if(Module[\'"locateFile"\"]){return Module[\'"locateFile"\"](path,scriptDirectory)}return
    scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
    nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
    dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
    shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=no
    dePath[\'"normalize"\"](filename);return
    nodeFS[\'"readFileSync"\"](filename,binary?null:"utf8");readBinary=function readBinary(filename){var
    ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
    ret};if(process[\'"argv"\"].length>1){thisProgram=process[\'"argv"\"][1].replace(/\\/g,"^")}arguments_=process[\'"arg
    v"\"].slice(2);process[\'"on"\"](\["uncaughtException"],function(ex){if(!(ex instanceof ExitStatus)){throw
    ex}});process[\'"on"\"](\["unhandledRejection"],abort);quit_=function(status){process[\'"exit"\"](status)};Module[\'"insep
    ect"\"]=function(){return["Emscripten Module object"]};var
    nodeWorkerThreads;try{nodeWorkerThreads=require("worker_threads")}catch(e){console.error("The
    \["worker_threads"\] module is not supported in this node.js build - perhaps a newer version is needed?");throw
    e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
    read!="undefined"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
    data;if(typeof readbuffer==="function"){return new
    Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
    scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
    arguments!="undefined"){arguments_=arguments}if(typeof
    quit==="function"){quit_=function(status){quit(status)}}if(typeof print!="undefined"){if(typeof
    console==="undefined")console={};console.log=print;console.warn=console.error=typeof
    printErr!="undefined"?printErr:print}}else
    if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
    ctory=self.location.href}else if(typeof
    document!="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
    _scriptDir !=="undefined" &&
    _scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.s
    ubstr(0,scriptDirectory.lastIndexOf("^")+1)}else{scriptDirectory=""}if(ENVIRONMENT_IS_NODE){read_=fun
    ction

```

```

shell_read(filename,binary){if(!nodeFS)nodeFS=require("\fs\");if(!nodePath)nodePath=require("\path\");filename=normalizePath(normalize\)(filename);return
nodeFS[\readFileSync\](filename,binary?null:\utf8\);readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret}}else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open(\GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} }else{if(ENVIRONMENT_IS_NODE){if(typeof
performance==="undefined"){global.performance=require("\perf_hooks\").performance} }var
out=Module[\print\]||console.log.bind(console);var err=Module[\printErr\]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} }moduleOverr
ides=null;if(Module[\arguments\])arguments_=Module[\arguments\];if(Module[\thisProgram\])thisProgram=
Module[\thisProgram\];if(Module[\quit\])quit_=Module[\quit\];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)} }var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module[\wasmBinary\])wasmBinary=Module[\wasmBinary\];var
noExitRuntime=Module[\noExitRuntime\]||true;if(typeof WebAssembly!=="object\"){abort(\no native wasm
support detected\)}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort(\Assertion failed: "+text)}}function getCFunc(ident){var
func=Module[\_"+ident];assert(func,\Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={\string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},\array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]} }var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)} }function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str="";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)} }return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):\}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var

```

```

endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){ var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){ var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){ var
len=0;for(var i=0;i<str.length;++i){ var
u=str.charCodeAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10)|str.charCodeAt(++i)&1023;if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){ GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmM
emory=Module["wasmMemory"];buffer=Module["buffer"]}else{if(Module["wasmMemory"]){wasmMemory=
Module["wasmMemory"]}else{wasmMemory=new
WebAssembly.Memory({"initial":INITIAL_MEMORY/65536,"maximum":2147483648/65536,"shared":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err("requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag");if(ENVIRONMENT_IS_NODE){console.log("(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)")}throw Error("bad
memory")}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlob
alBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctor
s()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof
Module["postRun"]="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,"addRunDependency cannot be used in a
pthread

```



```

worker`);runDependencies++;if(Module[\"monitorRunDependencies\"]){Module[\"monitorRunDependencies\"](run
Dependencies)}}function removeRunDependency(id){runDependencies--
;if(Module[\"monitorRunDependencies\"]){Module[\"monitorRunDependencies\"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=null
}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module[\"preloadedImages\"]={};Module
[\"preloadedAudios\"]={};function
abort(what){if(Module[\"onAbort\"]){Module[\"onAbort\"](what)}if(ENVIRONMENT_IS_PTHREAD)console.err
or(\\\"Pthread aborting at \\\"+(new
Error).stack);what+=\\\"\\\";err(what);ABORT=true;EXITSTATUS=1;what=\\\"abort(\\\"+what+\\\"). Build with -s
ASSERTIONS=1 for more info.\\\";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw
e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix=\\\"data:application/octet-stream;base64,\\\";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix=\\\"file://\\\";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile=\\\"tfjs-backend-wasm-threaded-
simd.wasm\\\";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw\\\"both async and sync fetching of the
wasm failed\\\"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\\\"function\\\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\\\"same-
origin\\\"}).then(function(response){if(!response[\\\"ok\\\"]){throw\\\"failed to load wasm binary file at
\\\"+wasmBinaryFile+\\\"\\\"}return response[\\\"arrayBuffer\\\"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\\\"a\\\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\\\"asm\\\"]=exports;wasmTable=Module[\\\"asm\\\"][\\\"I\\\"];wasmModule=module;if(!E
NVIRONMENT_IS_PTHREAD){var
numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.load
WasmModuleToWorker(w,function(){if!--numWorkersToLoad)removeRunDependency(\\\"wasm-
instantiate\\\")}})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency(\\\"wasm-instantiate\\\")}function
receiveInstantiatedSource(output){receiveInstance(output[\\\"instance\\\"],output[\\\"module\\\"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\\\"failed to asynchronously prepare
wasm: \\\"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\\\"function\\\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\\\"function\\\"){return fetch(wasmBinaryFile,{credentials:\\\"same-
origin\\\"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\\\"wasm streaming compile failed: \\\"+reason);err(\\\"falling
back to ArrayBuffer instantiation\\\")});return instantiateArrayBuffer(receiveInstantiatedSource)})}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\\\"instantiateWasm\\\"]){try{var
exports=Module[\\\"instantiateWasm\\\"](info,receiverInstance);return exports}catch(e){err(\\\"Module.instantiateWasm
callback failed with error: \\\"+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}var
ASM_CONSTS={10520:function(){throw\\\"Canceled!\\\"},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0}});function initPthreadsJS(){PThread.initRuntime()}function

```

```

callRuntimeCallbacks(callbacks){ while(callbacks.length>0){ var callback=callbacks.shift();if(typeof
callback=="function"){ callback(Module);continue }var func=callback.func;if(typeof
func=="number"){ if(callback.arg===undefined){ wasmTable.get(func)() }else { wasmTable.get(func)(callback.arg)
} }else { func(callback.arg===undefined?null:callback.arg) } } }var
ERRNO_CODES={ EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,EB
ADFD:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOSIG:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADF:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14
8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5 };function
_emsripten_futex_wake(addr,count){ if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){ var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){ --count;mainThreadWoken=1;if(count<=0)return
1 } }var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw" Atomics.notify returned an unexpected value
"+ret}Module["_emsripten_futex_wake"]=_emsripten_futex_wake;function
killThread(pthread_ptr){ if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! killThread() can only ever be
called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
killThread!";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.threads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker pthread=undefined}functio
n cancelThread(pthread_ptr){ if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! cancelThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
cancelThread!";var
pthread=PThread.threads[pthread_ptr];pthread.worker.postMessage({"cmd":"cancel"})}function
cleanupThread(pthread_ptr){ if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! cleanupThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
cleanupThread!";var
pthread=PThread.threads[pthread_ptr];if(pthread){ GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker) } }var
PThread={ unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){ var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){ PThread.allocateUnusedWorker() },initRuntime:function(){ var
tb=_malloc(228);for(var

```

```

i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,1,ENVIRON
MENT_IS_WORKER,1);__emscripten_register_main_browser_thread_id(tb),initWorker:function(){},pthreads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self())__pthread
_tsd_run_dtors(),runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=_pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({"cmd\":"exit\"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({"cmd\":"cancelDone\"})},terminateAllThreads:function(){for(var t in
PThread.pthreads){var
pthread=PThread.pthreads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)}PThre
ad.pthreads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker.pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[]},freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker.pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread.pthreads[worker.pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker.pthread);worker.pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e["data"];var
cmd=d["cmd"];if(worker.pthread)PThread.currentProxiedOperationCallerThread=worker.pthread.threadInfoStruct;
if(d["targetThread"]&&d["targetThread"]!=_pthread_self()){var
thread=PThread.pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d["transferList"])}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\" to target pthread '+d["targetThread"]+\", but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\"processQueuedMainThread
Work\"){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\"spawnThread\"){spawnThread(e.data)}else
if(cmd===\"cleanupThread\"){cleanupThread(d["thread"])}else
if(cmd===\"killThread\"){killThread(d["thread"])}else
if(cmd===\"cancelThread\"){cancelThread(d["thread"])}else
if(cmd===\"loaded\"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\"print\"){out(\"Thread \"+d["threadId"]+\"\":
\"+d["text"])}else if(cmd===\"printErr\"){err(\"Thread \"+d["threadId"]+\"\": \"+d["text"])}else
if(cmd===\"alert\"){alert(\"Thread \"+d["threadId"]+\"\": \"+d["text"])}else if(cmd===\"exit\"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if

```

```

(detached){PThread.returnWorkerToPool(worker)}}else
if(cmd===\exitProcess\){try{exit(d[\returnCode\])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\cancelDone\){PThread.returnWorkerToPool(worker)}else
if(cmd===\objectTransfer\){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\setImmediate\){worker.postMessage(e.data)}else{err(\worker sent an unknown command
\'+cmd\)}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\pthread sent
an error! \'+e.filename+\':\'+e.lineno+\':
\'+e.message\)};if(ENVIRONMENT_IS_NODE){worker.on(\message\,function(data){worker.onmessage({data:d
ata})});worker.on(\error\,function(data){worker.onerror(data)});worker.on(\exit\,function(data){})}worker.post
Message({\cmd\:\load\,\urlOrBlob\:\Module[\mainScriptUrlOrBlob\]\|\_scriptId\,\wasmMemory\:\wasmMe
memory\,\wasmModule\:\wasmModule\}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile(\tfjs-
backend-wasm-threaded-simd.worker.js\);PThread.unusedWorkers.push(new
Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}}};function
establishStackSpace(stackTop,stackMax){_emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module[\establishStackSpace\]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module[\getNoExitRuntime\]=getNoExitRuntime;function invokeEntryPoint(ptr,arg){return
wasmTable.get(ptr)(arg)}Module[\invokeEntryPoint\]=invokeEntryPoint;function
__assert_fail(condition,filename,line,func){abort(\Assertion failed: \'+UTF8ToString(condition)+\', at:
\'+[filename?UTF8ToString(filename):\unknown filename\],line,func?UTF8ToString(func):\unknown
function\')}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
_emscripten_get_now;if(ENVIRONMENT_IS_NODE){_emscripten_get_now=function(){var
t=process[\hrtime\]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){_emscripten_get_now=function(){return performance.now()-
Module[\__performance_now_clock_drift\]}}else if(typeof
dateNow!=="undefined"){_emscripten_get_now=dateNow}else _emscripten_get_now=function(){return
performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return
value}function _atexit(func,arg){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(1,1,func,arg)}function
_emscripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessag
e({\cmd\:\processQueuedMainThreadWork\})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({\targetThread\:\targetThreadId,\cmd\:\processThreadQueue
\})}else{var pthread=PThread.threads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return worker.postMessage({\cmd\:\processThreadQueue\})}ret
urn 1}function _abort(){abort()}function _emscripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emscripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emscripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\timed-out\)return-
73;if(ret===\not-equal\)return-6;if(ret===\ok\)return 0;throw\Atomics.wait returned an unexpected value
\'+ret\}else{if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emscripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emscripten_mai
n_thread_futex>>2,0);return-

```

```

73}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emscripten_main_thread_process_queued_calls();if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr)}return
0}}function
_emscripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emscripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require("\os").cpus().length;return
navigator["hardwareConcurrency"]}function _emscripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emscripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retur
n ret}var _emscripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emscripten_receive_on_main_thread_js(index,numCallArgs,args){_emscripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emscripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emscripten_receive_on_main_thread_js_callArgs)}function
_emscripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emscripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var
oldSize=_emscripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requeste
dSize+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListe
ners:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))){return}}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList
});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence}),removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){var

```

```

call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeId||event
TypeString==JSEvents.eventHandlers[i].eventTypeId)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeId,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackFunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeId,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeId==eventHandler.eventTypeId){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return"";if(target==window)return"#window";
if(target==screen)return"#screen";return
target&&target.nodeName?target.nodeName:""},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas);GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emscripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emscripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):"";_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!="undefined"?document:0,typeof window!="undefined"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!="undefined"?document.querySelector(target):undefined);return domElement}function
findCanvasEventTarget(target){return findEventTarget(target)}function
_emscripten_set_canvas_element_size_calling_thread(target,width,height){var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height;if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var

```

```

autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){ var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height } canvas.width=width;
canvas.height=height;if(autoResizeViewport){ canvas.GLctxObject.GLctx.viewport(0,0,width,height) } else
if(canvas.canvasSharedPtr){ var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emscripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1 } else{ return-4 } return 0 } function
_emscripten_set_canvas_element_size_main_thread(target,width,height){ if(ENVIRONMENT_IS_PTHREAD)retur
n _emscripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emscripten_set_canvas_element_size_calling_thread(target,width,height) } function
_emscripten_set_canvas_element_size(target,width,height){ var
canvas=findCanvasEventTarget(target);if(canvas){ return
_emscripten_set_canvas_element_size_calling_thread(target,width,height) } else{ return
_emscripten_set_canvas_element_size_main_thread(target,width,height) } } function
_emscripten_set_current_thread_status(newStatus){ } function
_emscripten_set_thread_name(threadId,name){ } function __webgl_enable_ANGLE_instanced_arrays(ctx){ var
ext=ctx.getExtension("\ANGLE_instanced_arrays");if(ext){ ctx["vertexAttribDivisor"]=function(index,divisor){ ex
t["vertexAttribDivisorANGLE"](index,divisor);ctx["drawArraysInstanced"]=function(mode,first,count,primcou
nt){ ext["drawArraysInstancedANGLE"](mode,first,count,primcount);ctx["drawElementsInstanced"]=function(
mode,count,type,indices,primcount){ ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount);
return 1 } } function __webgl_enable_OES_vertex_array_object(ctx){ var
ext=ctx.getExtension("\OES_vertex_array_object");if(ext){ ctx["createVertexArray"]=function(){ return
ext["createVertexArrayOES"]();ctx["deleteVertexArray"]=function(vao){ ext["deleteVertexArrayOES"](vao);
ctx["bindVertexArray"]=function(vao){ ext["bindVertexArrayOES"](vao);ctx["isVertexArray"]=function(vao)
{ return ext["isVertexArrayOES"](vao);return 1 } } function __webgl_enable_WEBGL_draw_buffers(ctx){ var
ext=ctx.getExtension("\WEBGL_draw_buffers");if(ext){ ctx["drawBuffers"]=function(n,bufs){ ext["drawBuffers
WEBGL"](n,bufs);return 1 } } function
__webgl_enable_WEBGL_multi_draw(ctx){ return!(ctx.multiDrawWebgl=ctx.getExtension("\WEBGL_multi_dra
w")) } var
GL={ counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{ },offscreenCanvases:{ },timerQueriesEXT:[],programInfos:{ },stringCache:{ },unpackAlignment:4,recordError:
function recordError(errorCode){ if(!GL.lastError){ GL.lastError=errorCode } },getNewId:function(table){ var
ret=GL.counter++;for(var i=table.length;i<ret;i++){ table[i]=null } return
ret },getSource:function(shader,count,string,length){ var source="";for(var i=0;i<count;++i){ var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len) } return
source },createContext:function(canvas,webGLContextAttributes){ var
ctx=canvas.getContext("\webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle },registerContext:function(ctx,webGLContextAttributes){ var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={ handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:
ctx };if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault===\undefined\|webGLContextAttributes.enableExtensions
ByDefault){ GL.initExtensions(context) } return
handle },makeContextCurrent:function(contextHandle){ GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx) },getContext:function(c
ontextHandle){ return

```

```

GL.contexts[contextHandle]},deleteContext:function(contextHandle){if(GL.currentContext===GL.contexts[context
Handle])GL.currentContext=null;if(typeof
JSEvents===\"object\")JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null},initExtensions:f
unction(context){if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension(\"
EXT_disjoint_timer_query\");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){if(ext.indexOf(\"lose_context\")<0&&ext.inde
xOf(\"debug\")<0){GLctx.getExtension(ext)}}),populateUniformTable:function(program){var
p=GL.programs[program];var
ptable=GL.programInfos[program]={uniforms:{},maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1};var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)===\"\\\"){name=name.slice(0,name.lastIndexOf(\"\\\"))}var loc=GLctx.getUniformLocation(p,name);if(loc){var
id=GL.getNewId(GL.uniforms);utable[name]=[u.size,id];GL.uniforms[id]=loc;for(var j=1;j<u.size;++j){var
n=name+\"\\\"+j+\"\\\";loc=GLctx.getUniformLocation(p,n);id=GL.getNewId(GL.uniforms);GL.uniforms[id]=loc}}
};var __emscripten_webgl_power_preferences=[\"default\",\"low-power\",\"high-performance\"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={\"alpha\":!!GROWABLE_HEAP_I32()[a+(0>>2)],\"depth\":!!GROWABLE_HEAP_I32()[a+(4
>>2)],\"stencil\":!!GROWABLE_HEAP_I32()[a+(8>>2)],\"antialias\":!!GROWABLE_HEAP_I32()[a+(12>>2)],\"p
remultipliedAlpha\":!!GROWABLE_HEAP_I32()[a+(16>>2)],\"preserveDrawingBuffer\":!!GROWABLE_HEAP_
I32()[a+(20>>2)],\"powerPreference\":__emscripten_webgl_power_preferences[powerPreference],\"failIfMajorPerf
ormanceCaveat\":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)]};var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GL.createContext(canvas,contextAttributes);return contextHandle}function
__emscripten_webgl_create_context(a0,a1){return __emscripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
__fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return __emscripten_proxy_to_main_thread_js(3,1,fd);return
0}function __fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return
__emscripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
__fd_write(fd,iiov,iiovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
__emscripten_proxy_to_main_thread_js(5,1,fd,iiov,iiovcnt,pnum);var num=0;for(var i=0;i<iiovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iiov+i*8>>2];var len=GROWABLE_HEAP_I32()[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8)[ptr+j]}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function __pthread_cleanup_pop(execute){var

```



```

routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
__pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){ wasmTable.get(routine)(arg)}})f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw`"Internal Error! spawnThread()
can only ever be called from main application thread!`;var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw`"Internal
error!`;if(!threadParams.pthread_ptr)throw`"Internal error, no pthread
ptr!`;PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;++i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={ worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr };var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emscripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr
ead=pthread;var
msg={`"cmd\":"run\","start_routine":threadParams.startRoutine,"arg":threadParams.arg,"threadInfoStruct":thre
adParams.pthread_ptr,"stackBase":threadParams.stackBase,"stackSize":threadParams.stackSize};worker.runPthr
ead=function(){ msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded
){ worker.runPthread();delete worker.runPthread } } function
__pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===`"undefined`"){err(`"Current
environment does not support SharedArrayBuffer, pthreads are not available!`);return
6}if(!pthread_ptr){err(`"pthread_create called with a null thread pointer!`);return 28}var transferList=[];var
error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return
__emscripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var
stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-
1){ stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+
8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==0}else{ stackSize=2097152}var
allocatedOwnStack=stackBase===0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=
stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var
i=0;i<228>>2;++i)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_p
tr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var
headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var
threadParams={ stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached
,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_P
THREAD){ threadParams.cmd=`"spawnThread"`;postMessage(threadParams,transferList)}else{ spawnThread(thread
Params)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var
tb=__pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled===2)throw`"Canceled!` }function
__emscripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce(`"Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread") }function

```

```

__emscripten_do_pthread_join(thread,status,block){if(!thread){err("\pthread_join attempted on a null thread
pointer!");return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self()==thread){err("\PThread
\"+thread+\" is attempting to join to itself!");return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emscripten_main_browser_thread_id()==thread){err("\Main thread
\"+thread+\" is attempting to join to itself!");return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!==thread){err("\pthread_join attempted on thread
\"+thread+\", which does not point to a valid thread, or does not exist anymore!");return
ERRNO_CODES.ESRCH}var
detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err("\Attempted to join thread
\"+thread+\", which was already detached!");return
ERRNO_CODES.EINVAL}if(block){_emscripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus==1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage({"cmd":\"cleanupThread\",\"thread\":thread});return
0}if(!block){return
ERRNO_CODES.EBUSY}}_pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emscripten_main_thre
ad_process_queued_calls();_emscripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}}function _pthread_join(thread,status){return __emscripten_do_pthread_join(thread,status,true)}function
_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emscripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wr
ite,_sysconf];var
asmLibraryArg={\"e\":__assert_fail,\"r\":__call_main,\"x\":__emscripten_notify_thread_queue,\"b\":_abort,\"y\":
_emscripten_asm_const_int,\"j\":_emscripten_conditional_set_current_thread_status,\"d\":_emscripten_futex_wait,\"
c\":_emscripten_futex_wake,\"f\":_emscripten_get_now,\"p\":_emscripten_memcpy_big,\"A\":_emscripten_num_l
ogical_cores,\"u\":_emscripten_receive_on_main_thread_js,\"q\":_emscripten_resize_heap,\"v\":_emscripten_set_ca
nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscrip
ten_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory||Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var

```

```

_init=Module["_init"]=function(){return(_init=Module["_init"]=Module["asm"][["C"]]).apply(null,arguments)};
var
_init_with_threads_count=Module["_init_with_threads_count"]=function(){return(_init_with_threads_count=Module["asm"][["D"]]).apply(null,arguments)};var
_get_threads_count=Module["_get_threads_count"]=function(){return(_get_threads_count=Module["_get_threads_count"]=Module["asm"][["E"]]).apply(null,arguments)};var
_register_tensor=Module["_register_tensor"]=function(){return(_register_tensor=Module["_register_tensor"]=Module["asm"][["F"]]).apply(null,arguments)};var
_dispose_data=Module["_dispose_data"]=function(){return(_dispose_data=Module["_dispose_data"]=Module["asm"][["G"]]).apply(null,arguments)};var
_dispose=Module["_dispose"]=function(){return(_dispose=Module["_dispose"]=Module["asm"][["H"]]).apply(null,arguments)};var
_Abs=Module["_Abs"]=function(){return(_Abs=Module["_Abs"]=Module["asm"][["J"]]).apply(null,arguments)};var
_Add=Module["_Add"]=function(){return(_Add=Module["_Add"]=Module["asm"][["K"]]).apply(null,arguments)};var
_AddN=Module["_AddN"]=function(){return(_AddN=Module["_AddN"]=Module["asm"][["L"]]).apply(null,arguments)};var
_All=Module["_All"]=function(){return(_All=Module["_All"]=Module["asm"][["M"]]).apply(null,arguments)};var
_Any=Module["_Any"]=function(){return(_Any=Module["_Any"]=Module["asm"][["N"]]).apply(null,arguments)};var
_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm"][["O"]]).apply(null,arguments)};var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm"][["P"]]).apply(null,arguments)};var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"][["Q"]]).apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"][["R"]]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][["S"]]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][["T"]]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["asm"][["U"]]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][["V"]]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][["W"]]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][["X"]]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][["Y"]]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][["Z"]]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["asm"][["_"]]).apply(null,arguments)};var

```

```

_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][["$"]]).apply(null,arguments)}
;var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][["aa"]]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][["ba"]]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][["ca"]]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][["da"]]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][["ea"]]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][["fa"]]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][["ga"]]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][["ha"]]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][["ia"]]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][["ja"]]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][["ka"]]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][["la"]]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][["ma"]]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][["na"]]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][["oa"]]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][["pa"]]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][["qa"]]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][["ra"]]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][["sa"]]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][["ta"]]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][["ua"]]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][["va"]]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][["wa"]]).apply(null,arguments)};var

```

```

_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][["x
a")]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][["ya")]).a
pply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][["za")]).apply(null,argumen
ts)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Mod
ule["_NonMaxSuppressionV3"]=Module["asm"][["Aa")]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Mod
ule["_NonMaxSuppressionV4"]=Module["asm"][["Ba")]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Mod
ule["_NonMaxSuppressionV5"]=Module["asm"][["Ca")]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][["Da"
]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][["Ea")]).appl
y(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][["Fa")]).apply(nu
ll,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][["Ga")]).apply(null,argume
nts)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][["Ha")]).apply(null,arg
uments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][["Ia")]).apply(null,argum
ents)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][["Ja")]).app
ly(null,arguments)};var
_Relu=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][["Ka")]).apply(null,argum
ents)};var
_Relu6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][["La")]).apply(null,a
rguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Mo
dule["asm"][["Ma")]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][["Na")]).app
ly(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWith
Offset"]=Module["asm"][["Oa")]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][["Pa")]).apply(nul
l,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][["Qa")]).apply(null,arg
uments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][["Ra
")]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][["Sa")]).
apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][["Ta")]).ap
ply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][["Ua")]).apply(null,arguments)
};var

```

```

_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Va"]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Wa"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Xa"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"]["Ya"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Za"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"]["_a"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["$a"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["ab"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["bb"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["cb"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["db"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"]["eb"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"]["fb"]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"]["gb"]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=Module["asm"]["hb"]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"]["ib"]).apply(null,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"]["jb"]).apply(null,arguments)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_location"]=Module["asm"]["kb"]).apply(null,arguments)};var
_emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=function(){return(_emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=Module["asm"]["lb"]).apply(null,arguments)};var
_thread_self=Module["_thread_self"]=function(){return(_thread_self=Module["_thread_self"]=Module["asm"]["mb"]).apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=Module["asm"]["nb"]).apply(null,arguments)};var
_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=function(){return(_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=Module["asm"]["ob"]).apply(null,arguments)};var
_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]=function(){return(_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]=Module["asm"]["pb"]).apply(null,arguments)};var

```

```

__emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=function()
{return(__emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=Module["asm"]
["qb"]).apply(null,arguments)};var
__emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=function()
{return(__emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=Module["asm"]
["rb"]).apply(null,arguments)};var
__emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=function()
{return(__emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=Module["asm"]
["sb"]).apply(null,arguments)};var
__emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=function()
{return(__emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=Module["asm"]
["tb"]).apply(null,arguments)};var
__emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=function()
{return(__emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=Module["asm"]
["ub"]).apply(null,arguments)};var
__emscripten_call_on_thread=Module["__emscripten_call_on_thread"]=function()
{return(__emscripten_call_on_thread=Module["__emscripten_call_on_thread"]=Module["asm"]
["vb"]).apply(null,arguments)};var
__emscripten_tls_init=Module["_emscripten_tls_init"]=function()
{return(__emscripten_tls_init=Module["_emscripten_tls_init"]=Module["asm"]
["wb"]).apply(null,arguments)};var
__emscripten_thread_init=Module["__emscripten_thread_init"]=function()
{return(__emscripten_thread_init=Module["__emscripten_thread_init"]=Module["asm"]
["xb"]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function()
{return(stackSave=Module["stackSave"]=Module["asm"]
["yb"]).apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function()
{return(stackRestore=Module["stackRestore"]=Module["asm"]
["zb"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function()
{return(stackAlloc=Module["stackAlloc"]=Module["asm"]
["Ab"]).apply(null,arguments)};var
__emscripten_stack_set_limits=Module["_emscripten_stack_set_limits"]=function()
{return(__emscripten_stack_set_limits=Module["_emscripten_stack_set_limits"]=Module["asm"]
["Bb"]).apply(null,arguments)};var
__memalign=Module["_memalign"]=function()
{return(__memalign=Module["_memalign"]=Module["asm"]
["Cb"]).apply(null,arguments)};var
__emscripten_allow_main_runtime_queued_calls=Module["__emscripten_allow_main_runtime_queued_calls"]=10512;var
__emscripten_main_thread_futex=Module["__emscripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasmMemory"]=wasmMemory;Module["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromiseResolve(Module);initRuntime();postMessage({"cmd":"loaded"});return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain();readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun()}if(Module["setStatus"]){Module["setStatus"]("Running..");setTimeout(function(){setTimeout(function(){Module["setStatus"]("");},1);doRun()},1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PTHREAD){postMessage({"cmd":"exitProcess","returnCode":status});throw new

```



```

WasmBackendModule = (function() {\n var _scriptDir = typeof document !== 'undefined' &&
document.currentScript ? document.currentScript.src : undefined;\n if (typeof __filename !== 'undefined')
_scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n WasmBackendModule =
WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!==\"undefined\"?WasmBackendModule:{};var
readyPromiseResolve,readyPromiseReject;Module[\"ready\"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\"./this.program\";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window===\"object\";ENVIRONMENT_IS_WORKER=typeof
importScripts===\"function\";ENVIRONMENT_IS_NODE=typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof
process.versions.node===\"string\";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory=\"\";function
locateFile(path){if(Module[\"locateFile\"]){return Module[\"locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\"path\").
dirname(scriptDirectory)+\"/\"}else{scriptDirectory=__dirname+\"/\"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\"fs\");if(!nodePath)nodePath=require(\"path\");filename=
nodePath[\"normalize\"](filename);return
nodeFS[\"readFileSync\"](filename,binary?null:\"utf8\");};readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process[\"argv\"].length>1){thisProgram=process[\"argv\"][1].replace(/\\\\\\\\g,\"/\");arguments_=process[\"arg
v\"].slice(2);process[\"on\"](\"uncaughtException\",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process[\"on\"](\"unhandledRejection\",abort);quit_=function(status){process[\"exit\"](status)};Module[\"insp
ect\"]=function(){return\"[Emscripten Module object]\"}}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!=\"undefined\"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer===\"function\"){return new
Uint8Array(readbuffer(f))}data=read(f,\"binary\");assert(typeof data===\"object\");return data};if(typeof
scriptArgs!=\"undefined\"){arguments_=scriptArgs}else if(typeof
arguments!=\"undefined\"){arguments_=arguments}if(typeof
quit===\"function\"){quit_=function(status){quit(status)}}if(typeof print!=\"undefined\"){if(typeof
console===\"undefined\")console={};console.log=print;console.warn=console.error=typeof
printErr!=\"undefined\"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=\"undefined\"&&document.currentScript){scriptDirectory=document.currentScript.src}if(_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf(\"blob:\")!==0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf(\"/\")+1)}else{scriptDirectory=\"\"}}{read_=function(url){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.responseType=\"arraybuffer\";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,true);xhr.responseType=\"arraybuffer\";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror()};xhr.onerror=onerror;xhr.send(null)}

```

```

}setWindowTitle=function(title){ document.title=title }else{ }var
out=Module[\'"print"\"]||console.log.bind(console);var err=Module[\'"printErr"\"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} }moduleOverr
ides=null;if(Module[\'"arguments"\"])arguments_=Module[\'"arguments"\"];if(Module[\'"thisProgram"\"])thisProgram=
Module[\'"thisProgram"\"];if(Module[\'"quit"\"])quit_=Module[\'"quit"\"];var
wasmBinary;if(Module[\'"wasmBinary"\"])wasmBinary=Module[\'"wasmBinary"\"];var
noExitRuntime=Module[\'"noExitRuntime"\"]||true;if(typeof WebAssembly!=="object"){ abort(\'"no native wasm
support detected"\')}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){ abort(\'"Assertion failed: \' +text)\'} }function getCFunc(ident){ var
func=Module[\'"_' +ident\"];assert(func,\'"Cannot call unknown function \' +ident+"", make sure it is exported\");return
func }function ccall(ident,returnType,argTypes,args,opts){ var toC={\'"string\":function(str){ var
ret=0;if(str!==null&&str!==undefined&&str!==0){ var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},\'"array\":function(arr){ var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret } };function
convertReturnValue(ret){ if(returnType===\'"string"\")return UTF8ToString(ret);if(returnType===\'"boolean"\")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){ for(var
i=0;i<args.length;i++){ var
converter=toC[argTypes[i]];if(converter){ if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{ cArgs[i
]=args[i] } }var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){ argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){ return type===\'"number"\'});var
numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){ return getCFunc(ident)}return
function(){ return ccall(ident,returnType,argTypes,arguments,opts) } }var UTF8Decoder=typeof
TextDecoder!=="undefined"?new TextDecoder(\'"utf8"\"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){ var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){ return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{ var
str=\'";while(idx<endPtr){ var u0=heap[idx++];if(!(u0&128)){ str+=String.fromCharCode(u0);continue }var
u1=heap[idx++]&63;if((u0&224)==192){ str+=String.fromCharCode((u0&31)<<6|u1);continue }var
u2=heap[idx++]&63;if((u0&240)==224){ u0=(u0&15)<<12|u1<<6|u2}else{ u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63 }if(u0<65536){ str+=String.fromCharCode(u0)}else{ var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023) } }return str}function
UTF8ToString(ptr,maxBytesToRead){ return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):\'"\' }function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){ if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){ var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){ var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){ if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){ if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){ if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{ if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63} }heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){ return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){ if(x%multiple>0){ x+=multiple-x%multiple}return x }var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function

```

```

updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]!="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]!="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"]((runDependencies))}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"]((runDependencies))}if(runDepend
encies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null
}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what+="abort("+what+"\n). Build with -s ASSERTIONS=1 for more info.";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://^";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-
wasm.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinaryFile){return new
Uint8Array(wasmBinaryFile)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch==="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:"same-
origin"}).then(function(response){if(!response["ok"]){throw"failed to load wasm binary file at
"+"wasmBinaryFile+"})return response["arrayBuffer"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={"a":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module["asm"]=exports;wasmMemory=Module["asm"]["j"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module["asm"]["r"];removeRunDependency("wasm-
instantiate")}addRunDependency("wasm-instantiate");function

```

```

receiveInstantiatedSource(output){receiveInstance(output["instance\"])function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)).then(receiver,function(reason){err("\failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\"function\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\"function\"){return fetch(wasmBinaryFile,{credentials:\"same-
origin\").then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\"wasm streaming compile failed: \"+reason);err(\"falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(Promise.reject);return {}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg
)}}else{func(callback.arg===undefined?null:callback.arg)}}function _abort(){abort()}function
_emscipten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscipten_get_heap_size(){return HEAPU8.length}function
emscipten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscipten_resize_heap(requestedSize){var oldSize=_emscipten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscipten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(ptr){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iow,iocnt,pnum){var num=0;for(var
i=0;i<iocnt;i++){var ptr=HEAP32[iow+i*8>>2];var len=HEAP32[iow+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _pthread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return

```

```

16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84: {if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1 } }setErrNo(28);return-1 }var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"s\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"t\"]).apply(null,argument
s)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"u\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"v\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"w\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"x\"]).app
ly(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"y\"]).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"][\"z\"]).apply(null,arguments)};var
_Ceil=Module[\"_Ceil\"]=function(){return(_Ceil=Module[\"_Ceil\"]=Module[\"asm\"][\"A\"]).apply(null,argument
s)};var
_ClipByValue=Module[\"_ClipByValue\"]=function(){return(_ClipByValue=Module[\"_ClipByValue\"]=Module[\"
asm\"][\"B\"]).apply(null,arguments)};var
_Conv2D=Module[\"_Conv2D\"]=function(){return(_Conv2D=Module[\"_Conv2D\"]=Module[\"asm\"][\"C\"]).ap
ply(null,arguments)};var
_Conv2DBackpropInput=Module[\"_Conv2DBackpropInput\"]=function(){return(_Conv2DBackpropInput=Modul
e[\"_Conv2DBackpropInput\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_Cos=Module[\"_Cos\"]=function(){return(_Cos=Module[\"_Cos\"]=Module[\"asm\"][\"E\"]).apply(null,arguments
)};var
_Cosh=Module[\"_Cosh\"]=function(){return(_Cosh=Module[\"_Cosh\"]=Module[\"asm\"][\"F\"]).apply(null,argu
ments)};var
_CropAndResize=Module[\"_CropAndResize\"]=function(){return(_CropAndResize=Module[\"_CropAndResize\"]

```

```

=Module["asm"]["G"].apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"]["H"].a
pply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=M
odule["asm"]["I"].apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=M
odule["_DepthwiseConv2dNative"]=Module["asm"]["J"].apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"]["K"].apply(null,arguments)
);var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"]["L"].apply(null,arg
uments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"]["M"].apply(null,argument
s)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Modu
le["asm"]["N"].apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"]["O"].apply(null,argu
ments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"]["P"].
apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchN
orm"]=Module["asm"]["Q"].apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Modu
le["asm"]["R"].apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=M
odule["_FusedDepthwiseConv2D"]=Module["asm"]["S"].apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"]["T"].apply(null
,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"]["U"
]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"]["V"].apply(
null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module[
"asm"]["W"].apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"]["
X"].apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"]["Y"].apply(null,argume
nts)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"]["
Z"].apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"]["_"].apply(null,arguments
)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm
"]["$"].apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"]["aa"].apply(null,argume
nts)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"]["ba"].
apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"]["c

```

```

a").apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][\da]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][\ea]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][\fa]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][\ga]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][\ha]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][\ia]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][\ja]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][\ka]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][\la]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][\ma]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][\na]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][\oa]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][\pa]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][\qa]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][\ra]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][\sa]).apply(null,arguments)};var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][\ta]).apply(null,arguments)};var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][\ua]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][\va]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][\wa]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][\xa]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][\ya]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][\za]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][\Aa])

```

```

\").apply(null,arguments));var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"]["Ba"]).
.apply(null,arguments));var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"]["Ca"]).ap
ply(null,arguments));var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"]["Da"]).apply(null,arguments)
};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Ea"]).ap
ply(null,arguments));var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Fa"]).apply(null,argumen
ts));var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Ga"]).apply(n
ull,arguments));var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_Squared
Difference"]=Module["asm"]["Ha"]).apply(null,arguments));var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Ia"]).apply(null,argume
nts));var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["as
m"]["Ja"]).apply(null,arguments));var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["Ka"]).apply(null,argument
s));var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["La"]).apply(null,argumen
ts));var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["Ma"]).apply(null,argumen
ts));var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["Na"]).apply(null,argu
ments));var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["Oa"]).apply(null,argumen
ts));var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"]["Pa"]).apply(null,ar
guments));var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"]["Qa"
]).apply(null,arguments));var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"]["Ra"
]).apply(null,arguments));var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"]["Sa"]).apply(null,arguments));var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"]["Ta"]).apply(nu
ll,arguments));var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"]["Ua"]).apply(null,argument
s));var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"]["Va"]).apply(null,arguments));var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"]["Wa"
]).apply(null,arguments));var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"
]["Xa"]).apply(null,arguments));var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"]["Ya"

```



```

this.readSync(dataId);\n }\n\n readSync(dataId: DataId): backend_util.BackendValues {\n  const {memoryOffset,\n  dtype, shape, stringBytes} =\n    this.dataIdMap.get(dataId);\n  if (dtype === 'string') {\n    return stringBytes;\n  }\n  const bytes = this.wasm.HEAPU8.slice(\n    memoryOffset,\n    memoryOffset +\n    util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n  return typedArrayFromBuffer(bytes.buffer, dtype);\n}\n\n /**\n * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n * is released, false otherwise.\n * @param dataId\n * @oaram force Optional, remove the data regardless of refCount\n */\n disposeData(dataId: DataId, force = false): boolean {\n  if (this.dataIdMap.has(dataId)) {\n    const data =\n      this.dataIdMap.get(dataId);\n    data.refCount--;\n    if (!force && data.refCount > 0) {\n      return false;\n    }\n\n    this.wasm._free(data.memoryOffset);\n    this.wasm.tfjs.disposeData(data.id);\n    this.dataIdMap.delete(dataId);\n  }\n  return true;\n}\n\n /** Return refCount of a `TensorData`. */\n refCount(dataId: DataId): number {\n  if (this.dataIdMap.has(dataId)) {\n    const tensorData =\n      this.dataIdMap.get(dataId);\n    return tensorData.refCount;\n  }\n  return 0;\n}\n\n incRef(dataId: DataId) {\n  const data = this.dataIdMap.get(dataId);\n  if (data != null) {\n    data.refCount++;\n  }\n}\n\n floatPrecision():\n 32 {\n  return 32;\n}\n\n // Returns the memory offset of a tensor. Useful for debugging and unit\n // testing.\n getMemoryOffset(dataId: DataId): number {\n  return this.dataIdMap.get(dataId).memoryOffset;\n}\n\n dispose() {\n  this.wasm.tfjs.dispose();\n  if ('PThread' in this.wasm) {\n    this.wasm.PThread.terminateAllThreads();\n  }\n  this.wasm = null;\n}\n\n memory() {\n  return {unreliable:\n  false};\n}\n\n /**\n * Make a tensor info for the output of an op. If `memoryOffset` is not\n * present, this method allocates memory on the WASM heap. If `memoryOffset`\n * is present, the memory was allocated elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n makeOutput(shape:\n  number[], dtype: DataType, memoryOffset?: number):\n  TensorInfo {\n  let dataId: {};\n  if (memoryOffset\n  == null) {\n    dataId = this.write(null /* values */, shape, dtype);\n  } else {\n    const id =\n      this.dataIdNextNumber++;\n    dataId = {id};\n    this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,\n    refCount: 1});\n    const size = util.sizeFromShape(shape);\n    this.wasm.tfjs.registerTensor(id, size,\n    memoryOffset);\n  }\n  return {dataId, shape, dtype};\n}\n\n typedArrayFromHeap({shape, dtype, dataId}:\n  TensorInfo):\n  backend_util.TypedArray {\n  const buffer = this.wasm.HEAPU8.buffer;\n  const\n  {memoryOffset} = this.dataIdMap.get(dataId);\n  const size = util.sizeFromShape(shape);\n  switch (dtype) {\n  case 'float32':\n    return new Float32Array(buffer, memoryOffset, size);\n  case 'int32':\n    return new\n    Int32Array(buffer, memoryOffset, size);\n  case 'bool':\n    return new Uint8Array(buffer, memoryOffset,\n    size);\n  default:\n    throw new Error(`Unknown dtype ${dtype}`);\n  }\n}\n\n\nfunction\n  createInstantiateWasmFunc(path: string) {\n  // this will be replace by rollup plugin patchWechatWebAssembly in\n  // minprogram's output.\n  // tslint:disable-next-line:no-any\n  return (imports: any, callback: any) => {\n    util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n      if (!response['ok']) {\n        imports.env.a(`failed to load wasm binary file at '${path}'`);\n      }\n      response.arrayBuffer().then(binary => {\n        WebAssembly.instantiate(binary, imports).then(output => {\n          callback(output.instance, output.module);\n        });\n      });\n    });\n    return {};\n  };\n}\n\n /**\n * Returns the path of the WASM binary.\n */\n * @param\n  simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n * @param wasmModuleFolder the directory containing the WASM binaries.\n */\n\nfunction getPathToWasmBinary(\n  simdSupported: boolean, threadsSupported: boolean,\n  wasmModuleFolder: string) {\n  if (wasmPath != null) {\n    // If wasmPath is defined, the user has supplied a full path to\n    // the vanilla .wasm binary.\n    return\n    wasmPath;\n  }\n\n  let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n  if (simdSupported &&\n  threadsSupported) {\n    path = 'tfjs-backend-wasm-threaded-simd.wasm';\n  } else if (simdSupported) {\n    path =\n    'tfjs-backend-wasm-simd.wasm';\n  }\n\n  if (wasmFileMap != null) {\n    if (wasmFileMap[path] != null) {\n      return\n      wasmFileMap[path];\n    }\n  }\n\n  return wasmModuleFolder + path;\n}\n\n /**\n * Initializes the wasm module and creates the js <--> wasm bridge.\n */\n * NOTE: We wrap the wasm module in a object with property\n  'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in\n  Chrome 76).\n */\n\nfunction export async function init(): Promise<{wasm: BackendWasmModule}> {\n  const\n  [simdSupported, threadsSupported] = await Promise.all([\n    env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n
```

```

env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n ]);\n\n return new Promise((resolve, reject) =>
{\n  const factoryConfig: WasmFactoryConfig = {};\n\n  /**\n   * This function overrides the Emscripten
module locateFile utility.\n   * @param path The relative path to the file that needs to be loaded.\n   * @param
prefix The path to the main JavaScript file's directory.\n   */\n  factoryConfig.locateFile = (path, prefix) => {\n
if (path.endsWith('.worker.js')) {\n    const response = wasmWorkerContents;\n    const blob = new
Blob([response], {type: 'application/javascript'});\n    return URL.createObjectURL(blob);\n  }\n\n  if
(path.endsWith('.wasm')) {\n    return getPathToWasmBinary(\n      simdSupported as boolean,
threadsSupported as boolean,\n      wasmPathPrefix != null ? wasmPathPrefix : prefix);\n  }\n  return prefix
+ path;\n  };\n\n  // Use the instantiateWasm override when system fetch is not available.\n  // Reference:\n  //
https://github.com/emscripten-
core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7feecfa907/tests/manual_wasm_instantiate.html#L170\n
if (customFetch) {\n    factoryConfig.instantiateWasm =\n
createInstantiateWasmFunc(getPathToWasmBinary(\n      simdSupported as boolean, threadsSupported as
boolean,\n      wasmPathPrefix != null ? wasmPathPrefix : ''));\n  }\n\n  let initialized = false;\n
factoryConfig.onAbort = () => {\n    if (initialized) {\n      // Emscripten already called console.warn so no need to
double log.\n      return;\n    }\n    if (initAborted) {\n      // Emscripten calls `onAbort` twice, resulting in double
error\n      // messages.\n      return;\n    }\n    initAborted = true;\n    const rejectMsg =\n      'Make sure the
server can serve the `.wasm` file relative to the '+\n      'bundled js file. For more details see
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers';\n
reject({message: rejectMsg});\n  };\n\n  let wasm: Promise<BackendWasmModule>;\n  // If `wasmPath` has
been defined we must initialize the vanilla module.\n  if (threadsSupported && simdSupported && wasmPath ==
null) {\n    factoryConfig.mainScriptUrlOrBlob = new Blob(\n      [\n        var WasmBackendModuleThreadedSimd = `
+\n        wasmFactoryThreadedSimd.toString(),\n        {type: 'text/javascript'});\n    wasm =
wasmFactoryThreadedSimd(factoryConfig);\n  } else {\n    // The wasmFactory works for both vanilla and SIMD
binaries.\n    wasm = wasmFactory(factoryConfig);\n  }\n\n  // The WASM module has been successfully
created by the factory.\n  // Any error will be caught by the onAbort callback defined above.\n
wasm.then((module) => {\n    initialized = true;\n    initAborted = false;\n\n    const voidReturnType: string =
null;\n    // Using the tfjs namespace to avoid conflict with emscripten's API.\n    module.tfjs = {\n      init:
module.cwrap('init', null, []),\n      initWithThreadsCount:\n        module.cwrap('init_with_threads_count', null,
[number']),\n      getThreadsCount: module.cwrap('get_threads_count', 'number', []),\n      registerTensor:
module.cwrap(\n        'register_tensor', null,\n        [\n          'number', // id\n          'number', // size\n
'number', // memoryOffset\n        ]),\n      disposeData: module.cwrap('dispose_data', voidReturnType,
[number']),\n      dispose: module.cwrap('dispose', voidReturnType, []),\n    };\n\n    resolve({ wasm: module });\n
  });\n  });\n\nfunction typedArrayFromBuffer(\n  buffer: ArrayBuffer, dtype: DataType):
backend_util.TypedArray {\n  switch (dtype) {\n    case 'float32':\n      return new Float32Array(buffer);\n    case
'int32':\n      return new Int32Array(buffer);\n    case 'bool':\n      return new Uint8Array(buffer);\n    default:\n
throw new Error(`Unknown dtype ${dtype}`);\n  }\n}\n\nconst wasmBinaryNames = [\n  'tfjs-backend-
wasm.wasm', 'tfjs-backend-wasm-simd.wasm',\n  'tfjs-backend-wasm-threaded-simd.wasm'\n] as const ;\n\ntype
WasmBinaryName = typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix:
string = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet
customFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `.wasm` file
which will be fetched when the wasm\n * backend is initialized. See\n *
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more
details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch
to download\n * the wasm file, default to false.\n */\n * @doc {heading: 'Environment', namespace: 'wasm'}\n
*/\n\nexport function setWasmPath(path: string, usePlatformFetch = false): void {\n  deprecationWarn(\n
'setWasmPath has been deprecated in favor of setWasmPaths and'+\n    ' ' will be removed in a future release.);\n  if
(initAborted) {\n    throw new Error(\n      'The WASM backend was already initialized. Make sure you call '+\n

```


Pad", "Multiply", "Neg", "NonMaxSuppressionV3", "NonMaxSuppressionV4", "NonMaxSuppressionV5", "kernelFunc", "NotEqual", "OneHot", "OnesLike", "Pack", "PadV2", "Pow", "Prelu", "Prod", "rangeImplCPU", "Range", "RealDiv", "Relu", "Relu6", "ResizeBilinear", "Reverse", "RotateWithOffset", "Round", "Rsqrt", "ScatterNd", "Select", "Sigmoid", "Sin", "Softmax", "SpaceToBatchND", "SplitV", "Sqrt", "Square", "SquaredDifference", "Step", "StridedSlice", "Sub", "Sum", "Tan", "Tanh", "Tile", "TopK", "Transform", "Unpack", "ZerosLike", "registerKernel", "env", "require\$\$0", "require\$\$1", "require\$\$2", "global", "require\$\$3", "require\$\$4", "tslib_1.__extends", "DataStorage", "engine", "KernelBackend", "wasmFactoryThreadedSimd", "wasmFactory", "deprecationWarn", "registerBackend"], "mappings": ";;;;;;;;;;;;;EAAA;;;;;;;;;;;;;EAIbA;EACA,IAAY,QAMX;EAND,WAAY,QAAQ;MACIB,6CAAW,CAAA;MACX,yCAAS,CAAA;MACT,uCAAQ,CAAA;MACR,2CAAU,CAAA;MACV,iDAAa,CAAA;EACf,CAAC,EANW,QAAQ,KAA R,QAAQ,QAMnB;EAED;EACA,IAAY,iBAQX;EARD,WAAY,iBAAiB;MAC3B,6DAAU,CAAA;MACV,yDAA Q,CAAA;MACR,2DAAS,CAAA;MACT,2DAAS,CAAA;MACT,mEAAa,CAAA;MACb,+DAAW,CAAA;MACX, uDAAO,CAAA;EACT,CAAC,EARW,iBAAiB,KAAjB,iBAAiB;;EC3B7B;;;;;;;;;;;;;EAuBA,IAAI,eAKQ,CAAC; EAEb,SAAS,KAAK,CAAC,OAAoB;MACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACA,qBAAY, EAAE,IAAI,aAAa;UACIE,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UA CR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CA AC,CAAC;EACL,CAAC;EAED,SAAS,gBAAGb,CAAC,IAIzB;MACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kB AAK,CAAS;MAC/B,IAAA,YAAC,EAAE,YAAC,EAAE,kBAAI,EAAE,sDAAsB,CAAW;MAEpD,IAAI,CAAC,C AAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,EAAE;UACID,MAAM,IAAI,KAAK,CAC X,6DAA6D,CAAC,CAAC;OACpE;MAEM,IAAA,6BAAU,EAAE,6BAAU,EAAE,6BAAU,EAAE,qCAAc,CAAU; MACnE,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC, EAAE,CAAC;MAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM, CAAC,CAAC,EAAE,CAAC;MAE/C,IAAI,MAAM,GAAG,CAAC,CAAC;MACf,IAAI,IAAI,IAAI,IAAI,EAAE;U AChB,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;UA CpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;cAC/B,MAAM,IAAI,KAAK,CACX,iDA AiD;mBACjD,UAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,MAAG,CAAA,CAAC,CAAC;WACvC;UACD,MAA M,GAAG,QAAQ,CAAC,EAAE,CAAC;OActB;MACD,IAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;UAC3D,C AAC;UACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC; MAC5D,IAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;MACIE,IAAI,eAAe,IAAI,IAAI,EAAE;UA C3B,MAAM,IAAI,KAAK,CACR,UAAU,mDAAgD;cAC7D,sBAAsB,CAAC,CAAC;OAC7B;MAED,IAAM,OAA O,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAA C,CAAC,CAAC;MACrD,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAA G,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACtD,IAAM,QAAQ,GAAG,CAAC,CAAC,KAAK,CAA C,CAAC,CAAC,CAAC;MAE5B,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,EAAE,OAA O,EAAE,QAAQ,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACvE,IAAM,KAAK,GAAG,OAAO,CAA C,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,IAAM,WAAW,GA AG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MACn E,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM, CAAC,CAAC;MAEnE,eAAe,CACX,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE, GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,UAAU,EAAE,UAAU,EAAE,eAAe,E AAE,MAAM,EAAE,wBAAwB,EACzE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;MAEHc,OAAO,GAAG, CAAC;EACb,CAAC;EAEM,IAAM,iBAAiB,GAaiB;MAC7C,UAAU,EAAEA,qBAAY;MACxB,WAAW,EAAE, MAAM;MACnB,SAAS,EAAE,KAAK;MACHb,UAAU,EAAE,gBAAoC;GACjD;;EC7GD;;;;;;;;;;;;;WauBgB,uB AAuB,CACnC,UAAkB,EAAE,OAAkB;MACxC,IAAI,QAA6D,CAAC;MAEIE,SAAS,SAAS,CAAC,OAAoB;UA CrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;cACzD,QAAQ;cACR, QAAQ;cACR,QAAQ;WACT,CAAC,CAAC;OACJ;MAED,SAAS,UAAU,CAAC,IAAiD;UAE5D,IAAA,sBAAO,E AAW,iBAAC,CAAU;UACpC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC, MAAM,CAAC,CAAC,EAAE,CAAC;UAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC, KAAK,EAAE,OAAO,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC;UAC5D,IAAM,KAAK,GAAG,OAAO,CAAC,S

AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;UAGnD,IAAIC,aAAI,CAAC,aA
Aa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;cACvC,OAAO,GAAG,CAAC;WACZ;UAED,QA
AQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;UACxC,OA
AO,GAAG,CAAC;OACZ;MAED,OAAO,EAAC,UAAU,YAAA,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,WA
AA,EAAE,UAAU,YAAA,EAAC,CAAC;EACIE;;ECpDA;;;;;;;EAoBO,IAAM,SAAS,GAAiB,uBAAuB,CAA
CC,YAAG,CAAC;;ECpBnE;;;;;;;WAuBgB,wBAAwB,CACpC,UAAkB,EAAE,qBAA8B,EACID,KAAgB;M
ACIB,IAAI,QAGQ,CAAC;MAEb,SAAS,SAAS,CAAC,OAAoB;UACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAA
C,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;cACzD,QAAQ;cACR,OAAO;cACP,QAAQ;cACR,QAAQ;cACR,OA
AO;cACP,QAAQ;cACR,QAAQ;cACR,QAAQ;WACT,CAAC,CAAC;OACJ;MAED,SAAS,UAAU,CAAC,IAAkD
;UAE7D,IAAA,sBAAO,EAAE,oBAAM,CAAS;UACxB,IAAA,YAAC,EAAE,YAAC,CAAW;UACtB,IAAM,GAA
G,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UAC/
C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,
CAAC;UAE/C,IAAM,UAAU,GAAG,KAAK,IAAI,IAAI,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC;UA
CnD,IAAM,QAAQ,GAAGC,qBAAY,CAAC,0BAA0B,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK
,CAAC,CAAC;UAC3E,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,UAAU,CAAC,CAAC;
;UAGrD,IAAIF,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;cACtC,OAAO,GAAG,CAAC;W
ACZ;UAED,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAA
C,MAAM,CAAC,CAAC;UACnE,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,
KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;UACnE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,
CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,IAAM,UAAU,GAAG,cAAM,OAAA,QAAQ,
CAC7B,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAA
E,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAA
C,GAAA,CAAC;;UAG9B,IAAI,qBAAqB,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,EAAE;cACID,UAAU,EAAE
,CAAC;cACb,OAAO,GAAG,CAAC;WACZ;UAED,IAAM,cAAc,GAAGE,qBAAY,CAAC,gBAAgB,CAAC,CAA
C,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;UACxE,IAAM,cAAc,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,C
AAC,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;UACxE,IAAM,eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,UAA
C,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,KAAK,CAAC,GAAA,CAAC,CAAC;UAChE,IAAM,eAAe,GAAG,c
AAc,CAAC,KAAK,CAAC,UAAc,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,KAAK,CAAC,GAAA,CAAC,CAA
C;UAChE,IAAI,eAAe,IAAI,eAAe,EAAE;cACtC,UAAU,EAAE,CAAC;cACb,OAAO,GAAG,CAAC;WACZ;eAA
M;cACL,MAAM,IAAI,KAAK,CACX,2CAA2C;mBAC3C,mBAAiB,CAAC,CAAC,KAAK,SAAI,UAAU,MAAG,
CAAA,CAAC,CAAC;WAChD;OACF;MAED,OAAO,EAAC,UAAU,YAAA,EAAE,WAAW,EAAE,MAAM,EAA
E,SAAS,WAAA,EAAE,UAAU,YAAA,EAAC,CAAC;EACIE;;ECxFA;;;;;;;EAqBA,IAAM,qBAAqB,GAAG,
IAAI,CAAC;EAE5B,IAAM,SAAS,GACIB,wBAAwB,CAACC,YAAG,EAAE,qBAAqB,CAAC;;ECxBxD;;;;;;;
;;EAuBA,IAAI,QAEQ,CAAC;EAEb,SAAS,SAAS,CAAC,OAAoB;MACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,C
AAC,KAAK,CAACC,aAAI,EAAE,IAAI,aAAa;UACnD,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;OA
CT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,IAAI,CAAC,IAAkD;MACvD,IAAA,oBAAM,EAAE,sBAAO,CAA
S;MAC/B,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,EAA
E,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;;MAGjE,IAAI,aAAI,CAAC,aAAa,CAAC,GAAG,
CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACvC,OAAO,GAAG,CAAC;OACZ;MAED,IAAM,QAAQ,GAAG,
MAAM,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,C
AAC,MAAM,CAAC,CAAC,EAAE,GAAA,CAAC,CAAC;MACrE,IAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI
,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;MACtE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,
CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,QAAQ,CAAC,aAAa,EAAE,
QAAQ,CAAC,MAAM,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;MAErE,
OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,UAAU,GAAiB;MACtC,UAAU,EAAE,aAAI;MAChB,WAA
W,EAAE,MAAM;MACnB,SAAS,WAAA;MACT,UAAU,EAAE,IAAwB;GACrC;;ECIDD;;;;;;;WAsBgB,Q
AAQ,CAAC,IAAoD;MAE3D,IAAA,iBAAC,EAAG,sBAAO,CAAS;MACpC,IAAM,GAAG,GAAG,OAAO,CAAC
,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,IAAM,MAAM,GAAG

,OAAO,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC;MAC7C,IAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,C
AAC,GAAG,CAAC,CAAC;MACHd,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACpB,OAAO,GAA
G,CAAC;EACb,CAAC;EAEM,IAAM,cAAc,GAaIB;MAC1C,UAAU,EAAEC,iBAAQ;MACpB,WAAW,EAAE,M
AAM;MACnB,UAAU,EAAE,QAA4B;GACzC;;ECpCD;,,,,,;EAwBA,IAAI,aAE4D,CAAC;EAEjE,SAASC,
OAAK,CAAC,OAAoB;MACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,kBAAS,EAAE,IAAI,a
AAa;UAC7D,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;O
ACT,CAAC,CAAC;EACL,CAAC;WAEe,SAAS,CACrB,IAC0E;MAErE,IAAA,oBAAM,EAAE,sBAAO,EAAE,k
BAAK,CAAS;;MAGhC,IAAA,kDAoE,EAAeE,oBAAY,EAAE,YAAqD,CAAC;MAE3E,IAAI,UAAU,GAAG,I
AAI,CAAC;MACtB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAA
C,EAAE,EAAE;UACpC,IAAI,IAAI,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;cACjB,UAAU,GAAG,KAAK,C
AAC;WACpB;OACF;MACD,IAAM,QAAQ,GAAG,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,EAAE,K
AAK,CAAC,IAAI,CAAC,CAAC;MAC7D,IAAM,CAAC,GAAG;UACR,MAAM,EAAE,MAAM,CAAC,CAAC,C
AAC,MAAM;UACvB,KAAK,EAAE,YAAY;UACnB,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,KAAK;OACt
B,CAAC;MAEF,IAAI,UAAU,EAAE;UACd,IAAM,MAAM,GAAG,QAAQ,CAAC,EAAC,MAAM,QAAA,EAAE,
OAAO,SAAS,EAAC,CAAC,CAAC;UAC3C,MAAM,CAAC,KAAK,GAAG,QAAQ,CAAC;UACxB,OAAO,MAA
M,CAAC;OACf;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK
,CAAC,CAAC;MACID,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,
CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,C
AAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAA
C,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;MAC9D,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,
CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAEnE,aAAa,CACT,GAAG,EAAE,WAAW,
EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,E
AAE,SAAS,EACrE,IAAI,CAAC,MAAM,CAAC,CAAC;MACjB,OAAO,GAAG,CAAC;EACb,CAAC;EAED,SA
S,eAAe,CAAC,OAAiB,EAAE,IAAc;MACxD,IAAM,QAAQ,GAAG,IAAI,KAAK,CAAC,OAAO,CAAC,MAAM,
CAAC,CAAC;MAC3C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,C
AAC,EAAE,EAAE;UACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CA
AC,CAAC;OAChC;MACD,OAAO,QAAQ,CAAC;EACIB,CAAC;EAED,SAAS,iBAAiB,CACtB,KAAe,EAAE,IA
Ac;MACjC,IAAM,QAAQ,GAAa,EAAE,CAAC;MAC9B,IAAM,OAAO,GAAa,EAAE,CAAC;MAC7B,KAAK,IA
AI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;UACrC,IAAI,
KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;cACiB,QAAQ,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CA
AC,CAAC,CAAC;WACzB;UACD,IAAI,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;
cACxB,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;WACvB;OACF;MACD,KAAK,IA
AI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;UACvC,IAAI
,SAAS,GAAG,CAAC,CAAC,CAAC;UACnB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,C
AAC,MAAM,EAAE,EAAE,CAAC,EAAE;cACvC,IAAI,OAAO,CAAC,CAAC,CAAC,IAAI,CAAC;mBACd,SA
S,KAAK,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,CAAC,GAAG,OAAO,CAAC,CAAC,CAAC,CAAC,EAAE;k
BACzD,SAAS,GAAG,CAAC,CAAC;eACf;WACF;UACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC;O
ACxB;MACD,OAAO,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;EAC7B,CAAC;EAEM,IAAM,eAAe,GAaIB;
MAC3C,UAAU,EAAEA,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,SAA6B;MACzC,SAA
S,EAAED,OAAK;GACjB;;ECTHD;,,,,,;EAqBA;,,,,,;WAQgB,uBAAuB,CACnC,CAAa,EAAE,IAAqB,EAA
E,OAAoB;MAM5D,IAAM,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC;MACvB,IAAM,KAAK,GAAG,CAAC,
CAAC,KAAK,CAAC,MAAM,CAAC;MAE7B,IAAM,YAAY,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,M
AAM,CAAC,CAAC;MACvD,IAAI,IAAI,GAAG,YAAY,CAAC;MACxB,IAAM,YAAY,GAAGE,qBAAY,CAAC,
kBAaKB,CAAC,IAAI,EAAE,KAAK,CAAC,CAAC;MACIE,IAAI,WAAW,GAAG,IAAI,CAAC;MACvB,IAAI,kB
AAKB,GAAG,KAAK,CAAC;MAC/B,IAAI,YAAY,IAAI,IAAI,EAAE;UACxB,IAAM,QAAQ,GAAa,IAAI,KAAK,
CAAC,KAAK,CAAC,CAAC;UAC5C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,M
AAM,EAAE,CAAC,EAAE,EAAE;cACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,C
AAC,CAAC,CAAC,CAAC;WACvC;UAED,IAAI,GAAGA,qBAAY,CAAC,gBAAGB,CAAC,IAAI,CAAC,MAAM

,EAAE,KAAK,CAAC,CAAC;UACzD,WAAW;cACP,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,YAAY,EAAC,EAAE,OAAO,SAAS,EAAC,CAAC,CAAC;UAE nE,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAA E,CAAC;UAC/C,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAA C,CAAC,EAAE,CAAC;UACIE,IAAI,YAAY,KAAK,GAAG,EAAE;cACxB,kBAaKb,GAAG,IAAI,CAAC;WAC3 B;OACF;MAED,OAAO,EAAC,UAAU,EAAE,WAAW,EAAE,YAAY,cAAA,EAAE,IAAI,MAAA,EAAE,kBAaK B,oBAAA,EAAC,CAAC;EAC3E;;EC9DA;;;;;;;EAuBA,IAAI,OAAiE,CAAC;EAETe,SAASI,OAAK,CAAC, OAAoB;MACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACE,YAAG,EAAE,IAAI,WAAW,CAAC, wBAAwB,CAAC,CAAC,CAAC;EAC/E,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAEpE,IAAA,sBAAO,EAA E,oBAAM,EAAE,kBAaK,CAAS;MAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;MACxB,IAAA,YAAC,CAAW;M ACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,E AAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACiB,IAAI,KAAK,GAAG,CAAC,CAAC;MAER,IAA A,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;MAE9C,IAAI,kBAaKb,EAAE; UACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC, EAAE,CAAC;UACjE,KAAK,GAAG,UAAU,CAAC;UACnB,OAAO,GAAG,YAAY,CAAC;OACxB;MAED,IAA M,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;MACrCN,qBAAY,CAAC,0BAA0B,CAAC,KAAK ,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;MACiD,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;MA C9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,IAAM,GAAG,GAAG,O AAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACiD,IAAIA,aAAI,CAAC,aA Aa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS, CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAA E,UAAU,EAAE,KAAK,CAAC,CAAC;OACrC;MAED,IAAI,kBAaKb,EAAE;;UAETB,OAAO,CAAC,WAAW,CA AC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,IAAM,QAAQ,GAAGE,qB AAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK, GAAG,QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,SAAS,GAAiB;MACrC, UAAU,EAAEM,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEF,OAAK;MACHB,UAAU,EAAE,G AAuB;GACpC;;EC9ED;;;;;;;EAuBA,IAAI,OAAiE,CAAC;EAETe,SAASA,OAAK,CAAC,OAAoB;MACjC, OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACG,YAAG,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAA C,CAAC,CAAC;EAC/E,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAEpE,IAAA,sBAAO,EAAE,oBAAM,EAA E,kBAaK,CAAS;MAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;MACxB,IAAA,YAAC,CAAW;MACnB,IAAM,G AAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;M AC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACiB,IAAI,KAAK,GAAG,CAAC,CAAC;MAER,IAAA,8CACuC,E ADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;MAE9C,IAAI,kBAaKb,EAAE;UACtB,IAAM ,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC; UACjE,KAAK,GAAG,UAAU,CAAC;UACnB,OAAO,GAAG,YAAY,CAAC;OACxB;MAED,IAAM,SAAS,GAA G,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;MACrCP,qBAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,E AAE,SAAS,CAAC,CAAC;MACiD,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;MAC9D,IAAM,U AAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,U AAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACiD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAA K,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAA E,KAAK,CAAC,CAAC;OACrC;MAED,IAAI,kBAaKb,EAAE;;UAETB,OAAO,CAAC,WAAW,CAAC,UAAU,C AAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC, oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QAA Q,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,SAAS,GAAiB;MACrC,UAAU,EAA EO,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEH,OAAK;MACHB,UAAU,EAAE,GAAuB;GAC pC;;EC9ED;;;;;;;EAwBA,IAAII,UAESB,CAAC;EAE3B,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,G AAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,eAAM,EAAE,IAAI,aAAa;UACrD,QAAQ;UACR,QAAQ;UAC

R,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,MAAM,CACX,IAAsE;
MACjE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAAA,iBAAI,CAA+B;MACnC,IAAA,YA
AC,CAAiC;MACzC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,C
AAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACiB,IAAI,KAAK,GAAG,CAAC,CA
AC;MAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,0CACoB,CAAC;MAE9C,IAAI,kBAakB,EAAE;
UACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,
EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;;cAGxB,KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,
GAAG,YAAY,CAAC;WACxB;OACF;MAED,IAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC
,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MACiC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,
EAAE,OAAO,CAAC,CAAC;MACiD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,SAAS,GAAGX,aAAI,CAAC,aAAa,CAAC,GAAG,C
AAC,KAAK,CAAC,CAAC;MACHd,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CA
AC,CAAC,CAAC;MACvCU,UAAQ,CAAC,OAAO,EAAE,QAAQ,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE,S
AAS,EAAE,SAAS,EAAE,KAAK,CAAC,CAAC;MAEtE,IAAI,kBAakB,EAAE;;UAEtB,OAAO,CAAC,WAAW,C
AAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,Y
AAY,GAAiB;MACxC,UAAU,EAAEC,eAAM;MACiB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,MAA0B;
MACtC,SAAS,EAAEL,OAAK;GACjB;;EChFD;;;;;;;EAqBA,IAAI,WAI6D,CAAC;EAEIE,SAASA,OAAK,
CAAC,OAAoB;MACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACM,gBAAO,EAAE,IAAI,aAAa
;UACzD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC
R,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAA
C,CAAC;EAEL,CAAC;EAED,SAAS,OAAO,CACZ,IAAwE;MACnE,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBA
AO,CAAS;MAEtC,IAAM,CAAC,GAAG,MAAM,CAAC,CAAa,CAAC;MAC/B,IAAM,GAAG,GAAG,OAAO,CA
AC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAExC,IAAA,6BAAU,EA
AE,uBAAO,EAAE,eAAG,EAAE,uCAAe,CAAU;MACiD,IAAM,QAAQ,GAAGV,qBAAY,CAAC,iBAAiB,CAC3
C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,kBAakB,GAAG,EAAE,eAAe,CAAC,CAAC
;MAE3E,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WA
AW,CAAC;MACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;MACpC,IAAM,QAAQ,
GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,
MAAM,CAAC;MACiC,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;MACtC,IAAM,YAAY,
GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,IA
AM,QAAQ,GAAG,QAAQ,CAAC,UAAU,CAAC;MAErC,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;UAC
iC,MAAM,IAAI,KAAK,CACX,4CAA4C;eACzC,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;OAC5D
;MAED,IAAI,QAAQ,CAAC,aAAa,KAAK,CAAC,IAAI,QAAQ,CAAC,cAAc,KAAK,CAAC,EAAE;UACjE,MAA
M,IAAI,KAAK,CACX,oEAAoE;eACpE,UAAQ,QAAQ,CAAC,cAAc,UAAK,QAAQ,CAAC,aAAa,OAAI,CAAA,
CAAC,CAAC;OACrE;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,
SAAS,CAAC,CAAC;MAC7D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,
MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC
,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,E
AAE,YAAY,EAAE,WAAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAAE,W
AAW,EAAE,QAAQ,EACzE,KAAK,CAAC,CAAC;MACX,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,aA
Aa,GAAiB;MACzC,UAAU,EAAEU,gBAAO;MACnB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEN,OAAK;M
AChB,UAAU,EAAE,OAA2B;GACxC;;EC9FD;;;;;;;WAqBgB,OAAO,CACnB,IAAwE;MACnE,IAAA,oBA
AM,EAAE,kBAAK,CAAS;MACtB,IAAA,YAAC,CAAW;MACZ,IAAA,mBAAK,CAAU;MAEtB,IAAM,KAAK,
GAAGN,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;MACiC,IAAM,MAAM,GAAGA,aAAI,
CAAC,sBAAsB,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;MAEzDA,aAAI,CAAC,MAAM,CACP,KAAK,KAA
KA,aAAI,CAAC,aAAa,CAAC,MAAM,CAAC,EACpC,cAAM,OAAA,gBAAc,MAAM,qBAAgB,CAAC,CAAC,K
AAK,yBAAsB;UACnE,8CAA8C,GAAA,CAAC,CAAC;;MAGxD,IAAI,CAAC,OAAO,CAAC,MAAM,CAAC,CA
AC,CAAC,MAAM,CAAC,CAAC;MAC9B,OAAO,EAAC,MAAM,EAAE,CAAC,CAAC,MAAM,EAAE,KAAK,E

AAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,CAAC;EAC3D,CAAC;EAEM,IAAM,aAAa,GA
AiB;MACzC,UAAU,EAAEa,gBAAO;MACnB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,OAA2B;GACxC;;
EC5CD;;;;;;;EaUBA,IAAI,eAG2C,CAAC;EAehD,SAASP,OAAK,CAAC,OAAoB;MACjC,eAAe,GAAG,O
AAO,CAAC,IAAI,CAAC,KAAK,CAACQ,oBAAW,EAAE,IAAI,aAAa;UACjE,QAAQ;UACR,OAAO;UACP,QA
AQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CA
AC;EACL,CAAC;EAED,SAAS,WAAW,CAAC,IAIpB;MACQ,IAAA,oBAAW,EAAE,sBAAO,EAAE,kBAAK,CA
AS;MAC/B,IAAA,YAAC,EAAE,YAAC,CAAW;MACf,IAAA,6BAAU,EAAE,6BAAU,CAAU;MAEvC,IAAI,CA
AC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,EAAE;UACID,MAAM,IAAI,KAAK,
CACX,4DAA4D,CAAC,CAAC;OACnE;MAED,IAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CA
AC;MAC7B,IAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAE7B,IAAM,WAAW,GAAG,
UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,
KAAK,GAAG,CAAC,CAAC,CAAC;MACzE,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAA
C,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;MAEz
E,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAA
C,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;MACzE,IAAM,WAAW,GAAG,UAAU,GAAG,CA
AC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CA
AC,CAAC,CAAC;MAEzE,IAAM,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CA
AC,CAAC,CAAC,CAAC;MACxC,IAAM,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EA
AE,CAAC,CAAC,CAAC,CAAC;MAExC,IAAM,SAAS,GAAGd,aAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC
;MACjD,IAAM,SAAS,GAAGA,aAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;MAEjD,IAAM,mBAAmB,GA
CrB,SAAS,KAAK,SAAS,IAAI,SAAS,KAAK,CAAC,IAAI,SAAS,KAAK,CAAC,CAAC;MAEIEA,aAAI,CAAC,
MAAM,CACP,KAAK,IAAI,CAAC,IAAI,KAAK,IAAI,CAAC,IAAI,mBAAmB,EAC/C,cAAM,OAAA,iEAAiE;U
ACnE,kEAAkE;WACIE,0BAAwB,UAAU,eAAU,UAAU,OAAI,CAAA,GAAA,CAAC,CAAC;MAEpE,IAAM,iBA
AiB,GACnB,SAAS,GAAG,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CA
AC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MAC
xE,IAAM,QAAQ,GAAG,iBAiB,CAAC,MAAM,CAAC,CAAC,WAAW,EAAE,WAAW,CAAC,CAAC,CAAC;M
AEtEA,aAAI,CAAC,MAAM,CACP,WAAW,KAAK,WAAW,EAC3B,cAAM,OAAA,oCAAkC,WAAW,YAAS;W
ACrD,WAAW,iCAA4B,CAAC,CAAC,KAAK,UAAO,CAAA;WACrD,CAAC,CAAC,KAAK,wBAAmB,UAAU,C
AAA;WACzC,qBAAmB,UAAU,iBAAc,CAAA,GAAA,CAAC,CAAC;MAErD,IAAM,QAAQ,GAAG,UAAU,GA
AG,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;UACrC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,C
AAC,CAAC;MACpE,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;
UACrC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;;MAGpE,IAAM,GAAG,GAAG,OAAO,CAA
C,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,
KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;MACzE,IAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,
EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QA
AQ,EAAC,EAAC,CAAC,CAAC;MAEzE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA
G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA
G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,IAAM,OAAO,GAAG,UAAU,GAAG,GA
AG,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACzD,IA
AM,QAAQ,GAAG,UAAU,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,GAAG,CAAC,KAAK,CA
AC,CAAC,CAAC,CAAC;MAC1D,IAAM,QAAQ,GAAG,IAAI,CAAC,GAAG,CAAC,SAAS,EAAE,SAAS,CAAC
,CAAC;MAehD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,EAAE,OAAO,EAAE,QAAQ,
CAAC,EAAE,GAAG,CAAC,KAAK,CAAC,CAAC;MACzE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,
GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,IAAM,WAAW,GAAG,IAAI,UAAU,
CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MACrE,IAAM,WAAW,
GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MA
ErE,eAAe,CACX,KAAK,EAAE,WAAW,EAAE,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,EAAE,WA
AW,EACxD,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;M

AErD,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACHC,OAAO,CAAC,WAAW,CAA
C,GAAG,CAAC,MAAM,CAAC,CAAC;MAEhC,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;MACrB,OAAO,G
AAG,CAAC;EACb,CAAC;EAEM,IAAM,iBAaiB,GAaiB;MAC7C,UAAU,EAAEc,oBAAW;MACvB,WAAW,E
AAE,MAAM;MACnB,SAAS,EAAER,OAAK;MACHB,UAAU,EAAE,WAA+B;GAC5C;;ECjID;EACA;EACA;EA
CA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EAEo,SAAS,UAAU,
CAAC,MAAM,EAAE,QAAQ,EAAE,KAAK,EAAE,YAAY,EAAE;EACIE,IAAI,MAAM,OAAO,GAAGN,aAAI,C
AAC,iBAaiB,CAAC,KAAK,EAAEA,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,CAAC,CAAC;EACHf,IAAI,IAA
I,YAAY,IAAI,KAAK,KAAK,QAAQ,EAAE;EAC5C;EACA,QAAQ,IAAI,MAAM,GAAG,CAAC,CAAC;EACvB,
QAAQ,MAAM,CAAC,OAAO,CAAC,KAAK,IAAI;EACHc,YAAY,MAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,C
AAC,KAAK,CAAC,KAAK,CAAC,CAAC;EACzD,YAAY,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,IAAI,EA
AE,MAAM,CAAC,CAAC;EAC5C,YAAY,MAAM,IAAI,IAAI,CAAC;EAC3B,SAAS,CAAC,CAAC;EACX,KAA
K;EACL,SAAS;EACT,QAAQ,IAAI,SAAS,GAAG,CAAC,CAAC;EAC1B,QAAQ,MAAM,CAAC,OAAO,CAAC,
KAAK,IAAI;EACHc,YAAY,MAAM,WAAW,GAAG,KAAK,KAAK,QAAQ;EACID,gBAAgBE,qBAAY,CAAC,s
BAAsB,CAAC,KAAK,CAAC,IAAI,CAAC;EAC/D,gBAAgB,KAAK,CAAC,IAAI,CAAC;EAC3B,YAAY,IAAI,I
AAI,GAAG,CAAC,CAAC;EACzB,YAAY,KAAK,IAAI,GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KAAK,CA
AC,KAAK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,EAAE;EAC3D,gBAAgB,MAAM,MAAM,GAAG,GAAG,
GAAG,QAAQ,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC;EAC7D,gBAAgB,KAAK,IAAI,GAAG,GAAG,CAAC,
EAAE,GAAG,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,EAAE;EAC/D,oBAAoB,
OAAO,CAAC,MAAM,GAAG,GAAG,CAAC,GAAG,WAAW,CAAC,IAAI,EAAE,CAAC,CAAC;EACHe,iBAaiB
;EACjB,aAAa;EACb,YAAY,SAAS,IAAI,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;EACxC,SAAS,CA
AC,CAAC;EACX,KAAK;EACL,IAAI,OAAO,OAAO,CAAC;EACnB;;EC7CA;EACA;EACA;EACA;EACA;EAC
A;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EAEo,SAAS,SAAS,CAAC,KAAK,E
AAE,IAAI,EAAE,IAAI,EAAE,KAAK,EAAE;EACpD,IAAI,MAAM,aAAa,GAAG,KAAK,KAAK,IAAI,CAAC;E
ACzC,IAAI,MAAM,2BAA2B,GAAG,KAAK,GAAG,IAAI,IAAI,IAAI,GAAG,CAAC,CAAC;EACjE,IAAI,MAA
M,2BAA2B,GAAG,IAAI,GAAG,KAAK,IAAI,IAAI,GAAG,CAAC,CAAC;EACjE,IAAI,IAAI,aAAa,IAAI,2BAA2
B;EACpD,QAAQ,2BAA2B,EAAE;EACrC,QAAQ,OAAOF,aAAI,CAAC,mBAAmB,CAAC,CAAC,EAAE,KAAK
,CAAC,CAAC;EACID,KAAK;EACL,IAAI,MAAM,WAAW,GAAG,IAAI,CAAC,GAAG,CAAC,IAAI,CAAC,IA
AI,CAAC,CAAC,IAAI,GAAG,KAAK,IAAI,IAAI,CAAC,CAAC,CAAC;EACnE,IAAI,MAAM,MAAM,GAAGA,a
AAI,CAAC,mBAAmB,CAAC,WAAW,EAAE,KAAK,CAAC,CAAC;EACHe,IAAI,IAAI,IAAI,GAAG,KAAK,IA
AI,IAAI,KAAK,CAAC,EAAE;EACpC;EACA;EACA,QAAQ,IAAI,GAAG,CAAC,CAAC,CAAC;EACIB,KAAK;
EACL,IAAI,MAAM,CAAC,CAAC,CAAC,GAAG,KAAK,CAAC;EACtB,IAAI,KAAK,IAAI,CAAC,GAAG,CAA
C,EAAE,CAAC,GAAG,MAAM,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;EAC5C,QAAQ,MAAM,CAAC,CA
AC,CAAC,GAAG,MAAM,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,IAAI,CAAC;EACzC,KAAK;EACL,IAAI
,OAAO,MAAM,CAAC;EACIB;;ECrCA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;
EACA;EACA;EACA;EACA;EACA;EAGO,SAAS,SAAS,CAAC,IAAI,EAAE,KAAK,EAAE,IAAI,EAAE,KAAK,
EAAE,KAAK,EAAE;EAC3D,IAAI,MAAM,WAAW,GAAGe,mBAAU,CAAC,gBAAgB,CAAC,KAAK,EAAE,K
AAK,EAAE,IAAI,CAAC,CAAC;EACxE,IAAI,MAAM,MAAM,GAAGf,aAAI,CAAC,aAAa,CAAC,IAAI,CAAC,
CAAC;EAC5C,IAAI,MAAM,QAAQ,GAAGA,aAAI,CAAC,cAAc,CAAC,KAAK,CAAC,CAAC;EACHD,IAAI,IA
AI,WAAW,EAAE;EACrB,QAAQ,MAAM,UAAU,GAAGe,mBAAU,CAAC,iBAaiB,CAAC,KAAK,EAAE,QAA
Q,CAAC,CAAC;EACzE,QAAQ,IAAI,KAAK,KAAK,QAAQ,EAAE;EACHc,YAAY,OAAO,IAAI,CAAC,KAAK,
CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC;EAC/D,SAAS;EACT,QAAQ,OAAO,IAAI,CAAC,Q
AAQ,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC;EAC9D,KAAK;EACL,IAAI,MAAM,WAAW,
GAAG,KAAK,KAAK,QAAQ;EAC1C,QAAQb,qBAAY,CAAC,sBAAsB,CAAC,IAAI,CAAC;EACjD,QAAQ,IAA
I,CAAC;EACb,IAAI,MAAM,KAAK,GAAGc,eAAM,CAAC,KAAK,EAAE,KAAK,EAAE,WAAW,CAAC,CAAC;
EACpD,IAAI,MAAM,MAAM,GAAGA,eAAM,CAAC,IAAI,EAAE,KAAK,CAAC,CAAC;EACvC,IAAI,KAAK,I
AAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,IAAI,EAAE,EAAE,CAAC,EAAE;EAC1C,QAA
Q,MAAM,MAAM,GAAG,MAAM,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC;EAC5C,QAAQ,MAAM,KAAK,G
AAG,MAAM,CAAC,GAAG,CAAC,CAAC,GAAG,EAAE,CAAC,KAAK,GAAG,GAAG,KAAK,CAAC,CAAC,C

AAC,CAAC,CAAC;EAC7D,QAAQ,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,GAAG,KAAK,CAAC,EAAE,GAAG,MAAM,CAAC,CAAC;EACnD,KAAK;EACL,IAAI,IAAI,KAAK,KAAK,QAAQ,EAAE;EAC5B,QAAQ,OAAOd,qBAAY,CAAC,sBAAsB,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;EACIE,KAAK;EACL,IAAI,OAAO,MAAM,CAAC,MAAM,CAAC;EACzB;;EC3CA;;;;;;;;;;;;;WAsBgB,KAAK,CACjB,IAAoE;MACtD,IAAA,iBAAC,EAAG,eAAoB,EA AZ,gBAAK,EAAE,cAAI,EAAG,sBAAO,CAAS;MAEpD,IAAA,yDAA6D,EAASD,cAAM,EAAE,aAAoD,CAAC;MAEpE,IAAM,WA AW,GAAGa,mBAAU,CAAC,gBAAGb,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;MACxE,IAAM,KAAK,GAAG,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MACzC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MAC/C,IAAM,QAAQ,GAAGf,aAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;MAC9C,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MAEID,IAAI,WA AW,EAAE;UACf,IAAM,UAAU,GAAGe,mBAAU,CAAC,iBAAiB,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC;UAEIE,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;cACxB,OAAO,CAAC,WA AW;kBACd,KAA sB;uBACiB,KAAK,CAAC,UAAU,EAAE,UAAU,GAAGf,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;WACpE;eAAM;cACL,IAAM,SAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;cAChD,SAAO,CAAC,GAAG,CACN,KAAoB;mBACbB,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;WACxE;UAED,OAAO,GAAG,CAAC;OACZ;MAED,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;UACxB,IAAM,GAAG,GAAGiB,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;UACjE,OAAO,CAAC,WA AW,GAAG,GAAmB,CAAC;UACiC,OAAO,GAAG,CAAC;OACZ;MAED,IAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;MACHD,IAAM,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAC5B,IAAI,IAAI,KAAK,CAAC,EAAE;UACd,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EAAE,MAA0B,EACrE,KAAyB,CAAC,CAAC;OACHc;WAAM,IAAI,IAAI,KAAK,CAAC,EAAE;UACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACiD,MAAKc,EAAE,KAAiC,CAAC,CAAC;OAC5E;WAAM,IAAI,IAAI,KAAK,CAAC,EAAE;UACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACnE,MAA0C,EACiC,KAAyC,CAAC,CAAC;OACHd;WAAM;UACL,IAAM,GAAG,GACLA,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAE,CAAC;UACvE,OAAO,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC;OACIB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAED,SAAS,OAAO,CACZ,KAA8B,EAAE,OA Ae,EAC/C,OAAgC,EAAE,KAAuB,EACzD,IAAsB;MACxB,IAAI,SAAS,GAAG,CAAC,CAAC;MACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,CAAC,GAAG,OAAO,GAAG,MAAM,CAAC;UACrC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;UACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC;OACtB;EACH,CAAC;EAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,OAAgC,EAAE,KAA+B,EACjE,IAA8B;MACHc,IAAI,SAAS,GAAG,CAAC,CAAC;MACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;UACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;cACIC,IAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;cACrD,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;cACnE,SAAS,IAAI,IAAI,CAAC,CAAC;WACTb;OACF;EACH,CAAC;EAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,QAAgB,EAAE,OAAgC,EACID,KAAuC,EACvC,IAAsC;MACxC,IAAI,SAAS,GAAG,CAAC,CAAC;MACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,

IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,C
AAC,CAAC,CAAC,CAAC;MAC9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MA
C9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,IAAM,MAAM,GAAG,KA
AK,CAAC,CAAC,CAAC,CAAC;MAExB,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE
,CAAC,EAAE,EAAE;UACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EA
AE,EAAE;cACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;k
BACIC,IAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,
GAAG,MAAM,CAAC;kBACpE,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAA
O,GAAG,IAAI,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;kBACnE,SAAS,IAAI,IAAI,CAAC,CA
AC,CAAC,CAAC;eACtB;WACF;OACF;EACH,CAAC;EAEM,IAAM,WAAW,GAAiB;MACvC,UAAU,EAAEC,c
AAK;MACjB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,KAAyB;GACtC;;EChJD;,,,,,,,,,,,,;EAYBA,SAAS,
cAAc,CAAC,IAIvB;MACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MAC/B,IAAA,YAAC,CAAW;
MACZ,IAAA,6BAAU,EAAE,mBAAK,CAAU;MAEIC,IAAM,IAAI,GAAG,UAAU,CAAC,MAAM,CAAC,UAAC
,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,GAAG,CAAC,GAAA,CAAC,CAAC;MAEHd,IAAM,QAAQ,GAAGh
B,qBAAY,CAAC,WAAW,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;MACrE,IAA
M,QAAQ,GAAGA,qBAAY,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,CAAC,
CAAC;MAC9E,IAAM,gBAAgB,GACiBA,qBAAY,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAK,EAAE,UAA
U,EAAE,IAAI,CAAC,CAAC;MACHe,IAAM,gBAAgB,GACiBA,qBAAY,CAAC,mBAAmB,CAAC,KAAK,EAA
E,UAAU,CAAC,MAAM,CAAC,CAAC;MAC/D,IAAM,SAAS,GACXA,qBAAY,CAAC,YAAY,CAAC,gBAAgB,
EAAE,KAAK,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;MAEIE,IAAM,SAAS,GAAG,OAAO,CAAC,EAAC,
MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,Q
AAQ,EAAC,EAAC,CAAC,CAAC;MAC5E,IAAM,WAAW,GACb,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,C
AAC,EAAE,SAAS,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,QAAQ,EAAC,EAAC,
CAAC,CAAC;MACIE,IAAM,mBAAmB,GAAG,OAAO,CAC/B,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WA
AW,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAC,EAAC,CAAC,CA
AC;MAC3E,IAAM,MAAM,GAAG,KAAK,CAAC;UACnB,MAAM,EAAE,EAAC,CAAC,EAAE,mBAAmB,EAA
C;UACHc,OAAO,SAAA;UACP,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAE,IAAI,EAAE,SAAS,EAAC;
OACID,CAAC,CAAC;MAEH,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;MACtC,OAA
O,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;MACxC,OAAO,CAAC,WAAW,CAAC,SAAS,C
AAC,MAAM,CAAC,CAAC;MAEtC,OAAO,MAAM,CAAC;EACHb,CAAC;EAEM,IAAM,oBAAoB,GAAiB;MA
ChD,UAAU,EAAEiB,uBAAc;MAC1B,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,cAAkC;GAC/C;;ECnED;;
,,,,,,,,,,,,;WAsBgB,IAAI,CACHb,IAAkE;MAEpD,IAAA,iBAAC,EAaw,wBAAK,EAAG,sBAAO,CAAS;MACpD
,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;MAC/C,
IAAM,MAAM,GAAG,OAAO,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC;MAC7C,IAAM,OAAO,GAAG,OA
AO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;MACHd,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;
MACpB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,UAAU,GAAiB;MACtC,UAAU,EAAEC,aAAI;MAC
hB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,IAAwB;GACrC;;ECrCD;,,,,,,,,,,,,;EAoBO,IAAM,UAAU,GA
AiB,uBAAuB,CAACC,aAAI,CAAC;;ECpBrE;,,,,,,,,,,,,;EAqBA,IAAI,QAAwE,CAAC;EAE7E,SAASf,OAAC,C
AAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACgB,oBAAW,EAAE,IAAI,aAAa;
UAC1D,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,I
AAI,CAAC,IAIb;MACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MAC/B,IAAA,YAAC,CAAW;M
ACZ,IAAA,iCAAY,EAAE,iCAAY,CAAU;MAC3C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C
AAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C
AAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,IAAM,KAAK,GAAG,OAAO,C
AAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,QAAQ,CAAC,G
AAG,EAAE,YAAY,EAAE,YAAY,EAAE,KAAK,CAAC,CAAC;MACjD,OAAO,GAAG,CAAC;EACb,CAAC;EA
EM,IAAM,iBAAiB,GAAiB;MAC7C,UAAU,EAAEA,oBAAW;MACvB,WAAW,EAAE,MAAM;MACnB,SAAS,E
AAEHb,OAAC;MACHb,UAAU,EAAE,IAAwB;GACrC;;ECpDD;,,,,,,,,,,,,;WAwBgB,MAAM,CACIB,IAAsE;M

ACjE,IAAA,oBAAM,EAAE,sBAAO,CAAS;MAE/B,IAAM,IAAI,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,CAA
C,KAAK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;
MAEtE,IAAI,QAAQ,GAAGE,qBAAY,CAAC,eAAe,CAAC,MAAM,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,O
AAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,IAAI,CAAC,CAAC;;MAG5E,IAAM,OAAO,GAAG,MAAM,C
AAC,MAAM,CAAC,UAAA,CAAC,IAAI,OAAAF,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,GAA
G,CAAC,GAAA,CAAC,CAAC;MACpE,IAAI,OAAO,CAAC,MAAM,KAAK,CAAC,EAAE;UACxB,OAAO,QA
AQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,CAAC,CAAC,CAAC,EAAC,EAAE,OAAO,SAA
A,EAAC,CAAC,CAAC;OACrD;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,MAA
M,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;MAEID,IAAIA,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,
KAAK,CAAC,EAAE;UACtC,OAAO,GAAG,CAAC;OACZ;MAED,IAAM,MAAM,GAAG,OAAO,CAAC,GAAG,
CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,CAAC;MACzCE,qBAAY,CAAC,sBAA
sB,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC;MAEID,IAAI,OAAO,CAAC,CAAC,CAAC,CAAC,KAAK,KAAK,
QAAQ,EAAE;;;;;;;UAQjC,IAAM,QAAQ,GAAG,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC;cAC5B,IAAM,SA
AS,GAAGF,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC;c
ACID,IAAM,KAAK,GAAG,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;cAC9B,OAAO,OAAO,CAAC,E
AAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAA
K,OAAA,EAAC,EAAC,CAAC,CAAC;WAC3D,CAAC,CAAC;UAEH,IAAM,eAAe,GAAG,QAAQ,CAAC,GAAG
,CAAC,UAAA,CAAC;cACpC,OAAO,EAAC,IAAI,EAAE,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,C
AAC,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,CAAC;WAC3D,CAAC,CAAC;;UAGH,QAAQ;cACJE,q
BAAY,CAAC,eAAe,CAAC,QAAQ,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAAK,GA
AA,CAAC,EAAE,CAAC,YAAY,CAAC;UAC3E,IAAM,YAAY,GAAG,QAAQ,CAAC,CAAC,CAAC,CAAC,KA
AK,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;UACHd,IAAM,SAAO,GAAGqB,UAAa,CACT,eAAe,EAAE,QA
AQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,EAC1C,YAAY,CAAa,CAAC;UAE9C,IAAM,aAAa,GA
CfrB,qBAAY,CAAC,eAAe,CAAC,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAA
K,GAAA,CAAC,EAAE,IAAI,CAAC,CAAC;UAEIE,GAAG,CAAC,KAAK,GAAG,aAAa,CAAC;UAC1B,IAAM,
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;UACID,OAAO,
CAAC,WAAW,GAAGA,qBAAY,CAAC,sBAAsB,CAAC,SAAO,CAAC,CAAC;UAE9E,QAAQ,CAAC,OAAO,C
AAC,UAAA,CAAC,IAAI,OAAA,OAAO,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,GAAA,CAAC,C
AAC;UAErD,OAAO,GAAG,CAAC;OACZ;MAED,IAAM,QAAQ,GAAGF,aAAI,CAAC,aAAa,CAAC,OAAO,CA
AC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,IAAI,CAAC,CAAC,CAAC;MACrE,IAAI,
YAAY,GAAG,CAAC,CAAC;MACrB,IAAM,SAAS,GAAG,OAAO,CAAC,GAAG,CAAC,UAAA,KAAK;UACjC,
IAAM,QAAQ,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CA
AC,CAAC;UAC7D,YAAY,IAAI,QAAQ,CAAC;UACzB,OAAO,QAAQ,CAAC;OACjB,CAAC,CAAC;MACH,IA
AM,MAAM,GAAG,OAAO,CAAC,GAAG,CAAC,UAAA,KAAK,IAAI,OAAA,OAAO,CAAC,kBAaKB,CAAC,K
AAK,CAAC,GAAA,CAAC,CAAC;MACvE,IAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC
,CAAC;MACHd,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,EAAE,CAAC,EAAE,EAAE;U
ACjC,IAAI,SAAS,GAAG,CAAC,GAAG,YAAY,CAAC;UACjC,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAA
C,GAAG,MAAM,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;cACtC,IAAM,QAAQ,GAAG,SAAS,CAAC,CAAC
,CAAC,CAAC;cAC9B,IAAM,QAAQ,GAAG,CAAC,GAAG,QAAQ,CAAC;cAC9B,IAAM,IAAI,GAAG,MAAM,
CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,QAAQ,GAAG,QAAQ,CAAC,CAAC;cAC/D,OAAO,C
AAC,GAAG,CAAC,IAAI,EAAE,SAAS,CAAC,CAAC;cAC7B,SAAS,IAAI,QAAQ,CAAC;WACvB;OACF;MAC
D,OAAO,GAAG,CAAC;EAcB,CAAC;EAEM,IAAM,YAAY,GAAiB;MACxC,UAAU,EAAEWB,eAAM;MACIB,
WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,MAA0B;GACvC;;EC/GD;;;;;;;;;EAqBA,IAAI,UAMsB,CAA
C;EAE3B,SAASIB,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACmB,
eAAM,EAAE,IAAI,aAAa;UACvD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,Q
AAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;U
ACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;E
ACL,CAAC;EAED,SAAS,MAAM,CACX,IAAsE;MACjE,IAAA,oBAAM,EAAE,kBAaK,EAAE,sBAAO,CAAS;

MAE/B,IAAA,YAAC,EAAE,sBAAM,CAAW;MAC3B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAA
G,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,QAAQ,GAAG,OAAO,CAAC,SAA
S,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEID,IAAA,uBAAO,EAAE,2BA
AS,EAAE,eAAG,EAAE,uCAAE,EAAE,6BAAU,CAAU;MACrE,IAAM,WAAW,GAAGvB,qBAAY,CAAC,uBAA
uB,CAAC,UAAU,CAAC,CAAC;MACrE,IAAM,QAAQ,GAAGA,qBAAY,CAAC,iBAAiB,CAC1C,CAAc,CAAC,
KAAK,EAAE,MAAmB,CAAC,KAAK,EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EAAE,KAAK,E
AAE,WAAW,CAAC,CAAC;MAE9C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAA
W,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,C
AAC;MACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,IAAM,SAAS,GAAG,
QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,
CAAC;MACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aA
Aa,CAAC;MAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,
CAAC,WAAW,CAAC;MACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;MAC1C,IAAM,cAAc,GAAG,
QAAQ,CAAC,WAAW,CAAC;MAC5C,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,
GAAG,CAAC,GAAG,CAAC,CAAC;MAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;UAC1C,MAAM,I
AAI,KAAK,CACX,mDAAmD;eAChD,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;OAC5D;MAED,IA
AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MAC7D,IA
AM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CA
AC;MACnD,UAAU,CACN,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KA
AK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,YAAY,EAC/
D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,EAAE,aAAa,E
AAE,YAAY,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;MAC3B,OAAO,GAAG,C
AAC;EACb,CAAC;EAEM,IAAM,YAAY,GAAiB;MACxC,UAAU,EAAEuB,eAAM;MACiB,WAAW,EAAE,MA
AM;MACnB,SAAS,EAAEnB,OAAK;MACHB,UAAU,EAAE,MAA0B;GACvC;;ECtGD;;;;;;;;;;;;;EAqBA,IAAI,u
BAQ8C,CAAC;EAEnD,SAASA,OAAK,CAAC,OAAoB;MACjC,uBAAuB,GAAG,OAAO,CAAC,IAAI,CAAC,K
AAK,CAACoB,4BAAmB,EAAE,IAAI,EAAE;UACtE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC
R,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAA
Q;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC
R,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAA
Q;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,mBAAmB,CAAC,IAI5B;MACQ,IAAA,sBAAO,EAAE,oBA
AM,EAAE,kBAAK,CAAS;MAC/B,IAAA,cAAE,EAAE,sBAAM,CAAW;MACrB,IAAA,uBAAO,EAAE,eAAG,E
AAE,6BAAU,EAAE,uCAAE,EAAE,6BAAU,CAAU;MAEtE,IAAM,SAAS,GAAG,CAAC,CAAC;MAEpB,IAAM,
WAAW,GAAGxB,qBAAY,CAAC,uBAAuB,CAAC,UAAU,CAAC,CAAC;MACrE,IAAM,QAAQ,GAAGA,qBAA
Y,CAAC,iBAAiB,CAC3C,UAAU,EAAE,MAAM,CAAC,KAAyC,EAAE,OAAO,EACrE,SAAS,EAAE,GAAG,EA
AE,eAAe,EAAE,KAAK,kBAAkB,WAAW,CAAC,CAAC;MAEvE,IAAA,8BAAS,EACT,oCAAY,EACZ,kCAAW,
EACX,gCAAU,EACV,4BAAQ,EACR,0BAAO,EACP,kCAAW,EACX,8BAAS,EACT,4BAAQ,EACR,oCAAY,E
ACZ,kCAAW,CACA;MAEb,IAAM,MAAM,GAAG,YAAY,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,CAAC,
GAAG,CAAC;MACvD,IAAM,OAAO,GAAG,WAAW,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,
CAAC;MAExD,IAAM,cAAc,GAAG,QAAQ,CAAC,UAAU,KAAK,cAAc,CAAC;MAC9D,IAAM,SAAS,GAAGF,
aAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC;MACxD,IAAM,SAAS,GAAGA,aAAI,CAAC,cA
Ac,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC;MAC1C,IAAA,+CAAYD,EAAXD,aAAK,EAAE,aAAK,EAAE,aA
A0C,CAAC;MACHe,IAAM,YAAY,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACiC,IAAM,UAAU,GAAG,c
AAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACHe,IAAM,UAAU,GA
AG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;MACrD,IAAM,cAAc,GAAG,cAAc,GAAG,
CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACzD,IAAM,YAAY,GAAG,SAAS,CAAC,CAAC,CAAC,C
AAC;MACiC,IAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,CAA
C,CAAC;MACHe,IAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;MACr
D,IAAM,cAAc,GAAG,cAAc,GAAG,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MAEzD,IAAM,GAAG,

GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;MAC5D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACjD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,uBAuB,CACnB,IAAI,EAAE,QAAQ,EAAE,SAAS,EAAE,YAAY,EAAE,WAaw,EAAE,QAAQ,EAAE,OAAO,EACvE,UAAU,EAAE,SAAS,EAAE,QAAQ,EAAE,WAaw,EAAE,YAAY,EAAE,WAaw,EACvE,MAAM,EAAE,OAAO,EAAE,KAAK,EAAE,KAAK,EAAE,KAAK,EAAE,YAAY,EAAE,UAAU,EAC9D,UAAU,EAAE,cAAc,EAAE,YAAY,EAAE,UAAU,EAAE,UAAU,EACHe,cAAc,EAAE,KAAK,CAAC,CAAC;MAC3B,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,yBAAyB,GAAiB;MACrD,UAAU,EAAE0B,4BAAmB;MAC/B,WAaw,EAAE,MAAM;MACnB,SAAS,EAAEpB,OAak;MACHB,UAAU,EAAE,mBAuB;GACpD;EC/HD;;;;;;;;;;;;;EAqBO,IAAM,SAAS,GAAiB,uBAuB,CAACqB,YAAG,CAAC;;ECrBnE;;;;;;;;;;;;;EAoBO,IAAM,UAAU,GAAiB,uBAuB,CAACC,aAAI,CAAC;;ECpBrE;;;;;;;;;;;;;EAuBA;EACA,IAAK,mBAGJ;EAHD,WAak,mBAAmB;MACtB,qEAAy,CAAA;MACZ,mEAAW,CAAA;EACb,CAAC,EAHI,mBAAmB,KAAAnB,mBAAmB,QAGvB;EAED,IAAI,iBAGkE,CAAC;EAEvE,SAAsTB,OAak,CAAC,OAAoB;MACjC,iBAAiB,GAAG,OA AO,CAAC,IAAI,CAAC,KAAK,CAACuB,sBAAa,EAAE,IAAI,WAaw;UACnE,QAAQ;UACR,QAAQ;UACR, QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EA CL,CAAC;EAED,SAAS,aAAa,CAAC,IAItB;MACQ,IAAA,sBAAO,EAAE,oBAAM,EA AE,kBAak,CAAS;MAC/B,IAAA,qBAAM,EAAE,6CAakB,EAAE,yBAAQ,CAAU;MAC9C,IAAA,oBAak,EA AE,oBAak,EAAE,sBAM,CAAW;MAEtC,IAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CA AC;MAE1B,IAAA,aAsD,EAArD,kBAuB,EAAE,iBAAyC,CAAC;MAC7D,IAAM,QAAQ,GAAG,CAAC,QAA Q,EAAE,UAAU,EAAE,SAAS,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAEnE,IAAI, UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;MACrD,IAAI, UAAU,CAAC;MACf,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,UAAU,GAAG,IAAI,CAAC,EA AC,OAAO,SAAs,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAA K,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;UAC5E,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC, UAAU,CAAC,MAAM,CAAC,CAAC;OACvD;MAED,IAAM,QAAQ,GAAG,UAAU,CAAC,EAAE,CAAC;MAC/ B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE ,CAAC;MACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAA C,CAAC,EAAE,CAAC;MAEzD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC ,CAAC;MACpD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAA C,CAAC,EAAE,CAAC;MAEnD,IAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,KAAK,CAAC ,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAE5E,iBAAiB,CACb,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAA E,QAAQ,EAAE,gBAAgB,EAAE,UAAU,EACnE,SAAS,EACT,mBAAmB,CAAC,MAAgD,CAAC,EACrE,kBAak B,EAAE,KAAK,CAAC,CAAC;MAE/B,IAAI,UAAU,IAAI,IAAI,EAAE;UACtB,OAAO,CAAC,WAaw,CAAC,U AAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,mBAAm B,GAAiB;MAC/C,UAAU,EAAEA,sBAAa;MACzB,WAaw,EAAE,MAAM;MACnB,SAAS,EAAEvB,OAak;MA ChB,UAAU,EAAE,aAAiC;GAC9C;;ECjGD;;;;;;;;;;;;;EAyBA,IAAI,UACsE,CAAC;EAE3E,SAASA,OAak,CA AC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACwB,eAAM,EAAE,IAAI,aAAa;UA CvD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EA CL,CAAC;WAEe,MAAM,CACpB,IAAsE;MAE/D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAak,CAAS;MAC/B ,IAAA,YAAC,CAAW;MACZ,IAAA,iBAAI,EAAE,2BAAS,EAAE,uBAAO,CAAU;MACzC,IAAM,KAAK,GAAG ,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAE7B9B,aAAI,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,KA AK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,OAAO,EACtD,cAAM,OAAA,6BAA2B,CAAC,CAAC,KAAK,iCA A8B,GAAA,CAAC,CAAC;;MAE1E,IAAM,WAaw,GAAGE,qBAAy,CAAC,kBAakB,CAAC,CAAC,IAAI,CAA C,EAAE,KAAK,CAAC,CAAC;MACnE,IAAI,SAAS,GAAG,CAAC,CAAC;MACiB,IAAI,WAaw,KAAK,IAAI,E AAE;UACxS,SAAS,GAAG,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAK,EA AE,EAAC,IAAI,EAAE,WAaw,EAAC,EAAE,OAAO,SAAs,EAAC,CAAC,CAAC;OAC3E;MACD,IAAM,YAA Y,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;MACHe

A,qBAAY,CAAC,0BAA0B,CAAC,QAAQ,EAAE,CAAC,YAAY,CAAC,EAAE,KAAK,CAAC,CAAC;MAEzE,IAAM,WAAW,GAAG,OAAO,CAAC,UAAU,CAAC,SAAS,CAAC,KAAK,EAAE,SAAS,CAAC,KAAK,CAAC,CAAC;MACzE,IAAM,QAAQ,GAAG,SAAS,CAAC,KAAK,CAAC,YAAY,CAAC,CAAC;MAC/C,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/D,IAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnE,UAAU,CAAC,WAAW,EAAE,SAAS,GAAG,CAAC,GAAG,CAAC,EAAE,OAAO,GAAG,CAAC,GAAG,CAAC,EAAE,QAAQ,EACzD,aAAa,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC;;MAG7C,IAAI,GAAG,GAAG,WAAW,CAAC;MACtB,IAAI,WAAW,KAAK,IAAI,EAAE;UACxB,IAAM,eAAe,GAAGA,qBAAY,CAAC,sBAAsB,CAAC,WAAW,CAAC,CAAC;UACzE,GAAG,GAAG,SAAS,CACb,EAAC,MAAM,EAAC,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,eAAe,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;UACvE,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;UACtC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;OACzC;MACD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,YAAY,GAAiB;MACxC,UAAU,EAAE4B,eAAM;MACiB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAExB,OAAK;MACHb,UAAU,EAAE,MAA0B;GACvC;;ECIFD;;;;;;;EAqBA,IAAI,gBAGuC,CAAC;EAE5C,SAASA,OAAK,CAAC,OAAoB;MACjC,gBAAgB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACyB,qBAAY,EAAE,IAAI,WAAW;UACjE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,OAAO;UACP,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;WAEe,YAAY,CAAC,IAI5B;MACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAAA,YAAC,CAAW;MACZ,IAAAA,2BAAS,EAAE,6BAAU,CAAU;MAEtC,IAAM,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAC7B,IAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACtE,IAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACrE,IAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAErE,IAAM,YAAY,GAAG,WAAW,GAAG,SAAS,CAAC;MAC7C,IAAM,WAAW,GAAG,UAAU,GAAG,SAAS,CAAC;MAC3C,IAAM,WAAW,GAAG,UAAU,IAAI,SAAS,GAAG,SAAS,CAAC,CAAC;MAEzD,IAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM;UACtC,CAAC,SAAS,EAAE,YAAY,EAAE,WAAW,EAAE,WAAW,CAAC;UACnD,CAAC,SAAS,EAAE,WAAW,EAAE,YAAY,EAAE,WAAW,CAAC,CAAC;MAExD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,SAAS,CAAC,CAAC;MAEvD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAC9C,IAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;MACrB,IAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC/B,aAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAExE,IAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,CAAC;MAC5E,IAAM,eAAe,GACjB,IAAI,UAAU,CAAC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAE5E,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,YAAY,GAAG,UAAU,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;MACnD,gBAAgB,CACZ,GAAG,EAAE,SAAS,EAAE,YAAY,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,EAC/D,gBAAgB,EAAE,eAAe,EAAE,WAAW,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;MAEIE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,kBAaKB,GAAiB;MAC9C,UAAU,EAAE+B,qBAAY;MACxB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEzB,OAAK;MACHb,UAAU,EAAE,YAAgC;GAC7C;;ECvFD;;;;;;;EAqBA,IAAI,mBAMsB,CAAC;EAE3B,SAASA,OAAK,CAAC,OAAoB;MACjC,mBAAmB;UACf,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC0B,8BAAqB,EAAE,IAAI,aAAa;cACzD,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;WACT,CAAC,CAAC;EACT,CAAC;EAED,SAAS,eAAe,CAAC,IAIxB;MACQ,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;MAE/B,IAAA,YAAC,EAAE,sBAAM,CAAW;MAC3B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEID,IAAA,uBAAO,EAAE,2

BAAS,EAAE,eAAG,EAAE,uCAAe,CAAU;MAEzD,IAAM,UAAU,GAAG,SAAS,IAAI,IAAI,GAAG,CAAC,CAA
C,EAAE,CAAC,CAAC,GAAG,SAAS,CAAC;MAE1D,IAAM,QAAQ,GAAG9B,qBAAY,CAAC,iBAAiB,CAC1C,
CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EACzD,UAAwC,EAAE,GAAG,EAAE,eAAe
,EAC/D,IAAI,iBAAiB,CAAC;MAE1B,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAA
W,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,C
AAC;MACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,IAAM,SAAS,GAAG,
QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,
CAAC;MACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aA
Aa,CAAC;MAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,
CAAC,WAAW,CAAC;MACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;MAC1C,IAAM,cAAc,GAAG,
QAAQ,CAAC,WAAW,CAAC;MAC5C,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,
GAAG,CAAC,GAAG,CAAC,CAAC;MAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;UAC1C,MAAM,I
AAI,KAAK,CACX,kEAAkE;eAC/D,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;OAC5D;MAED,IAA
M,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MAC7D,IAA
M,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAA
C;MACnD,mBAAmB,CACf,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KA
AK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,YAAY,EAC/
D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,EAAE,aAAa,E
AAE,YAAY,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;MAC3B,OAAO,GAAG,C
AAC;EACb,CAAC;EAEM,IAAM,2BAA2B,GAAiB;MACvD,UAAU,EAAE8B,8BAAqB;MACjC,WAAW,EAAE,
MAAM;MACnB,SAAS,EAAE1B,OAAK;MACHB,UAAU,EAAE,eAAmC;GAChD;;EC7GD;;;;;;;;;;;;;;;EAoBO,IA
AM,SAAS,GAAiB,uBAAuB,CAAC2B,YAAG,CAAC;;;ECpBnE;;;;;;;;;;;;;;;EAoBA,IAAMC,uBAAqB,GAAG,KA
AK,CAAC;EAC7B,IAAM,WAAW,GACpB,wBAAwB,CAACC,cAAK,EAAED,uBAAqB,EAAE,MAAM,CAAC;;
ECtBIE;;;;;;;;;;;;;;;EAoBO,IAAM,SAAS,GAAiB,uBAAuB,CAACE,YAAG,EAAE,SAAS,CAAC;;;ECpB9E;;;;;;;;
;;;;;WAsBgB,UAAU,CAAC,IAI1B;MACQ,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;MAC/B,IAAA,
oBAAK,CAAW;MACHB,IAAA,eAAG,CAAU;MAEpB,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAA
M,CAAC;MACrC,IAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;MACrC,IAAI,IAAI,
GAAG,GAAG,CAAC;MACf,IAAI,GAAG,GAAG,CAAC,EAAE;;UAEXpC,aAAI,CAAC,MAAM,CACP,EAAE,S
AAS,GAAG,CAAC,CAAC,IAAI,GAAG,EACvB,cAAM,OAAA,mCAAiC,EAAG,SAAS,GAAG,CAAC,CAAC,U
ACpD,SAAS,MAAG,GAAA,CAAC,CAAC;UACtB,IAAI,GAAG,SAAS,GAAG,GAAG,GAAG,CAAC,CAAC;OA
C5B;MACD,QAAQ,CAAC,MAAM,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;MAE5B,OAAO,OA
AO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,OAAO,SAAS,EAAE,KAAK,EAA
E,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;EAC1E,CAAC;EAEM,IAAM,gBAAgB,GAAiB;MA
C5C,UAAU,EAAEqC,mBAAU;MACtB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,UAA8B;GAC3C;;ECnD
D;;;;;;;;;;;;;WAsBgB,IAAI,CAAC,IAA8C;MAC1D,IAAA,eAA4B,EAAPB,gBAAK,EAAE,gBAAK,EAAE,gBA
AK,EAAG,sBAAO,CAAS;MACrD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,KAAK,C
AAC,CAAC;MAC7C,IAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;MACHD,OAA
O,CAAC,IAAI,CAAC,KAAe,CAAC,CAAC;MAC9B,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,UAAU,
GAAiB;MACtC,UAAU,EAAEC,aAAI;MACHB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,IAAwB;GACrC;;
ECICD;;;;;;;;;;;;;EAqBA,IAAI,iBAE2C,CAAC;EAehD,SAASHC,OAAK,CAAC,OAAoB;MACjC,iBAAiB,GAA
G,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiC,sBAAa,EAAE,IAAI,aAAa;UACrE,QAAQ;UACR,QAAQ;UACR,
QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACL,CAAC;WAEe,aAAa,CACzB,IA
AyD;MACpD,IAAA,oBAAM,EAAE,sBAAO,CAAS;MACxB,IAAA,oBAAK,CAAW;MAEvB,IAAM,GAAG,GA
AG,OAAO,CAAC,UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;MACzD,IA
AM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CA
AC;MACvD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,C
AAC,EAAE,CAAC;MAE7C,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,kBAAU,EAAE,mBAA0B,C
AAC;MAEIE,iBAAiB,CACb,OAAO,EAAE,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,EAAE,KAAK,

CAAC,CAAC;MACjE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,mBAAmB,GAAiB;MAC/C,UAAU,EA
AEA,sBAAa;MACzB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,aAAiC;MAC7C,SAAS,EAAEjC,OAAK;G
ACjB;;ECzDD;,,,,,,,,,,,,;EAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACkC,cAAK,CAAC;;ECnBvE;,,,,,,,,,,,,;
EAqBA,IAAMN,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,cAAc,GACvB,wBAAwB,CAACO,iBAAQ,EAA
EP,uBAAqB,CAAC;;ECvB7D;,,,,,,,,,,,,;EAqBA,IAAI,aAEgE,CAAC;EAER,E,SAAS5B,OAAK,CAAC,OAAoB;M
ACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAC9BoC,uBAAc,EAAE,IAAI,aACpB,CAAC,QAAQ,E
AAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,CAAC,CAAC,CAAC;EA
C9E,CAAC;EAED,SAAS,cAAc,CAAC,IAIvB;MACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;MA
C/B,IAAA,uCAAe,CAAU;MACzB,IAAA,YAAC,EAAE,kBAAI,EAAE,0BAAQ,EAAE,sBAAM,EAAE,oBAAK,
CAAW;MACID,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,
CAAC,EAAE,CAAC;MAC/C,IAAM,MAAM,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,M
AAM,CAAC,CAAC,EAAE,CAAC;MACrD,IAAM,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,Q
AAQ,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC7D,IAAM,QAAQ,GAAG,MAAM,IAAI,IAAI,GAAG,OA
AO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC;MA
C9E,IAAM,OAAO,GAAG,KAAK,IAAI,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,
MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC;MAE3E,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,
CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;;MAEjD,IAAI1C,aAAI,CAAC,aAAa,CAAC,C
AAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACrC,OAAO,GAAG,CAAC;OACZ;MAED,IAAM,KAAK,G
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,a
AAa,CACT,GAAG,EAAE,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,OAAO,EAAE,eAAe,EAAE,KAAK,CAA
C,CAAC;MACxE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,oBAAoB,GAAiB;MACHD,UAAU,EAAE0
C,uBAAc;MAC1B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEpC,OAAK;MACHB,UAAU,EAAE,cAAkC;GA
C/C;;EC/DD;,,,,,,,,,,,,;EAuBA,IAAI,eAQQ,CAAC;EAEb,SAASA,OAAK,CAAC,OAAoB;MACjC,eAAe,GAAG,
OAAO,CAAC,IAAI,CAAC,KAAK,CAACqC,oBAAW,EAAE,IAAI,aAAa;UACjE,QAAQ;UACR,QAAQ;UACR,
QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;
UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,
QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACL,C
AAC;EAED,SAAS,WAAW,CAAC,IAIpB;MACQ,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;MAC/B,
IAAA,YAAC,EAAE,sBAAM,EAAE,kBAAI,EAAE,sDAAsB,CAAW;MAEvD,IAAA,uBAAO,EACP,eAAG,EAC
H,2BAAS,EACT,6BAAU,EACV,uCAAe,EACf,6BAAU,EACV,qCAAc,CACN;MAEV,IAAM,QAAQ,GAAGzC,q
BAAY,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EAAE,SAA
S,EACrE,GAAG,EAAE,eAAe,CAAC,CAAC;MAE1B,IAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAA
C;MAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;UAC3B,MAAM,IAAI,KAAK,CACR,UAAU,mDAAGd;cAC7D,sBAAs
B,CAAC,CAAC;OAC7B;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAA
C,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA
C,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,IAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CA
AC;MAE5C,IAAI,MAAM,GAAG,CAAC,CAAC;MACf,IAAI,IAAI,IAAI,IAAI,EAAE;UACHB,IAAM,QAAQ,GA
AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;UACpD,IAAI,QAAQ,CAAC
,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;cAC/B,MAAM,IAAI,KAAK,CACX,gDAAGd;mBACHd,UAAQ,Q
AAQ,CAAC,KAAK,CAAC,MAAM,MAAG,CAAA,CAAC,CAAC;WACvC;UACD,IAAI,QAAQ,CAAC,KAAK,C
AAC,CAAC,CAAC,KAAK,cAAc,EAAE;cACxC,MAAM,IAAI,KAAK,CACX,6BAA2B,QAAQ,CAAC,KAAK,g
BAAa;mBACtD,0CAAwC,cAAc,MAAG,CAAA,CAAC,CAAC;WACHe;UACD,MAAM,GAAG,QAAQ,CAAC,E
AAE,CAAC;OACTB;MAED,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,
QAAQ,CAAC,WAAW,CAAC;MACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;MAC
pC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,IAAM,SAAS,GAAG,QAAQ,CA
AC,OAAO,CAAC,MAAM,CAAC;MAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;MA
CtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;
MAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WA

AW,CAAC;MACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;MAC1C,IAAM,SAAS,GAAG,QAAQ,CAAC,OOAO,CAAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;MAC3D,IAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;MACrC,IAAM,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC;MACnC,IAAM,OOAO,GAAG,QAAQ,CAAC,OOAO,CAAC;MAEjC,IAAI,UAAU,KAAK,MAAM,EAAE;UACzB,MAAM,IAAI,KAAK,CACX,wDAAwD;eACrD,UAAU,0BAAuB,CAAA,CAAC,CAAC;OAC3C;MAED,IAAM,GAAG,GAAG,OOAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MAC7D,IAAM,KAAK,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;UAC3D,CAAC;UACD,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAE5D,eAAe,CACX,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OOAO,EAAE,QAAQ,EAAE,YAAY,EAAE,WAAW,EACtE,MAAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OOAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;MAE3E,OOAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,iBAAiB,GAAiB;MAC7C,UAAU,EAAEyC,oBAAwB;MACvB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAErC,OAAK;MACHB,UAAU,EAAE,WAA+B;GAC5C;;ECzJD;;;;;;;EAAuBA,IAAI,wBAQQ,CAAC;EAEB,SAASA,OAAK,CAAC,OAAoB;MACjC,wBAAwB;UACpB,OOAO,CAAC,IAAI,CAAC,KAAK,CAACsC,6BAAoB,EAAE,IAAI,aAAa;cACxD,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;WACT,CAAC,CAAC;EACT,CAAC;EAED,SAAS,oBAAoB,CAAC,IAI7B;MACQ,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;MAC/B,IAAA,YAAC,EAAE,sBAAM,EAAE,kBAAI,EAAE,sDAAsB,CAAW;MAEvD,IAAA,uBAAO,EACP,eAAG,EACH,2BAAS,EACT,6BAAU,EACV,uCAAe,EACf,6BAAU,EACV,qCAAc,CACN;MAEV,IAAM,QAAQ,GAAG1C,qBAAy,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OOAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EAAE,IAAI,iBAAiB,CAAC;MAEhD,IAAM,eAAe,GACjB,iBAAiB,CAAC,UAAKd,CAAC,CAAC;MAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;UAC3B,MAAM,IAAI,KAAK,CACR,UAAU,4DAAYd;cActE,sBAAsB,CAAC,CAAC;OAC7B;MAED,IAAM,GAAG,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,QAAQ,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,IAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;MAE5C,IAAI,MAAM,GAAG,CAAC,CAAC;MACf,IAAI,IAAI,IAAI,IAAI,EAAE;UACHB,IAAM,QAAQ,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;UACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;cAC/B,MAAM,IAAI,KAAK,CACX,yDAAyD;mBACzD,UAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,MAAG,CAAA,CAAC,CAAC;WACvC;UACD,IAAI,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,cAAc,EAAE;cACxC,MAAM,IAAI,KAAK,CACX,sCAAoC,QAAQ,CAAC,KAAK,gBAAa;mBAC/D,0CAAwC,cAAc,MAAG,CAAA,CAAC,CAAC;WACH;UACD,MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;OACtB;MAED,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OOAO,CAAC,GAAG,CAAC;MACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OOAO,CAAC,KAAK,CAAC;MACxC,IAAM,SAAS,GAAG,QAAQ,CAAC,OOAO,CAAC,MAAM,CAAC;MAC1C,IAAM,OOAO,GAAG,QAAQ,CAAC,OOAO,CAAC,IAAI,CAAC;MACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;MAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;MAC1C,IAAM,SAAS,GAAG,QAAQ,CAAC,OOAO,CAAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;MAC3D,IAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;MACrC,IAAM,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC;MACnC,IAAM,OOAO,GAAG,QAAQ,CAAC,OOAO,CAAC;MAEjC,IAAI,UAAU,KAAK,MAAM,EAAE;UACzB,MAAM,IAAI,KAAK,CACX,iEAAiE;eAC9D,UAAU,0BAAuB,CAAA,CAAC,CAAC;OAC3C;MAED,IAAM,GAAG,GAAG,OOAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MAC7D,IAAM,KAAK,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;UAC3D,CAAC;UACD,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;M

AE5D,wBAAwB,CACpB,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,YAAY,EAAE,
WAAW,EACtE,MAAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAAE,cAAc,E
ACvE,aAAa,EAAE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cA
Ac,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;MAE3E,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,0BAA0
B,GAAiB;MACtD,UAAU,EAAE0C,6BAAoB;MAChC,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEtC,OAAK;
MAChB,UAAU,EAAE,oBAAwC;GACrD;:EC1JD;:;;;;;;;;;;EaUBA,IAAI,YAGI,CAAC;EAET,SAASA,OAAK,
CAAC,OAAoB;MACjC,YAAY,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACuC,iBAAQ,EAAE,IAAI,WAA
W;UACzD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;UA
CP,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,QAAQ,CAAC,IAAoD;MAE7D,IAAA,sBAAO,EAA
E,oBAAM,CAAS;MACxB,IAAA,sBAAM,EAAE,wBAAO,CAAW;MAE3B,IAAA,6DAC6C,EAD5C,mBAAW,E
AAE,iBAAS,EAAE,iBAAS,EAAE,eACS,CAAC;MAEpD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,W
AAW,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;MACiD,IAAI,SAAS,KAAK,CAAC,EAAE;UACnB,OAAO,G
AAG,CAAC;OACZ;MAED,IAAM,YAAY,GAAG,OAAO,CAAC,KAAK,CAAC;MACnC,IAAM,SAAS,GAAG,Y
AAY,CAAC,YAAY,CAAC,MAAM,GAAG,CAAC,CAAC,CAAC;MAExD,IAAM,KAAK,GAAG,OAAO,CAAC,
SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;MACnD,IAAM,GAAG,GAAG,KAAK,CAA
C,EAAE,CAAC;MACrB,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAA
M,CAAC,CAAC;MACiD,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,IAAM,YAAY,GAAG,IA
AI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,IAAM,KAAK,GAA
G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,YAA
Y,CACR,GAAG,EAAE,QAAQ,CAAC,MAAM,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,SAAS,E
AAE,SAAS,EACvE,YAAY,EAAE,KAAK,CAAC,CAAC;MAEzB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IA
AM,cAAc,GAAiB;MACiC,UAAU,EAAEA,iBAAQ;MACpB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEvC,O
AAK;MAChB,UAAU,EAAE,QAAQ;GACrB;:EC7ED;:;;;;;;;;;;EawBA,IAAI,UAGsB,CAAC;EAE3B,SAASA,O
AAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,WA
AW;UACvD,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;U
ACP,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,QAAQ,CACb,IAAoE;MAErE,IAAA,sBAAO,EA
AE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAAA,YAAC,EAAE,wBAAO,CAAW;MACrB,IAAA,iBAAL,EAAE,
2BAAS,CAAU;:MAGhC,IAAM,UAAU,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAL,EAAE,CAAC,CAAC,KAAK,C
AAC,CAAC,CAAC,CAAC,CAAC;MACzD,IAAM,WAAW,GAAG,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,
MAAM,CAAe,CAAC;MACnE,IAAM,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,CAAC;8BAC3
B,CAAC;UACR,IAAM,KAAK,GAAG,WAAW,CAAC,CAAC,CAAC,CAAC;UAC7BA,aAAI,CAAC,MAAM,CA
CP,KAAK,IAAI,OAAO,GAAG,CAAC,IAAI,KAAK,IAAI,CAAC,EACiC;cACI,OAAA,+BAA6B,KAAK,wBAAK
B,OAAO,GAAG,CAAC,OAAG;WAAA,CAAC,CAAC;:MAL9E,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAA
C,GAAG,WAAW,CAAC,MAAM,EAAE,EAAE,CAAC;kBAAIC,CAAC;OAMT;MAED,IAAM,SAAS,GAAGE,q
BAAY,CAAC,YAAY,CAAC,wBAAwB,CACHE,CAAW,EAAE,OAAiB,EAAE,UAAU,EAAE,SAAS,CAAC,CAA
C;MAE3D,IAAM,QAAQ,GAAG,OAAO,CAAC;UACvB,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC;UACX,KA
AK,EAAE;cACL,KAAK,EAAE;kBACL,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,O
AAO;kBAC3D,SAAS,CAAC,SAAS;eACpB;WACF;UACD,OAAO,SAAS;OACR,CAAC,CAAC;MACH,IAAM,
WAAW,GAAGF,aAAI,CAAC,aAAa,CAAC,OAAO,CAAC,KAAK,CAAC,CAAC;MACtD,IAAM,YAAY,GAAG,
OAAO,CAAC;UAC3B,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,EAAC;UACpB,KAAK,EAAE,EAAC,KAAK
,EAAE,CAAC,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS,CAAC,EAAC;UACxE,OAAO,S
AAA;OACR,CAAC,CAAC;MACH,IAAM,kBAAkB,GAAG;UACzB,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,S
AAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS;UAC3E,SAAS,CAAC,SAAS;OACpB,CAAC;MAEF,IAAM,GA
AG,GAAG,OAAO,CAAC,UAAU,CAAC,kBAAkB,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MAC5D,IAAIA,a
AAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACrC,OAAO,GAAG,CAAC;OA
CZ;MACD,IAAM,WAAW,GAAG,QAAQ,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,CAAC;MAE9C,IAAM,K
AAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;MACrD,IAAM,G
AAG,GAAG,KAAK,CAAC,EAAE,CAAC;MAErB,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C

AAC,YAAY,CAAC,MAAM,CAAC,CAAC;MAC/D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,C AAC;MAEnD,IAAM,aAAa,GAAG,IAAI,UAAU,CAChC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,QAA Q,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MACHe,IAAM,eAAe,GAAG,IAAI,UAAU,CACIC ,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,kBAakB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE ,UAAU,CACN,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,aAAa,EAAE,WAAW,EAAE,S AAS,EAC7D,SAAS,CAAC,SAAS,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC;MAEjD,OAAO,CAAC,WAAW,CA AC,QAAQ,CAAC,MAAM,CAAC,CAAC;MACrC,OAAO,CAAC,WAAW,CAAC,YAAY,CAAC,MAAM,CAAC, CAAC;;MAGzC,GAAG,CAAC,KAAK,GAAG,SAAS,CAAC,WAAW,CAAC;MACiC,OAAO,GAAG,CAAC;EAC b,CAAC;EAEM,IAAM,cAAc,GAAiB;MAC1C,UAAU,EAAE8C,iBAAQ;MACpB,WAAW,EAAE,MAAM;MACn B,SAAS,EAAExC,OAAK;MACHb,UAAU,EAAE,QAA4B;GACzC;;ECzHD;;;;;;;EAOBA,IAAM4B,uBAAq B,GAAG,KAAK,CAAC;EAC7B,IAAM,aAAa,GACtB,wBAAwB,CAACa,gBAAO,EAAEb,uBAAqB,EAAE,MAA M,CAAC;;ECtBpE;;;;;;;EAOBA,IAAMA,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,kBAakB,GAC3B, wBAAwB,CAACc,qBAAY,EAAEd,uBAAqB,EAAE,MAAM,CAAC;;ECtBzE;;;;;;;EAuBA,IAAIxB,UAC0E ,CAAC;EAE/E,SAASuC,WAAS,CAAC,OAAoB;MACrCvC,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,C AACwC,kBAAS,EAAE,IAAI,aAAa;UACxD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC, CAAC;EAEL,CAAC;WAEe,SAAS,CACrB,IAC0E;MAE5D,IAAA,iBAAC,EAAW,wBAAK,EAAG,sBAAO,CAA S;MAEpD,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAA C,EAAE,CAAC;;MAG/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,SAAS,CAAC,CAAC;MAEnD,IAAIID,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE; UACrC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC, EAAE,CAAC;UACnDU,UAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK ,EAAE,KAAK,CAAC,CAAC;OAChD;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,eAAe,GAAiB; MAC3C,UAAU,EAAEwC,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,SAAS,aAAA;MACT,UAAU,EAAE, SAA6B;GAC1C;;EC3DD;;;;;;;EAmBA,IAAMhB,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,UAAU,G ACnB,wBAAwB,CAACiB,aAAI,EAAEjB,uBAAqB,EAAE,MAAM,CAAC;;ECrBjE;;;;;;;EAOBA,IAAMA,u BAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,eAAe,GACxB,wBAAwB,CAACKB,kBAAS,EAAEiB,uBAAqB,EA AE,MAAM,CAAC;;ECtBtE;;;;;;;EAmBO,IAAM,SAAS,GAAiB,uBAAuB,CAACmB,YAAG,CAAC;;ECnBn E;;;;;;;EAmBA,IAAMnB,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,gBAAgB,GACzB,wBAAwB,CAA CoB,mBAAU,EAAEpB,uBAAqB,EAAE,MAAM,CAAC;;ECrBvE;;;;;;;EAwBA,IAAI,OACI,CAAC;EAET,S AAS5B,OAAK,CAAC,OAAoB;MACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiD,YAAG,EA AE,IAAI,WAAW;UAC/C,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAA C;EAED,SAAS,GAAG,CAAC,IAAgE;MAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IA AA,6BAAsB,EAAE,yBAAQ,CAAU;MAC1C,IAAA,YAAC,CAAW;MACnB,IAAM,GAAG,GAAG,OAAO,CAA C,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG, GAAG,CAAC;MACiB,IAAI,KAAK,GAAG,CAAC,CAAC;MAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI, EAAE,8BAAY,EAAE,0CACM,CAAC;MAE9C,IAAI,kBAakB,EAAE;UACtB,IAAM,YAAY,GAAG,OAAO,CA AC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,KAAK,GAAG,UA AU,CAAC;UACnB,OAAO,GAAG,YAAY,CAAC;OACxB;MAED,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,C AAC,MAAM,CAAC;MACrCrD,qBAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAA C;MAC1D,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;MAC9D,IAAM,UAAU,GAAGF,aAAI,CAA C,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAA E,CAAC,CAAC,KAAK,CAAC,CAAC;MACiD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC, KAAK,CAAC,EAAE;UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC, MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK, CAAC,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;OACxD;MAED,IAAI,kBAakB,EAAE;;UAETB,OAAO,CAA C,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,IAAM,QAA Q,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,

CAAC,KAAK,GAAG,QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,SAAS,G
AAiB;MACrC,UAAU,EAAEqD,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEjD,OAAK;MACHB,
UAAU,EAAE,GAAuB;GACpC;;ECrFD;;;;;;;EAmBA,IAAM4B,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IA
AM,aAAa,GACtB,wBAAwB,CAACsB,gBAAO,EAAEtB,uBAAqB,CAAC;;ECrB5D;;;;;;;EAqBA,IAAI,WA
KqE,CAAC;EAE1E,SAAS5B,OAAK,CAAC,OAAoB;MACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAA
K,CAACmD,gBAAO,EAAE,IAAI,aAAa;UACzD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QA
AQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UA
CR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACL,CAAC;EAE
D,SAAS,OAAO,CACZ,IAAwE;MACnE,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;MAEtC,IAAM,C
AAC,GAAG,MAAM,CAAC,CAAa,CAAC;MAC/B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C
AAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;;;;;;MAU/CzD,aAAI,CAAC,MAAM,CACP,CAAC,C
AAC,KAAK,KAAK,SAAS,EACrB;UACI,OAAA,4DAA0D,CAAC,CAAC,KAAK,MAAG;OAAA,CAAC,CAAC;
MAEvE,IAAA,6BAAU,EAAE,uBAAO,EAAE,eAAG,EAAE,uCAAe,CAAU;MAC1D,IAAM,QAAQ,GAAGE,qB
AAy,CAAC,iBAAiB,CAC3C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,kBAAkB,GAAG
,EAAE,eAAe,CAAC,CAAC;MAE3E,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAA
W,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,C
AAC;MACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,IAAM,SAAS,GAAG,
QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,
CAAC;MACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aA
Aa,CAAC;MAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,IAAM,WAAW,GAAG,QAAQ,
CAAC,WAAW,CAAC;MACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;MAC1C,IAAM,cAAc,GAAG,
QAAQ,CAAC,WAAW,CAAC;MAE5C,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;UAC1C,MAAM,IAAI,
KAAK,CACX,4CAA4C;eAczC,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;OAC5D;MAED,IAAM,G
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MAC7D,IAAM,K
AAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;M
AEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,C
AAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,YAAY,EAAE,WAAW,EACIE,M
AAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,cAAc,EAAE,aAAa,EACnE,YAAY,EAAE,WAAW,EAA
E,aAAa,EAAE,cAAc,EAAE,KAAK,CAAC,CAAC;MACrE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,a
AAa,GAAiB;MACzC,UAAU,EAAEuD,gBAAO;MACnB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEnD,OAA
K;MACHB,UAAU,EAAE,OAA2B;GACxC;;EC5GD;;;;;;;EAwBA,IAAI,QAAkE,CAAC;EAEvE,SAASA,OA
AK,CAAC,OAAoB;MACjC,QAAQ;UACJ,OAAO,CAAC,IAAI,CAAC,KAAK,CAACoD,aAAI,EAAE,IAAI,WAA
W,CAAC,wBAAwB,CAAC,CAAC,CAAC;EAC1E,CAAC;WAEe,IAAI,CACHB,IAAkE;MAE7D,IAAA,sBAAO,E
AAE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;MACxB,IAAA,YAAC,CAA
W;MACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CA
AC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACiB,IAAI,KAAK,GAAG,CAAC,CAAC;MAE
R,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAy,EAAE,0CACM,CAAC;MAE9C,IAAI,aAAa,GAA
G,IAAI,CAAC;MACzB,IAAI,kBAAkB,EAAE;UACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG
,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;;cAGxB,
KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,GAAG,YAAY,CAAC;cACvB,aAAa,GAAGxD,qBAAy,CAAC,gB
AAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;WAC/C;OACF;
MAEDA,qBAAy,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,C
AAC,CAAC;MACzC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;MACvE,IAAM,UAAU,GAAGF,a
AAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MACnD,IAAI,WAAW,GAAG,KAAK,CAAC;MACxB,IAAI,K
AAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,WAAW;cACP,IAAI,CAAC,EAAC,OAAO,SAAS,EAAE,MA
AM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,
CAAC,CAAC;UACnE,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAA
C,CAAC,EAAE,CAAC;OACxD;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SA

S,CAAC,CAAC;MACpD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;
UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,
EAAE,CAAC;UACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;OACtC;MAED,IAAI,k
BAakB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IA
AI,QAAQ,EAAE;;UAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,
YAAZ,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;OACtB;MAED,IAAI,KAAK,CAAC,
KAAK,KAAK,SAAS,EAAE;UAC7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;OAC
zC;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,UAAU,GAAiB;MACtC,UAAU,EAAEwD,aAAI;M
AChB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEpD,OAAK;MACHB,UAAU,EAAE,IAAwB;GACrC;;ECIGD;
;;;;;;;;;;;;EAWBA,IAAI,OACI,CAAC;EAET,SAASA,OAAK,CAAC,OAAoB;MACjC,OAAO,GAAG,OAAO,CA
AC,IAAI,CAAC,KAAK,CAACqD,YAAG,EAAE,IAAI,WAAW;UAC/C,QAAQ;UACR,QAAQ;UACR,QAAQ;UA
CR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAEpE,IAAA,sBAAO,EAA
E,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;MACxB,IAAA,YAAC,CAAW;M
ACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,E
AAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAER,IAA
A,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;MAE9C,IAAI,kBAakB,EAAE;
UACtB,IAAM,YAAZ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,
EAAE,CAAC;UACjE,IAAI,YAAZ,KAAK,GAAG,EAAE;;cAGxB,KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,
GAAG,YAAZ,CAAC;WACxB;OACF;MAED,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC
;MAErCzD,qBAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;MACID,IAAA,uE
ACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;MAC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WA
AW,CAAC,CAAC;MAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,K
AAK,CAAC,CAAC;MACtD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAA
E;UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA
C,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAA
U,EAAE,KAAK,CAAC,CAAC;OACxD;MAED,IAAI,kBAakB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,U
AAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,IAAM,QAAQ,GAAGE,qBAAY,
CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAZ,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAA
G,QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,SAAS,GAAiB;MACrC,UAA
U,EAAEyD,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAErD,OAAK;MACHB,UAAU,EAAE,GAA
uB;GACpC;;EC1FD;;;;;;;;;;;EAmBA,IAAM4B,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,aAAa,GACtB,
wBAAwB,CAAC0B,gBAAO,EAAE1B,uBAAqB,CAAC;;ECrB5D;;;;;;;;;;;EauBA;EACA,IAAK,iBAGJ;EAHD
,WAAK,iBAAiB;MACpB,+DAAW,CAAA;MACX,mEAAa,CAAA;EACf,CAAC,EAHI,iBAAiB,KAAjB,iBAAiB,
QAGrB;EAED,IAAI,aAGsB,CAAC;EAE3B,SAAS5B,OAAK,CAAC,OAAoB;MACjC,aAAa,GAAG,OAAO,CAA
C,IAAI,CAAC,KAAK,CAACuD,kBAAS,EAAE,IAAI,aAAa;UAC7D,QAAQ;UACR,OAAO;UACP,QAAQ;UAC
R,QAAQ;UACR,OAAO;UACP,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,
SAAS,SAAS,CAAC,IAIIB;MACiB,IAAA,iBAAC,EAAG,sBAAO,EAAE,eAAuB,EAAf,sBAAQ,EAAE,cAAK,CA
AS;MAE7D,IAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACzB,UAAc,CAAC,EAAE,CAAC,IAAK,OAAA,CA
AC,CAAC,CAAC,CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,C
AAC,GAAA,gBAAgB,CAAC;MACvE,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,
EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACID,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C
AAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,I
AAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAEnE,IAAM,eAAe,GAAG,QA
AQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;MAC
9D,IAAM,gBAAgB,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,CAAC,CAAC,CA
AC,GAAA,CAAC,CAAC;MAC/D,IAAM,gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAA
C,CAAC,MAAM,CAAC,CAAC;MAC3D,IAAM,iBAAiB,GACnB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBA

Q,CACtB,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,YAAY,CAAC,CAAC;MAEZ,I
AAA,0CACmC,EADIC,sCAAgB,EAAE,8BAAY,EAAE,oCAAE,EAAE,gCACf,CAAC;;;MAIIC,OAAO,CAAC,I
AAI,CAAC,KAAK,CAAC,aAAa,CAAC,CAAC;MAEIC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,C
AAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;MACIE,IAAM,oBAAoB,GACtB,OAAO,CAA
C,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,SAAS,EAAE,eAAe,CAAC,CAAC;MAEnE,OAAO,CAAC,qBAAq
B,EAAE,oBAAoB,CAAC,CAAC;EACvD,CAAC;EAEM,IAAM,yBAAyB,GAAiB;MACrD,UAAU,EAAEwD,4B
AAmB;MAC/B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE5D,OAAK;MACHb,UAAU,EAAE6D,YAA8B;GA
C3C;;EC9ED;;;;;;;EAmBA,IAAMjC,uBAAqB,GAAG,KAAK,CAAC;EAC7B,IAAM,cAAc,GACvB,wBAA
wB,CAACKc,iBAAQ,EAAEIC,uBAAqB,EAAE,MAAM,CAAC;;ECrBrE;;;;;;;EAqBA,IAAI,UAESB,CAAC;
EAE3B,SAAS5B,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC+D,e
AAM,EAAE,IAAI,aAAa;UACvD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CA
AC,CAAC;EACL,CAAC;EAED,SAAS,MAAM,CACX,IAAsE;MACjE,IAAA,oBAAM,EAAE,sBAAO,EAAE,kB
AAK,CAAS;MAC/B,IAAA,wBAAO,CAAW;MACIB,IAAA,mBAAK,EAAE,uBAAO,EAAE,yBAAQ,CAAU;MA
EzC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAK,OAAO,CAAC,KAAK,SAE,KAAK,IAAG,OAAO,CA
AC,CAAC;MACnE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CA
AC,CAAC,EAAE,CAAC;MAEnD,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CA
AC,MAAM,CAAC,CAAC;MACID,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,UAAU,CAAC,S
AAS,EAAE,KAAK,EAAE,OAAO,EAAE,QAAQ,EAAE,KAAK,CAAC,CAAC;MAEvD,OAAO,GAAG,CAAC;E
ACb,CAAC;EAEM,IAAM,YAAY,GAAiB;MACxC,UAAU,EAAEA,eAAM;MACIB,WAAW,EAAE,MAAM;MA
CnB,SAAS,EAAE/D,OAAK;MACHb,UAAU,EAAE,MAA0B;GACvC;;ECzDD;;;;;;;EAqBA,SAAS,QAAQ,
CAAC,IAAoD;MACpD,IAAA,iBAAC,EAAG,sBAAO,CAAS;MACpC,IAAM,GAAG,GAAG,OAAO,CAAC,UAA
U,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,IAAM,OAAO,GAAG,OAA
O,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;MACHd,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC;MA
ChB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,cAAc,GAAiB;MAC1C,UAAU,EAAEgE,iBAAQ;MACp
B,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,QAA4B;GACzC;;ECjCD;;;;;;;WauBgB,IAAI,CACHB,IA
AkE;MAE7D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MAC/B,IAAA,iBAAI,CAAU;MAErB,IAAI,
MAAM,CAAC,MAAM,KAAK,CAAC,EAAE;UACvB,OAAO,UAAU,CACb,EAAC,MAAM,EAAE,EAAC,KAA
K,EAAE,MAAM,CAAC,CAAC,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,GAAG,EAAE,I
AAI,EAAC,EAAC,CAAC,CAAC;OACHE;MAED,IAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC,K
AAK,CAAC;MAC9B,IAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;MAE9B,MAA
M,CAAC,OAAO,CAAC,UAAA,CAAC;UACdtE,aAAI,CAAC,iBAAiB,CACIB,KAAK,EAAE,CAAC,CAAC,KA
AK,EACd,uDAAuD,CAAC,CAAC;UAC7DA,aAAI,CAAC,MAAM,CACP,KAAK,KAAK,CAAC,CAAC,KAAK,
EACjB,cAAM,OAAA,uDAAuD,GAAA,CAAC,CAAC;OACpE,CAAC,CAAC;MAEH,IAAM,uBAAuB,GAAiB,E
AAE,CAAC;MACjD,IAAM,eAAe,GAAG,MAAM,CAAC,GAAG,CAAC,UAAA,CAAC;UACIC,IAAM,SAAS,G
ACX,UAAU,CAAC,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KA
AK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;UACIE,uBAAuB,CAAC,IAAI,CAAC,SAAS,
CAAC,CAAC;UACxC,OAAO,SAAS,CAAC;OACIB,CAAC,CAAC;MAEH,IAAM,MAAM,GAAG,MAAM,CAA
C,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,IAAI,MAAA,EAAC,EAAC,C
AAC,CAAC;MAEzE,uBAAuB,CAAC,OAAO,CAAC,UAAA,CAAC,IAAI,OAAA,OAAO,CAAC,WAAW,CAAC,
CAAC,CAAC,MAAM,CAAC,GAAA,CAAC,CAAC;MAEpE,OAAO,MAAM,CAAC;EACb,CAAC;EAEM,IAA
M,UAAU,GAAiB;MACtC,UAAU,EAAEuE,aAAI;MACHb,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,IAAw
B;GACrC;;ECjED;;;;;;;EAyBA,IAAI,SAG6C,CAAC;EAEID,SAASjE,OAAK,CAAC,OAAoB;MACjC,SA
S,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACKe,cAAK,EAAE,IAAI,aAAa;UACrD,QAAQ;UACR,OAAO;
UACP,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;E
ACL,CAAC;EAED,SAAS,GAAG,CACR,IAAoE;MACtD,IAAA,iBAAC,EAAG,sBAAO,EAAE,eAAgC,EAAxB,s
BAAQ,EAAE,gCAAc,CAAS;MAEtE,IAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACzB,UAAc,CAAC,EAAE,
CAAC,IAAK,OAAA,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG
,CAAC,CAAC,CAAC,CAAC,GAAA,gBAAgB,CAAC;MAEvE,IAAIxE,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC

,KAAK,CAAC,KAAK,CAAC,EAAE;;;UAGrC,OAAO,IAAI,CAAC;cACV,OAAO,SAAA;cACP,KAAK,EAAE,E
AAC,KAAK,EAAE,QAAQ,EAAE,KAAK,EAAE,aAAa,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC;WAC
/D,CAAC,CAAC;OACJ;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,
MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,
CAAC,CAAC,KAAK,CAAC,CAAC;MACID,IAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G
AAG,CAAC,MAAM,CAAC,CAAC;MACxD,IAAM,KAAK,GAAG,aAAa,CAAC,EAAE,CAAC;MAE/B,IAAM,
WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,C
AAC;MAEnE,IAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,CAAC,CA
AC,CAAC,GAAA,CAAC,CAAC;MAC9D,IAAM,gBAAGB,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,I
AAI,OAAA,QAAQ,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;MAC/D,IAAM,gBAAGB,GACIB,IAAI,UAAU,C
AAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;MAC3D,IAAM,iBAaIB,GACnB,IAAI,UA
AU,CAAC,IAAI,UAAU,CAAC,gBAAGB,CAAC,CAAC,MAAM,CAAC,CAAC;MAE5D,SAAS,CACL,GAAG,EA
AE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EA
AE,gBAAGB,EACrE,iBAaIB,EAAE,aAAa,EAAE,KAAK,CAAC,CAAC;MAC7C,OAAO,GAAG,CAAC;EACb,C
AAC;EAEM,IAAM,WAAW,GAAiB;MACvC,UAAU,EAAEwE,cAAK;MACjB,WAAW,EAAE,MAAM;MACnB,
UAAU,EAAE,GAAuB;MACnC,SAAS,EAAEIE,OAAK;GACjB;;ECpFD;::::::::::;EAmBA,IAAM4B,uBAaQb,
GAAG,KAAK,CAAC;EAC7B,IAAM,SAAS,GACIB,wBAawB,CAACuC,YAAG,EAAEvC,uBAaQb,CAAC;;ECr
BxD;::::::::::;EAuBA,IAAI,SAaKE,CAAC;EAEvE,SAAS5B,OAAK,CAAC,OAAoB;MACjC,SAAS,GAAG,OA
AO,CAAC,IAAI,CAAC,KAAK,CAACoE,cAAK,EAAE,IAAI,aAAa;UACrD,QAAQ;UACR,QAAQ;UACR,QAA
Q;OACT,CAAC,CAAC;EACL,CAAC;EAED,SAAS,KAAK,CAAC,IAAiD;MACvD,IAAA,oBAAM,EAAE,sBAA
O,CAAS;MACxB,IAAA,YAAC,EAAE,oBAAK,CAAW;MAC1B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CA
AC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,SAAS,GAAG,OAAO,CA
AC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,IAAI,OAAO,GAA
G,GAAG,CAAC;MACIB,IAAM,KAAK,GAAG,CAAC,CAAC;MACHb,IAAI,WAAW,GAAG,KAAK,CAAC;MA
CxB,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,WAAW,GAAG,IAAI,CAAC,EAAC,OAAO,SAA
A,EAAE,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,E
AAC,CAAC,CAAC;UACtE,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,
CAAC,CAAC,EAAE,CAAC;OACxD;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,
KAAK,EAAE,SAAS,CAAC,CAAC;MACnD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G
AAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,SAAS,CAAC,OAAO,EAAE,SAAS,EAAE,KAAK,C
AAC,CAAC;MAErC,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,OAAO,CAAC,WAAW,CAAC,W
AAW,CAAC,MAAM,CAAC,CAAC;OACzC;MACD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,WAAW,
GAAiB;MACvC,UAAU,EAAEA,cAAK;MACjB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEpE,OAAK;MACH
B,UAAU,EAAE,KAAyB;GACtC;;EC9DD;::::::::::;EAyBA,IAAI,QAEEqC,CAAC;EAE1C,SAASA,OAAK,CAA
C,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACqE,aAAI,EAAE,IAAI,WAAW;UAC
jD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACL,CAAC;EAED,SAAS,IAAI,C
AAC,IAIb;MACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAAA,iBAAI,EAAE,yBAAQ,C
AAU;MACxB,IAAA,YAAC,CAAW;MACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,K
AAK,GAAG,CAAC,CAAC;MAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM
,CAAC;MAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;MACzB,IAAI,kBAaKB,EAAE;UACtB,IAAM,YAAY,GAAG,O
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,IAAI,YA
AY,KAAK,GAAG,EAAE;;cAGxB,KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,GAAG,YAAY,CAAC;cACvB,a
AAa,GAAGzE,qBAAY,CAAC,gBAAGB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MA
AM,CAAC,CAAC;WAC/C;OACF;MAEDA,qBAAY,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAA
K,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;MACzC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAA
C;MACvE,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,IAAM,GAAG,GA
AG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;MACtD,IAAIA,aAAI,CAA

C,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;OAC3D;MAED,IAAI,kBAaB,EAAE;;UAETB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,UAAU,GAAiB;MACtC,UAAU,EAAEyE,aAAI;MACHb,WAAW,EAAE,MAAM;MACnB,SAAS,EAAErE,OAAK;MACHb,UAAU,EAAE,IAAwB;GACrC;;ECjGD;,,,,,;EAsBO,IAAM,KAAK,GACd,UAAc,IAA+C;MACvC,IAAA,sBAAO,EAAE,kBAaK,CAAS;MACvB,IAAA,mBAaK,EAAE,iBAaI,EAAE,iBAaI,EAAE,mBAaK,CAAU;MACzC,IAAM,MAAM,GAAGsE,SAAY,CAAC,KAAK,EAAE,IAAI,EA AE,IAAI,EAAE,KAAK,CAAC,CAAC;MAEtD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,MAA M,CAAC,MAAM,CAAC,EAAE,KAAK,CAAC,CAAC;MACvD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAaB,C AAC,GAAG,CAAC,CAAC;MACHd,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACpB,OAAO,GAA G,CAAC;EACb,CAAC,CAAC;EAEC,IAAM,WAAW,GAAiB;MACvC,UAAU,EAAEC,cAAK;MACjB,WAAW,E AAE,MAAM;MACnB,UAAU,EAAE,KAAyB;GACtC;;ECtCD;,,,,,;EAqBA,IAAM3C,uBAaQB,GAAG,IAA I,CAAC;EAC5B,IAAM,aAAa,GACtB,wBAAwB,CAAC4C,gBAAO,EAAE5C,uBAaQB,CAAC;;ECvB5D;,,,,,; ;;;EAmBO,IAAM,UAAU,GAAiB,uBAaUB,CAAC6C,aAAI,CAAC;;ECnBrE;,,,,,;EAmBO,IAAM,WAAW, GAAiB,uBAaUB,CAACC,cAAK,CAAC;;ECnBvE;,,,,,;EAuBA,IAAI,kBAGsE,CAAC;EAE3E,SAAS1E,OA AK,CAAC,OAAoB;MACjC,kBAaB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC2E,uBAAc,EAAE,IAAI, WAAW;UACrE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAA Q;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,cAAc,CAAC,IA IvB;MACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;MAE/B,IAAA,sBAAM,CAAW;MACjB,IAA A,iCAAY,EAAE,yCAAgB,EAAE,iBAaI,CAAU;MAC9C,IAAA,mBAAS,EAAE,kBAaQ,CAAS;MAE7B,IAAA,i BAAwD,EAAvD,aAAK,EAAE,iBAAS,EAAE,gBAAQ,EAAE,mBAA2B,CAAC;MAC/D,IAAM,QAAQ,GAAG,C AAC,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,CAAC,CAAC;MAE3D,IAAI,KAAK,GAAG,OAAO,CA AC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;MACjD,IAAI,UAAU,CAAC;MACf,IAAI ,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,UAAU;cACN,IAAI,CAAC,EAAC,OAAO,SAAS,EAAE,M AAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;UACpE,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAA C,CAAC;OACID;MACD,IAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;MAErB,IAAM,GAAG,GAAG,OAA O,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MACpD,IAAIjF,aAAI,CAAC,aAAa,CAAC,MAAM, CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UAC1C,OAAO,GAAG,CAAC;OACZ;MACD,IAAM,KAAK,GAAG, OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,kBAaB B,CACd,GAAG,EAAE,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,EAAE,SAAS,EAAE,QAAQ,EACjE, YAAY,GAAG,CAAC,GAAG,CAAC,EAAE,gBAAGB,GAAG,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC ;MAE3D,IAAI,UAAU,IAAI,IAAI,EAAE;UACtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,C AAC;OACxC;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,oBAAoB,GAAiB;MACHd,UAAU,EA AEiF,uBAAc;MAC1B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE3E,OAAK;MACHb,UAAU,EAAE,cAAc;G AC/C;;ECxFD;,,,,,;EAwBA,IAAI,WAE8C,CAAC;EAEnD,SAASA,OAAK,CAAC,OAAoB;MACjC,WAAW ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC4E,gBAAO,EAAE,IAAI,EAAE;UAC9C,QAAQ;UACR,OAAO ;UACP,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;WAEe,OAAO,C ACnB,IAAwE;MAEnE,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAaK,CAAS;MAC/B,IAAA,YAAC,CAAW;MA CZ,IAAA,iBAaI,CAAU;MAErB,IAAM,IAAI,GAAGIF,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,K AAK,CAAC,CAAC;MAEhD,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;UACxB,OAAO,Q AAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAS,EAAC,CAAC,CAAC;OA CzC;MAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KA AK,CAAC,CAAC;MACjD,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MA AM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GA

AG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,IAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,
CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;MAC9D,IAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAA
U,CAAC,CAAC,CAAC,KAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAErE,WAAW,CACP,GAAG,EAAE,SAAS,
EAAE,IAAI,CAAC,MAAM,EAAE,aAAa,EAAE,CAAC,CAAC,KAAC,CAAC,MAAM,EAAE,KAAC,CAAC,C
AAC;MAEvE,IAAM,QAAQ,GACV,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,GAAG,EAAC,E
AAE,KAAC,EAAE,EAAC,KAAC,EAAE,CAAC,CAAC,KAAC,EAAC,EAAE,OAAO,SAAS,EAAC,CAAC,CAA
C;MAEIE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACHc,OAAO,QAAQ,CAAC;E
ACIB,CAAC;EAEM,IAAM,aAAa,GAAiB;MACzC,UAAU,EAAEkF,gBAAO;MACnB,WAAW,EAAE,MAAM;M
ACnB,UAAU,EAAE,OAA2B;MACvC,SAAS,EAAE5E,OAAK;GACjB;;EC1ED;,,,,,,,,,,,,,;EAsBA,IAAI,UAGiE,
CAAC;EAEIE,SAASA,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC
6E,yBAAgB,EAAE,IAAI,aAAa;UACjE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC
R,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAACL
,CAAC;WAEe,gBAAgB,CAAC,IAIhC;MACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MAC/B,IA
AA,oBAAK,CAAW;MACHB,IAAA,uBAAO,EAAE,2BAAS,EAAE,qBAAM,CAAU;MAE3C,IAAM,GAAG,GAA
G,OAAO,CAAC,UAAU,CAAC,KAAC,CAAC,KAAC,EAAE,KAAC,CAAC,KAAC,CAAC,CAAC;MACzD,IAA
M,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAA
C;MACvD,IAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CA
AC,EAAE,CAAC;MAE7C,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,kBAAU,EAAE,mBAA0B,CA
AC;MAE5D,IAAA,0EAC0D,EADzD,eAAO,EAAE,eACgD,CAAC;MAEjE,IAAM,WAAW,GAAG,SAAS,KAAC,
CAAC,CAAC;MACpC,IAAM,gBAAgB,GAAG,GAAG,CAAC;MAE7B,IAAM,UAAU,GAAG,OAAO,SAAS,KA
AK,QAAQ;UAC5C,CAAC,SAAS,EAAE,SAAS,EAAE,SAAS,EAAE,WAAW,GAAG,CAAC,GAAG,gBAAgB,C
AAC,GACjE,SAAS,SAAE,gBAAgB,EAAC,CAAC;MACrC,IAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAA
U,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,UAAU,CACN,OAAO,EAAE,KAAC,EAAE,WA
AW,EAAE,UAAU,EAAE,WAAW,EAAE,OAAO,EAAE,OAAO,EACtE,OAAO,EAAE,SAAS,EAAE,UAAU,CAA
C,MAAM,EAAE,KAAC,CAAC,CAAC;MACID,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,sBAAsB,GA
AiB;MACID,UAAU,EAAEA,yBAAgB;MAC5B,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,gBAAoC;MACH
D,SAAS,EAAE7E,OAAK;GACjB;;EChFD;,,,,,,,,,,,,,;EAoBO,IAAM,WAAW,GAAiB,uBAAuB,CAAC8E,cAAK,
CAAC;;ECpBvE;,,,,,,,,,,,,,;EAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACC,cAAK,CAAC;;ECnBvE;,,,,,,,,,,,,,;
;EAuBA,IAAI,aAG0C,CAAC;EAE/C,SAAS/E,OAAK,CAAC,OAAoB;MACjC,aAAa,GAAG,OAAO,CAAC,IAAI
,CAAC,KAAC,CAACgF,kBAAS,EAAE,IAAI,WAAW;UAC3D,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QA
AQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAACL,CAA
C;EAED,SAAS,SAAS,CACd,IAC0E;MAErE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;MAC/B,IAA
A,wBAAO,EAAE,wBAAO,CAAW;MAC3B,IAAA,mBAAK,CAAU;MAEtB,IAAM,GAAG,GAAG,OAAO,CAAC
,UAAU,CAAC,KAAC,EAAE,OAAO,CAAC,KAAC,CAAC,CAAC;MACrD,IAAI,IAAI,aAAa,CAAC,K
AAK,CAAC,KAAC,CAAC,EAAE;UACnC,OAAO,GAAG,CAAC;OACZ;MAEK,IAAA,mEACmD,EADID,wBA
AS,EAAE,0BAAU,EAAE,wBAAS,EAAE,oBAAO,EAAE,0BACO,CAAC;MAE1D,IAAM,WAAW,GAAG,OAAO
,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;MAC1D,IAAM,SAAS,GAAG,WAA
W,CAAC,EAAE,CAAC;MAEjC,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAA
C,MAAM,CAAC,CAAC;MAC1D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,IAAM,YAAY,GA
AG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,IAAM,KAA
K,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACn
D,aAAa,CACT,SAAS,EAAE,SAAS,EAAE,QAAQ,CAAC,OAAO,CAAC,KAAC,CAAC,EAAE,SAAS,EAAE,UA
AU,EACpE,SAAS,EAAE,YAAY,EAAE,UAAU,EAAE,KAAC,CAAC,CAAC;MAEhD,OAAO,GAAG,CAAC;EA
Cb,CAAC;EAEM,IAAM,eAAe,GAAiB;MAC3C,UAAU,EAAEsF,kBAAS;MACrB,WAAW,EAAE,MAAM;MAC
nB,SAAS,EAAEhF,OAAK;MACHB,UAAU,EAAE,SAA6B;GAC1C;;EC/ED;,,,,,,,,,,,,,;EAqBA,IAAI,UAESB,CA
AC;EAE3B,SAASA,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,U
AAU,EAAE,IAAI,EAAE;UACHD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CA
AC,CAAC;EAEL,CAAC;EAED,SAAS,MAAM,CAAC,IAAkD;MACzD,IAAA,oBAAM,EAAE,sBAAO,CAAS;M

ACxB,IAAA,4BAAS,EAAE,YAAC,EAAE,YAAC,CAAW;MAEjC,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/D,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,I AAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,C AAC;MACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,C AAC,EAAE,CAAC;MAEnD,IAAM,KAAK,GAAG,SAAS,CAAC,KAAK,CAAC,MAAM,CAAC;MACrC,IAAM, KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAE7B,IAAM,MAAM,GAAG,KAAK,KAAK,CAA C,IAAI,KAAK,GAAG,CAAC,IAAI,KAAK,KAAK,CAAC;UACID,CAAC;UACDN,aAAI,CAAC,aAAa,CAAC,C AAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;MAEzC,UAAU,CAAC,WAAW,EAAE, GAAG,EAAE,GAAG,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;MACjD,OAAO,GAAG,CAAC;EACb,CAAC; EAEM,IAAM,YAAY,GAAiB;MACxC,UAAU,EAAEuF,eAAM;MACiB,WAAW,EAAE,MAAM;MACnB,UAAU, EAAE,MAA0B;MACtC,SAAS,EAAEjF,OAAK;GACjB;;EC7DD;;;;;;;EAqBA,IAAI,UAA8C,CAAC;EAEn D,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC8E,gBAAO, EAAE,IAAI,aAAa,CAAC,QAAQ,EAAE,QAAQ,CAAC,CAAC,CAAC;EAcHf,CAAC;EAED,SAAS,OAAO,CAA C,IAAmD;MAE3D,IAAA,sBAAO,EAAW,iBAAC,CAAU;MACpC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,C AAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAM,GAAG,GAAG,OAAO,C AAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,IAAM,KAAK,G AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;MAGnD,I AAIxF,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACvC,OAAO,GAAG,C AAC;OACZ;MAEDU,UAAQ,CAAC,GAAG,EAAE,KAAK,CAAC,CAAC;MACrB,OAAO,GAAG,CAAC;EACb, CAAC;EAEM,IAAM,aAAa,GAAiB;MACzC,UAAU,EAAE,SAAS;MACrB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEJ,OAAK;MACHB,UAAU,EAAE,OAA2B;GACxC;;EChDD;;;;;;;EAmBO,IAAM,SAAS,GAAiB,uB AAuB,CAACmF,YAAG,CAAC;;ECnBnE;;;;;;;EAqBA,IAAI/E,UACI,CAAC;EAET,SAASJ,OAAK,CAAC, OAAoB;MACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACgF,gBAAO,EAAE,IAAI,aAAa;UACt D,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,OAAO, CACZ,IAAwE;MAEnE,IAAA,sBAAO,EAAW,2BAAM,EAAW,oBAAG,CAAU;MACvD,IAAM,GAAG,GAAG,O AAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACpD,IAAM, GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC ;MAC3D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA C,EAAE,CAAC;MAEnD,IAAM,QAAQ,GAAG,MAAM,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC;MACnC,IA AM,KAAK,GAAGIF,aAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CAAC,GAAG,QAAQ,CAAC;;MAGID,I AAIa,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACvC,OAAO,GAAG,CA AC;OACZ;MAEDU,UAAQ,CAAC,GAAG,EAAE,KAAK,EAAE,QAAQ,EAAE,KAAK,CAAC,CAAC;MACtC,O AAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,aAAa,GAAiB;MACzC,UAAU,EAAEgF,gBAAO;MACnB,WA AW,EAAE,MAAM;MACnB,SAAS,EAAEpF,OAAK;MACHB,UAAU,EAAE,OAA2B;GACxC;;EC1DD;;;;;;; ;EAYBA,SAAS,cAAc,CAAC,IAIvB;MACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MAC/B,IAAA ,YAAC,CAAW;MACZ,IAAA,6BAAU,EAAE,yBAAQ,CAAU;MAErC,IAAM,IAAI,GAAGN,aAAI,CAAC,aAAa, CAAC,UAAU,CAAC,CAAC;MAE5C,IAAM,gBAAgB,GAA4B,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAA C,CAAC;MAC3D,gBAAgB,CAAC,IAAI,OAArB,gBAAgB,EAAU,QAAoC,EAAE;MAEhE,KAAK,IAAI,CAAC, GAAG,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE, EAAE,CAAC,EAAE;UAC3D,gBAAgB,CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC;O AC/B;MAED,IAAM,OAAO,GAAG,WAAW,CAAC,UAAU,CAAC;UACrC,MAAM,EAAE,EAAC,CAAC,GAAA, EAAC;UACX,OAAO,SAAA;UACP,KAAK,EAAE,EAAC,QAAQ,EAAE,gBAAgB,EAAE,aAAa,EAAE,CAAC,E AAC;OACtD,CAAE,CAAC;MAEjB,IAAM,mBAAmB,GACrBE,qBAAY,CAAC,WAAW,CAAC,OAAO,CAAC,K AAK,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;MAErE,IAAM,iCAAiC,GAAGA,qBAAY,CAAC, WAAW,CAC9D,mBAAmB,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;MAE1D, IAAM,YAAY,GACdA,qBAAY,CAAC,mBAAmB,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,EAA

Q,GAAA,CAAC,CAAC;UAErE,IAAM,IAAI,GAAGe,mBAAU,CAAC,eAAe,CAAC,MAAM,EAAE,IAAI,EAAE,
QAAQ,CAAC,CAAC;;UAehE,IAAM,MAAM,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAA
A,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,MAAM,EAAE,IAAI,MAAA,EAAC,E
AAC,CAAC,CAAC;UAC3E,MAAM;cACF,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,E
AAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;UAC
xE,OAAO,CAAC,WAAW,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;OACpC;WAAM;UACL,IAAM,GAAG,
GAAG,OAAO,CAAC,UAAU,CAAC,gBAAgB,EAAE,SAAS,CAAC,CAAC;UAE5D,IAAM,GAAG,GAAG,OAA
O,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UAC/C,IAAM,aAAa,
GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAACf,aAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,
CAAC,MAAM,CAAC,CAAC;UACxE,IAAM,UAAU,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,MAAM,C
AAC,CAAC,MAAM,CAAC,CAAC;UACjE,IAAM,QAAQ,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,
CAAC,CAAC,MAAM,CAAC,CAAC;UAC7D,IAAM,YAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,Q
AAQ,CAAC,CAAC,MAAM,CAAC,CAAC;UAErE,IAAM,gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,C
AAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;UAC5D,IAAM,eAAe,GAAG,IAAI,UAAU,CACIC,IAAI,UA
AU,CAACA,aAAI,CAAC,cAAc,CAAC,gBAAgB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;UACIE,IAAM,K
AAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;U
AEhD,gBAAgB,CACZ,GAAG,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,Q
AAQ,EAAE,YAAY,EACtE,gBAAgB,EAAE,eAAe,EAAE,gBAAgB,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;
UAEvE,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,GAAG,EAAC,EAAE,OAAO,
SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;UAElE,OAAO,CAAC,W
AAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;OACjC;MAED,OAAO,MAAM,CAAC;EACb,CAAC;EAE
M,IAAM,kBAaKB,GAAiB;MAC9C,UAAU,EAAEiG,qBAAY;MACxB,WAAW,EAAE,MAAM;MACnB,SAAS,E
AAE3F,OAAK;MACHb,UAAU,EAAE,YAAGc;GAC7C;;EC/HD;;;;;;;;;;EakBA,IAAM4B,uBAAqB,GAAG,I
AAI,CAAC;EAC5B,IAAM,SAAS,GACIB,wBAAwB,CAACgE,YAAG,EAAEhE,uBAAqB,CAAC;;ECpBxD;;;
;;;;;;EAWBA,IAAI,OACI,CAAC;EAET,SAAS5B,OAAK,CAAC,OAAoB;MACjC,OAAO,GAAG,OAAO,CAAC,
IAAI,CAAC,KAAK,CAAC6F,YAAG,EAAE,IAAI,WAAW;UAC/C,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,
QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAEpE,IAAA,sBAAO,EAAE,o
BAAM,EAAE,kBAaK,CAAS;MAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;MACxB,IAAA,YAAC,CAAW;MAC
nB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAA
E,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAER,IAAA,
8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAy,EAAE,0CACM,CAAC;MAE9C,IAAI,aAAa,GAAG,IAAI,
CAAC;MACzB,IAAI,kBAaKB,EAAE;UACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;cAGxB,KAAK,
GAAG,UAAU,CAAC;cACnB,OAAO,GAAG,YAAY,CAAC;cACvB,aAAa,GAAGjG,qBAAY,CAAC,gBAAgB,C
ACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;WAC/C;OACF;MAED
A,qBAAY,CAAC,0BAA0B,CACnC,KAAK,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,C
AAC;MACxC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;MACvE,IAAM,UAAU,GAAGF,aAAI,C
AAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,E
AAE,KAAK,CAAC,KAAK,CAAC,CAAC;MActD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CA
AC,KAAK,CAAC,EAAE;UACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CA
AC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CAAC,GA
AG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;OACID;MAED,IAAI,kBAaKB,EAAE;;UAEtB,OAAO,C
AAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,IAAM,Q
AAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GA
AG,CAAC,KAAK,GAAG,QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,SA
AS,GAAiB;MACrC,UAAU,EAAEiG,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE7F,OAAK;MA
ChB,UAAU,EAAE,GAAuB;GACpC;;EC5FD;;;;;;;;;;EAmBO,IAAM,SAAS,GAAiB,uBAAuB,CAAC8F,YAA
G,CAAC;;ECnBnE;;;;;;;;;;EAmBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;ECnBrE;;;;;;;;;

;EAuBA,IAAI,QAE2D,CAAC;EAEhE,SAAS/F,OAAK,CAAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACgG,aAAI,EAAE,IAAI,aAAa;UACnD,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,IAAI,CACT,IAAkE;MAC7D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MAC/B,IAAA,YAAC,CAAW;MACnB,IAAM,GAAG,GAA G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACxC,IAA A,iBAAI,CAAU;MAErB,IAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC, CAAC;MACrD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,E AAE,EAAE;UACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,IA AI,CAAC,CAAC,CAAC,CAAC;OACpC;MACD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC ,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MACnE,IAAM,aAAa,GAAG,IAAI,UAAU,CAAC,I AAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;MAEtE,IAAM,GAAG,GAAG,OAAO,CAAC,U AAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACID,IAAM,KAAK,GAAG,OAAO,CAAC,S AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,QAAQ,CACJ,GAAG,E AAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,aAAa,EAAE,QAAQ,CAAC,MAAM,EACHe,Q AAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;MACHC,OAAO,GAAG,CAAC;EACb,C AAC;EAEM,IAAM,UAAU,GAAiB;MACtC,UAAU,EAAEA,aAAI;MACHB,WAAW,EAAE,MAAM;MACnB,SA AS,EAAEhG,OAAK;MACHB,UAAU,EAAE,IAAwB;GACrC;;ECjED;;;;;;;;;;;;;;EAsBA,IAAI,QAG6B,CAAC;EA EIC,SAASA,OAAK,CAAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiG,aAAI,E AAE,IAAI,aAAa;UACnD,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,MAAM;UA CN,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAEM,IAAM,IAAI,GAEmB,UAAU,EAAB;UA AvB,kBAAM,EAAE,oBAAO,EAAE,gBAAK;MAC3C,IAAA,YAAC,CAAW;MACZ,IAAA,WAAW,EAAE,qBAA M,CAAU;MAEiB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CA AC,CAAC,EAAE,CAAC;MAC/C,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC ,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MACnE,IAAM,WAAW,GAAG,CAAC,CAAC,KAAK,CAAC,KAA K,EAAE,CAAC;MACpC,WAAW,CAAC,WAAW,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC;M ACxC,IAAM,SAAS,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;M AC3D,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,E AAE,CAAC;MAC/D,IAAM,UAAU,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,OAAO,CAAC,CAAC; MAC5D,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC ,EAAE,CAAC;MAEjE,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE, QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,EAAE,MAAM,EAC9D,WAAW,EAAE,YAAY,CAAC ,CAAC;MAE/B,OAAO,CAAC,SAAS,EAAE,UAAU,CAAC,CAAC;EACjC,CAAC,CAAC;EAEL,IAAM,UAAU, GAAiB;MACtC,UAAU,EAAEA,aAAI;MACHB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEjG,OAAK;MACH B,UAAU,EAAE,IAAwB;GACrC;;ECnED;;;;;;;;;;;;;;EAqBA,IAAI,aAKyC,CAAC;EAE9C,SAASA,OAAK,CAAC ,OAAoB;MACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACKG,kBAAS,EAAE,IAAI,WAAW;UAC 3D,QAAQ;UACR,QAAQ;UACR,MAAM;UACN,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,SAAS,CACd,IAC0E;MAErE,IAAA,sBAAO,EAAE,oBAAM,EAA E,kBAAK,CAAS;MAC/B,IAAA,oBAAK,EAAE,8BAAU,CAAW;MAC5B,IAAA,mCAAa,EAAE,yBAAQ,EAAE, 2BAAS,EAAE,+BAAW,CAAU;MAEiD,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,kBAAU,EAAE, mBAA0B,CAAC;MAC5D,IAAA,kEAC2D,EAD1D,iBAAS,EAAE,gBAC+C,CAAC;MACIE,IAAM,QAAQ,GAC V,CAAC,KAAK,EAAE,SAAS,EAAE,QAAQ;UAC1B,WAAW,CAAqC,CAAC;MACtD,IAAM,OAAO,GACT,IA AI,UAAU,CAAC,IAAI,UAAU,CAACxG,aAAI,CAAC,cAAc,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC, MAAM,CAAC,CAAC;MAE5E,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC ,KAAK,CAAC,CAAC;MACtD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC, MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,IAAM,SAAS,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC, KAAK,CAAC,MAAM,CAAC,CAAC;MACtD,IAAM,OAAO,GAAG,SAAS,CAAC,EAAE,CAAC;MAE7B,IAAM ,cAAc,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;MACHe,IAAM,

YAAy,GAAG,cAAc,CAAC,EAAE,CAAC;MAEvC,IAAM,mBAAmB,GAAG,aAAa,KAAK,SAAS,GAAG,CAAC
,GAAG,CAAC,CAAC;MACHe,IAAI,UAAU,CAAC;MACf,QAAQ,QAAQ;UACd,KAAK,UAAU;cAcB,UAAU,G
AAG,CAAC,CAAC;cACf,MAAM;UACR,KAAK,SAAS;cACZ,UAAU,GAAG,CAAC,CAAC;cACf,MAAM;UAC
R,KAAK,MAAM;cACT,UAAU,GAAG,CAAC,CAAC;cACf,MAAM;UACR,KAAK,SAAS;cACZ,UAAU,GAAG,
CAAC,CAAC;cACf,MAAM;UACR;cACE,UAAU,GAAG,CAAC,CAAC;cACf,MAAM;OACT;MAED,aAAa,CA
CT,OAAO,EAAE,YAAy,GAAG,UAAU,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,KAAK,EAA
E,SAAS,EACIE,QAAQ,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,EAAE,OAAO,EACvD,KAAK,CAAC,KA
AK,CAAC,MAAM,GAAG,CAAC,EAAE,mBAAmB,EAAE,UAAU,EAAE,SAAS,EACIE,KAAK,CAAC,CAAC;
MAEX,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM,eAAe,GAAiB;MAC3C,UAAU,EAAEWg,kBAAS;MA
CrB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEIG,OAAK;MACHb,UAAU,EAAE,SAA6B;GAC1C;;EC5GD;;;
;;;;;;;;;;EaUBA,SAAS,MAAM,CACX,IAAsE;MAEjE,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;MA
C/B,IAAA,oBAAK,CAAW;MACiB,IAAA,iBAAI,CAAU;MAEnB,IAAI,IAAI,GAAG,CAAC,EAAE;UACZ,IAAI,
IAAI,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;OAC5B;MAED,IAAM,UAAU,GAAG,KAAK,CAAC,KAAK,
CAAC,IAAI,CAAC,CAAC;MACrC,IAAM,IAAI,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;MACHc,I
AAM,QAAQ,GAAa,IAAI,KAAK,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC;MAC/C,IAAI,QAAQ,GAAG,CAAC
,CAAC;MACjB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;UA
C7B,IAAI,CAAC,KAAK,IAAI,EAAE;cACd,QAAQ,CAAC,QAAQ,EAAE,CAAC,GAAG,KAAK,CAAC,KAAK,
CAAC,CAAC,CAAC,CAAC;WACvC;OACF;MACD,IAAM,IAAI,GAAiB,IAAI,KAAK,CAAC,UAAU,CAAC,C
AAC;MACjD,IAAM,KAAK,GAAG,IAAI,KAAK,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;
MACtC,IAAM,IAAI,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;MACjC,IAAI,CAAC,IAAI,CAA
C,GAAG,CAAC,CAAC;MACf,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,E
AAE,CAAC,EAAE,EAAE;UACpC,KAAK,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC;UACHb,IAAI,CAAC,CAA
C,CAAC,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,
EAAC,KAAK,OAAA,EAAE,IAAI,MAAA,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;OAcTe;MACD,O
AAO,IAAI,CAAC,GAAG,CAAC,UAAU,EAAe;cAAd,kBAAM,EAAE,gBAAK;UAAM,QAAC,EAAC,MAAM,Q
AAA,EAAE,KAAK,OAAA,EAAE,KAAK,EAAE,QAAQ,EAAC;OAAc,CAAC,CAAC;EAC3E,CAAC;EAEM,IA
AM,YAAy,GAAiB;MACxC,UAAU,EAAEmG,eAAM;MACiB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,
MAA0B;GACvC;;EC1DD;:::;;;;;;;;EaQBA,SAAS,SAAS,CAAC,IAAQD;MACtD,IAAA,iBAAC,EAAG,sBAAO,
CAAS;MACpC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,
KAAK,CAAC,CAAC;MACjD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;MAC
hD,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;MACHb,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,IAAM
,eAAe,GAAiB;MAC3C,UAAU,EAAEC,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,SAA6B
;GAC1C;;ECjCD;:::;;;;;;;;EAsHA;EACA,IAAM,aAAa,GAAmB;MACpC,SAAS;MACT,SAAS;MACT,UAAU;
MACV,SAAS;MACT,SAAS;MACT,YAAy;MACZ,aAAa;MACb,iBAAiB;MACjB,oBAAoB;MACpB,UAAU;MA
CV,UAAU;MACV,iBAAiB;MACjB,YAAy;MACZ,YAAy;MACZ,yBAAyB;MACzB,SAAS;MACT,UAAU;MA
CV,mBAAmB;MACnB,YAAy;MACZ,kBAakB;MACiB,2BAA2B;MAC3B,SAAS;MACT,WAAW;MACX,SAA
S;MACT,gBAAgB;MACHb,UAAU;MACV,mBAAmB;MACnB,WAAW;MACX,cAAc;MACd,iBAAiB;MACjB,o
BAAoB;MACpB,iBAAiB;MACjB,0BAA0B;MACiB,cAAc;MACd,cAAc;MACd,aAAa;MACb,kBAakB;MACiB,
cAAc;MACd,eAAe;MACf,UAAU;MACV,eAAe;MACf,SAAS;MACT,gBAAgB;MACHb,SAAS;MACT,aAAa;M
ACb,aAAa;MACb,UAAU;MACV,SAAS;MACT,aAAa;MACb,eAAe;MACf,cAAc;MACd,SAAS;MACT,yBAAyB
;MACzB,yBAAyB;MACzB,yBAAyB;MACzB,cAAc;MACd,YAAy;MACZ,cAAc;MACd,UAAU;MACV,WAAW
;MACX,SAAS;MACT,WAAW;MACX,UAAU;MACV,WAAW;MACX,aAAa;MACb,UAAU;MACV,WAAW;M
ACX,aAAa;MACb,oBAAoB;MACpB,aAAa;MACb,sBAAsB;MACTB,WAAW;MACX,WAAW;MACX,eAAe;MA
Cf,YAAy;MACZ,aAAa;MACb,SAAS;MACT,WAAW;MACX,aAAa;MACb,oBAAoB;MACpB,YAAy;MACZ,U
AAU;MACV,YAAy;MACZ,uBAAuB;MACvB,UAAU;MACV,kBAakB;MACiB,SAAS;MACT,SAAS;MACT,S
AAS;MACT,UAAU;MACV,UAAU;MACV,UAAU;MACV,eAAe;MACf,eAAe;MACf,YAAy;MACZ,eAAe;GAC
hB,CAAC;EAeF,KAA2B,UAAa,EAAb,+BAAa,EAAb,2BAAa,EAAb,IAAa,EAAE;MAArC,IAAM,YAAy,sBAA
A;MACrBC,uBAAc,CAAC,YAAy,CAAC,CAAC;:::;;;;;;;;EC3N/B;:::;;;

;;;EaiBA,sBA0CA;EAxCA,IAAM,GAAG,GAAGC,YAAG,EAAE,CAAC;EAEIB;;;EAGA;EACA,GAAG,CAAC,
YAAY;EACZ;EACA;EACA;EACA,uBAAuB,EAAE;;UAA,Y,sBAAA,WAAW,CAAC,QAAQ,CAAC,IAAI,UAA
U,CAAC;kBACvE,CAAC,EAAE,EAAE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,
EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC,EAAI,EAAE,EAAE,CAAC,EAAG,CAAC,EAAE,CAA
C;kBACrD,CAAC,EAAE,CAAC,EAAG,CAAC,EAAI,EAAE,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,
CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,GAAG,EAAE,EAAE,EAAE,EAAE,EAAE,EAAE;eACpD,CAAC,CA
AC,EAAA;;OAAA,CAAC,CAAC;EAET;;;EAGA;EACA,GAAG,CAAC,YAAY,CAAC,8BAA8B,EAAE;;;UAG/
C,IAAI,GAAG,CAAC,GAAG,CAAC,SAAS,CAAC,EAAE;cActB,sBAAO,KAAK,EAAC;WACd;UAED,IAAI;;;c
AGF,IAAI,cAAc,EAAE,CAAC,KAAK,CAAC,WAAW,CAAC,IAAI,iBAAiB,CAAC,CAAC,CAAC,CAAC,CAAC
;;;cAGjE,sBAAO,WAAW,CAAC,QAAQ,CAAC,IAAI,UAAU,CAAC;sBACzC,CAAC,EAAE,EAAE,EAAE,GAA
G,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,C
AAC,EAAG,EAAE,EAAE,CAAC,EAAI,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE
,CAAC;sBACpE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAI,CAAC,EAAI,CAAC,EAAE,EAAE,EAAE,EAAE,EA
AE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAG,GAAG,EAAE,EAAE,EAAE,CAAC,
EAAE,CAAC,EAAE,EAAE,EAAE,EAAE;mBACnE,CAAC,CAAC,EAAC;WACL;UAAC,OAAO,CAAC,EAAE;c
ACV,sBAAO,KAAK,EAAC;WACd;;;OACF,CAAC;;;;;;;ECzDF,IAAI,6BAA6B,GAAG,CAAC,WAAW;EACd,
EAAE,IAAI,UAAU,GAAG,OAAO,QAAQ,KAAK,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aA
Aa,CAAC,GAAG,GAAG,SAAS,CAAC;EACtH,EAAE,IAAI,OAAO,UAAU,KAAK,WAAW,EAAE,UAAU,GAA
G,UAAU,IAAI,UAAU,CAAC;EAC/E,EAAE;EACF,SAAS,6BAA6B,EAAE;EACxC,EAAE,6BAA6B,GAAG,6BA
A6B,IAAI,EAAE,CAAC;AACTE;EACA,SAAS,gBAAgB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,M
AAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,KAAK,CAAC,SAAS,gBAAg
B,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,M
AAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iBAAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,
MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iB
AiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,
MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,SAAS,iBAAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE
,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,IAAI,MAA
M,CAAC,OAAO,6BAA6B,GAAG,WAAW,CAAC,6BAA6B,CAAC,EAAE,CAAC,IAAI,mBAAmB,CAAC,kBAA
kB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAA
C,mBAAmB,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CA
AC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAAC,GAAG,C
AAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,IAAI,UAA
U,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAgB,CAAC,IAAI,KAAK,CAAC,SAAS,MAAM,CAAC,OAAO
,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAaKB,CAAC,KAAK,CAAC,IAAI,qBAAqB,CAAC,KAA
K,CAAC,IAAI,mBAAmB,CAAC,KAAK,CAAC,IAAI,oBAAoB,CAAC,KAAK,CAAC,kBAaKB,CAAC,OAAO,
MAAM,GAAG,QAAQ,CAAC,qBAAqB,CAAC,OAAO,aAAa,GAAG,UAAU,CAAC,mBAAmB,CAAC,OAAO,O
AAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,C
AAC,IAAI,GAAG,QAAQ,CAAC,oBAAoB,CAAC,CAAC,kBAaKB,EAAE,CAAC,mBAAmB,EAAE,CAAC,qB
AqB,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAwB,CAAC,EAAE,KAAK,CAAC,GAAG,sBAAsB,CAA
C,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,C
AAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAY,C
AAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,eAAe,CAAC,IAAI,KAAK,KAAK,CAAC,SAAS,CAAC,U
AAU,CAAgB,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAAqB,CAA
C,CAAC,eAAe,CAACC,IAAe,CAAC,OAAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAI,CAAC,eAAe,CAA
C,SAAS,CAAC,IAAG,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,
CAAC,MAAM,CAAC,MAAM,CAACC,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAA
C,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAA
C,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,

CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAC,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAA
C,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC
,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAA
C,MAAM,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CA
AC,OAAO,CAAC,KAAC,CAAC,GAAG,EAAC,CAAC,UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KA
AK,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CA
AC,GAAG,EAAE,EAAE,YAAY,UAAU,CAAC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAA
O,CAAC,IAAI,CAAC,CAAC,oBAAoB,CAAC,KAAC,CAAC,CAAC,KAAC,CAAC,SAAS,MAAM,CAAC,CAA
C,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAA
U,CAAC,OAAM,4BAA4B,CAAC,CAAC,IAAI,iBAAiB,CAAC,GAAG,CAAC,iBAAiB,CAACE,eAAyB,CAAC,
MAAM,CAAC,CAAC,CAAC,OAAO,CAAC,KAAC,CAAC,yGAAyG,CAAC,CAAC,MAAM,CAAC,CAACC,cA
AM,CAAC,MAAM,CAAC,iBAAiB,CAAC,OAAM,CAAC,KAAC,GAAG,oBAAoB,CAAC,CAAC,GAAG,OAAO
,IAAI,EAAE,WAAW,CAAC,CAAC,KAAC,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CA
AC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,G
AAG,OAAO,UAAU,GAAG,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CA
AC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,Q
AAQ,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,GAAG,OAAO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CA
AC,WAAU,CAAC,KAAC,GAAG,OAAO,SAAS,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,GA
AG,OAAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAAC,CAAC,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM
,EAAC,EAAC,CAAC,GAAG,OAAO,KAAC,GAAG,WAAW,CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAA
W,CAAC,OAAO,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,KAAC,CAAC,OAAO,CAAC,IAAI,CAAC,
OAAO,CAAC,KAAC,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,MAAC,CAAC,CAAC,KAAC
,GAAG,kBAaKB,EAAE,qBAaQB,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QA
AQ,CAAC,KAAC,CAAC,KAAC,GAAG,OAAO,QAAQ,GAAG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAA
C,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,GAAG,OAAO,UAAU,KAAC,WAAW,IAAI,UAAU,C
AAC,CAAC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,CAA
C,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,GAAG,CAAC,C
AAC,CAAC,EAAC,CAAC,KAAC,CAAC,eAAe,CAAC,GAAE,CAAC,GAAG,mBAAmB,CAAC,CAAC,KAAC,C
AAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACF,
EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,
CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,I
AAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAA
G,CAAC,KAAC,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,
GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,O
AAO,GAAG,EAAC,CAAC,KAAC,CAAC,KAAC,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,
cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAC,CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,IAA
I,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,UAAU
,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAC,
CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CA
AC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,S
AAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,
IAAI,CAAC,KAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAA
G,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,MA
AM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CA
AC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,IA
AI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAO,GAAG,mBAAmB,CAAC,CAAC,GAAG,OAAO,WAAW,GAAG,
WAAW,CAAC,CAACG,cAAM,CAAC,WAAW,CAACC,UAAqB,CAAC,YAAW,CAAC,CAAC,IAAI,GAAG,CA
AC,MAAM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,

GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAAa,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAAG,CAAC,QAAQ,CAAC,KAAK,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE,CAAC,GAAG,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,EAAC,CAAC,CAAmH,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG,OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAAiC,EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,KAAK,CAAC,KAAK,CAAgB,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QAAC,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,+BAA+B,CAAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,QAAQ,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EAAC,GAAG,GAAG,SAAS,EAAE,GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAakB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAakB,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,QAAQ,CAAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,CAAC,OAAO,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAAK,CAAC,CAAC,IAAI,KAAK,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,YAAY,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAK,CAAC,SAAS,IAAI,CAAC,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU,GAAG,QAAQ,CAAC,GAAG,UAAU,EAAE,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,KAAK,CAAC,CAAC,OAAO,UAAU,CAAC,OAAO,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,SAAC,CAAC,CAAC,CAAC,SAAS,iBAaiB,CAAC,IAAI,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,IAAI,MAAM,CAAC,GAAG,CAAC,cAAc,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,MAAM,EAAE,GAAG,EAAE,MAAM,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,OAAO,GAAG,CAAC,GAAG,EAAE,EAAE,CAAC,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAC,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,GAAE,CAAC,KAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,GAAG,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAE,CAAC,GAAG,EAAE,CAAC,KAAK,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,EAAC,CAAC,KAAI,CAAC,

IAAI,EAAE,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,KAAK,CAAC,EA
AE,EAAE,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,EAAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,Y
AAY,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,OAAO,GAAG,CAAC,iBAAiB,CAAC,gBAAgB,EAAE,CAAC,
GAAG,CAAC,cAAc,CAAC,CAAC,EAAE,CAAC,SAAS,iBAAiB,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CA
AC,eAAe,CAAC,CAAC,GAAG,EAAE,eAAe,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,QAAQ,C
AAC,MAAM,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,
CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GA
AG,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAA
C,CAAC,IAAI,EAAE,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,E
AAE,CAAC,CAAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,KAAI,CAAC,GAAG,CAAC,EAAE,
GAAG,CAAC,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,
EAAC,CAAC,KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,C
AAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAA
C,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,KAAK,GAAG,CAAC,EAAE,KAAK
,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,
CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CA
AC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,
GAAE,CAAC,KAAI,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,
EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GA
AG,CAAC,CAAC,EAAE,EAAE,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,
CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CA
AC,GAAE,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,QAAQ,CAA
C,SAAS,YAAY,CAAC,GAAG,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,OAAO,iBAAiB,CAAC,GAAG,CAA
C,gBAAgB,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,SAAS,eAAe,CAAC,GAAG,CAAC,CAAC,IAAI,G
AAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAA
C,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,C
AAC,EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,CAAC,IAAI
,GAAG,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CA
AC,EAAE,GAAG,CAAC,EAAE,GAAG,CAAC,KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,GAAG,EAAE,CAAC,
CAAC,KAAK,GAAG,CAAC,EAAE,KAAK,CAAC,GAAG,EAAE,CAAC,CAAC,KAAK,GAAG,EAAE,EAAC,C
AAC,OAAO,GAAG,CAAC,SAAS,kBAaKB,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,gBAAgB,EAAE,CAA
C,GAAG,CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,SAAS,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC
,GAAG,CAAC,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,SAAQ,C
AAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,OAAO,CAAC,M
AAM,CAAC,OAAO,CAAC,OAAO,CAAC,OAAO,CAAC,SAAS,0BAA0B,CAAC,GAAG,CAAC,CAAC,MAAM,
CAAC,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAK,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,C
AAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,C
AAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,C
AAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OA
AO,CAAC,IAAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,
WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,G
AAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,EAAC,CAA
C,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,EAAE,QAAQ,CAAC,GAAG,sBAAsB,CAAC,CAAC,UAA
U,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,CAAC,KAAI,CAA
C,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,EAAC,CAAC,KAA
I,CAAC,UAAU,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,KAAK,CAAC,S
AAS,CAAC,UAAU,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,GAAG,EAAE,UAAU,CAA
C,MAAM,YAAY,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,6NAA6N,CAAC,CAAC,GAAG,mBAAmB,CAA

C,CAAC,OAAO,CAAC,GAAG,CAAC,mHAAmH,EAAC,CAAC,MAAM,KAAK,CAAC,YAAY,CAAC,CAAC,C
AAC,CAAC,GAAG,UAAU,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,C
AAC,UAAU,CAAC,0BAA0B,CAAC,MAAM,CAAC,CAAC,IAAI,SAAS,CAAC,IAAI,YAAY,CAAC,EAAE,CA
AC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAmB,IAAI,aAAa,CAAC,EAAE,CAAsD,G
AAG,CAAC,sBAAsB,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,kBAakB,GAAE,C
AAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,
QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,QAAQ,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,
QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,QAAQ,CAA
C,CAAC,MAAM,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,KAAK,EAAE,EAAC,CA
AC,CAAC,oBAAoB,CAAC,YAAY,EAAC,CAAC,SAAS,WAAW,EAAE,CAAYB,GAAG,sBAAsB,CAAC,OAAO
,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,oBAAoB,C
AAC,UAAU,EAAC,CAA4E,SAAS,OAAO,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,
SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,S
AAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,C
AAC,MAAM,CAAC,CAAC,YAAY,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,C
AAC,oBAAoB,CAAC,aAAa,EAAC,CAAC,SAAS,WAAW,CAAC,EAAE,CAAC,CAAC,YAAY,CAAC,OAAO,C
AAC,EAAE,EAAC,CAAC,SAAS,YAAY,CAAC,EAAE,CAAC,CAAC,aAAa,CAAC,OAAO,CAAC,EAAE,EAAC
,CAAC,IAAI,eAAe,CAAC,CAAC,CAA+B,IAAI,qBAAqB,CAAC,IAAI,CAAC,SAAS,gBAAgB,CAAC,EAAE,C
AAC,CAAC,MAAM,CAAC,CAAC,sBAAsB,CAAC,qDAAqD,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAA
M,CAAC,wBAAwB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,CAAC,
SAAS,mBAAmB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAAwB,CAAC,CA
AC,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,GAAG,eAAe,EAAE,CAAC,CAAC,CA
A+F,GAAG,qBAAqB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBAAqB,CAAC,qBAAqB,CAAC,IAAI,CAAC,QAAQ,
GAAE,CAAC,CAAC,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,EAAE,CAAC,MAAM,CAAC,iBAAiB,CAA
C,CAAC,EAAE,CAAC,SAAS,KAAK,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,C
AAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,CAAC,KAAK,CA
AC,sBAAsB,CAAC,CAAC,IAAI,KAAK,EAAE,KAAK,CAAC,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,CAAC,
IAAI,CAAC,CAAC,KAAK,CAAC,IAAI,CAAc,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,IAAI,C
AAC,CAAC,IAAI,WAAW,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,MA
AM,CAAC,CAAC,SAAS,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,MAAM,CAAC,SAAS,CA
AC,UAAU,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,C
AAC,GAAG,CAAC,CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAA
O,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,QAA
Q,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,sCAAsC,CAAC,G
AAG,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EAAC,CAAC,SAAS,S
AAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAAC,CAAC,OAAO,I
AAI,UAAU,CAAC,UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAA
C,KAAI,CAAC,MAAK,iDAAiD,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC,GAAG,EAAC,CA
AC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,GAAG,kBAakB,EAAE,qBAAqB,CAAC,CAAC
,CAAC,GAAG,OAAO,KAAK,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,OAAO,K
AAK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,
CAAC,GAAG,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,C
AAC,OAAO,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,OAAO,SA
S,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CA
AC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,
CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,EAAC,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,CAAC,CA
AC,OAAO,OAAO,CAAC,OAAO,EAAE,CAAC,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,
CAAC,CAAC,CAAC,SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,

SAAS,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,MAAM,CAAC,KAAC,CAAC,GAAG,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,IAAI,gBAAgB,CAAC,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,OAAO,CAAC,sBAAsB,CAAC,CAAC,CAAC,UAAU,CAAC,GAAG,CAAC,EAAE,gBAAgB,CAAC,mBAAmB,CAAmB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,gBAAgB,CAAmB,EAAE,CAAC,SAAS,yBAAyB,CAAC,MAAM,CAAC,CAAC,eAAe,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,EAAE,CAAC,SAAS,sBAAsB,CAAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAAE,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAAyC,CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAAoB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,OAAO,KAAC,GAAG,UAAU,CAAC,CAAC,OAAO,KAAC,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAAoB,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,CAAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,iCAAiC,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,qDAAqD,CAAC,CAAC,CAAC,CAAC,OAAO,KAAC,CAAC,CAAC,gBAAgB,EAAE,CAAC,KAAC,CAAC,kBAAkB,CAAC,CAAC,OAAO,EAAE,CAAC,IAAI,UAAU,CAAC,CAAC,KAAC,CAAC,UAAU,CAAC,MAAK,WAAW,CAAC,CAAC,KAAC,CAAC,SAAS,EAAE,CAAC,EAAE,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,kCAAkC,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,cAAc,EAAE,CAAC,OAAO,CAAC,WAAW,GAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS,CAAC,CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAAC,EAAE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,GAAG,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,GAAG,EAAE,CAAC,CAAC,KAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,CAAC,KAAC,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,KAAC,CAAC,EAAE,CAAC,KAAC,CAAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAAC,KAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,KAAC,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAC,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAC,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAC,CAAC,GAAG,CAAC,KAAC,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,KAAC,CAAC,GAAG,CAAC,KAAC,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,EAAE,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,C

AAC,GAAG,CAAC,KAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,OA
AO,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CA
AC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GA
AG,CAAC,OAAO,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAA
C,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,KAAC,CAAC,EAAE,CAAC,UAAU,CAAC,GAAG,CAAC,YAAY,
CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,YAAY,CAAC,CAAC,CAAC,U
AAU,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CA
AC,YAAY,CAAC,EAAE,CAAC,UAAU,CAAC,CAAC,CAAC,YAAY,CAAC,EAAE,CAAC,WAAW,CAAC,EAA
E,CAAC,QAAQ,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CAAC,YAAY,CAAC,E
AAE,CAAC,WAAW,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,YAAY,CAAC,EAAE,CAAC,QAAQ,CA
AC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,CAAC,SAAS,CA
AC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,YAAY,CAAC,GAAG,CAAC,MAA
M,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAA
C,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,C
AAC,eAAe,CAAC,EAAE,CAAC,UAAU,CAAC,EAAE,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,SAAS,sBAA
sB,CAAC,IAAI,CAAC,KAAC,CAAC,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EAAE,C
AAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,CAAC,EAAE,KAAC,CAAC,CAAC,CAAC,OAAM,CAAC,EAA
E,CAAC,GAAG,KAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,KAAC,EAAE,UAAU,CAAC,KAAC
,CAAC,QAAQ,CAAC,IAAI,qBAAqB,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE
,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,GAAG,qBAAqB,EAAE,IAAI,CAAC,CAAC,IAAI,UAA
U,CAAC,OAAO,CAAC,eAAe,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,qBAAqB,CAAC,CA
AC,CAAC,CAAC,GAAG,UAAU,EAAE,qBAAqB,CAAC,CAAC,EAAE,KAAC,CAAC,eAAe,CAAC,CAAC,CA
AC,GAAG,KAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,MAA
M,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC,GAAG,GAAG,EAAE,CAAC,
CAAC,OAAO,GAAG,CAAC,eAAe,CAAC,MAAK,8CAA8C,CAAC,GAAG,CAAC,MAAM,CAAC,wBAAwB,C
AAC,CAAC,sBAAsB,CAAC,SAAS,UAAU,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,oFAA
oF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,iDAAiD,CAAC,iBAAiB,EAAE,CAAC,WAAW,CAAC,EAAE,
EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,C
AAC,OAAO,CAAC,MAAM,CAAC,SAAS,EAAE,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,CAAC,OA
AO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,OAAO,CAAC,MAAM,CAA
C,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,UAAU,CAAC,SAAS,YAAY,CAAC
,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,sFAAsF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,m
DAAmD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,CAAC,MAA
M,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,SAAS,aAAa,CAAC,WAAW,CAA
C,CAAC,GAAG,sBAAsB,CAAC,MAAK,uFAAuF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,oDAAoD,CAA
C,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,GAAG,OAAO,CAAC,CAAC,iBAAi
B,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,
CAAC,MAAM,CAAC,OAAO,CAAC,kBAAkB,CAAC,MAAM,EAAE,CAAC,CAAC,IAAI,OAAO,CAAC,CAAC
,aAAa,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,eAAe,CAAC,CA
AC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,EAAE,CAAC,CAAC,CAAC,OA
AO,CAAC,oBAAoB,GAAE,CAAC,CAAC,CAAC,WAAW,CAAC,UAAU,CAAC,IAAI,EAAE,CAAC,OAAO,CA
AC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,E
AAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAA
iB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,EAAE,CAAC,IAAI,OAAO,CAAC,EAAE,C
AAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,SAAS,CAA
C,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EA
AE,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAA
O,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,CAAC,CAAC,

OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,EAAE,CAAC,C
AAC,wBAAwB,CAAC,EAAE,CAAC,CAAC,qBAAqB,CAAC,CAAC,CAAC,CAAC,2CAA2C,CAAC,EAAE,EA
AC,CAAC,CAAC,UAAU,CAAC,UAAU,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,kBAakB,CAAC,EAAE,CA
AC,eAAe,CAAC,UAAU,EAAE,CAAC,eAAe,CAAC,UAAU,CAAC,MAAM,OAAO,CAAC,kBAakB,CAAC,MA
AM,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,GAAG,EAAE,GAAE,CAAC,GAAG,sBAAsB,
EAAE,aAAa,EAAE,CAAC,wBAAwB,GAAE,CAAC,CAAC,8BAA8B,CAAC,SAAS,EAAE,CAAC,QAAQ,CAAC
,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,C
AAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CA
AC,CAAC,CAAC,OAAO,CAAC,eAAe,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAA
E,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC
,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,CAAC,
UAAU,CAAC,CAAC,wBAAwB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,UAAU,CAAC
,SAAS,QAAQ,CAAC,CAAC,IAAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,OAAO,CAA
C,8BAA8B,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,K
AAK,CAAC,MAAM,CAAC,EAAC,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,UAAU,CAAC,OAAO,CAAC,8B
AA8B,CAAC,aAAa,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,YAAY,C
AAC,EAAC,CAAC,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,IAAI,CAAC,IAAI,OAAO,CAAC,QAAQ,CAA
C,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,OAAO,EAAE,OAAO,
CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,OAAO,CAAC,MAAM,EAAC,CAAC,CAAC,OAA
O,CAAC,QAAQ,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,aA
Aa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,
CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,aAAa,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC
,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IA
AI,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,OAAO
,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,c
AAc,CAAC,GAAE,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAA
O,GAAG,OAAO,CAAC,gBAAgB,CAAC,CAAC,IAAI,SAAS,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gB
AAgB,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAG,
EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,OAAO,CAAC,gB
AAgB,EAAC,CAAC,OAAO,CAAC,gBAAgB,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,iBAAiB,EAAE,OAA
O,CAAC,SAAS,CAAC,KAAK,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,C
AAC,GAAG,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,KAAI,CAAC,CAAC,k
BAakB,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,+BAA+B,CAAC,UAAU,CAAC,OAAO,OAAO,CAA
C,QAAQ,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAgB,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC
,MAAM,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,
MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,
MAAM,CAAC,OAAO,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,+BAA+B,CAAC,SAAS,IAAI,CAAC,CAAC,i
BAAiB,EAAE,CAAC,4CAA4C,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,GAAE,CAAC,O
AAO,CAAC,iBAAiB,EAAE,CAAC,4CAA4C,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,qBAAq
B,CAAC,SAAS,IAAI,CAAC,EAAE,CAAC,sBAAsB,CAAC,SAAS,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAA
M,CAAC,SAAS,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,I
AAI,GAAG,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,m
CAAmC,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAG,CAAC,CAAC,cAAc,CAAC,EAAE,CAA
C,CAAC,cAAc,CAAC,EAAE,aAAa,EAAE,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,QAAQ,CAAC,CA
AC,CAAC,YAAY,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,
CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,cAAc,CAAC,EAAC,CAAC,KAAI,CAAC,OAAO,CAAC,KAAK,CAA
C,yCAAyC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC,qCAAqC,EAAC,CAAC,O
AAO,CAAC,mCAAmC,CAAC,SAAS,CAAC,MAAM,CAAC,GAAG,GAAG,GAAG,6BAA6B,CAAC,CAAC,4CA

A4C,GAAE,CAAC,KAAC,GAAG,GAAG,GAAG,aAAa,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EAA
C,CAAC,KAAC,GAAG,GAAG,GAAG,eAAe,CAAC,CAAC,aAAa,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,C
AAC,KAAC,GAAG,GAAG,GAAG,YAAY,CAAC,CAAC,UAAU,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,C
AAC,KAAC,GAAG,GAAG,GAAG,cAAc,CAAC,CAAC,YAAY,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CA
AC,KAAC,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,IAAI,CAAC,GAAG,iBA
AiB,CAAC,iBAAiB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,
UAAU,EAAE,CAAC,OAAO,MAAM,CAAC,WAAU,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG,OAAO,CAAC
,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,C
AAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,UAAU,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CA
AC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAA
G,OAAO,CAAC,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,C
AAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,MAAM,CAAC,CAAC,IAAI,QAAQ,CAAC,M
AAM,CAAC,OAAO,EAAE,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,OAAO,CAAC,gB
AAgB,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,
MAAM,EAAC,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG,aAAa,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CA
AC,CAAC,YAAY,CAAC,EAAC,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,YAAY,UAAU,CAAC,OA
AO,MAAM,CAAC,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG,YAAY,CAAC,CAAC,OAAO,CAAC,kBAaKB,
CAAC,MAAM,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,gBAaGB,CAAC,CAAC,OAAO,CAAC,qBAaQB,CA
AC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAC,GAAG,CAAC,CAAC,IAAI,CAAC,MAAM,GAAG,cAAc,CAAC,C
AAC,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAC,CAAC,GAAG,CAAC,iCAaIC,C
AAC,GAAG,EAAC,CAAC,OAAO,CAAC,mCAAmC,CAAC,UAAS,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC
,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,yBAaYB,CAAC,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,
CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,OAAO,EAAC,CAAC,CAAC,GAAG,mBAaMB,CAAC,CAAC
,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,SAAS,IAAI,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IA
AI,CAAC,IAAI,CAAC,EAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,SAAS,IAAI,C
AAC,CAAC,MAAM,CAAC,OAAO,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MA
AM,CAAC,SAAS,IAAI,CAAC,EAAE,EAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,MAA
M,CAAC,WAAW,CAAC,MAAM,CAAC,qBAaQB,CAAC,EAAE,UAAU,CAAC,YAAY,CAAC,UAAU,CAAC,Y
AAY,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,oBAaOB,CAAC,UAAU,CAAC,IAAI,aAAa,CAAC,UAAU,CA
AC,2CAA2C,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC,IAAI,MAAM,CAAC,aAAa,CAAC,EAAC,
CAAC,CAAC,YAAY,CAAC,UAAU,CAAC,GAAG,OAAO,CAAC,aAAa,CAAC,MAAM,EAAE,CAAC,CAAC,C
AAC,OAAO,CAAC,oBAaOB,EAAE,CAAC,OAAO,CAAC,sBAaSB,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,
CAAC,EAAC,CAAC,GAAG,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,a
AAa,CAAC,GAAG,EAAE,CAAC,KAAC,OAAO,IAAI,CAAC,CAAC,YAAY,CAAC,SAAS,KAAC,CAAC,CAA
C,IAAI,CAAC,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,KAAC,CAAC,MAAM,WAAW,CAAC,GAAG,EAA
E,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,mBAaMB,CAAC,QAAQ,CAAC,QAAQ,CAAC,CA
AC,4BAA4B,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,MAAM,CAAC,q
BAaQB,CAAC,CAAC,mBAaMB,CAAC,SAAS,gBAaGB,EAAE,CAAC,OAAO,aAAa,CAAC,MAAM,CAAC,kB
AAkB,CAAC,CAAC,gBAaGB,CAAC,SAAS,gBAaGB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,SAA
S,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,kBAaKB,CAAC,CAAC,gB
AAgB,CAAC,SAAS,cAAc,CAAC,SAAS,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,o
BAaOB,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,QAAQ,CAAC,CAAC,QAAQ,CAAC,YAAY,CAAC,QAAQ,
CAAC,CAAC,kBAaKB,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAaKB,CAAC,E
AAC,CAAC,SAAS,YAAY,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,UAAU,CAAC,KAAC,CAAC,IAAI,CA
AC,IAAI,EAAC,CAAC,IAAI,mBAaMB,CAAC,GAAG,mBAaMB,CAAC,CAAC,mBAaMB,CAAC,UAAU,CAA
C,IAAI,CAAC,CAAC,OAAO,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,CAAC,G
AAG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,EAAC,CAAC,KAAC,GAAG,sBAaSB,CAAC,CAAC,m
BAaMB,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,+BAA+B,CAAC,E

AAC,CAAC,KAAK,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,CAAC,mBAAmB,CAAC,QAAO,CAAC,KAA
K,mBAAmB,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,QAAQ,CAAC,K
AAK,CAAC,CAAC,iBAAiB,EAAE,CAAC,iBAAiB,EAAE,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,OAAO,K
AAK,CAAC,SAAS,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,
CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,SAAS,gCAAgC,CAAC,cAAc,CAAC,YA
AY,CAAC,CAAC,GAAG,cAAc,EAAE,YAAY,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,6BAA6B,C
AAC,EAAC,CAAC,KAAK,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,K
AAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,KAAI,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,cA
Ac,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,EAAE,OAAO,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CA
AC,CAAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,
OAAO,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,KAAK,GAAE,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,M
AAM,CAAC,MAAM,CAAC,CAAC,IAAI,IAAI,CAAC,gBAAgB,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,O
AAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,SAAS,iDAAiD,CAAC,
cAAc,CAAC,SAAS,CAAC,EAAE,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GA
AG,IAAI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,C
AAC,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,CAAC,kBAaKB,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,C
AAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAA
G,GAAG,GAAG,WAAW,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,WAAW,CAAC,OAAM,C
AAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,CAAC,OAAO,CAAC,CAAC,MAAK,4CAA4C,CAAC,GAAG,C
AAC,KAAI,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,EAAE,
GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,IA
AI,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,C
AAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,CAAC,WAAW,CA
AC,GAAG,EAAE,CAAC,GAAG,IAAI,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,i
BAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,QAAQ,
CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC
,GAAG,QAAQ,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,4CAA4C,EAAE,CAAC,GAAG,OAAO,CAAC,IAAI,
CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CA
AC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,EA
AC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAA
C,gBAAgB,EAAE,CAAC,UAAU,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,
6BAA6B,EAAE,CAAC,GAAG,mBAAmB,CAAC,OAAOC,EAAa,CAAC,IAAI,EAAE,CAAC,MAAM,CAAC,OA
AO,SAAS,CAAC,qBAAqB,CAAC,CAAC,SAAS,mCAAmC,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,IAAI,WA
AW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,SAAS,EAAE,CAAC,IAAI,qBAAqB
,CAAC,WAAW,CAAC,IAAI,IAAI,CAAC,UAAU,CAAC,qBAAqB,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CA
AC,IAAI,EAAE,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,E
AAE,CAAC,CAAC,IAAI,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAA
C,CAAC,CAAC,CAAC,CAAC,CAAC,IAAG,CAAC,IAAI,GAAG,CAAC,yCAAyC,CAAC,KAAK,CAAC,qBAAq
B,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,YAAY,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,8CA
A8C,CAAC,EAAE,CAAC,IAAI,qBAAqB,CAAC,EAAE,CAAC,SAAS,gBAAgB,CAAC,MAAM,CAAC,GAAG,C
AAC,CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,GAAG,GAAG,CAAC,CAAC,M
AAM,EAAE,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,C
AAC,GAAG,CAAC,GAAG,MAAM,EAAE,GAAG,CAAC,CAAC,CAAC,GAAG,EAAE,CAAC,qBAAqB,CAAC,I
AAI,CAAC,MAAM,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,C
AAC,GAAG,CAAC,CAAC,CAAC,EAAE,IAAG,CAAC,OAAO,qBAAqB,CAAC,SAAS,qCAAqC,CAAC,KAAK,
CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,8CAA8C,CAAC,MAAM,CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,
IAAI,EAAE,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,EAAE,
CAAC,CAAC,8CAA8C,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC

,IAAI,YAAY,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,YAAY,CAAC,oBAAoB,CAAC,KA
AK,CAAC,CAAC,UAAU,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,KAAK,CAAC
,IAAI,CAAC,8CAA8C,CAAC,CAAC,SAAS,yBAAyB,EAAE,CAAC,OAAO,gBAAgB,EAAE,CAAC,MAAM,CA
AC,SAAS,yBAAyB,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,CAAC,MAAM,
CAAC,UAAU,CAAC,KAAK,GAAG,EAAE,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAA
C,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,SAAS,uBAAuB,CAAC,aAAa,CAAC,CAAC,IAAI,
OAAO,CAAC,yBAAyB,EAAE,CAAC,GAAG,aAAa,EAAE,OAAO,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,W
AAW,CAAC,UAAU,CAAC,GAAG,aAAa,CAAC,WAAW,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,IAAI,OAA
O,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,
OAAO,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iB
AAiB,CAAC,aAAa,CAAC,SAAS,CAAC,CAAC,IAAI,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC
,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,aAAa,CAAC,iBAAiB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,IA
AI,WAAW,CAAC,yBAAyB,CAAC,OAAO,CAAC,CAAC,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,C
AAC,OAAO,KAAK,CAAC,IAAI,QAAQ,CAAC,CAAC,cAAc,CAAC,CAAC,CAAC,uBAAuB,CAAC,UAAU,CA
AC,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,C
AAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,EAAC,CAAC,QAAQ,CAAC,aAAa,CAAC
,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,GAAE,CAAC,CAAC,4BAA4B,CAAC,UAAU,CAAC,GAAG,CAAC,
QAAQ,CAAC,8BAA8B,CAAC,CAAmD,QAAQ,CAAC,8BAA8B,CAAC,KAAI,CAAC,CAAC,CAAC,aAAa,CA
AC,EAAE,CAAC,SAAS,CAAC,SAAS,cAAc,CAAC,UAAU,CAAC,QAAQ,CAAC,CAAC,SAAS,sBAAsB,CAAC
,IAAI,CAAC,IAAI,CAAC,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,IAAI,CAAC,MAAM,CAAC,OAAO,KAA
K,CAAC,IAAI,IAAI,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,EAAE,IAAI,CAAC,CA
AC,CAAC,CAAC,OAAO,KAAK,CAAC,OAAO,IAAI,CAAC,IAAI,IAAI,CAAC,IAAI,QAAQ,CAAC,aAAa,CAA
C,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,cAAc,EAAE,
cAAc,EAAE,sBAAsB,CAAC,IAAI,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,Q
AAQ,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,UAAU,CAAC,UAAU,CAAC,QAAQ,
CAAC,QAAQ,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,CAA
C,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,CAAC,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,mBAAmB,CA
AC,SAAS,cAAc,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CA
AC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,cAAc,
EAAE,cAAc,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EA
AE,EAAC,CAAC,CAAC,CAAC,CAAC,8BAA8B,CAAC,UAAU,CAAC,OAAO,QAAQ,CAAC,cAAc,EAAE,QA
AQ,CAAC,mBAAmB,CAAC,mBAAmB,CAAC,CAAC,gBAAgB,CAAC,UAAU,CAAC,GAAG,CAAC,QAAQ,C
AAC,8BAA8B,EAAE,CAAC,CAAC,MAAM,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QA
AQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,aAAa,CA
AC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAA
E,CAAC,CAAC,IAAI,CAAC,cAAc,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,CAAC,QAAQ,EAAC,CAAC,CAAC
,CAAC,aAAa,CAAC,EAAE,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,IAAI,CAA
C,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,
GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,MAAM,GAAG,CAAC,eAAe,EAAE,eA
Ae,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,CAAC,CAAC,QAAQ,CAAC,cAAc,C
AAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,cAAc,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,CAAC,
CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAA
C,CAAC,eAAe,CAAC,CAAC,CAAC,iBAAiB,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC,aAAa,
CAAC,MAAM,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,uBAAuB,CAAC,SAAS,YAAY,CAAC,CAAC,
IAAI,cAAc,CAAC,SAAS,cAAc,CAAC,KAAK,CAAC,CAAC,EAAE,QAAQ,CAAC,cAAc,CAAC,QAAQ,CAAC,
mBAAmB,CAAC,YAAY,CAAC,QAAQ,CAAC,gBAAgB,EAAE,CAAC,YAAY,CAAC,WAAW,CAAC,KAAK,C
AAC,CAAC,QAAQ,CAAC,gBAAgB,EAAE,CAAC,EAAE,QAAQ,CAAC,eAAc,CAAC,CAAC,GAAG,YAAY,C
AAC,YAAY,CAAC,CAAC,YAAY,CAAC,iBAAiB,CAAC,cAAc,CAAC,YAAY,CAAC,MAAM,CAAC,gBAAgB,

CAAC,YAAY,CAAC,eAAe,CAAC,cAAc,CAAC,YAAY,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC,aAAa,CAA
C,IAAI,CAAC,YAAY,CAAC,CAAC,QAAQ,CAAC,4BAA4B,GAAE,CAAC,KAAI,CAAC,IAAI,IAAI,CAAC,CA
AC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,GAA
G,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,YAAY,CAAC,MAAM,EAAE,QAAQ,CAAC
,aAAa,CAAC,CAAC,CAAC,CAAC,eAAe,EAAE,YAAY,CAAC,eAAe,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC
,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,8BAA8B,CAAC,SAAS,YAAY,CAAC,gBAAgB,CAA
C,WAAW,CAAC,SAAS,CAAC,QAAQ,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,EAAE,CAAC,IAAI,OAAO,CA
AC,UAAU,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,WAAW,CA
AC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,iBAAiB,EAAE,CA
AC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,2BAA2B,CAAC,CAAC,CAAC,YAAY,CA
AC,SAAS,CAAC,gBAAgB,CAAC,SAAS,CAAC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,CA
AC,+BAA+B,CAAC,SAAS,YAAY,CAAC,CAAC,OAAO,YAAY,EAAE,KAAK,CAAC,CAAC,OAAO,CAAC,CA
AC,KAAK,CAAC,CAAC,OAAO,OAAO,CAAC,mCAAmC,CAAC,QAAQ,OAAO,YAAY,CAAC,CAAC,CAAC,o
BAAoB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,EAAE,CAAC,GAAG,MAA
M,EAAE,MAAM,CAAC,OAAM,SAAS,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,OAAM,SAAS,CAAC,OA
AO,MAAM,EAAE,MAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,iBAAiB,C
AAC,UAAU,CAAC,OAAO,QAAQ,CAAC,iBAAiB,EAAE,QAAQ,CAAC,uBAAuB,CAAC,CAAC,CAAC,SAAS,
eAAe,CAAC,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,eAAe,CAAC,QAAQ,CAAC,CAAC,CAAC,IAAI
,OAAO,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAA
C,CAAC,OAAO,OAAO,CAAC,SAAS,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAK,CAAC,MAAM,C
AAC,CAAC,IAAI,QAAQ,CAAC,SAAS,EAAE,CAAC,IAAI,OAAO,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,I
AAI,eAAe,CAAC,CAAC,CAAC,GAAG,YAAY,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,YAAY,EAAC,CAAC,i
BAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,eAAe,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,C
AAC,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CA
AC,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,CAAC,eAAe,CA
AC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,SAAS,qDAAqD,CAAC,YAAY,CAAC,YAAY,C
AAC,KAAK,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,E
AAE,CAAC,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,SAAS,sBAAs
B,CAAC,OAAO,CAAC,CAAC,OAAO,OAAO,CAAC,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,OAAO
,CAAC,IAAI,kBAAkB,CAAC,CAAC,CAAC,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,CAAC
,CAAC,OAAO,MAAM,GAAG,WAAW,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,SAAS,eAAe,CAAC,MAA
M,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,kBAAkB,CAAC,M
AAM,CAAC,GAAG,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,S
AAS,CAAC,CAAC,OAAO,UAAU,CAAC,SAAS,qBAAqB,CAAC,MAAM,CAAC,CAAC,OAAO,eAAe,CAAC,M
AAM,CAAC,CAAC,SAAS,kDAaKD,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,
CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,CAAC,CAAC,CAAC,GA
AG,MAAM,CAAC,eAAe,CAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,EAAE,CAAC,CAAC,CAA
C,KAAK,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAA
M,CAAC,GAAG,MAAM,CAAC,eAAe,EAAE,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,GAAG,MAAM,C
AAC,eAAe,CAAC,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,IAAI,kBAAkB,CAAC,KAAK,CAAC,GAAG,M
AAM,CAAC,WAAW,EAAE,MAAM,CAAC,WAAW,CAAC,KAAK,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,
CAAC,WAAW,CAAC,KAAK,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAAkB,CAAC,YAAY,CAAC,CAAC,
CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,G
AAG,MAAM,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,OAAM,CAAC,MAAM,
CAAC,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,MAAM,CAAC,GAAG,kBAAkB,CAAC,CA
AC,MAAM,CAAC,WAAW,CAAC,KAAK,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,M
AAM,EAAC,CAAC,CAAC,KAAK,GAAG,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,YAAY,CAAC,iBAAiB,EA
AE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,qDAAqD,CAAC,YAAY,CAAC,MA

AM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,KAAI,CAAC,OAAM,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,+CAA+C,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,OAAO,kDAakD,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,OAAO,kDAakD,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,KAAI,CAAC,OAAO,+CAA+C,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,CAAC,SAAS,qCAAqC,CAAC,SAAS,CAAC,EAAE,SAAS,2BAA2B,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE,SAAS,qCAAqC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,wBAAwB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,qBAAqB,CAAC,CAAC,SAAS,KAAK,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,KAAK,CAAC,OAAO,EAAC,CAAC,CAAC,GAAG,CAAC,qBAAqB,CAAC,CAAC,SAAS,IAAI,CAAC,KAAK,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,KAAK,CAAC,SAAS,EAAC,CAAC,CAAC,GAAG,CAAC,uBAAuB,CAAC,CAAC,SAAS,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,4BAA4B,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sCAAsC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,yBAAY,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAO,GAAG,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,mBAAmB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,iBAAiB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,oBAAoB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,eAAe,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,kBAakB,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,iCAAiC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,oBAAoB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,+BAA+B,CAAC,GAAG,CAAC,CAAC,OAAM,CAAC,EAAE,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,YAAY,CAAC,kBAakB,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,aAAa,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,iBAAiB,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,eAAe,CAAC,CAAC,CAAC,WAAW,CAAC,SAAS,WAAW,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,SAAS,CAAC,CAAC,EAAE,CAAC,SAAS,CAAC,UAAU,CAAC,CAAC,CAAC,QAAQ,CAAC,SAAS,KAAK,CAAC,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,OAAO,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,OAAO,GAAG,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,YAAY,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,SAAS,CAAC,GAAG,EAAC,CAAC,OAAO,MAAM,CAAC,CAAC,aAAa,CAAC,SAAS,MAAM,CAAC,sBAAsB,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,OAAO,CAAC,sBAAsB,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,eAAe,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,OAAO,MAAM,CAAC,CAAC,eAAe,CAAC,SAAS,GAAG,CAAC,sBAAsB,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,aAAa,EAAE,CAAC,IAAI,OAAO,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,UAAU,CAAC,sBAAsB,CAAC,OAAO,CAAC,sBAAsB,CAAC,YAAY,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,GAAG,OAAO,sBAAsB,CAAC,yBAAY,GAAG,WAAW,EAAE,sBAAsB,CAAC,yBAAY,B

CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,OAAO,EAAC,CAAC,OAAO,MAAM,CAAC,CAAC,kBAakB,CAAC,SAAS,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,CAAC,cAAc,EAAE,EAAE,CAAC,cAAc,CAAC,KAAK,CAAC,OAAO,EAAE,aAAa,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,aAAa,CAAC,CAAC,OAAO,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,aAAa,CAAC,SAAS,aAAa,CAAC,CAAC,GAAG,EAAE,CAAC,cAAc,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,IAAI,CAAC,GAAG,OAAO,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC,yBAayB,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,EAAE,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,WAAW,CAAC,SAAS,CAAC,KAAK,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAI,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,EAAE,CAAC,cAAc,CAAC,GAAG,OAAO,CAAC,kBAakB,CAAC,OAAO,OAAO,CAAC,kBAakB,CAAC,IAAI,CAAC,IAAI,KAAK,CAAC,OAAO,CAAC,KAAK,CAAC,qCAAqC,CAAC,KAAK,CAAC,CAAC,sCAAsC,CAAC,KAAK,CAAC,CAAC,iCAAiC,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,qBAAqB,CAAC,KAAK,CAAC,YAAY,CAAC,0BAA0B,CAAC,CAAC,+BAA+B,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,KAAK,CAAC,sBAAsB,EAAE,EAAE,EAAE,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,YAAY,CAAC,GAAG,EAAC,CAAC,CAAC,EAAC,CAAC,CAAC,oBAAoB,CAAC,SAAS,OAAO,CAAC,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,gBAAgB,CAAC,CAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,yBAayB,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,IAAI,WAAW,CAAC,KAAK,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,gBAAgB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,CAAC,EAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,kBAakB,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,KAAK,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,IAAG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,oCAAoC,CAAC,CAAC,SAAS,CAAC,WAAW,CAAC,kBAakB,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,UAAU,EAAE,CAAC,CAAC,IAAI,eAAe,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,oBAAoB,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,uBAAuB,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,iBAAiB,CAAC,oCAAoC,CAAC,eAAe,CAAC,CAAC,8BAA8B,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,yBAayB,CAAC,iBAAiB,EAAE,CAAC,CAAC,E

AAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,
EAAE,CAAC,CAAC,CAAC,CAAC,wBAAwB,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC
,CAAC,CAAC,CAAC,4BAA4B,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,
CAAC,CAAC,IAAI,MAAM,CAAC,qBAaQb,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,CAA
C,OAAO,CAAC,CAAC,GAAG,iBAAiB,CAAC,mBAAmB,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,aAAa,CAA
C,EAAE,CAAC,aAAa,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,OAAO,aAAa,CAAC,SAAS,gCAAgC,CAA
C,EAAE,CAAC,EAAE,CAAC,CAAC,OAAO,mCAAmC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,IAAI,QAAQ
,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CA
AC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,
MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,EAAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAAC,MAAM,GA
AG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBAAiB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,M
AAM,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,CAAC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,CAA
C,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,
IAAI,GAAG,CAAC,iBAAiB,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,O
AAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,YAAY,CAAC,GA
AG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,
GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAm
C,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,C
AAC,UAAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAA
mC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CA
AC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,GAAG,sBAAs
B,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IA
AI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,MA
AM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,iBAAiB,EAAE,CAAC,GAAG,CAAC,CAAC,CAA
C,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,C
AAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,
GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,SAAS,CAAC,EAAE,CAAC,gBAAgB,EAAE,CAAC,
GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,GAAG,EAAE,IAAG,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CA
AC,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,SAAS,oBAAoB,CAAC,OAAO,CAAC,CAAC,IAAI,OAA
O,CAAC,OAAO,CAAC,kBAakB,CAAC,GAAG,EAAE,CAAC,GAAG,OAAO,CAAC,OAAO,GAAE,CAAC,SA
AS,qBAaQb,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,IAAI,CAAC,UAAU,C
AAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,EAAC,CAAC,EAAC,CAAC,SAAS,WAAW,CA
AC,YAAY,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,qFAaqF,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,Y
AAY,EAAE,CAAC,GAAG,MAAM,CAAC,OAAO,GAAG,SAAS,CAAC,MAAK,iBAAiB,CAAC,GAAG,CAAC,
YAAY,CAAC,WAAW,CAAC,MAAK,iCAAc,CAAC,OAAO,CAAC,cAAc,CAAC,IAAI,CAAC,MAAM,CAAC,
CAAC,IAAI,SAAS,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,
CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,C
AAC,CAAC,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,YAAY,
CAAC,SAAS,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,YAAY,CAAC,WAAW,CAAC,CAAC,C
AAC,MAAM,CAAC,MAAM,CAAC,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,SAAS,CAAC,YAAY,CAAC,SA
AS,CAAC,iBAAiB,CAAC,YAAY,CAAC,iBAAiB,CAAC,gBAAgB,CAAC,YAAY,CAAC,WAAW,CAAC,CAAC
,IAAI,GAAG,CAAC,OAAO,CAAC,gBAAgB,EAAE,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,
CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,K
AAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OA
AO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,OAAO,CAA
C,gBAAgB,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CA
AC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAA
G,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,

CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,YAA Y,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,K
AAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,CA
AC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,CAAC,EAAE,EAAE,CAA
C,CAAC,CAAC,YAA Y,CAAC,QAAQ,CAAC,CAAC,IAAI,WAAW,CAAC,2BAA2B,EAAE,CAAC,IAAI,aAAa,
CAAC,WAAW,CAAC,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,
EAAE,CAAC,CAAC,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,IAAI,GAAG,CA
AC,CAAC,KAAK,CAAC,KAAK,CAAC,eAAe,CAAC,YAA Y,CAAC,YAA Y,CAAC,KAAK,CAAC,YAA Y,CAA
C,GAAG,CAAC,kBAaKB,CAAC,YAA Y,CAAC,WAAW,CAAC,WAAW,CAAC,YAA Y,CAAC,SAAS,CAAC,W
AAW,CAAC,YAA Y,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,CAAC,IA
AI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,WAAW,CAAC,GAAG,CAAC,YAA Y,CAAC,Y
AA Y,EAAC,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,UAAU,EAAE,CAAC,
OAAO,MAAM,CAAC,WAAU,CAAC,CAAC,SAAS,eAAe,CAAC,WAAW,CAAC,IAAI,CAAC,aAAa,CAAC,GA
AG,CAAC,CAAC,GAAG,OAAO,iBAAiB,GAAG,WAAW,CAAC,CAAC,GAAG,CAAC,qFAAqF,CAAC,CAAC,
OAAO,CAAC,CAAC,GAAG,CAAC,WAAW,CAAC,CAAC,GAAG,CAAC,mDAaD,CAAC,CAAC,OAAO,EA
AE,CAAC,IAAI,YAA Y,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,sBAAsB,GAAG,YAA Y
,CAAC,MAAM,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,OAAO,qCAAqC,CAAC,SAAS,CAAC,WAA
W,CAAC,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,CAAuB,IAAI,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAA
C,CAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,CAAC,GAAG,IAAI,EAAE,IAAI,EAAE,CAAC,CAAC,CAAC,CAA
C,SAAS,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,SAAS,EAAE,KAAK,CAAC,SAAS,CA
AC,iBAAiB,EAAE,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAA
C,IAAI,CAAC,EAAE,EAAE,CAAC,CAAC,GAAG,EAAC,CAAC,KAAI,CAAC,SAAS,CAAC,QAAO,CAAC,IA
AI,iBAAiB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,iBAAiB,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,EAA
E,CAAC,SAAS,EAAC,CAAC,KAAI,CAAC,SAAS,EAAE,SAAS,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,EA
AC,CAAC,IAAI,gBAaGB,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,
CAAC,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,gBAaGB,EAAE,
CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,WAAW,EAAE,CAAC,CAAC,CAAC,g
BAaGB,CAAC,iBAAiB,EAAE,CAAC,gBAaGB,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,gBAaGB,CAAC,IA
AI,OAAO,CAAC,gBAaGB,CAAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,O
AAO,CAAC,IAAI,YAA Y,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,SAAS,CAAC,SAAS,CAAC,iBAAiB,CAAC
,iBAAiB,CAAC,QAAQ,CAAC,QAAQ,CAAC,YAA Y,CAAC,aAAa,CAAC,WAAW,CAAC,gBAaGB,CAAC,GA
AG,CAAC,GAAG,CAAC,YAA Y,CAAC,YAA Y,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,YAA Y,CAAC,G
AAG,CAAC,aAAa,CAAC,WAAW,CAAC,YAA Y,CAAC,YAA Y,EAAC,CAAC,KAAI,CAAC,WAAW,CAAC,YA
AY,EAAC,CAAC,OAAO,CAAC,CAAC,SAAS,uBAaB,CAAC,GAAG,CAAC,sBAAsB,CAAC,OAAO,IA
AAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,OAAO,IAAI,cAAc,CAAC,OAAO,CAAC,IA
AAI,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,cAAc,CAAC,OAA
O,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,C
AAC,CAAC,GAAG,QAAQ,EAAE,CAAC,CAAC,MAAK,WAAW,CAAC,SAAS,kCAaK,EAAE,CAAC,GAAG,
mBAaB,CAAC,OAAO,GAAG,qBAaB,CAAC,OAAO,QAAQ,CAAC,0IAA0I,EAAC,CAAC,SAAS,4BAA4B,
CAAC,MAAM,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAA
C,kDAaD,CAAC,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,GAAG,sBAAsB,EAAE,aAAa,EAAE,EAAE,M
AAM,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,mCAaC,CAAC,CAAC,OAAO,WAAW,CA
AC,OAAO,CAAC,KAAK,GAAG,CAAC,sBAAsB,EAAE,kCAaK,EAAE,EAAE,MAAM,CAAC,CAAC,GAAG,
CAAC,cAAc,CAAC,MAAM,CAAC,mCAaC,CAAC,CAAC,OAAO,WAAW,CAAC,OAAO,CAAC,IAAI,IAAI,
CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,IAAI,GAAG,MAAM,C
AAC,CAAC,GAAG,CAAC,mCAaC,CAAC,MAAM,CAAC,sEAsE,CAAC,CAAC,OAAO,WAAW,CAAC,KA
AK,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,
CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,GAAG,CAAC,2BAA2B,CAAC,MAAM,CAAC,+BAA+B,CA
AC,CAAC,OAAO,WAAW,CAAC,MAAM,CAAC,GAAG,KAAK,CAAC,CAAC,kCAaK,GAAE,CAAC,OAAO,

AC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,6BAA6B,CAAC,GAAG,CAAC,qCAAqC,CAAC,GAAG,CAA
C,uBAAuB,CAAC,GAAG,CAAC,mCAAmC,CAAC,GAAG,CAAC,qCAAqC,CAAC,GAAG,CAAC,2BAA2B,CA
AC,GAAG,CAAC,gCAAgC,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,SA
AS,CAAC,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,UAAU,EAAE,MAAM,CAAC,YAAY,CAAC,CAAC,GAA
G,CAAC,oBAAoB,CAAC,GAAG,CAAC,qBAAqB,CAAC,GAAG,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CA
AC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,EAAE,CAAC,IAAI,kBAakB,CAAC,MAA
M,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAAoB,CAA
C,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C
AAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CA
AC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CA
AC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,C
AAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAakB,CAA
C,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAAo
B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,C
AAC,CAAC,CAAC,IAAI,gBAAgB,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC
,gBAAgB,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,E
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,C
AAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,M
AAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA
AC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,
MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC
,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAA
G,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,O
AAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,
CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA
I,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,
MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAA
C,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAA
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CA
AC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,M
AAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA
AC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC
,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GA
AG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,c
AAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,C
AAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,
OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,
SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA
AS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,C

AAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAA
C,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CA
AC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KA
AK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,C
AAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,
CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CA
AC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAA
c,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KA
AK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,C
AAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,
CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MA
AM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,
IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,M
AAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAA
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CA
AC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GA
AG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,
QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAA
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA
AI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAA
C,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CA
AC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAA
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC
,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CA
AC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,C
AAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAA
C,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAA
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CA
AC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,qBAAqB,CAAC,MAAM,CAAC,u
BAAuB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qBAAqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,M
AAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,
IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,C
AAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,
SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,C
AAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC
,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,
MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CA
AC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,C
AAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,M
AAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAA
I,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,O

AAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,C
AAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAA
C,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,
CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM
,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAA
C,CAAC,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,WAA
W,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAA
U,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAA
C,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAA
C,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MA
AM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I
AAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,C
AAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAA
C,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,
CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,E
AAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,
CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,
MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC
,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAA
C,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC
,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAA
C,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBA
AoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAA
C,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,
SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAA
M,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,C
AAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBA
AsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAA
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA
AI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CA
AC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC
,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,C
AAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAA
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,
MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC
,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAA
C,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAA
C,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA

C,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UA
AU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,C
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,K
AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,
OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA
S,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC
,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAA
C,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MA
AM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,C
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,
CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CA
AC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAA
U,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CA
AC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,C
AAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,
MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAA
M,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,C
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OA
AM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CA
AC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC
,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,C
AAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA
C,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ
,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU
,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAA
C,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAA
M,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA
AI,kBAAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAAkB,CAAC,MA
AM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,
OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,K
AAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CA
AC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,C
AAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,
CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CA
AC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CA
AC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,C

AAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC, OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM, CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI, KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC, OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SA AS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAA C,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,IAAI,CAAC,EAAE, KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAAY,CAAC,CAA C,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CA AC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MA AM,CAAC,YAAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAAY,CAAC,C AAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC, CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAA M,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CA AC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM ,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,E AAEE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC ,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAA K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,IAAI,iBAAiB,CA AC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBA AmB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS ,CAAC,CAAC,CAAC,IAAI,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,UAAU,CAAC,OAAM,CA AC,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC, EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC, CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAC,C AAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC ,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0 B,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CA AC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM,CAAC,8CAA8C,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,4 CAA4C,CAAC,MAAM,CAAC,8CAA8C,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAA E,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,+CAA+C,CAAC,MAAM,CAAC,iDAAiD,CAA C,CAAC,UAAU,CAAC,OAAM,CAAC,+CAA+C,CAAC,MAAM,CAAC,iDAAiD,CAAC,CAAC,MAAM,CAAC, KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,2CAA2 C,CAAC,MAAM,CAAC,6CAA6C,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,2CAA2C,CAAC,MAAM,CAAC, 6CAA6C,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,S AAS,CAAC,CAAC,CAAC,IAAI,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,UAAU,CAAC,OAAM ,CAAC,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CA AC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kCAAkC,CAAC,MAAM,CAAC,oCAA oC,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,MAA M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA AI,qCAAqC,CAAC,MAAM,CAAC,uCAAuC,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qCAAqC,CAAC,MA AM,CAAC,uCAAuC,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IA AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,yCAAyC,CAAC,MAAM,CAAC,2CAA2C,CAAC,CAAC,UAAU,CA AC,OAAM,CAAC,yCAAyC,CAAC,MAAM,CAAC,2CAA2C,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAA C,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,2BAA2B,CAAC,MAAM,C AAC,6BAA6B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,C AAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,

CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4BAA4B,CAAC,MAAM,CAAC,8BAA8B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,4BAA4B,CAAC,MAAM,CAAC,8BAA8B,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM,CAAC,8CAA8C,CAAC,CAAC,KAAC,CAAC,IAAI,8BAA8B,CAAC,MAAM,CAAC,gCAAgC,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,+BAA+B,CAAC,MAAM,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,OAAM,CAAC,qBAaqB,CAAC,SAAS,SAAS,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,qBAaqB,CAAC,UAAS,CAAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAuB,GAAG,eAAe,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,sBAAsB,CAAC,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAAC,WAAW,EAAE,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,KAAC,EAAE,CAAC,GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,IAAI,CAAC,GAAG,KAAC,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,EAAE,CAAC,OAAO,GAAE,CAAC,GAAAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,GAAE,CAAC,CAAC,CAAC,EAAE,CAAC,KAAC,CAAC,KAAC,GAAE,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,SAAS,IAAI,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,GAAG,QAAQ,EAAE,aAAa,EAAE,MAAM,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,aAAa,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,IAAI,UAAU,CAAC,MAAM,CAAC,CAAO,CAAC,GAAG,aAAa,CAAC,CAAE,KAAC,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAIc,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,KAAC,CAAC,KAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,EAAE,GAAE,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,aAAa,CAAC,KAAC,CAAC,OAAO,CAAC,UAAU,GAAE,CAAC,GAAG,EAAE,CAAC;AACn5mE;AACa;EACA,EAAE,OAAO,6BAA6B,CAAC,KAAC;EAC5C,CAAC;EACD,EAAE;EACF,CAAC,GAAG,CAAC;EAEH,cAAc,GAAG,6BAA6B;;;EChBzC,MAAM,kBAakB,GAAG,ikGAAikG;;;ECCnmG,IAAI,iBAAiB,GAAG,CAAC,WAAW;EACpC,EAAE,IAAI,UAAU,GAAG,OAAO,QAAQ,KAAC,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC,GAAG,GAAG,SAAS,CAAC;EACtH,EAAE,IAAI,OAAO,UAAU,KAA

K, WAAW, EAAE, UAAU, GAAG, UAAU, IAAI, UAAU, CAAC; EAC/E, EAAE; EACF, SAAS, iBAAiB, EAAE; EAC5
B, EAAE, iBAAiB, GAAG, iBAAiB, IAAI, EAAE, CAAC; AAC9C; EACA, IAAI, MAAM, CAAC, OAAO, iBAAiB, GAA
G, WAAW, CAAC, iBAAiB, CAAC, EAAE, CAAC, IAAI, mBAAmB, CAAC, kBAaKB, CAAC, MAAM, CAAC, OAAO
, CAAC, CAAC, IAAI, OAAO, CAAC, SAAS, OAAO, CAAC, MAAM, CAAC, CAAC, mBAAmB, CAAC, OAAO, CAA
C, kBAaKB, CAAC, OAAM, CAAC, CAAC, CAAC, IAAI, eAAe, CAAC, EAAE, CAAC, IAAI, GAAG, CAAC, IAAI, GA
AG, IAAI, MAAM, CAAC, CAAC, GAAG, MAAM, CAAC, cAAc, CAAC, GAAG, CAAC, CAAC, CAAC, eAAe, CAAC,
GAAG, CAAC, CAAC, MAAM, CAAC, GAAG, EAAC, CAAC, CAAC, IAAI, UAAU, CAAC, EAAE, CAAC, IAAI, WA
AW, CAAC, gBAAgB, CAAC, IAAI, KAAK, CAAC, SAAS, MAAM, CAAC, OAAO, CAAC, CAAC, MAAM, OAAO, C
AAC, CAAC, IAAI, kBAaKB, CAAC, KAAK, CAAC, IAAI, qBAaQB, CAAC, KAAK, CAAC, IAAI, mBAAmB, CAAC,
KAAK, CAAC, IAAI, oBAaOB, CAAC, KAAK, CAAC, kBAaKB, CAAC, OAAO, MAAM, GAAG, QAAQ, CAAC, qBA
AqB, CAAC, OAAO, aAAa, GAAG, UAAU, CAAC, mBAAmB, CAAC, OAAO, OAAO, GAAG, QAAQ, EAAE, OAAO,
OAAO, CAAC, QAAQ, GAAG, QAAQ, EAAE, OAAO, OAAO, CAAC, QAAQ, CAAC, IAAI, GAAG, QAAQ, CAAC, oB
AAoB, CAAC, CAAC, kBAaKB, EAAE, CAAC, mBAAmB, EAAE, CAAC, qBAaQB, CAAC, IAAI, eAAe, CAAC, EAA
E, CAAC, SAAS, UAAU, CAAC, IAAI, CAAC, CAAC, GAAG, MAAM, CAAC, YAAY, CAAC, CAAC, CAAC, OAAO,
MAAM, CAAC, YAAY, CAAC, CAAC, IAAI, CAAC, eAAe, CAAC, CAAC, OAAO, eAAe, CAAC, IAAI, KAAK, KAA
K, CAAC, SAAS, CAAC, UAAU, CAAG, IAAI, MAAM, CAAC, IAAI, QAAQ, CAAC, GAAG, mBAAmB, CAAC, CAA
C, GAAG, qBAaQB, CAAC, CAAC, eAAe, CAACL, IAAe, CAAC, OAAO, CAAC, eAAe, CAAC, CAAC, IAAG, CAAC,
KAAI, CAAC, eAAe, CAAC, SAAS, CAAC, IAAG, CAAC, KAAK, CAAC, SAAS, UAAU, CAAC, QAAQ, CAAC, MAA
M, CAAC, CAAC, GAAG, CAAC, MAAM, CAAC, MAAM, CAACC, EAAa, CAAC, GAAG, CAAC, QAAQ, CAAC, QA
AQ, CAACD, IAAe, CAAC, QAAQ, CAAC, QAAQ, CAAC, WAAW, CAAC, CAAC, QAAQ, CAAC, CAAC, OAAO, M
AAM, CAAC, cAAc, CAAC, CAAC, QAAQ, CAAC, MAAM, CAAC, IAAI, CAAC, MAAM, CAAC, CAAC, CAAC, UA
AU, CAAC, SAAS, UAAU, CAAC, QAAQ, CAAC, CAAC, IAAI, GAAG, CAAC, KAAK, CAAC, QAAQ, CAAC, IAAI, C
AAC, CAAC, GAAG, CAAC, GAAG, CAAC, MAAM, CAAC, CAAC, GAAG, CAAC, IAAI, UAAU, CAAC, GAAG, EA
AC, CAAC, MAAM, CAAC, GAAG, CAAC, MAAM, CAAC, CAAC, OAAO, GAAG, CAAC, CAAC, GAAG, OAAO, C
AAC, MAAM, CAAC, CAAC, MAAM, CAAC, CAAC, CAAC, CAAC, WAAW, CAAC, OAAO, CAAC, MAAM, CAAC,
CAAC, CAAC, CAAC, CAAC, OAAO, CAAC, KAAK, CAAC, GAAG, EAAC, CAAC, UAAU, CAAC, OAAO, CAAC,
MAAM, CAAC, CAAC, KAAK, CAAC, CAAC, CAAC, CAAC, OAAO, CAAC, IAAI, CAAC, CAAC, mBAAmB, CAAC
, SAAS, EAAE, CAAC, CAAC, GAAG, EAAE, EAAE, YAAY, UAAU, CAAC, CAAC, CAAC, MAAM, EAAE, CAAC, C
AAC, CAAC, CAAC, OAAO, CAAC, IAAI, CAAC, CAAC, oBAaOB, CAAC, KAAK, CAAC, CAAC, KAAK, CAAC, SA
AS, MAAM, CAAC, CAAC, OAAO, CAAC, MAAM, CAAC, CAAC, MAAM, EAAC, CAAC, CAAC, MAAM, CAAC, S
AAS, CAAC, CAAC, UAAU, CAAC, OAAM, 4BAA4B, EAAC, CAAC, KAAK, GAAG, oBAaOB, CAAC, CAAC, GAA
G, OAAO, IAAI, EAAE, WAAW, CAAC, CAAC, KAAK, CAAC, SAAS, UAAU, CAAC, CAAC, CAAC, CAAC, OAAO, I
AAI, CAAC, CAAC, CAAC, EAAC, CAAC, UAAU, CAAC, SAAS, UAAU, CAAC, CAAC, CAAC, CAAC, IAAI, IAAI, C
AAC, GAAG, OAAO, UAAU, GAAG, UAAU, CAAC, CAAC, OAAO, IAAI, UAAU, CAAC, UAAU, CAAC, CAAC, CA
AC, CAAC, CAAC, IAAI, CAAC, IAAI, CAAC, CAAC, CAAC, QAAQ, CAAC, CAAC, MAAM, CAAC, OAAO, IAAI, G
AAG, QAAQ, CAAC, CAAC, OAAO, IAAI, CAAC, CAAC, GAAG, OAAO, UAAU, EAAE, WAAW, CAAC, CAAC, UA
AU, CAAC, WAAU, CAAC, KAAK, GAAG, OAAO, SAAS, EAAE, WAAW, CAAC, CAAC, UAAU, CAAC, UAAS, CA
AC, GAAG, OAAO, IAAI, GAAG, UAAU, CAAC, CAAC, KAAK, CAAC, SAAS, MAAM, CAAC, CAAC, IAAI, CAAC,
MAAM, EAAC, EAAC, CAAC, GAAG, OAAO, KAAK, GAAG, WAAW, CAAC, CAAC, GAAG, OAAO, OAAO, GAA
G, WAAW, CAAC, OAAO, CAAC, EAAE, CAAC, OAAO, CAAC, GAAG, CAAC, KAAK, CAAC, OAAO, CAAC, IAAI,
CAAC, OAAO, CAAC, KAAK, CAAC, OAAO, QAAQ, GAAG, WAAW, CAAC, QAAQ, CAAC, MAAK, CAAC, CAAC
, KAAK, GAAG, kBAaKB, EAAE, qBAaQB, CAAC, CAAC, GAAG, qBAaQB, CAAC, CAAC, eAAe, CAAC, IAAI, CA
AC, QAAQ, CAAC, KAAI, CAAC, KAAK, GAAG, OAAO, QAAQ, GAAG, WAAW, EAAE, QAAQ, CAAC, aAAa, CAA
C, CAAC, eAAe, CAAC, QAAQ, CAAC, aAAa, CAAC, IAAG, CAAC, GAAG, UAAU, CAAC, CAAC, eAAe, CAAC, WA
AU, CAAC, GAAG, eAAe, CAAC, OAAO, CAAC, OAAO, CAAC, GAAG, CAAC, CAAC, CAAC, eAAe, CAAC, eAAe,
CAAC, MAAM, CAAC, CAAC, CAAC, eAAe, CAAC, WAAW, CAAC, GAAG, CAAC, CAAC, CAAC, EAAC, CAAC, K
AAI, CAAC, eAAe, CAAC, GAAE, CAAC, CAAC, KAAK, CAAC, SAAS, GAAG, CAAC, CAAC, IAAI, GAAG, CAAC, I
AAI, cAAc, CAAC, GAAG, CAAC, IAAI, CAAC, KAAK, CAAC, GAAG, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC

,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,U
AAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,K
AAK,CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAA
I,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CA
AC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,C
AAC,IAAI,CAAC,KAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,
GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,
MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,
CAAC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,I
AAI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAQ,IAAI,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,EAAE,OAA
O,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,E
AAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,IAAI,eAAe,CAAC,CAAC,GA
AG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,
GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,C
AAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAAa,CAAC,CAAC,WAAW,CAAC,MAAM
,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAA
C,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG,OAAO,WA
AW,GAAG,QAAQ,CAAC,CAAC,KAAC,CAAC,iCAAiC,EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,KAAC,CAA
C,KAAC,CAAgB,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,
KAAC,CAAC,oBAAoB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QAAQ,CAAC,KAAC,CAAC,CAAC,IAAI,IA
AI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,+BAA+B,CAAC,KA
AK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAC,CAAC,KAAC,CAAC,UAAU,CAAC,QA
AQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,QAAQ,CAAC,SAAS,GAAG,CAAC,CA
AC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EAAE,GAAG,GAAG,SAAS,EAAE,GAAG,G
AAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,CAAC,CAA
C,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAA
C,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,C
AAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAakB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,
CAAC,CAAC,CAAC,SAAS,kBAakB,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,QAAQ,CAAC,OAAO
,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,CAAC,OAAO,OAAO,CAAC,GAAG,CAAC,
CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAAC,CAAC,CAAC,IAAI,KAAC,CAAC,EAAE
,CAAC,IAAI,KAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,
CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,QAA
Q,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,GAAG,KAAC,GAAG,CAAC,CAAC,KAAC,
CAAC,SAAS,EAAE,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,CAAC,EAA
C,CAAC,KAAC,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,IA
AI,GAAG,CAAC,IAAI,CAAC,KAAC,CAAC,IAAI,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,kBAakB,CAAC
,GAAG,CAAC,CAAC,GAAG,KAAC,GAAG,CAAC,CAAC,YAAY,CAAC,KAAC,CAAC,CAAC,OAAO,GAAG,
CAAC,SAAS,KAAC,CAAC,KAAC,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,QA
AQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAC,CAAC,SAAS,IAAI,CAAC,CAAC,OAAO,I
AAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU,GAAG,QAAQ,CAAC,GAAG,UAAU,EAA
E,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,KAAC,CAAC,CAAC,OAAO,UAAU,CAAC,
OAAO,KAAC,CAAC,KAAC,CAAC,UAAU,CAAC,QAAQ,CAAC,SAAc,CAAC,CAAC,CAAC,IAAI,WAAW,C
AAC,OAAO,WAAW,GAAG,WAAW,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,SAAS,i
BAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,IAAI,MAAM,CAAC,GAAG,CAAC,cAAc,CAA
C,IAAI,MAAM,CAAC,GAAG,CAAC,MAAM,IAAI,CAAC,MAAM,CAAC,EAAE,EAAE,MAAM,EAAE,MAAM
,CAAC,CAAC,EAAE,MAAM,CAAC,GAAG,MAAM,CAAC,GAAG,CAAC,EAAE,EAAE,IAAI,CAAC,QAAQ,E

AAE,WAAW,CAAC,CAAC,OAAO,WAAW,CAAC,MAAM,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,CAAC,
MAAM,CAAC,CAAC,CAAC,KAAI,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,MAAM,GAAG,CAAC,MAAM,C
AAC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,CAAC,GAAG,
CAAC,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EA
AE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,
GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,CAAC,C
AAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,
CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,E
AAE,GAAG,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,GAAE,CAAC,KAAI,CAAC,EAAE,CAAC,CAAC,EAAE
,CAAC,CAAC,GAAG,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,IAAI,CAAC,GAA
G,EAAE,CAAC,CAAC,GAAE,CAAC,GAAG,EAAE,CAAC,KAAK,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC
,YAAY,CAAC,EAAE,EAAC,CAAC,KAAI,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,EA
E,MAAM,CAAC,YAAY,CAAC,KAAK,CAAC,EAAE,EAAE,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,E
AAC,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,YAAY,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,OAA
O,GAAG,CAAC,iBAAiB,CAAC,MAAM,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,EAAE,CAAC,SAAS,iBAAi
B,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,GAAG,EAAE,eAAe,CAAC,CAAC,CA
AC,CAAC,OAAO,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,eAAe
,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EA
AE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,
EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,IAAI,EAAE,CAAC,GAAG,CAAC,UAAU,CAAC,EA
E,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAAC,E
AAE,CAAC,KAAI,CAAC,GAAG,CAAC,EAAE,GAAG,CAAC,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,M
AAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,EAAC,CAAC,KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,CAA
C,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAA
G,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,G
AAE,CAAC,KAAK,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,C
AAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAA
C,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,
EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,KAAI,CAAC,GAAG,MAAM,CAAC,CAAC,E
AAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CA
AC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,EAAE,CAAC,IAAI,C
AAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MA
AM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,
CAAC,CAAC,OAAO,MAAM,CAAC,QAAQ,CAAC,SAAS,YAAY,CAAC,GAAG,CAAC,MAAM,CAAC,eAAe,C
AAC,CAAC,OAAO,iBAAiB,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,SAAS,k
BAkB,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,EA
C,CAAC,SAAS,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,GAAG,CAAC,CAAC,QAAQ,CAAC,CAAC,
CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,SAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CA
AC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,O
AAO,CAAC,SAAS,0BAA0B,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,OAAO
,CAAC,CAAC,KAAK,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,M
AAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IA
AI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAA
C,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,WAAW,CAAC,GAAG,CAAC,
CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,
CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CA
AC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,EAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB
,CAAC,EAAE,QAAQ,CAAC,IAAI,SAAS,CAAC,IAAI,YAAY,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,

CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,aAAa,CAAC,EAAE,CAA8B,UAAU,CAAC,IAAI,CAAC,CAAC,
IAAI,CAAC,UAAU,CAAC,kBAakB,GAAE,CAAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,GAAG,
MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,QAAQ,CAAC,EAAE,UAAU,CAAC,
MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,MAAM,CAA
C,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,KAAC,EA
AE,EAAE,CAAC,CAAC,oBAAoB,CAAC,YAAY,EAAE,CAAC,SAAS,WAAW,EAAE,CAAYB,oBAAoB,CAAC,
UAAU,EAAE,CAAC,SAAS,OAAO,EAAE,CAAC,oBAAoB,CAAC,UAAU,EAAE,CAAC,SAAS,OAAO,EAAE,C
AAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,U
AAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,M
AAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,K
AAK,EAAE,EAAE,CAAC,CAAC,oBAAoB,CAAC,aAAa,EAAE,CAAC,SAAS,WAAW,CAAC,EAAE,CAAC,CA
AC,YAAY,CAAC,OAAO,CAAC,EAAE,EAAE,CAAC,SAAS,YAAY,CAAC,EAAE,CAAC,CAAC,aAAa,CAAC,
OAAO,CAAC,EAAE,EAAE,CAAC,IAAI,eAAe,CAAC,CAAC,CAA+B,IAAI,qBAAqB,CAAC,IAAI,CAAC,SA
S,gBAAgB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAAwB,CAAC,CAAC,C
AAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAE,CAAC,CAAC,SAAS,mBAAmB,CAAC,EAAE,CAA
C,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAAwB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAAwB,
CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,eAAe,EAAE,CAAC,CAAC,CAA+F,GAAG,qBAAqB,CAAC,CAAC,I
AAI,QAAQ,CAAC,qBAAqB,CAAC,qBAAqB,CAAC,IAAI,CAAC,QAAQ,GAAE,CAAC,CAAC,CAAC,MAAM,
CAAC,iBAAiB,CAAC,CAAC,EAAE,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,EAAE,CAAC,SAAS,KAAC,
CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CA
AC,IAAI,EAAE,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,IAAI,CAA
c,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,IAAI,CAAC,CAAC,IAAI,WAAW,CAAC,YAAY,CA
AC,IAAI,CAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,SAAS,SAAS,CAAC,GAA
G,CAAC,MAAM,CAAC,CAAC,OAAO,MAAM,CAAC,SAAS,CAAC,UAAU,CAAC,GAAG,CAAC,UAAU,CAA
C,MAAM,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,aAAa,CAAC,
uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,C
AAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,C
AAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,wBAAwB,CAAC,GAAG,CAAC,SAAS,CAAC,cAAc,CAAC,CAA
C,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EAAE,CAAC,SAAS,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAA
C,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,GA
AG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,MAAK,iDAAiD,CAAC,CAA
C,MAAM,GAAG,CAAC,CAAC,KAAC,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GA
AG,CAAC,UAAU,GAAG,kBAakB,EAAE,qBAAqB,CAAC,CAAC,CAAC,GAAG,OAAO,KAAC,GAAG,UAAU,
EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,OAAO,KAAC,CAAC,cAAc,CAAC,CAAC,WAAW,CA
AC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,IAAI,CA
AC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,CAAC,OAAO,QAAQ,CAAC,aAAa,CAAC,EAA
E,CAAC,CAAC,CAAC,KAAC,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,K
AAI,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAA
C,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,EA
AC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,OAAO,EAAE,CAA
C,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,SAAS,UAAU,EAAE,CA
AC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,eAAe,CAAC,QAAQ,CAAC,MAAM,CA
AC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,OAAO,CAA
C,UAAU,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,M
AAM,CAAC,CAAC,SAAS,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,CAAC,mBAAmB,CAA
mB,EAAE,CAAC,gBAAgB,CAAmB,CAAC,CAAC,SAAS,yBAAyB,CAAC,MAAM,CAAC,CAAC,eAAe,CAAC,
MAAM,CAAC,UAAU,CAAC,EAAE,CAAC,SAAS,sBAA sB,CAAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAA
E,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI

,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAAyC,
CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC
,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAAoB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc
,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,OAAO,KAAC,GAAG,UAAU,CAAC,CAAC,OAAO,KA
AK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,C
AAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAAoB,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,C
AAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,iCAAiC,CAAC,MAAM,CAAC,
CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CA
AC,CAAC,KAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,
CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,IAAI,CAAC,eA
Ae,CAAC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,qDAAqD,CAAC,CAAC,C
AAC,CAAC,OAAO,KAAC,CAAC,CAAC,gBAAgB,EAAE,CAAC,KAAC,CAAC,kBAAkB,CAAC,CAAC,OAA
M,EAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS,CAAC,CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,CAA
C,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAAC,EAAE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CAAC,C
AAC,QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,GAAG,
OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAAS,CA
AC,GAAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,Q
AAQ,CAAC,GAAG,EAAC,CAAC,CAAC,KAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,CAA
C,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,KAAC,GAAE,C
AAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,IA
AI,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,yBAAyB,EAAE,CAAC,OAAO,MAAM,CA
AC,MAAM,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,
CAAC,MAAM,CAAC,UAAU,CAAC,KAAC,GAAG,EAAE,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAA
M,CAAC,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,SAAS,uBAAuB,CAAC,aAAa,CAA
C,CAAC,IAAI,OAAO,CAAC,yBAAyB,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,GAAG,aAAa,CAAC,
WAAW,CAAC,CAAC,OAAO,KAAC,CAAC,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC,CA
AC,OAAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,OAAO,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO
,CAAC,CAAC,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iBAAiB,CAAC,aAAa,CAAC,SAAS,CAAC,CAAC,IA
AI,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,aAAa,C
AAC,iBAAiB,CAAC,CAAC,KAAC,CAAC,CAAC,IAAI,WAAW,CAAC,yBAAyB,CAAC,OAAO,CAAC,
CAAC,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,OAAO,KAAC,CAAC,IAAI,QAAQ,CAAC,CA
AC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,SAAS,C
AAC,SAAS,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CA
AC,CAAC,GAAG,IAAI,GAAG,CAAC,EAAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAAC,MAAM,GAAG,CAAC,
CAAC,GAAG,CAAC,GAAG,EAAE,iBAAiB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC
,MAAM,CAAC,EAAC,CAAC,KAAC,CAAC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,OA
AO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,IAAI,GAAG,
CAAC,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,
CAAC,MAAM,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,YAAY,CAAC,GAAG,CAAC,CAAC,O
AAO,GAAG,CAAC,CAAC,KAAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,CAA
C,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,CAAC,U
AAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,EAAE,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CA
AC,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CA
AC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,GAAG,CAA
C,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,GAAG,EAAE,CAAC,C
AAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,
CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,SAAS,CAAC,EAAE,CAAC,MAAM,CAAC,G
AAG,CAAC,CAAC,CAAC,EAAC,CAAC,GAAG,EAAE,IAAG,CAAC,MAAM,CAAC,IAAI,EAAE,CAAC,CAA

C,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,SAAS,eAAe,EAAE,CAAC,OAAO,CAAC,CAAC,SAAS,aAAa,EA
AE,CAAC,OAAO,EAAE,CAAC,SAAS,QAAQ,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,iBAaiB,EAAE,EA
AE,CAAC,CAAC,CAAC,KAAK,CAAC,OAAO,KAAK,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,
IAAI,EAAE,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CA
AC,OAAO,WAAW,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KA
AK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAA
K,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,
EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,E
AAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EA
AE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAA
E,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,
CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,MAAM,C
AAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CA
AC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CA
AC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CA
AC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CA
AC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAA
C,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,
OAAO,MAAM,CAAC,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,
CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,
CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,C
AAC,KAAK,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CA
AC,KAAK,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,IAAI,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,
KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,O
AAO,UAAU,CAAC,KAAK,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,KA
AK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,IAAI,CAAC,KAAK,
CAAC,CAAC,OAAO,OAAO,CAAC,KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,
KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,E
AAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GA
AG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,KAAK,GA
AG,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,EAA
E,CAAC,KAAK,CAAC,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,
CAAC,CAAC,GAAG,OAAO,SAAS,GAAG,QAAQ,CAAC,OAAO,SAAS,CAAC,qBAaQB,CAAC,EAAE,CAAC,
CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,aA
Aa,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,uBAauB,CAAC,
GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,eAAe,CA
AC,GAAG,CAAC,aAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,EAAE,CAAC,I
AAI,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAO,CAAC,kBAaKB,CAAC,M
AAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA
C,OAAO,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GA
AG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAawB,CAAC,MAAM,CAA
C,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAO,CAAC,wBAawB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAA
C,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,C
AAC,IAAI,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAO,CAAC,kBAaKB,CA
AC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,gBAaGB,CAAC,MAAM,CAAC,kBAaKB,CAAC,CAAC,

UAAU,CAAC,OAAM,CAAC,gBAAgB,CAAC,MAAM,CAAC,kBAAkB,CAAC,CAAC,MAAM,CAAC,KAAK,C
AAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,M
AAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAA
C,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,C
AAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,M
AAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC
,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG
,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAA
C,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KA
AK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,O
AAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA
AS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC
,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAA
C,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAA
C,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MA
AM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CA
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC
,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,
MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAA
G,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,O
AAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,
CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA
I,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAA
C,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CA
AC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EA
AE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CA
AC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAA
C,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAA
I,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,
CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,K
AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,K
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAA
C,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,M
AAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,C
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA
C,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MA
AM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI
,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC
,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC

,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAA
M,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I
AAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,
CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,C
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAA
M,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAA
C,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,C
AAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,
KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAA
M,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,Q
AAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA
AS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAA
C,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EA
AE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,C
AAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAK,
CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAA
C,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C
AAC,CAAC,IAAI,qBAaqB,CAAC,MAAM,CAAC,uBAauB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qBAA
qB,CAAC,MAAM,CAAC,uBAauB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,K
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,
UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,
CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAA
M,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CA
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC
,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,
MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,
OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,C
AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAA
C,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KA
AK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,O
AAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA
AS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAA
C,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAA
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CA
AC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,
MAAM,CAAC,aAAa,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA
AC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,
MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UA
AU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,C
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,K

AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,
OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,
CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,
CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,
UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC
,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM
,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC
,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAA
M,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,
CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OA
AM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAA
C,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,C
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,o
BAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,C
AAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA
AC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,O
AAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WA
AW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,C
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,O
AAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,S
AAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,
CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,
MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAA
C,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAA
C,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MA
AM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,C
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,
CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,
MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OA
AO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,C
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,M
AAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC
,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA
AS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAA
C,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAA
C,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,M
AAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA

C,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAA
M,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK
,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UA
AU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,C
AAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,C
AAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,
MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAA
M,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,
CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OA
AM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CA
AC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,C
AAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,K
AAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,C
AAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA
C,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK
,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,
CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,
IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAaKB,CAAC,MAAM,CAA
C,oBAaB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAaKB,CAAC,MAAM,CAAC,oBAaB,CAAC,CAA
C,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA
AC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MA
AM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,
CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAA
M,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,M
AAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,C
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,
CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MA
AM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI
,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,O
AAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,C
AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAA
C,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAA
K,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OA
AO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,C
AAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UA
AU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAA
K,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,
CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,
CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MA
AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I

AAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,C
AAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,
SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,C
AAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CA
AC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAA
C,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS
,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAA
W,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,C
AAC,CAAC,CAAC,IAAI,YAA Y,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAA
Y,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAA Y,CAAC,CAAC,UAA
U,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAA Y,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CA
AC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,C
AAC,KAAK,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,Y
AA Y,CAAC,IAAI,CAAC,OAAO,CAAC,+BAA+B,CAAC,MAAM,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,C
AAC,OAAM,CAAC,qBAaqB,CAAC,SAAS,SAAS,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,EAAE,CA
AC,GAAG,CAAC,SAAS,CAAC,qBAaqB,CAAC,UAAU,CAAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAu
B,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,
CAAC,CAAC,MAAM,CAAC,SAAS,KAAK,EAAE,CAAC,GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CA
AC,MAAM,CAAC,WAAW,CAAC,CAAC,IAAI,CAAC,GAAG,KAAK,CAAC,OAAO,WAAW,EAAE,CAAC,OA
AO,EAAE,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAA
M,CAAC,sBAAsB,CAAC,EAAE,CAAC,OAAO,GAAE,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,C
AAC,MAAM,CAAC,WAAW,CAAC,CAAC,YAA Y,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,
UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,
GAAE,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,GAAE,CAAC,CAAC,MAAM,CAAC,KAAK,C
AAC,CAAC,GAAG,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,S
AAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CA
AC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,S
AAS,CAAC,CAAC,GAAG,EAAE,GAAE,CAAC,CAAC,GAAG,EAAE,CAAC;AAC334B;AACa;EACA,EAAE,
OAAO,iBAAiB,CAAC,KAAK;EACHc,CAAC;EACD,EAAE;EACF,CAAC,GAAG,CAAC;EAEH,cAAc,GAAG,i
BAAiB;;;MCuBHM,+BAAa;MAK5C,qBAAmB,IAAqD;UAAxE,YACE,iBAAO,SAIR;UALkB,UAAI,GA AJ,IAA
I,CAAI;UAHhE,sBAAgB,GAAG,CAAC,CAAC;UAK3B,KAAI,CAAC,IAAI,CAAC,IAAI,CAAC,oBAAoB,CA
AC,YAA Y,CAAC,CAAC;UACID,kBAaKB,GAAG,KAAI,CAAC,IAAI,CAAC,IAAI,CAAC,eAAe,EAAE,CAAC;
UACtD,KAAI,CAAC,SAAS,GAAG,IAAIC,oBAAW,CAAC,KAAI,EAAEC,eAAM,EAAE,CAAC,CAAC;;OACID
;MAED,2BAAK,GAAL,UAA M,MAAkC,EAAE,KAAe,EAAE,KAAe;UAExE,IAAM,MAAM,GAAG,EAAC,EA
E,EAAE,IAAI,CAAC,gBAAgB,EAAE,EAAC,CAAC;UAC7C,IAAI,CAAC,IAAI,CAAC,MAAM,EAAE,MAAM,
EAAE,KAAK,EAAE,KAAK,EAAE,CAAC,CAAC,CAAC;UAC3C,OAAO,MAAM,CAAC;OACf;MAED,gCAAU
,GAAV;UACE,OAAO,IAAI,CAAC,SAAS,CAAC,UAAU,EAAE,CAAC;OACpC;MAEK,0BAAI,GAAV,UAAW,
CAAa;;;kBACHb,KAAK,GAAGrH,aAAI,CAAC,GAAG,EAAE,CAAC;kBACzB,CAAC,EAAE,CAAC;kBACE,Q
AAQ,GAAGA,aAAI,CAAC,GAAG,EAAE,GAAG,KAAK,CAAC;kBACpC,sBAAO,EAAC,QAAQ,UAAA,EAAC
,EAAC;;OACnB;MAED,0BAAI,GAAJ,UACI,MAAc,EAAE,MAAkC,EAAE,KAAe,EACnE,KAAe,EAAE,QAAg
B;UACnC,IAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;UACnC,IAAI,KAAK,KAAK,QAAQ,EAAE
;cACtB,IAAM,WAAW,GAAG,MAAsB,CAAC;cAC3C,IAAI,CAAC,SAAS,CAAC,GAAG,CACd,MAAM,EACN,
EAAC,EAAE,IAAA,EAAE,WAAW,aAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,YAA Y,EAAE,IA
AI,EAAE,QAAQ,UAAA,EAAC,CAAC,CAAC;cACnE,OAAO;WACR;UAED,IAAM,IAAI,GAAGA,aAAI,CAAC
,aAAa,CAAC,KAAK,CAAC,CAAC;UACvC,IAAM,QAAQ,GAAG,IAAI,GAAGA,aAAI,CAAC,eAAe,CAAC,KA
AK,CAAC,CAAC;UACpD,IAAM,YAA Y,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC;

UAEjD,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,IAAA,EAAE,YAAY,cAAA,EAA
E,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,QAAQ,UAAA,EAAC,CAAC,CAAC;UAEvE,IAAI,CAAC,IAAI,C
AAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;UAEtD,IAAI,MAAM,IAAI,IA
AI,EAAE;cACIB,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,GAAG,CACbB,IAAI,UAAU,CACT,MAAkC,CAAC,
MAAM,EACzC,MAAkC,CAAC,UAAU,EAAE,QAAQ,CAAC,EAC7D,YAAY,CAAC,CAAC;WACnB;OACF;M
AEK,0BAAI,GAAV,UAAW,MAAc;;;kBACvB,sBAAO,IAAI,CAAC,QAAQ,CAAC,MAAM,CAAC,EAAC;;;OAC
9B;MAED,8BAAQ,GAAR,UAAU,MAAc;UACf,IAAA,+BACwB,EADvB,8BAAE,EAAE,gBAAK,EAAE,gBAA
K,EAAE,4BACL,CAAC;UAC/B,IAAI,KAAK,KAAK,QAAQ,EAAE;cACtB,OAAO,WAAW,CAAC;WACpB;UA
CD,IAAM,KAAK,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,KAAK,CACcC,YAAY,EACZ,YAAY,GAAG
A,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,GAAGA,aAAI,CAAC,eAAe,CAAC,KAAK,CAAC,CAAC,CAAC;U
AC5E,OAAO,oBAAoB,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;OACID;;;;;;MAQD,iCAAW,
GAAX,UAAE,MAAc,EAAE,KAAa;UAAb,sBAAA,EAAA,aAAa;UACvC,IAAI,IAAI,CAAC,SAAS,CAAC,GAA
G,CAAC,MAAM,CAAC,EAAE;cAC9B,IAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,C
AAC,CAAC;cACxC,IAAI,CAAC,QAAQ,EAAE,CAAC;cACbB,IAAI,CAAC,KAAK,IAAI,IAAI,CAAC,QAAQ,G
AAG,CAAC,EAAE;kBAC/B,OAAO,KAAK,CAAC;eACd;cAED,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,
CAAC,YAAY,CAAC,CAAC;cACnC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,WAAW,CAAC,IAAI,CAAC,EAAE,
CAAC,CAAC;cACpC,IAAI,CAAC,SAAS,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;WAC/B;UACD,OAAO,I
AAI,CAAC;OACb;;MAGD,8BAAQ,GAAR,UAAU,MAAc;UACrB,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAA
C,MAAM,CAAC,EAAE;cAC9B,IAAM,UAAU,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,
CAAC;cAC9C,OAAO,UAAU,CAAC,QAAQ,CAAC;WAC5B;UACD,OAAO,CAAC,CAAC;OACV;MAED,4BA
AM,GAAN,UAAO,MAAc;UACnB,IAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC
,CAAC;UACxC,IAAI,IAAI,IAAI,IAAI,EAAE;cACbB,IAAI,CAAC,QAAQ,EAAE,CAAC;WACjB;OACF;MAED,
oCAAc,GAAd;UACE,OAAO,EAAE,CAAC;OACX;;;MAID,qCAAE,GAaf,UAAgB,MAAc;UAC5B,OAAO,IAAI,
CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC;OACbD;MAED,6BAAO,GAAP;UAC
E,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,EAAE,CAAC;UACzB,IAAI,SAAS,IAAI,IAAI,CAAC,IAAI,EA
AE;cACIB,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC;WACzC;UACD,IAAI,CAAC,IAAI
,GAAG,IAAI,CAAC;OACIB;MAED,4BAAM,GAAN;UACE,OAAO,EAAC,UAAU,EAAE,KAAK,EAAC,CAAC;
OAC5B;;;;;;MAQD,gCAAU,GAAV,UAAW,KAAe,EAAE,KAAe,EAAE,YAAqB;UAEhE,IAAI,MAAU,CAAC;U
ACf,IAAI,YAAY,IAAI,IAAI,EAAE;cACxB,MAAM,GAAG,IAAI,CAAC,KAAK,CAAC,IAAI,eAAe,KAAK,EA
E,KAAK,CAAC,CAAC;WACtD;eAAM;cACL,IAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;cACn
C,MAAM,GAAG,EAAC,EAAE,IAAA,EAAC,CAAC;cACd,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,E
AAE,EAAC,EAAE,IAAA,EAAE,YAAY,cAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,QAAQ,EA
E,CAAC,EAAC,CAAC,CAAC;cACIE,IAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;cA
CvC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;WAC
vD;UACD,OAAO,EAAC,MAAM,QAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAC,CAAC;OAC/B;MA
ED,wCAAkB,GAAIB,UAAmB,EAAkC;cAAjC,gBAAK,EAAE,gBAAK,EAAE,kBAAM;UAEtC,IAAM,MAAM,G
AAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC;UACbC,IAAA,sDAAY,CAA+B;UACID,IAAM,I
AAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;UACvC,QAAQ,KAAK;cACX,KAAK,SAAS;kBA
CZ,OAAO,IAAI,YAAY,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;cACtD,KAAK,OAAO;kBACV
,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;cACpD,KAAK,MAAM;kBACT,
OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;cACpD;kBACE,MAAM,IAAI,KA
AK,CAAC,mBAAiB,KAAO,CAAC,CAAC;WAC7C;OACF;MACH,kBAAC;EAAD,CA3KA,CAAiCsH,sBAAa,G
A2K7C;EAED,SAAS,yBAAyB,CAAC,IAAY;;;MAI7C,OAAO,UAAO,OAAY,EAAE,QAAa;UACjCtH,aAAI,CA
AC,KAAK,CAAC,IAAI,EAAE,EAAC,WAAW,EAAE,aAAa,EAAC,CAAC,CAAC,IAAI,CAAC,UAAO,QAAQ;c
AC3D,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE;kBACnB,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,yC
AAuC,IAAI,MAAG,CAAC,CAAC;eAC/D;cACD,QAAQ,CAAC,WAAW,EAAE,CAAC,IAAI,CAAC,UAAA,MA
AM;kBACbC,WAAW,CAAC,WAAW,CAAC,MAAM,EAAE,OAAO,CAAC,CAAC,IAAI,CAAC,UAAA,MAAM;
sBACID,QAAQ,CAAC,MAAM,CAAC,QAAQ,EAAE,MAAM,CAAC,MAAM,CAAC,CAAC;mBACIC,CAAC,C

AAC;eACJ,CAAC,CAAC;WACJ,CAAC,CAAC;UACH,OAAO,EAAE,CAAC;OACX,CAAC;EACJ,CAAC;EAED
;EAMA,SAAS,mBAAmB,CACxB,aAAsB,EAAE,gBAAYB,EACjD,gBAAwB;MAC1B,IAAI,QAAQ,IAAI,IAA
I,EAAE;;UAGpB,OAAO,QAAQ,CAAC;OACjB;MAED,IAAI,IAAI,GAAmB,wBAAwB,CAAC;MACpD,IAAI,a
AAa,IAAI,gBAAgB,EAAE;UACrC,IAAI,GAAG,sCAAsC,CAAC;OAC/C;WAAM,IAAI,aAAa,EAAE;UACxB,IA
AI,GAAG,6BAA6B,CAAC;OACtC;MAED,IAAI,WAAW,IAAI,IAAI,EAAE;UACvB,IAAI,WAAW,CAAC,IAAI,
CAAC,IAAI,IAAI,EAAE;cAC7B,OAAO,WAAW,CAAC,IAAI,CAAC,CAAC;WAC1B;OACF;MAED,OAAO,gB
AAgB,GAAG,IAAI,CAAC;EACjC,CAAC;EAED;WAOsB,IAAI;;0BACkB,qBAAM,OAAO,CAAC,GAAG,
CAAC;0BAC1D4G,YAAG,EAAE,CAAC,QAAQ,CAAC,uBAAuB,CAAC;0BACvCA,YAAG,EAAE,CAAC,QAA
Q,CAAC,8BAA8B,CAAC;uBAC/C,CAAC,EAAA;;sBAHI,KAAoC,SAGxC,EAHK,aAAa,QAAA,EAAE,gBAAgB
,QAAA;sBAKtC,sBAAO,IAAI,OAAO,CAAC,UAAC,OAAO,EAAE,MAAM;8BACjC,IAAM,aAAa,GAAsB,EAA
E,CAAC;;8BAO5C,aAAa,CAAC,UAAU,GAAG,UAAC,IAAI,EAAE,MAAM;kCACtC,IAAI,IAAI,CAAC,QAA
Q,CAAC,YAAY,CAAC,EAAE;sCAC/B,IAAM,QAAQ,GAAG,kBAaKB,CAAC;sCACpC,IAAM,IAAI,GAAG,IA
AI,IAAI,CAAC,CAAC,QAAQ,CAAC,EAAE,EAAC,IAAI,EAAE,wBAAwB,EAAC,CAAC,CAAC;sCACpE,OAA
O,GAAG,CAAC,eAAe,CAAC,IAAI,CAAC,CAAC;mCACIC;kCAED,IAAI,IAAI,CAAC,QAAQ,CAAC,OAAO,C
AAC,EAAE;sCAC1B,OAAO,mBAAmB,CACtB,aAAwB,EAAE,gBAA2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc
,GAAG,MAAM,CAAC,CAAC;mCACvD;kCACD,OAAO,MAAM,GAAG,IAAI,CAAC;+BACtB,CAAC;;8BAK
F,IAAI,WAAW,EAAE;kCACf,aAAa,CAAC,eAAe;sCACzB,yBAAYB,CAAC,mBAAmB,CACzC,aAAwB,EAAE,
gBAA2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,EAAE,CAAC,CAAC,CAAC;+BACxD;8BAED,IAAI,W
AAW,GAAG,KAAK,CAAC;8BACxB,aAAa,CAAC,OAAO,GAAG;kCACtB,IAAI,WAAW,EAAE;;sCAEf,OAAO
;mCACR;kCACD,IAAI,WAAW,EAAE;;sCAGf,OAAO;mCACR;kCACD,WAAW,GAAG,IAAI,CAAC;kCACnB,
IAAM,SAAS,GACX,kEAAkE;sCACIE,iIAAI,CAAC;kCACtI,MAAM,CAAC,EAAC,OAAO,EAAE,SAAS,EAAC
,CAAC,CAAC;+BAC9B,CAAC;8BAEF,IAAI,IAAGC,CAAC;;8BAErC,IAAI,gBAAgB,IAAI,aAAa,IAAI,QAAQ,I
AAI,IAAI,EAAE;kCACzD,aAAa,CAAC,mBAAmB,GAAG,IAAI,IAAI,CACxC,CAAC,sCAAsC;0CACtCW,2BA
AuB,CAAC,QAAQ,EAAE,CAAC,EACpC,EAAC,IAAI,EAAE,iBAaIB,EAAC,CAAC,CAAC;kCAC/B,IAAI,GA
AGA,2BAAuB,CAAC,aAAa,CAAC,CAAC;+BAC/C;mCAAM;;kCAEL,IAAI,GAAGC,eAAW,CAAC,aAAa,CAA
C,CAAC;+BACnC;;8BAID,IAAI,CAAC,IAAI,CAAC,UAAC,MAAM;kCACf,WAAW,GAAG,IAAI,CAAC;kCA
CnB,WAAW,GAAG,KAAK,CAAC;kCAEpB,IAAM,cAAc,GAAW,IAAI,CAAC;;kCAEpC,MAAM,CAAC,IAAI,
GAAG;sCACZ,IAAI,EAAE,MAAM,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,EAAE,EAAE,CAAC;sCACpC,o
BAAoB,EACbB,MAAM,CAAC,KAAK,CAAC,yBAAYB,EAAE,IAAI,EAAE,CAAC,QAAQ,CAAC,CAAC;sCAC
7D,eAAe,EAAE,MAAM,CAAC,KAAK,CAAC,mBAAmB,EAAE,QAAQ,EAAE,EAAE,CAAC;sCACHe,cAAc,E
AAE,MAAM,CAAC,KAAK,CACxB,iBAaIB,EAAE,IAAI,EACvB;0CACE,QAAQ;0CACR,QAAQ;0CACR,QAA
Q;uCACT,CAAC;sCACN,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,cAAc,EAAE,cAAc,EAAE,CAAC,QAA
Q,CAAC,CAAC;sCACrE,OAAO,EAAE,MAAM,CAAC,KAAK,CAAC,SAAS,EAAE,cAAc,EAAE,EAAE,CAAC;
mCACrD,CAAC;kCAEF,OAAO,CAAC,EAAC,IAAI,EAAE,MAAM,EAAC,CAAC,CAAC;+BACzB,CAAC,CAA
C;2BACJ,CAAC,EAAC;;GACJ;EAED,SAAS,oBAAoB,CACzB,MAAmB,EAAE,KAAe;MACtC,QAAQ,KAAK;
UACX,KAAK,SAAS;cACZ,OAAO,IAAI,YAAY,CAAC,MAAM,CAAC,CAAC;UACIC,KAAK,OAAO;cACV,O
AAO,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;UACbC,KAAK,MAAM;cACT,OAAO,IAAI,UAAU,CAAC,MA
AM,CAAC,CAAC;UACbC;ACE,MAAM,IAAI,KAAK,CAAC,mBAaIB,KAAO,CAAC,CAAC;OAC7C;EACH,C
AAC;EAED,IAAM,eAAe,GAAG;MACtB,wBAAwB,EAAE,6BAA6B;MACvD,sCAAsC;GAC9B,CAAE;EAGZ,I
AAI,QAAQ,GAAW,IAAI,CAAC;EAC5B,IAAI,cAAc,GAAW,IAAI,CAAC;EACIC,IAAI,WAAW,GAAuC,EAAE,
CAAC;EACzD,IAAI,WAAW,GAAG,KAAK,CAAC;EACxB,IAAI,WAAW,GAAG,KAAK,CAAC;EAExB;;
;WAYgB,WAAW,CAAC,IAAY,EAAE,gBAAwB;MAAxB,iCAAA,EAAA,wBAAwB;MACHc,wBAAE,CACX,8
DAA8D;UAC9D,uCAAuC,CAAC,CAAC;MAC7C,IAAI,WAAW,EAAE;UACf,MAAM,IAAI,KAAK,CACX,+DA
A+D;cAC/D,mEAAmE,CAAC,CAAC;OAC1E;MACD,QAAQ,GAAG,IAAI,CAAC;MACHB,WAAW,GAAG,gBA
AgB,CAAC;EACjC,CAAC;EAED;;WAYBgB,YAAY,CACxB,eAA0D,EAC1D,gBAAwB;MAAxB,
iCAAA,EAAA,wBAAwB;MAC1B,IAAI,WAAW,EAAE;UACf,MAAM,IAAI,KAAK,CACX,+DAA+D;cAC/D,w
DAAwD;cACxD,cAAc,CAAC,CAAC;OACrB;MAED,IAAI,OAAO,eAAe,KAAK,QAAQ,EAAE;UACvC,cAAc,G
AAG,eAAe,CAAC;OACIC;WAAM;UACL,WAAW,GAAG,eAAe,CAAC;UAC9B,IAAM,YAAY,GACd,eAAe,CA

AC,MAAM,CAAC,UAAA,IAAI,IAAI,OAAA,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,GAAA,CAAC,CAAC;UA
C9D,IAAI,YAAY,CAAC,MAAM,GAAG,CAAC,EAAE;cAC3B,MAAM,IAAI,KAAK,CACX,0DAA0D;mBACvD
,YAAY,CAAC,IAAI,CAAC,GAAG,CAAC,8CAA2C,CAAA;kBACpE,oEAAoE;kBACpE,oDAAoD,CAAC,CAA
C;WAC3D;OACF;MAED,WAAW,GAAG,gBAAGB,CAAC;EACjC,CAAC;EAWD,IAAI,YAAY,GAAG,CAAC,C
AAC,CAAC;EACtB,IAAI,kBAaKB,GAAG,CAAC,CAAC,CAAC;EAE5B;;;;;WAMgB,eAAe,CAAC,UAAkB;M
AChD,YAAY,GAAG,UAAU,CAAC;EAC5B,CAAC;EAED;;;;;WAKgB,eAAe;MAC7B,IAAI,kBAaKB,KAAK,C
AAC,CAAC,EAAE;UAC7B,MAAM,IAAI,KAAK,CAAC,+BAA+B,CAAC,CAAC;OACID;MACD,OAAO,kBAA
kB,CAAC;EAC5B;;ECxfA;EAEA;MACM,OAAO,GAAG;;ECHhB;;;;;;;EAIbA,wBAcA;EALA,IAAM,aAA
a,GAAG,CAAC,CAAC;AACxBC,0BAAe,CAAC,MAAM,EAAE;;;;;sBACP,qBAAM,IAAI,EAAE,EAAA;;kBAAp
B,IAAI,GAAI,CAAA,SAAY,MAAhB;kBACX,sBAAO,IAAI,WAAW,CAAC,IAAI,CAAC,EAAC;;;OAC9B,EAA
E,aAAa,CAAC;;;;;;;" }

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "StridedSlice.js", "sourceRoot": "", "sources": [ "../src/kernels/StridedSlice.ts" ], "names": [], "mappings": "AAAA;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,UAAU,EAAE,YAAY,EAAqD,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAGIJ,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AACIC,OAAO,EAAC,KAAK,EAAC,MAAM,SAAS,CAAC;AAE9B,IAAI,gBAI8C,CAAC;AAEnD,SAAS,KAAK,CAAC,OAAoB;IACjC,gBAAGB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,YAAY,EAAE,IAAI,CAAC,QAAQ,EAAE;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,OAAO;QACP,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,MAAM,UAAU,YAAY,CAAC,IAI5B;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IAEnB,MAAM,EACJ,KAAK,EAEL,GAAG,EACH,OAAO,EACP,SAAS,EACT,OAAO,EACP,YAAY,EACZ,WAAW,EACX,cAAc,EACf,GAAG,KAAK,CAAC;IAEV,MAAM,EACJ,gBAAGB,EACHb,UAAU,EACV,UAAU,EACV,SAAS,EACT,aAAa,EACb,KAAK,EAAE,MAAM,EACb,GAAG,EAAE,IAAI,EACT,OAAO,EA AE,QAAQ,EACIB,GACG,UAAU,CAAC,SAAS,CACHb,CAAC,CAAC,KAAK,EAAE,KAAK,EAAE,GAAG,EA AE,OAAO,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAC9D,WAAW,EAAE,cAAc,CAAC,CAAC;IAErC,IAAI,MAAM,CAAC;IAEX,IAAI,UAAU,EAAE;QACd,iDAaID;QACjD,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;KACtE;SAAM,IAAI,SAAS,IAAI,aAAa,EAAE;QACrC,qEAAqE;QACrE,IAAI,CAAC,MAAM,CACP,CAAC,CAAC,KAAK,CAAC,MAAM,IAAI,CAAC,EACnB,GAAG,EAAE,CAAC,yCAAYc,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,CAAC,CAAC;QAErE,MAAM,IAAI,GAAG,UAAU,CAAC,eAAe,CAAC,MAAM,EAAE,IAAI,EAAE,QAAQ,CAAC,CAAC;QACHE,wEAAwE;QACxE,MAAM,MAAM,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,MAAM,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;QAC3E,MAAM;YACF,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;QACxE,OAAO,CAAC,WAAW,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;KACpC;SAAM;QACL,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,gBAAGB,EAAE,SAAS,CAAC,CAAC;QAE5D,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,MAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;QACxE,MAAM,UAAU,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC;QACjE,MAAM,QAAQ,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;QAC7D,MAAM,YAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;QAErE,MAAM,gBAAGB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAGB,CAAC,CAAC,MAAM,CAAC,CAAC;QAC5D,MAAM,eAAe,GAAG,IAAI,UAAU,CACI
```


Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/StridedSlice.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"tf-backend-wasm.min.js","sources":["../src/kernels/types.ts","../src/kernels/_FusedMatMul.ts","../src/kernels/unary_kernel.ts","../src/kernels/Abs.ts","../src/kernels/binary_kernel.ts","../src/kernels/Add.ts","../src/kernels/AddN.ts","../src/kernels/Identity.ts","../src/kernels/Transpose.ts","../src/kernels/All.ts","../src/kernels/kernel_utils.ts","../src/kernels/Any.ts","../src/kernels/ArgMax.ts","../src/kernels/AvgPool.ts","../src/kernels/Reshape.ts","../src/kernels/BatchMatMul.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Slice.js","../src/kernels/Slice.ts","../src/kernels/BatchToSpaceND.ts","../src/kernels/Cast.ts","../src/kernels/ClipByValue.ts","../src/kernels/Ceil.ts","../src/kernels/Concat.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js","../src/kernels/Conv2D.ts","../src/kernels/Conv2DBackpropInput.ts","../src/kernels/CropAndResize.ts","../src/kernels/Cos.ts","../src/kernels/Cosh.ts","../src/kernels/Cumsum.ts","../src/kernels/DepthToSpace.ts","../src/kernels/DepthwiseConv2dNative.ts","../src/kernels/Elu.ts","../src/kernels/Equal.ts","../src/kernels/Exp.ts","../src/kernels/ExpandDims.ts","../src/kernels/Fill.ts","../src/kernels/FlipLeftRight.ts","../src/kernels/FusedBatchNorm.ts","../src/kernels/Floor.ts","../src/kernels/FloorDiv.ts","../src/kernels/FusedConv2D.ts","../src/kernels/FusedDepthwiseConv2D.ts","../src/kernels/GatherNd.ts","../src/kernels/GatherV2.ts","../src/kernels/LeakyRelu.ts","../src/kernels/Greater.ts","../src/kernels/GreaterEqual.ts","../src/kernels/Max.ts","../src/kernels/Less.ts","../src/kernels/LessEqual.ts","../src/kernels/Log.ts","../src/kernels/LogicalAnd.ts","../src/kernels/MaxPool.ts","../src/kernels/Maximum.ts","../src/kernels/Mean.ts","../src/kernels/Min.ts","../src/kernels/MirrorPad.ts","../src/kernels/Minimum.ts","../src/kernels/NonMaxSuppressionV3.ts","../src/kernels/Multiply.ts","../src/kernels/Neg.ts","../src/kernels/NonMaxSuppression_util.ts","../src/kernels/NonMaxSuppressionV4.ts","../src/kernels/NonMaxSuppressionV5.ts","../src/kernels/OneHot.ts","../src/kernels/NotEqual.ts","../src/kernels/OnesLike.ts","../src/kernels/Pack.ts","../src/kernels/PadV2.ts","../src/kernels/Prelu.ts","../src/kernels/Pow.ts","../src/kernels/Prod.ts","../src/kernels/ResizeBilinear.ts","../src/kernels/Range.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js","../src/kernels/RealDiv.ts","../src/kernels/Relu.ts","../src/kernels/Relu6.ts","../src/kernels/Reverse.ts","../src/kernels/RotateWithOffset.ts","../src/kernels/ScatterNd.ts","../src/kernels/Round.ts","../src/kernels/Rsqrt.ts","../src/kernels/Select.ts","../src/kernels/Sigmoid.ts","../src/kernels/Softmax.ts","../src/kernels/Sin.ts","../src/kernels/SpaceToBatchND.ts","../src/kernels/SplitV.ts","../src/kernels/Step.ts","../src/kernels/Sqrt.ts","../src/kernels/Square.ts","../src/kernels/SquaredDifference.ts","../src/kernels/StridedSlice.ts","../src/kernels/Sum.ts","../src/kernels/Sub.ts","../src/kernels/Tile.ts","../src/kernels/Tan.ts","../src/kernels/Tanh.ts","../src/kernels/TopK.ts","../src/kernels/Transform.ts","../src/kernels/Unpack.ts","../src/register_all_kernels.ts","../src/kernels/ZerosLike.ts","../src/flags_wasm.ts","../wasm-out/tfjs-backend-wasm-threaded-simd.js","../wasm-out/tfjs-backend-wasm.js","../src/backend_wasm.ts","../wasm-out/tfjs-backend-wasm-threaded-simd.worker.js","../src/base.ts","../src/version.ts"],"sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n * This enum must align with the enum defined in cc/backend.h.\n * export enum CppDType {\n *   float32 = 0,\n *   int32 = 1,\n *   bool = 2,\n *   string = 3,\n *   complex64 = 4\n * }\n * Must match enum in cc/fusable_activations.h.\n * export
```

enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu = 6}\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { FusableActivation } from\n './types';\n\nlet wasmFusedMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n  bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n  transposeB: boolean, activation: number,\n  biasId: number,\n  preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul,\n  null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n    'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n    'number', // activation\n    'number', // biasId\n    'number', // preluActivationWeightsId\n    'number', //\n    leakyreluAlpha\n    'number' // out_id\n  ]);\n\n  function fusedBatchMatMul(args: {\n    inputs:\n      _FusedMatMulInputs,\n    backend: BackendWasm,\n    attrs: _FusedMatMulAttrs\n  }) {\n    const { inputs, backend,\n    attrs } = args;\n    const { a, b, bias, preluActivationWeights } = inputs;\n\n    if (a.dtype !== 'float32' || b.dtype !==\n    'float32') {\n      throw new Error(\n        `_FusedMatMul for non non-float32 tensors not yet supported.`);\n    }\n\n    const { transposeA, transposeB, activation, leakyreluAlpha } = attrs;\n    const aId =\n    backend.dataIdMap.get(a.dataId).id;\n    const bId = backend.dataIdMap.get(b.dataId).id;\n\n    let biasId = 0;\n    if (bias != null) {\n      const biasData = backend.dataIdMap.get(bias.dataId);\n      if (biasData.shape.length !== 1) {\n        throw new Error(\n          `_FusedMatMul only supports rank-1 bias but got ` +\n          `rank\n          ${biasData.shape.length}`);\n      }\n      biasId = biasData.id;\n    }\n\n    const preluActivationWeightsId =\n    preluActivationWeights == null ?\n    0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n    const\n    fusedActivation =\n    FusableActivation[activation as { } as keyof typeof FusableActivation];\n    if\n    (fusedActivation == null) {\n      throw new Error(\n        `${activation} activation not yet supported for\n        FusedConv2D` +\n        `in the wasm backend.`);\n    }\n\n    const leftDim = transposeA ? a.shape[2] : a.shape[1];\n    const rightDim = transposeB ? b.shape[1] : b.shape[2];\n    const batchDim = a.shape[0];\n\n    const out =\n    backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n    const outId =\n    backend.dataIdMap.get(out.dataId).id;\n\n    const aShapeBytes = new Uint8Array(new\n    Int32Array(a.shape).buffer);\n    const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n    wasmFusedMatMul(\n      aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n      transposeA,\n      transposeB, fusedActivation, biasId, preluActivationWeightsId,\n      leakyreluAlpha || 0, outId);\n\n    return\n    out;\n  }\n\n  export const fusedMatMulConfig: KernelConfig = {\n    kernelName: _FusedMatMul,\n    backendName:\n    'wasm',\n    setupFunc: setup,\n    kernelFunc: fusedBatchMatMul as { } as KernelFunc\n  };\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { DataType, KernelConfig, TensorInfo, UnaryInputs, util } from '@tensorflow/tfjs-core';\n\nimport\n { BackendWasm } from '../backend_wasm';\n\nimport { CppDType } from './types';\n\nexport function\n createUnaryKernelConfig(\n  kernelName: string, outType?: DataType): KernelConfig {\n  let wasmFunc: (xId:
```

```

number, dtype: number, outId: number) => void;\n\n function setupFunc(backend: BackendWasm): void {\n
wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n  'number', // x_id\n  'number', // dtype\n  'number', // out_id\n  ]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}):\n
TensorInfo {\n  const {backend, inputs: {x}} = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const
out = backend.makeOutput(x.shape, outType || x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n
  // Short-circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n\n
wasmFunc(xId, CppDType[x.dtype], outId);\n  return out;\n }\n\n return {kernelName, backendName: 'wasm',
setupFunc, kernelFunc};\n}\n\n", /*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*\n\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n\n", /*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*\n\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport
function createBinaryKernelConfig(\n  kernelName: string, supportsFullBroadcast: boolean,\n  dtype?:
DataType): KernelConfig {\n  let wasmFunc:\n    (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n
number, bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n      void;\n\n  function
setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /*
void */, [\n      'number', // a_id, \n      'array', // a_shape\n      'number', // a_shape.length\n      'number', // b_id\n
      'array', // b_shape\n      'number', // b_shape.length\n      'number', // dtype\n      'number' // out_id\n    ]);\n  }\n\n  function
kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}):\n    TensorInfo {\n    const {backend,
inputs} = args;\n    const {a, b} = inputs;\n    const aId = backend.dataIdMap.get(a.dataId).id;\n    const bId =
backend.dataIdMap.get(b.dataId).id;\n    const outputType = dtype != null ? dtype : a.dtype;\n    const newShape =
backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n    const out = backend.makeOutput(newShape,
outputType);\n\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(newShape) === 0) {\n      return
out;\n    }\n\n    const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n    const bShapeBytes =
new Uint8Array(new Int32Array(b.shape).buffer);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n
const kernelFunc = () => wasmFunc(\n      aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n
      CppDType[a.dtype], outId);\n\n    // Currently only some float operations support full broadcast.\n    if
(supportsFullBroadcast && a.dtype === 'float32') {\n      kernelFunc();\n      return out;\n    }\n\n    const
aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n    const bBroadcastDims =
backend_util.getBroadcastDims(b.shape, newShape);\n    const loopsOverAllOfA = aBroadcastDims.every((v, i) =>
v === i);\n    const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n    if (loopsOverAllOfA &&
loopsOverAllOfB) {\n      kernelFunc();\n      return out;\n    } else {\n      throw new Error(\n        `Broadcasting
along outer dims is not yet `+\n        `supported for ${a.dtype} ${kernelName}.`);\n    }\n  }\n\n  return
{kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n}\n\n", /*\n * @license\n * Copyright 2019 Google

```

LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const addConfig: KernelConfig =\ncreateBinaryKernelConfig(Add, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nlet wasmFunc: (inputIds: Uint8Array, inputIdsLen: number, dtype: number, outId: number) => void;\nfunction setupFunc(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n    'array', // input_ids\n    'number', // input_ids.length\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\nfunction addn(args: {inputs: TensorInfo[], backend: BackendWasm}) {\n  const {inputs, backend} = args;\n  const out = backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n  // Short-circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n  const inputIds = inputs.map(x => backend.dataIdMap.get(x.dataId).id);\n  const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmFunc(inputIdsBytes, inputIds.length, CCppType[out.dtype], outId);\n  return out;\n}\nexport const addNConfig: KernelConfig = {\n  kernelName: AddN,\n  backendName: 'wasm',\n  setupFunc,\n  kernelFunc: addn as { } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nexport function identity(args: {inputs: IdentityInputs, backend: BackendWasm}): TensorInfo {\n  const {inputs, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const inVals = backend.typedArrayFromHeap(x);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.set(inVals);\n  return out;\n}\nexport const identityConfig: KernelConfig = {\n  kernelName: Identity,\n  backendName: 'wasm',\n  kernelFunc: identity as { } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the
```

License.\n *

```
=====\\n
*\\n\\nimport { KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs } from
 '@tensorflow/tfjs-core';\\n\\nimport { BackendWasm } from './backend_wasm';\\n\\nimport { identity } from
 './Identity';\\n\\nimport { CppDType } from './types';\\n\\nlet wasmTranspose: (\\n  xId: number, xShape: Uint8Array,
 xShapeLength: number, dtype: CppDType,\\n  outId: number, perm: Uint8Array, permLength: number) =>
 void;\\n\\nfunction setup(backend: BackendWasm) {\\n  wasmTranspose = backend.wasm.cwrap(Transpose, null /*
 void */, [\\n    'number', // xId\\n    'array', // x.shape\\n    'number', // x.shape.length\\n    'number', // dtype\\n
 'number', // outId\\n    'array', // perm\\n    'number', // perm.length\\n  ]);\\n}\\n\\nexport function transpose(\\n  args:\\n
 {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs}):\\n  TensorInfo {\\n  const {inputs,
 backend, attrs} = args;\\n  // Reduce any dimensions with size one. Lower-rank transpose kernel performs\\n  // better
 due to simpler memory access pattern.\\n  const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,
 attrs.perm);\\n\\n  let permIsNoOp = true;\\n  for (let i = 0; i < perm.length; i++) {\\n    if (perm[i] !== i) {\\n
 permIsNoOp = false;\\n    }\\n  }\\n  const outShape = computeOutShape(inputs.x.shape, attrs.perm);\\n  const x = {\\n
 dataId: inputs.x.dataId,\\n  shape: reducedShape,\\n  dtype: inputs.x.dtype\\n };\\n\\n  if (permIsNoOp) {\\n  const
 cloned = identity({inputs, backend});\\n  cloned.shape = outShape;\\n  return cloned;\\n }\\n\\n  const out =
 backend.makeOutput(outShape, x.dtype);\\n  const xId = backend.dataIdMap.get(x.dataId).id;\\n  const outId =
 backend.dataIdMap.get(out.dataId).id;\\n  const permBytes = new Uint8Array(new Int32Array(perm).buffer);\\n
 const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\\n\\n  wasmTranspose(\\n    xId,
 xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\\n    perm.length);\\n  return
 out;\\n}\\n\\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\\n  const outShape = new
 Array(inShape.length);\\n  for (let i = 0; i < outShape.length; i++) {\\n    outShape[i] = inShape[perm[i]];\\n  }\\n
 return outShape;\\n}\\n\\nfunction removeOneSizeDims(\\n  shape: number[], perm: number[]): [number[], number[]]
 {\\n  const newShape: number[] = [];\\n  const newPerm: number[] = [];\\n  for (let i = 0; i < shape.length; ++i) {\\n
 if (shape[i] !== 1) {\\n    newShape.push(shape[i]);\\n  }\\n  if (shape[perm[i]] !== 1) {\\n
 newPerm.push(perm[i]);\\n  }\\n  }\\n  for (let i = 0; i < newPerm.length; ++i) {\\n    let minValIdx = -1;\\n    for (let j =
 0; j < newPerm.length; ++j) {\\n      if (newPerm[j] >= i &&\\n        (minValIdx === -1 || newPerm[minValIdx] >
 newPerm[j])) {\\n        minValIdx = j;\\n      }\\n    }\\n    newPerm[minValIdx] = i;\\n  }\\n  return [newShape,
 newPerm];\\n}\\n\\nexport const transposeConfig: KernelConfig = {\\n  kernelName: Transpose,\\n  backendName:
 'wasm',\\n  kernelFunc: transpose as { } as KernelFunc,\\n  setupFunc: setup,\\n};\\n"/**\\n * @license\\n * Copyright
 2021 Google LLC. All Rights Reserved.\\n * Licensed under the Apache License, Version 2.0 (the "License");\\n *
 you may not use this file except in compliance with the License.\\n * You may obtain a copy of the License at\\n *\\n *
 http://www.apache.org/licenses/LICENSE-2.0\\n *\\n * Unless required by applicable law or agreed to in writing,
 software\\n * distributed under the License is distributed on an "AS IS" BASIS,\\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\\n * See the License for the specific language
 governing permissions and\\n * limitations under the License.\\n *
```

```

backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
  wasmAll(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n  // dispose of the transposed tensor.\n
  backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n  // reshape\n  const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n  out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const allConfig: KernelConfig = {\n  kernelName: All,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: all as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google Inc. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport { backend_util, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from
'./backend_wasm';\nimport { transpose } from './Transpose';\n\n/**\n * Compute permutation axes and do a transpose
if necessary.\n *\n * Used by reduction ops.\n * @param x input TensorInfo\n * @param axis reduction axes\n *
@param backend wasm backend instance\n *\nexport function permuteAxesAndTranspose(\n  x: TensorInfo,
  axis: number|number[], backend: BackendWasm): {\n  transposed: TensorInfo|null,\n  axes: number[],\n
  originalAxes: number[],\n  inputWasTransposed: boolean\n} {\n  const xShape = x.shape;\n  const xRank =
x.shape.length;\n  const originalAxes = util.parseAxisParam(axis, xShape);\n  let axes = originalAxes;\n  const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n  let xTransposed = null;\n  let
inputWasTransposed = false;\n  if (permutedAxes !== null) {\n    const newShape: number[] = new Array(xRank);\n
    for (let i = 0; i < newShape.length; i++) {\n      newShape[i] = xShape[permutedAxes[i]];\n    }\n    axes =
backend_util.getInnerMostAxes(axes.length, xRank);\n    xTransposed =\n      transpose({inputs: {x}, attrs: {perm:
permutedAxes}, backend});\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const transposedId =
backend.dataIdMap.get(xTransposed.dataId).id;\n    if (transposedId !== xId) {\n      inputWasTransposed = true;\n
    }\n  }\n\n  return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n\n"/**\n * @license\n *
Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport { Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport
{ permuteAxesAndTranspose } from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAny = backend.wasm.cwrap(Any,
null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: {backend: BackendWasm, inputs: AnyInputs,
attrs: AnyAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n
const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n
const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis,
  backend);\n\n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n
    input = transposed;\n    inputId = transposedId;\n  }\n\n  const inputRank = input.shape.length;\n
  backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n  const [outShape, reduceShape] =\n
  backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =

```

```

util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmAny(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n  // dispose of the transposed tensor.\n
backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n  // reshape\n  const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n  out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const anyConfig: KernelConfig = {\n  kernelName: Any,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: any as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport { ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { permuteAxesAndTranspose } from
'/kernel_utils';\n\nimport { CppDType } from './types';\n\nlet wasmFunc: (\n  xId: number, dtype: number, outerSize:
number, innerSize: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n  'number', // x_id\n  'number', // dtype\n
'number', // outer_size\n  'number', // inner_size\n  'number' // out_id\n ]);\n}\n\nfunction argmax(\n  args:
{inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs}) {\n  const {backend, inputs, attrs} = args;\n
const {axis} = attrs as {} as ArgMaxAttrs;\n  const {x} = inputs as {} as ArgMaxInputs;\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const {transposed, axes,
inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n
const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n  if (transposedId !== xId) {\n  // transpose
was not a no-op. We will need to dispose of this\n  // once we are done.\n  input = transposed;\n  inputId =
transposedId;\n  }\n }\n\n  const outShape = input.shape.slice(0, -1);\n  const out =
backend.makeOutput(outShape, 'int32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const outerSize =
util.sizeFromShape(out.shape);\n  const innerSize = input.shape[axes[0]];\n  wasmFunc(inputId,
CppType[input.dtype], outerSize, innerSize, outId);\n\n  if (inputWasTransposed) {\n  // dispose of the
transposed tensor.\n  backend.disposeData(transposed.dataId);\n }\n\n  return out;\n}\n\nexport const
argMaxConfig: KernelConfig = {\n  kernelName: ArgMax,\n  backendName: 'wasm',\n  kernelFunc: argmax as {}
as KernelFunc,\n  setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport { AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmAvgPool: (\n  xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, strideHeight: number,\n
strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n  'number', // xId\n  'number', // batchSize\n
'number', // inputHeight\n  'number', // inputWidth\n  'number', // filterHeight\n  'number', // filterWidth\n
'number', // padTop\n  'number', // padRight\n  'number', // padBottom\n  'number', // padLeft\n  'number', //

```

```

strideHeight\n 'number', // strideWidth\n 'number', // channels\n 'number', // outId\n ]);\n}\n\nfunction
avgPool(\n  args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n  const {inputs, attrs,
backend} = args;\n\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n\n  const
{filterSize, strides, pad, dimRoundingMode} = attrs;\n  const convInfo = backend_util.computePool2DInfo(\n
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n  const filterHeight =
convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const
padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n  const padLeft =
convInfo.padInfo.left;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n
const channels = convInfo.inChannels;\n\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n
`wasm backend does not support dataFormat: " +\n      `${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n
}\n\n  if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n    throw new Error(\n
`was backend
only supports average pooling with dilation = [1, 1],` +\n      `got [${convInfo.dilationHeight},
${convInfo.dilationWidth}].`);\n  }\n\n  const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const
outId = backend.dataIdMap.get(out.dataId).id;\n\n  wasmAvgPool(\n    xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n    padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n
outId);\n  return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n  kernelName: AvgPool,\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: avgPool as { } as KernelFunc\n};\n", "/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function reshape(\n  args: {inputs:
ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm}) {\n  const {inputs, attrs} = args;\n  const {x} =
inputs;\n  const {shape} = attrs;\n\n  const xSize = util.sizeFromShape(x.shape);\n  const $shape =
util.inferFromImplicitShape(shape, xSize);\n\n  util.assert(\n    xSize === util.sizeFromShape($shape),\n    () =>
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n      `shape must have the same number of
elements.`);\n\n  // Backend needs to track refCount for the dataId for reshape op\n  args.backend.incRef(x.dataId);\n
return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n
kernelName: Reshape,\n  backendName: 'wasm',\n  kernelFunc: reshape as { } as KernelFunc\n};\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {reshape} from
'./Reshape';\n\nlet wasmBatchMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n
bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n  transposeB: boolean, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,
null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n
'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n
'number' // out_id\n ]);\n}\n\nfunction batchMatMul(args: {\n  inputs: BatchMatMulInputs,\n  backend:

```


2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*
import { backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util }
from '@tensorflow/tfjs-core';
import { BackendWasm } from '../backend_wasm';
import { sliceImplCPU } from
'./kernel_utils/shared';
export function slice(
  args: { inputs: SliceInputs, attrs: SliceAttrs, backend:
BackendWasm }) {
  const { inputs: { x }, attrs: { begin, size }, backend } = args;
  const [begin_, size_] =
slice_util.parseSliceParams(x, begin, size);
  const isContinuous = slice_util.isSliceContinuous(x.shape, begin_,
size_);
  const xVals = backend.readSync(x.dataId);
  const out = backend.makeOutput(size_, x.dtype);
  const
xStrides = util.computeStrides(x.shape);
  const outData = backend.dataIdMap.get(out.dataId);
  if (isContinuous)
  {
    const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);
    if (x.dtype === 'string') {
      outData.stringBytes =
(xVals as Uint8Array[])
        .slice(flatOffset, flatOffset +
util.sizeFromShape(size_));
    } else {
      const outVals = backend.typedArrayFromHeap(out);
      outVals.set(
(xVals as TypedArray)
        .subarray(flatOffset, flatOffset +
util.sizeFromShape(size_)));
    }
  }
  return out;
}
if (x.dtype === 'string') {
  const res =
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);
  outData.stringBytes = res as Uint8Array[];
  return
out;
}
const outVals = backend.typedArrayFromHeap(out);
const rank = x.shape.length;
if (rank === 2)
  {
    slice2d(
      xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],
size_ as
[number, number]);
  }
else if (rank === 3)
  {
    slice3d(
      xVals as TypedArray, xStrides[0], xStrides[1],
outVals,
      begin_ as [number, number, number], size_ as [number, number, number]);
  }
else if (rank === 4)
  {
    slice4d(
      xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,
begin_ as [number,
number, number, number],
size_ as [number, number, number, number]);
  }
else {
    const res =
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;
    outVals.set(res);
  }
return
out;
}
function slice2d(
  xVals: backend_util.TypedArray, xStride: number,
outVals:
backend_util.TypedArray, begin: [number, number],
size: [number, number]): void {
  let outOffset = 0;
  const beginI = begin[0];
  const beginJ = begin[1];
  const endI = beginI + size[0];
  for (let i = beginI; i < endI;
i++) {
    const xOffset = i * xStride + beginJ;
    outVals.set(xVals.subarray(xOffset, xOffset + size[1]),
outOffset);
    outOffset += size[1];
  }
}
function slice3d(
  xVals: backend_util.TypedArray, xStride1:
number, xStride2: number,
outVals: backend_util.TypedArray, begin: [number, number, number],
size:
[number, number, number]): void {
  let outOffset = 0;
  const beginI = begin[0];
  const beginJ = begin[1];
  const beginK = begin[2];
  const endI = beginI + size[0];
  const endJ = beginJ + size[1];
  for (let i = beginI; i <
endI; i++) {
    for (let j = beginJ; j < endJ; j++) {
      const xOffset = i * xStride1 + j * xStride2 + beginK;
      outVals.set(xVals.subarray(xOffset, xOffset + size[2]),
outOffset);
      outOffset += size[2];
    }
  }
}
function slice4d(
  xVals: backend_util.TypedArray, xStride1: number, xStride2: number,
xStride3:
number, outVals: backend_util.TypedArray,
begin: [number, number, number, number],
size: [number, number, number, number]): void {
  let outOffset = 0;
  const beginI = begin[0];
  const beginJ = begin[1];
  const beginK = begin[2];
  const endI = beginI + size[0];
  const endJ = beginJ + size[1];
  const endK = beginK
+ size[2];
  const beginL = begin[3];
  for (let i = beginI; i < endI; i++) {
    for (let j = beginJ; j < endJ; j++)
    {
      for (let k = beginK; k < endK; k++) {
        const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +
beginL;
        outVals.set(xVals.subarray(xOffset, xOffset + size[3]),
outOffset);
        outOffset += size[3];
      }
    }
  }
}
export const sliceConfig: KernelConfig = {
  kernelName: Slice,
  backendName: 'wasm',
  kernelFunc: slice as { } as KernelFunc,
};
/**
 * @license
 * Copyright 2021 Google LLC. All Rights
Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file
except in compliance with the License.
 * You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { reshape } from './Reshape';\nimport { slice } from './Slice';\nimport { transpose } from './Transpose';\n\nfunction batchToSpaceND(args: {\n  inputs: BatchToSpaceNDInputs,\n  backend: BackendWasm,\n  attrs: BatchToSpaceNDAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { blockShape, crops } = attrs;\n\n  const prod = blockShape.reduce((a, b) => a * b);\n  const reshaped = backend_util.getReshaped(x.shape, blockShape, prod);\n  const permuted = backend_util.getPermuted(reshaped.length, blockShape.length);\n  const reshapedPermuted = backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n  const sliceBeginCoords = backend_util.getSliceBeginCoords(crops, blockShape.length);\n  const sliceSize = backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n  const xReshaped = reshape({ inputs: { x }, backend, attrs: { shape: reshaped } });\n  const xTransposed = transpose({ inputs: { x: xReshaped }, backend, attrs: { perm: permuted } });\n  const xTransposedReshaped = reshape({ inputs: { x: xTransposed }, backend, attrs: { shape: reshapedPermuted } });\n  const result = slice({\n    inputs: { x: xTransposedReshaped },\n    backend,\n    attrs: { begin: sliceBeginCoords, size: sliceSize }\n  });\n\n  backend.disposeData(xReshaped.dataId);\n  backend.disposeData(xTransposed.dataId);\n  backend.disposeData(xReshaped.dataId);\n\n  return result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n  kernelName: BatchToSpaceND,\n  backendName: 'wasm',\n  kernelFunc: batchToSpaceND as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nexport function cast(\n  args: {\n    inputs: CastInputs,\n    attrs: CastAttrs,\n    backend: BackendWasm\n  }):\n  TensorInfo {\n  const { inputs: { x }, attrs: { dtype }, backend } = args;\n  const out = backend.makeOutput(x.shape, dtype);\n  const inVals = backend.toArrayFromHeap(x);\n  const outVals = backend.toArrayFromHeap(out);\n  outVals.set(inVals);\n\n  return out;\n}\n\nexport const castConfig: KernelConfig = {\n  kernelName: Cast,\n  backendName: 'wasm',\n  kernelFunc: cast as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmClip: (xId: number, min: number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmClip = backend.wasm.cwrap(ClipByValue, null /* void */, [\n    'number', // x_id\n    'number', // min\n    'number', // max\n    'number' // out_id\n  ]);\n}\n\nfunction clip(args: {\n  inputs: ClipByValueInputs,\n  backend:
```

```
BackendWasm,\n attrs: ClipByValueAttrs\n)) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {clipValueMin, clipValueMax} = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =\n backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmClip(xId,\n clipValueMin, clipValueMax, outId);\n return out;\n}\n\n\nexport const clipByValueConfig: KernelConfig = {\n kernelName: ClipByValue,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: clip as {} as\n KernelFunc\n};\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *
```

```
=====\n\n*/\nimport {KernelConfig, Ceil} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\nimport {backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util} from\n '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {concatImplCPU} from\n './kernel_utils/shared';\nimport {identity} from './Identity';\nimport {reshape} from './Reshape';\nexport function\n concat(\n  args: {inputs: ConcatInputs, backend: BackendWasm, attrs: ConcatAttrs}) {\n const {inputs, backend}\n = args;\n\n const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n let outShape =\n backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n\n // Keep only non-empty tensors (ignore tensors\n with 0 in their shape).\n const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n if ($inputs.length ===\n 1) {\n return identity({inputs: {x: $inputs[0]}, backend});\n }\n\n const out = backend.makeOutput(outShape,\n inputs[0].dtype);\n\n if (util.sizeFromShape(outShape) === 0) {\n return out;\n }\n\n const shapes =\n $inputs.map(t => t.shape);\n backend_util.assertParamsConsistent(shapes, axis);\n\n if ($inputs[0].dtype ===\n 'string') {\n // Any concat of n-dimensional tensors across any axis can be reduced to\n // a concatenation of two-\n dimensional tensors across the axis 1 by first\n // partitioning the axes of the original tensors into those less than\n // axis to be concatenated and the rest. Then reshape the tensors\n // into a two-dimensional tensor by\n collapsing these two sets of axes and\n // concatenate the resulting matrices across the axis 1, finally reshaping\n // the result to have the proper shape.\n const inputs2D = $inputs.map(t => {\n const innerSize =\n util.sizeFromShape(t.shape.slice(axis));\n const shape = [-1, innerSize];\n return reshape({inputs: {x: t},\n backend, attrs: {shape}});\n });\n\n const inputsValShapes = inputs2D.map(t => {\n return {vals:\n backend.readSync(t.dataId), shape: t.shape};\n });\n\n // Concat 2d tensors along axis=1.\n outShape =\n backend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);\n const simplyConcat =\n inputs2D[0].shape[0] === 1;\n const outVals = concatImplCPU(\n inputsValShapes, outShape,\n inputs[0].dtype,\n simplyConcat) as string[];\n\n const finalOutShape =\n backend_util.computeOutShape($inputs.map(t => t.shape), axis);\n\n out.shape = finalOutShape;\n\n const\n outData = backend.dataIdMap.get(out.dataId);\n outData.stringBytes =\n backend_util.fromStringArrayToUint8(outVals);\n\n inputs2D.forEach(t => backend.disposeData(t.dataId));\n\n return out;\n }\n\n const batchDim = util.sizeFromShape($inputs[0].shape.slice(0, axis));\n let sumInnerDims =\n 0;\n const innerDims = $inputs.map(input => {\n const innerDim = util.sizeFromShape(input.shape.slice(axis));\n
```



```

// filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n 'number', //
padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n 'number', //
dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number',
// outputChannels\n 'number', // outId\n );\n}\n\nfunction conv2d(\n  args: {inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs}) {\n  const {inputs, attrs, backend} = args;\n\n  const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n
const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n  const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n  const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n    pad, dimRoundingMode, false,
$dataFormat);\n\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const
padTop = convInfo.padInfo.top;\n  const padRight = convInfo.padInfo.right;\n  const padBottom =
convInfo.padInfo.bottom;\n  const padLeft = convInfo.padInfo.left;\n  const dilationHeight =
convInfo.dilationHeight;\n  const dilationWidth = convInfo.dilationWidth;\n  const strideHeight =
convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n  const inputChannels =
convInfo.inChannels;\n  const outputChannels = convInfo.outChannels;\n  const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm backend
Conv2D does not support dataFormat:` +\n      ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n  }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  wasmConv2d(\n    xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n    filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n    dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n    outputChannels, outId);\n  return out;\n}\n\nexport
const conv2DConfig: KernelConfig = {\n  kernelName: Conv2D,\n  backendName: 'wasm',\n  setupFunc: setup,\n
kernelFunc: conv2d as { } as KernelFunc\n};\n",`/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n  dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n  filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n
outHeight: number, outWidth: number, outChannels: number,\n  strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n  fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n
xRowStride: number, xColStride: number, xChannelStride: number,\n  yBatchStride: number, yRowStride:
number, yColStride: number,\n  yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n 'number', //
filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n 'number', //
outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number',
// fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number',
// yChannelStride\n 'number', // outId\n ];\n}\n\nfunction conv2DBackpropInput(args: {\n  backend:
BackendWasm,\n  inputs: Conv2DBackpropInputInputs,\n  attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const {backend, inputs, attrs} = args;\n  const {dy, filter} = inputs;\n  const {strides, pad, dataFormat,

```

```

dimRoundingMode, inputShape} = attrs;\n\n const dilations = 1;\n\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n const {\n batchSize,\n filterHeight,\n filterWidth,\n inChannels,\n
inHeight,\n inWidth,\n outChannels,\n outHeight,\n outWidth,\n strideHeight,\n strideWidth\n } =
convInfo;\n\n const topPad = filterHeight - 1 - convInfo.padInfo.top;\n const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n const dxStrides =
util.computeStrides(convInfo.inShape);\n const dyStrides = util.computeStrides(dy.shape);\n const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n const xBatchStride = dxStrides[0];\n const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n const xColStride = isChannelsLast ? dxStrides[2] : 1;\n const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n const yBatchStride = dyStrides[0];\n const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n const yColStride = isChannelsLast ? dyStrides[2] : 1;\n const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n const out = backend.makeOutput(convInfo.inShape,
'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const dyId =
backend.dataIdMap.get(dy.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
wasmConv2DBackpropInput(\n dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n
inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n topPad, leftPad, fltS0, fltS1, fltS2,
xBatchStride, xRowStride,\n xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n
yChannelStride, outId);\n return out;\n}\n\nexport const conv2DBackpropInputConfig: KernelConfig = {\n
kernelName: Conv2DBackpropInput,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc,
TensorInfo} from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { cast }
from './Cast';\n\n// Must match enum in CropAndResize.cc\nenum InterpolationMethod {\n bilinear = 0,\n nearest
= 1\n}\n\nlet wasmCropAndResize: (\n imagesId: number, boxesId: number, boxIndId: number, numBoxes:
number,\n imagesShape: Uint8Array, cropHeight: number, cropWidth: number,\n method: number,
extrapolationValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n 'number', // imagesId\n
'number', // boxesId\n 'number', // boxIndId\n 'number', // numBoxes\n 'array', // images shape\n
'number', // cropHeight\n 'number', // cropWidth\n 'number', // method\n 'number', // extrapolation value\n
'number' // out id\n ]);\n\nfunction cropAndResize(args: {\n backend: BackendWasm,\n inputs: CropAndResizeInputs,\n
attrs: CropAndResizeAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {method,
extrapolationValue, cropSize} = attrs;\n const {image, boxes, boxInd} = inputs;\n const numBoxes =
boxes.shape[0];\n\n const [cropHeight, cropWidth] = cropSize as [number, number];\n const outShape =
[numBoxes, cropHeight, cropWidth, image.shape[3]];\n\n let imagesData =
backend.dataIdMap.get(image.dataId);\n let castedData;\n if (image.dtype !== 'float32') {\n castedData =
cast({backend, inputs: {x: image}, attrs: {dtype: 'float32'}});\n imagesData =
backend.dataIdMap.get(castedData.dataId);\n }\n\n const imagesId = imagesData.id;\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n\n const
out = backend.makeOutput(outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const
imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n\n wasmCropAndResize(\n

```



```

permutedOut;\n if (permutation !== null) {\n   const undoPermutation =
backend_util.getUndoAxesPermutation(permutation);\n   out = transpose(\n     {inputs: {x: permutedOut}, attrs:
{perm: undoPermutation}, backend});\n   backend.disposeData(permutedX.dataId);\n
backend.disposeData(permutedOut.dataId);\n };\n return out;\n}\n\nexport const cumsumConfig: KernelConfig =
{\n  kernelName: Cumsum,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: cumsum as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace:
(\n  xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n  xStridesLength: number,
outputShape: Uint8Array, outputStrides: Uint8Array,\n  outSize: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n  wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\n    'number', // xId\n    'number', // blockSize\n    'number', // channelsLast\n    'array', // xStrides\n
'number', // xStridesLength\n    'array', // outputShape\n    'array', // outputStrides\n    'number', // outSize\n
'number', // outId\n  ]);\n}\n\nexport function depthToSpace(args: {\n  backend: BackendWasm,\n  inputs:
DepthToSpaceInputs,\n  attrs: DepthToSpaceAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n  const {blockSize, dataFormat} = attrs;\n\n  const batchSize = x.shape[0];\n  const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n  const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n  const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n  const
outputHeight = inputHeight * blockSize;\n  const outputWidth = inputWidth * blockSize;\n  const outputDepth =
inputDepth / (blockSize * blockSize);\n\n  const outputShape = (dataFormat === 'NHWC') ?\n    [batchSize,
outputHeight, outputWidth, outputDepth] :\n    [batchSize, outputDepth, outputHeight, outputWidth];\n\n  const
out = backend.makeOutput(outputShape, 'float32');\n\n  const xData = backend.dataIdMap.get(x.dataId);\n  const
xId = xData.id;\n  const xStridesBytes =\n    new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n  const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n  const outStridesBytes =\n    new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n  wasmDepthToSpace(\n    xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n    outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n  return
out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n  kernelName: DepthToSpace,\n  backendName:
'wasm',\n  setupFunc: setup,\n  kernelFunc: depthToSpace as { } as KernelFunc\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n  xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, padTop:

```


LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
<http://www.apache.org/licenses/LICENSE-2.0>\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from './Reshape';\nexport function expandDims(args: {\n  inputs: ExpandDimsInputs,\n  attrs: ExpandDimsAttrs,\n  backend: BackendWasm\n}) {\n  const {inputs, attrs, backend} = args;\n  const {input} = inputs;\n  const {dim} = attrs;\n\n  const inputRank = input.shape.length;\n  const newShape = input.shape.slice();\n  let $dim = dim;\n  if (dim < 0) {\n    // Negative value is counted from the tail of rank.\n    util.assert(\n      -(inputRank + 1) <= dim,\n      () => `Axis must be in the interval [${-(inputRank + 1)}, ${\n        inputRank\n      }]`);\n    $dim = inputRank + dim + 1;\n  }\n  newShape.splice($dim, 0, 1);\n\n  return reshape({inputs: {x: input}, backend, attrs: {shape: newShape}});\n}\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'wasm',\n  kernelFunc: expandDims as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nexport function fill(args: {attrs: FillAttrs, backend: BackendWasm}) {\n  const {attrs: {shape, value, dtype}, backend} = args;\n  const out = backend.makeOutput(shape, dtype);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.fill(value as number);\n  return out;\n}\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName: 'wasm',\n  kernelFunc: fill as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nlet wasmFlipLeftRight: (\n  xId: number, batch:
```

```

number, imageHeight: number, imageWidth: number,\n  numChannels: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight,
null /* void */, [\n  'number', // xId\n  'number', // batch\n  'number', // imageHeight\n  'number', //
imageWidth\n  'number', // numChannels\n  'number', // outId\n  ]);\n}\n\nexport function flipLeftRight(\n
args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n  const {inputs, backend} = args;\n
const {image} = inputs;\n  const out = backend.makeOutput(image.shape, image.dtype);\n  const imageId =
backend.dataIdMap.get(image.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const [batch,
imageHeight, imageWidth, numChannels] = image.shape;\n  const wasmFlipLeftRight = (\n  imageId, batch,
imageHeight, imageWidth, numChannels, outId);\n  return out;\n}\n\nexport const flipLeftRightConfig:
KernelConfig = {\n  kernelName: FlipLeftRight,\n  backendName: 'wasm',\n  kernelFunc: flipLeftRight as {} as
KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing\n * permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc,
TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet
wasmBatchNorm: (\n  xId: number, meanId: number, varianceId: number, offsetId: number,\n  scaleId: number,
varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
  wasmBatchNorm = backend.wasm.cwrap(\n    FusedBatchNorm, null /* void */,\n    ['number', 'number',
'number', 'number', 'number', 'number', 'number']);\n}\n\nfunction fusedBatchNorm(args: {\n  backend:
BackendWasm,\n  inputs: FusedBatchNormInputs,\n  attrs: FusedBatchNormAttrs\n}): TensorInfo {\n  const
{backend, inputs, attrs} = args;\n  const {varianceEpsilon} = attrs;\n  const {x, mean, variance, offset, scale} =
inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const meanId =
backend.dataIdMap.get(mean.dataId).id;\n  const varianceId = backend.dataIdMap.get(variance.dataId).id;\n  const
offsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n  const scaleId = scale != null ?
backend.dataIdMap.get(scale.dataId).id : 0;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  // Short-
circuit zero-sized tensors.\n  if (util.sizeFromShape(x.shape) === 0) {\n    return out;\n  }\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  const wasmBatchNorm = (\n    xId, meanId, varianceId, offsetId, scaleId,
varianceEpsilon, outId);\n  return out;\n}\n\nexport const fusedBatchNormConfig: KernelConfig = {\n  kernelName:
FusedBatchNorm,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: fusedBatchNorm as {} as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing\n * permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n
*

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {FloorDiv, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const floorDivConfig: KernelConfig =\n  createBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n*\n\nimport {backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {FusableActivation} from './types';\nlet wasmFusedConv2d:\n  (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n   filterId: number, filterHeight: number, filterWidth: number,\n   biasId: number, padTop: number, padRight: number, padBottom: number,\n   padLeft: number, isSamePad: number, dilationHeight: number,\n   dilationWidth: number, strideHeight: number, strideWidth: number,\n   inputChannels: number, outputChannels: number, activation: number,\n   preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n   void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // biasId\n    'number', // padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', // dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // inputChannels\n    'number', // outputChannels\n    'number', // activation\n    'number', // preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number', // outId\n  ]);\n\n  function fusedConv2d(args: {\n    inputs: FusedConv2DInputs,\n    backend: BackendWasm,\n    attrs: FusedConv2DAttrs\n  }) {\n    const {inputs, attrs, backend} = args;\n    const {x, filter, bias, preluActivationWeights} = inputs;\n    const {\n      strides,\n      pad,\n      dilations,\n      dataFormat,\n      dimRoundingMode,\n      activation,\n      leakyreluAlpha\n    } = attrs;\n\n    const convInfo = backend_util.computeConv2DInfo(\n      (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n      pad, dimRoundingMode);\n\n    const fusedActivation =\n      FusableActivation[activation as {}] as keyof typeof FusableActivation;\n\n    if (fusedActivation == null) {\n      throw new Error(\n        `${activation} activation not yet supported for FusedConv2D` +\n        ` in the wasm backend.`);\n    }\n\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const filterId =\n      backend.dataIdMap.get(filter.dataId).id;\n\n    const outputChannels = convInfo.outChannels;\n\n    let biasId = 0;\n    if (bias != null) {\n      const biasData = backend.dataIdMap.get(bias.dataId);\n      if (biasData.shape.length !== 1) {\n        throw new Error(\n          `FusedConv2D only supports rank-1 bias but got` +\n          `rank ${biasData.shape.length}.`);\n      }\n      if (biasData.shape[0] !== outputChannels) {\n        throw new Error(\n          `FusedConv2D bias shape (${biasData.shape}) does not` +\n          `match the number of output channels` +\n          ` (${outputChannels})`);\n      }\n      biasId = biasData.id;\n    }\n\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const padTop = convInfo.padInfo.top;\n    const padRight = convInfo.padInfo.right;\n    const padBottom = convInfo.padInfo.bottom;\n    const padLeft = convInfo.padInfo.left;\n\n    const dilationHeight = convInfo.dilationHeight;\n    const dilationWidth = convInfo.dilationWidth;\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth = convInfo.strideWidth;\n    const inputChannels = convInfo.inChannels;\n    const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n    const batchSize = convInfo.batchSize;\n    const inHeight = convInfo.inHeight;\n    const inWidth = convInfo.inWidth;\n\n    if
```



```

(dataFormat !== 'NHWC') {\n  throw new Error(\n    `wasm backend FusedConv2D does not support
dataFormat:` +\n    `${dataFormat}`. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n  0 :\n  backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n  xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n  biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n  dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n  fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n  kernelName: FusedConv2D,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `AS IS` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from './backend_wasm';\n\nimport { FusibleActivation } from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n  (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number,\n  biasId: number, padTop: number, padRight:
number, padBottom: number,\n  padLeft: number, isSamePad: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:
number, activation: number,\n  preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedDepthwiseConv2d =\n  backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n    'number', // xId\n    'number', //
batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', //
filterHeight\n    'number', // filterWidth\n    'number', // biasId\n    'number', // padTop\n    'number', //
padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', //
dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n
'number', // inputChannels\n    'number', // outputChannels\n    'number', // activation\n    'number', //
preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number', // outId\n  ]);\n\nfunction
fusedDepthwiseConv2d(args: {\n  inputs: FusedDepthwiseConv2DInputs,\n  backend: BackendWasm,\n  attrs:
FusedDepthwiseConv2DAttrs\n}) {\n  const { inputs, attrs, backend } = args;\n  const { x, filter, bias,
preluActivationWeights } = inputs;\n  const {\n    strides,\n    pad,\n    dilations,\n    dataFormat,\n
dimRoundingMode,\n    activation,\n    leakyreluAlpha\n  } = attrs;\n\n  const convInfo =
backend_util.computeConv2DInfo(\n    (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n
pad, dimRoundingMode, true /* depthwise */);\n\n  const fusedActivation =\n    FusibleActivation[activation as {}
as keyof typeof FusibleActivation];\n  if (fusedActivation == null) {\n    throw new Error(\n      `${activation}
activation not yet supported for FusedDepthwiseConv2D`\n      +\n      `in the wasm backend.`);\n  }\n\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n  const
outputChannels = convInfo.outChannels;\n\n  let biasId = 0;\n  if (bias != null) {\n    const biasData =
backend.dataIdMap.get(bias.dataId);\n    if (biasData.shape.length !== 1) {\n      throw new Error(\n
`FusedDepthwiseConv2D only supports rank-1 bias but got`\n      +\n      `rank ${biasData.shape.length}.`);\n    }\n
if (biasData.shape[0] !== outputChannels) {\n      throw new Error(\n        `FusedDepthwiseConv2D bias shape
(${biasData.shape}) does not`\n        +\n        `match the number of output channels (${outputChannels})`);\n    }\n
biasId = biasData.id;\n  }\n\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth =

```

```

convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const
padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n   throw new Error(\n     `wasm backend FusedDepthwiseConv2D does not support
dataFormat:` +\n     `${dataFormat}`. Please use 'NHWC'.`);\n };\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n   0 :\n   backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedDepthwiseConv2d(\n   xId, batchSize,
inHeight, inWidth, filterId, filterHeight, filterWidth,\n   biasId, padTop, padRight, padBottom, padLeft,
isSamePad, dilationHeight,\n   dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n   fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n  kernelName: FusedDepthwiseConv2D,\n  backendName:
'wasm',\n  setupFunc: setup,\n  kernelFunc: fusedDepthwiseConv2d as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\nlet
wasmGatherNd: (\n  xId: number, dtype: CCppType, indicesId: number, numSlices: number,\n  sliceRank:
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n    'number', // xId\n
'number', // dtype\n 'number', // indicesId\n 'number', // numSlices\n 'number', // sliceRank\n 'number', //
sliceSize\n 'array', // strides\n 'number' // outId\n ]);\n}\n\nfunction gatherNd(args: {backend: BackendWasm,
inputs: GatherNdInputs}):\n  TensorInfo {\n  const {backend, inputs} = args;\n  const {params, indices} =
inputs;\n\n  const [resultShape, numSlices, sliceSize, strides] =\n    gather_util.prepareAndValidate(params,
indices);\n\n  const out = backend.makeOutput(resultShape, params.dtype);\n  if (numSlices === 0) {\n    return
out;\n  }\n\n  const indicesShape = indices.shape;\n  const sliceRank = indicesShape[indicesShape.length - 1];\n\n
const xData = backend.dataIdMap.get(params.dataId);\n  const xId = xData.id;\n  const indicesData =
backend.dataIdMap.get(indices.dataId);\n  const indicesId = indicesData.id;\n\n  const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmGatherNd(\n    xId, CCppType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n    stridesBytes,
outId);\n\n  return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n  kernelName: GatherNd,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: gatherNd\n};\n\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,

```

```

TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {reshape} from './Reshape';\n\nimport {CppType} from './types';\n\nlet wasmGather:
(\n  xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n  indicesId: number, batchSize:
number, outStrides: Uint8Array,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n  'number', // xId\n  'number', // dtype\n  'array',
// xStrides\n  'number', // stridesSize\n  'number', // indicesId\n  'number', // batchSize\n  'array', //
outStrides\n  'number' // outId\n  ]);\n}\n\nfunction gatherV2(\n  args: {backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs}): \n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {x,
indices} = inputs;\n  const {axis, batchDims} = attrs;\n\n  // Throw error when any index is out of bound.\n  const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n  const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n  const axisDim = x.shape[parsedAxis];\n  for (let i = 0; i < indicesVals.length; ++i) {\n  const index
= indicesVals[i];\n  util.assert(\n    index <= axisDim - 1 && index >= 0,\n    () =>\n      `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]);\n  }\n\n  const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n    x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n  const flattenX = reshape({\n    inputs: {x},\n    attrs: {\n      shape: [\n        shapeInfo.batchSize,
shapeInfo.outerSize, shapeInfo.dimSize,\n        shapeInfo.sliceSize\n      ]\n    },\n    backend\n  });\n  const
indicesSize = util.sizeFromShape(indices.shape);\n  const flattenIndex = reshape({\n    inputs: {x: indices},\n    attrs:
{shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n    backend\n  });\n  const flattenOutputShape =
[\n    shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n    shapeInfo.sliceSize\n  ];\n\n  const out = backend.makeOutput(flattenOutputShape, x.dtype);\n  if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n  }\n\n  const stridesSize = flattenX.shape.length - 1;\n  const xData =
backend.dataIdMap.get(flattenX.dataId);\n  const xId = xData.id;\n\n  const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n  const indicesId = indicesData.id;\n\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n\n  const xStridesBytes = new Uint8Array(\n    new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n  const outStridesBytes = new Uint8Array(\n    new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n  wasmGather(\n    xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n    shapeInfo.batchSize, outStridesBytes, outId);\n\n  backend.disposeData(flattenX.dataId);\n  backend.disposeData(flattenIndex.dataId);\n\n  // reshape\n  out.shape =
shapeInfo.outputShape;\n  return out;\n}\n\nexport const gatherV2Config: KernelConfig = {\n  kernelName:
GatherV2,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: gatherV2 as { } as KernelFunc\n};\n\n"/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from
'./types';\n\nlet wasmFunc: (\n  xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>
void;\n\nfunction setupFunc(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(LeakyRelu,
null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // leakyrelu_alpha\n    'number', //
out_id\n  ]);\n}\n\nexport function leakyRelu(\n  args: \n    {inputs: LeakyReluInputs, attrs: LeakyReluAttrs,
backend: BackendWasm}): \n  TensorInfo {\n  const {inputs: {x}, attrs: {alpha}, backend} = args;\n\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  // According to TF API, LeakyRelu returns float32 when input is either
float32\n  // or int32.\n  const out = backend.makeOutput(x.shape, 'float32');\n\n  if (util.sizeFromShape(x.shape)
!== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmFunc(xId, CppDType[x.dtype], alpha,
outId);\n  }\n\n  return out;\n}\n\nexport const leakyReluConfig: KernelConfig = {\n  kernelName: LeakyRelu,\n

```

backendName: 'wasm',\n setupFunc,\n kernelFunc: leakyRelu as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport { Greater, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\n createBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { GreaterEqual, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig }\n from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\n createBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport\n { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmMax: (xId:\n number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:\n BackendWasm): void {\n  wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n\n  function max(args: {\n    backend:\n    BackendWasm, inputs: MaxInputs, attrs: MaxAttrs\n  }):\n    TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { reductionIndices: axis, keepDims } = attrs;\n    const { x } = inputs;\n    const xId =\n    backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const { transposed, axes, originalAxes,\n    inputWasTransposed } =\n    permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input = transposed;\n    inputId =\n    transposedId;\n    }\n\n    const inputRank = input.shape.length;\n    backend_util.assertAxesAreInnerMostDims('max',\n    axes, inputRank);\n    const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, axes);\n    const reduceSize =\n    util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape, x.dtype);\n    if\n    (util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmMax(inputId, CppDType[x.dtype], reduceSize, outId);\n    }\n\n    if (inputWasTransposed) {\n    // dispose of the\n    transposed tensor.\n    backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n    // reshape\n    const\n    newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n    }\n\n    return out;\n  }\n\n  export const maxConfig: KernelConfig = {\n    kernelName: Max,\n    backendName: 'wasm',\n  }\n}
```

setupFunc: setup,\n kernelFunc: max as { } as KernelFunc\n);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Less} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, LessEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\ncreateBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util}
```

```

from '@tensorflow/tfjs-core';
import {BackendWasm} from '../backend_wasm';
let wasmMaxPool: (xId:
number, batchSize: number, inputHeight: number, inputWidth: number,
filterHeight: number, filterWidth:
number, padTop: number, padRight: number,
padBottom: number, padLeft: number, dilationHeight: number,
dilationWidth: number, strideHeight: number, strideWidth: number,
inputChannels: number, outputChannels:
number, outId: number) => void;
function setup(backend: BackendWasm) {
wasmMaxPool =
backend.wasm.cwrap(MaxPool, null /* void */, [
number, // xId
number, // batchSize
number, // inputHeight
number, // inputWidth
number, // filterHeight
number, // filterWidth
number, // padTop
number, // padRight
number, // padBottom
number, // padLeft
number, // dilationHeight
number, // dilationWidth
number, // strideHeight
number, // strideWidth
number, // inputChannels
number, // outputChannels
number, // outId
]);
}
function maxPool(xId: number, batchSize: number, inputHeight: number, inputWidth: number,
filterHeight: number, filterWidth: number, padTop: number, padRight: number,
padBottom: number, padLeft: number, dilationHeight: number, dilationWidth: number,
strideHeight: number, strideWidth: number, inputChannels: number, outputChannels:
number, outId: number): Tensor4D {
const {inputs, attrs, backend} =
args;
const x = inputs.x as Tensor4D;
const xId = backend.dataIdMap.get(x.dataId).id;
// TF API
supports int32 input. CPU and WebGL backend also support int32
// input. WASM backend doesn't support it
because it uses xnnpack which only
// supports float32.
// Add the following assert only for the WASM
backend instead of at core op
// level.
// TODO: add support for int32 input.
util.assert(x.dtype
=== 'float32',
() =>
`Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);
const
{filterSize, strides, pad, dimRoundingMode} = attrs;
const convInfo = backend_util.computePool2DInfo(
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);
const filterHeight =
convInfo.filterHeight;
const filterWidth = convInfo.filterWidth;
const padTop = convInfo.padInfo.top;
const
padRight = convInfo.padInfo.right;
const padBottom = convInfo.padInfo.bottom;
const padLeft =
convInfo.padInfo.left;
const dilationHeight = convInfo.dilationHeight;
const dilationWidth =
convInfo.dilationWidth;
const strideHeight = convInfo.strideHeight;
const strideWidth =
convInfo.strideWidth;
const inputChannels = convInfo.inChannels;
const outputChannels =
convInfo.outChannels;
if (convInfo.dataFormat !== 'channelsLast') {
throw new Error(
`wasm
backend does not support dataFormat: "${convInfo.dataFormat}". Please use 'channelsLast'.`);
}
const out = backend.makeOutput(convInfo.outShape, 'float32');
const outId =
backend.dataIdMap.get(out.dataId).id;
wasmMaxPool(xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,
padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,
strideHeight, strideWidth, inputChannels, outputChannels, outId);
return out;
}
export const maxPoolConfig:
KernelConfig = {
kernelName: MaxPool,
backendName: 'wasm',
setupFunc: setup,
kernelFunc: maxPool
} as KernelConfig;
/**
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed
 * under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the
 * License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed
 * on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
 * implied.
 * See the License for the specific language governing permissions and
 * limitations under the
 * License.
 */
}

=====
import {KernelConfig, Maximum} from '@tensorflow/tfjs-core';
import {createBinaryKernelConfig} from
'/binary_kernel';
const supportsFullBroadcast = false;
export const maximumConfig: KernelConfig =
createBinaryKernelConfig(Maximum, supportsFullBroadcast);
/**
 * @license
 * Copyright 2020 Google
 * LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not
 * use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
 * OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
 * governing permissions and
 * limitations under the License.
 */
=====

```

```

*\n\nimport {backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {cast} from './Cast';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmMean =\n  backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);\n}\n\nexport function mean(\n  args:
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs};\n  TensorInfo {\n    const {backend, inputs,
attrs} = args;\n    const {axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId =
backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const {transposed, axes, originalAxes,
inputWasTransposed} =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    let reductionAxes = axes;\n    if
(inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId
!== xId) {\n        // transpose was not a no-op. We will need to dispose of this\n        // once we are done.\n        input =
transposed;\n        inputId = transposedId;\n        reductionAxes = backend_util.getInnerMostAxes(\n
reductionAxes.length, input.shape.length);\n      }\n    }\n\n    backend_util.assertAxesAreInnerMostDims(\n      'mean',
reductionAxes, input.shape.length);\n    const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n    const reduceSize =
util.sizeFromShape(reduceShape);\n    let castedInput = input;\n    if (input.dtype !== 'float32') {\n      castedInput =\n      cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n      inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n    }\n\n    const out = backend.makeOutput(outShape, 'float32');\n    if
(util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmMean(inputId, reduceSize, outId);\n    }\n\n    if (inputWasTransposed) {\n      // dispose of the transposed
tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n      // reshape\n      const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n\n    if (input.dtype
!== 'float32') {\n      backend.disposeData(castedInput.dataId);\n    }\n\n    return out;\n}\n\nexport const meanConfig:
KernelConfig = {\n  kernelName: Mean,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: mean as {\n
as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmMin: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n}\n\nfunction min(args: {backend:
BackendWasm, inputs: MinInputs, attrs: MinAttrs};\n  TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const
{axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let
inputId = xId;\n    let input = x;\n\n    const {transposed, axes, originalAxes, inputWasTransposed} =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n      const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId !== xId) {\n        // transpose was not a no-op. We
will need to dispose of this\n        // once we are done.\n        input = transposed;\n        inputId = transposedId;\n      }\n    }\n\n    const inputRank = input.shape.length;\n\n    backend_util.assertAxesAreInnerMostDims('min', axes,
inputRank);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape,
axes);\n    const reduceSize = util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape,
input.dtype);\n    if (util.sizeFromShape(input.shape) !== 0) {\n      const outId =

```

```

backend.dataIdMap.get(out.dataId).id;\n  wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);\n }\n\n if
(inputWasTransposed) {\n  // dispose of the transposed tensor.\n  backend.disposeData(transposed.dataId);\n
}\n\n if (keepDims) {\n  // reshape\n  const newShape = backend_util.expandShapeToKeepDim(out.shape,
originalAxes);\n  out.shape = newShape;\n }\n\n return out;\n}\n\nexport const minConfig: KernelConfig = {\n
kernelName: Min,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: min as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\n// Must match
enum in MirrorPad.cc\nenum MirrorPaddingMode {\n  reflect = 0,\n  symmetric = 1\n}\n\nlet wasmMirrorPad: (\n
xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes:
Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n  outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n  wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n
'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-
paddings\n 'array', // post-paddings\n 'number', // mode\n 'number', // outId\n ]);\n}\n\nfunction
mirrorPad(args: {\n  inputs: MirrorPadInputs,\n  backend: BackendWasm,\n  attrs: MirrorPadAttrs\n}) {\n  const
{inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n  const outShape = paddings.map(\n    (p, i) => p[0] /*
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out =
backend.makeOutput(outShape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n  const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n  const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n    new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n  const
postPaddingsBytes =\n    new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n  wasmMirrorPad(\n
xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n  postPaddingsBytes,
MirrorPaddingMode[mode], outId);\n  return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n
kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as {} as KernelFunc,\n setupFunc:
setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const minimumConfig: KernelConfig =\n
createBinaryKernelConfig(Minimum, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

```



```

governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,
NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number)
=> number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(\n
NonMaxSuppressionV3,\n  'number', // Result*\n  [\n    'number', // boxesId\n    'number', // scoresId\n
'number', // maxOutputSize\n    'number', // iouThreshold\n    'number', // scoreThreshold\n
]);\n\nfunction kernelFunc(args: {\n  backend: BackendWasm,\n  inputs: NonMaxSuppressionV3Inputs,\n  attrs:
NonMaxSuppressionV3Attrs\n}): TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { iouThreshold,
maxOutputSize, scoreThreshold } = attrs;\n  const { boxes, scores } = inputs;\n\n  const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n  const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n  const
resOffset =\n    wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n\n  const
{pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n    parseResultStruct(backend, resOffset);\n\n
// Since we are not using scores for V3, we have to delete it from the heap.\n
backend.wasm._free(pSelectedScores);\n  backend.wasm._free(pValidOutputs);\n\n  const selectedIndicesTensor
=\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n  return
selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n  kernelName:
NonMaxSuppressionV3,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: kernelFunc as { } as
KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport { KernelConfig, Multiply } from '@tensorflow/tfjs-core';\n\nimport { createBinaryKernelConfig } from
'./binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\n  createBinaryKernelConfig(Multiply, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelConfig, Neg } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'./unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n"/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { BackendWasm } from './backend_wasm';\n\n// Analogous to `struct Result` in

```

```

`non_max_suppression_impl.h`.ninterface Result {\n pSelectedIndices: number;\n selectedSize: number;\n
pSelectedScores: number;\n pValidOutputs: number;\n}\n/**\n * Parse the result of the c++ method, which has the
shape equivalent to\n * `Result`. \n * ^\nexport function parseResultStruct(\n backend: BackendWasm, resOffset:
number): Result {\n const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n const
pSelectedIndices = result[0];\n const selectedSize = result[1];\n const pSelectedScores = result[2];\n const
pValidOutputs = result[3];\n // Since the result was allocated on the heap, we have to delete it.\n
backend.wasm._free(resOffset);\n return {pSelectedIndices, selectedSize, pSelectedScores,
pValidOutputs};\n}\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the `License`);\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an `AS IS` BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs,
NonMaxSuppressionV4Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n
padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =
backend.wasm.cwrap(\n NonMaxSuppressionV4,\n 'number', // Result*\n [\n 'number', // boxesId\n
'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', //
scoreThreshold\n 'bool', // padToMaxOutputSize\n ]);\n}\n\nfunction nonMaxSuppressionV4(args: {\n
backend: BackendWasm,\n inputs: NonMaxSuppressionV4Inputs,\n attrs: NonMaxSuppressionV4Attrs\n}):
TensorInfo[] {\n const {backend, inputs, attrs} = args;\n const {iouThreshold, maxOutputSize, scoreThreshold,
padToMaxOutputSize} =\n attrs;\n const {boxes, scores} = inputs;\n\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const
resOffset = wasmFunc(\n boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n
padToMaxOutputSize);\n\n const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n
parseResultStruct(backend, resOffset);\n\n // Since we are not using scores for V4, we have to delete it from the
heap.\n backend.wasm._free(pSelectedScores);\n\n const selectedIndicesTensor =\n backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n const validOutputsTensor =
backend.makeOutput([], 'int32', pValidOutputs);\n\n return [selectedIndicesTensor,
validOutputsTensor];\n}\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n kernelName:
NonMaxSuppressionV4,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV4 as {\n
as KernelFunc,\n};\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the `License`);\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an `AS IS` BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,
NonMaxSuppressionV5Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc:\n(boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n softNmsSigma: number) =>\n number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =

```

```

backend.wasm.cwrap(\n  NonMaxSuppressionV5,\n  'number', // Result*\n  [\n  'number', // boxesId\n  'number', // scoresId\n  'number', // maxOutputSize\n  'number', // iouThreshold\n  'number', // scoreThreshold\n  'number', // softNmsSigma\n  ]);\n\nfunction kernelFunc(args: {\n  backend: BackendWasm,\n  inputs: NonMaxSuppressionV5Inputs,\n  attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[] {\n  const {backend, inputs, attrs} = args;\n  const {iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma} = attrs;\n  const {boxes, scores} = inputs;\n\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n  const resOffset = wasmFunc(\n    boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n\n  const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n    parseResultStruct(backend, resOffset);\n\n  // Since we are not using validOutputs for V5, we have to delete it from the\n  // heap.\n  backend.wasm._free(pValidOutputs);\n\n  const selectedIndicesTensor =\n    backend.makeOutput([selectedSize, 'int32', pSelectedIndices);\n  const selectedScoresTensor =\n    backend.makeOutput([selectedSize, 'float32', pSelectedScores);\n\n  return [selectedIndicesTensor, selectedScoresTensor];\n}\n\nexport const nonMaxSuppressionV5Config: KernelConfig = {\n  kernelName: NonMaxSuppressionV5,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: kernelFunc\n} as KernelFunc;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmOneHot: (\n  indicesId: number, depth: number, onValue: number, offValue: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n    'number', // indices_id\n    'number', // depth,\n    'number', // onValue\n    'number', // offValue\n    'number' // out_id\n  ]);\n\n  function oneHot(\n    args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n    const {inputs, backend, attrs} = args;\n    const {indices} = inputs;\n    const {depth, onValue, offValue} = attrs;\n\n    const out = backend.makeOutput([...indices.shape, depth], 'int32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const indicesData = backend.dataIdMap.get(indices.dataId);\n    const indicesId = indicesData.id;\n\n    wasmOneHot(indicesId, depth, onValue, offValue, outId);\n\n    return out;\n  }\n\n  export const oneHotConfig: KernelConfig = {\n    kernelName: OneHot,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: oneHot\n  } as KernelFunc;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {KernelConfig, NotEqual} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const notEqualConfig: KernelConfig =\n  createBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES

```

OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nfunction onesLike(args: {inputs: OnesLikeInputs, backend: BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outVals = backend.tensorArrayFromHeap(out);\n  outVals.fill(1);\n  return out;\n}\n\nexport const onesLikeConfig: KernelConfig = {\n  kernelName: OnesLike,\n  backendName: 'wasm',\n  kernelFunc: onesLike as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {concat} from './Concat';\nimport {expandDims} from './ExpandDims';\n\nexport function pack(\n  args: {inputs: PackInputs, backend: BackendWasm, attrs: PackAttrs}):\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {axis} = attrs;\n\n  if (inputs.length === 1) {\n    return expandDims(\n      {inputs: {input: inputs[0]}, backend, attrs: {dim: axis}});\n  }\n\n  const shape = inputs[0].shape;\n  const dtype = inputs[0].dtype;\n  inputs.forEach(t => {\n    util.assertShapesMatch(\n      shape, t.shape, 'All tensors passed to stack must have matching shapes');\n    util.assert(\n      dtype === t.dtype, 'All tensors passed to stack must have matching dtypes');\n  });\n\n  const intermediateTensorInfos: TensorInfo[] = [];\n  const expandedTensors = inputs.map(t => {\n    const expandedT =\n      expandDims({inputs: {input: t}, backend, attrs: {dim: axis}});\n    intermediateTensorInfos.push(expandedT);\n    return expandedT;\n  });\n\n  const result = concat({inputs: expandedTensors, backend, attrs: {axis}});\n  intermediateTensorInfos.forEach(t => backend.disposeData(t.dataId));\n\n  return result;\n}\n\nexport const packConfig: KernelConfig = {\n  kernelName: Pack,\n  backendName: 'wasm',\n  kernelFunc: pack as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {fill} from './Fill';\nimport {CppType} from './types';\n\nlet wasmPadV2: (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n  constantValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmPadV2 = backend.wasm.cwrap(PadV2, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'array', // pre-paddings\n    'array', // post-paddings\n    'number', // constantValue\n    'number', // outId\n  ]);\n}\n\nfunction pad(\n  args: {inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs}) {\n  const {inputs: {x}, backend, attrs: {paddings, constantValue}} = args;\n\n  const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n  if (util.sizeFromShape(x.shape) === 0) {\n    // Short-circuit the computation, since x doesn't have value, only\n    // the shape is used to compute output shape to pad.\n  }\n\n  return fill(outShape, constantValue);\n}\n\nexport const padConfig: KernelConfig = {\n  kernelName: PadV2,\n  backendName: 'wasm',\n  kernelFunc: pad as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```

return fill({\n  backend,\n  attrs: {shape: outShape, value: constantValue, dtype: x.dtype}\n  });\n\n const
xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n const
outTensorData = backend.dataIdMap.get(out.dataId);\n const outId = outTensorData.id;\n\n const xShapeBytes =
new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple =>
padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n const prePaddingsBytes =\n  new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const postPaddingsBytes =\n  new
Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmPadV2(\n  xId, xShapeBytes, x.shape.length,
CppType[x.dtype], prePaddingsBytes,\n  postPaddingsBytes, constantValue, outId);\n return out;\n\n\nexport
const padV2Config: KernelConfig = {\n kernelName: PadV2,\n backendName: 'wasm',\n kernelFunc: pad as {} as
KernelFunc,\n setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, Prelu, PreluInputs} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {cast} from './Cast';\n\nlet wasmPrelu: (xId: number,
weightsId: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmPrelu =
backend.wasm.cwrap(Prelu, null /* void */, [\n  'number', // x_id\n  'number', // weights_id\n  'number' //
out_id\n  ]);\n\n  function prelu(args: {inputs: PreluInputs, backend: BackendWasm}) {\n    const {inputs, backend}
= args;\n    const {x, alpha} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const weightsId =
backend.dataIdMap.get(alpha.dataId).id;\n\n    let inputId = xId;\n    const input = x;\n    let castedInput = input;\n    if
(input.dtype !== 'float32') {\n      castedInput = cast({backend, inputs: {x}, attrs: {dtype: 'float32'}});\n      inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n    }\n\n    const out = backend.makeOutput(x.shape, 'float32');\n
const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmPrelu(inputId, weightsId, outId);\n\n    if (input.dtype
!== 'float32') {\n      backend.disposeData(castedInput.dataId);\n    }\n\n    return out;\n  }\n\n  export const preluConfig:
KernelConfig = {\n    kernelName: Prelu,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: prelu as {} as
KernelFunc\n  };\n  , "/*\n  * @license\n  * Copyright 2019 Google LLC. All Rights Reserved.\n  * Licensed under the
Apache License, Version 2.0 (the \"License\");\n  * you may not use this file except in compliance with the
License.\n  * You may obtain a copy of the License at\n  *\n  * http://www.apache.org/licenses/LICENSE-2.0\n  *\n  *
Unless required by applicable law or agreed to in writing, software\n  * distributed under the License is distributed
on an \"AS IS\" BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n  * See the License for the specific language governing permissions and\n  * limitations under the
License.\n  *

```

```

=====\n
*\n\nimport {KernelConfig, Pow} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const powConfig: KernelConfig =\n  createBinaryKernelConfig(Pow, supportsFullBroadcast);\n  , "/*\n  * @license\n  * Copyright 2020 Google LLC. All
Rights Reserved.\n  * Licensed under the Apache License, Version 2.0 (the \"License\");\n  * you may not use this
file except in compliance with the License.\n  * You may obtain a copy of the License at\n  *\n  *
http://www.apache.org/licenses/LICENSE-2.0\n  *\n  * Unless required by applicable law or agreed to in writing,
software\n  * distributed under the License is distributed on an \"AS IS\" BASIS,\n  * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n  * See the License for the specific language
governing permissions and\n  * limitations under the License.\n  *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util} from

```

```

'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmProd: (\n
xId: number, reduceSize: number,\n  dtype: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n    'number',\n    'number',\n    'number',\n    'number'\n  ]);\n}\n\nfunction prod(args: {\n  backend: BackendWasm,\n  inputs: ProdInputs,\n  attrs:
ProdAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x
= inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const
{transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  let
reductionAxes = axes;\n  if (inputWasTransposed) {\n    const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n      // transpose was not a no-op. We
will need to dispose of this\n      // once we are done.\n      input = transposed;\n      inputId = transposedId;\n
reductionAxes = backend_util.getInnerMostAxes(\n      reductionAxes.length, input.shape.length);\n    }\n  }\n\n  backend_util.assertAxesAreInnerMostDims(\n    'prod', reductionAxes, input.shape.length);\n  const [outShape,
reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n  const reduceSize
= util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, input.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of
the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n  return out;\n}\n\nexport const prodConfig: KernelConfig = {\n  kernelName: Prod,\n  backendName: 'wasm',\n
setupFunc: setup,\n  kernelFunc: prod as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport {KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {cast} from
'./Cast';\n\nlet wasmResizeBilinear: (\n  xId: number, batch: number, oldHeight: number, oldWidth: number,\n
numChannels: number, newHeight: number, newWidth: number,\n  alignCorners: number, halfPixelCenters:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmResizeBilinear =
backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n    'number', // xId\n    'number', // batch\n    'number', //
oldHeight\n    'number', // oldWidth\n    'number', // numChannels\n    'number', // newHeight\n    'number', //
newWidth\n    'number', // alignCorners\n    'number', // halfPixelCenters\n    'number' // outId\n  ]);\n}\n\nfunction
resizeBilinear(args: {\n  backend: BackendWasm,\n  inputs: ResizeBilinearInputs,\n  attrs: ResizeBilinearAttrs\n}):
TensorInfo {\n  const {backend, inputs, attrs} = args;\n\n  const {images} = inputs;\n  const {alignCorners,
halfPixelCenters, size} = attrs;\n  const [newHeight, newWidth] = size;\n\n  const [batch, oldHeight, oldWidth,
numChannels] = images.shape;\n  const outShape = [batch, newHeight, newWidth, numChannels];\n\n  let xData =
backend.dataIdMap.get(images.dataId);\n  let castedData;\n  if (xData.dtype !== 'float32') {\n    castedData =\n
cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n    xData =
backend.dataIdMap.get(castedData.dataId);\n  }\n  const xId = xData.id;\n\n  const out =
backend.makeOutput(outShape, 'float32');\n  if (util.sizeFromShape(images.shape) === 0) {\n    return out;\n  }\n
const outId = backend.dataIdMap.get(out.dataId).id;\n\n  wasmResizeBilinear(\n    xId, batch, oldHeight,
oldWidth, numChannels, newHeight, newWidth,\n    alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n  if
(castedData != null) {\n    backend.disposeData(castedData.dataId);\n  }\n\n  return out;\n}\n\nexport const
resizeBilinearConfig: KernelConfig = {\n  kernelName: ResizeBilinear,\n  backendName: 'wasm',\n  setupFunc:

```


UUFDDeMsTUFBTsxDQUFDLENBQUMsQ0FBQyxHQUFHLE1BQU0sQ0FBQyxDQUFDLEdBQUcsQ0FBQy
xDQUFDLEdBQUcsSUFBSsxDQUFD00tBQ2xDO0IBQ0QsT0FBTyxNQUFNLENBQUM7QUFDaEIsQ0FBQyI
sInNvdXJjZXNDb250ZW50IjpbLi8qKlxuICogQGxpY2Vuc2VcbiAqIENvcHlyaWdodCAyMDIwIEdvb2dsZSBMT
EMuIEFsCBSaWdodHMgUmVzZXJjZXJ2ZWQuXG4gKiBmaWNlbnNIZCB1bmRlciB0aGUgQXBhY2hlIEpY2Vuc
2UsIFZlcnNpb24gMi4wICh0aGUgXCJMaWNlbnNlXCipO1xuICogeW91IG1heSBub3QgdXNlIHROaXMgZmlsZ
SBleGNlcHQgaW4gY29tcGxpYW5jZSB3aXRoIHRoZSBMaWNlbnNlLlxuICogWW91IG1heSBvYnRhaW4gYSB
jb3B5IG9mIHRoZSBMaWNlbnNlIGF0XG4gKlxuICogaHR0cDovL3d3dy5hcGFjaGUub3JnL2xpY2Vuc2VzL0xJ
Q0VOU0UtMi4wXG4gKlxuICogVW5sZXNzIHJlcXVpcmVkIGJ5IGFwcGxpY2FibGUGbGF3IG9yIGFncmVIZC
B0byBpbiB3cm10aW5nLCBzb2Z0d2FyZVxuICogZGlzdHJpYnV0ZWQgdW5kZXIgdGhlIEpY2Vuc2UgaXMgZ
GlzdHJpYnV0ZWQgb24gYW4gXCJBuYBU1wiEjBU0ITLFXuICogV0IUSE9VVCBxQVJSQU5USUVTIE9SIE
NPTkRjVEIPTIMgT0YgQU5ZIEtJTkQsIGVpdGhlcjBlcHByZXNzIG9yIGltcGxpZWQuXG4gKiBTZWUgdGhlIE
xpY2Vuc2UgZm9yIHRoZSBzcGVjaWZpYyBsYW5ndWFnZSBnb3Zlcm5pbmcgcGVybWlze2lbnMgYW5kXG4
gKiBsaW1pdGF0aW9ucyB1bmRlciB0aGUgTGljZW5zZS5cbiAqID09PT09PT09PT09PT09PT09PT09PT09PT
T09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09
0IHtEYXRhVHlwZU1hcCwgZXRpbH0gZnJvbSAnQHRlbnNvcmsZsb3cvdGZqcyljb3JlZtcblxuZXhwb3J0IGZ1bm
N0aW9uIHJhbmdlSW1wbChcbiAgICBzdGFydDogbnVtYmVycyLCBzdG9wOiBudW1iZXIsIHNOZXA6IG51bWJlci
xcbiAgICBkdHlwZTogJ2Zsb2F0MzInfCdpbnQzMicpOiBEYXRhVHlwZU1hcFsnZmxvYXQzMicgcFAnaW50Mz
InXSB7XG4gIGNvbnN0IHNBhbWVTdGFydFN0b3AgPSBzdGFydCA9PT0gc3RvcDtcbiAgY29uc3QgaW5jcmVhc
2luZ1JhbmdlTmVnYXRpdmVtdGVwID0gc3RhcncGqPCBzdG9wIDwgc3RhcncGqJiYgc3RlcCA+IDE7XG5cbiAga
WYgKHNhbWVTdGFydFN0b3AgfHwgaW5jcmVhc2luZ1JhbmdlTmVnYXRpdmVtdGVwIHx8XG4gICAgICBk
ZWNyZWZfaW5nUmFuZ2VQb3NpdG12ZVN0ZXAgPSBzdG9wIDwgc3RhcncGqJiYgc3RlcCA+IDE7XG5cbiAga
WYgKHNhbWVTdGFydFN0b3AgfHwgaW5jcmVhc2luZ1JhbmdlTmVnYXRpdmVtdGVwIHx8XG4gICAgICBk
ZWNyZWZfaW5nUmFuZ2VQb3NpdG12ZVN0ZXApIHtcbiAgICBzYXR1cm4gdXRpbC5tYWtlWmVyb3NueXB
lZEFycmF5KDAsIGR0eXB1KTtcbiAgfVxuXG4gIGNvbnN0IG51bUVsZW1lbnRzID0gTWF0aC5hYnMoTWF0aC
5jZWlsKChzdG9wID0gc3RhcncGqIC8gc3RlcCkqO1xuICBjb25zdCB2YWx1ZXMGPSB1dGlsLm1ha2VaZXJvc1R
5cGVkQXJyYXkobnVtRWxlbnVudHM5IGR0eXB1KTtcblxuICBpZiAoc3RvcCA8IHNOYXJ0ICYmIHNOZXAqP
T09IDEpIHtcbiAgICAvLyBBdXRvIGFkanVzdCB0aGUgc3RlcDdzIHNPZ24gaWYgaXQgaGFzbid0IGJlZ4gc2V
0XG4gICAgLy8gKG9yIHdhcyBzZXQgdG8gMSlcbiAgICBzdGVwID0gLTE7XG4gIH1cb1xuICB2YWx1ZXNBm
F0gPSBzdGFydDtcbiAgZm9yIChsZXQgaSA9IDE7IGkgPCB2YWx1ZXMGbGVuZ3RoOyBpKyspIHtcbiAgICB2
YWx1ZXNBaV0gPSB2YWx1ZXNBaSAtdFDfDcsgc3RlcDtcbiAgfVxuICBzYXR1cm4gdmFsdWVzO1xufVxuIl19"
,"/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License,
Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by
applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
=====\n *\nimport { KernelConfig, RealDiv } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from
 './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const realDivConfig: KernelConfig =\ncreateBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n",/*\n * @license\n * Copyright 2019 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n *\nimport { KernelConfig, Relu } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from
 './unary_kernel';\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n",/*\n * @license\n

* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Relu6} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from  
 './unary_kernel';\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n", /**\n *  
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from  
 '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {identity} from  
 './Identity';\nimport {reshape} from './Reshape';\n\nlet wasmReverse: (\n  xId: number, axes: Uint8Array,  
 axesLength: number, outShape: Uint8Array,\n  outShapeLength: number, outId: number) => void;\n\nfunction  
setup(backend: BackendWasm) {\n  wasmReverse = backend.wasm.cwrap(Reverse, null, [\n    'number', // x_id\n    'array', // axes\n    'number', // axes_length\n    'array', // out_shape\n    'number', // out_shape_length\n    'number', // out_id\n  ]);\n}\n\nexport function reverse(\n  args: {inputs: ReverseInputs, backend: BackendWasm, attrs:  
ReverseAttrs}):  
TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {dims} =  
attrs;\n\n  const axes = util.parseAxisParam(dims, x.shape);\n\n  if (x.shape.length === 0) {\n    return  
identity({inputs: {x}, backend});\n  }\n\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const xId =  
backend.dataIdMap.get(x.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const axesBytes =  
new Uint8Array(new Int32Array(axes).buffer);\n  const outShapeBytes = new Uint8Array(new  
Int32Array(x.shape).buffer);\n\n  wasmReverse(\n    xId, axesBytes, axes.length, outShapeBytes, x.shape.length,  
outId);\n\n  const reshaped =\n    reshape({inputs: {x: out}, attrs: {shape: x.shape}, backend});\n\n  backend.disposeData(out.dataId);\n  return reshaped;\n}\n\nexport const reverseConfig: KernelConfig = {\n  kernelName: Reverse,\n  backendName: 'wasm',\n  kernelFunc: reverse as {} as KernelFunc,\n  setupFunc:  
setup\n};\n", /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the  
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,  
TensorInfo} from '@tensorflow/tfjs-core';\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport  
{BackendWasm} from '../backend_wasm';\n\nlet wasmRotate: (\n  xId: number, batch: number, imageHeight:  
number, imageWidth: number,\n  numChannels: number, radians: number, centerX: number, centerY: number,\n  fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n    'number', // xId\n    'number', //  
batch\n    'number', // imageHeight\n    'number', // imageWidth\n    'number', // numChannels\n    'number', //  
radians\n    'number', // centerX\n    'number', // centerY\n    'array', // fillBytes\n    'number', // fillLength\n  ]);\n}
```

```
'number', // outId\n ]);\n}\n\nexport function rotateWithOffset(args: {\n  inputs: RotateWithOffsetInputs,\n  backend: BackendWasm,\n  attrs: RotateWithOffsetAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {image} = inputs;\n  const {radians, fillValue, center} = attrs;\n  const out = backend.makeOutput(image.shape, image.dtype);\n  const imageId = backend.dataIdMap.get(image.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n  const [centerX, centerY] = backend_util.getImageCenter(center, imageHeight, imageWidth);\n  const fillIsBlack = fillValue === 0;\n  const fullOpacityValue = 255;\n  const fillValues = typeof fillValue === 'number' ? [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] : [...fillValue, fullOpacityValue];\n  const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n  wasmRotate(\n    imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n    centerY, fillBytes, fillValues.length, outId);\n  return out;\n}\n\nexport const rotateWithOffsetConfig: KernelConfig = {\n  kernelName: RotateWithOffset,\n  backendName: 'wasm',\n  kernelFunc: rotateWithOffset as {} as KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\n\nlet wasmScatterNd: (\n  indicesId: number, updatesId: number, dtype: CCppType, sliceRank: number,\n  numUpdates: number, sliceSize: number, strides: Uint8Array,\n  outputSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmScatterNd = backend.wasm.cwrap(ScatterNd, null /*void*/, [\n    'number', // indicesId\n    'number', // updatesId\n    'number', // dtype\n    'number', // sliceRank\n    'number', // numUpdates\n    'number', // sliceSize\n    'array', // strides\n    'number', // outputSize\n    'number' // outId\n ]);\n\nfunction scatterNd(\n  args: {\n    backend: BackendWasm, inputs: ScatterNdInputs, attrs: ScatterNdAttrs\n }): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {indices, updates} = inputs;\n  const {shape} = attrs;\n  const out = backend.makeOutput(shape, updates.dtype);\n  if (util.sizeFromShape(shape) === 0) {\n    return out;\n  }\n  const {sliceRank, numUpdates, sliceSize, strides, outputSize} = scatter_util.calculateShapes(updates, indices, shape);\n  const indicesData = backend.dataIdMap.get(indices.dataId);\n  const indicesId = indicesData.id;\n  const updatesData = backend.dataIdMap.get(updates.dataId);\n  const updatesId = updatesData.id;\n  const stridesBytes = new Uint8Array(new Int32Array(strides).buffer);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmScatterNd(\n    indicesId, updatesId, CCppType[updates.dtype], sliceRank, numUpdates,\n    sliceSize, stridesBytes, outputSize, outId);\n  return out;\n}\n\nexport const scatterNdConfig: KernelConfig = {\n  kernelName: ScatterNd,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: scatterNd as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n\n"/**\n */
```

@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
```

```
 './unary_kernel';\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n"/**\n *
```

@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Select, SelectInputs, util} from '@tensorflow/tfjs-core';\nimport
```

```
 {BackendWasm} from './backend_wasm';\nlet wasmSelect: (\n  conditionId: number, tId: number, eId: number,\n  offset: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmSelect =\n    backend.wasm.cwrap('SelectV2', null, [\n      'number', // conditionId\n      'number', // tId\n      'number', // eId\n      'number', // offset\n      'number', // outId\n    ]);\n\n  function select(args: {inputs: SelectInputs, backend:\n    BackendWasm}) {\n    const {inputs, backend} = args;\n    const {condition, t, e} = inputs;\n    const conditionId =\n      backend.dataIdMap.get(condition.dataId).id;\n    const tId = backend.dataIdMap.get(t.dataId).id;\n    const eId =\n      backend.dataIdMap.get(e.dataId).id;\n    const out = backend.makeOutput(t.shape, t.dtype);\n    const outId =\n      backend.dataIdMap.get(out.dataId).id;\n\n    const cRank = condition.shape.length;\n    const tRank =\n      t.shape.length;\n\n    const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n      1 : 0;\n\n    util.sizeFromShape(t.shape.slice(1));\n\n    wasmSelect(conditionId, tId, eId, offset, outId);\n    return out;\n  }\n\n  export
```

```
 const selectConfig: KernelConfig = {\n  kernelName: Select,\n  backendName: 'wasm',\n  kernelFunc: select as }  
 as KernelFunc,\n  setupFunc: setup\n};\n"/**\n *
```

@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util} from '@tensorflow/tfjs-
```

```
core';\nimport {BackendWasm} from './backend_wasm';\nlet wasmFunc: (xId: number, outId: number) =>  
 void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Sigmoid, null /*  
 void */, ['number', 'number']);\n\n  function sigmoid(args: {backend: BackendWasm, inputs: SigmoidInputs}):  
 TensorInfo {\n    const {backend, inputs: {x}} = args;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const out =\n      backend.makeOutput(x.shape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(out.shape) === 0) {\n      return out;\n    }\n\n    wasmFunc(xId,  
 outId);\n    return out;\n  }\n\n  export const sigmoidConfig: KernelConfig = {\n    kernelName: 'Sigmoid',\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: sigmoid as }  
 as KernelFunc\n};\n"/**\n *
```

@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or

agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId:\n number, channels: number, batch: number) =>\n void;\n\nfunction setup(backend: BackendWasm): void {\n\n  wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n    'number', // xId\n    'number', // outId\n    'number', // channels\n    'number' // batch\n  ]);\n\n  function softmax(\n    args: { backend: BackendWasm,\n    inputs: SoftmaxInputs, attrs: SoftmaxAttrs }):\n    TensorInfo {\n\n    const { backend, inputs: { logits }, attrs: { dim } } =\n    args;\n\n    const xId = backend.dataIdMap.get(logits.dataId).id;\n    const out = backend.makeOutput(logits.shape,\n    logits.dtype);\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const channels = logits.shape[dim];\n\n    const batch = util.sizeFromShape(logits.shape) / channels;\n\n    // Short-circuit zero-sized tensors.\n    if\n    (util.sizeFromShape(out.shape) === 0) {\n      return out;\n    }\n\n    wasmFunc(xId, outId, channels, batch);\n\n    return\n    out;\n  }\n\n  export const softmaxConfig: KernelConfig = {\n    kernelName: Softmax,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: softmax as {} as KernelFunc\n  };}\n\n"/**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n*\n\nimport { KernelConfig, Sin } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from\n './unary_kernel';\n\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n
```

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,\n SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { padV2Config } from\n './PadV2';\n\nimport { reshape } from './Reshape';\n\nimport { transpose } from './Transpose';\n\nfunction\n spaceToBatchND(args: {\n  inputs: SpaceToBatchNDInputs,\n  backend: BackendWasm,\n  attrs:\n  SpaceToBatchNDAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { blockShape,\n  paddings } = attrs;\n\n  const prod = util.sizeFromShape(blockShape);\n\n  const completePaddings: Array<[number,\n  number]> = [[0, 0]];\n\n  completePaddings.push(...(paddings as Array<[number, number]>));\n\n  for (let i = 1 +\n  blockShape.length; i < x.shape.length; ++i) {\n    completePaddings.push([0, 0]);\n  }\n\n  const paddedX =\n  padV2Config.kernelFunc({\n    inputs: { x },\n    backend,\n    attrs: { paddings: completePaddings, constantValue:\n    0 }\n  }) as TensorInfo;\n\n  const reshapedPaddedShape =\n  backend_util.getReshaped(paddedX.shape,\n  blockShape, prod, false);\n\n  const permutedReshapedPaddedPermutation =\n  backend_util.getPermuted(\n  reshapedPaddedShape.length, blockShape.length, false);\n\n  const flattenShape =\n  backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n\n  const reshapeInputs:\n  ReshapeInputs = { x: paddedX};\n  const reshapeAttrs: ReshapeAttrs = { shape: reshapedPaddedShape};\n  const\n  paddedXReshaped =\n  reshape({ inputs: reshapeInputs, backend, attrs: reshapeAttrs});\n\n  const transposeInputs:\n
```

```

TransposeInputs = {x: paddedXReshaped};\n const transposeAttrs:\n   TransposeAttrs = {perm:
permutedReshapedPaddedPermutation};\n const paddedXT =\n   transpose({inputs: transposeInputs, backend,
attrs: transposeAttrs});\n\n const resultReshapeInputs: ReshapeInputs = {x: paddedXT};\n const
resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};\n const result = reshape(\n   {inputs:
resultReshapeInputs, backend, attrs: resultReshapeAttrs});\n\n backend.disposeData(paddedX.dataId);\n
backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n\n return
result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n backendName: 'wasm',\n kernelFunc: spaceToBatchND as {} as KernelFunc\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\nimport {slice} from './Slice';\n\nexport function splitV(\n  args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {\n  const {inputs, attrs, backend} = args;\n  const {x} = inputs;\n  const
{numOrSizeSplits, axis} = attrs;\n\n  const $axis = util.parseAxisParam(axis, x.shape)[0];\n\n  const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n  const begin = new Array(x.shape.length).fill(0);\n
const size = x.shape.slice();\n  return splitSizes.map(s => {\n    const xSliceSize = [...size];\n    xSliceSize[$axis] =
s;\n    const xSlice =\n      slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});\n    begin[$axis] += s;\n
return xSlice;\n  });\n}\n\nexport const splitVConfig: KernelConfig = {\n kernelName: SplitV,\n backendName:
'wasm',\n kernelFunc: splitV as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nlet wasmStep:
(xId: number, alpha: number, dtype: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n    'number', // x_id\n
'number', // alpha\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\n\nfunction step(\n  args: {backend:
BackendWasm, inputs: StepInputs, attrs: StepAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n
const {alpha} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n\n  const out =
backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmStep(xId,
alpha, CCppType[x.dtype], outId);\n  return out;\n}\n\nexport const stepConfig: KernelConfig = {\n kernelName:
Step,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: step as {} as KernelFunc\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, Sqrt} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n", "/*\n * @license\n
 * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig}
from './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const squaredDifferenceConfig: KernelConfig
=\n createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright
2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {reshape} from
'./Reshape';\n\nimport {slice} from './Slice';\n\nlet wasmStridedSlice: (\n  xId: number, xStridesBytes: Uint8Array,
xRank: number,\n  beginBytes: Uint8Array, endBytes: Uint8Array, stridesBytes: Uint8Array,\n  outShapeBytes:
Uint8Array, outStridesBytes: Uint8Array,\n  outShapeLength: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n  wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n
'number', // xId\n 'array', // xStrides\n 'number', // xRank\n 'array', // beginBytes\n 'array', // endBytes\n
'array', // stridesBytes\n 'array', // outShapeBytes\n 'array', // outStridesBytes\n 'number', //
outShapeLength\n 'number', // outId\n ]);\n}\n\nexport function stridedSlice(args: {\n  backend: BackendWasm,\n
inputs: StridedSliceInputs,\n  attrs: StridedSliceAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n\n  const {\n    begin,\n    end,\n    strides,\n    beginMask,\n    endMask,\n    ellipsisMask,\n
newAxisMask,\n    shrinkAxisMask\n  } = attrs;\n\n  const {\n    finalShapeSparse,\n    finalShape,\n    isIdentity,\n
sliceDim0,\n    isSimpleSlice,\n    begin: $begin,\n    end: $end,\n    strides: $strides\n  } =\n    slice_util.sliceInfo(\n
      x.shape, begin, end, strides, beginMask, endMask, ellipsisMask,\n      newAxisMask, shrinkAxisMask);\n\n  let result;\n\n  if (isIdentity) {\n    // Optimization #1, slice is a no-op plus reshape\n    result = reshape({inputs: {x},
backend, attrs: {shape: finalShape}});\n  } else if (sliceDim0 || isSimpleSlice) {\n    // Optimization #2, slice is
memory contiguous (only occurs in dim 0)\n    util.assert(\n      x.shape.length >= 1,\n      () => `Input must have
rank at least 1, got: ${x.shape.length}`);\n\n    const size = slice_util.computeOutShape($begin, $end, $strides);\n
// To tolerate begin[0] > end[0] (a 0-output slice), we min(begin, end).\n    const sliced = slice({inputs: {x},

```

```

backend, attrs: {begin: $begin, size});\n  result =\n    reshape({inputs: {x: sliced}, backend, attrs: {shape:
finalShape}});\n  backend.disposeData(sliced.dataId);\n } else {\n  const out =
backend.makeOutput(finalShapeSparse, 'float32');\n\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const
xStridesBytes =\n    new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n  const beginBytes
= new Uint8Array(new Int32Array($begin).buffer);\n  const endBytes = new Uint8Array(new
Int32Array($end).buffer);\n  const stridesBytes = new Uint8Array(new Int32Array($strides).buffer);\n\n  const
outputShapeBytes =\n    new Uint8Array(new Int32Array(finalShapeSparse).buffer);\n  const outStridesBytes =
new Uint8Array(\n    new Int32Array(util.computeStrides(finalShapeSparse)).buffer);\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n\n  wasmStridedSlice(\n    xId, xStridesBytes, x.shape.length,
beginBytes, endBytes, stridesBytes,\n    outputShapeBytes, outStridesBytes, finalShapeSparse.length, outId);\n\n  result = reshape({inputs: {x: out}, backend, attrs: {shape: finalShape}});\n\n  backend.disposeData(out.dataId);\n
}\n\n  return result;\n}\n\nexport const stridedSliceConfig: KernelConfig = {\n  kernelName: StridedSlice,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: stridedSlice as { } as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmSum: (xId:
number, reduceSize: number, dtype: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n    'number', // input_id\n    'number', // reduce_size\n    'number', // dtype\n    'number', // out_id\n  ]);\n\n  function sum(args: {backend:
BackendWasm, inputs: SumInputs, attrs: SumAttrs}):\n    TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let
inputId = xId;\n    let input = x;\n    const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n    let reductionAxes = axes;\n    if (inputWasTransposed) {\n    const
transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n    // transpose was
not a no-op. We will need to dispose of this\n    // once we are done.\n    input = transposed;\n    inputId =
transposedId;\n    reductionAxes = backend_util.getInnerMostAxes(\n    reductionAxes.length,
input.shape.length);\n    }\n  }\n  backend_util.assertAxesAreInnerMostDims(\n    'sum', reductionAxes,
input.shape.length);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n  const reduceSize =
util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, input.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmSum(inputId, reduceSize, CCppType[out.dtype], outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of
the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n  return out;\n}\n\nexport const sumConfig: KernelConfig = {\n  kernelName: Sum,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: sum as { } as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

```

governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from\n './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const subConfig: KernelConfig =\n createBinaryKernelConfig(Sub, supportsFullBroadcast);\n", "/**\n * @license\n * Copyright 2019 Google LLC. All\n Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an\n "AS IS"\n BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\nimport\n {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nlet wasmTile: (\n  xId:\n  number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\n  newShapeSize: number, dtype:\n  number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTile =\n  backend.wasm.cwrap(Tile, null /* void */, [\n    'number', // x_id\n    'array', // x_shape\n    'number', //\n    x_shape.length\n    'array', // new_shape\n    'number', // new_shape.length\n    'number' // out_id\n  ]);\n\n  function tile(\n    args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n    const {inputs,\n    backend, attrs} = args;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const {reps} =\n    attrs;\n\n    const newShape: number[] = new Array(x.shape.length);\n    for (let i = 0; i < newShape.length; i++) {\n      newShape[i] = x.shape[i] * reps[i];\n    }\n\n    const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n    const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n\n    const out =\n    backend.makeOutput(newShape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmTile(\n    xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n    CCppType[out.dtype], outId);\n\n    return\n    out;\n  }\n\n  export const tileConfig: KernelConfig = {\n    kernelName: Tile,\n    backendName: 'wasm',\n    setupFunc:\n    setup,\n    kernelFunc: tile as {} as KernelFunc\n  };  
", "/**\n * @license\n * Copyright 2021 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this\n file\n except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an\n "AS IS"\n BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this\n file\n except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an\n "AS IS"\n BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this\n file\n except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
```


agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\nlet wasmTopK: (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n  xDtype: CppDType, k: number, sorted: boolean, outValuesId: number,\n  outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'number', // k\n    'bool', // sorted\n    'number', // outValuesId\n    'number', // outIndicesId\n  ]);\n\n  export const topk: (\n    args: { inputs: TopKInputs, backend: BackendWasm, attrs: TopKAttrs }) =>\n    TensorInfo[] | TensorInfo = ({ inputs, backend, attrs }) => {\n      const { x } = inputs;\n      const { k, sorted } = attrs;\n      const xId = backend.dataIdMap.get(x.dataId).id;\n      const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n      const outputShape = x.shape.slice();\n      outputShape[outputShape.length - 1] = k;\n      const outValues = backend.makeOutput(outputShape, x.dtype);\n      const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n      const outIndices = backend.makeOutput(outputShape, 'int32');\n      const outIndicesId = backend.dataIdMap.get(outIndices.dataId).id;\n      wasmTopK(\n        xId, xShapeBytes, x.shape.length, CppDType[x.dtype], k, sorted,\n        outValuesId, outIndicesId);\n      return [outValues, outIndices];\n    };\n\n  export const topKConfig: KernelConfig = {\n    kernelName: TopK,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: topk as { } as KernelFunc,\n  };,\n  /**\n   * @license\n   * Copyright 2021 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the \"License\");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing,\n   * software\n   * distributed under the License is distributed on an \"AS IS\" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   */\n}
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmTransform: (\n  imageId: number, transformsId: number, isBatchTransform: boolean,\n  batch: number, outHeight: number, outWidth: number, numChannels: number,\n  imageWidth: number, imageHeight: number, strides: Uint8Array,\n  stridesLength: number, interpolationModeId: number, fillModeId: number,\n  fillValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmTransform = backend.wasm.cwrap(Transform, null /* void */, [\n    'number', // imageId\n    'number', // transformsId\n    'bool', // isBatchTransform\n    'number', // batch\n    'number', // outHeight\n    'number', // outWidth\n    'number', // numChannels\n    'number', // imageWidth\n    'number', // imageHeight\n    'array', // strides\n    'number', // stridesLength\n    'number', // interpolationModeId\n    'number', // fillModeId\n    'number', // fillValue\n    'number', // outId\n  ]);\n\n  function transform(\n    args: {\n      backend: BackendWasm, inputs: TransformInputs, attrs: TransformAttrs\n    }):\n    TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { image, transforms } = inputs;\n    const { interpolation, fillMode, fillValue, outputShape } = attrs;\n    const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n    const [outHeight, outWidth] =\n      outputShape != null ? outputShape : [imageHeight, imageWidth];\n    const outShape =\n      [batch, outHeight, outWidth, numChannels] as [number, number, number, number];\n    const strides =\n      new Uint8Array(new Int32Array(util.computeStrides(image.shape)).buffer);\n    const out = backend.makeOutput(outShape, image.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const imageData = backend.dataIdMap.get(image.dataId);\n    const imageId = imageData.id;\n    const transformsData = backend.dataIdMap.get(transforms.dataId);\n    const transformsId = transformsData.id;\n    const
```

```

interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n let fillModeId;\n switch (fillMode) {\n case
'constant':\n fillModeId = 1;\n break;\n case 'reflect':\n fillModeId = 2;\n break;\n case 'wrap':\n
fillModeId = 3;\n break;\n case 'nearest':\n fillModeId = 4;\n break;\n default:\n fillModeId = 1;\n
break;\n }\n\n wasmTransform(\n imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n
outWidth, numChannels, imageWidth, imageHeight, strides,\n image.shape.length - 1, interpolationModeId,
fillModeId, fillValue,\n outId);\n\n return out;\n}\n\nexport const transformConfig: KernelConfig = {\n
kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as {} as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {slice} from
'./Slice';\n\nfunction unpack(\n args: {inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs});\n
TensorInfo[] {\n const {inputs, backend, attrs} = args;\n const {value} = inputs;\n let {axis} = attrs;\n if (axis <
0) {\n axis += value.shape.length;\n }\n\n const numOutputs = value.shape[axis];\n const rank =
value.shape.length;\n const outShape: number[] = new Array(rank - 1);\n let outIndex = 0;\n for (let i = 0; i < rank;\n
i++) {\n if (i !== axis) {\n outShape[outIndex++] = value.shape[i];\n }\n }\n const outs: TensorInfo[] = new
Array(numOutputs);\n const begin = new Array(rank).fill(0);\n const size = value.shape.slice();\n size[axis] = 1;\n
for (let i = 0; i < outs.length; i++) {\n begin[axis] = i;\n outs[i] = slice({inputs: {x: value}, attrs: {begin, size},
backend});\n }\n return outs.map(({dataId, dtype}) => ({dataId, dtype, shape: outShape}));\n}\n\nexport const
unpackConfig: KernelConfig = {\n kernelName: Unpack,\n backendName: 'wasm',\n kernelFunc: unpack as {} as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n */\n\n//

```

```

We explicitly import the modular kernels so they get registered in the\n// global registry when we compile the
library. A modular build would replace\n// the contents of this file and import only the kernels that are
needed.\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {fusedMatMulConfig}
from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {addConfig} from
'./kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport
{anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {avgPoolConfig}
from './kernels/AvgPool';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport
{batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {castConfig} from './kernels/Cast';\nimport
{ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport
{concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport
{conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {cosConfig} from
'./kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from
'./kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {depthToSpaceConfig}
from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from

```

```

./kernels/DepthwiseConv2dNative';\nimport {eluConfig} from './kernels/Elu';\nimport {equalConfig} from
./kernels/Equal';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from
./kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from
./kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from
./kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport
{fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from
./kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport
{gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport
{greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport
{leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport
{lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport
{logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport
{maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport
{meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
./kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from
./kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
./kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
./kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
./kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
./kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
./kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
{rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
./kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
./kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
./kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
./kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
./kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
./kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
./kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
./kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
./kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
./kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
./kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n  \n absConfig,\n  \n addConfig,\n  \n addNConfig,\n  \n allConfig,\n  \n anyConfig,\n  \n
argMaxConfig,\n  \n avgPoolConfig,\n  \n batchMatMulConfig,\n  \n batchToSpaceNDConfig,\n  \n castConfig,\n  \n
ceilConfig,\n  \n clipByValueConfig,\n  \n concatConfig,\n  \n conv2DConfig,\n  \n conv2DBackpropInputConfig,\n  \n
cosConfig,\n  \n coshConfig,\n  \n cropAndResizeConfig,\n  \n cumsumConfig,\n  \n depthToSpaceConfig,\n  \n
depthwiseConv2dNativeConfig,\n  \n eluConfig,\n  \n equalConfig,\n  \n expConfig,\n  \n expandDimsConfig,\n  \n fillConfig,\n
  \n flipLeftRightConfig,\n  \n floorConfig,\n  \n floorDivConfig,\n  \n fusedMatMulConfig,\n  \n fusedBatchNormConfig,\n
  \n fusedConv2DConfig,\n  \n fusedDepthwiseConv2DConfig,\n  \n gatherNdConfig,\n  \n gatherV2Config,\n  \n greaterConfig,\n
  \n greaterEqualConfig,\n  \n identityConfig,\n  \n leakyReluConfig,\n  \n lessConfig,\n  \n lessEqualConfig,\n  \n logConfig,\n
  \n logicalAndConfig,\n  \n maxConfig,\n  \n maximumConfig,\n  \n maxPoolConfig,\n  \n meanConfig,\n  \n minConfig,\n
  \n minimumConfig,\n  \n mirrorPadConfig,\n  \n multiplyConfig,\n  \n negConfig,\n  \n nonMaxSuppressionV3Config,\n
  \n

```

```

nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n
onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n
realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n
rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n
sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n
squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n
tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n
zerosLikeConfig\n];\n\nfor (const kernelConfig of kernelConfigs) {\n registerKernel(kernelConfig);\n}\n", "/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nfunction zerosLike(args: {inputs: ZerosLikeInputs, backend:
BackendWasm}) {\n const {inputs: {x}, backend} = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backendtypedArrayFromHeap(out);\n outVals.fill(0);\n return out;\n}\n\nexport const
zerosLikeConfig: KernelConfig = {\n kernelName: ZerosLike,\n backendName: 'wasm',\n kernelFunc: zerosLike
as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {env} from '@tensorflow/tfjs-core';\n\nconst ENV = env();\n\n/**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
Uint8Array([\n 0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n 2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
11\n ]));\n\n/**\n * True if threads are supported.\n *\n// From: https://github.com/GoogleChromeLabs/wasm-
feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n return false;\n }\n\n try {\n //
Test for transferability of SABs (needed for Firefox)\n //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
program containing threaded\n // instructions.\n return WebAssembly.validate(new Uint8Array([\n 0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
11\n ]));\n } catch (e) {\n return false;\n }\n});\n", "\nvar WasmBackendModuleThreadedSimd = (function() {\n
var _scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n return
(function(WasmBackendModuleThreadedSimd) {\n WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}

```

```

return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}}return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}}return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\.this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module["ENVIRONMENT_IS_PTHREAD"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module["buffer"];var scriptDirectory="";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"^")}arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"]("unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["insp
ect"]=function(){return"[Emscripten Module object]"};var
nodeWorkerThreads;try{nodeWorkerThreads=require("worker_threads")}catch(e){console.error("The
\"worker_threads\" module is not supported in this node.js build - perhaps a newer version is needed?");throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
arguments!="undefined"){arguments_=arguments}if(typeof
quit==="function"){quit_=function(status){quit(status)}}if(typeof print!="undefined"){if(typeof
console==="undefined")console={};console.log=print;console.warn=console.error=typeof
printErr!="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire

```

```

ctory=self.location.href}else if(typeof
document!=="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !== "undefined" &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf("\^")+1)}else{scriptDirectory=""}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret}else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
===200||xhr.status===0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)
}setWindowTitle=function(title){document.title=title}else{if(ENVIRONMENT_IS_NODE){if(typeof
performance==="undefined"){global.performance=require("perf_hooks").performance}}var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module["arguments"])arguments_=Module["arguments"];if(Module["thisProgram"])thisProgram=
Module["thisProgram"];if(Module["quit"])quit_=Module["quit"];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)}}var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!=="object"){abort("no native wasm
support detected")}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str="";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var

```

```

u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63;if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAtAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAtAt(++i);u=65536+((u&1023)<<10)|u1&1023;if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++
]=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var
len=0;for(var i=0;i<str.length;++i){var
u=str.charCodeAtAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10)|str.charCodeAtAt(++i)&1023;if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmM
emory=Module["wasmMemory"];buffer=Module["buffer"]}else{if(Module["wasmMemory"]){wasmMemory=
Module["wasmMemory"]}else{wasmMemory=new
WebAssembly.Memory({"initial":INITIAL_MEMORY/65536,"maximum":2147483648/65536,"shared":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err("requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag");if(ENVIRONMENT_IS_NODE){console.log("(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)")}throw Error("bad
memory")}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlob
alBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctor
s()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof

```

```

Module["postRun"]]=="function")Module["postRun"]=[Module["postRun"];while(Module["postRun"].length){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)function addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,"addRunDependency cannot be used in a pthread worker");runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}}function removeRunDependency(id){runDependencies--;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDependencies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}if(dependenciesFulfilled){var callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module["preloadedAudios"]={};function abort(what){if(Module["onAbort"]){Module["onAbort"](what)}if(ENVIRONMENT_IS_PTHREAD)console.error("Pthread aborting at "+(new Error).stack);what+="\n";err(what);ABORT=true;EXITSTATUS=1;what+="abort("+what+"). Build with -s ASSERTIONS=1 for more info.";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://";function isFileURI(filename){return hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-wasm-threaded-simd.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the wasm failed"}}catch(err){abort(err)}}function getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof fetch==="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:"same-origin"}).then(function(response){if(!response["ok"]){throw"failed to load wasm binary file at "+wasmBinaryFile+""}return response["arrayBuffer"]()).catch(function(){return getBinary(wasmBinaryFile)})}else{if(readAsync){return new Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new Uint8Array(response))},reject)}))}return Promise.resolve().then(function(){return getBinary(wasmBinaryFile)})}function createWasm(){var info={"a":asmLibraryArg};function receiveInstance(instance,module){var exports=instance.exports;Module["asm"]=exports;wasmTable=Module["asm"]["t"];wasmModule=module;if(!ENVIRONMENT_IS_PTHREAD){var numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.loadWasmModuleToWorker(w,function(){if(--numWorkersToLoad)removeRunDependency("wasm-instantiate")})})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency("wasm-instantiate")}}function receiveInstantiatedSource(output){receiveInstance(output["instance"],output["module"])}function instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err("failed to asynchronously prepare wasm: "+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof WebAssembly.instantiateStreaming==="function"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFile)&&typeof fetch==="function"){return fetch(wasmBinaryFile,{credentials:"same-origin"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return result.then(receiveInstantiatedSource,function(reason){err("wasm streaming compile failed: "+reason);err("falling

```



```

back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}}))else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}var
ASM_CONSTS={10520:function(){throw\"Canceled!\"},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0}});function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg
)}}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,E
BADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOSIG:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADF:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14
8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5};function
__emscripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress===addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr===mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return
1}}var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw\"Atomics.notify returned an unexpected value
\"+ret}Module[\"_emscripten_futex_wake\"]=_emscripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! killThread() can only ever be
called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in
killThread!\";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.pthreads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker.pthread=undefined}functio
n cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! cancelThread() can only
ever be called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in
cancelThread!\";var
pthread=PThread.pthreads[pthread_ptr];pthread.worker.postMessage({\"cmd\": \"cancel\"})}function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! cleanupThread() can only
ever be called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in

```

```

cleanupThread!";var
pthread=PThread pthreads[thread_ptr];if(pthread){GROWABLE_HEAP_I32()[thread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)}}var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}},initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,1,ENVIRON
MENT_IS_WORKER,1);__emscripten_register_main_browser_thread_id(tb)},initWorker:function(){ pthreads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self())__pthread
_tsd_run_dtors()},runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=_pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({"cmd":"exit"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({"cmd":"cancelDone"})},terminateAllThreads:function(){for(var t in
PThread pthreads){var
pthread=PThread pthreads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)}}PThre
ad pthreads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[],freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread pthreads[worker pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker pthread);worker pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e["data"];var
cmd=d["cmd"];if(worker pthread)PThread.currentProxiedOperationCallerThread=worker pthread.threadInfoStruct;
if(d["targetThread"]&&d["targetThread"]!="_pthread_self"){var
thread=PThread pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d["transferList"])}}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\" to target pthread '+d["targetThread"]+'\", but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\"processQueuedMainThread
Work\"){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\"spawnThread\"){spawnThread(e.data)}else
if(cmd===\"cleanupThread\"){cleanupThread(d["thread"])}}else
if(cmd===\"killThread\"){killThread(d["thread"])}}else

```

```

if(cmd===\cancelThread"){cancelThread(d[\thread\])}else
if(cmd===\loaded"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\print"){out(\Thread \"+d[\threadId\"]+\":
\"+d[\text\])}else if(cmd===\printErr"){err(\Thread \"+d[\threadId\"]+\": \"+d[\text\])}else
if(cmd===\alert"){alert(\Thread \"+d[\threadId\"]+\": \"+d[\text\])}else if(cmd===\exit"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}}else
if(cmd===\exitProcess"){try{exit(d[\returnCode\])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\cancelDone"){PThread.returnWorkerToPool(worker)}else
if(cmd===\objectTransfer"){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\setimmediate"){worker.postMessage(e.data)}else{err(\worker sent an unknown command
\"+cmd)}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\pthread sent
an error! \"+e.filename+\":\"+e.lineno+\":
\"+e.message)};if(ENVIRONMENT_IS_NODE){worker.on(\message\",function(data){worker.onmessage({data:d
ata})});worker.on(\error\",function(data){worker.onerror(data)});worker.on(\exit\",function(data){})}worker.post
Message({\cmd\":\load\",urlOrBlob\":Module[\mainScriptUrlOrBlob\]|_scriptDir,\wasmMemory\":wasmMe
memory,\wasmModule\":wasmModule}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile(\tfjs-
backend-wasm-threaded-simd.worker.js\");PThread.unusedWorkers.push(new
Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}}};function
establishStackSpace(stackTop,stackMax){_emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module[\establishStackSpace\"]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module[\getNoExitRuntime\"]=getNoExitRuntime;function invokeEntryPoint(ptr,argv){return
wasmTable.get(ptr)(argv)}Module[\invokeEntryPoint\"]=invokeEntryPoint;function
__assert_fail(condition,filename,line,func){abort(\Assertion failed: \"+UTF8ToString(condition)+\", at:
\"+[filename?UTF8ToString(filename):\unknown filename],line,func?UTF8ToString(func):\unknown
function\")}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
_emscripten_get_now;if(ENVIRONMENT_IS_NODE){_emscripten_get_now=function(){var
t=process[\hrtime\]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){_emscripten_get_now=function(){return performance.now()-
Module[\__performance_now_clock_drift\]}}else if(typeof
dateNow!=\"undefined"){_emscripten_get_now=dateNow}else _emscripten_get_now=function(){return
performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return
value}function _atexit(func,argv){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(1,1,func,argv)}function
__emscripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessag
e({\cmd\":\processQueuedMainThreadWork\})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({\targetThread\":targetThreadId,\cmd\":\processThreadQueu
e\})}else{var pthread=PThread.pthreads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({\cmd\":\processThreadQueue\})}ret
urn 1}function _abort(){abort()}function _emscripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emscripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emscripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\timed-out\")return-

```

```

73;if(ret===\"not-equal\")return-6;if(ret===\"ok\")return 0;throw\"Atoms.wait returned an unexpected value
\'+ret}else{if(Atoms.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_mai
n_thread_futex>>2,0);return-
73}lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emscripten_main_thread_process_queued_calls();if(Atoms.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr)}return
0}}function
_emscripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emscripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require(\"os\").cpus().length;return
navigator[\"hardwareConcurrency\"]}function _emscripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emscripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retu
rn ret}var _emscripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emscripten_receive_on_main_thread_js(index,numCallArgs,args){_emscripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emscripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emscripten_receive_on_main_thread_js_callArgs)}function
_emscripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emscripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmmemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var
oldSize=_emscripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListen
ers:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))}{return }}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList

```

```

});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence}),removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return\"";if(target==window)return\"#window\";
if(target==screen)return\"#screen\";return
target&&target.nodeName?target.nodeName:\"\"},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas);GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emscripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emscripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):\"\";_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=\"undefined\"?document:0,typeof window!=\"undefined\"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=\"undefined\"?document.querySelector(target):undefined);return domElement}function

```

```

findCanvasEventTarget(target){return findEventTarget(target)}function
_emsripten_set_canvas_element_size_calling_thread(target,width,height){var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){canvas.GLctxObject.GLctx.viewport(0,0,width,height)}}else
if(canvas.canvasSharedPtr){var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emsripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1}else{return-4}return 0}function
_emsripten_set_canvas_element_size_main_thread(target,width,height){if(ENVIRONMENT_IS_PTHREAD)retur
n _emsripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emsripten_set_canvas_element_size(target,width,height){var
canvas=findCanvasEventTarget(target);if(canvas){return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}else{return
_emsripten_set_canvas_element_size_main_thread(target,width,height)}}function
_emsripten_set_current_thread_status(newStatus){}function
_emsripten_set_thread_name(threadId,name){}function __webgl_enable_ANGLE_instanced_arrays(ctx){var
ext=ctx.getExtension("ANGLE_instanced_arrays");if(ext){ctx["vertexAttribDivisor"]=function(index,divisor){ext["vertexAttribDivisorANGLE"](index,divisor)};ctx["drawArraysInstanced"]=function(mode,first,count,primcount){ext["drawArraysInstancedANGLE"](mode,first,count,primcount)};ctx["drawElementsInstanced"]=function(mode,count,type,indices,primcount){ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount)}}return 1}}function __webgl_enable_OES_vertex_array_object(ctx){var
ext=ctx.getExtension("OES_vertex_array_object");if(ext){ctx["createVertexArray"]=function(){return
ext["createVertexArrayOES"]();};ctx["deleteVertexArray"]=function(vao){ext["deleteVertexArrayOES"](vao)};
ctx["bindVertexArray"]=function(vao){ext["bindVertexArrayOES"](vao)};ctx["isVertexArray"]=function(vao)
{return ext["isVertexArrayOES"](vao)};return 1}}function __webgl_enable_WEBGL_draw_buffers(ctx){var
ext=ctx.getExtension("WEBGL_draw_buffers");if(ext){ctx["drawBuffers"]=function(n,bufs){ext["drawBuffers
WEBGL"](n,bufs)};return 1}}function
__webgl_enable_WEBGL_multi_draw(ctx){return!!(ctx.multiDrawWebgl=ctx.getExtension("WEBGL_multi_dra
w"))}var
GL={counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{},offscreenCanvases:{},timerQueriesEXT:[],programInfos:{},stringCache:{},unpackAlignment:4,recordError:
function recordError(errorCode){if(!GL.lastError){GL.lastError=errorCode}},getNewId:function(table){var
ret=GL.counter++;for(var i=table.length;i<ret;i++){table[i]=null}return
ret},getSource:function(shader,count,string,length){var source="";for(var i=0;i<count;++i){var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return
source},createContext:function(canvas,webGLContextAttributes){var
ctx=canvas.getContext("webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle},registerContext:function(ctx,webGLContextAttributes){var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:

```

```

ctx};if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault===undefined){webGLContextAttributes.enableExtensions
ByDefault}{GL.initExtensions(context)}return
handle},makeContextCurrent:function(contextHandle){GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){return
GL.contexts[contextHandle]},deleteContext:function(contextHandle){if(GL.currentContext===GL.contexts[context
Handle])GL.currentContext=null;if(typeof
JSEvents===undefined){JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null},initExtensions:f
unction(context){if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("
EXT_disjoint_timer_query");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){if(ext.indexOf("lose_context")<0&&ext.inde
xOf("debug")<0){GLctx.getExtension(ext)}}),populateUniformTable:function(program){var
p=GL.programs[program];var
ptable=GL.programInfos[program]={uniforms:{},maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1};var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)===`\`){name=name.slice(0,name.lastIndexOf(``))}var loc=GLctx.getUniformLocation(p,name);if(loc){var
id=GLctx.getNewId(GLctx.uniforms);utable[name]=[u.size,id];GLctx.uniforms[id]=loc;for(var j=1;j<u.size;++j){var
n=name+`\`+j+`\`;loc=GLctx.getUniformLocation(p,n);id=GLctx.getNewId(GLctx.uniforms);GLctx.uniforms[id]=loc}}
};var __emscripten_webgl_power_preferences=["default","low-power","high-performance"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],"failIfMajorPerf
ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)]};var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GLctx.createContext(canvas,contextAttributes);return contextHandle}function
__emscripten_webgl_create_context(a0,a1){return __emscripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){stream===1?out:err}(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
__fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return __emscripten_proxy_to_main_thread_js(3,1,fd);return
0}function __fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return

```

```

_emsripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
_fd_write(fd,iiov,iiovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(5,1,fd,iiov,iiovcnt,pnum);var num=0;for(var i=0;i<iiovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iiov+i*8>>2];var len=GROWABLE_HEAP_I32()[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j]);num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function _pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
_pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasmTable.get(routine)(arg))}}f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw`Internal Error! spawnThread()
can only ever be called from main application thread!`;var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw`Internal
error!`;if(!threadParams.pthread_ptr)throw`Internal error, no pthread
ptr!`;PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;+i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emsripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr
ead=pthread;var
msg={"cmd":"run","\start_routine":threadParams.startRoutine,"arg":threadParams.arg,"threadInfoStruct":thre
adParams.pthread_ptr,"stackBase":threadParams.stackBase,"stackSize":threadParams.stackSize};worker.runPthre
ad=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded
){worker.runPthread();delete worker.runPthread}}function
_pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===`undefined`){err(`Current
environment does not support SharedArrayBuffer, pthreads are not available!`);return
6}if(!pthread_ptr){err(`pthread_create called with a null thread pointer!`);return 28}var transferList=[];var
error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return
_emsripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var
stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-
1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+
8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==0}else{stackSize=2097152}var
allocatedOwnStack=stackBase===0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=
stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var
i=0;i<228>>2;+i)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_p
tr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var
headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var
threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached
,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_P
THREAD){threadParams.cmd=`spawnThread`;postMessage(threadParams,transferList)}else{spawnThread(thread
Params)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var

```



```

tb=_pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled==2)throw\Canceled!\}function
_emsripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce(\Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread\)}function
_emsripten_do_pthread_join(thread,status,block){if(!thread){err(\pthread_join attempted on a null thread
pointer!\);return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self()===thread){err(\PThread
\'+thread+\ is attempting to join to itself!\);return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emsripten_main_browser_thread_id()===thread){err(\Main thread
\'+thread+\ is attempting to join to itself!\);return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!===thread){err(\pthread_join attempted on thread
\'+thread+\, which does not point to a valid thread, or does not exist anymore!\);return
ERRNO_CODES.ESRCH}var
detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err(\Attempted to join thread
\'+thread+\, which was already detached!\);return
ERRNO_CODES.EINVAL}if(block){_emsripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus===1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage(\cmd:\cleanupThread\,thread\);return
0}if(!block){return
ERRNO_CODES.EBUSY}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emsripten_main_thre
ad_process_queued_calls();_emsripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}function _pthread_join(thread,status){return _emsripten_do_pthread_join(thread,status,true)}function
_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\object\)return navigator[\hardwareConcurrency\]|1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emsripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wr
ite,_sysconf];var
asmLibraryArg={\e\:__assert_fail,\r\:__call_main,\x\:_emsripten_notify_thread_queue,\b\:_abort,\y\:_
_emsripten_asm_const_int,\j\:_emsripten_conditional_set_current_thread_status,\d\:_emsripten_futex_wait,\
c\:_emsripten_futex_wake,\f\:_emsripten_get_now,\p\:_emsripten_memcpy_big,\A\:_emsripten_num_l
ogical_cores,\u\:_emsripten_receive_on_main_thread_js,\q\:_emsripten_resize_heap,\v\:_emsripten_set_ca

```

```

nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory||Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"C\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"E\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"F\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"G\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"H\"]).apply(
null,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"J\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"K\"]).apply(null,argumen
ts)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"L\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"M\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"N\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"O\"]).ap
ply(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"P\"]).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"][\"Q\"]).apply(null,arguments)};var
_Ceil=Module[\"_Ceil\"]=function(){return(_Ceil=Module[\"_Ceil\"]=Module[\"asm\"][\"R\"]).apply(null,argument
s)};var
_ClipByValue=Module[\"_ClipByValue\"]=function(){return(_ClipByValue=Module[\"_ClipByValue\"]=Module[
\"asm\"][\"S\"]).apply(null,arguments)};var
_Conv2D=Module[\"_Conv2D\"]=function(){return(_Conv2D=Module[\"_Conv2D\"]=Module[\"asm\"][\"T\"]).app
ly(null,arguments)};var
_Conv2DBackpropInput=Module[\"_Conv2DBackpropInput\"]=function(){return(_Conv2DBackpropInput=Modul
e[\"_Conv2DBackpropInput\"]=Module[\"asm\"][\"U\"]).apply(null,arguments)};var
_Cos=Module[\"_Cos\"]=function(){return(_Cos=Module[\"_Cos\"]=Module[\"asm\"][\"V\"]).apply(null,arguments
)};var
_Cosh=Module[\"_Cosh\"]=function(){return(_Cosh=Module[\"_Cosh\"]=Module[\"asm\"][\"W\"]).apply(null,argu
ments)};var
_CropAndResize=Module[\"_CropAndResize\"]=function(){return(_CropAndResize=Module[\"_CropAndResize\"]
=Module[\"asm\"][\"X\"]).apply(null,arguments)};var

```

```

_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][_"Y"]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][_"Z"]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][_" _"]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][_"$"]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][_"aa"]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][_"ba"]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][_"ca"]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][_"da"]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][_"ea"]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][_"fa"]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][_"ga"]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][_"ha"]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][_"ia"]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][_"ja"]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][_"ka"]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][_"la"]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][_"ma"]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][_"na"]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][_"oa"]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][_"pa"]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][_"qa"]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][_"ra"]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][_"sa"]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][_"ta"]).apply(null,arguments)};var

```

```

_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][_"ua"]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][_"va"]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][_"wa"]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][_"xa"]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][_"ya"]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][_"za"]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][_"Aa"]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][_"Ba"]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][_"Ca"]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][_"Da"]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][_"Ea"]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][_"Fa"]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][_"Ga"]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][_"Ha"]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][_"Ia"]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][_"Ja"]).apply(null,arguments)};var
_Relu=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][_"Ka"]).apply(null,arguments)};var
_Relu6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][_"La"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][_"Ma"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][_"Na"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][_"Oa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][_"Pa"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][_"Qa"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][_"Ra"]).apply(null,arguments)};var

```

```

_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"]["Sa"]);
apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"]["Ta"]);ap
ply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"]["Ua"]);.apply(null,arguments)
};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Va"]);.a
pply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Wa"]);.apply(null,argume
nts)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Xa"]);.apply(n
ull,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_Squared
Difference"]=Module["asm"]["Ya"]);.apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Za"]);.apply(null,argume
nts)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["as
m"]["_a"]);.apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["$a"]);.apply(null,argument
s)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["ab"]);.apply(null,argume
nts)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["bb"]);.apply(null,argument
s)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["cb"]);.apply(null,argu
ments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["db"]);.apply(null,argument
s)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"]["eb"]);.apply(null,ar
guments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"]["fb
b"]);.apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"]["gb
b"]);.apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"]["hb"]);.apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"]["ib"]);.apply(nul
l,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"]["jb"]);.apply(null,arguments
)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"]["kb"]);.apply(null,arguments)};var
_emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=function(){return(_emscripten_get_global
_libc=Module["_emscripten_get_global_libc"]=Module["asm"]["lb"]);.apply(null,arguments)};var
_thread_self=Module["_thread_self"]=function(){return(_thread_self=Module["_thread_self"]=Module["as
m"]["mb"]);.apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=M
odule["__pthread_tsd_run_dtors"]=Module["asm"]["nb"]);.apply(null,arguments)};var

```

```

_emsripten_main_thread_process_queued_calls=Module["_emsripten_main_thread_process_queued_calls"]=function(){return(_emsripten_main_thread_process_queued_calls=Module["_emsripten_main_thread_process_queued_calls"]=Module["asm"][["ob"]]).apply(null,arguments)};var
_emsripten_current_thread_process_queued_calls=Module["_emsripten_current_thread_process_queued_calls"]=function(){return(_emsripten_current_thread_process_queued_calls=Module["_emsripten_current_thread_process_queued_calls"]=Module["asm"][["pb"]]).apply(null,arguments)};var
_emsripten_register_main_browser_thread_id=Module["_emsripten_register_main_browser_thread_id"]=function(){return(_emsripten_register_main_browser_thread_id=Module["_emsripten_register_main_browser_thread_id"]=Module["asm"][["qb"]]).apply(null,arguments)};var
_emsripten_main_browser_thread_id=Module["_emsripten_main_browser_thread_id"]=function(){return(_emsripten_main_browser_thread_id=Module["_emsripten_main_browser_thread_id"]=Module["asm"][["rb"]]).apply(null,arguments)};var
__emsripten_do_dispatch_to_thread=Module["__emsripten_do_dispatch_to_thread"]=function(){return(__emsripten_do_dispatch_to_thread=Module["__emsripten_do_dispatch_to_thread"]=Module["asm"][["sb"]]).apply(null,arguments)};var
_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=function(){return(_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=Module["asm"][["tb"]]).apply(null,arguments)};var
_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=function(){return(_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=Module["asm"][["ub"]]).apply(null,arguments)};var
__emsripten_call_on_thread=Module["__emsripten_call_on_thread"]=function(){return(__emsripten_call_on_thread=Module["__emsripten_call_on_thread"]=Module["asm"][["vb"]]).apply(null,arguments)};var
_emsripten_tls_init=Module["_emsripten_tls_init"]=function(){return(_emsripten_tls_init=Module["_emsripten_tls_init"]=Module["asm"][["wb"]]).apply(null,arguments)};var
__emsripten_thread_init=Module["__emsripten_thread_init"]=function(){return(__emsripten_thread_init=Module["__emsripten_thread_init"]=Module["asm"][["xb"]]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][["yb"]]).apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"][["zb"]]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][["Ab"]]).apply(null,arguments)};var
_emsripten_stack_set_limits=Module["_emsripten_stack_set_limits"]=function(){return(_emsripten_stack_set_limits=Module["_emsripten_stack_set_limits"]=Module["asm"][["Bb"]]).apply(null,arguments)};var
_memalign=Module["_memalign"]=function(){return(_memalign=Module["_memalign"]=Module["asm"][["Cb"]]).apply(null,arguments)};var
__emsripten_allow_main_runtime_queued_calls=Module["__emsripten_allow_main_runtime_queued_calls"]=10512;var
__emsripten_main_thread_futex=Module["__emsripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasmMemory"]=wasmMemory;Module["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromiseResolve(Module);initRuntime();postMessage({"cmd":"loaded"});return}preRun();if(runDependencies>0){return}function

```

```

doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus\"])Module["setStatus\"]("Running...");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus\"]("\\"),1);doRun(),1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":"exitProcess","returnCode":status});throw new
ExitStatus(status)}else{}}if(noExitRuntime){}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunti
me();if(Module["onExit\"])Module["onExit\"](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module["preInit\"])if(typeof
Module["preInit"]===\function\"){Module["preInit"]=[Module["preInit"]];while(Module["preInit"].length>0){
Module["preInit"].pop()}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n);nif (typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports["WasmBackendModuleThreadedSimd"] =
WasmBackendModuleThreadedSimd;\n", "\nvar WasmBackendModule = (function() {\n var _scriptDir = typeof
document !== 'undefined' && document.currentScript ? document.currentScript.src : undefined;\n if (typeof
__filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n
WasmBackendModule = WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!=="undefined"?WasmBackendModule:{};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\.\/this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory=""";function
locateFile(path){if(Module["locateFile\"])return Module["locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\path\").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\fs");if(!nodePath)nodePath=require(\path");filename=n
odePath["normalize\"](filename);return
nodeFS["readFileSync\"](filename,binary?null:\utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,\^");arguments_=process["arg
v"].slice(2);process["on\"](\uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on\"](\unhandledRejection",abort);quit_=function(status){process["exit\"](status)};Module["insp
ect"]=function(){return["Emscripten Module object"]}"}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,\binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof

```

```

arguments!=="undefined"){arguments_=arguments}if(typeof
quit===\function\"){quit_=function(status){quit(status)}if(typeof print!=="undefined"){if(typeof
console===\undefined\"){console={};console.log=print;console.warn=console.error=typeof
printErr!=="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(!_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf(\blob:\")!=0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf(\^")+1)}else{scriptDirectory=""}}read_=function(url){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} }else{ }var
out=Module[\print\]||console.log.bind(console);var err=Module[\printErr\]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} }moduleOverr
ides=null;if(Module[\arguments\])arguments_=Module[\arguments\];if(Module[\thisProgram\])thisProgram=
Module[\thisProgram\];if(Module[\quit\])quit_=Module[\quit\];var
wasmBinary;if(Module[\wasmBinary\])wasmBinary=Module[\wasmBinary\];var
noExitRuntime=Module[\noExitRuntime\]||true;if(typeof WebAssembly!=="object"){abort(\no native wasm
support detected\)}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort(\Assertion failed: "+text)}}function getCFunc(ident){var
func=Module[\_"+ident];assert(func,\Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC=\string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len);return ret},\array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType===\string\)return UTF8ToString(ret);if(returnType===\boolean\)return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\number\});var
numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}var UTF8Decoder=typeof
TextDecoder!=="undefined"?new TextDecoder("utf8"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{var
str="";while(idx<endPtr){var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}}return str}function

```



```

UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;+i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=Module["preRun"];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]=="function")Module["postRun"]=Module["postRun"];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"](runDependencies)}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=nul
l}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what="abort(\n"+what+"\n). Build with -s ASSERTIONS=1 for more info.";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-
wasm.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function

```

```

getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\function\&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\same-
origin\}).then(function(response){if(!response[\ok\]){throw"failed to load wasm binary file at
\"+wasmBinaryFile+\"}return response[\arrayBuffer\]()}).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))}}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\a\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\asm\]=exports;wasmMemory=Module[\asm\][\j\];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module[\asm\][\r\];removeRunDependency(\wasm-
instantiate\)}addRunDependency(\wasm-instantiate\);function
receiveInstantiatedSource(output){receiveInstance(output[\instance\])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\function\&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\function\){return fetch(wasmBinaryFile,{credentials:\same-
origin\}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\wasm streaming compile failed: \"+reason);err(\falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\instantiateWasm\]){try{var
exports=Module[\instantiateWasm\](info,receiveInstance);return exports}catch(e){err(\Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(Promise.reject);return{}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\function\){callback(Module);continue}var func=callback.func;if(typeof
func===\number\){if(callback.arg===undefined){wasmTable.get(func)()}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}function _abort(){abort()}function
_emscripten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscripten_get_heap_size(){return HEAPU8.length}function
emscripten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var oldSize=_emscripten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requesteSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iiov,iiovcnt,pnum){var num=0;for(var

```

```

i=0;i<iocvnt;i++){ var ptr=HEAP32[iov+i*8>>2];var len=HEAP32[iov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _pthread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]|1;return 1 } }setErrNo(28);return-1 }var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
___wasm_call_ctors=Module[\"___wasm_call_ctors\"]=function(){return(___wasm_call_ctors=Module[\"___wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"s\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"t\"]).apply(null,argument
s)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"u\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"v\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"w\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"x\"]).app
ly(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"y\"]).a
pply(null,arguments)};var

```

```

_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"])[["z"]]).apply(null,arguments);var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"])[["A"]]).apply(null,arguments);var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"])[["B"]]).apply(null,arguments);var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"])[["C"]]).apply(null,arguments);var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=Module["asm"])[["D"]]).apply(null,arguments);var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"])[["E"]]).apply(null,arguments);var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"])[["F"]]).apply(null,arguments);var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"])[["G"]]).apply(null,arguments);var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"])[["H"]]).apply(null,arguments);var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"])[["I"]]).apply(null,arguments);var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"])[["J"]]).apply(null,arguments);var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"])[["K"]]).apply(null,arguments);var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"])[["L"]]).apply(null,arguments);var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"])[["M"]]).apply(null,arguments);var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"])[["N"]]).apply(null,arguments);var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"])[["O"]]).apply(null,arguments);var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"])[["P"]]).apply(null,arguments);var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"])[["Q"]]).apply(null,arguments);var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"])[["R"]]).apply(null,arguments);var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"])[["S"]]).apply(null,arguments);var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"])[["T"]]).apply(null,arguments);var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"])[["U"]]).apply(null,arguments);var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"])[["V"]]).apply(null,arguments);var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"])[["W"]]).apply(null,arguments);var

```

```

_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][_X]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][_Y]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][_Z]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][_]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][_$]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][_aa]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][_ba]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][_ca]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][_da]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][_ea]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][_fa]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][_ga]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][_ha]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][_ia]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][_ja]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][_ka]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][_la]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][_ma]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][_na]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][_oa]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][_pa]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][_qa]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][_ra]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][_sa]).apply(null,arguments)};var

```

```

_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][_"ta"]).apply(null,arguments)};var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][_"ua"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][_"va"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][_"wa"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][_"xa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][_"ya"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][_"za"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][_"Aa"]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][_"Ba"]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][_"Ca"]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][_"Da"]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][_"Ea"]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][_"Fa"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][_"Ga"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"][_"Ha"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][_"Ia"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"][_"Ja"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][_"Ka"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][_"La"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][_"Ma"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][_"Na"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][_"Oa"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][_"Pa"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][_"Qa"]).apply(null,arguments)};var

```

```

_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"])[_R
a]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"])[_Sa]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"])[_Ta]).apply(nu
ll,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"])[_Ua]).apply(null,argument
s)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"])[_Va]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"])[_Wa]).
apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"
][_Xa]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"])[_Ya\
]).apply(null,arguments)};Module["cwrap"]=cwrap;var calledRun;function
ExitStatus(status){this.name=_ExitStatus;this.message=_Program terminated with
exit(_+status+)};this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"](_Running...);setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"](_),1});doRun(),1)}else{doRun()}}Module["run"]=run;if(Module["preInit"]){if(typeof
Module["preInit"]==_function)Module["preInit"]=Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop()}run();\n\n\n return WasmBackendModule.ready\n\n\n);};\n\n\nif (typeof exports ===
'object' && typeof module === 'object')\n module.exports = WasmBackendModule;\nelse if (typeof define ===
'function' && define[_amd'])\n define([], function() { return WasmBackendModule; });\nelse if (typeof exports ===
'object')\n exports[_WasmBackendModule] = WasmBackendModule;\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport './flags_wasm';\n\nimport {backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,
engine, env, KernelBackend, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasmModule,
WasmFactoryConfig} from './wasm-out/tfjs-backend-wasm';\n\nimport {BackendWasmThreadedSimdModule} from
'./wasm-out/tfjs-backend-wasm-threaded-simd';\n\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-
backend-wasm-threaded-simd.js';\n\n@ts-ignore\nimport {wasmWorkerContents} from './wasm-out/tfjs-backend-
wasm-threaded-simd.worker.js';\n\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\n\ninterface
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:
number;\n /** Only used for string tensors, storing encoded bytes. */\n stringBytes?: Uint8Array[];\n}\n\nexport
type DataId = object; // object instead of {} to force non-primitive.\n\nexport class BackendWasm extends
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:
DataStorage<TensorData>;\n\n constructor(public wasm:
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n

```

```

this.wasm.tfjs.initWithThreadsCount(threadsCount);\n  actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n  this.dataIdMap = new DataStorage(this, engine());\n  }\n\n  write(values: backend_util.BackendValues, shape:\n  number[], dtype: DataType):\n    DataId {\n      const dataId = {id: this.dataIdNextNumber++};\n      this.move(dataId, values, shape, dtype, 1);\n      return dataId;\n    }\n\n  numDataIds(): number {\n    return\n  this.dataIdMap.numDataIds();\n  }\n\n  async time(f: () => void): Promise<BackendTimingInfo> {\n    const start =\n  util.now();\n    f();\n    const kernelMs = util.now() - start;\n    return {kernelMs};\n  }\n\n  move(\n  dataId:\n  DataId, values: backend_util.BackendValues, shape: number[],\n  dtype: DataType, refCount: number): void {\n    const id = this.dataIdNextNumber++;\n    if (dtype === 'string') {\n      const stringBytes = values as Uint8Array[];\n      this.dataIdMap.set(\n        dataId,\n        {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n    }\n    return;\n  }\n\n  const size = util.sizeFromShape(shape);\n  const numBytes = size *\n  util.bytesPerElement(dtype);\n  const memoryOffset = this.wasm._malloc(numBytes);\n  this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n  this.wasm.tfjs.registerTensor(id, size,\n  memoryOffset);\n  if (values != null) {\n    this.wasm.HEAPU8.set(\n      new Uint8Array(\n        (values\n  as backend_util.TypedArray).buffer,\n        (values as backend_util.TypedArray).byteOffset, numBytes),\n      memoryOffset);\n  }\n  }\n\n  read(dataId: DataId): Promise<backend_util.BackendValues> {\n    return\n  this.readSync(dataId);\n  }\n\n  readSync(dataId: DataId): backend_util.BackendValues {\n    const {memoryOffset,\n  dtype, shape, stringBytes} =\n    this.dataIdMap.get(dataId);\n    if (dtype === 'string') {\n      return stringBytes;\n    }\n    const bytes = this.wasm.HEAPU8.slice(\n      memoryOffset,\n      memoryOffset +\n  util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n    return typedArrayFromBuffer(bytes.buffer, dtype);\n  }\n\n  /**\n   * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n   * is released, false\n   * otherwise.\n   * @param dataId\n   * @oaram force Optional, remove the data regardless of refCount\n   */\n  disposeData(dataId: DataId, force = false): boolean {\n    if (this.dataIdMap.has(dataId)) {\n      const data =\n  this.dataIdMap.get(dataId);\n      data.refCount--;\n      if (!force && data.refCount > 0) {\n        return false;\n      }\n      this.wasm._free(data.memoryOffset);\n      this.wasm.tfjs.disposeData(data.id);\n    }\n    this.dataIdMap.delete(dataId);\n    return true;\n  }\n\n  /** Return refCount of a `TensorData`. */\n  refCount(dataId: DataId): number {\n    if (this.dataIdMap.has(dataId)) {\n      const tensorData =\n  this.dataIdMap.get(dataId);\n      return tensorData.refCount;\n    }\n    return 0;\n  }\n\n  incRef(dataId: DataId) {\n    const data = this.dataIdMap.get(dataId);\n    if (data != null) {\n      data.refCount++;\n    }\n  }\n\n  floatPrecision():\n  32 {\n    return 32;\n  }\n\n  // Returns the memory offset of a tensor. Useful for debugging and unit\n  // testing.\n  getMemoryOffset(dataId: DataId): number {\n    return this.dataIdMap.get(dataId).memoryOffset;\n  }\n\n  dispose() {\n    this.wasm.tfjs.dispose();\n    if ('PThread' in this.wasm) {\n      this.wasm.PThread.terminateAllThreads();\n    }\n    this.wasm = null;\n  }\n\n  memory() {\n    return {unreliable:\n  false};\n  }\n\n  /**\n   * Make a tensor info for the output of an op. If `memoryOffset` is not\n   * present, this\n   * method allocates memory on the WASM heap. If `memoryOffset`\n   * is present, the memory was allocated\n   * elsewhere (in c++) and we just record\n   * the pointer where that memory lives.\n   */\n  makeOutput(shape:\n  number[], dtype: DataType, memoryOffset?: number):\n  TensorInfo {\n    let dataId: {};\n    if (memoryOffset\n  == null) {\n      dataId = this.write(null /* values */, shape, dtype);\n    } else {\n      const id =\n  this.dataIdNextNumber++;\n      dataId = {id};\n      this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,\n  refCount: 1});\n      const size = util.sizeFromShape(shape);\n      this.wasm.tfjs.registerTensor(id, size,\n  memoryOffset);\n    }\n    return {dataId, shape, dtype};\n  }\n\n  typedArrayFromHeap({shape, dtype, dataId}:\n  TensorInfo):\n  backend_util.TypedArray {\n    const buffer = this.wasm.HEAPU8.buffer;\n    const\n  {memoryOffset} = this.dataIdMap.get(dataId);\n    const size = util.sizeFromShape(shape);\n    switch (dtype) {\n      case 'float32':\n        return new Float32Array(buffer, memoryOffset, size);\n      case 'int32':\n        return new\n  Int32Array(buffer, memoryOffset, size);\n      case 'bool':\n        return new Uint8Array(buffer, memoryOffset,\n  size);\n      default:\n        throw new Error(`Unknown dtype ${dtype}`);\n    }\n  }\n\n  function\n  createInstantiateWasmFunc(path: string) {\n    // this will be replace by rollup plugin patchWechatWebAssembly in\n  // miniprogram's output.\n    // tslint:disable-next-line:no-any\n    return (imports: any, callback: any) => {\n      util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n        if (!response['ok']) {\n

```



```

imports.env.a(^ failed to load wasm binary file at '${path}');\n    }\n    response.arrayBuffer().then(binary => {\n
  WebAssembly.instantiate(binary, imports).then(output => {\n      callback(output.instance, output.module);\n
  });\n  });\n  });\n  return {};\n  });\n}\n\n/**\n * Returns the path of the WASM binary.\n * @param
simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n *
@param wasmModuleFolder the directory containing the WASM binaries.\n */\nfunction getPathToWasmBinary(\n
  simdSupported: boolean, threadsSupported: boolean,\n  wasmModuleFolder: string) {\n  if (wasmPath != null) {\n
    // If wasmPath is defined, the user has supplied a full path to\n    // the vanilla .wasm binary.\n    return
wasmPath;\n  }\n\n  let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n  if (simdSupported &&
  threadsSupported) {\n    path = 'tfjs-backend-wasm-threaded-simd.wasm';\n  } else if (simdSupported) {\n    path =
'tfjs-backend-wasm-simd.wasm';\n  }\n\n  if (wasmFileMap != null) {\n    if (wasmFileMap[path] != null) {\n
    return wasmFileMap[path];\n    }\n  }\n\n  return wasmModuleFolder + path;\n}\n\n/**\n * Initializes the wasm
module and creates the js <--> wasm bridge.\n * NOTE: We wrap the wasm module in a object with property
'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in
Chrome 76).\n */\nexport async function init(): Promise<{ wasm: BackendWasmModule}> {\n  const
[simdSupported, threadsSupported] = await Promise.all([\n    env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n    env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n  ]);\n\n  return new Promise((resolve, reject) =>
{\n    const factoryConfig: WasmFactoryConfig = {};\n\n    /**\n     * This function overrides the Emscripten
module locateFile utility.\n     * @param path The relative path to the file that needs to be loaded.\n     * @param
prefix The path to the main JavaScript file's directory.\n     */\n    factoryConfig.locateFile = (path, prefix) => {\n
    if (path.endsWith('.worker.js')) {\n      const response = wasmWorkerContents;\n      const blob = new
Blob([response], {type: 'application/javascript'});\n      return URL.createObjectURL(blob);\n    }\n\n    if
(path.endsWith('.wasm')) {\n      return getPathToWasmBinary(\n        simdSupported as boolean,\n
        threadsSupported as boolean,\n        wasmPathPrefix != null ? wasmPathPrefix : prefix);\n    }\n\n    return prefix
+ path;\n  });\n\n  // Use the instantiateWasm override when system fetch is not available.\n  // Reference:\n  //
https://github.com/emscripten-core/emscripten/blob/2bca083cbbd5a4133db61fd74d04f7feecfa907/tests/manual_wasm_instantiate.html#L170\n
if (customFetch) {\n    factoryConfig.instantiateWasm =\n
createInstantiateWasmFunc(getPathToWasmBinary(\n      simdSupported as boolean, threadsSupported as
boolean,\n      wasmPathPrefix != null ? wasmPathPrefix : ''));\n  }\n\n  let initialized = false;\n
factoryConfig.onAbort = () => {\n    if (initialized) {\n      // Emscripten already called console.warn so no need to
double log.\n      return;\n    }\n    if (initAborted) {\n      // Emscripten calls `onAbort` twice, resulting in double
error\n      // messages.\n      return;\n    }\n    initAborted = true;\n    const rejectMsg =\n      'Make sure the
server can serve the `.wasm` file relative to the ' +\n      'bundled js file. For more details see\n
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers';\n
reject({message: rejectMsg});\n  });\n\n  let wasm: Promise<BackendWasmModule>;\n  // If `wasmPath` has
been defined we must initialize the vanilla module.\n  if (threadsSupported && simdSupported && wasmPath ==
null) {\n    factoryConfig.mainScriptUrlOrBlob = new Blob(\n      [\n        var WasmBackendModuleThreadedSimd = `
+\n        wasmFactoryThreadedSimd.toString(),\n      ]\n      {type: 'text/javascript'});\n    wasm =
wasmFactoryThreadedSimd(factoryConfig);\n  } else {\n    // The wasmFactory works for both vanilla and SIMD
binaries.\n    wasm = wasmFactory(factoryConfig);\n  }\n\n  // The WASM module has been successfully
created by the factory.\n  // Any error will be caught by the onAbort callback defined above.\n
wasm.then((module) => {\n    initialized = true;\n    initAborted = false;\n\n    const voidReturnType: string =
null;\n    // Using the tfjs namespace to avoid conflict with emscripten's API.\n    module.tfjs = {\n      init:
module.cwrap('init', null, []),\n      initWithThreadsCount: module.cwrap('init_with_threads_count', null,
['number']),\n      getThreadsCount: module.cwrap('get_threads_count', 'number', []),\n      registerTensor:
module.cwrap(\n        'register_tensor', null, [\n          'number', // id\n          'number', // size\n
          'number', // memoryOffset\n        ]),\n      disposeData: module.cwrap('dispose_data', voidReturnType,
['number']),\n      dispose: module.cwrap('dispose', voidReturnType, []),\n    }; \n\n    resolve({ wasm: module});\n

```

```

});\n });\n\nfunction typedArrayFromBuffer(\n  buffer: ArrayBuffer, dtype: DataType):
backend_util.TypedArray {\n  switch (dtype) {\n    case 'float32':\n      return new Float32Array(buffer);\n    case
'int32':\n      return new Int32Array(buffer);\n    case 'bool':\n      return new Uint8Array(buffer);\n    default:\n
throw new Error(`Unknown dtype ${dtype}`);\n  }\n}\n\nconst wasmBinaryNames = [\n  'tfjs-backend-
wasm.wasm', 'tfjs-backend-wasm-simd.wasm',\n  'tfjs-backend-wasm-threaded-simd.wasm'\n] as const ;\n\nconst
WasmBinaryName = typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix:
string = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet
customFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `.wasm` file
which will be fetched when the wasm\n * backend is initialized. See\n *
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more
details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch
to download\n * the wasm file, default to false.\n * \n * @doc {heading: 'Environment', namespace: 'wasm'}\n
*\n * export function setWasmPath(path: string, usePlatformFetch = false): void {\n  deprecationWarn(\n
'setWasmPath has been deprecated in favor of setWasmPaths and' +\n    ' ' will be removed in a future release.);\n  if
(initAborted) {\n    throw new Error(\n      'The WASM backend was already initialized. Make sure you call ' +\n
      '\n      `setWasmPath()` before you call `tf.setBackend()` or `tf.ready()`);\n  }\n  wasmPath = path;\n  customFetch =
usePlatformFetch;\n}\n\n/**\n * Configures the locations of the WASM binaries.\n * \n * \n * \n * setWasmPaths({\n
* 'tfjs-backend-wasm.wasm': 'renamed.wasm',\n * 'tfjs-backend-wasm-simd.wasm': 'renamed-simd.wasm',\n *
'tfjs-backend-wasm-threaded-simd.wasm': 'renamed-threaded-simd.wasm'\n * });\n * \n * tf.setBackend('wasm');\n *
\n * \n * @param prefixOrFileMap This can be either a string or object:\n * - (string) The path to the directory
where the WASM binaries are located.\n * Note that this prefix will be used to load each binary (vanilla,\n *
SIMD-enabled, threading-enabled, etc.).\n * - (object) Mapping from names of WASM binaries to custom\n *
full paths specifying the locations of those binaries. This is useful if\n * your WASM binaries are not all located
in the same directory, or if your\n * WASM binaries have been renamed.\n * @param usePlatformFetch optional
boolean to use platform fetch to download\n * the wasm file, default to false.\n * \n * @doc {heading:
'Environment', namespace: 'wasm'}\n * \n * export function setWasmPaths(\n  prefixOrFileMap: string|{\n  key in
WasmBinaryName]?: string},\n  usePlatformFetch = false): void {\n  if (initAborted) {\n    throw new Error(\n
'The WASM backend was already initialized. Make sure you call ' +\n    '\n    `setWasmPaths()` before you call
`tf.setBackend()` or ' +\n    '\n    `tf.ready()`);\n  }\n  \n  if (typeof prefixOrFileMap === 'string') {\n    wasmPathPrefix
= prefixOrFileMap;\n  } else {\n    wasmFileMap = prefixOrFileMap;\n    const missingPaths =\n    wasmBinaryNames.filter(name => wasmFileMap[name] == null);\n    if (missingPaths.length > 0) {\n      throw new
Error(\n        `There were no entries found for the following binaries: ` +\n        ` ${missingPaths.join(',')}. Please
either call setWasmPaths with a ` +\n        `map providing a path for each binary, or with a string indicating ` +\n
        `the directory where all the binaries can be found.`);\n    }\n  }\n  \n  customFetch = usePlatformFetch;\n}\n\n/**
Used in unit tests. *\n * export function resetWasmPath(): void {\n  wasmPath = null;\n  wasmPathPrefix = null;\n
wasmFileMap = {};\n  customFetch = false;\n  initAborted = false;\n}\n\nlet threadsCount = -1;\nlet
actualThreadsCount = -1;\n\n/**\n * Sets the number of threads that will be used by XNNPACK to create\n *
threadpool (default to the number of logical CPU cores).\n * \n * This must be called before calling
`tf.setBackend('wasm')`.\n * \n * export function setThreadsCount(numThreads: number) {\n  threadsCount =
numThreads;\n}\n\n/**\n * Gets the actual threads count that is used by XNNPACK.\n * \n * It is set after the
backend is initialized.\n * \n * export function getThreadsCount(): number {\n  if (actualThreadsCount === -1) {\n
throw new Error(`WASM backend not initialized.`);\n  }\n  return actualThreadsCount;\n}\n\n",\nexport const
wasmWorkerContents = `var Module={};function threadPrintErr(){var
text=Array.prototype.slice.call(arguments).join("\\ ");console.error(text)}function threadAlert(){var
text=Array.prototype.slice.call(arguments).join("\\ ");postMessage({cmd:"alert",text:text,threadId:Module["_pthread_self"]()})}var
err=threadPrintErr;this.alert=threadAlert;Module["instantiateWasm"]=function(info,receiveInstance){var
instance=new

```

```

WebAssembly.Instance(Module["wasmModule"],info);Module["wasmModule"]=null;receiveInstance(instance);r
return instance.exports};function
moduleLoaded(){this.onmessage=function(e){try{if(e.data.cmd===\"load\"){Module["wasmModule"]=e.data.wa
smModule;Module["wasmMemory"]=e.data.wasmMemory;Module["buffer"]=Module["wasmMemory"].buffer;
Module["ENVIRONMENT_IS_PTHREAD"]=true;if(typeof
e.data.urlOrBlob===\"string\"){importScripts(e.data.urlOrBlob)}else{var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)}
WasmBackendModuleThreadedSimd(Module).then(function(instance){Module=instance;moduleLoaded()})}else
if(e.data.cmd===\"objectTransfer\"){Module["PThread"].receiveObjectTransfer(e.data)}else
if(e.data.cmd===\"run\"){Module["__performance_now_clock_drift"]=performance.now()-
e.data.time;Module["__emscripten_thread_init\""](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module["establishStackSpace\""](top,max);Module["__emscripten_tls_init\""](
);Module["PThread"].receiveObjectTransfer(e.data);Module["PThread"].setThreadStatus(Module["__pthread_self
\""](),1);try{var
result=Module["invokeEntryPoint\""](e.data.start_routine,e.data.arg);if(!Module["getNoExitRuntime\""]())Module["
PThread"].threadExit(result)}catch(ex){if(ex===\"Canceled!\"){Module["PThread"].threadCancel()}else
if(ex!==\"unwind\")if(ex instanceof
Module["ExitStatus\"]){if(Module["getNoExitRuntime\""]()){else{Module["PThread"].threadExit(ex.status)}}el
se{Module["PThread"].threadExit(-2);throw ex}}}}else
if(e.data.cmd===\"cancel\")if(Module["__pthread_self\""]()){Module["PThread"].threadCancel()}else
if(e.data.target===\"setimmediate\")else
if(e.data.cmd===\"processThreadQueue\")if(Module["__pthread_self\""]){Module["__emscripten_current_thread_
process_queued_calls\""]()}else{err(\"worker.js received unknown command
\"+e.data.cmd);err(e.data)}catch(ex){err(\"worker.js onmessage() captured an uncaught exception:
\"+ex);if(ex&&ex.stack)err(ex.stack);throw ex}};if(typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof process.versions.node===\"string\"){self={location:{href:__filename}}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require(\"worker_threads\");global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on(\"message\",function(data){onmessage({data:data})});var
nodeFS=require(\"fs\");var nodeRead=function(filename){return nodeFS.readFileSync(filename,\"utf8\")};function
globalEval(x){global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));postMessage=function(msg){parentPort.postMessage(msg)};if(typeof
performance===\"undefined\"){performance={now:function(){return Date.now()}}}};\"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport './flags_wasm';\n\nimport {registerBackend} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm,
init} from './backend_wasm';\n\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath,
setWasmPaths} from './backend_wasm';\n\nexport {version as version_wasm} from './version';\n\nconst
WASM_PRIORITY = 2;\n\nregisterBackend('wasm', async () => {\n\n  const {wasm} = await init();\n\n  return new
BackendWasm(wasm);\n\n}, WASM_PRIORITY);\n\n\"/** @license See the LICENSE file. *\n\n// This code is
auto-generated, do not modify this file!\n\nconst version = '3.11.0';\n\nexport
{version};\n\n\"names\":[\"CppDType\",\"FusableActivation\",\"wasmFusedMatMul\",\"fusedMatMulConfig\",\"kernelNa
me\",\"_FusedMatMul\",\"backendName\",\"setupFunc\",\"backend\",\"wasm\",\"cwrap\",\"kernelFunc\",\"args\",\"inputs\",\"attrs

```

, "a", "b", "bias", "preluActivationWeights", "dtype", "Error", "transposeA", "transposeB", "activation", "leakyreluAlpha", "aId", "dataIdMap", "get", "dataId", "id", "bId", "biasId", "biasData", "shape", "length", "preluActivationWeightsId", "fuse dActivation", "leftDim", "rightDim", "batchDim", "out", "makeOutput", "outId", "aShapeBytes", "UInt8Array", "Int32Array", "buffer", "bShapeBytes", "createUnaryKernelConfig", "outType", "wasmFunc", "x", "xId", "util", "sizeFromShape", "absConfig", "Abs", "createBinaryKernelConfig", "supportsFullBroadcast", "outputType", "newShape", "backend_util", "assertAndGetBroadcastShape", "aBroadcastDims", "getBroadcastDims", "bBroadcastDims", "loopsOverAllOfA", "every", "v", "i", "loopsOverAllOfB", "addConfig", "Add", "addNConfig", "AddN", "inputIds", "map", "inputIdsBytes", "identity", "inVals", "typedArrayFromHeap", "set", "wasmTranspose", "identityConfig", "Identity", "transpose", "_a", "perm", "newPerm", "push", "minValIdx", "j", "reducedShape", "permIsNoOp", "outShape", "inShape", "Array", "computeOutShape", "cloned", "permBytes", "xShapeBytes", "wasmAll", "transposeConfig", "Transpose", "permuteAxesAndTranspose", "axis", "xShape", "xRank", "originalAxes", "parseAxisParam", "axes", "permutedAxes", "getAxesPermutation", "xTransposed", "inputWasTransposed", "getInnerMostAxes", "transposed", "wasmAny", "allConfig", "All", "keepDims", "inputId", "input", "inputRank", "assertAxesAreInnerMostDims", "_b", "reduceShape", "reduceSize", "disposeData", "expandShapeToKeepDim", "anyConfig", "Any", "wasmAvgPool", "argMaxConfig", "ArgMax", "transposedId", "slice", "outerSize", "innerSize", "avgPoolConfig", "AvgPool", "filterSize", "strides", "pad", "dimRoundingMode", "convInfo", "computePool2DInfo", "filterHeight", "filterWidth", "padTop", "padInfo", "top", "padRight", "right", "padBottom", "bottom", "padLeft", "left", "strideHeight", "strideWidth", "channels", "inChannels", "dataFormat", "dilationWidth", "dilationHeight", "reshape", "xSize", "\$shape", "inferFromImplicitShape", "assert", "incRef", "wasmBatchMatMul", "reshapeConfig", "Reshape", "batchMatMulConfig", "BatchMatMul", "aRank", "bRank", "innerShapeA", "innerShapeB", "outerShapeA", "outerShapeB", "outerDimsA", "outerDimsB", "batchDimA", "batchDimB", "batchDimsCompatible", "concat", "b3dShape", "a3d", "b3d", "a3dId", "b3dId", "Math", "max", "sliceImpl", "vals", "begin", "size", "isContinuous", "slice_util", "isSliceContinuous", "xStrides", "computeStrides", "flatOffset", "computeFlatOffset", "subarray", "decodedData", "fromUInt8ToStringArray", "inBuf", "outBuf", "outLoc", "indexToLoc", "inLoc", "idx", "fromStringArrayToUInt8", "values", "begin_", "size_", "xVals", "readSync", "outData", "stringBytes", "res", "sliceImplCPU", "outVals", "rank", "xStride", "outOffset", "beginI", "beginJ", "endI", "xOffset", "slice2d", "xStride1", "xStride2", "beginK", "endJ", "slice3d", "xStride3", "endK", "beginL", "k", "slice4d", "sliceConfig", "Slice", "batchToSpaceNDConfig", "BatchToSpaceND", "blockShape", "crops", "prod", "reduce", "reshaped", "getReshaped", "permuted", "getPermuted", "reshapedPermuted", "getReshapedPermuted", "sliceBeginCoords", "getSliceBeginCoords", "sliceSize", "getSliceSize", "xReshaped", "result", "cast", "wasmClip", "castConfig", "Cast", "ceilConfig", "Ceil", "clipByValueConfig", "ClipByValue", "clipValueMin", "clipValueMax", "t", "\$inputs", "filter", "shapes", "assertParamsConsistent", "inputs2D", "inputsValShapes", "simplyConcat", "outVals_1", "getArrayFromDType", "offset", "forEach", "colOffset", "tIdx", "row", "resIdx", "col", "concatImplCPU", "finalOutShape", "sumInnerDims", "innerDims", "innerDim", "inOffset", "wasmConv2d", "concatConfig", "Concat", "wasmConv2DBackpropInput", "conv2DConfig", "Conv2D", "filterId", "dilations", "\$dataFormat", "convertConv2DDataFormat", "computeConv2DInfo", "inputChannels", "outputChannels", "outChannels", "isSamePad", "type", "InterpolationMethod", "wasmCropAndResize", "conv2DBackpropInputConfig", "Conv2DBackpropInput", "dy", "inputShape", "batchSize", "inHeight", "inWidth", "outHeight", "outWidth", "topPad", "leftPad", "isChannelsLast", "dxStrides", "dyStrides", "fltS0", "fltS1", "fltS2", "xBatchStride", "xRowStride", "xColStride", "xChannelStride", "yBatchStride", "yRowStride", "yColStride", "yChannelStride", "dyId", "cosConfig", "Cos", "coshConfig", "Cosh", "wasmCumsum", "cropAndResizeConfig", "CropAndResize", "castedData", "method", "extrapolationValue", "cropSize", "image", "boxes", "boxInd", "numBoxes", "cropHeight", "cropWidth", "imagesData", "imagesId", "boxesId", "boxIndId", "imagesShapeBytes", "wasmDepthToSpace", "cumsumConfig", "Cumsum", "exclusive", "reverse", "permutation", "permutedX", "permutedAxis", "permutedOut", "finalDim", "permutedXId", "permutedOutId", "getUndoAxesPermutation", "wasmDepthwiseConv2d", "depthToSpaceConfig", "DepthToSpace", "blockSize", "outputHeight", "outputWidth", "outputDepth", "outputShape", "xStridesBytes", "outputShapeBytes", "outStride sBytes", "depthwiseConv2dNativeConfig", "DepthwiseConv2dNative", "\$dilations", "eluConfig", "Elu", "equalConfig", "Equal", "expConfig", "Exp", "expandDims", "dim", "\$dim", "splice", "expandDimsConfig", "ExpandDims", "fill", "value", "wasmFlipLeftRight", "fillConfig", "Fill", "wasmBatchNorm", "flipLeftRightConfig", "FlipLeftRight", "imageId", "batch", "imageHeight", "imageWidth", "numChannels", "floorConfig", "Floor", "floorDivConfig", "FloorDiv", "wasmFusedConv2d", "fusedBatchNormConfig", "FusedBatchNorm", "varianceEpsilon", "mean", "variance", "scale", "meanId", "var

ianceId", "offsetId", "scaleId", "wasmFusedDepthwiseConv2d", "fusedConv2DConfig", "FusedConv2D", "wasmGatherNd", "fusedDepthwiseConv2DConfig", "FusedDepthwiseConv2D", "wasmGather", "gatherNdConfig", "GatherNd", "params", "indices", "resultShape", "numSlices", "indicesShape", "sliceRank", "indicesId", "stridesBytes", "gatherV2Config", "GatherV2", "batchDims", "parsedAxis", "indicesVals", "axisDim", "index", "shapeInfo", "segment_util", "collectGatherOpShapeInfo", "flattenX", "dimSize", "indicesSize", "flattenIndex", "flattenOutputShape", "stridesSize", "greaterConfig", "Greater", "greaterEqualConfig", "GreaterEqual", "wasmMax", "leakyReluConfig", "LeakyRelu", "alpha", "lessConfig", "Less", "lessEqualConfig", "LessEqual", "logConfig", "Log", "logicalAndConfig", "LogicalAnd", "wasmMaxPool", "maxConfig", "Max", "maximumConfig", "Maximum", "wasmMean", "maxPoolConfig", "MaxPool", "wasmMin", "meanConfig", "Mean", "reductionAxes", "castedInput", "MirrorPaddingMode", "wasmMirrorPad", "minConfig", "Min", "minimumConfig", "Minimum", "mirrorPadConfig", "MirrorPad", "paddings", "mode", "p", "prePaddingsFlat", "padTuple", "postPaddingsFlat", "prePaddingsBytes", "postPaddingsBytes", "multiplyConfig", "Multiply", "negConfig", "Neg", "parseResultStruct", "resOffset", "HEAPU8", "pSelectedIndices", "selectedSize", "pSelectedScores", "pValidOutputs", "_free", "nonMaxSuppressionV3Config", "NonMaxSuppressionV3", "iouThreshold", "maxOutputSize", "scoreThreshold", "scores", "scoresId", "nonMaxSuppressionV4Config", "NonMaxSuppressionV4", "padToMaxOutputSize", "wasmOneHot", "nonMaxSuppressionV5Config", "NonMaxSuppressionV5", "softNmsSigma", "notEqualConfig", "NotEqual", "oneHotConfig", "OneHot", "depth", "onValue", "offValue", "onesLikeConfig", "OnesLike", "wasmPadV2", "packConfig", "Pack", "assertShapesMatch", "intermediateTensorInfos", "expandedT", "wasmPrelu", "padV2Config", "PadV2", "constantValue", "powConfig", "Pow", "wasmProd", "preluConfig", "Prelu", "weightsId", "wasmResizeBilinear", "prodConfig", "Prod", "rangeConfig", "Range", "start", "stop", "step", "makeZerosTypedArray", "numElements", "abs", "ceil", "rangeImplCPU", "realDivConfig", "RealDiv", "reluConfig", "Relu", "relu6Config", "Relu6", "wasmReverse", "resizeBilinearConfig", "ResizeBilinear", "images", "alignCorners", "halfPixelCenters", "newHeight", "newWidth", "oldHeight", "oldWidth", "xDData", "wasmRotate", "reverseConfig", "Reverse", "dims", "axesBytes", "outShapeBytes", "wasmScatterNd", "rotateWithOffsetConfig", "RotateWithOffset", "radians", "fillValue", "center", "centerX", "centerY", "fillValues", "fillBytes", "roundConfig", "Round", "rsqrtConfig", "Rsqrt", "wasmSelect", "scatterNdConfig", "ScatterNd", "updates", "numUpdates", "outputSize", "updatesId", "selectConfig", "Select", "condition", "e", "conditionId", "tId", "eId", "cRank", "tRank", "sigmoidConfig", "Sigmoid", "sinConfig", "Sin", "softmaxConfig", "Softmax", "logits", "spaceToBatchNDConfig", "SpaceToBatchND", "completePaddings", "paddedX", "reshapedPaddedShape", "permutedReshapedPaddedPermutation", "flattenShape", "paddedXReshaped", "paddedXT", "wasmStep", "splitVConfig", "SplitV", "numOrSizeSplits", "\$axis", "splitSizes", "prepareSplitSize", "s", "xSliceSize", "xSlice", "sqrtConfig", "Sqrt", "squareConfig", "Square", "squaredDifferenceConfig", "SquaredDifference", "wasmStridedSlice", "stepConfig", "Step", "wasmSum", "stridedSliceConfig", "StridedSlice", "end", "beginMask", "endMask", "ellipsisMask", "newAxisMask", "shrinkAxisMask", "finalShapeSparse", "finalShape", "isIdentity", "sliceDim0", "isSimpleSlice", "\$begin", "\$end", "\$strides", "sliced", "beginBytes", "endBytes", "subConfig", "Sub", "wasmTile", "sumConfig", "Sum", "tanConfig", "Tan", "tanhConfig", "Tanh", "wasmTopK", "tileConfig", "Tile", "reps", "newShapeBytes", "wasmTransform", "topKConfig", "TopK", "sorted", "outValues", "outValuesId", "outIndices", "outIndicesId", "transformConfig", "Transform", "fillModeId", "transforms", "interpolation", "fillMode", "transformsId", "interpolationModeId", "unpackConfig", "Unpack", "numOutputs", "outIndex", "outs", "zerosLikeConfig", "ZerosLike", "kernelConfigs_1", "_i", "kernelConfig", "registerKernel", "ENV", "env", "registerFlag", "WebAssembly", "validate", "MessageChannel", "port1", "postMessage", "SharedArrayBuffer", "_scriptDir", "WasmBackendModuleThreadedSimd", "document", "currentScript", "src", "undefined", "__filename", "GROWABLE_HEAP_I8", "wasmMemory", "updateGlobalBufferAndViews", "HEAP8", "GROWABLE_HEAP_U8", "GROWABLE_HEAP_I32", "HEAP32", "GROWABLE_HEAP_U32", "HEAPU32", "GROWABLE_HEAP_F64", "HEAPF64", "readyPromiseResolve", "readyPromiseReject", "Module", "Promise", "resolve", "reject", "key", "moduleOverrides", "hasOwnProperty", "quit_", "status", "toThrow", "ENVIRONMENT_IS_WEB", "ENVIRONMENT_IS_WORKER", "ENVIRONMENT_IS_NODE", "ENVIRONMENT_IS_SHELL", "window", "importScripts", "process", "versions", "node", "ENVIRONMENT_IS_PTHREAD", "read_", "readAsync", "readBinary", "nodeFS", "nodePath", "scriptDirectory", "locateFile", "path", "nodeWorkerThreads", "require\$\$0", "dirname", "__dirname", "filename", "binary", "require\$\$1", "ret", "replace", "ex", "ExitStatus", "abort", "require\$\$2", "console", "error", "global", "Worker", "read", "f", "data", "readbuffer", "scriptArgs", "quit", "print", "log", "warn", "printErr", "self", "location", "href", "indexOf", "substr", "lastIndexOf", "url", "xhr", "XMLHttpRequest", "open", "send", "respo

nseText", "responseType", "response", "onload", "onerror", "performance", "require\$\$\$3", "wasmBinary", "bind", "err", "warnOnce", "text", "shown", "wasmModule", "noExitRuntime", "ABORT", "getCFunc", "ident", "func", "ccall", "returnType", "argTypes", "opts", "toC", "string", "str", "len", "stringToUTF8", "stackAlloc", "array", "arr", "writeArrayToMemory", "cArgs", "stack", "converter", "stackSave", "apply", "UTF8ToString", "Boolean", "convertReturnValue", "stackRestore", "numericArgs", "arguments", "UTF8ArrayToString", "heap", "maxBytesToRead", "endIdx", "u0", "u1", "u2", "String", "fromCharCode", "ch", "ptr", "stringToUTF8Array", "outIdx", "maxBytesToWrite", "startIdx", "u", "charCodeAt", "outPtr", "lengthBytesUTF8", "alignUp", "multiple", "buf", "Int8Array", "Int16Array", "Uint16Array", "Uint32Array", "Float32Array", "Float64Array", "wasmTable", "INITIAL_MEMORY", "Memory", "initial", "maximum", "shared", "byteLength", "__ATPRERUN__", "__ATINIT__", "__ATMAIN__", "__ATPOSTRUN__", "preRun", "addOnPreRun", "shift", "callRuntimeCallbacks", "initRuntime", "preMain", "postRun", "addOnPostRun", "cb", "unshift", "__wasm_call_ctors", "runDependencies", "dependenciesFulfilled", "addRunDependency", "removeRunDependency", "callback", "what", "RuntimeError", "hasPrefix", "prefix", "prototype", "startsWith", "dataURIPrefix", "isDataURI", "fileURIPrefix", "isFileURI", "wasmBinaryFile", "getBinary", "file", "getBinaryPromise", "fetch", "credentials", "then", "catch", "createWasm", "info", "asmLibraryArg", "receiveInstance", "instance", "module", "exports", "numWorkersToLoad", "PThread", "unusedWorkers", "w", "loadWasmModuleToWorker", "receiveInstantiatedSource", "output", "instantiateArrayBuffer", "receiver", "instantiate", "reason", "instantiateStreaming", "ASM_CONSTS", "10520", "10538", "\$0", "\$1", "setTimeout", "__emscripten_dispatcher_thread", "initPthreadsJS", "callbacks", "arg", "ERRNO_CODES", "EPERM", "ENOENT", "ESRCH", "EINTR", "EIO", "ENXIO", "E2BIG", "ENOEXEC", "EBADF", "ECHILD", "EAGAIN", "EWOULDBLOCK", "ENOMEM", "EACCES", "EFAULT", "ENOTBLK", "EBUSY", "EEXIST", "EXDEV", "ENODEV", "ENOTDIR", "EISDIR", "EINVAL", "ENFILE", "EMFILE", "ENOTTY", "ETXTBSY", "EFBIG", "ENOSPC", "ESPIPE", "EROFS", "EMLINK", "EPIPE", "EDOM", "ERANGE", "ENOMSG", "EIDRM", "ECHRNG", "EL2NSYNC", "EL3HLT", "EL3RST", "ELNRNG", "EUNATCH", "ENOCST", "EL2HLT", "EDEADLK", "ENOLCK", "EBADE", "EBADR", "EXFULL", "ENOANO", "EBADRQC", "EBADSLT", "EDEADLOCK", "EBFONT", "ENOSTR", "ENODATA", "ETIME", "ENOSR", "ENONET", "ENOPKG", "EREMOTE", "ENOLINK", "EADV", "ESRMNT", "ECOMM", "EPROTO", "EMULTIHOP", "EDOTDOT", "EBADMSG", "ENOTUNIQ", "EBADFD", "EREMCHG", "ELIBACC", "ELIBBAD", "ELIBSCN", "ELIBMAX", "ELIBEXEC", "ENOSYS", "ENOTEMPTY", "ENAMETOOLONG", "ELOOP", "EOPNOTSUPP", "EPFNOSUPPORT", "ECONNRESET", "ENOBUFS", "EAFNOSUPPORT", "EPROTOTYPE", "ENOTSOCK", "ENOPROTOOPT", "ESHUTDOWN", "ECONNREFUSED", "EADDRINUSE", "ECONNABORTED", "ENETUNREACH", "ENETDOWN", "ETIMEDOUT", "EHOSTDOWN", "EHOSTUNREACH", "EINPROGRESS", "EALREADY", "EDESTADDRREQ", "EMSGSIZE", "EPROTONOSUPPORT", "ESOCKTNOSUPPORT", "EADDRNOTAVAIL", "ENETRESET", "EISCONN", "ENOTCONN", "ETOOMANYREFS", "EUSERS", "EDQUOT", "ESTALE", "ENOTSUP", "ENOMEDIUM", "EILSEQ", "EOVERFLOW", "ECANCELED", "ENOTRECOVERABLE", "EOWNERDEAD", "ESTRPIPE", "_emscripten_futex_wake", "addr", "count", "Infinity", "mainThreadWaitAddress", "Atomics", "load", "__emscripten_main_thread_futex", "mainThreadWoken", "compareExchange", "notify", "killThread", "pthread_ptr", "pthread", "pthreads", "worker", "terminate", "freeThreadData", "runningWorkers", "cancelThread", "cmd", "cleanupThread", "returnWorkerToPool", "_emscripten_get_now", "initMainThreadBlock", "allocateUnusedWorker", "tb", "_malloc", "headPtr", "tlsMemory", "store", "__emscripten_thread_init", "_emscripten_register_main_browser_thread_id", "initWorker", "threadExitHandlers", "setThreadStatus", "runExitHandlers", "pop", "_pthread_self", "__pthread_tsd_run_dtors", "runExitHandlersAndDeinitThread", "exitCode", "threadExit", "threadCancel", "terminateAllThreads", "threadInfoStruct", "allocatedOwnStack", "stackBase", "runWithoutMainThreadQueuedCalls", "__emscripten_allow_main_runtime_queued_calls", "receiveObjectTransfer", "onFinishedLoading", "onmessage", "d", "currentProxiedOperationCallerThread", "thread", "targetThread", "_emscripten_main_thread_process_queued_calls", "spawnThread", "loaded", "runPthread", "alert", "exit", "target", "lineno", "message", "on", "urlOrBlob", "pthreadMainJs", "getNewWorker", "busySpinWait", "msecs", "now", "establishStackSpace", "stackTop", "stackMax", "_emscripten_stack_set_limits", "getNoExitRuntime", "invokeEntryPoint", "__assert_fail", "line", "__call_main", "argc", "argv", "_main", "setErrNo", "errno_location", "atexit", "_emscripten_proxy_to_main_thread_js", "_emscripten_notify_thread_queue", "targetThreadId", "mainThreadId", "_abort", "_emscripten_asm_const_int", "code", "sigPtr", "argbuf", "readAsmConstArgs", "_emscripten_conditional_set_current_thread_status", "expectedStatus", "newStatus", "_emscripten_futex_wait", "val", "timeout", "tNow", "tEnd", "exchange", "wait", "_ems

cripten_memcpy_big", "dest", "num", "copyWithin", "_emscripten_num_logical_cores", "require\$\$4", "cpus", "navigator", "sync", "numCallArgs", "serializedNumCallArgs", "_emscripten_run_in_main_runtime_thread_js", "dateNow", "_emscripten_receive_on_main_thread_js_callArgs", "readAsmConstArgsArray", "double", "_emscripten_receive_on_main_thread_js", "proxiedFunctionTable", "_emscripten_get_heap_size", "emscripten_realloc_buffer", "grow", "_emscripten_resize_heap", "requestedSize", "oldSize", "maxHeapSize", "cutDown", "overGrownHeapSize", "min", "JSEvents", "inEventHandler", "removeAllEventListeners", "eventHandlers", "_removeHandler", "deferredCalls", "registerRemoveEventListeners", "removeEventListenersRegistered", "deferCall", "targetFunction", "precedence", "argsList", "arraysHaveEqualContent", "arrA", "arrB", "call", "sort", "y", "removeDeferredCalls", "canPerformEventHandlerRequests", "currentEventHandler", "allowsDeferredCalls", "runDeferredCalls", "removeAllHandlersOnTarget", "eventTypeString", "h", "removeEventListener", "eventListenerFunc", "useCapture", "registerOrRemoveHandler", "eventHandler", "jsEventHandler", "event", "handlerFunc", "callbackfunc", "addEventListener", "queueEventHandlerOnThread_iiii", "eventHandlerFunc", "eventTypeId", "eventData", "userData", "varargs", "__emscripten_call_on_thread", "getTargetThreadForEventCallback", "getNodeNameForTarget", "screen", "nodeName", "fullscreenEnabled", "webkitFullscreenEnabled", "stringToNewUTF8", "jsString", "cString", "_emscripten_set_offscreencanvas_size_on_target_thread_js", "targetCanvas", "width", "height", "targetCanvasPtr", "_emscripten_set_offscreencanvas_size_on_target_thread", "maybeCStringToJsString", "specialHTMLTargets", "findEventTarget", "querySelector", "findCanvasEventTarget", "_emscripten_set_canvas_element_size_calling_thread", "canvas", "canvasSharedPtr", "offscreenCanvas", "controlTransferredOffscreen", "autoResizeViewport", "GLctxObject", "GLctx", "prevViewport", "getParameter", "viewport", "_emscripten_set_canvas_element_size_main_thread", "_emscripten_set_canvas_element_size", "_emscripten_set_current_thread_status", "_emscripten_set_thread_name", "threadId", "name", "__webgl_enable_ANGLE_instanced_arrays", "ctx", "ext", "getExtension", "divisor", "first", "primcount", "__webgl_enable_OES_vertex_array_object", "vao", "__webgl_enable_WEBGL_draw_buffers", "n", "bufs", "__webgl_enable_WEBGL_multi_draw", "multiDrawWebgl", "GL", "counter", "buffers", "programs", "framebuffers", "renderbuffers", "textures", "uniforms", "shaders", "vaos", "contexts", "offscreenCanvases", "timerQueriesEXT", "programInfos", "stringCache", "unpackAlignment", "recordError", "errorCode", "lastError", "getNewId", "table", "getSource", "shader", "source", "createContext", "webGLContextAttributes", "getContext", "registerContext", "handle", "context", "attributes", "version", "majorVersion", "enableExtensionsByDefault", "initExtensions", "makeContextCurrent", "contextHandle", "currentContext", "deleteContext", "initExtensionsDone", "disjointTimerQueryExt", "getSupportedExtensions", "populateUniformTable", "program", "ptable", "maxUniformLength", "maxAttributeLength", "maxUniformBlockNameLength", "utable", "numUniforms", "getProgramParameter", "getActiveUniform", "loc", "getUniformLocation", "__emscripten_webgl_power_preferences", "_emscripten_webgl_do_create_context", "powerPreference", "contextAttributes", "stencil", "antialias", "premultipliedAlpha", "preserveDrawingBuffer", "failIfMajorPerformanceCaveat", "minorVersion", "explicitSwapControl", "proxyContextToMainThread", "renderViaOffscreenBackBuffer", "_emscripten_webgl_create_context", "a0", "a1", "SYSCALLS", "mappings", "printChar", "stream", "curr", "getStr", "get64", "low", "high", "_fd_close", "fd", "_fd_seek", "offset_low", "offset_high", "whence", "newOffset", "_fd_write", "iov", "iovcnt", "pnum", "_pthread_cleanup_pop", "execute", "routine", "_pthread_cleanup_push", "threadParams", "stackHigh", "stackSize", "tis", "detached", "global_locale", "_emscripten_get_global_libc", "msg", "start_routine", "startRoutine", "time", "transferList", "_pthread_create", "attr", "_emscripten_sync_run_in_main_thread_4", "_memalign", "_pthread_test_cancel_js", "_emscripten_check_blocking_allowed", "_emscripten_do_pthread_join", "block", "_emscripten_main_browser_thread_id", "threadStatus", "threadExitCode", "_pthread_join", "_sysconf", "calledRun", "r", "c", "A", "q", "l", "g", "o", "z", "m", "this", "run", "doRun", "implicit", "returnCode", "runCaller", "ready", "WasmBackendModule", "UTF8Decoder", "TextDecoder", "endPtr", "decode", "_super", "_this", "tfjs", "initWithThreadsCount", "threadsCount", "actualThreadCount", "getThreadsCount", "DataStorage", "engine", "tslib_1.__extends", "BackendWasm", "dataIdNextNumber", "move", "numDataIds", "kernelMs", "refCount", "numBytes", "bytesPerElement", "memoryOffset", "registerTensor", "byteOffset", "typedArrayFromBuffer", "force", "has", "delete", "dispose", "unreliable", "write", "KernelBackend", "getPathToWasmBinary", "simdSupported", "threadsSupported", "wasmModuleFolder", "wasmPath", "wasmFileMap", "init", "all", "getAsync", "factoryConfig", "endsWith", "blob", "Blob", "URL", "createObjectURL", "wasmPathPrefix", "customFetch", "instantiateWasm", "imports", "arrayBuffer", "createInstantiateWasmFunc", "initialized", "onAbort", "initAborted", "mainScriptUrlOrBlob", "wasmFactoryThreadedSimd", "toString", "wasmFactory", "wasmBinaryNames", "numThreads",

IAAAC,WAAQL,YAASM,UAGIBwE,EAYCR,SACIrD,EAAiBsD,GAGnB,IAFA,IAAM3B,EAAqB,GACrB4B,E
AAoB,GACjBnB,EAAI,EAAGA,EAAIpC,EAAMC,SAAUmC,EACjB,IAAbpC,EAAMoC,IACRT,EAAS6B,KAA
KxD,EAAMoC,IAEC,IAAnBpC,EAAMsD,EAAKIB,KACbmB,EAAQC,KAAKF,EAAKIB,IAGtB,IAASA,EAAI,
EAAGA,EAAImB,EAAQtD,SAAUmC,EAAG,CAEvC,IADA,IAAIqB,GAAa,EACRC,EAAI,EAAGA,EAAIH,EA
AQtd,SAAUyD,EACHCH,EAAQG,IAAMtB,KACE,IAAfqB,GAAoBF,EAAQE,GAAaF,EAAQG,MACpDD,EAA
YC,GAGhBH,EAAQE,GAAarB,EAEvB,MAAO,CAACT,EAAU4B,sBA/DXI,OAAcL,OAEjBM,GAAa,EACRxB,
EAAI,EAAGA,EAAIkB,EAAKrD,OAAQmC,IAC3BkB,EAAKIB,KAAOA,IACdwB,GAAa,GAGjB,IAAMC,EAY
BR,SAAYBC,EAAMBR,GAE1C,IADA,IAAMO,EAAW,IAAIE,MAAMD,EAAQ7D,QAC1BmC,EAAI,EAAGA,E
AAIyB,EAAS5D,OAAQmC,IACnCyB,EAASzB,GAACK0B,EAAQR,EAAKIB,IAE7B,OAAOyB,EA9BUG,CAA
BpF,EAAOsC,EAAEIB,MAAOnB,EAAMYe,MACjDpC,EAAI,CACRvB,OAAQf,EAAOsC,EAAEvB,OACjBK,M
AAO2D,EACPzE,MAAON,EAAOsC,EAAEhC,OAGIB,GAAI0E,EAAY,CACd,IAAMK,EAASpB,EAAS,CAACj
E,SAACL,YAEjC,OADAOF,EAAOjE,MAAQ6D,EACRI,EAGT,IAAM1D,EAAMhC,EAAQic,WAAWqD,EAAU
3C,EAAEhC,OACrCiC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAEEvB,QAAQC,GACtCa,EAAQIC,EAAQkB,U
AAUC,IAAIa,EAAIZ,QAAQC,GAC1CsE,EAAY,IAAIvD,WAAW,IAAIC,WAAW0C,GAAMzC,QACHDsD,EAA
c,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QAK3D,OAHAoC,EACI9B,EAAKgd,EAAajD,EAAEIB,
MAAMC,OAAQIC,EAASmD,EAAEhC,OAAQuB,EAAOyD,EAC5DZ,EAAKrD,QACFM,EAoCF,IC1FH6D,ED0
FSC,EAAGC,CAC3CIG,WAAymG,YACZjG,YAAa,OACbK,WAAy0E,EACZ9E,UazFF,SAAcC,GACb0E,EAA
gB1E,EAAQC,KAAKC,MAAM6F,YAAW,KAAiB,CAC7D,SACA,QACA,SACA,SACA,SACA,QACA,sBEPYC,
EACZrD,EAAesD,EAABjG,GAMxC,IAAMkG,EAASvD,EAAEIB,MACX0E,EAAQxD,EAAEIB,MAAMC,OA
EhB0E,EAAevD,OAAKwD,eAAeJ,EAAMC,GAC3CI,EAAOF,EACLG,EAAeID,eAAamD,mBAAMBF,EAAMH,G
ACvDM,EAAc,KACdC,GAAqB,EACzB,GAAoB,MAAhBH,EAASB,CAExB,IADA,IAAMnD,EAAqB,IAAIoC,M
AAMW,GAC5BtC,EAAI,EAAGA,EAAIT,EAAS1B,OAAQmC,IACnCT,EAASS,GAACKqC,EAAOK,EAAa1C,IA
GpCyC,EAAOjD,eAAasD,iBAAiBL,EAAK5E,OAAQyE,GACIDM,EACI5B,EAAU,CAACxE,OAAQ,CAACsC,K
AAIrC,MAAO,CAACyE,KAAMwB,GAAevG,YAEzD,IAAM4C,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAEEvB
,QAAQC,GACvBrB,EAAQkB,UAAUC,IAAI5F,EAAYrF,QAAQC,KAC1CuB,IACnB8D,GAAqB,GAlzB,MAAO,
CAACE,WAAyH,EAAaL,eAAcE,OAAMI,sBDYhD,IEIDHG,EFkDSC,EAA0B,CACrCIH,WAAymH,MACZjH,
YAAa,OACbC,UAnDF,SAAcC,GACb6F,EAAU7F,EAAQC,KAAKC,MAAM6G,MAAK,KAAe,CAAC,4BAmdI
D5G,WAhDF,SAAcC,GA EJ,IAAAJ,YAASK,WAAQC,UACjB2F,SAAMe,aACNrE,MAEHsE,EADQjH,EAAQkB
,UAAUC,IAAIwB,EAEEvB,QAAQC,GAExC6F,EAAQvE,EAENmC,WAAC8B,eAAYN,SAAMF,iBAAcM,uBA
GnCA,IAEFQ,EAAQN,EACRK,EAfQjH,EAAQkB,UAAUC,IAAIyF,EAAWxF,QAAQC,IAKhE,IAAM8F,EAA
YD,EAAMzF,MAAMC,OAC9B2B,eAAa+D,2BAA2B,MAAOd,EAAMa,GAC/C,IAAAE,sDAAC/B,OAAUgC,O
AEXC,EAAa1E,OAACK,cAAcwE,GA EhCtF,EAAMhC,EAAQic,WAAWqD,EAAU3C,EAAEhC,OAC3C,GAAw
C,IAApCkC,OAACK,cAAcoE,EAAMzF,OAAC,CACzC,IAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QA
AQC,GACHDwE,EAAQoB,EAASM,EAAYrF,GAQ/B,GALiW,E,GAEF1G,EAAQwH,YAAyz,EAAWxF,QAG7B
4F,EAAU,CAEZ,IAAM5D,EAAWC,eAAaoE,qBAAqBzF,EAAIP,MAAO2E,GAC9DpE,EAAIP,MAAQ2B,EAGd,
OAAOpB,IEGF,ICjDHU,EDiDSgF,EAA0B,CACrC9H,WAAy+H,MACZ7H,YAAa,OACbC,UAnDF,SAAcC,GA
Cb6G,EAAU7G,EAAQC,KAAKC,MAAMyH,MAAK,KAAe,CAAC,4BAmdIDxH,WAhDF,SAAcC,GA EJ,IAAAJ
,YAASK,WAAQC,UACjB2F,SAAMe,aACNrE,MAEHsE,EADQjH,EAAQkB,UAAUC,IAAIwB,EAEEvB,QAAQ
C,GAExC6F,EAAQvE,EAENmC,WAAC8B,eAAYN,SAAMF,iBAAcM,uBAGnCA,IAEFQ,EAAQN,EACRK,EA
fQjH,EAAQkB,UAAUC,IAAIyF,EAAWxF,QAAQC,IAKhE,IAAM8F,EAAyD,EAAMzF,MAAMC,OAC9B2B,
eAAa+D,2BAA2B,MAAOd,EAAMa,GAC/C,IAAAE,sDAAC/B,OAAUgC,OAEXC,EAAa1E,OAACK,cAAcwE,G
AEhCtF,EAAMhC,EAAQic,WAAWqD,EAAU3C,EAAEhC,OAC3C,GAAwC,IAApCkC,OAACK,cAAcoE,EA
MzF,OAAC,CACzC,IAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHDwF,EAAQI,EAASM,E
AAYrF,GAQ/B,GALiW,E,GAEF1G,EAAQwH,YAAyz,EAAWxF,QAG7B4F,EAAU,CAEZ,IAAM5D,EAAWC,e
AAaoE,qBAAqBzF,EAAIP,MAAO2E,GAC9DpE,EAAIP,MAAQ2B,EAGd,OAAOpB,ICKF,ICtDH4F,EDsDSC,E
AA6B,CACxCjI,WAAyKI,SACzhI,YAAa,OACbK,WAXCF,SACIC,GACK,IAAAJ,YAASK,WACT4F,eACAtD,
MACDC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAEEvB,QAAQC,GACxC4F,EAAUrE,EACVsE,EAAQvE,EA
NmC,WAAC8B,eAAYN,SAAMI,uBAGzB,GAAIA,EAAoB,CACtB,IAAMqB,EAAe/H,EAAQkB,UAAUC,IAAIy

F,EAAXwF,QAAQC,GAC1D0G,IAAiBnF,IAGnBsE,EAAQN,EACRk,EAAXu,GAId,IAAMzC,EAAX4B,EAAMzF,MAAMuG,MAAM,GAAl,GACjChG,EAAMhC,EAAXiC,WAAWqD,EAAX,SACnCpD,EAAXiC,EAAXkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAC1C4G,EAAYpF,OAAC,cAAcd,EAAlP,OACnCpG,EAAYhB,EAAMzF,MAAM6E,EAAX,IAQnC,OAPA5D,EAASuE,EAASzH,EAASOH,EAAMvG,OAAXsH,EAAXW,EAAXWhG,GAE3DwE,GAEF1G,EAAXwH,YAAZY,EAAXwF,QAG1BY,GAOPjC,UAnDF,SAAeC,GACb0C,EAAX1C,EAAXC,KAAC,MAAM4H,SAAQ,KAAiB,CACrD,SACA,SACA,SACA,SACA,aCuDG,IAAMK,EAAX8B,CACzCvI,WAAWwI,UACZtI,YAAa,OACbC,UAjEF,SAAeC,GACb4H,EAAX5H,EAAXC,KAAAC,MAAMkI,UAAS,KAAiB,CACzD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAmDFjI,WA/CF,SACIC,GACK,IAAAC,WAAQC,UAAON,YAEhB2C,EAAltC,EAAXoS,C,EACXC,EAAM5C,EAAXkB,UAAUC,IAAIwB,EAAXEvB,QAAQC,GAERcGh,eAAAYC,YAASC,QAAKC,oBAC3BC,EAAXpF,eAAaqF,kBAC1B/F,EAAXEIB,MAAO4G,EAAYC,EAAS,EAAMBC,EAAXC,GAEPdG,EAAXeF,EAASE,aACxBC,EAAXH,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EAAXWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EAAXUX,EAASK,QAAQO,KAC3BC,EAAXeb,EAASa,aACxBC,EAAXcd,EAAXSc,YACvBC,EAAXWf,EAAXSgB,WAE1B,GAA4B,iBAAXBhB,EAAXSiB,WACX,MAAM,IAAI9I,MACN,6CACG6H,EAAXSiB,4CAGIB,GAA+B,IAA3BjB,EAAXSkB,eAAAmD,IAA5BIB,EAAXSmB,eAC3C,MAAM,IAAIhJ,MACN,0EACQ6H,EAAXSmB,oBAAMbNB,EAAXSkB,oBAGnD,IAAM3H,EAAMhC,EAAXiC,WAAWwG,EAAXSnD,SAAU,WAC5CpD,EAAXiC,EAAXkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAMhD,OAJAuG,EACIhF,EAAXKD,EAAXEIB,MAAM,GAAlkB,EAAXEIB,MAAM,GAAlkB,EAAXEIB,MAAM,GAAlkH,EAAXc,EACvDC,EAAXQG,EAAXUE,EAAXWE,EAASE,EAAXc,EAAXaC,EACjEtH,GACGF,aCjEO6H,EACZzJ,GACK,IAAAC,WAAQC,UACRqC,MACAIB,UAEDqI,EAAXjH,OAAC,cAAcH,EAAXEIB,OAC7BsI,EAASIH,OAAXKmH,uBAAXuBvI,EAAXOqI,GASID,OAPAJH,OAAXoH,OACDH,IAAUjH,OAAXC,cAAcH,IAC7B,WAAM,MAAA,cAAcA,kBAAsBpH,EAAXEIB,MAAtC,sEAIvRb,EAAXKJ,QAAQkK,OAAXoVH,EAAXEvB,QACf,CAACA,OAAXQuB,EAAXEvB,OAAXQK,MAAXoS,I,EAAXQpJ,MAAXOGC,EAAXEhC,OAG7C,ICjBHwJ,EDiBSC,EAAX8B,CACzCxK,WAAWYyK,UACZvK,YAAa,OACbK,WAAWY0J,GCIpF,IAAMS,EAAXc,CAC7C1K,WAAWY2K,cACZzK,YAAa,OACbC,UAnGF,SAAeC,GACbMk,EAAXkBNK,EAAXC,KAAAC,MAAMqK,cAAa,KAAiB,CACjE,SACA,QACA,SACA,SACA,QACA,SACA,SACA,SACA,SACA,YA0FFpK,WAtFF,SAAqBC,GAKZ,IAAAC,WAAQL,YAASM,UACjBC,MAAGC,MACHK,eAAAYC,eAEnB,GAAgB,YAAZP,EAAXEI,OAAXmC,YAAZH,EAAXAEG,MAC7B,MAAM,IAAIC,MACN,8DAGN,IAAM4J,EAAXQjK,EAAXEkB,MAAMC,OACHb+I,EAAXQjK,EAAXEiB,MAAMC,OAAXEhBgJ,EAAX7J,EAAXaN,EAAXEkB,MAAM+I,EAAXQ,GAAXKjK,EAAXEkB,MAAM+I,EAAXQ,GACHhEG,EAAX7J,EAAXaN,EAAXEiB,MAAMgJ,EAAXQ,GAAXKjK,EAAXEiB,MAAMgJ,EAAXQ,GAAXEhEG,EAAXc/J,EAAXaN,EAAXEkB,MAAM+I,EAAXQ,GAAXKjK,EAAXEkB,MAAM+I,EAAXQ,GACHeK,EAAXc/J,EAAXaN,EAAXEiB,MAAMgJ,EAAXQ,GAAXKjK,EAAXEiB,MAAMgJ,EAAXQ,GAAXEhK,EAAXavK,EAAXEkB,MAAMuG,MAAM,GAAl,GAC/B+C,EAAXAvK,EAAXEiB,MAAMuG,MAAM,GAAl,GAEBgD,EAAYnI,OAAC,cAAcG,I,GAC/BG,EAAYpI,OAAC,cAAciI,GAEBG,EACFF,IAAcC,GAA2B,IAAdD,GAACi,IAAdC,EAAXDpI,OAAXoH,OACDO,GAAS,GAAC,GAAS,GAAXS,GAC5B,WAAM,MAAA,uJAESBJ,YAAoBC,UAEPd,IAEMzF,GADF0F,EAAYC,EAAY1K,EAAXEkB,MAAMuG,MAAM,GAAl,GAAXxH,EAAXEiB,MAAMuG,MAAM,GAAl,IACICmD,OAAXO,CAACP,EAAXaC,IAAXDhI,OAAXoH,OACDS,IAAgBC,GACHb,WAAM,MAAA,kCAAKCD,YACjCC,8BAAXuCPK,EAAXEkB,cACzCjB,EAAXEiB,yBAAXwBZ,EAC7B,mBAAMBC,oBAE3B,IAEMsK,EAAXWtK,EAAXa,CAACmK,EAAXWJ,EAAXaF,GACzB,CAACM,EAAXWN,EAAXaE,GAGjDQ,EAAXxB,EAAXQ,CAACxJ,OAAXQ,CAACsC,EAAXGpC,GAAlP,UAASM,MAAXO,CAACmB,MANrCZ,EAAXa,CAACmK,EAAXWN,EAAXaE,GACzB,CAACI,EAAXWJ,EAAXaF,MAMjDY,EAAXAMzB,EAAXQ,CAACxJ,OAAXQ,CAACsC,EAAXGnC,GAAlR,UAASM,MAAXO,CAACmB,MAAXO2J,KAEvDG,EAAXQvL,EAAXkB,UAAUC,IAAIkK,EAAljK,QAAQC,GAC1CmK,EAAXQxL,EAAXkB,UAAUC,IAAIImK,EAAXIK,QAAQC,GAE1CQ,EAAXUhB,EAAXawK,EAAXI5J,MAAM,GAAX4J,EAAXI5J,MAAM,GACHdK,EAAXWhB,EAAXawK,EAAXI7J,MAAM,GAAX6J,EAAXI7J,MAAM,GACjDM,EAAXW0J,KAAAC,IAAIV,EAAXW,GAEBjJ,EAAMhC,EAAXiC,WAAW,CAACF,EAAXUF,EAASC,GAAXWuJ,EAAXIK,OAC5DuB,EAAXiC,EAAXkB,UAAUC,IAAIa,EAAXAIZ,QAAQC,GAE1Cc,EAAXc,IAAIC,WAAW,IAAIC,WAAWgJ,EAAXI5J,OAAXOa,QACvDC,EAAXc,IAAIIH,WAAW,IAAIC,WAAWjI,EAAXI7J,OAAXOa,QAUX7D,OARA6H,EACIoB,EAAXOpJ,EAAXaKJ,EAAXI5J,MAAMC,OAAXQ8J,EAAXOjJ,EAC7C+I,EAAXI7J,MAAMC,OAAXQb,EAAYC,EAAYoB,GAE9CIC,EAAXwH,YAAWY6D,EAAXjK,QACxBpB,EAAXwH,YAAWY8D,EAAXIK,QAEXBY,EAAXIP,MAAXQ6D,EACLtD,ICvGF,SAAS2J,EAAXUC,EAAMC,EAAX

OC,EAAMrK,EAAOd,GACHD,MAAMoL,EAACc,aAAWC,iBAAiBxK,EAAOoK,EAAOC,GACxDpK,EAASmB,
OAAKC,cAAcgJ,GAC5BI,EAAWrJ,OAAKsJ,eAAe1K,GACrC,GAAIsK,EAAa,CACb,MAAMK,EAAaJ,aAAWK,
kBAAkBR,EAAOK,GACvD,MAAc,WAAVvL,EACOIL,EAAK5D,MAAMoE,EAAYA,EAAa1K,GAExCkK,EAA
KU,SAASF,EAAYA,EAAa1K,GAElD,MAAM6K,EAawB,WAAV5L,EACHB0C,eAAamJ,uBAAuBZ,GACpCA,E
ACEa,EAAQnK,SAAOb,EAAOd,EAAO4L,GAC7BG,EAASpK,SAAOwJ,EAAMnL,GAC5B,IAAK,IAAIkD,EAA
I,EAAGA,EAAI6I,EAAOZ,OAAQjI,EAAG,CACIC,MAAM8I,EAASD,EAAOE,WAAW/I,GAC3BgJ,EAAQF,EA
AOvI,KAAI,CAAC0I,EAAK3H,IAAM2H,EAAMjB,EAAM1G,KACjDuH,EAAOjI,IAAIgI,EAAMtL,OAAO0L,M
AAWF,GAEvC,MAAc,WAAVhM,EACO0C,eAAa0J,uBAAuBL,EAAOM,QAe/CN,EAAOM,gBCpBFhF,EACZ5
H,GACc,IAAAuC,aAAImC,UAAQ+G,UAAOC,SAAO9L,YAEpCqH,uCAAC4F,OAAQC,OAETnB,EAACc,aAA
WC,iBAAiBtJ,EAAEIB,MAAOwL,EAAQC,GAC3DC,EAAQnN,EAAQoN,SAASzK,EAAEvB,QAC3BY,EAAM
hC,EAAQic,WAAWiL,EAAOvK,EAAEhC,OACICuL,EAAWrJ,OAAKsJ,eAAexJ,EAAEIB,OACjC4L,EAUrn,
EAAQkB,UAAUC,IAAIa,EAAIZ,QAElC,GAAI2K,EAAa,CACf,IAAMK,EAAaJ,aAAWK,kBAAkBY,EAAQf,G
AExD,GAAgB,WAAZvJ,EAAEhC,MACJ0M,EAAQC,YACHH,EACInF,MAAMoE,EAAYA,EAAavJ,OAAKC,c
AAcoK,SAE3CIN,EAAQwE,mBAAmBxC,GACnCyC,IACH0I,EACIb,SAASF,EAAYA,EAAavJ,OAAKC,cAAco
K,KAGhE,OAAOIL,EAGT,GAAgB,WAAZW,EAAEhC,MAAoB,CACxB,IAAM4M,EAAMC,EAAaL,EAAOF,E
AAQC,EAAOvK,EAAEIB,MAAOkB,EAAEhC,OAElD,OADA0M,EAAQC,YAAcC,EACfVl,EAGT,IAAMyL,E
AAUzN,EAAQwE,mBAAmBxC,GACrC0L,EAAO/K,EAAEIB,MAAMC,OACrB,GAAa,IAATgM,GAsBN,SACIP
,EAAgCQ,EACHf,EAAkC5B,EACICC,GAKF,IAJA,IAAI8B,EAAY,EACVC,EAAShC,EAAM,GACfIC,EAASj
C,EAAM,GACfkC,EAAOF,EAAS/B,EAAK,GACIBjI,EAAIgK,EAAQhK,EAAIkK,EAAMIK,IAAK,CACIC,IAA
MmK,EAAUnK,EAAI8J,EAAUG,EAC9BL,EAAQhJ,IAAI0I,EAAMb,SAAS0B,EAASA,EAAUIC,EAAK,IAAK8
B,GACxDA,GAAa9B,EAAK,IAhCIBmC,CACId,EAAqBjB,EAAS,GAAIuB,EAASR,EAC3CC,QACC,GAAa,IAA
TQ,GAiCb,SACIP,EAAgCe,EAAkBC,EACIDV,EAAkC5B,EACICC,GAOF,IANA,IAAI8B,EAAY,EACVC,EAA
ShC,EAAM,GACfIC,EAASjC,EAAM,GACfuC,EAASvC,EAAM,GACfkC,EAAOF,EAAS/B,EAAK,GACrBuC,E
AAOP,EAAShC,EAAK,GACIBjI,EAAIgK,EAAQhK,EAAIkK,EAAMIK,IAC7B,IAAK,IAAI8B,EAAI2I,EAAQ3I,
EAAIkJ,EAAMIJ,IAAK,CACIC,IAAM6I,EAAUnK,EAAIqK,EAAW/I,EAAIgJ,EAAWC,EAC9CX,EAAQhJ,IAAI
0I,EAAMb,SAAS0B,EAASA,EAAUIC,EAAK,IAAK8B,GACxDA,GAAa9B,EAAK,IA9CpBwC,CACInB,EAAqB
jB,EAAS,GAAIA,EAAS,GAAIuB,EAC/CR,EAAoCC,QACnC,GAAa,IAATQ,GAGDb,SACIP,EAAgCe,EAAkBC,
EACIDI,EAAkBd,EACIB5B,EACAC,GAUF,IATA,IAAI8B,EAAY,EACVC,EAAShC,EAAM,GACfIC,EAASjC,E
AAM,GACfuC,EAASvC,EAAM,GACfkC,EAAOF,EAAS/B,EAAK,GACrBuC,EAAOP,EAAShC,EAAK,GACrB0
C,EAAOJ,EAAStC,EAAK,GACrB2C,EAAS5C,EAAM,GAZHI,EAAIgK,EAAQhK,EAAIkK,EAAMIK,IAC7B,I
AAK,IAAI8B,EAAI2I,EAAQ3I,EAAIkJ,EAAMIJ,IAC7B,IAAK,IAAIuJ,EAAIN,EAAQM,EAAIF,EAAME,IAAK,
CACIC,IAAMV,EAAUnK,EAAIqK,EAAW/I,EAAIgJ,EAAWO,EAAIH,EAAWE,EAC7DhB,EAAQhJ,IAAI0I,EA
AMb,SAAS0B,EAASA,EAAUIC,EAAK,IAAK8B,GACxDA,GAAa9B,EAAK,IAIEtB6C,CACIxB,EAAqBjB,EAAS,
GAAIA,EAAS,GAAIA,EAAS,GAAIuB,EAC5DR,EACAC,OACC,CACCK,EACFC,EAAaL,EAAOF,EAAQC,E
AAOvK,EAAEIB,MAAOkB,EAAEhC,OACID8M,EAAQhJ,IAAI8I,GAGd,OAAOvL,EA8DF,IAAM4M,EAA4B,
CACvChP,WAAyIP,QACZ/O,YAAa,OACbK,WAAy6H,GChFP,IAAM8G,EAAqC,CACHDIP,WAAyMp,iBACZ
jP,YAAa,OACbK,WAZCF,SAawBC,GAKf,IAAAC,WAAQL,YAASM,UACjBqC,MACAqM,eAAYC,UAEBc,E
AAOF,EAAWG,QAAO,SAAC5O,EAAGC,GAAM,OAAD,EAAIC,KAEvC4O,EAAW/L,eAAagM,YAAY1M,E
AAEIB,MAAOuN,EAAYE,GACzDI,EAAWjM,eAAakM,YAAYH,EAAS1N,OAAQsN,EAAWtN,QACHe8N,EAC
FnM,eAAaoM,oBAAoB9M,EAAEIB,MAAOuN,EAAYE,GACpDQ,EACFrM,eAAasM,oBAAoBV,EAAOD,EAA
WtN,QACjDkO,EACFvM,eAAawM,aAAaL,EAAkBP,EAAOD,EAAWtN,QAe5DoO,EAAYjG,EAAQ,CAACxJ,
OAAQ,CAACsC,KAAI3C,UAASM,MAAO,CAACmB,MAAO2N,KAC1D3I,EACF5B,EAAU,CAACxE,OAAQ,C
AACsC,EAAGmN,GAAY9P,UAASM,MAAO,CAACyE,KAAMuK,KAGxDS,EAAS/H,EAAM,CACnB3H,OAA
Q,CAACsC,EAHiBkH,EACxB,CAACxJ,OAAQ,CAACsC,EAAG8D,GAAczG,UAASM,MAAO,CAACmB,MAA
O+N,MAGrDxP,UACAM,MAAO,CAACuL,MAAO6D,EAAkB5D,KAAM8D,KAOzC,OAJA5P,EAAQwH,YAA
YsI,EAAU1O,QAC9BpB,EAAQwH,YAAYf,EAYrF,QACHCpB,EAAQwH,YAAYsI,EAAU1O,QAEB2O,aCiC
OC,EACZ5P,GAEC,IAAAuC,aAYhC,gBAAQX,YAC9BgC,EAAMhC,EAAQic,WAAWU,EAAEIB,MAAOd,G
ACIC4D,EAASvE,EAAQwE,mBAAmB7B,GAG1C,OAFgB3C,EAAQwE,mBAAmBxC,GACnCyC,IAAIF,GACL

vC,EAGF,ICZHiO,EDYSC,EAA2B,CACtCtQ,WAAYuQ,OACZrQ,YAAa,OACbK,WAAy6P,GEhBDI,EAA2B5
N,EAAwB6N,QD2BzD,IAAMC,EAaKc,CAC7C1Q,WAAy2Q,cACZzQ,YAAa,OACbC,UA3BF,SAAeC,GACbi
Q,EAAWjQ,EAAQC,KAAKc,MAAMqQ,cAAa,KAAiB,CAC1D,SACA,SACA,SACA,YAuBFpQ,WAnBF,SAAc
C,GAKL,IAAAC,WAAQL,YAASM,UACjBqC,MACA6N,iBAAcC,iBACf7N,EAAM5C,EAAQkB,UAAUC,IAAI
wB,EAAEvB,QAAQC,GACtCW,EAAMhC,EAAQiC,WAAWU,EAAEiB,MAAOkB,EAAEhC,OACpCuB,EAAQI
C,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAehD,OADA4O,EAASrN,EAAK4N,EAACc,EAACvO,GACnCF,a
EpBOmJ,EACZ/K,GACK,IAAAC,WAAQL,YAETiG,EAAOpD,OAAKwD,eAAejG,EAAKE,MAAM2F,KAAM5
F,EAAO,GAAGoB,OAAO,GAE/D6D,EAAWjC,eAAaoC,gBAAGBpF,EAAO+D,KAAI,SAAAsM,GAAC,OAAA
A,EAAEjP,SAAQwE,GAGhE0K,EAAUtQ,EAAOuQ,QAAO,SAAAF,GAAC,OAAA7N,OAAKc,cAAc4N,EAAEj
P,OAAAS,KACjE,GAAuB,IAAnBkP,EAAQjP,OACV,OAAO4C,EAAS,CAACjE,OAAQ,CAACsC,EAAGgO,EAA
Q,IAAK3Q,YAG5C,IAAMgC,EAAMhC,EAAQiC,WAAWqD,EAAUjF,EAAO,GAAGM,OAEnD,GAAqC,IAAjC
kC,OAAKc,cAAAcW,GACrB,OAAOtD,EAGT,IAAM6O,EAASF,EAAQvM,KAAI,SAAAsM,GAAC,OAAAA,E
AAEjP,SAGIC,GAF4A4B,eAAayN,uBAAuBD,EAAQ5K,GAEnB,WAArB0K,EAAQ,GAAGhQ,MAAOB,CAQjC,I
AAMoQ,EAAWJ,EAAQvM,KAAI,SAAAsM,GAC3B,IAAMxI,EAAyrf,OAAKc,cAAc4N,EAAEjP,MAAMuG,
MAAM/B,IAEnD,OAAO4D,EAAQ,CAACxJ,OAAQ,CAACsC,EAAG+N,GAAlI,Q,UAASM,MAAO,CAACmB,
MADnC,EAAE,EAAGyG,SAIf8I,EAakBD,EAAS3M,KAAI,SAAAsM,GACnC,MAAO,CAAC9E,KAAM5L,EA
AQoN,SAASd,EAAEtP,QAASK,MAAOiP,EAAEjP,UAIrD6D,EACIjC,eAAaoC,gBAAGBsL,EAAS3M,KAAI,S
AAAsM,GAAC,OAAAA,EAAEjP,SAAQ,GAC7D,IAAMwP,EAAwC,IAAzBF,EAAS,GAAGtP,MAAM,GACjCy
P,ECpDH,SAAoB7Q,EAAQiF,EAAU3E,EAAOsQ,GACHd,MAAMxD,EAAU5K,OAAKsO,kBAAkBxQ,EAAOk
C,OAAKc,cAAAcW,IACjE,GAAl2L,GAA0B,WAAVtQ,EAAoB,CAEpC,IAAIyQ,EAAS,EACb/Q,EAAOgR,SAA
QnK,IACX,MAAM4E,EAAOjJ,OAAKc,cAAcoE,EAAMzF,OACtCgM,EAAQhJ,IAAIyC,EAAM0E,KAAMwF,G
ACxBA,GAAUtF,SAGb,CACD,IAAIwF,EAAy,EACbJr,EAAOgR,SAAQnK,IACX,MAAMqF,EAAwB,WAAV
5L,EACb0C,eAAamJ,uBAAuBtF,EAAM0E,MAC1C1E,EAAM0E,KACV,IAAI2F,EAAO,EACX,IAAK,IAAIC,
EAAM,EAAGA,EAAMtK,EAAMzF,MAAM,KAAM+P,EAAC,CAC3C,MAAMC,EAASD,EAAMIM,EAAS,GA
AKgM,EACnC,IAAK,IAAI,EAAM,EAAGA,EAAMxK,EAAMzF,MAAM,KAAMiQ,EACtCjE,EAAQgE,EAASC
,GAAOnF,EAAyGf,KAG5CD,GAAapK,EAAMzF,MAAM,MAGjC,OAAOgM,EDyBSkE,CACIX,EAAlB1L,EA
AUjF,EAAO,GAAGM,MACrCsQ,GAEdW,EACFvO,eAAaoC,gBAAGBkL,EAAQvM,KAAI,SAAAsM,GAAC,O
AAAA,EAAEjP,SAAQwE,GAQ5D,ONAJE,EAAlP,MAAQmQ,EACI5R,EAAQkB,UAAUC,IAAIa,EAAlZ,QAC
ICkM,YAAcjK,eAAa0J,uBAAuBmE,GAElDH,EAASM,SAAQ,SAAAX,GAAC,OAAA1Q,EAAQwH,YAAykJ,E
AAEtP,WAErCY,EAYT,IATA,IAAMD,EAAWc,OAAKc,cAAc6N,EAAQ,GAAGIP,MAAMuG,MAAM,EAAG/B
,IAC1D4L,EAAe,EACbC,EAAyNB,EAAQvM,KAAI,SAAA8C,GAC5B,IAAM6K,EAAWIP,OAAKc,cAAcoE,EA
AMzF,MAAMuG,MAAM/B,IAEtD,OADA4L,GAAGBE,EACTA,KAehxN,EAASoM,EAAQvM,KAAI,SAAA8C,
GAAS,OAAAIH,EAAQwE,mBAAmB0C,MACzDuG,EAAUzN,EAAQwE,mBAAmBxC,GACICxB,EAAl,EAAG
A,EAAluB,EAAUvB,IAE5B,IADA,IAAIoN,EAAyPn,EAAIqR,EACXhO,EAAl,EAAGA,EAAlU,EAAO7C,OAA
QmC,IAAK,CACtC,IAAMkO,EAAWD,EAAUjO,GACrBmO,EAAWxR,EAAluR,EACfnG,EAAOrH,EAAOV,GA
AGyI,SAAS0F,EAAUA,EAAWD,GACrDtE,EAAQhJ,IAAIImH,EAAMgC,GACIBA,GAAAmE,EAGjB,OAAO/P,E
AGF,IEtFHiQ,EFsFSC,EAA6B,CACxctS,WAAyUS,SACZrS,YAAa,OACbK,WAAyGL,GEbP,IC5EHhH,ED4ESC
,EAA6B,CACxCzS,WAAy0S,SACZxS,YAAa,OACbC,UAvEF,SAAeC,GACbiS,EAAajS,EAAQC,KAAKc,MAA
MoS,SAAQ,KAAiB,CACvD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SAC
A,SACA,SACA,SACA,SACA,SACA,SACA,YAoDFnS,WAhDF,SACIC,GACK,IAAAC,WAAQC,UAAON,YAEf
2C,MAAGiO,WACJhO,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCkR,EAAWvS,EAAQkB
,UAAUC,IAAIyP,EAAOxP,QAAQC,GAECiH,YAASkK,cAAWjK,QAAKc,oBAAiBkB,eAC3C+I,EAAcpP,eAA
aqP,wBAAwBhJ,GACnDjB,EAAWpF,eAAAsP,kBACzBhQ,EAAlB,MAAQmP,EAAoBnP,MAAO6G,EAASKK,E
AC5DjK,EAACc,GAAiB,EAAOiK,GAE3B9J,EAAeF,EAASE,aACxBC,EAACh,EAASG,YACvBC,EAASJ,EA
ASK,QAAQC,IAC1BC,EAAWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EAAUX,EAAS
K,QAAQO,KAC3BO,EAAlBnB,EAASmB,eAC1BD,EAAGBIB,EAASKB,cACzBL,EAAeb,EAASa,aACxBC,EAA
cd,EAASc,YACvBqJ,EAAGbnK,EAASgB,WACzBoJ,EAAlBpK,EAASqK,YAC1BC,EAASc,SAA1BtK,EAASK,
QAAQkK,KAAkB,EAAl,EAEdD,GAA4B,iBAAxBvK,EAASiB,WACX,MAAM,IAAI9I,MACN,oDACG6H,EAA

ACA,SACA,SACA,QACA,SACA,QACA,QACA,SACA,YAkDF/W,oBA9C2BC,GAKpB,IAAAJ,YAASK,WAAQ
C,UACjBqC,MACAwU,cAAWzN,eAEZ6J,EAAY5Q,EAAEIB,MAAM,GAKpB2V,GAJ8B,SAAf1N,EAAYB/G,E
AAEIB,MAAM,GAAKkB,EAAEIB,MAAM,IAIhC0V,EAC7BE,GAJ6B,SAAf3N,EAAYB/G,EAAEIB,MAAM,GA
AKkB,EAAEIB,MAAM,IAIjC0V,EAC3BG,GAJ6B,SAAf5N,EAAYB/G,EAAEIB,MAAM,GAAKkB,EAAEIB,MA
AM,KAIhC0V,EAAYA,GAExCI,EAA8B,SAAf7N,EACjB,CAAC6J,EAAW6D,EAACc,EAAaC,GACvC,CAAC/
D,EAAW+D,EAaAf,EAACc,GAERCrV,EAAMhC,EAAQiC,WAAWsV,EAaAa,WAGtC3U,EADQ5C,EAAQkB,U
AAUC,IAAIwB,EAAEvB,QACpBC,GACZmW,EACF,IAAIpV,WAAW,IAAIC,WAAWQ,OAAKsJ,eAAexJ,EAA
EIB,QAAQa,QAE1DmV,EAAMb,IAAIrV,WAAW,IAAIC,WAAWkV,GAAajV,QAC9DoV,EACF,IAAIrV,WAA
W,IAAIC,WAAWQ,OAAKsJ,eAAeoL,IAAcjV,QAE9DJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GA
MhD,OAJA8U,GACivT,EAAKuU,EAF2B,SAAfzN,EAaWb,EAaI,EAef8N,EAaE7U,EAAEIB,MAAMC,OAAS,
EAC9D+V,EAakBC,EAaiBH,EAAY7V,OAAQq,GAepDF,ICyBF,IAAM2V,GAA4C,CACvD/X,WAAyGy,wB
ACZ9X,YAAa,OACbC,UA9EF,SAaEc,GACBgX,GACIhX,EAAQC,KAAKC,MAAM0X,wBAaUb,KAAiB,CAC
zD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SA
CA,SACA,SACA,YA0DNzX,WAtDF,SAAYBC,GAKhB,IAAAC,WAAQC,UAAON,YAef2C,MAAGiO,WACJhO
,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCkR,EAAWvS,EAAQkB,UAAUC,IAAIpP,EAA
OxP,QAAQC,GAE/CiH,YAASKk,cAAWjK,QAAKC,oBAE1BqP,EAA0B,MAAbrF,EAaOb,CAAC,EAAG,GAA
KA,EAE1C/J,EAAWpF,eAAasP,kBACzBhQ,EAAelB,MAAQmP,EAaObnP,MAAO6G,EACIDuP,EAA0CtP,EAA
KC,GAChD,GAEEG,EAaEf,EAASE,aACxBC,EAACh,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EA
AWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EAAX,EAASK,QAAQO,KAC3BO,EA
AiBnB,EAASmB,eAC1BD,EAAGbIB,EAASKb,cACzBL,EAaEb,EAASa,aACxBC,EAACd,EAASc,YACvBqJ,EA
AgBnK,EAASgB,WACzBoJ,EAaiBpK,EAASqK,YAC1BC,EAASc,SAA1BtK,EAASK,QAAQkK,KAAkB,EAaI,
EAeZD,GAA4B,iBAAXbV,K,EAASiB,WACX,MAAM,IAAI9I,MACN,mEACG6H,EAASiB,4CAGiB,IAAM1H,E
AAMhC,EAAQiC,WAAWwG,EAASnD,SAAU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,
GAMhD,OALA2V,GACIpU,EAAKD,EAAEIB,MAAM,GAaIkB,EAAEIB,MAAM,GAaIkB,EAAEIB,MAAM,G
AAI8Q,EAAU5J,EACnDC,EAaAc,EAAQG,EAAUE,EAaWE,EAAS2J,EACnDnJ,EAAGBD,EAaEL,EAACc,EA
AaqJ,EAC1DC,EAAGB3Q,GACbF,ICjFI8V,GAA0BtV,EAaWbuV,OCCIDC,GACT/U,EAAYBgV,SAFC,EAE6B,
QCF9CC,GAA0B1V,EAawB2V,MAAK,oBCEpDC,GAaWhY,GAKIB,IAAAC,WAAQC,UAAON,YACfkH,UA
CAmR,QAEDIR,EAAYD,EAAMzF,MAAMC,OACxB0B,EAaW8D,EAAMzF,MAAMuG,QACzBsQ,EAaOD,E
AWX,OAVIA,EAAM,IAERxV,OAAKoH,SACC9C,EAAY,IAAMkR,GACpB,WAAM,MAAA,mCAAoCIR,EA
Y,QACIDA,SACRmR,EAaOnR,EAAYkR,EAAM,GAE3BjV,EAASmV,OAAOD,EAAM,EAAG,GAElBzO,EA
Q,CAACxJ,OAAQ,CAACsC,EAAGuE,GAaQIH,UAASM,MAAO,CAACmB,MAAO2B,KAGvD,IAAMoV,GAaI
C,CAC5C5Y,WAAy6Y,aACZ3Y,YAAa,OACbK,WAAyYiY,aC5BEM,GAaKtY,GACZ,IAAA0E,UAAQRD,UAA
OkX,UAAOhY,UAAQX,YAC/BgC,EAAMhC,EAAQiC,WAAWR,EAaOd,GAGtC,OAFgBX,EAaQwE,mBAAM
BxC,GACnC0W,KAAKC,GACN3W,EAGF,ICTH4W,GDSSC,GAA2B,CACtCjZ,WAAyKZ,OACzhZ,YAAa,OA
CbK,WAAyYy,ICmBP,IC/BHK,GD+BSC,GAAoC,CAC/CpZ,WAAyqZ,gBACznZ,YAAa,OACbK,oBAIBEC,G
ACK,IAAAC,WAAQL,YACRwV,UAEDxT,EAAMhC,EAAQiC,WAAWuT,EAAM/T,MAAO+T,EAAM7U,OAC
5CuY,EAaUIZ,EAAQkB,UAAUC,IAAIqU,EAAMpU,QAAQC,GAC9Ca,EAAQIC,EAAQkB,UAAUC,IAAIa,EA
AIZ,QAAQC,GAE1CyD,UAAcQ,UAAOC,OAAaC,OAAyC,OAIvC,OAFaV,GACIM,EAASC,EAaOC,EAaAc
,EAAYC,EAaapX,GACnDF,GAOPjC,UA/BF,SAaEc,GACb4Y,GAAoB5Y,EAAQC,KAAKC,MAAM+Y,gBAaE
,KAAiB,CACtE,SACA,SACA,SACA,SACA,SACA,aEbSM,GAA4B/W,EAawBgX,SCGpDC,GACTxW,EAAYBy
W,YAFC,GFqCvB,IGnCHC,GHmCSC,GAAqC,CACHdha,WAAyia,iBACZ/Z,YAAa,OACbC,UApCF,SAaEc,G
ACb+Y,GAAGb/Y,EAAQC,KAAKC,MACzB2Z,iBAAGb,KACHB,CAAC,SAAU,SAAU,SAAU,SAAU,SAAU,SA
AU,YAkCjE1Z,WA/BF,SAawBC,GAKf,IAAAJ,YAASK,WACTyZ,0BACAnX,MAAGoX,SAAMC,aAAU5I,WA
AQ6I,UAC5BrX,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtC6Y,EAASla,EAAQkB,UAAU
C,IAAI4Y,EAAK3Y,QAAQC,GAC5C8Y,EAaana,EAAQkB,UAAUC,IAAI6Y,EAAS5Y,QAAQC,GACpD+Y,EA
AqB,MAAVhJ,EAaiBpR,EAAQkB,UAAUC,IAAIqQ,EAaOhQ,QAAQC,GAaK,EAEnEW,EAAMhC,EAAQiC,WAAWU,EAAEIB,
EAAGbja,EAAQkB,UAAUC,IAAI8Y,EAAM7Y,QAAQC,GAaK,EAEnEW,EAAMhC,EAAQiC,WAAWU,EAAEIB,
MAAOkB,EAaEhC,OAE1C,GAAoC,IAAhCkC,OAAKC,cAACh,EAAEIB,OACvB,OAAOO,EAGT,IAAME,EA

ACvBqJ,EAAGbnK,EAASgB,WACzBoJ,EAaiBpK,EAASqK,YAEhC,GAA4B,iBAAXBrK,EAASiB,WACX,MAAM,IAAI9I,MACN,6CACG6H,EAASiB,4CAGIB,IAAM1H,EAAMhC,EAAQIC,WAAWwG,EAASnD,SAAU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAMhD,OAJAkC,GACI3a,EAAKD,EAAEIB,MAAM,GAAIkB,EAAEIB,MAAM,GAAIkB,EAAEIB,MAAM,GAAIkH,EAACc,EACvDC,EAAQG,EAAUE,EAAW E,EAASQ,EAAGBD,EACtDL,EAACc,EAAaqJ,EAACc,EAAgB3Q,GACvDF,IEPF,ICrEH+b,GDqESC,GAA2B,CACtCpe,WAAyqe,OACZne,YAAa,OACbC,UAtEF,SAAeC,GACb4d,GACI5d,EAAQC,KAAKC,MAAM+d,OAA M,KAAe,CAAC,4BAqE7C9d,oBAjEEC,GAEK,IAAAJ,YAASK,WAAQC,UACjB2F,SAAMe,aACNrE,MACDC, EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACx4F,EAAUrE,EACVsE,EAAQvE,EAENmC,WAAC8B,eAAYN,SAAMF,iBAACm,uBAGnCWx,EAAGB5X,EACpB,GAAI,EAAoB,CACtB,IAAMqB,EAAe/H,EA AQkB,UAAUC,IAAIyF,EAAWxF,QAAQC,GAC1D0G,IAAIbnF,IAGnBsE,EAAQN,EACRK,EAAUc,EACVmW, EAAGB7a,eAAASD,iBACzBuX,EAACxc,OAAQwF,EAAMzF,MAAMC,SAI1C2B,eAAa+D,2BACT,OAAQ8W,EAAehX,EAAMzF,MAAMC,QACjC,IAAA2F,sDAAC/B,OAAUgC,OAEXC,EAAa1E,OAAKC,cAAcwE,GACIC6 W,EAACjX,EACE,YAAhBA,EAAMvG,QACRwd,EACInO,EAAC,CAACHQ,UAASK,OAAQ,CAACsC,EAAGuE ,GAAQ5G,MAAO,CAACK,MAAO,aACtDsG,EAAUjH,EAAQkB,UAAUC,IAAIgd,EAAY/c,QAAQC,IAGtD,IA AMW,EAAMhC,EAAQIC,WAAWqD,EAAU,WACzC,GAAwC,IAApCzC,OAAKC,cAAcoE,EAAMzF,OAAc,CA CzC,IAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GACHDuc,GAAS3W,EAASM,EAAYrF,GAQh C,GALIwE,GAEF1G,EAAQwH,YAAyZ,EAAWxF,QAG7B4F,EAAU,CAEZ,IAAM5D,EAAWC,eAAaoE,qBAA qBzF,EAAIP,MAAO2E,GAC9DpE,EAAIP,MAAQ2B,EAOD,MAJoB,YAAhB8D,EAAMvG,OACRX,EAAQwH,Y AAY2W,EAAY/c,QAG3BY,ICLF,IC7DFoc,GAKDC,GDwDSC,GAA0B,CACrC1e,WAAy2e,MACZze,YAAa,O ACbC,UA7DF,SAAeC,GACb+d,GAAU/d,EAAQC,KAAKC,MAAMqe,MAAK,KAAe,CAC/C,SACA,SACA,SAC A,YAyDFpe,WArDF,SAAaC,GA EJ,IAAAJ,YAASK,WAAQC,UACjB2F,SAAMe,aACNrE,MACDC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACx4F,EAAUrE,EACVsE,EAAQvE,EAENmC,WAAC8B,eAAYN,SAAMF,iBAACm,uBAGvC,GAAIA,EAAoB,CACtB,IAAMqB,EAAe/H,EAAQkB,UAAUC,IAAIyF,EAAWxF,QAAQC,GAC1D0G,IAAIbnF,IAGnBsE,EAAQN,EACRK,EAAUc,GAId,IAAMZ,EAAYD,EAAMzF,MAAMC, OAE9B2B,eAAa+D,2BAA2B,MAAOd,EAAMa,GAC/C,IAAAE,sDAAC/B,OAAUgC,OAEXC,EAAa1E,OAAKC, cAAcwE,GAehCtF,EAAMhC,EAAQIC,WAAWqD,EAAU4B,EAAMvG,OAC/C,GAAwC,IAApCkC,OAAKC,cA AcoE,EAAMzF,OAAc,CACzC,IAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GACHD0c,GAAQ9 W,EAASzH,EAASmD,EAAEHc,OAAQ4G,EAAYrF,GAQID,GALIwE,GAEF1G,EAAQwH,YAAyZ,EAAWxF,Q AG7B4F,EAAU,CAEZ,IAAM5D,EAAWC,eAAaoE,qBAAqBzF,EAAIP,MAAO2E,GAC9DpE,EAAIP,MAAQ2B, EAGd,OAAOpB,IE9DIwc,GACTvb,EAAYbwb,WAFc,IDK9B,SAAKL,GACHA,yBACAA,6BAFF,CAAKA,KA AAA,QakDE,IEnDH1b,GFmDSgc,GAAgC,CAC3C9e,WAAy+e,YACZ7e,YAAa,OACbK,WA9BF,SAAMBC,GA KD,IAAAuC,aAAI3C,YAAS8E,UAAQ8Z,aAAUC,SAEzCvZ,EAAWsZ,EAASxa,KACtB,SAAC0a,EAAGjb,GAA M,OAAaib,EAAE,GAAqBnc,EAAEIB,MAAMoC,GAAKib,EAAE,MAC9C1c,EAAM5C,EAAQkB,UAAUC,IAAI wB,EAAEvB,QAAQC,GACiCW,EAAMhC,EAAQIC,WAAWqD,EAAU3C,EAAEHc,OACrCuB,EAAQIC,EAAQ kB,UAAUC,IAAIa,EAAlZ,QAAQC,GAC1CuE,EAAC,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QAE rDyc,EAAkBH,EAASxa,KAAL,SAAA4a,GAAY,OAAAA,EAAS,MACpDC,EAAMBL,EAASxa,KAAL,SAAA4a,G AAY,OAAAA,EAAS,MACrDE,EACF,IAAI9c,WAAW,IAAIC,WAAW0c,GAAiBzc,QAC7C6c,EACF,IAAI/c,W AAW,IAAIC,WAAW4c,GAakB3c,QAkpD,OAHA+b,GACIzb,EAAKgD,EAAajD,EAAEIB,MAAMC,OAAQIC, EAASmD,EAAEHc,OAAQue,EACrDC,EAAMbF,GAakBS,GAAO3c,GACzCF,GAOPjC,UA5CF,SAAeC,GACbq e,GAAGBre,EAAQC,KAAKC,MAAMye,YAAW,KAAiB,CAC7D,SACA,QACA,SACA,SACA,QACA,QACA,SA CA,aGrBSS,GACTnc,EAAYBoc,YAFc,GCFjBC,GAA0B9c,EAawB+c,gBCW/CC,GACZxf,EAAsByf,GACxB,IA AM1P,EAAS,IAAI1N,WAAWrC,EAAQC,KAAKyf,OAAOpD,OAAQmd,EAAW,GAC/DE,EAAMB5P,EAAO,GA C1B6P,EAAe7P,EAAO,GACtB8P,EAakB9P,EAAO,GACzB+P,EAAGB/P,EAAO,GAG7B,OADa/P,EAAQC,KA AK8f,MAAMN,GACZ,CAACE,mBAakBC,eAAcC,kBAaIBc,iBH6BpD,II7CHpd,GJ6CSsd,GAA0C,CACrDpgB, WAAyqgB,sBACZngB,YAAa,OACbC,UA5CF,SAAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MACpB+f,sBAC A,SACA,CACE,SACA,SACA,SACA,SACA,YAoCN9f,WAhCF,SAAoBC,GAKX,IAAAJ,YAASK,WAAQC,UAC jB4f,iBAACc,kBAACc,mBAC7B3K,UAAO4K,WAERrK,EAAUHW,EAAQkB,UAAUC,IAAIuE,EAAMrU,QAA QC,GAC9Cif,EAAWtgB,EAAQkB,UAAUC,IAAIkf,EAAOjf,QAAQC,GAKhDyD,OAFFpC,GAASsT,EAASsK,E

AAUH,EAAeD,EAAcE,IAEtDT,qBAAkBC,iBAAcC,oBAAiBC,kBAUxD,OANA9f,EAAQC,KAAK8f,MAAMF,
GACnB7f,EAAQC,KAAK8f,MAAMD,GAGf9f,EAAQiC,WAAW,CAAC2d,GAAe,QAASD,KIU3C,ICIDHjd,GD
kDS6d,GAA0C,CACrD3gB,WAAy4gB,sBACZ1gB,YAAa,OACbC,UAhDF,SAAeC,GACb0C,GAAW1C,EAAQ
C,KAAKC,MACpBsgB,sBACA,SACA,CACE,SACA,SACA,SACA,SACA,SACA,UAAuCNrgB,WAnCF,SAA6BC,
GAKpB,IAAAJ,YAASK,WAAQC,UACjB4f,iBAAcC,kBAAcC,mBAAgBK,uBAE7ChL,UAAO4K,WAERrK,EA
AUhW,EAAQkB,UAAUC,IAAIu,EAAMrU,QAAQC,GAC9Cif,EAAWtgB,EAAQkB,UAAUC,IAAIkf,EAAOjf,
QAAQC,GAMhDyD,OAJYpC,GACdsT,EAASsK,EAAUH,EAAeD,EAAcE,EACHDK,IAEGd,qBAAkBC,iBAAcC
,oBAAiBC,kBAWxD,OAPA9f,EAAQC,KAAK8f,MAAMF,GAOZ,CAJH7f,EAAQiC,WAAW,CAAC2d,GAAe,Q
AASD,GAERb3f,EAAQiC,WAAW,GAAl,QAAS6d,MCKtD,ICpDHY,GDoDSC,GAA0C,CACrD/gB,WAAyghB,s
BACZ9gB,YAAa,OACbC,UAhDF,SAAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MACpB0gB,sBACA,SACA,C
ACE,SACA,SACA,SACA,SACA,SACA,YAAuCNzgB,WAnCF,SAAoBC,GAKX,IAAAJ,YAASK,WAAQC,UACj
B4f,iBAAcC,kBAAcC,mBAAgBS,iBAC7CpL,UAAO4K,WAERrK,EAAUhW,EAAQkB,UAAUC,IAAIu,EAAM
rU,QAAQC,GAC9Cif,EAAWtgB,EAAQkB,UAAUC,IAAIkf,EAAOjf,QAAQC,GAMhDyD,OAJYpC,GACdsT,EA
ASsK,EAAUH,EAAeD,EAAcE,EACHDS,IAEGLB,qBAAkBC,iBAAcC,oBAAiBC,kBAyxD,OAPA9f,EAAQC,KA
AK8f,MAAMD,GAOZ,CAJH9f,EAAQiC,WAAW,CAAC2d,GAAe,QAASD,GAES53f,EAAQiC,WAAW,CAAC2
d,GAAe,UAAWC,MEhDvCiB,GACT7d,EAAyB8d,YAFC,EAEGC,QD+BvD,IAAMC,GAA6B,CACxCphB,WAA
YqhB,SACZnhB,YAAa,OACbC,UA9BF,SAAeC,GACb0gB,GAAa1gB,EAAQC,KAAKC,MAAM+gB,SAAQ,KA
AiB,CACvD,SACA,SACA,SACA,SACA,YAyBF9gB,WArBF,SACIC,GACK,IAAAC,WAAQL,YAASM,UACjB0
a,YACAKG,UAAOC,YAASC,aAEjBpf,EAAMhC,EAAQiC,WAAe+Y,EAAQvZ,cAAOyf,IAAQ,SACpDhf,EAAQ
IC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAG1Cga,EADcrb,EAAQkB,UAAUC,IAAI6Z,EAAQ5Z,QACpBC
,GAI9B,OAFaqf,GAAWrF,EAAW6F,EAAOC,EAASC,EAAUlf,GAeZCF,IEpBF,IAAMqf,GAA+B,CAC1CzhB,
WAAy0hB,WACZxB,YAAa,OACbK,WAXF,SAAkBC,GACA,IAAAuC,aAAI3C,YACdgC,EAAMhC,EAAQiC,
WAAWU,EAAEIB,MAAOkB,EAAEhC,OAG1C,OAFgBX,EAAQwE,mBAAMbxC,GACnC0W,KAAK,GACN1
W,ICmCF,ICpCHuf,GDoCSC,GAA2B,CACtC5hB,WAAy6hB,OACZ3hB,YAAa,OACbK,oBAxCEC,GAEK,IAA
AC,WAAQL,YACRiG,eAEP,GAAsB,IAAIb5F,EAAOqB,OACT,OAAO0W,GACH,CAAC/X,OAAQ,CAAC6G,
MAAO7G,EAAO,IAAKL,UAAASM,MAAO,CAAC+X,IAAKpS,KAGzD,IAAMxE,EAAQpB,EAAO,GAAGoB,M
ACIBd,EAAQN,EAAO,GAAGM,MAExBN,EAAOgR,SAAQ,SAAAX,GACb7N,OAAK6e,kBACDjgB,EAAOiP,E
AAEjP,MACT,yDACJoB,OAAKoH,OACDtJ,IAAU+P,EAAE/P,OACZ,WAAM,MAAA,8DAGZ,IAAMghB,EAA
wC,GAQxC5R,EAAS5E,EAAO,CAAC9K,OAPCA,EAAO+D,KAAI,SAAAsM,GACjC,IAAMkR,EACFxJ,GAAW
,CAAC/X,OAAQ,CAAC6G,MAAOwJ,GAAI1Q,UAAASM,MAAO,CAAC+X,IAAKpS,KAE1D,OADA0b,EAAwB
1c,KAAK2c,GACtBA,KAGuC5hB,UAAASM,MAAO,CAAC2F,UAIjE,OAFa0b,EAAwBtQ,SAAQ,SAAAX,GAA
K,OAAA1Q,EAAQwH,YAAyKJ,EAAEtP,WAEpD2O,ICqBF,ICxDH8R,GDwDSC,GAA4B,CACvCliB,WAAyMi
B,QACZjiB,YAAa,OACbK,WAvCF,SACIC,GACc,IAAAuC,aAAI3C,YAAS8E,UAAQ8Z,aAAUoD,kBAEzC1c,E
AAWsZ,EAASxa,KACtB,SAAC0a,EAAgjb,GAAM,OAAAib,EAAE,GAAqBnc,EAAEIB,MAAMoC,GAAKib,E
AAE,MAEpD,GAAoC,IAAhCjc,OAAKC,cAAcH,EAAEIB,OAGvB,OAAOiX,GAAC,CACV1Y,UACAM,MAAO
,CAACmB,MAAO6D,EAAUqT,MAAOqJ,EAAerhB,MAAOgC,EAAEhC,SAI5D,IAAMiC,EAAM5C,EAAQkB,U
AAUC,IAAIwB,EAAEvB,QAAQC,GACtCW,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,OAERcuB,EA
DgBIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QACpBC,GAETbuE,EAAC,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB
,OAAOa,QAERdyc,EAAkBH,EAASxa,KAAI,SAAA4a,GAAY,OAAAA,EAAS,MACpDC,EAAMBL,EAASxa,KA
AI,SAAA4a,GAAY,OAAAA,EAAS,MACrDE,EACF,IAAI9c,WAAW,IAAIC,WAAW0c,GAAiBzc,QAC7C6c,EA
CF,IAAI/c,WAAW,IAAIC,WAAW4c,GAakB3c,QAKpD,OAHAif,GACI3e,EAAKgd,EAAajD,EAAEIB,MAAM
C,OAAQIC,EAASmD,EAAEhC,OAAQue,EACrDC,EAAMb6C,EAAe9f,GAC/BF,GAOPjC,UArDF,SAAeC,GAC
buhB,GAAYvhB,EAAQC,KAAKC,MAAM6hB,QAAO,KAAiB,CACrD,SACA,QACA,SACA,SACA,QACA,QAC
A,SACA,aEnBSE,GACThf,EAAyBif,OAFc,GDsCvB,IEhCHC,GFgCSC,GAA4B,CACvCxiB,WAAyYiB,QACZvi
B,YAAa,OACbC,UAnCF,SAAeC,GACb6hB,GAAY7hB,EAAQC,KAAKC,MAAMmiB,QAAO,KAAiB,CACrD,S
ACA,SACA,YAgCFliB,WA5BF,SAAeC,GACN,IAAAC,WAAQL,YACR2C,MAAGma,UACJla,EAAM5C,EAAQ
kB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCihB,EAAyTiB,EAAQkB,UAAUC,IAAI2b,EAAM1b,QAAQC,GA
EID4F,EAAUrE,EACRSE,EAAQvE,EACVwb,EAAcJX,EACE,YAAhBA,EAAMvG,QACRwd,EAAcnO,EAAK,C

AACHQ,UAASK,OAAQ,CAACsC,KAAIrC,MAAO,CAACK,MAAO,aACzDsG,EAAUjH,EAAQkB,UAAUC,IAA
Igd,EAAy/c,QAAQC,IAGtD,IAAMW,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAO,WACICS,EAAQIC,EAAQ
kB,UAAUC,IAAIa,EAAlZ,QAAQC,GAMhD,OALAwgB,GAAU5a,EAASqb,EAAWpgB,GAEV,YAAhBgF,EAA
MvG,OACRX,EAAQwH,YAAy2W,EAAy/c,QAE3BY,IEsCF,ICrEHugB,GDqESC,GAA2B,CACtC5iB,WAAy6i
B,OACZ3iB,YAAa,OACbC,UAIEF,SAAeC,GACbmiB,GAAWniB,EAAQC,KAAKC,MAAMuiB,OAAM,KAAe,
CACjD,SACA,SACA,SACA,YA8DFtiB,WA1DF,SAAcC,GAKL,IAAAJ,YAASK,WAAQC,UACjB2F,SAAMe,a
ACNrE,MACDC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACx4F,EAAUrE,EACVsE,EAAQ
vE,EAENmC,WAAC8B,eAAYN,SAAMF,iBAAcM,uBAGnCwX,EAAgB5X,EACpB,GAAIL,EAAoB,CACtB,IAA
MqB,EAAe/H,EAAQkB,UAAUC,IAAIyF,EAAXF,QAAQC,GAC1D0G,IAAIbnF,IAGnBsE,EAAQN,EACRK,E
AAUc,EACVmW,EAAgB7a,eAAasD,iBACzBuX,EAACxc,OAAQwF,EAAMzF,MAAMC,SAI1C2B,eAAa+D,2B
ACT,OAAQ8W,EAAehX,EAAMzF,MAAMC,QACjC,IAAA2F,sDAAC/B,OAAUgC,OAEXC,EAAa1E,OAAKC,c
AAcwE,GAEHctF,EAAMhC,EAAQiC,WAAWqD,EAAU4B,EAAMvG,OAC/C,GAAwC,IAApCkC,OAAKC,cAA
coE,EAAMzF,OAAC,CACzC,IAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GACHd8gB,GAASlb,
EAASM,EAAY/H,EAASwC,EAAlrB,OAAQuB,GAQRd,GALiWE,GAEF1G,EAAQwH,YAAyZ,EAAXF,QAG7
B4F,EAAU,CAEZ,IAAM5D,EAAWC,eAAaoE,qBAAqBzF,EAAlP,MAAO2E,GAC9DpE,EAAlP,MAAQ2B,EAG
d,OAAOpB,IEvDI0gB,GAA4B,CACvC9iB,WAAy+iB,QACZ7iB,YAAa,OACbK,WAdE,SAACC,GACQ,IAAAJ,
YAASM,UACTsiB,UAAOC,SAAMC,SAAMniB,UACpBqM,ECTL,SAAMb4V,EAAOC,EAAMC,EAAMniB,GA
IzC,GAHsBiiB,IAAUC,GACID,EAAQC,GAAQC,EAAO,GACvBD,EAAOD,GAASE,EAAO,EAGvD,OAAOjgB,
OAAKkgB,oBAAoB,EAAGpiB,GAEvC,MAAMqiB,EAACvX,KAAKwX,IAAIxX,KAAKyX,MAAML,EAAOD,G
AASE,IACID9V,EAASnK,OAAKkgB,oBAAoBC,EAAlrB,GACjDkiB,EAAOD,GAAKb,IAATE,IAGhBA,GAA
Q,GAEZ9V,EAAO,GAAK4V,EACZ,IAAK,IAAI/e,EAAl,EAAGA,EAAlmJ,EAAOtL,OAAQmC,IAC/BmJ,EAAO
nJ,GAAMjJ,EAAOnJ,EAAl,GAAKif,EAehC,OAAO9V,EDVUmW,CAAAP,EAAOC,EAAMC,EAAMniB,GAZ
CqB,EAAMhC,EAAQiC,WAAW,CAAC+K,EAAOtL,QAASf,GAGhD,OAFgBX,EAAQwE,mBAAMbxC,GACnC
yC,IAAIuI,GACLhL,IETAohB,GACTngB,EAAYBogB,WAFc,GCFjBC,GAA2B9gB,EAAwB+gB,QCANDC,GAA
4BhhB,EAAwBihB,SLgE1D,IM3DHC,GN2DSC,GAAqC,CACHD/jB,WAAyGkB,iBACZ9jB,YAAa,OACbC,UA1
DF,SAAeC,GACbuiB,GAAqBviB,EAAQC,KAAKC,MAAM0jB,iBAAGB,KAAe,CACrE,SACA,SACA,SACA,SA
CA,SACA,SACA,SACA,SACA,SACA,SACA,YAgDFzjB,WA5CF,SAAwBC,GAKf,IAUHgV,EAVGpV,YAASK,WAA
QC,UAEjBujB,WACAC,iBAACc,qBAAkBjY,SACHckY,OAAWC,OAENZf,UAAcQU,OAAO+K,OAAWC,OAA
U7K,OAC7BhU,EAAW,CAAC6T,EAAO6K,EAAWC,EAAU3K,GAElC8K,EAAQpB,EAAQkB,UAAUC,IAAI0
iB,EAAOziB,QAERb,YAAhBgjB,EAAMzjB,QACRyU,EACIpF,EAAC,CAACHQ,UAASK,OAAQ,CAACsC,EA
GkhB,GAASvjB,MAAO,CAACK,MAAO,aACvDyjB,EAAQpB,EAAQkB,UAAUC,IAAIiU,EAAWH,U,SAE3C,I
AAMwB,EAAMwhB,EAAM/iB,GAZW,EAAMhC,EAAQiC,WAAWqD,EAAU,WACzC,GAAyC,IAArCzC,OA
AKC,cAAc+gB,EAAOpB,OAC5B,OAAOO,EAET,IAAME,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,
GAUhD,OARakhB,GACI3f,EAAKuW,EAAO+K,EAAWC,EAAU7K,EAAa0K,EAAWC,EACzDH,EAAe,EAAl,
EAAGC,EAAMb,EAAl,EAAG7hB,GAElC,MAAdkT,GACFpV,EAAQwH,YAAy4N,EAAWH,U,QAG1BY,IMXF,
IC/CHqiB,GD+CSC,GAA8B,CACzC1kB,WAAy2kB,UACZzkB,YAAa,OACbK,oBAhCEC,GAEK,IAAAC,WAA
QL,YAASM,UACjBqC,MACA6hB,SAEDle,EAAOzD,OAAKwD,eAAeme,EAAM7hB,EAAEIB,OAEC,GAAuB,
IAAnBkB,EAAEIB,MAAMC,OACV,OAAO4C,EAAS,CAACjE,OAAQ,CAACsC,KAAI3C,YAGhC,IAAMgC,EA
AMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAlhC,OACpCiC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EA
EvB,QAAQC,GACtCa,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAElCojB,EAAY,IAAlriB,WAAW,
IAAIC,WAAWiE,GAAMhE,QACHdoiB,EAAGB,IAAltiB,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QAE7Doh
B,GACI9gB,EAAK6hB,EAAWne,EAAK5E,OAAQgjB,EAAe/hB,EAAEIB,MAAMC,OAAQQ,GAehE,IAAMkN,
EACFvF,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGX,GAAM1B,MAAO,CAACmB,MAAOkB,EAAEIB,OAAQzB,
YAGxD,OADAA,EAAQwH,YAAyxF,EAAlZ,QACjBgO,GAOPrP,UA7CF,SAAeC,GACb0jB,GAAC1jB,EAAQC
,KAAKC,MAAMqkB,UAAS,KAAM,CAC9C,SACA,QACA,SACA,QACA,SACA,aCwCG,ICpDHI,GDoDSC,GA
AuC,CACIDhIB,WAAyilB,mBACZ/kB,YAAa,OACbK,oBAnC+BC,GAKxB,IAAAC,WAAQL,YAASM,UACjBk
V,UACAsP,YAASC,cAAWC,WAErBhjB,EAAMhC,EAAQiC,WAAWuT,EAAM/T,MAAO+T,EAAM7U,OAC5C
uY,EAAUIZ,EAAQkB,UAAUC,IAAIqU,EAAMpU,QAAQC,GAC9Ca,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAl

Z,QAAQC,GAE1CyD,UAAcQu,OOAOC,OOAaC,OOAYC,OAeJcJ,S,uCAAC4d,OOAASC,OAMVC,EAakC,iBA AdJ,EACtB,CAACA,EAawa,EAawa,EAJO,IAAdA,EAIGc,EAH3B,KAIjBA,UAJiB,MAKnBK,EAAY,IAAIhj B,WAAW,IAAIC,WAAW8iB,GAAY7iB,QAk5D,OAHA+hB,GACInL,EAASC,EAaOC,EAaAc,EAAYC,EAaA wL,EAASG,EAC/DC,EAASE,EAawD,EAawZjB,OOAQq,GACpCF,GAOPjC,UApDF,SAAeC,GACbqkB,GAA arkB,EAaQC,KAAKC,MAAM2kB,mBAakB,KAAiB,CACjE,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,QACA,SACA,aEnBSQ,GAA4B7iB,EAawB8iB,SCDpDC,GAA4B/iB,EAawBgjB,SFuD1D,IGrDHC,GHqD SC,GAAgC,CAC3C9iB,WAAy+IB,YACZ7iB,YAAa,OACbC,UAjDF,SAAeC,GACb2kB,GAAgB3kB,EAaQC,K AAKC,MAAMyIB,YAAW,KAAe,CAC3D,SACA,SACA,SACA,SACA,SACA,SACA,SACA,QACA,SACA,YAwCFxIB, WApCF,SACIC,GAGK,IAAAJ,YAASK,WAAQC,UACjB0a,YAAS4K,YACTnkB,UAEDO,EAAMhC,EAaQiC, WAAWR,EAaOmK,EAaQjIB,OAC9C,GAakC,IAA9BkC,OOAKC,cAAcrB,GACrB,OOAoo,EAGH,IAAA8C, wCAACsW,cAAWYk,eAAYjW,cAAWtH,YAASwd,eAI5CzK,EADcrB,EAaQkB,UAAUC,IAAI6Z,EAaQ5Z,QA CpBC,GAGxB0kB,EADc/IB,EAaQkB,UAAUC,IAAIyK,EAaQxB,QACpBC,GAExBia,EAaE,IAAIIZ,WAAW, IAAIC,WAAWiG,GAAShG,QAeTdj,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAKhD,OAJAsjB,GA CItJ,EAaw0K,EAawVmB,EAASomB,EAaQjIB,OOAQya,EAawYk,EAC1DjW,EAaw0L,EAacwK,EAAY5jB ,GAEICF,IGfF,ICnCHU,GDmCSsjB,GAA6B,CACxCpmB,WAAyqmB,SACZnmB,YAAa,OACbK,WxBF,SAAg BC,GACP,IAAAC,WAAQL,YACRkmB,cAAWxV,MAAGyV,MAEfC,EAacpmB,EAaQkB,UAAUC,IAAI+kB,E AAU9kB,QAAQC,GACtDgIB,EAAMrmB,EAaQkB,UAAUC,IAAIuP,EAaEtP,QAAQC,GACtCiB,EAAMtmB,E AAQkB,UAAUC,IAAIgIB,EAaE/kB,QAAQC,GACtCW,EAAMhC,EAaQiC,WAAWyO,EAaEjP,MAAOiP,EAa E/P,OACpCuB,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAE1CkIB,EAaQL,EAaUzkB,MAAMC,O ACxB8kB,EAaQ9V,EAaEjP,MAAMC,OAehB0P,EAaMB,IAAVmV,GAaEA,EAaQ,GAaE,IAAVC,EACvC,EA CA3jB,OOAKC,cAAc4N,EAaEjP,MAAMuG,MAAM,IAGrC,OADAyD,GAaWW,EAaAc,EAaKC,EAaKIV,EA AQIP,GACnCF,GAOPjC,UAnCF,SAAeC,GACbyIB,GAAazIB,EAaQC,KAAKC,MAAM,WAAy,KAAm,CACHD ,SACA,SACA,SACA,SACA,aCYG,ICtBHwC,GDsBS+jB,GAA8B,CACzC7mB,WAAy,UACZE,YAAa,OACbC, UAavBF,SAAeC,GACb0C,GAaw1C,EAaQC,KAAKC,MAAMwmB,UAAAS,KAAiB,CAAC,SAAU,YAuBnEvmB, WApBF,SAAiBC,GAER,IAAAJ,YAAkB2C,aACnBC,EAAM5C,EAaQkB,UAAUC,IAAIwB,EAaEvB,QAAQC, GACtCW,EAAMhC,EAaQiC,WAAWU,EAaEIB,MAAOkB,EAaEHc,OACpCuB,EAaQIC,EAaQkB,UAAUC,I AAIa,EAaIZ,QAAQC,GAGhD,OOAsC,IAAICwB,OOAKC,cAAcd,EAaIP,QAI3BiB,GAASE,EAaKV,GAHLF,I EjBE2kB,GAA0BnkB,EAawBokB,ODkCxD,IAAMC,GAA8B,CACzCjnB,WAAyknB,UACZhnB,YAAa,OACbC ,UAhCF,SAAeC,GACb0C,GAaw1C,EAaQC,KAAKC,MAAM4mB,UAAAS,KAAiB,CACtD,SACA,SACA,SACA ,YA4BF3mB,WxBF,SACIC,GAEK,IAAAJ,YAAkB+mB,kBAAiB1O,cACpCzV,EAAM5C,EAaQkB,UAAUC,I AAI4IB,EAaO3IB,QAAQC,GAC3CW,EAAMhC,EAaQiC,WAAW8kB,EAaOtB,MAAOsIB,EAaOpmB,OAC9 CuB,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAE1CmI,EAawud,EAaOtB,MAAM4W,GACxBc,E AAQtW,OOAKC,cAAcikB,EAaOtB,OAAS+H,EAGjD,OOAsC,IAAIC3G,OOAKC,cAAcd,EAaIP,QAI3BiB,GA ASE,EAaKV,EAaOsH,EAaU2P,GAHtBnX,IEmCJ,IAAMglB,GAAqC,CACHDpnB,WAAyqmB,iBACZnnB,YA Aa,OACbK,WA3DF,SAAwBC,GAKf,IAAAC,WAAQL,YAASM,UACjBqC,MACAQm,eAAY4P,aAEb1P,EAaOr M,OOAKC,cAAckM,GAE1BkY,EAa4C,CAAC,CAAC,EAAG,IACvDA,EAaiBjiB,WAAjBiiB,EAa0BtI,GAE1B ,IAAK,IAAI/a,EAaI,EAaImL,EAawtN,OOAQmC,EAaIIB,EAaEIB,MAAMC,SAAUmC,EACxDqjB,EAaiBjiB ,KAAK,CAAC,EAAG,IAG5B,IAAMkiB,EAaUrF,GAAY3hB,WAAW,CACrCE,OOAQ,CAACsC,KACT3C,UAC AM,MAAO,CAACse,SAAUsI,EAaKBIF,cAAe,KAG/CoF,EACF/jB,eAAagM,YAAy8X,EAaQ11B,MAAOuN,EA AYE,GAAM,GAExDmY,EAaOChkB,eAAakM,YACnD6X,EAaOB11B,OOAQsN,EAawtN,QAAQ,GAE7C4IB,E ACFjkB,eAAaOM,oBAAoB0X,EAaQ11B,MAAOuN,EAAYE,GAAM,GAIHqY,EACF1d,EAaQ,CAACxJ,OA HwB,CAACsC,EAAGwkB,GAGLnnB,UAAASM,MAFV,CAACmB,MAAO2IB,KAOrCI,EACF3IB,EAaU,CAACxE, OAJ0B,CAACsC,EAAG4kB,GAILvnB,UAAASM,MAF5B,CAACyE,KAAmsiB,KAMtBtX,EAASIG,EACX,CAAC xJ,OAHS,C,CAACsC,EAAG6kB,GAGbxnB,UAAASM,MAFF,CAACmB,MAAO6IB,KAQjD,OAJAtmB,EAaQwH, YAAy2f,EAaQ/IB,QAC5BpB,EAaQwH,YAAy+f,EAAGbnmB,QACpCpB,EAaQwH,YAAyggB,EAASpmB,Q AEtB2O,ICjCF,ICtBH0X,GDsBSC,GAA6B,CACxC9nB,WAAy+nB,SACZ7nB,YAAa,OACbK,oBAvBEC,GACK ,IAAAC,WAAQC,UAAON,YACf2C,MACAiB,oBAAiB3hB,SAEIB4hB,EAaQhIB,OOAKwD,eAAeJ,EAAMtD, EAaEIB,OOAO,GAE3CqmB,EAaazkB,eAAa0kB,iBAAiBpIB,EAAGiB,EAaiBC,GAC/Dhc,EAaQ,IAAIrG,MA

AM7C,EAAEIB,MAAMC,QAAQgX,KAAK,GACvC5M,EAAOnJ,EAAEIB,MAAMuG,QACrB,OAAO8f,EAAW1
jB,KAAI,SAAA4jB,GACpB,IAAMC,EAAiBnc,UACvBmc,EAAWJ,GAASG,EACpB,IAAME,EACFlgB,EAAM,
CAAC3H,OAAQ,CAACsC,KAAIrC,MAAO,CAACuL,QAAOC,KAAMmc,GAAajoB,YAE1D,OADA6L,EAAMg
c,IAAUG,EACTE,OErBEC,GAA2B3IB,EAAwB4IB,QCDnDC,GAA6B7IB,EAAwB8IB,UCArDC,GACTtIB,EAA
yBulB,qBAFC,GH+BvB,II1BHC,GJ0BSC,GAA2B,CACtC9oB,WAAy+oB,OACZ7oB,YAAa,OACbC,UA1BF,S
AAeC,GACbynB,GAAWznB,EAAQC,KAAKC,MAAMyoB,OAAM,KAAe,CACjD,SACA,SACA,SACA,YAsBFx
oB,WAIBF,SACIC,GAEK,IAAAJ,YAASK,WACTyc,gBACAna,MACDC,EAAM5C,EAAQkB,UAAUC,IAAIwB,
EAAEvB,QAAQC,GAETcW,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAEhC,OACpCuB,EAAQIC,E
AAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAehD,OADAomB,GAAS7kB,EAAKka,EAAOtd,EAASmD,EAAEhC,
OAAQuB,GACjCF,II4EF,ICIGH4mB,GDKgSC,GAAMC,CAC9CjpB,WAAykpB,eACZhpB,YAAa,OACbC,UAh
GF,SAAeC,GACbyoB,GAAMbzoB,EAAQC,KAAKC,MAAM4oB,eAAc,KAAe,CACjE,SACA,QACA,SACA,QA
CA,QACA,QACA,QACA,QACA,SACA,YAsFF3oB,oBAIF2BC,GAKpB,IA4BH2P,EA5BG/P,YAASK,WAAQC,
UACjBqC,MAGLkI,UACAKd,QACAZgB,YACA0gB,cACAC,YACAC,iBACAC,gBACAC,mBAGItkB,kDACJuk
B,qBACAC,eACAC,eACAC,cACAC,kBACAC,UACAC,QACAC,YAQF,GAAIL,EAExZ,EAASIG,EAAQ,CAA
CxJ,OAAQ,CAACsC,KAAI3C,UAASM,MAAO,CAACmB,MAAO6nB,UACID,GAAIE,GAAaC,EAAe,CAErC5
mB,OAaKoH,OACDtH,EAAEIB,MAAMC,QAAU,GACIB,WAAW,MAAA,yCAAYCiB,EAAEIB,MAAMC,UA
E3D,IAAMoK,EAAOE,aAAWvG,gBAAgBikB,EAAQC,EAAMC,GAehDC,EAAS7hB,EAAM,CAAC3H,OAAQ,C
AACsC,KAAI3C,UAASM,MAAO,CAACuL,MAAO6d,EAAQ5d,UACnEiE,EACIIG,EAAQ,CAACxJ,OAAQ,CA
ACsC,EAAGknB,GAAS7pB,UAASM,MAAO,CAACmB,MAAO6nB,KAC1DtpB,EAAQwH,YAAyqiB,EAAOzo
B,YACTb,CACL,IAAMY,EAAMhC,EAAQiC,WAAWonB,EAakB,WAE3CzmB,EAAM5C,EAAQkB,UAAUC,I
AAIwB,EAAEvB,QAAQC,GACtCmW,EACF,IAAIpV,WAAW,IAAIC,WAAWQ,OAAsJ,eAAeJ,EAAEIB,QA
AQa,QAC1DwnB,EAAa,IAAI1nB,WAAW,IAAIC,WAAWqnB,GAAQpnB,QACnDynB,EAAW,IAAI3nB,WAA
W,IAAIC,WAAWsnB,GAAMrnB,QAC/CgZ,EAAe,IAAIIZ,WAAW,IAAIC,WAAWunB,GAAUtnB,QAEdmV,E
ACF,IAAIrV,WAAW,IAAIC,WAAWgnB,GAakB/mB,QAC9CoV,EAakB,IAAIrV,WACxB,IAAIC,WAAWQ,O
AAKsJ,eAAekd,IAAmB/mB,QACpDJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAehDonB,GACI7I
B,EAak4U,EAAe7U,EAAEIB,MAAMC,OAAQooB,EAAyC,EAAUzO,EAC1D7D,EAakBC,EAAiB2R,EAAiB3
nB,OAAQQ,GAehE6N,EAASIG,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGX,GAAMhC,UAASM,MAAO,CAAC
mB,MAAO6nB,KAE5DtpB,EAAQwH,YAAyxF,EAAIZ,QAG1B,OAAO2O,IEpGLia,GACT/mB,EAAyBgnB,OA
FC,GDqEvB,IEhEHC,GFgESC,GAA0B,CACrCvqB,WAAyWqB,MACZtqB,YAAa,OACbC,UA/DF,SAAeC,GAC
b4oB,GAAU5oB,EAAQC,KAAKC,MAAMkqB,MAAK,KAAe,CAC/C,SACA,SACA,SACA,YA2DFjqB,WAvDF,
SAAaC,GAeJ,IAAAJ,YAASK,WAAQC,UACjB2F,SAAMe,aACNrE,MACDC,EAAM5C,EAAQkB,UAAUC,IA
IwB,EAAEvB,QAAQC,GACxC4F,EAAUrE,EACVsE,EAAQvE,EAENmC,WAAC8B,eAAYN,SAAMF,iBAACm,
uBAGnCwX,EAAgB5X,EACpB,GAAIL,EAAoB,CACtB,IAAMqB,EAAe/H,EAAQkB,UAAUC,IAAIyF,EAAWxF
,QAAQC,GAC1D0G,IAAIbnF,IAGnBsE,EAAQN,EACRK,EAAUc,EACVmW,EAAgB7a,eAAasD,iBACzBuX,E
AAcxc,OAAQwF,EAAMzF,MAAMC,SAI1C2B,eAAa+D,2BACT,MAAO8W,EAehX,EAAMzF,MAAMC,QAC
hC,IAAA2F,sDAAC/B,OAAUgC,OAEXC,EAAa1E,OAakC,cAAcwE,GAehCtF,EAAMhC,EAAQiC,WAAWqD,
EAAU4B,EAAMvG,OAC/C,GAAwC,IAApCkC,OAakC,cAAcoE,EAAMzF,OAAC,CACzC,IAAMS,EAAQIC,E
AAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHdunB,GAAQ3hB,EAASM,EAAY/H,EAASwC,EAAIrB,OAAQu
B,GAQpD,GALIW,E,GAEF1G,EAAQwH,YAAyZ,EAAWxF,QAG7B4F,EAAU,CAEZ,IAAM5D,EAAWC,eAAao
E,qBAAqBzF,EAAIP,MAAO2E,GAC9DpE,EAAIP,MAAQ2B,EAGd,OAAOpB,IGjEIqoB,GAA0B7nB,EAAwB8
nB,OCAIDC,GAA2B/nB,EAAwBgoB,QFyCzD,IGtCHC,GHsCSC,GAA2B,CACtC9qB,WAAy+qB,OACZ7qB,Y
AAa,OACbC,UApCF,SAAeC,GACbkqB,GAAWlqB,EAAQC,KAAKC,MAAMyqB,OAAM,KAAiB,CACnD,SAC
A,QACA,SACA,QACA,SACA,YA8BFxqB,WA1BF,SACIC,GAOF,IANO,IAAAC,WAAQL,YAASM,UACjBqC,
MACDC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACrCupB,SAEDxnB,EAAqB,IAAIoC,MA
AM7C,EAAEIB,MAAMC,QACpCmC,EAAI,EAAGA,EAAIT,EAAS1B,OAAQmC,IACnCT,EAASS,GAakIB,E
AAEIB,MAAMoC,GAak+mB,EAak/mB,GAEIC,IAAM+B,EAAC,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,
OAAOa,QACrDuoB,EAAgB,IAAIzoB,WAAW,IAAIC,WAAWe,GAAUd,QAExDN,EAAMhC,EAAQiC,WAAW
mB,EAAUT,EAAEhC,OACrCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAIhD,OAHA6oB,GACIt

K,EAAG,GAAl,GAAl,EAAG,EAAG,EAAG,GAAl,EAAl,IAAK,GAAl,EAAG,EAAG,GAAl,OAEIE,MAAO+jB,
GACP,UAAO,mQCvDX,IACM+G,EADFC,GACED,EAAiC,oBAAbE,UAA4BA,SAASC,cAAgBD,SAASC,cAAc
C,SAAMC,EACHf,oBAAfC,aAA4BN,EAAaA,GAAcM,qBAE3DL,GAGT,SAASM,IAA+F,OAAzEC,EAAWprB,
QAAQA,GAAQqrB,GAA2BD,EAAWprB,QAAesrB,EAAM,SAASC,IAA+F,OAAzEH,EAAWprB,QAAQA,GAA
QqrB,GAA2BD,EAAWprB,QAAeod,EAAO,SAASoO,IAAgG,OAAzEJ,EAAWprB,QAAQA,GAAQqrB,GAA2B
D,EAAWprB,QAAeyrB,EAAO,SAASC,IAAgG,OAAzEN,EAAWprB,QAAQA,GAAQqrB,GAA2BD,EAAWprB,
QAAe2rB,EA AQ,SAASC,IAAgG,OAAzER,EAAWprB,QAAQA,GAAQqrB,GAA2BD,EAAWprB,QAAe6rB,EA
AQ,IAAmGC,EAAoBC,EAAAnHC,EAA8C,oBAFlOBnB,EAAGCA,GAAiC,IAE6kBA,EAA8B,GAA8CmB,EAAC,
MAAE,IAAIC,SAAQ,SAASC,EAAQC,GAAQL,EAAoBI,EAAQH,EAAMBI,KAAS,IAA2BC,EAAvBC,EAAGB,
GAAW,IAAID,KAAOJ,EAAWA,EAAOM,eAAeF,KAAMC,EAAGBD,GAACKJ,EAAOI,IAAM,IAAuDG,EAAM,S
AASC,EAAOC,GAAS,MAAMA,GAAaC,GAAmB,EAAUC,GAASB,EAAUC,GAAoB,EAAUC,GAAqB,EAAMH
,EAAMC,iBAATI,OAAKBH,EAA6C,mBAAhBI,cAA2BH,EAAqC,iBAAVI,SAA8C,iBAAnBA,QAAQC,UAAoD,
iBAAxBD,QAAQC,SAASC,KAAgBL,GAASBH,IAAqBE,IAASBD,EAASB,IAAIQ,EAABnB,EAA+B,yBAAG,E
AASmB,IAAwBntB,EAAOgsB,EA Ae,QAAE,IAA4JoB,EAAMC,EAAUC,EAA8BC,EAAWC,EAAjNC,EAAGB,G
AAG,SAASC,EAAWC,GAAM,OAA3B,EAAMB,WAAUA,EAAMB,WAAE2B,EA AKF,GAAwBA,EAAGBE,E
AA2E,GAAGf,EAAoB,CAAu0B,IAAIgB,EA AhzBH,EA AvBd,EA AuCkB,EAAGBC,QAAQL,GAAiB,IAAyBM,U
AAU,IAAIX,EAAM,SAAoBY,EAASC,GAAuH,OAA3GV,IAAOA,EAAOW,GA AkBV,IAASA,EAASK,GAAGB
G,EAASR,EAAoB,UAAEQ,GAAiBT,EAAqB,aAAES,EAASC,EAAO,KAAK,SAASX,EA AW,SAAoBU,GAAU,I
AAIG,EA Aif,EAAMY,GAAS,GAAiE,OAAvDG,EA AInuB,SAAQmuB,EA AI,IAAIruB,WAAWquB,IAAKxmB,E
AAOwmB,EA AInuB,QAAemuB,GAAQnB,QAAc,KAAE5tB,OAAO,GAAe4tB,QAAc,KAAE,GAAGoB,QAAQ,
MAAM,KAAgBpB,QAAc,KAAEtnB,MAAM,GAAGsnB,QAAY,GAAE,qBAAoB,SAASqB,GA AI,KAAKA,aAA
cC,IAAa,MAAMD,KAAmRb,QAAY,GAAE,qBAAqBuB,IAAOHC,EAAM,SAASC,GAAQQ,QAAc,KAAER,IAA
SR,EAAGB,QAAE,WAAW,MAAM,8BAAoD,IAAI4B,EA AkBY,EA A0B,MAAM3K,GAA4H,MAAZH4K,QAAQ
C,MAAM,2GAAiH7K,EA AE8K,GAAOC,OAAOhB,EA AkBgB,YAAe/B,GAASc,oBAANgC,OAAmBzB,EAAM,
SAAoB0B,GAAG,OAAOD,KAAKC,KAAIxB,EA AW,SAAoBwB,GAAG,IAAIC,EA AK,MAAuB,mBAAbC,WA
AgC,IAAIIvB,WAAWkvB,WAAWF,KAA0BnnB,EA AqB,iBAA3ConB,EA AKF,KAAKC,EA AE,YAAgDC,IAA4
B,oBAAZE,YAAoCA,WAAwF,mBAAPC,OAAmB3C,EAAM,SAASC,GAAQ0C,KAAK1C,KAA2B,oBAAR2C,
QAAyC,oBAAVV,UAsBA,QAAQ,IAAGA,QAAQW,IAAID,MAAMV,QAAQY,KAAKZ,QAAQC,MAAwB,oB
AAXY,SAAuBA,SAASH,SAAezC,GAAoBC,KAA0BA,EA AuBc,EAAGB8B,KAAKC,SAASC,KAA+B,oBAAX3
E,UAAwBA,SAASC,gBAAe0C,EAAGB3C,SAASC,cAAcC,KAA6B,oBAAfJ,GAA8BA,IAAY6C,EAAGB7C,GA
AoD6C,EA AH,IAAnCA,EAAGBiC,QAAQ,SAA8BjC,EAAGBkC,OAAO,EA AEIC,EAAGBmC,YAAY,KAAK,GA
AwB,GAAMhD,GAAqBQ,EAAM,SAAoBY,EA ASC,GAAuH,OAA3GV,IAAOA,EAAOW,GA AkBV,IAASA,EA
ASK,GAAGBG,EAASR,EAAoB,UAAEQ,GAAiBT,EAAqB,aAAES,EAASC,EAAO,KAAK,SAASX,EA AW,SAA
oBU,GAAU,IAAIG,EA Aif,EAAMY,GAAS,GAAiE,OAAvDG,EA AInuB,SAAQmuB,EA AI,IAAIruB,WAAWquB
,IAAKxmB,EA AOwmB,EA AInuB,QAAemuB,KAAUf,EAAM,SAASyC,GA AK,IAAIC,EA AI,IAAIC,eAAwD,OA
AzCD,EA AIE,KAAK,MAAMH,GA AI,GAAOC,EA AIG,KAAK,MAAaH,EA AII,cAAiBvD,IAAuBW,EA AW,SA
ASuC,GA AK,IAAIC,EA AI,IAAIC,eAAuF,OAAxED,EA AIE,KAAK,MAAMH,GA AI,GAAOC,EA AIK,aAAa,cA
AcL,EA AIG,KAAK,MAAa,IAAInwB,WAAWgwB,EA AIM,YAAW/C,EA AU,SAASwC,EA AIQ,EA AOC,GAAS,I
AAIR,EA AI,IAAIC,eAAeD,EA AIE,KAAK,MAAMH,GA AI,GAAMC,EA AIK,aAAa,cAAcL,EA AIO,OAAO,WA
A0B,KAAZP,EA AItD,QAAyB,GAAZsD,EA AItD,QAAWsD,EA AIM,SAAUC,EA AOP,EA AIM,UAAiBE,KAAW
R,EA AIQ,QAAQA,EA AQR,EA AIG,KAAK,SAAqErD,GAA6C,oBAAd2D,cAA2B5B,GAAO4B,YAAYC,EAASB
D,aAAa,IAA4mBE,EA AxmB/wB,EA AIsB,EA Ac,OAAgYc,QAAQW,IAAIsB,KAAKjC,SAAakC,EA AI3E,EA Ai
B,UAAgYc,QAAQY,KAAKqB,KAAKjC,SAAS,IAAIrC,KAAOC,EA AoBA,EAAGBC,eAAeF,KAAMJ,EAAOI,G
AAKC,EAAGBD,IAAmL,SAASwE,EAASC,GAAUD,EAASE,QAAMF,EAASE,MAAM,IAAOF,EAASE,MAAM
D,KAAOD,EAASE,MAAMD,GAAM,EA AEF,EA AIE,IAA/RxE,EAAGB,KAAQL,EA AkB,WAAaA,EA AkB,UAA
KA,EA AoB,aAAcA,EA AoB,YAAKA,EA Aa,OAAEO,EA AMP,EA Aa,MAA+PA,EA AmB,aAAEyE,EA AWzE,EA
AmB,YAAE,IAA+HZ,EA Ae2F,EA A1IC,EA AchF,EAASB,gBAAG,EA A6B,iBAAd1B,aAAwBiE,GAAM,mCAAi
E,IAAsqGvuB,EA OsrB,EA AMIO,EAASBqO,EA AOE,EAAGBE,EA A5tGoF,GAAM,EA AqB,SAAStpB,EA AOic,

EAAUiN,GAAUjN,GAAW2K,GAAM,qBAAqBsC,GAAO,SAASK,EAASC,GAAO,IAAIC,EAAPF,EAAO,IAAI
mF,GAAuF,OAAhFxpB,EAAOypB,EAAG,gCAAGCD,EAAM,8BAAqCC,EAAG,SAASC,EAAMF,EAAMG,EA
WC,EAASzzB,EAAG0zB,GAAM,IAAIC,EAAG,CAACC,OAAS,SAASC,GAAG,IAAIxD,EAAG,EAAE,GAAGwD
,MAAAA,GAAMc,IAANA,EAAG,CAAC,IAAIC,EAAGoB,GAAGfD,EAAGIvyB,QAAQ,GAAGyByyB,EAAGf,EAAJc
xD,EAAGI2D,GAAGWF,GAAG0BA,GAAGK,OAAG0zD,GAAGK4D,MAAGQ,SAASC,GAAGK,IAAGI7D,EAAGI2D,GAAGWE,
EAAGI5yB,QAAoC,OAAG5B6yB,GAAGmBD,EAAGI7D,GAAGYA,IAAGsJiD,EAAGKF,EAASC,GAAGWe,EAAM,GAAO
C,EAAM,EAAE,GAAGr0B,EAAM,IAAGI,IAAGIyD,EAAE,EAAEA,EAAEzD,EAAGKsB,OAAGOmC,IAAGI,CAAC,IA
AI6wB,EAAGUX,EAAGIF,EAAGShwB,IAAGO6wB,GAAGsB,IAAGRD,IAAGUA,EAAGME,MAAGYH,EAAGM3wB,GAAG6
wB,EAAGUt0B,EAAGKyD,KAAGS2wB,EAAGM3wB,GAAGzD,EAAGKyD,GAAGK,IAAGI4sB,EAAGIiD,EAAGKkB,MAAG
M,KAAGKJ,GAAGoE,OAAG7D/D,EAAGrY,SAA4BA,GAAGK,MAAGB,WAAGbmD,EAAG6BiB,EAAGapE,GAAGqB,YAAGb
mD,EAAG8BkB,QAAQR,E,GAAGYA,EAAGiQsE,CAAGmBtE,GAAGB,IAAGRgE,GAAGUO,GAAGaP,GAAGchE,EAAGI,SAA
SvwB,EAAGMuzB,EAAGMG,EAAGWC,EAASC,GAAG4B,IAAGImB,GAAG1BpB,EAAGSA,GAAGU,IAAG4BlwB,OAAGM,S
AAGSqP,GAAGM,MAAGc,WAAGPA,KAAGuD,MAAGT,WAAGb4gB,GAAGqCqB,IAAGcnB,EAAGaN,EAASC,GAAGc,WAAGW
,OAAGOE,EAAGMF,EAAGMG,EAAGWC,EAAGSqB,YAAGiB,SAASC,EAAGkBC,EAAGKtoB,EAAGIuoB,GAAGyD,IAAGzC,I
AAGIC,EAAGOxoB,EAAGIuoB,EAAGmBpB,EAAGI,KAAGWnnB,GAAGKwoB,IAAGQ,CAAC,IAAGIC,EAAGH,EAAGKtoB,
KAAGO,IAAGIyoB,EAAG,OAAGOtB,EAAGI,GAAGQ,IAAGHsB,EAAGL,CAAGoD,IAAGIC,EAAGe,GAAGZJ,EAAGKtoB,KAAG
U,GAAGa,MAAGN,IAAGHyB,GAAGJ,CAAGmE,IAAGIE,EAAGe,GAAGZL,EAAGKtoB,KAAGmG,IAAGvEyoB,EAAGL,MAAGN
,IAAGHA,IAAGqB,GAAGHA,IAAGQ,GAAGC,GAAGI,EAAGEC,GAAGe,EAAGHF,IAAGO,GAAGC,GAAGI,GAAGC,GAAGI,E
AAGc,GAAGZL,EAAGKtoB,MAAGB,MAAGOmB,GAAGKyB,OAAGOC,aAAaJ,OAAGQ,CAAC,IAAGIK,EAAGL,EAAG,
MAAGmB,GAAGKyB,OAAGOC,aAAa,MAAGMC,GAAGI,GAAG,MAAGS,KAAGHA,SAA3Q3B,GAAGKyB,OAAGOC,cAA
iB,GAAGHJ,IAAGQ,EAAGEC,QAAGIHvB,GAAGKyB,OAAGOC,aAAaJ,GAAG0U,OAAGOtB,EAAGI,SAAGSY,EAAGagB,EAAG
IR,GAAGB,OAAGOQ,EAAGIV,EAAGkBT,H,IAAGmBgI,EAAGIR,GAAGB,GAAG,SAAGSS,EAAGkB7B,EAAGImB,EAAGKW
,EAAGOC,GAAGiB,KAAGKA,EAAGB,GAAG,OAAGO,EAAG0D,IAAGxD,IAAGIC,EAAGSF,EAAGWT,EAAGOS,EAAGOC,EA
AGB,EAAGUnyB,EAAE,EAAEA,EAAEowB,EAAGIvyB,SAAGSmC,EAAE,CAAC,IAAGIqyB,EAAEjC,EAAGIkC,WAA
WtyB,GAAGoF,GAAG9EqyB,GAAG,OAAGOA,GAAG,QAAGkCA,EAAE,QAAGU,KAAGFA,IAAGS,IAAGO,KAAG9CjC,EA
AAGkC,aAAatyB,IAAGqCqyB,GAAG,IAAGI,CAAC,GAAGH,GAAGQT,EAAGO,MAAGMF,EAAGKW,KAAGU,OAAGO,G
AAGA,GAAG,KAAGK,CAAC,GAAGH,EAAGO,GAAGT,EAAGO,MAAGMF,EAAGKW,KAAGU,IAAGIG,GAAG,EAAGEd
,EAAGKW,KAAGU,IAAGM,GAAGFG,OAAGU,GAAGA,GAAG,MAAGM,CAAC,GAAGH,EAAGO,GAAGT,EAAGO,MAAG
MF,EAAGKW,KAAGU,IAAGIG,GAAG,GAAGd,EAAGKW,KAAGU,IAAGIG,GAAG,EAAE,GAAGd,EAAGKW,KAAGU,IA
AGM,GAAGFG,MAAGS,CAAC,GAAGH,EAAGO,GAAGT,EAAGO,MAAGMF,EAAGKW,KAAGU,IAAGIG,GAAG,GAAGd,
EAAGKW,KAAGU,IAAGIG,GAAG,GAAG,GAAGd,EAAGKW,KAAGU,IAAGIG,GAAG,EAAE,GAAGd,EAAGKW,KAAG
U,IAAGM,GAAGFG,GAAGqB,OAAGfd,EAAGKW,GAAGQ,EAAGSA,EAAGOE,EAAGS,SAAGS9B,EAAGf,EAAImC,EAAGOJ,
GAAGiB,OAAGOF,EAAGkB7B,EAAGIpG,IAAGmBuI,EAAGOJ,GAAGiB,SAAGSK,EAAGBpC,GAAGe,IAAGV,IAAGIC,EAAGI,E
AAUrwB,EAAE,EAAEA,EAAEowB,EAAGIvyB,SAAGSmC,EAAE,CAAC,IAAGIqyB,EAAEjC,EAAGIkC,WAAWtyB,
GAAGmQyB,GAAG,OAAGOA,GAAG,QAAGMA,EAAE,QAAGU,KAAGFA,IAAGS,IAAGwB,KAAGpBjC,EAAGIkC,aAAaty
B,IAAGWqyB,GAAG,MAAGMhC,EAAGoBA,GAAGRgC,GAAG,KAAGU,EAAGUA,GAAG,MAAGW,EAAGY,EAAE,OAAG
OhC,EAAGI,SAAGSK,GAAGmBF,EAAGM/xB,GAAGQmrB,IAAGmBhpB,IAAGI4vB,EAAGM/xB,GAAGQ,SAAGSg0B,GAAGQ
3zB,EAAE4zB,GAAGK,OAAGrC5zB,EAAE4zB,EAAGS,IAAG5zB,GAAG4zB,EAAGS5zB,EAAE4zB,GAAGB5zB,E
AAwE,SAAGSgrB,GAAG2B6I,GAAGK10B,EAAGOk0B,EAAGIII,EAAGc,MAAGAEV,EAAGM,IAAGI6I,UAAGUD,GAAGKII,EA
AGe,OAAGS,IAAGIoI,WAAWF,GAAGKII,EAAE,OAAGEP,EAAGO,IAAGI1rB,WAAWm0B,GAAGKII,EAAE,OAAG5O,EA
AGO,IAAGId,WAAWo0B,GAAGKII,EAAGB,QAAU,IAAGIqI,YAAGYH,GAAGKII,EAAGB,QAAGEL,EAAGQ,IAAGI2I,YAAG
YJ,GAAGKII,EAAGB,QAAU,IAAGIuI,aAAaL,GAAGKII,EAAGB,QAAGEH,EAAGQ,IAAGI2I,aAAaN,GAAGK,IAAGu3BO,
GAAGn3BC,GAAGeI,EAAGuB,gBAAG,SAAGS,GAAGmB,EAAGwB/B,EAAGWY,EAAGmB,WAAEhsB,EAAGOsB,EAAG
e,YAAGO,GAAGA,EAAGmB,WAAGZ,EAAGWY,EAAGmB,gBAAGoH,MAAG7GZ,EAAGW,IAAGId,YAAGYqK,OAAGO,CA
AGC,QAAGUF,GAAGe,MAAGMG,QAAGU,MAAGiBC,QAAGS,KAAGuB90B,kBAAGk2qB,mBAAGz,MAAG5XgG,EAAGI,+
NAAGkO/D,GAAGqB6B,QAAQW,IAAGI,qHAA2H9wB,MAAGM,cAAGmB8sB,IAAGYprB,EAAGoorB,EAAGwprB,QAA
O00B,GAAGe10B,EAAGO+0B,WAAW1J,GAAG2BrrB,GAAGsB,IAAGI1B,GAAGa,GAAGOC,GAAGW,GAAGOC,GAAGW,G
AAGyBC,GAAGc,GAAG4I,SAAGSK,KAAGS,IAAGGjI,EAAGH,CAAGiC,GAAGnB,EAAE,OAAG8E,IAAG/C,mBAAGI1BA,EAAE

,SAAcA,EAAe,OAAE,CAACA,EAAe,SAASA,EAAe,OAAE5sB,QAAQI2B,GAAyRj,EAAe,OAAEsJ,SAAUC,G
AAqBP,KAAc,SAASQ,KAAyCrI,GAA8BoI,GAAqBN,IAAY,SAASQ,KAAaI,GAA8BoI,GAAqBL,IAAuF,SAAS
Q,KAAU,IAAGvI,EA AH,CAAiC,GAAGnB,EAAGB,QAAiF,IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,
CAACA,EAAGB,UAAASA,EAAGB,QAAE5sB,QAAQu2B,GAAa3J,EAAGB,QAAEsJ,SAAUC,GAAqBJ,KAAe,SA
ASE,GAAyO,GAAIZ,GAAaa,QAAQD,GA AI,SAASD,GAAaC,GA AIT,GAACU,QAAQD,GAAP8BzI,GAAuB8H,
GAAWtyB,KAAK,CAACyB,KAAK,WAAW0E,QAAg5B,IAAIC,GAAGB,EA AoCC,GAAsB,KAAK,SAASC,G
AAiB13B,GA AI4I,GAAQwLB,EA AuB,uDAAuD4I,KAAqB/J,EA A+B,wBAAGA,EA A+B,uBAAE+J,IAAkB,SAA
SG,GAAoBn3B,GAA6G,GA AzGg3B,KAAqB/J,EA A+B,wBAAGA,EA A+B,uBAAE+J,IAAqC,GAAjBA,IAAqH
C,GAAsB,CAAC,IAAIG,EAASH,GAAsBA,GAAsB,KAAKG,KAAuE,SAAS5H,GAAM6H,GAASpK,EAAGB,SA
AGA,EAAGB,QAAEoK,GAASjJ,GA AuBsB,QAAQC,MAAM,wBA AuB,IAAKpwB,OAAO6zB,OAAgBxB,EAAT
yF,GAAM,IAAanF,GAAM,EA AkBmF,EA AK,SAASA,EA AK,+CAA+C,IAAIvS,EA AE,IAAIyG,YAAY+L,aAAa
D,GAA4B,MAAtBrK,EA AmBII,GAASA,EA AE,SAASyS,GAAU3E,EA AI4E,GAAQ,OAAOnD,OAAOoD,UAAU
C,WAAW9E,EA AI8E,WAAWF,GAA8B,IAAtB5E,EA AIjC,QAAQ6G,GA AxevK,EA AwB,gBAAE,GAAGA,EA A
wB,gBAAE,GAA6b,IAAI0K,GAAC,wCAAwC,SAASC,GAAU3I,GAAU,OAAOsI,GAAUtI,EAAS0I,IAAe,IAAIE,
GAAC,UAAU,SAASC,GAAU7I,GAAU,OAAOsI,GAAUtI,EAAS4I,IAAe,IAAIE,GA Ae,uCAAgH,SAASC,GAAU
C,GAAM,IAAI,GAAGA,GAAMF,IAAgBrG,EAAY,OAAO,IAAI3wB,WAAW2wB,GAAY,GAAGnD,EAAY,OA
AOA,EA AW0J,GA AW,KAAK,kDAAmD,MAAMrG,GA AKpC,GAAMoC,IAAM,SAASsG,KAAmB,IAAIxG,IA
Aa/D,GAAoBC,GA AuB,CAAC,GA AkB,mBAARuK,QAAqBL,GAAUC,IAAIb,OAAOI,MAAMJ,GA Ae,CAACK
,YAAY,gBAAGBC,MAAK,SAAShH,GAAU,IAAIA,EA Aa,GAAG,KAAK,uCA AuC0G,GA Ae,IAAI,OAAO1G,E
AAsB,iBAAMiH,OAAM,WAAW,OAAON,GAAUD,OAAuB,GAAGzJ,EA AW,OAAO,IAAIpB,SAAQ,SAASC,E
AAQC,GAAQkB,EA AUyJ,IAAe,SAAS1G,GAAUIE,EA AQ,IAAIpsB,WAAWswB,MAAYjE,MAAY,OAAOF,QA
AQC,UAAUkL,MAAK,WAAW,OAAOL,GAAUD,OAAkB,SAASQ,KAAa,IAAIC,EA AK,CAACt5B,EA AIu5B,IA
AAe,SAASC,EAAGBC,EAASC,GAAQ,IAAIC,EA AQF,EA ASE,QAA6E,GA ArE5L,EAAY,IAAE4L,EA AQnD,G
AAUzI,EAAY,IAAK,EA AE+E,EA AW4G,GAAWxK,EA AuB,CAAC,IAAI0K,EA AiBC,GAAQC,cAAc34B,OAA
O04B,GAAQC,cAAchpB,SAAQ,SAASipB,GAAGF,GAAQG,uBA AuBD,GA AE,aAAiBH,GA AiB3B,YAA8G,SA
ASgC,EA A0BC,GAAQV,EAAGBU,EA AiB,SAAEA,EA Ae,QAAG,SAASC,EA AuBC,GAAU,OAAOpB,KAAmB
G,MAAK,SAASnJ,GAAQ,OAAO3D,YAAYgO,YAAYrK,EA AOsJ,MAAQH,KAAKiB,GAAS,SAASE,GAAQ5H,
EA AI,0CAA0C4H,GAAQhK,GAAMgK,MAAomB,GAAP+BpL,GAAwB8I,KAA+8BjK,EA AwB,gBAAG,IAAGe,
OAAhDA,EA AwB,gBAAEuL,EA AKE,GAAGC,MAAM5T,GAAGe,OAA7D8M,EA AI,sDAAsD9M,IAAU,EA Ao
D,OAAxyB4M,GAAsD,mBAAnCnG,YAAYkO,sBA AoC7B,GAAUG,KAAkBD,GAAUC,KAAgC,mBAARI,MA
AsYkB,EA AuBF,GA AIYhB,MAAMJ,GA Ae,CAACK,YAAY,gBAAGBC,MAAK,SAAShH,GA AQe,OAAhD9F,Y
AAYkO,qBA AQpI,EAASmH,GA AoBH,KAAKc,GAA0B,SAASK,GA AuG,OAA/F5H,EA AI,kCAAKC4H,GAAQ
5H,EA AI,6CAAoDyH,EA AuBF,UAAkTb,MAAMtL,GAA0B,GAA3hf4K,GAAUG,MAAiBA,GA AepJ,EA AWoJ,
KAAy+E,IAAI2B,GA AW,CAACC,MAAM,WAAW,KAAK,aAAaC,MAAM,SAASC,EAAGC,GA AIC,YAAW,W
AAWC,GA AmCH,EAAGC,KAAK,KAAK,SAASG,KAAiBIB,GAAQtC,cAAc,SAASD,GAAqB0D,GA AW,KAA
MA,EA AU75B,OAAO,GA AE,CAAC,IAAI+2B,EAAS8C,EA AU3D,QAAQ,GAAoB,mBA AVa,EA AV,CAA0D,IA
AAI/E,EA AK+E,EAAS/E,KAAAsB,iBAAPA,OA AmCnG,IA AfkL,EAAS+C,IAAiBzE,GAAU51B,IAAIuyB,EA Ad
qD,GAA2BA,GAAU51B,IAAIuyB,EA AdqD,CA AoB0B,EAAS+C,KAAW9H,OAAoBnG,IA AfkL,EAAS+C,IAAG
B,KAAK/C,EAAS+C,UAAxN/C,EAASnK,IAAsN,IAAI mN,GAAY,CAACC,MAAM,GAAGC,OAAO,GAAGC,M
AAM,GAAGC,MAAM,GAAGC,IAAI,GAAGC,MAAM,GAAGC,MAAM,EA AEC,QAAQ,GAAGC,MAAM,EA A
EC,OAAO,GAAGC,OAAO,EA AEC,YAAY,EA AEC,OAAO,GAAGC,OAAO,EA AEC,OAAO,GAAGC,QAAQ,IA
AIC,MAAM,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,GAAGC,QAAQ,GAAGC,OAAO,GAAGC,OAA
O,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OAAO,GAAGC,QAAQ,GAAGC,MAAM,GAAGC,OAAO,GAAGC,
OAAO,GAAGC,MAAM,GAAGC,OAAO,GAAGC,MAAM,GAAGC,KAAK,GAAGC,OAAO,GAAGC,OAAO,G
AAGC,MAAM,GAAGC,OAAO,IAAIC,SAAS,IAAIC,OAAO,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC
,OAAO,IAAIC,OAAO,IAAIC,QAAQ,GAAGC,OAAO,GAAGC,MAAM,IAAIC,MAAM,IAAIC,OAAO,IAAIC,O
AAO,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,UAAU,GAAGC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,MAAM,
IAAIC,MAAM,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,QAAQ,GAAGC,KAAK,IAAIC,OAAO,IAAI

C,MAAM,IAAIC,OAAO,GAAGC,UAAU,GAAGC,QAAQ,IAAIC,QAAQ,EAAEC,SAAS,IAAIC,OAAO,IAAIC,
QAAQ,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,SAAS,IAAIC,OAAO,GAAGC,UAAU,
GAAGC,aAAa,GAAGC,MAAM,GAAGC,WAAW,IAAIC,aAAa,IAAIC,WAAW,GAAGC,QAAQ,GAAGC,aAAa,
EAAEC,WAAW,GAAGC,SAAS,GAAGC,YAAY,GAAGC,UAAU,IAAIC,aAAa,GAAGC,WAAW,EAAEC,aAAa
,GAAGC,YAAY,GAAGC,SAAS,GAAGC,UAAU,GAAGC,UAAU,IAAIC,aAAa,GAAGC,YAAY,GAAGC,SAAS
,EAAEC,aAAa,GAAGC,SAAS,GAAGC,gBAAGB,GAAGC,gBAAGB,IAAIC,cAAc,EAAEC,UAAU,GAAGC,QA
AQ,GAAGC,SAAS,GAAGC,aAAa,IAAIC,OAAO,IAAIC,OAAO,GAAGC,OAAO,GAAGC,QAAQ,IAAIC,UA
U,IAAIC,OAAO,GAAGC,UAAU,GAAGC,UAAU,GAAGC,gBAAGB,GAAGC,WAAW,GAAGC,SAAS,KAAK,S
AASC,GAAuBC,EAAKC,GAAO,GAAGD,GAAM,GAAGA,EAAK3V,IAAmB/rB,SAAa,EAAL0hC,GAAWC,EA
AM,EAAE,OAAO,GAAG,GAAU,GAAPA,EAAS,OAAO,EAAKA,GAAO,aAAWA,EAAMC,EAAAA,GAAS,IA
AIC,EAAsBC,QAAQC,KAAK3V,IAAoB4V,IAAgC,GAAOC,EAAGB,EAAE,GAAGJ,GAAuBH,GAAqBI,QAAQ
I,gBAAGB9V,IAAoB4V,IAAgC,EAAEH,EAAsB,IAAkBA,IAA+BI,EAAGB,IAAtBN,GAaKc,GAAE,OAAO,EA
AG,IAAI5S,EAAI+S,QAAQK,OAAO/V,IAAoBsV,GAAM,EAAEC,GAAO,GAAG5S,GAAK,EAAE,OAAOA,EA
AIkT,EAAGB,KAAK,+CAA+CIT,EAA4D,SAASqT,GAAWC,GAAa,GAAGtU,EAAuB,KAAK,qFAAQF,IAAIsU,
EAAY,KAAK,kDAaKdJW,IAAoBiW,EAAY,IAAI,GAAG,EAAE,IAAIC,EAAQ5J,GAAQ6J,SAASF,GAAaC,EA
AQE,OAAOC,YAAY/J,GAAQgK,eAAeJ,GAAS5J,GAAQiK,eAAe9rB,OAAO6hB,GAAQiK,eAAerS,QAAQgS,E
AAQE,QAAQ,GAAGF,EAAQE,OAAOF,aAAQzW,EAAU,SAAS+W,GAAaP,GAAa,GAAGtU,EAAuB,KAAK,u
FAAuF,IAAIsU,EAAY,KAAK,oDAAG3J,GAAQ6J,SAASF,GAAqBG,OAAOIX,YAAY,CAACuX,IAAM,WAA
W,SAASC,GAAcT,GAAa,GAAGtU,EAAuB,KAAK,wFAAwF,IAAIsU,EAAY,KAAK,qDAaQD,IAAIC,EAAQ5J,
GAAQ6J,SAASF,GAAa,GAAGC,EAAQ,CAACIW,IAAoBiW,EAAY,IAAI,GAAG,EAAE,IAAIG,EAAOF,EAAQ
E,OAAO9J,GAAQqK,mBAAmBP,IAArsC5V,EAA+B,uBAAE6U,GAA6qC,IAA0xMuB,GAAtxMtK,GAAQ,CAA
CC,cAAc,GAAGgK,eAAe,GAAGM,oBAAoB,WAAiC,IAAtB,IAA8B9gC,EAAE,EAAEA,EAAe,IAAkCA,EAAG
u2B,GAAQwK,wBAAyB9M,YAAY,WAA+B,IAApB,IAAI+M,EAAGC,GAAQ,KAAajhC,EAAE,EAAEA,EAAE,
KAAQA,EAAEmqB,IAAoB6W,EAAG,EAAEhhC,GAAG,EAAEiqB,IAAoB+W,EAAG,IAAI,GAAGA,EAAG,IA
AIE,EAAQF,EAAG,IAAI/W,IAAoBiX,GAAS,GAAGA,EAAQ,IAAIC,EAAUF,GAAQ,KAAK,IAAQjhC,EAAE,E
AAEA,EAAE,MAAMA,EAAEmqB,IAAoBgX,EAAU,EAAEnhC,GAAG,EAAE2/B,QAAQyB,MAAMjX,IAAoB6
W,EAAG,KAAK,EAAEG,GAAWxB,QAAQyB,MAAMjX,IAAoB6W,EAAG,IAAI,EAAEA,GAAIK,GAAyBL,G
AAI5V,EAAsB,GAAGkW,GAA4CN,IAAKO,WAAW,aAAanB,SAAS,GAAGoB,mBAAmB,GAAGC,gBAAGB,a
AAaC,gBAAGB,WAAW,KAAMnL,GAAQiL,mBAAmB3jC,OAAO,GAAG04B,GAAQiL,mBAAmBG,KAA3BpL
,GAAsC3K,GAAwBgW,MAAGBC,MAA4BC,+BAA+B,SAASd,EAAGe,GAAUpC,QAAQyB,MAAMjX,IAAoB6
W,EAAG,IAAI,EAAE,GAAGrB,QAAQyB,MAAMjX,IAAoB6W,EAAG,IAAI,EAAE,GAAGzK,GAAQmL,kBAA
kB/B,QAAQyB,MAAMjX,IAAoB6W,EAAG,GAAG,EAAEe,GAAUpC,QAAQyB,MAAMjX,IAAoB6W,EAAG,G
AAG,EAAE,GAAG1B,GAAuB0B,EAAG,EAAE,YAAYK,GAAyB,EAAE,EAAE,IAAIW,WAAW,SAASD,GAA
U,IAAIf,EAAGY,KAAmBZ,IAAIzK,GAAQuL,+BAA+Bd,EAAGe,GAAanW,GAAwBzC,YAAY,CAACuX,IAA
M,WAAyUB,aAAa,WAAWIL,GAAQuL,+BAA+BF,MAAiB,GAAGzY,YAAY,CAACuX,IAAM,gBAAGBwB,oB
AAoB,WAAW,IAAI,IAAIr1B,KAAK0pB,GAAQ6J,UAAcD,EAAQ5J,GAAQ6J,SAASvzB,KAAeszB,EAAQE,Q
AAQ9J,GAAQqK,mBAAmBT,EAAQE,QAAS9J,GAAQ6J,SAAS,GAAG,IAAI,IAAIpgC,EAAE,EAAEA,EAAEu
2B,GAAQC,cAAc34B,SAASmC,GAAOqgC,EAAO9J,GAAQC,cAAcx2B,IAAUsgC,YAAqC,IAAZB/J,GAAQC,c
AAc,GAAWx2B,EAAE,EAAEA,EAAEu2B,GAAQiK,eAAe3iC,SAASmC,EAAE,CAAC,IAAIqgC,EAAqCF,GA
ArCE,EAAO9J,GAAQiK,eAAexgC,IAAsBmgC,QAAQ5J,GAAQgK,eAAeJ,GAASE,EAAOC,YAAY/J,GAAQiK,
eAAe,IAAID,eAAe,SAASJ,GAAS,GAAlA,EAAJ,CAAmB,GAAGA,EAAQgC,iBAAiB,CAAC,IAAIhB,EAAUIX,
IAAoBkW,EAAQgC,iBAAiB,KAAK,GAAGIY,IAAoBkW,EAAQgC,iBAAiB,KAAK,GAAG,EAAEjmB,GAAMil
B,GAAWjlb,GAAMikB,EAAQgC,kBAaKbHc,EAAQgC,iBAAiB,EAAKhC,EAAQiC,mBAAmBjC,EAAQkC,W
AAUnmB,GAAMikB,EAAQkC,WAAWIC,EAAQkC,UAAU,EAAKIC,EAAQE,SAAOF,EAAQE,OAAOF,QAAQ,
QAAMS,mBAAmB,SAASP,GAAQ9J,GAAQ+L,iCAAgC,kBAaKb/L,GAAQ6J,SAASC,EAAOF,QAAQgC,kBA
AkB5L,GAAQC,cAAcp1B,KAAKi/B,GAAQ9J,GAAQiK,eAAe9rB,OAAO6hB,GAAQiK,eAAerS,QAAQkS,GAA
Q,GAAG9J,GAAQgK,eAAeF,EAAOF,SAASE,EAAOF,aAAQzW,MAAa4Y,gCAAGC,SAASzS,GAAM5F,IAAoB
sY,IAA8C,GAAG,EAAE,IAAI1S,IAAO,QAAQ5F,IAAoBsY,IAA8C,GAAG,IAAIC,sBAAsB,SAAShV,KAAQkJ,

uBAaUB,SAAS2J,EAAOoC,GAAMbPc,EAAOqC,UAAU,SAASpgB,GAAG,IAAIqgB,EAAErgB,EAAQ,KAAM
oe,EAAIiC,EAAO,IAAgG,GAA3FtC,EAAOF,UAAQ5J,GAAQqM,oCAAoCvC,EAAOF,QAAQgC,kBAaOBQ,EA
AgB,cAAGA,EAAgB,cAAGf,KAAgB,CAAC,IAAIiB,EAAOtM,GAAQ6J,SAASuC,EAAEG,cAAoR,OAAAnQD,E
AAQA,EAAOxC,OAAOIX,YAAY7G,EAAEkL,KAAKmV,EAAgB,cAAQzV,QAAQC,MAAM,0CAA0CuT,EAAI
,uBAaUBiC,EAAgB,aAAE,4CAAuCpM,GAAQqM,yCAAoCIZ,GAAiB,GAAS,gCAANgX,EAAqCqC,UAAoD,G
AAS,gBAANrC,EAAqBsC,GAAY1gB,EAAEkL,WAAW,GAAS,kBAANKt,EAAuBC,GAACgC,EAAU,aAAQ,G
AAS,eAANjC,EAAoBT,GAAW0C,EAAU,aAAQ,GAAS,iBAANjC,EAAsBD,GAAakC,EAAU,aAAQ,GAAS,WA
ANjC,EAAgBL,EAAO4C,QAAO,EAAQR,GAakBA,EAakBpC,GAAWA,EAAO6C,aAAY7C,EAAO6C,oBAAo
B7C,EAAO6C,iBAaiB,GAAS,UAAAnxC,EAAeviC,EAAI,UAAUwkC,EAAy,SAAE,KAAKA,EAAQ,WAAQ,GA
AS,aAANjC,EAakBtR,EAAI,UAAUuT,EAAy,SAAE,KAAKA,EAAQ,WAAQ,GAAS,UAAAnjC,EAAeyC,MAA
M,UAAUR,EAAy,SAAE,KAAKA,EAAQ,WAAQ,GAAS,SAANjC,EAA2BL,EAAOF,SAASR,QAAQC,KAAKz
V,IAAoBkW,EAAOF,QAAQgC,iBAaiB,IAAI,IAAgB5L,GAAQqK,mBAAMbP,QAAc,GAAS,gBAANK,EAAqB
,IAAI0C,GAAKT,EAAc,YAAG,MAAMrgB,GAAG,GAAGA,aAAyK,GAAW,OAAO,MAAMzK,MAAiB,eAAN
oe,EAAoBnK,GAAQqK,mBAAMbP,GAASb,mBAANK,EAAwBnK,GAAQiM,sBAAsBlgB,EAAEkL,MAA8B,iB
AAhBIL,EAAEkL,KAAK6V,OAAyBhD,EAAOIX,YAAY7G,EAAEkL,MAAW4B,EAAI,kCAAKCsR,GAAKnK,
GAAQqM,yCAAoCIZ,GAAW2W,EAAOtR,QAAQ,SAASzM,GAAG8M,EAAI,0BAA0B9M,EAAEmK,SAAS,IA
AInK,EAAEghB,OAAO,KAAKhhB,EAAEihB,UAAaY,IAAQBgV,EAAOmD,GAAG,WAAU,SAAShW,GAAM6
S,EAAOqC,UAAU,CAACIV,KAAKA,OAA6S,EAAOmD,GAAG,SAAQ,SAAShW,GAAM6S,EAAOtR,QAAQv
B,MAAQ6S,EAAOmD,GAAG,QAAO,SAAShW,QAAS6S,EAAOIX,YAAY,CAACuX,IAAM,OAAO+C,UAAyH
Z,EAA4B,qBAAGpB,EAAWQ,WAAaA,EAAW2F,WAAaA,KAAcuR,qBAAQb,WAAW,IAAI2C,EAAcvX,EAA
W,6CAA6CoK,GAAQC,cAAcp1B,KAAK,IAAIisB,OAAOqW,KAAiBC,aAAa,WAAuI,OAA3F,GAA9BpN,GAA
QC,cAAc34B,SAAW04B,GAAQwK,uBAaUBxK,GAAQG,uBAaUBH,GAAQC,cAAc,KAAOD,GAAQC,cAAc34
B,OAAO,EAAS04B,GAAQC,cAAcmL,MAAkB,MAAMiC,aAAa,SAASC,GAAqC,IAA9B,IAAIh3B,EAAEmiB,Y
AAY8U,MAAMD,EAAy7U,YAAY8U,MAAMj3B,OAAO,SAASk3B,GAAoBC,EAASC,GAAUC,GAA6BF,EAA
SC,GAAU9S,GAAa6S,GAA4D,SAASG,KAAmB,OAAO1U,EAA0D,SAAS2U,GAAiBpS,EAAI2F,GAAK,OAAO
zE,GAAU51B,IAAI00B,EAAdkB,CAAMByE,GAaiD,SAAS0M,GAAehiB,EAAUoK,EAAS6X,EAAKzU,GAAM
7C,GAAM,qBAAQBgE,EAAa3O,GAAW,SAAS,CAACoK,EAASuE,EAAavE,GAAU,mBAAMb6X,EAAKzU,EA
AKmB,EAAanB,GAAM,qBAAQb,SAAS0U,GAAaC,EAAKC,GAAqBC,MAAMF,EAAKC,GAA0Y,SAASE,GA
AS7vB,GAAYD,OAAIDmV,IAAoB2a,MAAQb,GAAG9vB,EAAaA,EAAM,SAAS+vB,GAAQhV,EAAK8H,GAA
K,GAAG/L,EAAuB,OAAOkZ,GAAoC,EAAE,EAAEjV,EAAK8H,GAAK,SAASoN,GAAiCC,EAAeC,GAAc,GA
AGD,GAAgBC,EAAc9b,YAAY,CAACuX,IAAM,qCAAqC,GAAG9U,EAAwBzC,YAAY,CAAC2Z,aAAekC,EA
AetE,IAAM,2BAA2B,CAAC,IAAIP,EAAQ5J,GAAQ6J,SAAS4E,GAAoB3E,EAAOF,GAASA,EAAQE,OAAO,I
AAIA,EAAQ,OAAOA,EAAOIX,YAAY,CAACuX,IAAM,uBAaUB,OAAO,EAAE,SAASwE,KAASIY,KAAQ,SA
ASmY,GAA0BC,EAAKC,EAAOC,GAAQ,IAAI/oC,EAAKgpC,GAAiBF,EAAOC,GAAQ,OAAOpO,GAAWkO,G
AAMrU,MAAM,KAAKx0B,GAAM,SAASipC,GAakDC,EAAeC,IAAY,SAASC,GAAuBpG,EAAKqG,EAAIC,G
AAS,GAAGtG,GAAM,GAAGA,EAAK3V,IAAmB/rB,SAAa,EAAL0hC,EAAU,OAAO,GAAG,GAAIpU,EAAgO,
CAAC,GAAGwU,QAAQC,KAAK3V,IAAoBsV,GAAM,IAAIqG,EAAK,OAAO,EAAE,IAAIE,EAAK9W,YAAY
8U,MAAUiC,EAAKD,EAAKD,EAAkG,IAA7EIG,QAAQqG,SAAS/b,IAAoB4V,IAAgC,EAAEN,KAAc,CAAwB,
IAAvBuG,EAAK9W,YAAY8U,OAAciC,EAAyF,OAA1EpG,QAAQqG,SAAS/b,IAAoB4V,IAAgC,EAAE,IAAU,
GAAsF,GAAa,GAAvFF,QAAQqG,SAAS/b,IAAoB4V,IAAgC,EAAE,GAAMB,MAAQD,GAA/CkD,KAAkDpD,Q
AAQC,KAAK3V,IAAoBsV,GAAM,IAAIqG,EAAK,OAAO,EAAWjG,QAAQqG,SAAS/b,IAAoB4V,IAAgC,EAA
EN,GAAM,OAAO,EAAh1B,IAAI3S,EAAI+S,QAAQsG,KAAKhc,IAAoBsV,GAAM,EAAEgG,EAAIC,GAAS,G
AAS,cAANjZ,EAAkB,OAAO,GAAG,GAAS,cAANA,EAAkB,OAAO,EAAE,GAAS,OAANA,EAAW,OAAO,EA
AE,KAAK,6CAA6CA,EAA+oB,SAASzS,GAAuBC,EAAK1c,EAAI2c,GAAKpc,IAAmBqc,WAAWF,EAAK1c,E
AAIA,EAAI2c,GAAK,SAASE,KAAgC,OAAGjb,EAA2Bkb,EAAcC,OAAO3oC,OAAC4oC,UAA+B,oBAAE,SAA
S3B,GAAoC9sB,EAAm0uB,GAAGk,IAA1J,IAAIC,EAAytV,UAAUxzB,OAAO,EAAM+yB,EAAME,KAAgB8V
,EAAsBD,EAAgBpqC,EAAKg0B,GAAiC,EAAtBqW,GAA6BjqC,EAAEJ,GAAM,EAAUyD,EAAE,EAAEA,EAA
E2mC,EAAy3mC,IAAI,CAAC,IAAI23B,EAAItG,UAAU,EAAErXB,GAAGqqB,IAAoB1tB,EAAEqD,GAAG23B,

EAAI,IAAI/K,EAAIia,GAA0C7uB,EAAM4uB,EAAsBrqC,EAAKmqC,GAA0B,OAAPbvV,GAAaP,GAAchE,EA
A91GnC,EAA4B,oBAAEsZ,GAAqEtZ,EAAYb,iBAAE0Z,GAAMf1Z,EAAYb,iBAAE2Z,GAA0VvD,GAARbxV,
EAAyC,WAAW,IAAIxe,EAAE4e,QAAgB,SAAI,OAAY,IAAL5e,EAAE,GAAOA,EAAE,GAAG,KAAa+e,EAA4
C,WAAW,OAAOoD,YAAY8U,MAAMrZ,EAAsC,+BAA4B,oBAAVqc,QAA2CA,QAAiC,WAAW,OAAO9X,YA
AY8U,OAA+8E,IAAIiD,GAA+C,GAAOC,GAAsB,GAAG,SAASzB,GAAiBF,EAAO1S,GAAoC,IAAIZ,EAAW,I
AA9CiV,GAAsBnpC,OAAO,EAAS80B,IAAM,EAAQZ,EAAG/H,IAAmBqb,MAAU,CAAC,IAAI4B,EAAOIV,E
AAG,IAAOkV,GAAY,EAAJtU,GAAMA,IAAMqU,GAAsB5IC,KAAK6IC,EAAO5c,IAAoBsI,KAAO,GAAG1I,I
AAoB0I,MAAQA,EAAI,OAAOqU,GAAsB,SAASE,GAAsClvB,EAAM2uB,EAAYpqC,GAAMwqC,GAA+ClpC,
OAAO8oC,EAA0B,IAAd,IAAIhqC,EAAEJ,GAAM,EAAUyD,EAAE,EAAEA,EAAE2mC,EAAY3mC,IAAK+mC
,GAA+C/mC,GAAGqqB,IAAoB1tB,EAAEqD,GAAoG,OAAhFgY,EAAM,EAAqDkf,IAAYlf,EAAM,GAA9Cmv
B,GAAqBnvB,IAAwC+Y,MAAM,KAAKgw,IAAgD,SAASK,KAA4B,OAAOpd,IAAmBnsB,OAAO,SAASwpC,
GAA0Bp/B,GAAM,IAAQg,OAAjG4hB,EAAWyd,KAAKr/B,EAAKxJ,EAAO+0B,WAAW,QAAQ,IAAI1J,GAA2
BD,EAAWprB,QAAe,EAAE,MAAM6jB,KAAK,SAASilB,GAAwBC,GAAe,IAAIC,EAAQL,KAA4B,GAAGI,GA
AeC,EAAS,OAAO,EAAM,IAAIC,EAAY,WAAW,GAAGF,EAACe,EAAa,OAAO,EAAM,IAAI,IAAIC,EAAQ,EA
AEA,GAAS,EAAEA,GAAS,EAAE,CAAC,IAAIC,EAakBH,GAAS,EAAE,GAAGE,GAA6N,GAAPNC,EAakBh
gC,KAAKigC,IAAID,EAakBJ,EAAC,WAAshH,GAA/Fz/B,KAAKigC,IAAIH,EAAYjV,GAAQ7qB,KAAKC,IA
AI2/B,EAACI,GAAMb,SAA2E,OAAO,EAAM,OAAO,EAAM,IAAIE,GAAS,CAACC,eAAe,EAAEC,wBAAwB,
WAAW,IAAI,IAAIhoC,EAAE8nC,GAASG,cAAcpqC,OAAO,EAAEmC,GAAG,IAAIA,EAAG8nC,GAASI,eAAe
loC,GAAG8nC,GAASG,cAAc,GAAGH,GAASK,cAAc,IAAIC,6BAA6B,WAAeN,GAASO,iCAAKFP,GAASO,gC
AA+B,IAAOF,cAAc,GAAGG,UAAU,SAASC,EAAeC,EAAWC,GAAU,SAASC,EAAuBC,EAAKC,GAAM,GAA
GD,EAak9qC,QAAQ+qC,EAak/qC,OAAO,OAAO,EAAM,IAAI,IAAIImC,KAAK2oC,EAAM,GAAGA,EAak3
oC,IAAI4oC,EAak5oC,GAAG,OAAO,EAAM,OAAO,EAak,IAAI,IAAIA,KAAK8nC,GAASK,cAAc,CAAC,IA
AIU,EAakf,GAASK,cAAcnoC,GAAG,GAAG6oC,EAakN,gBAAgBA,GAAGBG,EAAuBG,EAakJ,SAASA,GA
AW,OAAQX,GAASK,cAAc/mC,KAAK,CAACmnC,eAAeA,EAAeC,WAAWA,EAAWC,SAASA,IAAWX,GAAS
K,cAAcW,MAAK,SAAShqC,EAAEiqC,GAAG,OAAOjqC,EAAE0pC,WAAWO,EAAEP,eAAcQ,oBAAoB,SAAS
T,GAAgB,IAAI,IAAIvoC,EAAE,EAAEA,EAAE8nC,GAASK,cAActqC,SAASmC,EAAM8nC,GAASK,cAAcnoC,
GAAGuoC,gBAAgBA,IAAgBT,GAASK,cAAczzB,OAAO1U,EAAE,KAAKA,IAAKipC,+BAA+B,WAAW,OAA
OnB,GAASC,gBAAgBD,GAASoB,oBAAoBC,qBAAqBC,iBAAiB,WAAW,GAAIb,GAASmB,iCAAYC,IAAI,IA
AIjpC,EAAE,EAAEA,EAAE8nC,GAASK,cAActqC,SAASmC,EAAE,CAAC,IAAI6oC,EAakf,GAASK,cAAcno
C,GAAG8nC,GAASK,cAAczzB,OAAO1U,EAAE,KAAKA,EAAE6oC,EAakN,eAAexX,MAAM,KAAK8X,EAA
KJ,YAAYR,cAAc,GAAGoB,0BAA0B,SAAShG,EAAOiG,GAAiB,IAAI,IAAItpC,EAAE,EAAEA,EAAE8nC,GA
ASG,cAAcpqC,SAASmC,EAAM8nC,GAASG,cAAcjoC,GAAGqjC,QAAQA,GAAUiG,GAAiBA,GAAiBxB,GAA
SG,cAAcjoC,GAAGspC,iBAAkxB,GAASI,eAAeloC,MAAQkoC,eAAe,SAASloC,GAAG,IAAIupC,EAAezB,G
AASG,cAAcjoC,GAAGupC,EAAEIG,OAAOmG,oBAAoBD,EAAED,gBAAgBC,EAAEE,kBAakBF,EAAEG,YA
AY5B,GAASG,cAAcvzB,OAAO1U,EAAE,IAAI2pC,wBAAwB,SAASC,GAAC,IAAIC,EAAe,SAAwBC,KAASh
C,GAASC,eAAeD,GAASoB,oBAAoBU,EAAa9B,GAASsB,mBAAMbQ,EAAaG,YAAYD,GAAOhC,GAASsB,q
BAAqBtB,GAASC,gBAAgB,GAAG6B,EAAaI,aAAcJ,EAAaH,kBAakBI,EAAeD,EAAavG,OAAO4G,iBAAiBL,
EAAaN,gBAAgBO,EAAeD,EAAaF,YAAY5B,GAASG,cAAc7mC,KAAKwoC,GAAc9B,GAASM,oCAAoC,IAAI
,IAAIpoC,EAAE,EAAEA,EAAE8nC,GAASG,cAAcpqC,SAASmC,EAAM8nC,GAASG,cAAcjoC,GAAGqjC,QA
AQUG,EAAavG,QAAQyE,GAASG,cAAcjoC,GAAGspC,iBAAiBM,EAAaN,iBAAiBxB,GAASI,eAAeloC,MAAS
kqC,+BAA+B,SAASpH,EAAaqH,EAAiBC,EAAYC,EAAUC,GAAU,IAAIg,EAASIT,KAAgByZ,EAAQha,GAA
W,IAAIg,IAAoBsgB,GAAS,GAAGH,EAAYngB,IAAoBsgB,EAAQ,GAAG,GAAGF,EAAUpG,IAAoBsgB,EA
AQ,GAAG,GAAGD,EAASE,GAA4B,EAAE1H,EAAa,UAAUqH,EAAiBE,EAAUE,GAASpZ,GAAa6S,IAAWyG,
gCAAGC,SAAS3H,GAAC,OAAOA,GAAC,KAAK,EAAE,OAAO,EAAE,KAAK,EAAE,OAAOvM,GAAGQM,oCA
AoC,QAAQ,OAAOE,IAAe4H,qBAAqB,SAASrH,GAAQ,OAAIA,EAAMBA,GAAQ9X,OAAa,UAAa8X,GAAQs
H,OAAa,UAAiBtH,GAAQA,EAAOuH,SAASvH,EAAOuH,SAAS,GAAtH,IAA0HC,kBAakB,WAAW,OAAOthB
,SAASshB,mBAAMbthB,SAASuhB,0BAA0B,SAASC,GAAGBC,GAAU,IAAIIntC,EAAO20B,EAAgBwY,GAAU,
EAAMC,EAAQhK,GAAQpjC,GAA8C,OAAtCyyB,EAAa0a,EAASC,EAAQptC,GAAeotC,EAAQ,SAASC,GAAy

DpI,EAAaqI,EAAaC,EAAMC,GAAQ,IAAIrH,EAASIT,KAAgByZ,EAAQha,GAAW,IAAQ+a,EAAGb,EAAXH,I
AAcG,EAAGBP,GAAGbI,IAAclhB,IAAoBsgB,GAAS,GAAGe,EAAGBrhB,IAAoBsgB,EAAQ,GAAG,GAAGa,E
AAMnhB,IAAoBsgB,EAAQ,GAAG,GAAGc,EAAGOb,GAA4B,EAAE1H,EAAa,UAAU,EAAEWI,EAAGBf,GAAS
pZ,GAAa6S,GAAU,SAASuH,GAASDzI,EAAaqI,EAAaC,EAAMC,GAAgEH,GAAyDpI,EAajHqI,EAAaA,EAAa
na,EAAama,GAAC,GAASFC,EAAMC,GAAQ,SAASG,GAAuBP,GAAS,OAAOA,EAAQ,EAAEja,EAAaia,GAAS
A,EAAQ,IAAIQ,GAAMb,CAAC,EAAoB,oBAAXliB,SAAuBA,SAAS,EAakB,oBAATgC,OAAqBA,OAAO,GA
AG,SAASmgB,GAAGBrI,GAakK,OAA1JA,EAAOmI,GAAuBnI,GAAuBoI,GAAMbPI,KAA4B,oBAAX9Z,SA
uBA,SAASoiB,cAAcI,QAAQ3Z,GAA6B,SAASkiB,GAASbVI,GAAQ,OAAOqI,GAAGBrI,GAAG,SAASwI,GA
mDxI,EAAO+H,EAAMC,GAAQ,IAAIS,EAAOF,GAASbVI,GAAQ,IAAIyI,EAAO,OAAO,EAAOI,GAARIA,EA
OC,kBAAiB9hB,IAAoB6hB,EAAOC,iBAAiB,GAAGX,EAAMnhB,IAAoB6hB,EAAOC,gBAAGb,GAAG,GAAG
V,IAAUS,EAAOE,iBAakBF,EAAOG,4BAASd,OAAGH,EAAOC,iBAAMFR,GAAjDthB,IAAoB6hB,EAAOC,gB
AAgB,GAAG,GAASeII,EAAO+H,EAAMC,GAAG,IAAc,EAahoBS,EAAOE,kBAAGBF,EAAOA,EAAOE,iBAAG
B,IAAIE,GAAMb,EAAM,GAAGJ,EAAOK,aAAaL,EAAOK,YAAYC,MAAM,CAAC,IAAIC,EAAaP,EAAOK,Y
AAYC,MAAME,aAAa,MAAMJ,EAAqC,IAAIbG,EAAa,IAA0B,IAAIbA,EAAa,IAAQa,EAAa,KAAKP,EAAOV
,OAAOiB,EAAa,KAAKP,EAAOT,OAA4U,OAARUS,EAAOV,MAAMA,EAAMU,EAAOT,OAAOA,EAAUa,GA
AoBJ,EAAOK,YAAYC,MAAMG,SAAS,EAAE,EAAEnB,EAAMC,GAAiO,EAAE,SAASmB,GAAGDnJ,EAAO+
H,EAAMC,GAAQ,OAGzf,EAA8BkZ,GAAoC,EAAE,EAAEzB,EAAO+H,EAAMC,GAAGeQ,GAAMdXI,EAAO
+H,EAAMC,GAAQ,SAASoB,GAAGCpJ,EAAO+H,EAAMC,GAAiD,OAA9BO,GAASbVI,GAA0BwI,GAAMdXI,
EAAO+H,EAAMC,GAAoBmB,GAAGDnJ,EAAO+H,EAAMC,GAAS,SAASqB,GAASChH,IAAY,SAASiH,GAA4
BC,EAASC,IAAO,SAASC,GAASCC,GAAK,IAAIC,EAAID,EAAIE,aAAa,0BAA0B,GAAGD,EAAoX,OAA/WD,
EAAyB,oBAAE,SAAS/0B,EAAMk1B,GAASF,EAA8B,yBAAEh1B,EAAMk1B,IAAUH,EAAyB,oBAAE,SAAS/
xB,EAAMyB,EAAM3N,EAAM4N,GAAWJ,EAA8B,yBAAEhyB,EAAMyB,EAAM3N,EAAM4N,IAAYL,EAA
2B,sBAAE,SAAS/xB,EAAMkWB,EAAMrWB,EAAMgI,EAAQi2B,GAAWJ,EAAGC,2BAAEhyB,EAAMkWB,EA
MrWB,EAAMgI,EAAQi2B,IAAMb,EAAG,SAASC,GAAuCN,GAAK,IAAIC,EAAID,EAAIE,aAAa,2BAA2B,GA
AGD,EAAqS,OAAhSD,EAAuB,kBAAE,WAAW,OAAOC,EAA0B,wBAAKD,EAAuB,kBAAE,SAASO,GAAMN,
EAA0B,qBAAEM,IAAMP,EAAqB,gBAAE,SAASO,GAAMN,EAAWb,mBAAEM,IAAMP,EAAmB,cAAE,SAAS
O,GAAMN,OAAON,EAAASB,iBAAEM,IAAA,EAAG,SAASC,GAAMCR,GAAMN,IAAIC,EAAID,EAAIE,aAAa,sBAA
sB,GAAGD,EAA0E,OAARED,EAAiB,YAAE,SAASS,EAAEC,GAAMT,EAAASB,iBAAEQ,EAAEC,IAAc,EAAG,S
AASC,GAAGCX,GAAMN,SAASA,EAAIY,eAAeZ,EAAIE,aAAa,qBAAqB,IAAIW,GAAG,CAACC,QAAQ,EAAE
C,QAAQ,GAAGC,SAAS,GAAGC,aAAa,GAAGC,cAAc,GAAGC,SAAS,GAAGC,SAAS,GAAGC,QAAQ,GAAG
C,KAAK,GAAGC,SAAS,GAAGC,kBAakB,GAAGC,gBAAGb,GAAGC,aAAa,GAAGC,YAAY,GAAGC,gBAAG
B,EAAEC,YAAY,SAAQBC,GAAejB,GAAGkB,YAAWIB,GAAGkB,UAAUD,IAAYE,SAAS,SAASC,GAA4B,IA
ArB,IAAIpiB,EAAIghB,GAAGC,UAAkB7tC,EAAEgvC,EAAMnxC,OAAOmC,EAAE4sB,EAAI5sB,IAAMgvC,E
AAMhVC,GAAG,KAAK,OAAO4sB,GAAMqIB,UAAU,SAASC,EAAO1P,EAAMrP,EAAOtYB,GAASB,IAAd,IA
AIsxC,EAAO,GAAWnvC,EAAE,EAAEA,EAAEW/B,IAAQx/B,EAAE,CAAC,IAAIqWB,EAAIXyB,EAAOosB,IA
AoBpsB,EAAS,EAAFmC,GAAMN,IAAI,EAAEmvC,GAAQne,EAAa/G,IAAoBkG,EAAS,EAAFnwB,GAAMN,GAA
GqwB,EAAI,OAAE3G,EAAU2G,GAAMN,OAAO8e,GAAQC,cAAc,SAAStD,EAAOuD,GAAWb,IAAIc,EAAIjB,
EAAOwD,WAAW,QAAQD,GAAWb,OAAItC,EAAWba,GAAG2B,gBAAGbxC,EAAIsC,GAAPC,GAA2EE,gBA
AgB,SAASxC,EAAIsC,GAAWb,IAAIG,EAAOvO,GAAQ,GAAGhX,IAAoBulB,EAAO,GAAG,GAAG5N,KAAg
B,IAAI6N,EAAQ,CAACD,OAAOA,EAAOE,WAAWL,EAAuBM,QAAQN,EAAuBO,aAAaxD,MAAMW,GAAq
O,OAA7NA,EAAIjB,SAAOiB,EAAIjB,OAAOK,YAAYsD,GAAQ7B,GAAGU,SAASkB,GAAQC,GAAqE,oBAA
nDJ,EAAuBQ,2BAAyCR,EAAuBQ,4BAA2BjC,GAAGkC,eAAeL,GAAGBD,GAAQO,mBAAMb,SAASC,GAAW
H,OAAzGpC,GAAGqC,eAAeR,GAAGU,SAAS0B,GAAevB,EAAOSiB,IAAIX,GAAMwB,GAAGqC,gBAAGBr
C,GAAGqC,eAAe7D,QAAc4D,IAAGb5D,KAAQkD,WAAW,SAASU,GAAe,OAAOpC,GAAGU,SAAS0B,IAAG
BE,cAAc,SAASF,GAAMkPc,GAAGqC,iBAAiBrC,GAAGU,SAAS0B,KAAepC,GAAGqC,eAAe,MAA0B,iBAAX
nI,IAAoBA,GAASuB,0BAA0BuE,GAAGU,SAAS0B,GAAe5D,MAAMN,QAAW8B,GAAGU,SAAS0B,IAAGBp
C,GAAGU,SAAS0B,GAAe5D,MAAMN,SAO8B,GAAGU,SAAS0B,GAAe5D,MAAMN,OAAOK,iBAAYziB,G
AAUxN,GAAM0xB,GAAGU,SAAS0B,GAAeR,QAAQ5B,GAAGU,SAAS0B,GAAe,MAAMF,eAAe,SAASL,GA

A+C,GAAICA,IAAQA,EAAQ7B,GAAGqC,iBAAkBR,EAAQU,mBAAX,CAAqCV,EAAQU,oBAAmB,EAAK,IAAI/D,EAAMqD,EAAQrD,MAAMU,GAAsCV,GAAOiB,GAACjB,GAAOmB,GAACnB,GAAOA,EAAMgE,sBAAAsBhE,EAAMa,aAAa,4BAA4BS,GAAGCtB,IAAgBA,EAAMiE,0BAA0B,IAAQ7iC,SAAQ,SAASw/B,GAAQA,EAAl7e,QAAQ,gBAAGB,GAAG6e,EAAl7e,QAAQ,SAAS,GAAGie,EAAMa,aAAaD,QAASSD,qBAaQB,SAASC,GAA0O,IAAjO,IAAI1B,EAAE2yB,GAAGG,SAASwC,GAAaC,EAAO5C,GAAGa,aAAa8B,GAAS,CAACpC,SAAS,GAAGsC,iBAAiB,EAAEC,oBAAoB,EAAEC,2BAA2B,GAAOC,EAAOJ,EAAOrC,SAAa0C,EAAyZE,GAAM0E,oBAAoB71B,EAAE,OAAejb,EAAE,EAAEA,EAAE6wC,IAAc7wC,EAAE,CAAC,IAAIqyB,EAAE+Z,GAAM2E,iBAAiB91B,EAAEjb,GAAO6sC,EAAKxa,EAAEwa,KAAK2D,EAAOC,iBAAiB7oC,KAAKC,IAAI2oC,EAAOC,iBAAiB5D,EAAKhvC,OAAO,GAASB,KAAhBgVc,EAAK1oC,OAAO,KAAS0oC,EAAKA,EAAK1oC,MAAM,EAAE0oC,EAAKxe,YAAy,OAAM,IAAI2iB,EAAl5E,GAAM6E,mBAAmBh2B,EAAE4xB,GAAM,GAAGmE,EAAl,CAAC,IAAIxzC,EAAGowC,GAAGmB,SAASnB,GAAGO,UAAUyC,EAAO/D,GAAM,CAACxa,EAAEppqB,KAAKzK,GAAIowC,GAAGO,SAAS3wC,GAAIwzC,EAAl,IAAI,IAAI1vC,EAAE,EAAEA,EAAE+wB,EAAEppqB,OAAO3G,EAAE,CAAC,IAAIksC,EAAEX,EAAK,IAAIvrC,EAAE,IAAI0vC,EAAl5E,GAAM6E,mBAAmBh2B,EAAEuyB,GAAGhwC,EAAGowC,GAAGmB,SAASnB,GAAGO,UAAUP,GAAGO,SAAS3wC,GAAIwzC,OAAaE,GAAGqC,CAAC,UAAU,YAAy,oBAAoB,SAASC,GAAoC9N,EAAOqM,GAAY,IAAIhzC,EAAEgzC,GAAY,EAAM0B,EAAGBnnB,IAAoBvtB,KAAe20C,EAAkB,CAACp4B,QAAUgR,IAAoBvtB,KAAU2gB,QAAU4M,IAAoBvtB,KAAU40C,UAAyrmB,IAAoBvtB,KAAU60C,YAAActnB,IAAoBvtB,KAAW80C,qBAAUbVnB,IAAoBvtB,KAAW+0C,wBAA0BxnB,IAAoBvtB,KAAW00C,gBAAkBF,GAAGqCE,GAAlBM,+BAAlCznB,IAAoBvtB,KAAWkzC,aAAa31B,IAAoBvtB,KAAWi1C,aAAa1nB,IAAoBvtB,KAAWmzC,0BAA0B51B,IAAoBvtB,MAAWk1C,oBAAoB3nB,IAAoBvtB,MAAWm1C,yBAAYb5nB,IAAoBvtB,MAAWo1C,6BAA6B7nB,IAAoBvtB,OAAgBovC,EAAOF,GAASbvI,GAAGQ,OAAIyI,EAAoBuF,EAAkBO,oBAA4B,EAAoBhE,GAAGwB,cAAActD,EAAOuF,GAAG/F,EAAlI,SAASU,GAAlCC,EAAGC,GAAl,OAAOd,GAAoCa,EAAGC,GAAl,IAA4sQ7F,GAASxsQ8F,GAAS,CAACC,SAAS,GAAGrE,QAAQ,CAAC,KAAK,GAAG,IAAIse,UAAU,SAASC,EAAOC,GAAM,IAAI7zC,EAAOyzC,GAASpE,QAAQuE,GAAKB,IAAPC,GAAlB,KAAPA,IAAQb,IAATD,EAAWl0C,EAAlixB,GAAKkC,EAAkB7yB,EAAO,IAAIA,EAAOZ,OAAO,GAAOY,EAAO2C,KAAKkxC,IAAQ/H,aAAQ7gB,EAAUpsB,IAAI,WAAkF,OAAvE40C,GAAS3H,SAAS,EAAUtgB,IAAoBioB,GAAS3H,QAAQ,GAAG,IAAegI,OAAO,SAASvgB,GAA+B,OAAIbB,EAAagB,IAAIbwgB,MAAM,SAASC,EAAIC,GAAM,OAAOD,IAAM,SAASE,GAAUC,GAAl,OAAghnB,EAA8BkZ,GAAoC,EAAE,EAAE8N,GAAW,EAAE,SAASC,GAASD,EAAGE,EAAWC,EAAyC,EAAOC,GAAW,GAAGrnB,EAAuB,OAAOkZ,GAAoC,EAAE,EAAE8N,EAAGE,EAAWC,EAAyC,EAAOC,GAAW,SAASC,GAUN,EAAGO,EAAIC,EAAOC,GAAM,GAAGznB,EAAuB,OAAOkZ,GAAoC,EAAE,EAAE8N,EAAGO,EAAlC,EAAOC,GAAGb,IAAV,IAAIjN,EAAl,EAAUpmC,EAAE,EAAEA,EAAEozC,EAAOpzC,IAAI,CAAqF,IAApF,IAAIgyB,EAAl/H,IAAoBkpB,EAAM,EAAlFnzC,GAAK,GAAOqwB,EAAlpG,IAAoBkpB,GAAO,EAAlFnzC,EAAl,IAAI,GAAWsB,EAAE,EAAEA,EAAE+uB,EAAl/uB,IAAK4wC,GAASE,UAAUQ,EAAG5oB,IAAmBgI,EAAlwB,IAAI8kC,GAAK/V,EAAqC,OAAjCpG,IAAoBopB,GAAM,GAAGjN,EAAW,EAAE,SAASKN,GAAqBC,GAAAS,IAAIC,EAAQjd,GAAQiL,mBAAmBG,MAAS4R,GAAGC,IAAU,SAASC,GAASBD,EAAQ7b,GAAKpB,GAAGiL,mBAAmBpgC,MAAK,WAAW8xB,GAAU51B,IAAIk2C,EAAdtgB,CAAuByE,MAAO,SAASqL,GAAY0Q,GAAC,GAAG9nB,EAAuB,KAAK,sFAAsF,IAAIyU,EAAO9J,GAAGqoN,eAAe,QAAoBja,IAAjB2W,EAAOF,QAAoB,KAAK,kBAAkB,IAAIuT,EAAaxT,YAAy,KAAK,kCAAKC3J,GAAGqkE,eAAep/B,KAAKi/B,GAAqC,IAA7B,IAAIc,EAAUF,GAAGQ,KAAejhC,EAAE,EAAEA,EAAE,MAAMA,EAAGiqB,IAAoBkX,EAAy,EAAFnHc,GAAG,GAAG,EAAE,IAAI2zC,EAAUD,EAAarR,UAAUqR,EAAaE,UAAczT,EAAQ5J,GAAG6J,SAASsT,EAAaxT,aAAa,CAACG,OAAOA,EAAOGc,UAAUqR,EAAarR,UAAUuR,UAAUF,EAAaE,UAAUxR,kBAAkBsR,EAAatR,kBAAkBD,iBAAlBuR,EAAaxT,aAAiB2T,EAAlIT,EAAQgC,kBAAkB,EAAExC,QAAQyB,MAAMjX,IAAoB0pB,KAAyH,EAAaI,UAAUnU,QAAQyB,MAAMjX,IAAoB0pB,KAAa1S,GAAWxB,QAAQyB,MAAMjX,IAAoB0pB,KAAy1T,EAAQgC,kBAAkBxC,QAAQyB,MAAMjX,IAAoB0pB,KAAyH,EAAaE,WAAWjU,QAAQyB,MAAMjX,IAAoB0pB,KAAyF,GAAWhU,QAAQyB,MAAMjX,IAAoB0pB,KAAaH,EAAaE,WAAWjU,QAAQyB,MAAMjX,IAAoB0pB,KAAeF,GAAWhU,QAAQyB,MAAMjX,IAAoB0pB,KAAgBH,EAAaI,UAAU,IAAkDC,EAAICC,KAA4D,GAAGrU,QAAQyB,MAAMjX,IAAoB0pB,KAAaE,GAAe1T,EAAOF,QAAQA,EAAQ,IAAI8T,EAAl,CAA CvT,IAAM,MAAMwT,cAAgBR,EAAaS,aAAaxc,IAAM+b,EAAa/b,IAAIwK,iBAAmBuR,EAAaxT,YAAyM,C,U

AAyqR,EAAarR,UAAUuR,UAAyF,EAAaE,WAAWvT,EAAO6C,WAAW,WAAW+Q,EAAIG,KAAKplB,YAA
Y8U,MAAMzD,EAAOIX,YAAy8qB,EAAIP,EAAaW,eAAkBhU,EAAO4C,SAAQ5C,EAAO6C,oBAAoB7C,EA
AO6C,YAAy,SAASoR,GAAgBpU,EAAyqU,EAAKL,EAAcvc,GAAG,GAA8B,oBAApBvO,kBAA4H,OAA3Fg
G,EAAI,uFAA8F,EAAE,IAAI8Q,EAASe,OAAzD9Q,EAAI,qDAA4D,GAAG,IAAIilB,EAAa,GAAe,GAAgzoB,G
AA+C,IAAtByoB,EAAax2C,OAAoB,OAAO22C,GAAsC,UAAUtU,EAAyqU,EAAKL,EAAcvc,GAA2B,IAAlic,
EAAU,EAAMvR,EAAU,EAAMyR,EAAS,EAAKS,IAAa,GAAPA,GAAUX,EAAU3pB,IAAoBsqB,GAAM,GAA
GX,GAAW,MAAMvR,EAAUpY,IAAoBsqB,EAAK,GAAG,GAAGT,EAA2C,IAAIC7pB,IAAoBsqB,EAAK,IAAI
,IAAYX,EAAU,QAAQ,IAAIxR,EAA6B,GAAXC,EAAgBD,EAAmBC,EAAUoS,GAAU,GAAGb,GAAqCxtC,GA
ArBi8B,GAAWuR,GAA2B,GAAqC,IAAIC,IAAIzR,EAAiBIB,GAAQ,KAAajhC,EAAE,EAAEA,EAAE,KAASA,
EAAEmqB,KAAqBgY,GAakB,GAAgNiC,GAAG,EAAEiqB,IAAoBiW,GAAa,GAAGiC,EAAiBIY,IAAoBkY,EA
AiB,IAAI,GAAGA,EAAiB,IAAIjB,EAAQiB,EAAiB,IAAIY,IAAoBiX,GAAS,GAAGA,EAAQ,IAAIwS,EAAa,C
AACrR,UAAUA,EAAUuR,UAAUA,EAAUxR,kBAAkBA,EAakB0R,SAASA,EAASK,aAAaD,EAACHU,YAAyI
C,EAAiBxK,IAAIA,EAAIOc,aAAaA,GAA8I,OAA7HzoB,GAAwB8nB,EAAhT,IAAI,cAAcvX,YAAyUqB,EAAa
W,IAAmBrR,GAAyOQ,GAAqB,EAAE,SAASgB,KAA0B,GAAI9oB,EAAJ,CAAKC,IAAIoV,EAAGY,KAAgB,G
AAIZ,IAA6BrB,QAAQC,KAAKzV,IAAoB6W,EAAG,IAAI,IAAGg,GAAvDrB,QAAQC,KAAKzV,IAAoB6W,E
AAG,GAAG,GAakB,KAAK,aAAY,SAAS2T,KAAwCtpB,GAA8BD,GAA6BiE,EAAS,4IAA4I,SAASulB,GAA6
B/R,EAAO5X,EAAO4pB,GAAO,IAAIhS,EAAGe,OAAxDzT,EAAI,oDAA2DwI,GAAYG,MAAM,GAAGnM,GA
AwBgW,MAAiBiB,EAAmE,OAA3DzT,EAAI,WAAWyT,EAAO,qCAA4CjL,GAAy8C,QAAa,IAAI9O,GAAwBk
pB,MAAsCjS,EAAuE,OAA/DzT,EAAI,eAAeyT,EAAO,qCAA4CjL,GAAy8C,QAAmD,GAACzQ,IAAoB4Y,EA
AO,IAAI,KAAaA,EAA+H,OAAvHzT,EAAI,oCAAoCyT,EAAO,wEAA+EjL,GAAyG,MAAkE,GAA/C4H,QAA
QC,KAAKzV,IAAoB0Y,EAAO,IAAI,GAAwF,OAAxEzT,EAAI,4BAA4ByT,EAAO,iCAAwCjL,GAAyUuB,OAAs
D,IAA5C0b,GAAOF,OAA4C,CAAC,IAAII,EAApV,QAAQC,KAAKzV,IAAoB0Y,EAAO,GAAG,GAAG,GAai
B,GAAdkS,EAAgB,CAAC,IAAIC,EAAerV,QAAQC,KAAKzV,IAAoB0Y,EAAO,GAAG,GAAwN,OAAN5X,IA
AOhb,IAAoBgB,GAAQ,GAAG+pB,GAAerV,QAAQyB,MAAMjX,IAAoB0Y,EAAO,IAAI,EAAE,GAAOjX,EA
AkDzC,YAAy,CAACuX,IAAM,gBAAgBmC,OAASA,IAAvEIC,GAACKC,GAAYE,EAAE,IAAIgS,EAAO,OAAO
jd,GAAyiB,MAAM6b,KAA8B9oB,GAAuBmX,KAA+C4C,GAAuB9C,EAAO,EAAEKs,EAAmpB,EAAuB,IAAI,
IAAI,SAASqpB,GAAcpS,EAAO5X,GAAQ,OAAO2pB,GAA6B/R,EAAO5X,GAAO,GAAM,SAASiqB,GAASrI,G
AAM,GAAGjhB,EAAuB,OAAOkZ,GAAoC,EAAE,EAAE+H,GAAM,OAAOA,GAAM,KAAK,GAAG,OAAO,M
AAM,KAAK,GAA8B,OAAOnF,OAakB,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KA
AK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAA
I,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,I
AAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAA
K,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAA
G,KAAK,GAAG,KAAK,GAAG,OAAO,OAAO,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,G
AAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAA
I,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,
KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,K
AAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,EAAE,KAAK,IA
AI,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAA
G,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,OAAO,EAAE,KAAK,G
AAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,EAAE,OAAO,KAAK,KAAK,GAAG,KAAK,GAAG,
KAAK,GAAG,OAAO,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,WAAW,KAAK,GAAG,KAA
K,EAAE,OAAO,MAAM,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,KA
AK,KAAK,EAAE,OAAO,QAAQ,KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,O
AAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,G
AAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,EAAE,OAAO,IAAI,KAAK,IAAI,OAAO,GAAG,KAAK,
GAAG,OAAO,GAAG,KAAK,EAAE,OAAO,GAAG,KAAK,EAAE,OAAO,EAAE,KAAK,GAAG,OAAO,EAAE,
KAAK,GAAL,MAAsB,iBAAZjB,WAA4BA,UAA+B,qBAAy,EAAgB,OAAb9B,GAAS,KAAW,EAAM/Y,GAau

B2K,GAAQuK,sBAAGC,IAA44fqU,GAAX4fhO,GAAqB,CAAC,KAAKtC,GAAQ2H,GAAGDmG,GAAUE,GAAS
K,GAAUgC,IAAcjf,GAAC,CAAC3T,EAAI+hB,GAAe+Q,EAAI7Q,GAAazlC,EAAImC,GAAiCpoC,EAAIuoC,G
AAO6D,EAAI5D,GAA0B7jC,EAAIkKc,GAakD7C,EAAIgD,GAAuB0P,EAAI/V,GAAuB/R,EAAIsT,GAAoB5lB
,EAAIirB,GAAuBoP,EAAIhP,GAA8BjU,EAAI6U,GAAsCqO,EAAIhO,GAAwBxnC,EAAI0sC,GAAoCzsC,EAAI
0sC,GAAsCvoB,EAAIwoB,GAA4BIW,EAAIsb,GAAiCyD,EAAI7C,GAAUnF,EAAIqF,GAAS4C,EAAIvC,GAA
UwC,EAAIje,GAAe/6B,EAAImtB,GAAYY,EAAMb,WAAEKrB,EAAIrC,GAAqBzoC,EAAI4oC,GAAsBIK,EAAI
+K,GAAgBsB,EAAIX,GAAcPoC,EAAIqoC,IAAmC3gB,IAAjBwB,KAAoCtL,EAA2B,mBAAE,WAAW,OAAO8
J,GAAmB9J,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,aAA6sV4P,IAAvrVxW,EAAC,MAAE,
WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyC5G,EAAiC,yBAAE,WAAW,
OAAgCA,EAAiC,yBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAmC5G,EAA2B,mBAAE,WAAW,OA
A0BA,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAiC5G,EAAYb,iBAAE,WAAW,OAAwB
A,EAAYb,iBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EA
sB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SA
EA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,
IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GA
AGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MA
AM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAK
M,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB
5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EA
iB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAqB,aAA
E,WAAW,OAAoBA,EAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAA
W,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAqB,aAAE,WAAW,OAAo
BA,EAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EA
AGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EA6B,
qBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,
EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAA
K,GAAGsG,MAAM,KAAKM,YAA+B5G,EAuB,eAAE,WAAW,OAAsBA,EAuB,eAAEA,EAAY,IAAK,GAA
GsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,M
AAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,K
AAKM,YAAuC5G,EAA+B,uBAAE,WAAW,OAA8BA,EAA+B,uBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAA
KM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAu
B5G,EAAe,OAAE,WAAW,OAAcA,EAae,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,
KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA+B5G,EAuB,eAAE,W
AAW,OAAsBA,EAuB,eAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OA
AcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EA
AkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAawB,gBAAE,WAAW,OAAuBA,EAawB,
gBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA6B5G,EAqB,aAAE,WAAW,OAAoBA,EAqB,aAAE
A,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsC5G,EAA8B,sBAAE,WAAW,OAA6BA,EA8B,sBAAEA,EA
AY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IA
AM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IA
GsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MA
AM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KA
AKM,YAA2B5G,EAAMb,WAAE,WAAW,OAAkBA,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAK
M,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5
G,EAAMb,WAAE,WAAW,OAAkBA,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,E
AAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA4B5G,EAAoB,YA
AE,WAAW,OAAmBA,EAoB,YAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WA
AW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAg

BA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAAwB,gBAAE,WAAW,OAAuBA,EAAwB,gBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,OAAyBA,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAmC5G,EAA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAOwW,GAAQxW,EAAgB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAAGbNv,GAAMuO,EAAC,MAAE,WAAW,OAAOvO,GAAMuO,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBuT,GAAGbNa,EAA0B,kBAAE,WAAW,OAAOma,GAAGbNa,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB2iB,GAA4BvpB,EAAoC,4BAAE,WAAW,OAAOupB,GAA4BvpB,EAAoC,4BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBuQ,GAACnX,EAAsB,cAAE,WAAW,OAAOmX,GAACnX,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBwQ,GAAYBpX,EAAiC,yBAAE,WAAW,OAAOoX,GAAYBpX,EAAiC,yBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB0R,GAA6CtY,EAAqD,6CAAE,WAAW,OAAOsY,GAA6CtY,EAAqD,6CAAEA,EAAY,IAAM,IAAGsG,

MAAM,KAAKM,YAAaSiQ,IAAtO7W,EAAwD,gDAAE,WAAW,OAAuDA,EAAwD,gDAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA4D5G,EAAoD,4CAAE,WAAW,OAAO6W,GAA4C7W,EAAoD,4CAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAAgByjB,GAAMCrqB,EAA2C,mCAAE,WAAW,OAAOqqB,GAAMCrqB,EA A2C,mCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmG,GAAMC/M,EAA2C,mCAAE,WAAW,OA AO+M,GAAMC/M,EAA2C,mCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmjB,GAAsC/pB,EAA8 C,sCAAE,WAAW,OAAO+pB,GAAsC/pB,EAA8C,sCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBw V,GAA0Cpc,EAakD,0CAAE,WAAW,OAAOoc,GAA0Cpc,EAakD,0CAAEA,EAAY,IAAM,IAAGsG,MAAM,K AAKM,YAAgBmZ,GAA4B/f,EAAoC,4BAAE,WAAW,OAAO+f,GAA4B/f,EAAoC,4BAAEA,EAAY,IAAM,IA AGsG,MAAM,KAAKM,YAA0LgQ,IAArJ5W,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM ,IAAGsG,MAAM,KAAKM,YAAyC5G,EAAiC,yBAAE,WAAW,OAAO4W,GAAYB5W,EAAiC,yBAAEA,EAAY, IAAM,IAAGsG,MAAM,KAAKM,aAAgBP,GAAUrG,EAakB,UAAE,WAAW,OAAOqG,GAAUrG,EAakB,UAA EA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBF,GAAa1G,EAAqB,aAAE,WAAW,OAAO0G,GAAa1G,EA AqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBd,GAAW9F,EAAMb,WAAE,WAAW,OAAO8F, GAAW9F,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB6S,GAA6BzZ,EAAqC,6BAAE,W AAW,OAAOyZ,GAA6BzZ,EAAqC,6BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBojB,GAAUhqB, EAakB,UAAE,WAAW,OAAOgqB,GAAUhqB,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA gBkR,GAA6C9X,EAAqD,6CAAE,MAAUoV,GAA+BpV,EAAuC,+BAAE,MAA8J,SAASsC,GAAW9B,GAAQ4q B,KAAKhJ,KAAK,aAAagJ,KAAktS,QAAQ,gCAAgCtY,EAAO,IAAI4qB,KAAK5qB,OAAOA,EAAqH,SAAS6q B,GAAIv5C,GAA4B,KAAGi4B,GAAGB,GAAnB,CAA6B,GAAG5I,EAAGG,OAAxErB,EAAoBE,GAAQwJ,UAA c9K,YAAY,CAACuX,IAAM,WAAkB7M,KAAyW,GAAGB,IAA2O/J,EAakB,WAAGA,EAakB,UAAE,cAAc8M ,YAAW,WAAWA,YAAW,WAAW9M,EAakB,UAAE,MAAK,GAAGsrB,MAAS,IAAQA,KAAjX,SAASA,IAA WZ,KAAiBA,IAAU,EAak1qB,EAakB,WAAE,EAAQiF,IAAAuE,KAAcC,KAAU3J,EAAoBE,GAAWA,EAA6B, sBAAEA,EAA6B,uBAAI0J,QAAwL,SAASiP,GAAKnY,EAAO+qB,GAAU,IAAGA,IAAUvmB,GAAwB,IAATxE ,EAA5B,CAA+C,IAAI+qB,GAAapqB,EAA+E,MAAvDzC,YAAY,CAACuX,IAAM,cAAcuV,WAAahrB,IAAE,IA AI8B,GAAW9B,GAakBwE,IAAQB8G,GAAQ2L,sBAAyDzX,EAAe,QAAEA,EAAe,OAAEQ,GAAQyE,GAAM, GAAK1E,EAAMC,EAAO,IAAI8B,GAAW9B,KAAS,GAA32CR,EAAc,MAAEpuB,EAAMouB,EAAGB,QAAE8L ,GAAQ9L,EAAGB,QAAE8L,GAAQ9L,EAAMb,WAAEZ,EAAYW,EAAMb,WAAEsC,GAAuJ0H,GAAsB,SAAS yhB,IAAgBf,IAAUW,KAAUX,KAAU1gB,GAAsByhB,IAA2IbZrB,EAAY,IAAEqrB,GAA4YrrB,EAAGB,QAAiF, IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UAAASA,EAAGB,QAAE5sB,OAAO,GAAG 4sB,EAAGB,QAAEkX,KAAIBIX,GAG5ymE,OAHO0mEmB,IAAwB6D,GAAC,EAAM8G,GAAQgL,cAAauU,KA Gp4mExsB,EAA8B6sB,QAkrC/f,UAAiB9M,8BCfnB,IACMD,EADF+sB,GACE/sB,EAAiC,oBAAbE,UAA4BA,S AASC,cAAgBD,SAASC,cAAcC,SAAMC,EACHf,oBAAfC,aAA4BN,EAAaA,GAACm,qBAE3DysB,GAGT,IAA2 E7rB,EAAoBC,EAA3FC,EAakC,oBAFpC2rB,EAAoBA,GAAqB,IAEOA,EAakB,GAA8C3rB,EAAc,MAAE,IAA IC,SAAQ,SAASC,EAAQC,GAAQL,EAAoBI,EAAQH,EAAMBI,KAAS,IAA2BC,EAAvBC,EAAGB,GAAW,IAAI D,KAAOJ,EAAWA,EAAOM,eAAeF,KAAMC,EAAGBD,GAAKJ,EAAOI,IAAM,IAAyGM,GAAMb,EAAUC,GA AsB,EAAUC,GAAoB,EAAUC,GAAqB,EAAMH,EAAMC,iBAATI,OAAkBH,EAA6C,mBAAhBI,cAA2BH,EAA qC,iBAAVI,SAA8C,iBAAnBA,QAAQC,UAAoD,iBAAxBD,QAAQC,SAASC,KAAgBL,GAAsBH,IAAQBE,IAAs BD,EAAAsB,IAA4JS,EAAMC,EAAUC,EAA8BC,EAAWC,EAAjNC,EAAGB,GAAG,SAASC,EAAWC,GAAM,O AAG3B,EAAMb,WAAUA,EAAMb,WAAE2B,EAakF,GAawBA,EAAGBE,EAA8Ef,GAA+Ca,EAAvBd,EA Au CkB,EAAGBC,QAAQL,GAAiB,IAAyBM,UAAU,IAAIX,EAAM,SAAoBY,EAASC,GAAuH,OAA3GV,IAAOA,E AAOw,GAakBV,IAASA,EAASK,GAAGBG,EAASR,EAAoB,UAAEQ,GAAiBT,EAAqB,aAAES,EAASC,EAAO ,KAAK,SAASX,EAAW,SAAoBU,GAAU,IAAIG,EAAIf,EAAMY,GAAS,GAAiE,OAAvDG,EAAInuB,SAAQmu B,EAAL,IAAIruB,WAAWquB,IAAKxmB,EAAOwmB,EAInuB,QAAemuB,GAAQnB,QAAc,KAAE5tB,OAAO, GAAe4tB,QAAc,KAAE,GAAGoB,QAAQ,MAAM,KAAgBpB,QAAc,KAAEtnB,MAAM,GAAGsnB,QAAY,GAA E,qBAAoB,SAASqB,GAAL,KAAKA,aAAcC,IAAa,MAAMD,KAAmrB,QAAY,GAAE,qBAAqBuB,IAAuDvC,EA AgB,QAAE,WAAW,MAAM,+BAAsCa,GAAsC,oBAANgC,OAAmBzB,EAAM,SAAoB0B,GAAG,OAAOD,KAA KC,KAAIxB,EAAW,SAAoBwB,GAAG,IAAIC,EAak,MAAuB,mBAAbC,WAAgC,IAAIvB,WAAWkvB,WAA WF,KAA0BnnB,EAAqB,iBAA3ConB,EAakF,KAAKC,EAAE,YAAgDC,IAA4B,oBAAZE,YAAoCA,WAA2J,o

BAARE,QAAyC,oBAAVV,UAAxBA,QAAQ,IAAGA,QAAQW,IAAID,MAAMV,QAAQY,KAAKZ,QAAQC,MAAwB,oBAAXY,SAAuBA,SAASH,SAAEzC,GAAoBC,KAA0BA,EAAuBc,EAAGb8B,KAAKC,SAASC,KAA+B,oBAAX3E,UAAwBA,SAASC,gBA Ae0C,EAAGb3C,SAASC,cAAcC,KAAOJ,IAAY6C,EAAGb7C,GAAoD6C,EA AH,IAAnCA,EAAGBiC,QAAQ,SAA8BjC,EAAGBkC,OAAO,EAAEIC,EAAGBmC,YAAY,KAAK,GAAwB,GA AIxC,EAAM,SAASyC,GA AK,IAAIC,EAAI,IAAIC,eAAwD,OAAzCD,EAAIE,KAAK,MAAMH,GA AI,GAAOC,EA AIG,KAAK,MAAAH,EAAII,cAAiBvD,IAAuBW,EA AW,SAASuC,GA AK,IAAIC,EAAI,IAAIC,eAAuF,OAAxED ,EAAIE,KAAK,MAAMH,GA AI,GAAOC,EAAIK,aAAa,cAAcL,EAAIG,KAAK,MAAA,IAAI nWB,WAAWgwB,E AAIM,YAAW/C,EAAU,SAASwC,EAAIQ,EAAOC,GAAS,IAAIR,EAAI,IAAIC,eAAeD,EAAIE,KAAK,MAAMH ,GA AI,GAAOC,EAAIK,aAAa,cAAcL,EAAIO,OAAO,WAA0B,KAAZP,EAAItD,QAAyB,GAAZsD,EAAItD,QA AWsD,EAAIM,SAAUC,EAAOP,EAAIM,UAAiBE,KAAWR,EAAIQ,QAAQA,EAAQR,EAAIG,KAAK,QAAkE,IA AiYQ,EAAkMrF,EAA/jB1rB,EAAIssB,EAAc,OAAGyC,QAAQW,IAAIsB,KAAKjC,SAAakC,EAAI3E,EAAiB, UAAGyC,QAAQY,KAAKqB,KAAKjC,SAAS,IAAIrC,KAAOC,EAAoBA,EAAGBC,eAAeF,KAA MJ,EAAOI,GA AKC,EAAGBD,IAAMC,EAAGB,KAAQL,EA AkB,WAAaA,EA AkB,UAKA,EAAoB,aAAcA,EAAoB,YAAKA,EA Aa,MAAQA,EAAa,KAAoBA,EAAMB,aAAEyE,EA AWzE,EAAMB,YAAoBA,EAAsB,cAAgC,iBAAd1B,aAAw BiE,GAAM,mCAAkD,IAAI0C,GAAM,EAAGqB,SAASpB,EAAOic,EAAUiN,GA AUjN,GAAW2K,GAAM,qBAA qBsC,GAAO,SAASK,EAASC,GAAO,IAAIC,EA AKpF,EAAO,IAAI mF,GAAuF,OAAhFxpB,EAAOypB,EAAK,g CAAGCD,EAAM,8BAAqCC,EA AK,SAASC,EAAMF,EAAMG,EAAWC,EAASzzB,EAAK0zB,GAAM,IAAIC,EA AI,CAACC,OAAS,SAASC,GA AK,IAAIxD,EAAI,EAAE,GAA GwD,MAAAA,GAAMC,IAANA,EAAQ,CAAC,IAA IC,EAAoB,GAAfD,EAAIvyB,QAAQ,GAAyByyB,EAAaF,EAAjCxD,EAAI2D,GAAWF,GAA0BA,GA AK,OA AOzD,GAAK4D,MAAQ,SAASC,GA AK,IAAI7D,EAAI2D,GAAWE,EAAI5yB,QAAoC,OAA5B6yB,EAAMBD,E AAI7D,GAA YA,IAAsJiD,EA AKF,EAASC,GAAWe,EAAM,GAAOC,EAAM,EAAE,GAAGr0B,EAAM,IAAI,IA AIyD,EAAE,EAAEA,EAAEzD,EAAKsB,OAAOmC,IAAI,CAAC,IAAI6wB,EAAUX,EAAIF,EAAShwB,IAAO6 wB,GAAsB,IAARD,IAAUA,EAAME,MAAYH,EAAM3wB,GAAG6wB,EAAUt0B,EAAKyD,KAAS2wB,EAAM 3wB,GAAGzD,EAAKyD,GA AK,IAAI4sB,EAAIiD,EAAKkB,MAAM,KAAKJ,GAAoE,OAA7D/D,EAArY,SAA4 BA,GA AK,MAAGB,WAAbmD,EAA6BiB,EAAapE,GAAqB,YAAbmD,EAA8BkB,QAAQrE,GAA YA,EAAiQsE, CAAMbtE,GAAGB,IAARgE,GAAUO,GAAaP,GAAcH,EAAI,SAASvWB,EAAMuzB,EAAMG,EAAWC,EAASC ,GAA4B,IAAI mB,GAAI1BpB,EAASA,GAAU,IAA4BlWB,OAAM,SAASqP,GAAM,MAAc,WAA PA,KAAuD,MA AT,WAAb4gB,GAAqCqB,IAAcnB,EAAaN,EAASC,GAAc,WAAW,OAAOE,EAAMF,EAAMG,EAAWC,EAASq B,YAAiB,IAAgzD5yB,EAAOsrB,EAAMIO,EAAsBqO,EAA/0DmsB,EAAiC,oBAAdC,YAA0B,IAAIA,YAAY,aA AQ5sB,EAAU,SAAS4H,EA AkBC,EA AKtoB,EAAIuoB,GAA6D,IAA7C,IAAIC,EAAOxoB,EAAIuoB,EAAMB+k B,EAAOttC,EAAUsoB,EAAKglB,MAAWA,GAAQ9kB,MAAU8kB,EAAO,GAAGA,EAAOttC,EAAI,IAAIsoB,E AAK9oB,UAAU4tC,EAAa,OAAOA,EAAYG,OAAOj1B,EAAK9oB,SAASQ,EAAIstC,IAAYB,IAAX,IAAI nMB,EA AI,GAASnnB,EAAIstC,GAAO,CAAC,IAAI7kB,EAAGH,EA AKtoB,KAAO,GAAQ,IAAHyoB,EAAL,CAAoD,IAA IC,EAAe,GA AZJ,EA AKtoB,KAAU,GAAa,MAAN,IAAHyoB,GAAJ,CAAMe,IAAIE,EAAe,GA AZL,EA AKto B,KAAmG,IAAvEyoB,EAAL,MAAN,IAAHA,IAAQB,GAAHA,IAAQ,GAAGC,GA AI,EAAEC,GAAe,EA AHF,IA AO,GAAGC,GA AI,GAAGC,GA AI,EAAc,GA AZL,EA AKtoB,MAAGB,MAAOmnB,GA AKyB,OAAOC,aAAaJ,O AAQ,CAAC,IAAIK,EAAGL,EAAG,MAAMtB,GA AKyB,OAAOC,aAAa,MAAMC,GA AI,GAAG,MAAS,KAAH A,SAA3Q3B,GA AKyB,OAAOC,cAAiB,GAAHJ,IAAQ,EAAEC,QAAIHvB,GA AKyB,OAAOC,aAAaJ,GAA2U,O AAOtB,EAAI,SAASY,EAAAgB,EAAIR,GAAGB,OAAOQ,EAAIV,EAAkBzV,EAAOmW,EAAIR,GAAGB,GAAG ,SAASS,EAAk7B,EAAImB,EAAKW,EAAOC,GAAiB,KAAKA,EAAGB,GAAG,OAAO,EAA0D,IAAxD,IAAIC, EAASF,EAAWT,EAAOS,EAAOC,EAAGB,EAAUnyB,EAAE,EAAEA,EAAEowB,EAAIvyB,SAASmC,EAAE,C AAC,IAAIqyB,EAAEjC,EAAIkC,WAAWtyB,GAAoF,GAA9EqyB,GAAG,OAAOA,GAAG,QAAkCA,EAAE,QA AU,KAAFA,IAAS,IAAO,KAA9CjC,EAAIkC,aAAatyB,IAAQcQyB,GAAG,IAAI,CAAC,GAAGH,GAAQT,EAA O,MAAMF,EAAKW,KAAUG,OAAO,GAAGA,GAAG,KAAK,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF ,EAAKW,KAAU,IAAIG,GAAG,EAAEd,EAAKW,KAAU,IAAM,GAAFG,OAAU,GAAGA,GAAG,MAAM,CAA C,GAAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,GAAG,GAAGd,EAAKW,KAAU,IAAIG,G AAG,EAAE,GAAGd,EAAKW,KAAU,IAAM,GAAFG,MAAS,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF, EAAKW,KAAU,IAAIG,GAAG,GAAGd,EAAKW,KAAU,IAAIG,GAAG,GAAG,GAAGd,EAAKW,KAAU,IAAI

G,GAAG,EAAE,GAAGd,EAAKW,KAAU,IAAM,GAAFG,GAAqB,OAAfd,EAAKW,GAAQ,EAASA,EAAOE,E
AAS,SAAS9B,EAAaF,EAAImC,EAAOJ,GAAiB,OAAOF,EAakB7B,EAAIvU,EAAO0W,EAAOJ,GAAiB,SAAS
zB,EAAmBF,EAAM/xB,GAAQsrB,EAAMnpB,IAAI4vB,EAAM/xB,GAAQ,SAASg0B,EAAQ3zB,EAAE4zB,GA
AkD,OAArC5zB,EAAE4zB,EAAS,IAAG5zB,GAAG4zB,EAAS5zB,EAAE4zB,GAAgB5zB,EAAwE,SAASgrB,E
AA2B6I,GAAKI0B,EAAOk0B,EAAIII,EAAC,MAAEV,EAAM,IAAI6I,UAAUD,GAAKII,EAAe,OAAS,IAAIoI,W
AAWF,GAAKII,EAAe,OAAEP,EAAO,IAAIrB,WAAWm0B,GAAKII,EAAe,OAAE5O,EAAO,IAAItd,WAAW0
0B,GAAKII,EAAgB,QAAU,IAAIqI,YAAYH,GAAKII,EAAgB,QAAU,IAAIsl,YAAYJ,GAAKII,EAAgB,QAAU,I
AAIuI,aAAaL,GAAKII,EAAgB,QAAU,IAAIwI,aAAaN,GAAWbII,EAAuB,eAA1C,IAA0DyI,EAACo,EAAa,GAA
OC,EAAW,GAAOC,EAAW,GAAOC,EAAC,GAAYf,SAASC,IAAS,GAAgPj,EAAe,OAA8E,IAA/C,mBAAIbA,E
AAe,SAACa,EAAe,OAAE,CAACA,EAAe,SAASA,EAAe,OAAE5sB,QAAQi2B,EAAYrJ,EAAe,OAAEsJ,SAAU
C,GAAqBP,GAAC,SAASQ,IAAScD,GAAqBN,GAAY,SAASQ,IAAUF,GAAqBL,GAAY,SAASQ,IAAU,GAAG1
J,EAAgB,QAAiF,IAAJD,mBAAAnBA,EAAgB,UAAcA,EAAgB,QAAE,CAACA,EAAgB,UASA,EAAgB,QAAE5
sB,QAAQu2B,EAAa3J,EAAgB,QAAEsJ,SAAUC,GAAqBJ,GAAe,SAASE,EAAYO,GAAlZ,EAAaa,QAAQD,GA
AI,SAASD,EAAaC,GAAlT,EAACU,QAAQD,GAA9tBX,EAAWtyB,KAAK,CAACyuB,KAAK,WAAW0E,QAAis
B,IAAIC,EAAgB,EAAoCC,EAASb,KAAK,SAASC,GAAiB13B,GAAIq3B,IAAQb/J,EAA+B,wBAAGA,EAA+B,u
BAAE+J,GAakB,SAASG,GAAoBn3B,GAA6G,GAazGg3B,IAAQb/J,EAA+B,wBAAGA,EAA+B,uBAAE+J,GA
AqC,GAAjBA,GAAqHC,EAASb,CAAC,IAAIG,EAASH,EAASbA,EAASb,KAAKG,KAAuE,SAAS5H,GAAM6H
,GAASpK,EAAgB,SAAGA,EAAgB,QAAEoK,GAAezF,EAATyF,GAAM,IAAanF,GAAM,EAAkBMf,EAAK,SA
ASA,EAAK,+CAA+C,IAAIvS,EAAE,IAAIyG,YAAY+L,aAAaD,GAA4B,MAAtBrK,EAAMbII,GAASA,EAAE,S
AASyS,GAAU3E,EAAI4E,GAAQ,OAAOnD,OAAOoD,UAAUC,WAAW9E,EAAI8E,WAAWF,GAA8B,IAAtB5
E,EAAIjC,QAAQ6G,GAAAtZvK,EAAwB,gBAAE,GAAGA,EAAwB,gBAAE,GAA2W,IAAI0K,GAAC,wCAAwC,
SAASC,GAAU3I,GAAU,OAAOsI,GAAUtI,EAAS0I,IAAe,IAAIE,GAAC,UAAU,SAASC,GAAU7I,GAAU,OAAO
sI,GAAUtI,EAAS4I,IAAe,IAAIE,GAAe,yBAaK,G,SAASC,GAAUC,GAAM,IAAI,GAAGA,GAAMF,IAAgBrG,E
AAY,OAAO,IAAI3wB,WAAW2wB,GAAY,GAAGnD,EAAY,OAAOA,EAAW0J,GAAW,KAAK,kDAAMd,MA
AMrG,GAAKpC,GAAMoC,IAAM,SAASgG,KAAmB,IAAIxG,IAAa/D,GAAoBC,GAAuB,CAAC,GAakB,mBAA
RuK,QAAqBL,GAAUC,IAAiB,OAAOI,MAAMJ,GAAe,CAACK,YAAY,gBAAGBC,MAAK,SAAShH,GAAU,IA
AIA,EAAa,GAAG,KAAK,uCAAuC0G,GAAe,IAAI,OAAO1G,EAASb,iBAAMiH,OAAM,WAAW,OAAON,GAA
UD,OAAuB,GAAGzJ,EAAW,OAAO,IAAIpB,SAAQ,SAASC,EAAQC,GAAQkB,EAAUyJ,IAAe,SAAS1G,GAA
UIE,EAAQ,IAAIpsB,WAAWswB,MAAYjE,MAAY,OAAOF,QAAQC,UAAUkL,MAAK,WAAW,OAAOL,GAA
UD,OAAkB,SAASQ,KAAa,IAAIC,EAAK,CAACt5B,EAAIu5B,IAAe,SAASC,EAAgBC,EAASC,GAAQ,IAAIC,
EAAQF,EAASE,QAAQ5L,EAAY,IAAE4L,EAAScV,M,GAA9BD,EAAWY,EAAY,IAAK,GAAwChsB,QAAQy0B
,EAAUzI,EAAY,IAAK,EAAEK,KAA6E,SAASgC,EAA0BC,GAAQV,EAAgBU,EAAiB,UAAAG,SAASC,EAAuB
C,GAAU,OAAOpB,KAAmBG,MAAK,SAASnJ,GAAQ,OAAO3D,YAAYgO,YAAYrK,EAAOsJ,MAAQH,KAAK
iB,GAAS,SAASE,GAAQ5H,EAAI,0CAA0C4H,GAAQhK,GAAMgK,MAAomB,GAA37tC,KAA87BjK,EAAw
B,gBAAG,IAAgE,OAahDA,EAAwB,gBAAEuL,EAAKE,GAAGC,MAAM5T,GAAGe,OAA7D8M,EAAI,sDAAS
D9M,IAAU,EAAoD,OAAxyB4M,GAASd,mBAAAnCnG,YAAYkO,sBAAoC7B,GAAUG,KAAkBD,GAAUC,KAA
gC,mBAARI,MAASyKb,EAAuBF,GAAlYhB,MAAMJ,GAAe,CAACK,YAAY,gBAAGBC,MAAK,SAAShH,GA
AqE,OAahD9F,YAAYkO,qBAaQbPl,EAASmH,GAAoBH,KAAKc,GAA0B,SAASK,GAAUG,OAA/F5H,EAAI,k
CAAKc4H,GAAQ5H,EAAI,6CAAoDyH,EAAuBF,UAAkTb,MAAMtL,GAA0B,GAAG,SAASwJ,GAAqB0D,GA
AW,KAAAMA,EAAU75B,OAAO,GAAG,CAAC,IAAI+2B,EAAS8C,EAAU3D,QAAQ,GAAoB,mBAAV,a,EAAV,
CAA0D,IAAI/E,EAAK+E,EAAS/E,KAAASb,iBAAPA,OAAmCnG,IAAfkL,EAAS+C,IAAiBzE,EAAU51B,IAAIuy
B,EAAAdqD,GAA2BA,EAAU51B,IAAIuyB,EAAAdqD,CAAoB0B,EAAS+C,KAAW9H,OAAoBnG,IAAfkL,EAAS
+C,IAAgB,KAAK/C,EAAS+C,UAAxN/C,EAASnK,IAASn,SAASyA,KAAIY,KAAQ,SAASkZ,GAAuBC,EAAK
1c,EAAI2c,GAAKvqB,EAAOwqB,WAAWF,EAAK1c,EAAIA,EAAI2c,GAAK,SAASgB,KAA4B,OAAOvrB,EA
AOhe,OAAO,SAASwpC,GAA0Bp/B,GAAM,IAAQg,OAAjG4hB,EAAWyd,KAAKr/B,EAAKxJ,EAAO+0B,WA
AW,QAAQ,IAAI1J,EAA2BD,EAAWprB,QAAe,EAAE,MAAM6jB,KAAK,SAASiB,GAAwBC,GAAe,IAAIC,EA
AQL,KAAgCM,EAAY,WAAW,GAAGF,EAACe,EAAa,OAAO,EAAM,IAAI,IAAIC,EAAQ,EAAEA,GAAS,EAA
EA,GAAS,EAAE,CAAC,IAAIC,EAAkBH,GAAS,EAAE,GAAGE,GAA6N,GAAPNC,EAAkBgC,KAAKigC,IAA

ID,EAakBJ,EAac,WAAshH,GAA/Fz/B,KAAKigC,IAAIH,EAAYjV,EAAQ7qB,KAAKC,IAAI2/B,EAacI,GAA
mB,SAA2E,OAAO,EAAM,OAAO,EAahgHxS,GAAUG,MAAiBA,GAAepJ,EAawoJ,KAAi9G,IAAI2c,GAAS,C
AACC,SAAS,GAAGR,E,QAAQ,CAAC,KAAK,GAAG,IAAIse,UAAU,SAASC,EAAOC,GAAM,IAAI7zC,EAAOy
zC,GAASpE,QAAQuE,GAakB,IAAPC,GAaiB,KAAPA,IAAQb,IAATD,EAAWl0C,EAAlIxB,GAakKc,EAakB
7yB,EAAO,IAAIA,EAAOZ,OAAO,GAAOY,EAAO2C,KAAKxK,IAAQ/H,aAAQ7gB,EAAUpsB,IAAI,WAAqE,
OAAID40C,GAAS3H,SAAS,EAAUrgB,EAAOgoB,GAAS3H,QAAQ,GAAG,IAAegI,OAAO,SAASvgB,GAA+B,
OAAIbhB,EAagB,IAAiBwgB,MAAM,SAASC,EAAIC,GAAM,OAAOD,IAAM,SAASE,GAAUC,GAAI,OAAO,
EAAE,SAASC,GAASD,EAAGE,EAAWC,EAAYC,EAAOC,IAAY,SAASC,GAAUN,EAAGO,EAAIC,EAAOC,G
AAgB,IAAV,IAAIjN,EAai,EAAUpmC,EAAE,EAAEA,EAAEozC,EAAOpzC,IAAI,CAA2D,IAA1D,IAAIgyB,E
AAI9H,EAAOipB,EAAM,EAafnzC,GAak,GAAOqwB,EAAlnG,EAAOipB,GAAO,EAafnzC,EAai,IAAI,GAA
WsB,EAAE,EAAEA,EAAE+uB,EAai/uB,IAAK4wC,GAASE,UAAUQ,EAAG/2B,EAAOmW,EAai1wB,IAAI8k
C,GAak/V,EAawB,OAApBnG,EAAOmpB,GAAM,GAAGjN,EAaw,EAAE,SAASkO,KAAkB,OAAO,EAAE,S
AASW,KAAgB,OAAO,GAAG,SAAStQ,GAAS7vB,GAA4C,OAArCoV,EAAO0a,MAAQb,GAAG9vB,EAAaA,E
AAM,SAASogC,GAASrI,GAAM,OAAOA,GAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAS8B,OAAOnF,OA
AkB,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,GA
AG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KA
AK,IAAI,KAAK,IAAI,KAAK,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,K
AAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GA
AG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,O
AAO,OAAO,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,
KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAA
K,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,
IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,
GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,EAAE,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KA
AK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KA
AK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,OAAO,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG
,KAAK,GAAG,KAAK,EAAE,OAAO,KAAK,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAA
K,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,WAAW,KAAK,GAAG,KAAK,EAAE,OAAO,MAAM,KAAK,G
AAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,KAAK,KAAK,EAAE,OAAO,QAAQ,
KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OA
AO,MAAM,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,
OAAO,IAAI,KAAK,EAAE,OAAO,IAAI,KAAK,IAAI,OAAO,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,EAA
E,OAAO,GAAG,KAAK,EAAE,OAAO,EAAE,KAAK,GAAG,OAAO,EAAE,KAAK,GAai,MAASB,iBAAZjB,W
AA4BA,UAA+B,qBAAY,EAagB,OAAb9B,GAAS,KAAW,EAAE,IAA0zXwQ,GAAtzXlf,GAac,CAACv5B,EA
AIwoC,GAAOvC,EAaiuD,GAAuB5jB,EAaiiB,GAAwBha,EAaiolB,GAAU0C,EAaixC,GAASI2C,EAaiu2C,G
AAU3J,EAai+K,GAAGbM,EAaiR,GAacj1C,EAaiK1C,IAAmC3gB,IAAjBwB,KAAoCtL,EAa2B,mBAAE,W
AAW,OAAO8J,GAAMb9J,EAa2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,aAAg6VuT,IAA14Vna,
EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyC5G,EAaiC,yB
AAE,WAAW,OAAgCA,EAaiC,yBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAmC5G,EAa2B,mBAA
E,WAAW,OAA0BA,EAa2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAiC5G,EAAYB,iBAAE,W
AAW,OAAwBA,EAAYB,iBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAASB,cAAE,WAAW,
OAAqBA,EAASB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgB
A,EAaiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,
KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,E
AAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAA
K,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGs
G,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,
KAAKM,YAAwB5G,EAagB,QAAE,WAAW,OAAeA,EAagB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAK

M,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAAW,OAAsBA,EAAuB,eAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuC5G,EAA+B,uBAAE,WAAW,OAA8BA,EAA+B,uBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAAW,OAAsBA,EAAuB,eAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAgC5G,EAAwB,gBAAE,WAAW,OAAuBA,EAAwB,gBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsC5G,EAA8B,sBAAE,WAAW,OAA6BA,EAA8B,sBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA4B5G,EAAoB,YAAE,WAAW,OAAmBA,EAAoB,YAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAAwB,gBAAE,WAAW,OAAuBA,EAAwB,gBAAEA,EAAY,IAAM,IA

AGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,M
AAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,OAAyBA,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAA
M,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,
YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,
EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAA
kB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAA
E,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW
,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,
EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAc,MA
AEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAgB,QAAEA,E
AAY,IAAM,IAAGsG,MAAM,KAAKM,YAAmC5G,EAA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EA
AY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAc,MAAEA,EAAY,IAAM,I
AAGsG,MAAM,KAAKM,YAA8B5G,EAAcB,cAAE,WAAW,OAAqBA,EAAcB,cAAEA,EAAY,IAAM,IAAGsG,
MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KA
AKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA
qB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAA
c,MAAE,WAAW,OAAaA,EAAc,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,W
AAW,OAAaA,EAAc,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAA
aA,EAAc,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EA
AmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAm
B,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAcB,cAAE,WAAW,OAAqBA,EAAcB,cAA
EA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAgB,QAAEA,EA
AY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAc,MAAEA,EAAY,IAAM,I
AAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,OAAOma,GAakBna,EAA0B,kBAAEA,EAAY,I
AAM,IAAGsG,MAAM,KAAKM,aAAgBP,GAAUrG,EAakB,UAAE,WAAW,OAAOqG,GAAUrG,EAakB,UAA
EA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBF,GAAa1G,EAAqB,aAAE,WAAW,OAAO0G,GAAa1G,EA
AqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBd,GAAW9F,EAAmB,WAAE,WAAW,OAAO8F,
GAAW9F,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgD,SAAStE,GAAW9B,GAAQ4qB,
KAAKhJ,KAAK,aAAagJ,KAAKtS,QAAQ,gCAAgCtY,EAAO,IAAI4qB,KAAK5qB,OAAOA,EAAqH,SAAS6qB,
GAAIv5C,GAA+F,SAASw5C,IAAWZ,KAAiBA,IAAU,EAAK1qB,EAakB,WAAE,EAAQiF,IAAauE,IAAcC,IA
AU3J,EAAoBE,GAAWA,EAA6B,sBAAEA,EAA6B,uBAAI0J,MAApRK,EAAGB,IAAUUX,IAAYW,EAAGB,IAA2
O/J,EAakB,WAAGA,EAakB,UAAE,cAAc8M,YAAW,WAAWA,YAAW,WAAW9M,EAakB,UAAE,MAAK,G
AAGsrB,MAAS,IAAQA,MAA2B,GAAxwBtrB,EAAc,MAAEpuB,EAakJo4B,EAAcB,SAASyH,IAAgBf,IAAU
W,KAAUX,KAAU1gB,EAAcByhB,IAAifzrB,EAAY,IAAEqrB,GAAOrB,EAAGB,QAAiF,IAAjD,mBAAnBA,EA
AgB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UAAASA,EAAGB,QAAE5sB,OAAO,GAAG4sB,EAAGB,QAAEkX,
KAAIBIX,GAGx14B,OAHM34BqrB,KAG524BM,EAakBD,QAKzB/f,UAAiBggB,oBC4BjB,WAAmBh6C,GAAn
B,MACEq6C,0BADiBC,OAAAt6C,EAHXs6C,mBAAmB,EAKzBA,EAakT6C,KAAKu6C,KAAKC,qBAAqBC,I
ACpCC,GAAqBJ,EAakT6C,KAAKu6C,KAAKI,kBACpCL,EAakr5C,UAAy,IAAI25C,cAAyN,EAAMO,cAkK
3C,mIA3KiCC,MAY/BC,kBAAA,SAAMhuC,EAAoCvL,EAAiBd,GAEdZ,IAAMS,EAAS,CAACC,GAAIq4C,KA
AKuB,oBAEzB,OADAvB,KAAKwB,KAAK95C,EAAQ4L,EAAQvL,EAAOd,EAAO,GACjCS,GAGT45C,uBAA
A,WACE,OAAOtB,KAAKx4C,UAAUi6C,cAGIBH,iBAAN,SAAW5pB,8EAIT,OAHMxO,EAAQ/f,OAAK8kC,M
ACnBvW,OAEO,CAACgqB,SADsv4C,OAAK8kC,MAAQ/kB,WAIhCo4B,iBAAA,SACI55C,EAAGB4L,EAAoC
vL,EACpDd,EAAiB06C,GACnB,IAAMh6C,EAakq4C,KAAKuB,mBACHb,GAAC,WAAVt6C,EAaj,CAQA,IA
AMmL,EAAOjJ,OAAKC,cAAcrB,GAC1B65C,EAAWxvC,EAAOjJ,OAAK04C,gBAAGB56C,GACvC66C,EAAe
9B,KAAKz5C,KAAK6kC,QAAQwW,GAEvC5B,KAAKx4C,UAAUuD,IAAIrD,EAAG,CAACC,KAAIm6C,eAAc
/5C,QAAOd,QAAO06C,aAE5D3B,KAAKz5C,KAAKu6C,KAAKiB,eAAep6C,EAAIyK,EAAM0vC,GAElB,MA
AVxuC,GACF0sC,KAAKz5C,KAAKyf,OAAOjb,IACb,IAAIrC,WACC4K,EAAMc1K,OACnC0K,EAAMC0uC,
WAAyJ,GACpDE,OArBN,CACE,IAAMluC,EAACn,EACpB0sC,KAAKx4C,UAAUuD,IACXrD,EACA,CAACC,

KAAIiM,cAAa7L,QAAOd,QAAO66C,aAAc,KAAMH,eAqBtDL,iBAAN,SAAW55C,wEACT,SAAOs4C,KAAKts
C,SAAShM,WAGvB45C,qBAAA,SAAS55C,GACD,IAAA0D,wBAAC02C,iBAAc76C,UAAOc,UAAO6L,gBAEn
C,MAAc,WAAV3M,EACK2M,EAsQb,SACIhL,EAaQb3B,GACvB,OAAQA,GACN,IAAK,UACH,OAAO,IAAIk
2B,aAAav0B,GAC1B,IAAK,QACH,OAAO,IAAID,WAAWC,GACx4C,IAAK,OACH,OAAO,IAAIF,WAAWE,GA
Cx4B,QACE,MAAM,IAAI1B,MAAM,iBAAiBD,IA3Q5Bg7C,CAHOjC,KAAKz5C,KAAKyf,OAAO1X,MAC3Bw
zC,EACAA,EAAe34C,OAAKC,cAAcrB,GAASoB,OAAK04C,gBAAgB56C,IACIC2B,OAAQ3B,IAS5Cq6C,wBA
AA,SAAY55C,EAAgBw6C,GAC1B,gBAD0BA,MACtBIC,KAAKx4C,UAAU26C,IAAIz6C,GAAS,CAC9B,IAA
MiwB,EAAOqoB,KAAKx4C,UAAUC,IAAIC,GAehC,GADaiwB,EAAKqgB,YACAO,GAASvqB,EAAKqgB,SA
AW,EAC5B,OAAO,EAGT3B,KAAKz5C,KAAK8f,MAAMsR,EAAKmqB,cACrB9B,KAAKz5C,KAAKu6C,KAA
Khzc,YAAY6pB,EAAKhWb,IACHCq4C,KAAKx4C,UAAU46C,OAAO16C,GAExB,OAAO,GAIT45C,qBAAA,S
AAS55C,GACP,OAAIs4C,KAAKx4C,UAAU26C,IAAIz6C,GACFs4C,KAAKx4C,UAAUC,IAAIC,GACpBi6C,S
AEb,GAGTL,mBAAA,SAAO55C,GACL,IAAMiwB,EAAOqoB,KAAKx4C,UAAUC,IAAIC,GACpB,MAARiwB,
GACFA,EAAKqgB,YAITL,2BAAA,WACE,OAAO,IAKTA,4BAAA,SAAgB55C,GACd,OAAOs4C,KAAKx4C,U
AAUC,IAAIC,GAAQo6C,cAGpCR,oBAAA,WACeTb,KAAKz5C,KAAKu6C,KAAKuB,UACX,YAAArC,KAAKz
5C,MACpBy5C,KAAKz5C,KAAKm6B,QAAQ2L,sBAEpB2T,KAAKz5C,KAAO,MAGd+6C,mBAAA,WACE,M
AAO,CAACgB,YAAY,IAStBhB,uBAAA,SAAWv5C,EAAiBd,EAAiB66C,GAE3C,IAAIp6C,EACJ,GAAoB,MA
AhBo6C,EACFp6C,EAASs4C,KAAKuC,MAAM,KAAmBx6C,EAAOd,OACzC,CACL,IAAMU,EAAKq4C,KAA
KuB,mBACHB75C,EAAS,CAACC,MACVq4C,KAAKx4C,UAAUuD,IAAIrD,EAAQ,CAACC,KAAIm6C,eAAc/5
C,QAAOd,QAAO06C,SAAU,IACtE,IAAMvvC,EAAOjJ,OAAKC,cAAcrB,GACHCi4C,KAAKz5C,KAAKu6C,K
AAKiB,eAAep6C,EAAIyK,EAAM0vC,GAE1C,MAAO,CAACp6C,SAAQK,QAAOd,UAGzBq6C,+BAAA,SAAm
BI2C,OAACrD,UAAOd,UAAOS,WAE1BkB,EAASo3C,KAAKz5C,KAAKyf,OAAOpd,OACzBk5C,qCACD1vC,
EAAOjJ,OAAKC,cAAcrB,GACHC,OAAQd,GACN,IAAK,UACH,OAAO,IAAIk2B,aAAav0B,EAAQk5C,EAAc1v
C,GACHd,IAAK,QACH,OAAO,IAAIzJ,WAAWC,EAAQk5C,EAAc1vC,GAC9C,IAAK,OACH,OAAO,IAAI1J,W
AAWE,EAAQk5C,EAAc1vC,GAC9C,QACE,MAAM,IAAIIL,MAAM,iBAAiBD,QAxKRu7C,iBAsMjC,SAASC,
GACLC,EAAwBC,EACxBC,GACF,GAAGB,MAAZC,GAGF,OAAOA,GAGT,IAAItsB,EAAuB,yBAO3B,OANIm
sB,GAAiBC,EACnBpsB,EAAO,uCACEmS,IACtNsB,EAAO,+BAGU,MAAfusB,IACuB,MAArBA,GAAyvsB,G
ACpusB,GAAyvsB,GAIhBqsB,EAAMbrsB,WAUNwsB,2GACsB,SAAMluB,QAAQmuB,IAAI,CAC1DhwB,QA
AMiwB,SAAS,yBACfjwB,QAAMiwB,SAAS,0CAGjB,OALM73C,EAAoCuC,SAAnC+0C,OAAeC,UAKf,IAAI9t
B,SAAQ,SAACC,EAASC,GAC3B,IAAMmuB,EAAMC,CAOzC5sB,WAA2B,SAACC,EAAM4I,GACHC,GAAI5I,
EAAK4sB,SAAS,cAAe,CAC/B,IACMC,EAAO,IAAIC,KAAK,CC9RI,mkGD8RQ,CAAC/pC,KAAM,2BACzC,O
AAOgqC,IAAIC,gBAAgBH,GAG7B,OAAI7sB,EAAK4sB,SAAS,SACTV,GACHC,EAA0BC,EACR,MAAIba,G
AAyBA,GAAiBrkB,GAezCA,EAAS5I,IAMdkB,KACFP,EAAcQ,gBA1FpB,SAAMcntB,GAIjC,OAAO,SAACot
B,EAAc5kB,GAWpB,OAVA51B,OAAK22B,MAAMvJ,EAAM,CAACwJ,YAAa,gBAAgBC,MAAK,SAACHH,G
AC9CA,EAAa,IACHB2qB,EAAQ3wB,IAAIinsB,EAAE,uCAAUc0vB,OAEvDyC,EAAS4qB,cAAc5jB,MAAK,SA
AAnJ,GAC1B3D,YAAYgO,YAAYrK,EAAQ8sB,GAAS3jB,MAAK,SAAAE,GAC5ChC,EAASgC,EAAOT,SAAU
S,EAAOR,iBAIhC,IA4EDsjB,CAA0BpB,GACtBC,EAA0BC,EACR,MAAIba,GAAyBA,GAAiB,MAGpD,IAKBIj
9C,EAIBau9C,GAAc,EACIBZ,EAAca,QAAU,WACtB,IAAID,IAIAE,GAAJ,CAKAA,IAAc,EAIjvB,EAAO,CA
AC2Y,QAFJ,sMAOFiV,GAAoBD,GAA6B,MAAZG,IACvCK,EAAce,oBAAsB,IAAIZ,KACpC,CAAC,uCACaa,
GAAwBC,YACzB,CAAC7qC,KAAM,oBACX/S,EAAO29C,GAAwBhB,IAG/B38C,EAAO69C,GAAyIB,GAKrB
38C,EAAKy5B,MAAK,SAACO,GACTujB,GAAc,EACdE,IAAc,EAI dzjB,EAAOugB,KAAO,CACZiC,KAAmxiB
,EAAO/5B,MAAM,OAAQ,KAAM,IACjCu6C,qBACIxgB,EAAO/5B,MAAM,0BAA2B,KAAM,CAAC,WACnD0
6C,gBAAiB3gB,EAAO/5B,MAAM,oBAAqB,SAAU,IAC7Du7C,eAAgBxB,EAAO/5B,MACnB,kBAAMb,KACn
B,CACE,SACA,SACA,WAENsH,YAAayB,EAAO/5B,MAAM,eAdG,KAc6B,CAAC,WAC3D67C,QAAS9hB,E
AAO/5B,MAAM,UAFo,KAEoB,KAGnDsuB,EAAQ,CAACvuB,KAAMg6B,kBAmbRb,IAAM8jB,GAAKB,CACt
B,yBAA0B,8BAC1B,wCAIExB,GAAmB,KACnBW,GAAyB,KACzBV,GAAKD,GACIDkB,IAAc,EACdP,IAAc,E
AyFIB,IAAIzC,IAAgB,EACHBC,IAAsB,oBEvcV,QAAQ,kHACP,SAAM8B,aACrB,OADOX8C,EAAQ6E,iBACR,
IAAIk2C,GAAy/6C,aAHH,iDF0dpB,IAA4B,IAAxB06C,GACF,MAAM,IAAI/5C,MAAM,iCAEIB,OAAO+5C,+B
AbuBqD,GAC9BtD,GAAesD,0BArFW/tB,EAAcguB,GAIxC,gBAJwCA,MACxCC,kBACI,qGAEAR,GACF,MAA

M,IAAI98C,MACN,kiAGN27C,GAAWtsB,EACXktB,GAAcc,2BA6BZE,EACAF,GACF,gBADEA,MACEP,GAC F,MAAM,IAAI98C,MACN,mIAKN,GAA+B,iBAApBu9C,EACTjB,GAAiBiB,MACZ,CACL3B,GAAc2B,EACd,I AAMC,EACFL,GAAgBntC,QAAO,SAAA8/B,GAAQ,OAAqB,MAArB8L,GAAy9L,MAC/C,GAAI0N,EAAa18C, OAAS,EACxB,MAAM,IAAI,MACN,2DACGw9C,EAAaC,KAAK,KADrB,iKAORIB,GAAcc,kBGldA"}

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.min.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"setup_test.js","sourceRoot":"","sources":["../src/setup_test.ts"],"names":[],"mappings":"AAAA;:::;GAEg;AAEH,wDAAwD;AACxD,OAAO,uBAAuB,CAAC;AAC/B,gDAAgD;AAChD,OAAO,wEAAwE,CAAC;AAChF,iDAAiD;AACjD,OAAO,mDAAmD,CAAC;AAE3D,iDAAiD;AACjD,OAAO,EAAC,WAAW,EA AE,gBAAgB,EAAa,MAAM,yCAAYC,CAAC;AAEIG,WAAW,CAAC,CAAC,EAAC,IAAI,EAAE,WAAW,EAAE, WAAW,EAAE,MAAM,EAAE,UAAU,EAAE,IAAI,EAAC,CAAC,CAAC,CAAC;AAE1E;::GAGG;AACH,MAA M,YAAY,GAAiB;IACjC;QACE,UAAU,EAAE,SAAS;QACrB,QAAQ,EAAE;YACR,SAAS;YACT,YAAY;YACZ ,0EAA0E;YAC1E,0BAA0B,EAAE,wBAAwB;SACrD;KACF;IACD,EAAC,OAAO,EAAE,SAAS,EAAC;IACpB;Q ACE,OAAO,EAAE,KAAK;QACd,QAAQ,EAAE;YACR,UAAU;YACV,gDAAgD;SAGjD;KACF;IACD;QACE,O AAO,EAAE,MAAM;QACf,QAAQ,EAAE;YACR,UAAU;YACV,gCAAgC;YACChC,SAAS;SACV;KACF;IACD,E AAC,OAAO,EAAE,cAAc,EAAC;IACzB;QACE,OAAO,EAAE,SAAS;QACIB,QAAQ,EAAE;YACR,UAAU;YAC V,WAAW;SACZ;KACF;IACD;QACE,OAAO,EAAE,MAAM;QACf,QAAQ,EAAE;YACR,YAAY;YACZ,UAAU; YACV,mBAAmB;YACnB,kBAaKB;YACIB,0BAA0B,CAAE,oCAAoC;YACpC,aAAa;SAC1C;KACF;IACD;QA CE,OAAO,EAAE,SAAS;QACIB,QAAQ,EAAE;YACR,iBAAiB;YACjB,WAAW;YACX,mBAAmB;YACnB,cAA c;YACd,mBAAmB,CAAG,uBAAuB;SAE9C;KACF;IACD,EAAC,OAAO,EAAE,eAAe,EAAC;IAC1B;QACE,OA AO,EAAE,gBAAgB;QACzB,QAAQ,EAAE;YACR,WAAW;SACZ;KACF;IACD;QACE,OAAO,EAAE,SAAS;QA CIB,QAAQ,EAAE;YACR,mBAAmB;YACnB,UAAU;YACV,mBAAmB;YACnB,wBAAwB;YACxB,SAAS;YAC T,0BAA0B;SAE3B;KACF;IACD;QACE,OAAO,EAAE,kBAaKB;QAC3B,QAAQ,EAAE;YACR,kBAaKB;YACIB ,UAAU;YACV,MAAM;SACP;KACF;IACD;QACE,OAAO,EAAE,SAAS;QACIB,QAAQ,EAAE;YACR,kBAaKB; YACIB,UAAU;YACV,gDAAgD;YACG,WAAW;YAC9D,MAAM;YACN,yDAAYD;YACzD,sBAAsB;YACtB,iE AAiE;YACjE,kEAAkE;SACnE;KACF;IACD,EAAC,OAAO,EAAE,kBAaKB,EAAE,QAAQ,EAAE,CAAC,UAAU ,CAAC,EAAC;IACrD;QACE,OAAO,EAAE,QAAQ;QACjB,QAAQ,EAAE;YACR,UAAU;YACV,YAAY,CAAE, oBAAoB;SACnC;KACF;IACD;QACE,OAAO,EAAE,QAAQ;QACjB,QAAQ,EAAE;YACR,SAAS;YACT,sCAAs C,CAAE,4BAA4B;SACrE;KACF;IACD;QACE,OAAO,EAAE,QAAQ;QACjB,QAAQ,EAAE;YACR,UAAU,CAA E,uBAAuB;SACpC;KACF;IACD;QACE,OAAO,EAAE,UAAU;QACnB,QAAQ,EAAE;YACR,qBAAqB;YACrB, UAAU,CAAc,uBAAuB;SACd;KACF;IACD,EAAC,OAAO,EAAE,YAAY,EAAC;IACvB;QACE,OAAO,EAAE, MAAM;QACf,QAAQ,EAAE;YACR,UAAU;YACV,SAAS,CAAI,qCAAqC;SACnD;KACF;IACD;QACE,OAAO, EAAE,MAAM;QACf,QAAQ,EAAE;YACR,SAAS;YACT,UAAU;YACV,SAAS;SACV;KACF;IACD;QACE,OA AO,EAAE,MAAM;QACf,QAAQ,EAAE;YACR,SAAS;YACT,UAAU;SACX;KACF;IACD;QACE,OAAO,EAAE, MAAM;QACf,QAAQ,EAAE;YACR,UAAU;YACV,SAAS;YACT,UAAU,CAAG,gCAAgC;SAC9C;KACF;IACD; QACE,OAAO,EAAE,WAAW;QACpB,QAAQ,EAAE;YACR,UAAU,CAAE,uBAAuB;SACpC;KACF;IACD,EAA C,OAAO,EAAE,QAAQ,EAAC;IACnB,EAAC,OAAO,EAAE,eAAe,EAAC;IAC1B,EAAC,OAAO,EAAE,SAAS,E AAC;IACpB,EAAC,OAAO,EAAE,kBAaKB,EAAC;IAC7B,EAAC,OAAO,EAAE,gBAAgB,EAAC;IAC3B,EAAC ,OAAO,EAAE,SAAS,EAAC;IACpB,EAAC,OAAO,EAAE,mBAAmB,EAAC;IAC9B;QACE,UAAU,EAAE,MAA M;QACIB,QAAQ,EAAE;YACR,YAAY;YACG,eAAe;YAC9B,oDAAoD;YACG,gBAAgB;YACvE,UAAU,CAAE ,gCAAgC;SAC7C;KACF;IACD;QACE,UAAU,EAAE,MAAM;QACIB,QAAQ,EAAE;YACR,UAAU,CAAE,gCA AgC;SAC7C;KACF;IACD;QACE,OAAO,EAAE,QAAQ;QACjB,QAAQ,EAAE;YACR,SAAS;YACT,UAAU,CA AE,+BAA+B;SAC5C;KACF;IACD,EAAC,OAAO,EAAE,WAAW,EAAC;IACtB,EAAC,OAAO,EAAE,QAAQ,E AAC;IACnB,EAAC,OAAO,EAAE,OAAO,EAAC;IACIB,EAAC,OAAO,EAAE,MAAM,EAAE,QAAQ,EAAE,CA
```

AC,SAAS,EAAE,WAAW,CAAC,EAAC;IACrD;QACE,OAAO,EAAE,MAAM;QACf,QAAQ,EAAE;YACR,UAAU;YACV,iBAAiB,CAAE,gDAAGD;YAChD,qCAAqC;SACzD;KACF;IACD,EAAC,OAAO,EAAE,MAAM,EAAC;IACjB,EAAC,OAAO,EAAE,mBAAMb,EAAC;IAC9B,EAAC,OAAO,EAAE,QAAQ,EAAE,QAAQ,EAAE,CAAC,UAAU,CAAC,EAAC;IAC3C,EAAC,OAAO,EAAE,MAAM,EAAC;IACjB;QACE,OAAO,EAAE,KAAK;QACd,QAAQ,EAAE;YACR,YAAy;YACZ,UAAU;YACV,MAAM,CAAS,uBAAuB;SACvC;KACF;IACD,EAAC,OAAO,EAAE,SAAS,EAAC;IACpB;QACE,OAAO,EAAE,SAAS;QACIB,QAAQ,EAAE;YACR,UAAU;YACV,0CAA0C,CAAE,2BAA2B;YAC3B,0BAA0B;SACvE;KACF;IACD;QACE,OAAO,EAAE,SAAS;QACIB,QAAQ,EAAE;YACR,UAAU;YACV,0CAA0C,CAAE,2BAA2B;YAC3B,0BAA0B;SACvE;KACF;IACD;QACE,OAAO,EAAE,MAAM;KACb;IACD;QACE,UAAU,EAAE,QAAQ;QACpB,QAAQ,EAAE;YACR,8BAA8B;YACG,iBAAiB;YACID,8BAA8B;YAC9B,8BAA8B;YAC9B,QAAQ;SACT;KACF;IACD;QACE,OAAO,EAAE,UAAU;QACnB,QAAQ,EAAE;YACR,8BAA8B;YACG,iBAAiB;YACID,8BAA8B;YAC9B,8BAA8B;YAC9B,QAAQ;SACT;KACF;IACD;QACE,OAAO,EAAE,cAAc;QACvB,QAAQ,EAAE;YACR,UAAU;YACV,8BAA8B;YACG,iBAAiB;YACID,8BAA8B;YAC9B,8BAA8B;YAC9B,QAAQ;SACT;KACF;IACD;QACE,OAAO,EAAE,OAAO;QACb,QAAQ,EAAE;YACR,8BAA8B;YACI,iBAAiB;YACnD,8BAA8B;YAC9B,+BAA+B;YAC/B,8BAA8B;YAC9B,QAAQ;SACT;KACF;IACD;QACE,OAAO,EAAE,WAAW;QACpB,QAAQ,EAAE;YACR,UAAU;YACV,8BAA8B;YACI,iBAAiB;YACnD,8BAA8B;YAC9B,+BAA+B;YAC/B,8BAA8B;YAC9B,QAAQ;SACT;KACF;IACD;QACE,OAAO,EAAE,UAAU;QACnB,QAAQ,EAAE;YACR,8BAA8B;YACG,iBAAiB;YACID,8BAA8B;YAC9B,8BAA8B;YAC9B,QAAQ;SACT;KACF;IACD;QACE,OAAO,EAAE,OAAO;QACb,QAAQ,EAAE;YACR,QAAQ;SACT;KACF;IACD,EAAC,UAAU,EAAE,SAAS,EAAC;IACvB,EAAC,UAAU,EAAE,MAAM,EAAC;IACpB,EAAC,UAAU,EAAE,QAAQ,EAAC;IACtB;QACE,UAAU,EAAE,aAAa;QACzB,QAAQ,EAAE;YACR,8BAA8B;YACG,qBAAqB;YACtD,8BAA8B;YAC9B,8BAA8B;SAC/B;KACF;IACD;QACE,UAAU,EAAE,OAAO;QACnB,QAAQ,EAAE;YACR,UAAU;YACV,eAAe,CAAE,sCAAsC;SACxD;KACF;IACD,EAAC,UAAU,EAAE,MAAM,EAAC;IACpB;QACE,UAAU,EAAE,MAAM;QACIB,QAAQ,EAAE;YACR,UAAU;SACX;KACF;IACD;QACE,UAAU,EAAE,MAAM;QACIB,QAAQ,EAAE;YACR,UAAU,CAAE,gCAAgC;SAC7C;KACF;IACD;QACE,UAAU,EAAE,KAAK;QACjB,QAAQ,EAAE,CAAC,UAAU,CAAC,CAAE,gCAAgC;KAEzD;IACD;QACE,UAAU,EAAE,OAAO;QACnB,QAAQ,EAAE,CAAC,UAAU,CAAC,CAAE,gCAAgC;KACzD;IACD;QACE,UAAU,EAAE,QAAQ;QACpB,QAAQ,EAAE,CAAC,UAAU,CAAC,CAAE,gCAAgC;KACzD;IACD;QACE,UAAU,EAAE,QAAQ;QACpB,QAAQ,EAAE;YACR,uCAAuC;YACvC,UAAU,CAAgC,gCAAgC;SAC3E;KACF;IACD;QACE,UAAU,EAAE,WAAW;QACvB,qCAAqC;QACrC,QAAQ,EAAE,CAAC,SAAS,CAAC;KACtB;IACD;QACE,UAAU,EAAE,UAAU;QACtB,qCAAqC;QACrC,QAAQ,EAAE,CAAC,SAAS,CAAC;KACtB;IACD,EAAC,OAAO,EAAE,MAAM,EAAC;IACjB,EAAC,OAAO,EAAE,OAAO,EAAC;IACIB,EAAC,OAAO,EAAE,MAAM,EAAC;IACjB,EAAC,OAAO,EAAE,YAAy,EAAC;IACvB,EAAC,OAAO,EAAE,OAAO,EAAC;IACIB;QACE,OAAO,EAAE,OAAO;QACb,6BAA6B;QAC7B,QAAQ,EAAE,CAAC,MAAM,CAAC;KACnB;IACD,EAAC,OAAO,EAAE,aAAa,EAAC;IACxB,EAAC,OAAO,EAAE,MAAM,EAAC;IACjB,EAAC,OAAO,EAAE,WAAW,EAAC;IACtB;QACE,UAAU,EAAE,KAAK;QACjB,QAAQ,EAAE;YACR,cAAc,CAAE,yBAAyB;SAC1C;KACF;IACD;QACE,UAAU,EAAE,KAAK;QACjB,QAAQ,EAAE;YACR,cAAc,CAAE,yBAAyB;SAC1C;KACF;IACD,EAAC,OAAO,EAAE,iBAAiB,EAAC;IAC5B,EAAC,OAAO,EAAE,gBAAgB,EAAC;IAC3B,EAAC,OAAO,EAAE,gBAAgB,EAAC;CAC5B,CAAC;AAEF,MAAM,aAAa,GAAG,CAAC,QAAGB,EAAE,EAAE;IACzC,wCAAwC;IACxC,IAAI,QAAQ,CAAC,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,EAAE;QACrC,OAAO,IAAI,CAAC;KACb;IAED,0CAA0C;IAC1C,IAAI,QAAQ,CAAC,UAAU,CAAC,MAAM,CAAC,EAAE;QAC/B,OAAO,IAAI,CAAC;KACb;IAED,OAAO,KAAK,CAAC;AACf,CAAC,CAAC;AACF,gBAAgB,CAAC,YAAy,EAAE,aAAa,CAAC,CAAC;AAE9C,0CAA0C;AAC1C,gDAAGD;AACbD,8CAA8C;AAC9C,OAAO,CAAC,kCAAKc,CAAC,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language

governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\n// Import core for side effects (e.g. flag registration)\nimport '@tensorflow/tfjs-core';\n\n// tslint:disable-next-line:no-imports-from-dist\nimport '@tensorflow/tfjs-core/dist/public/chained_ops/register_all_chained_ops';\n\n// tslint:disable-next-line: no-imports-from-dist\nimport '@tensorflow/tfjs-core/dist/register_all_gradients';\n\n// tslint:disable-next-line: no-imports-from-dist\nimport { setTestEnvs, setupTestFilters, TestFilter } from\n '@tensorflow/tfjs-core/dist/jasmine_util';\n\nsetTestEnvs({ name: 'test-wasm', backendName: 'wasm', isDataSync:\n true });\n\n/**\n * Tests that have these substrings in their name will be included unless one\n * of the strings in excludes appears in the name.\n */\nconst TEST_FILTERS: TestFilter[] = [\n  {\n    startsWith: 'tensor',\n    excludes: [\n      'complex', // Complex numbers not supported yet\n      'derivative', // Gradients not yet supported.\n      'Downcasting broken, see: https://github.com/tensorflow/tfjs/issues/2590\n      'Tensor2D float32 -> bool',\n      'Tensor2D int32 -> bool'\n    ]\n  },\n  {\n    include: 'softmax',\n    {\n      include: 'pow',\n      excludes: [\n        'gradient', // zerosLike not defined yet.\n        'broadcasting same rank Tensors different shape', // Broadcasting\n        along\n          // inner dims not\n          // supported yet.\n      ]\n    },\n    {\n      include: 'add',\n      excludes: [\n        'gradient', // Gradient is missing.\n        'upcasts when dtypes dont match', // Uses the 'complex' dtype.\n        'complex', // Complex numbers not supported yet\n      ]\n    },\n    {\n      include: 'depthToSpace',\n    },\n    {\n      include: 'avgPool',\n      excludes: [\n        'gradient', // Not yet implemented.\n        'avgPool3d', // Not yet implemented.\n      ]\n    },\n    {\n      include: 'relu',\n      excludes: [\n        'derivative', // Not yet implemented.\n        'gradient', // Not yet implemented.\n        'valueAndGradients', // Not yet implemented.\n        'broadcasted bias', // Not yet implemented.\n        'fused A x B with 2d bias' // Fused matMul with 2D bias not yet\n        // supported.\n      ]\n    },\n    {\n      include: 'maxPool',\n      excludes: [\n        'maxPoolBackprop', // Not yet implemented.\n        'maxPool3d', // Not yet implemented.\n        'maxPool3dBackprop', // Not yet implemented.\n        'ignores NaNs', // Actual != expected.\n        'maxPoolWithArgmax' // Not yet implemented.\n      ]\n    },\n    {\n      include: 'cropAndResize',\n    },\n    {\n      include: 'resizeBilinear',\n      excludes: [\n        'gradients', // Not yet implemented.\n      ]\n    },\n    {\n      include: 'matmul',\n      excludes: [\n        'valueAndGradients', // Gradients not defined yet\n        'gradient', // Gradients not defined yet\n        'zero in its shape', // Zero in shapes aren't supported yet\n        'matmul followed by mul', // mul not supported yet\n        'upcasts', // Upcasting not supported yet.\n        'fused A x B with 2d bias', // Fused matMul with 2D bias not yet\n        // supported.\n      ]\n    },\n    {\n      include: 'depthwiseConv2D',\n      excludes: [\n        'broadcasted bias', // Broadcasted bias not yet supported.\n        'gradient', // Gradients not defined yet.\n        'NCHW', // xnn pack does not support channels first.\n      ]\n    },\n    {\n      include: 'conv2d',\n      excludes: [\n        'broadcasted bias', // Broadcasted bias not yet supported.\n        'gradient', // Gradients not defined yet.\n        'backProp input x=[2,3,3,1] f=[2,2,1,1] s=1 p=0', // Gradients not\n        // defined.\n        'NCHW', // xnn pack does not support channels first. // Issue:\n        https://github.com/tensorflow/tfjs/issues/3104. // Actual != expected.\n        'relu bias stride 2 x=[1,8,8,16] f=[3,3,16,1] s=[2,2] d=8 p=same',\n        'prelu bias stride 2 x=[1,8,8,16] f=[3,3,16,1] s=[2,2] d=8 p=same',\n      ]\n    },\n    {\n      include: 'conv2dTranspose',\n      excludes: ['gradient']\n    },\n    {\n      include: 'prelu',\n      excludes: [\n        'gradient', // Gradient is missing.\n        'derivative' // Missing gradient.\n      ]\n    },\n    {\n      include: 'cast',\n      excludes: [\n        'complex', // Complex numbers not yet implemented.\n        'shallow slice an input that was cast' // Slice is not implemented.\n      ]\n    },\n    {\n      include: 'gather',\n      excludes: [\n        'gradient' // Not yet implemented.\n      ]\n    },\n    {\n      include: 'sigmoid',\n      excludes: [\n        'sigmoidCrossEntropy', // Not yet implemented.\n        'gradient' // Not yet implemented.\n      ]\n    },\n    {\n      include: 'scatterND',\n    },\n    {\n      include: 'abs',\n      excludes: [\n        'gradient', // Not yet implemented.\n        'complex' // Complex numbers not supported yet.\n      ]\n    },\n    {\n      include: 'sub',\n      excludes: [\n        'complex', // Complex numbers not yet implemented.\n        'gradient', // Not yet implemented.\n        'upcasts', // Upcasting not supported yet.\n      ]\n    },\n    {\n      include: 'mul',\n      excludes: [\n        'complex', // Complex numbers not yet supported.\n        'gradient', // Gradient not defined yet.\n      ]\n    },\n    {\n      include: 'div',\n      excludes: [\n        'gradient', // Gradient not defined yet.\n        'upcasts', // Cast not supported yet.\n        'divNoNaN' // divNoNaN not yet implemented.\n      ]\n    },\n    {\n      include: 'batchNorm',\n      excludes: [\n        'gradient' // Gradient\n    }\n  ]\n];
```

```

is missing.\n  ]\n },\n {include: 'slice'},\n {include: 'stridedSlice'},\n {include: 'rotate'},\n {include:
'rotateWithOffset'},\n {include: 'flipLeftRight'},\n {include: 'square'},\n {include: 'squaredDifference'},\n {\n
startsWith: 'min ',\n  excludes: [\n   '2D, axis=0', // Permuted axes requires transpose, which is not yet\n
// implemented.\n   'index corresponds to start of a non-initial window', // argMin not yet\n
// implemented.,\n   'gradient' // Gradients not yet implemented\n  ]\n },\n {\n  startsWith: 'max
',\n  excludes: [\n   'gradient' // Gradients not yet implemented\n  ]\n },\n {\n  include: 'concat',\n  excludes:
[\n   'complex', // Complex numbers not supported yet\n   'gradient' // Split is not yet implemented\n  ]\n },\n
{\n  include: 'transpose'},\n {\n  include: 'oneHot'},\n {\n  include: 'split'},\n {\n  include: 'pad ', excludes: ['complex',
'zerosLike']},\n {\n  include: 'clip',\n  excludes: [\n   'gradient',\n   'propagates NaNs' // clip delegates to
XNNPACK which does not make\n // guarantees about behavior of nans.\n  ]\n },\n {\n  include:
'addN'},\n {\n  include: 'nonMaxSuppression'},\n {\n  include: 'argmax', excludes: ['gradient']},\n {\n  include: 'exp ',\n {\n
include: 'elu',\n  excludes: [\n   'derivative', // Not yet implemented.\n   'gradient', // Not yet implemented.\n
'selu' // Not yet implemented.\n  ]\n },\n {\n  include: 'unstack'},\n {\n  include: 'minimum',\n  excludes: [\n
'gradient', // Not yet implemented.\n   'broadcasts 2x1 Tensor2D and 2x2 Tensor2D' //
Broadcasting along inner\n // dims not supported yet.\n  ]\n },\n {\n  include:
'maximum',\n  excludes: [\n   'gradient', // Not yet implemented.\n   'broadcasts 2x1
Tensor2D and 2x2 Tensor2D' // Broadcasting along inner\n // dims not supported
yet.\n  ]\n },\n {\n  include: 'log ',\n },\n {\n  startsWith: 'equal ',\n  excludes: [\n   'broadcasting Tensor2D
shapes', // Broadcasting along outer dims not\n // supported yet.\n   'broadcasting
Tensor3D shapes', // Same as above.\n   'broadcasting Tensor4D shapes', // Same as above.\n   'string'\n  ]\n
},\n {\n  include: 'greater ',\n  excludes: [\n   'broadcasting Tensor2D shapes', // Broadcasting along outer dims
not\n // supported yet.\n   'broadcasting Tensor3D shapes', // Same as above.\n
'broadcasting Tensor4D shapes', // Same as above.\n   'string'\n  ]\n },\n {\n  include: 'greaterEqual',\n
excludes: [\n   'gradient', // Not yet implemented.\n   'broadcasting Tensor2D shapes', //
Broadcasting along outer dims not\n // supported yet.\n   'broadcasting Tensor3D shapes', // Same as above.\n
'broadcasting Tensor4D shapes', // Same as above.\n   'string'\n  ]\n },\n {\n  include:
'less ',\n  excludes: [\n   'broadcasting Tensor2D shapes', // Broadcasting along outer dims not\n
// supported yet.\n   'broadcasting Tensor3D shapes', // Same as above.\n   'broadcasting Tensor3D
float32', // Same as above.\n   'broadcasting Tensor4D shapes', // Same as above.\n   'string'\n  ]\n },\n {\n
include: 'lessEqual',\n  excludes: [\n   'gradient', // Not yet implemented.\n   'broadcasting
Tensor2D shapes', // Broadcasting along outer dims not\n // supported yet.\n
'broadcasting Tensor3D shapes', // Same as above.\n   'broadcasting Tensor3D float32', // Same as above.\n
'broadcasting Tensor4D shapes', // Same as above.\n   'string'\n  ]\n },\n {\n  include: 'notEqual',\n  excludes:
[\n   'broadcasting Tensor2D shapes', // Broadcasting along outer dims not\n // supported
yet.\n   'broadcasting Tensor3D shapes', // Same as above.\n   'broadcasting Tensor4D shapes', // Same as
above.\n   'string'\n  ]\n },\n {\n  include: 'mean ',\n  excludes: [\n   'axis=0', // Reduction not supported
along inner dimensions.\n  ]\n },\n {\n  startsWith: 'reverse'},\n {\n  startsWith: 'sum'},\n {\n  startsWith: 'cumsum'},\n
{\n  startsWith: 'logicalAnd ',\n  excludes: [\n   'broadcasting Tensor2D shapes', // Broadcasting along outer
dimensions\n // not yet supported.\n   'broadcasting Tensor3D shapes', // Same as above.\n
'broadcasting Tensor4D shapes', // Same as above.\n  ]\n },\n {\n  startsWith: 'tile ',\n  excludes: [\n
'gradient', // Gradient not yet implemented.\n   'string tensor' // String tensors not yet implemented.\n  ]\n },\n
{\n  startsWith: 'sin ',\n {\n  startsWith: 'cos ',\n  excludes: [\n   'gradient', // Gradient not yet implemented.\n  ]\n
},\n {\n  startsWith: 'cosh',\n  excludes: [\n   'gradient' // Gradient not yet implemented.\n  ]\n },\n {\n
startsWith: 'tan',\n  excludes: ['gradient'] // Gradient not yet implemented.\n\n },\n {\n  startsWith: 'tanh ',\n
excludes: ['gradient'] // Gradient not yet implemented.\n },\n {\n  startsWith: 'rsqrt ',\n  excludes: ['gradient'] //
Gradient not yet implemented.\n },\n {\n  startsWith: 'sqrt ',\n  excludes: ['gradient'] // Gradient not yet
implemented.\n },\n {\n  startsWith: 'where ',\n  excludes: [\n   '1D condition with higher rank a and b', // Fill
not yet implemented.\n   'gradient' // Gradient not yet implemented.\n  ]\n },\n {\n

```

```

startsWith: 'zerosLike',\n // Complex numbers not supported yet.\n excludes: ['complex'],\n },\n {\n
startsWith: 'onesLike',\n // Complex numbers not supported yet.\n excludes: ['complex'],\n },\n {include:
'prod'},\n {include: 'floor'},\n {include: 'topk'},\n {include: 'expandDims'},\n {include: 'stack'},\n {\n include:
'round'},\n // Pool is not supported yet.\n excludes: ['pool'],\n },\n {include: 'step kernel'},\n {include: 'ceil'},\n
{include: 'mirrorPad'},\n {\n startsWith: 'all',\n excludes: [\n 'ignores NaNs' // Doesn't yet ignore NaN\n ]\n
},\n {\n startsWith: 'any',\n excludes: [\n 'ignores NaNs' // Doesn't yet ignore NaN\n ]\n },\n {include:
'image.transform'},\n {include: 'batchToSpaceND'},\n {include: 'spaceToBatchND'},\n];\n\nconst customInclude =
(testName: string) => {\n // Include all regular describe() tests.\n if (testName.indexOf('test-wasm') < 0) {\n
return true;\n }\n // Include all of the wasm specific tests.\n if (testName.startsWith('wasm')) {\n return true;\n
}\n\n return false;\n};\n\nsetupTestFilters(TEST_FILTERS, customInclude);\n\n// Import and run all the tests from
core.\n\n// tslint:disable-next-line:no-imports-from-dist\n// tslint:disable-next-line:no-require-
imports\nrequire('@tensorflow/tfjs-core/dist/tests');\n"}

```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/setup_test.js.map

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"OnesLike.js","sourceRoot":"","sources":["../src/kernels/OnesLike.ts"],"names":[],"mappings":
"AAAA;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,QAAQ,EAAiB,MAAM,uBAAuB,CAAC;AAIzF,SAAS,QAAQ,C
AAC,IAAoD;IACpE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CA
AC;IACpC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KA
AK,CAAC,CAAC;IACjD,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;IAChD,
OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACkB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,C
AAC,MAAM,cAAc,GAaiB;IAC1C,UAAU,EAAE,QAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,
QAA4B;CACzC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nfunction onesLike(args: {inputs: OnesLikeInputs, backend:
BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n
  const outVals = backend.typedArrayFromHeap(out);\n  outVals.fill(1);\n  return out;\n}\n\nexport const
onesLikeConfig: KernelConfig = {\n  kernelName: OnesLike,\n  backendName: 'wasm',\n  kernelFunc: onesLike as
{} as KernelFunc,\n};\n"}

```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/OnesLike.js.map

No license file was found, but licenses were detected in source scan.

```

/* Copyright 2019 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at

```

*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
* =====*/

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/clamp_impl.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/non_max_suppression_impl.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sub.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sigmoid_test.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/_FusedMatMul.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedDepthwiseConv2D.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Exp.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/CropAndResize.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/leakyrelu_impl.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/check_macros.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Mean.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/binary.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Softmax_test.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedConv2D.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Prelu.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/AddN.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/transpose_impl.h
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/LogicalAnd.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/MaxPool.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/MaxPool_test.cc
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Prelu_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Multiply.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Reverse.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/transpose_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ClipByValue.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Tanh.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Min.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/conv2d_impl.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Conv2D_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Pow.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Transpose.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/leakyrelu_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ScatterNd.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Prelu.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/backend_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/AvgPool.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Cos.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sin.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/DepthwiseConv2dNative.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Conv2D.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Rsqrt.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sum.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ClipByValue.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Minimum.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/conv2d_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Square.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedConv2D_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/interpolate_bilinear_impl.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Gather.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Add.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Relu6.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ResizeBilinear.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ResizeBilinear_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedBatchNorm.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Conv2D.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Less.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sigmoid.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedDepthwiseConv2D.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Abs.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Max.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/NonMaxSuppressionV5.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/interpolate_bilinear_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/unary.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/util.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/backend.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/sigmoid_impl.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedDepthwiseConv2D_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/DepthwiseConv2dNative_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/GatherNd.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/util.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/PadV2.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Greater.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/NonMaxSuppressionV3.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Cumsum.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/clamp_impl.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/util_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sigmoid.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Log.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/AvgPool_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/non_max_suppression_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FusedConv2D.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Tile.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/prelu_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/LeakyRelu.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ArgMax.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/LessEqual.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/prelu_impl.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FloorDiv.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Relu.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/LeakyRelu.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ResizeBilinear.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/binary.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/ClipByValue_test.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/sigmoid_impl.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/backend.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/_FusedMatMul.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/AvgPool.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/MaxPool.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/RealDiv.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/GreaterEqual.cc

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/DepthwiseConv2dNative.h

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Maximum.cc

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "ZerosLike.js", "sourceRoot": "", "sources": ["../../src/kernels/ZerosLike.ts"], "names": [], "mappings": "AAAA;;;;;;;;;;;GAeG;AAEH,OOAO,EAA2B,SAAS,EAAkB,MAAM,uBAAuB,CAAC;AAI3F,SAAS,SAAS,CAAC,IAAqD;IACtE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OOAO,EAAC,GAAG,IAAI,CA
```

AC;IACpC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,CAAC,CAAC,KA
AK,CAAC,CAAC;IACjD,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;IACHD,
OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACHB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,C
AAC,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,S
AA6B;CAC1C,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs } from '@tensorflow/tfjs-core';\nimport\n{ BackendWasm } from '../backend_wasm';\n\nfunction zerosLike(args: { inputs: ZerosLikeInputs, backend:\nBackendWasm }) {\n  const { inputs: { x }, backend } = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outVals = backend.toArrayFromHeap(out);\n  outVals.fill(0);\n  return out;\n}\n\nexport const\nzerosLikeConfig: KernelConfig = {\n  kernelName: ZerosLike,\n  backendName: 'wasm',\n  kernelFunc: zerosLike\nas { } as KernelFunc,\n};\n"]}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ZerosLike.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Step.js","sourceRoot":"","sources":["../src/kernels/Step.ts"],"names":[],"mappings":"AAAA;;;  
;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,IAAI,EAAoC,MAAM,uBAaUB,CAAC;AAIxG,OAAO,EAAC,QAAQ,EA  
AC,MAAM,SAAS,CAAC;AAEjC,IAAI,QACI,CAAC;AAET,SAAS,KAAC,CAAC,OAAoB;IACjC,QAAQ,GAAG  
,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,IAAI,EAAE,IAAI,CAAC,QAAQ,EAAE;QACjD,QAAQ;QACR,QAA  
Q;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CACT,IAAkE;IAEpE,M  
AAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,KAAC,EA  
AC,GAAG,KAAC,CAAC;IACtB,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,G  
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE/C,MA  
AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CA  
AC;IACjD,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CA  
AC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,KAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAA  
C,EAAE,KAAC,CAAC,CAAC;IAC/C,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,UAA  
U,GAAiB;IACtC,UAAU,EAAE,IAAI;IACHB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IACHB,UAA  
U,EAAE,IAAwB;CACrC,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2020 Google LLC. All  
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this  
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo } from '@tensorflow/tfjs-  
core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\n\nlet wasmStep:  
(xId: number, alpha: number, dtype: number, outId: number) =>\n  void;\n\nfunction setup(backend:
```

```
BackendWasm): void {\n  wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n  'number', // x_id\n  'number', // alpha\n  'number', // dtype\n  'number', // out_id\n  ]);\n}\n\nfunction step(\n  args: {backend: BackendWasm, inputs: StepInputs, attrs: StepAttrs});\n  TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {alpha} = attrs;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n\n    const out = backend.makeOutput(x.shape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmStep(xId, alpha, CppDType[x.dtype], outId);\n  }\n  return out;\n}\n\nexport const stepConfig: KernelConfig = {\n  kernelName: Step,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: step as {} as KernelFunc\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Step.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Softmax.js","sourceRoot":"","sources":["../src/kernels/Softmax.ts"],"names":[],"mappings":"A  
AAA;:::;;GAeG;AAEH,OAAO,EAA2B,OAAO,EAA2C,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIvH,IAAI  
,QACI,CAAC;AAET,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CA  
AC,OAAO,EAAE,IAAI,CAAC,UAAU,EAAE;QACtD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ,CAA  
G,QAAQ;KACpB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IAE1E,MAAM,EAAC,OAA  
O,EAAE,MAAM,EAAE,EAAC,MAAM,EAAC,EAAE,KAAK,EAAE,EAAC,GAAG,EAAC,EAAC,GAAG,IAAI,  
CAAC;IACvD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAA  
C,CAAC,EAAE,CAAC;IACpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK,EA  
AE,MAAM,CAAC,KAAK,CAAC,CAAC;IAC3D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CA  
AC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,QAAQ,GAAG,MAAM,CAAC,KAAK,C  
AAC,GAAG,CAAC,CAAC;IACnC,MAAM,KAAK,GAAG,IAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CA  
AC,GAAG,QAAQ,CAAC;IAE1D,oCAAoC;IACpC,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC  
,KAAK,CAAC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAED,QAAQ,CAAC,GAAG,EAAE,KAAK,EAAE,  
QAAQ,EAAE,KAAK,CAAC,CAAC;IACtC,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,  
aAAa,GAAiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,  
UAAU,EAAE,OAA2B;CACxC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All  
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this  
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *  
=====\\n
```

```
*\\n\\nimport {KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util} from  
'@tensorflow/tfjs-core';\\n\\nimport {BackendWasm} from '../backend_wasm';\\n\\nlet wasmFunc: (xId: number, outId:  
number, channels: number, batch: number) =>\\n  void;\\n\\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n    'number', // xId\n    'number', // outId\n    'number', // channels\n    'number' // batch\n  ]);\n}\n\nfunction softmax(\n  args: {backend: BackendWasm, inputs: SoftmaxInputs, attrs: SoftmaxAttrs});\n  TensorInfo {\n    const {backend, inputs: {logits}, attrs: {dim}} = args;\n    const xId = backend.dataIdMap.get(logits.dataId).id;\n    const out = backend.makeOutput(logits.shape, logits.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const channels = logits.shape[dim];\n    const batch = util.sizeFromShape(logits.shape) / channels;\n\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(out.shape) === 0) {\n      return out;\n    }\n\n    wasmFunc(xId, outId, channels, batch);\n  }\n  return out;\n}\n\nexport const softmaxConfig: KernelConfig = {\n  kernelName: Softmax,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: softmax as {} as KernelFunc\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Softmax.js.map
```

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"tf-backend-wasm.es2017.min.js","sources":["../src/kernels/types.ts","../src/kernels/_FusedMatMul.ts","../src/kernels/unary_kernel.ts","../src/kernels/Abs.ts","../src/kernels/binary_kernel.ts","../src/kernels/Add.ts","../src/kernels/AddN.ts","../src/kernels/Identity.ts","../src/kernels/Transpose.ts","../src/kernels/kernel_utils.ts","../src/kernels/All.ts","../src/kernels/Any.ts","../src/kernels/ArgMax.ts","../src/kernels/AvgPool.ts","../src/kernels/Reshape.ts","../src/kernels/BatchMatMul.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Slice.js","../src/kernels/Slice.ts","../src/kernels/BatchToSpaceND.ts","../src/kernels/Cast.ts","../src/kernels/Ceil.ts","../src/kernels/ClipByValue.ts","../src/kernels/Concat.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js","../src/kernels/Conv2D.ts","../src/kernels/Conv2DBackpropInput.ts","../src/kernels/Cos.ts","../src/kernels/Cosh.ts","../src/kernels/CropAndResize.ts","../src/kernels/Cumsum.ts","../src/kernels/DepthToSpace.ts","../src/kernels/DepthwiseConv2dNative.ts","../src/kernels/Elu.ts","../src/kernels/Equal.ts","../src/kernels/Exp.ts","../src/kernels/ExpandDims.ts","../src/kernels/Fill.ts","../src/kernels/FlipLeftRight.ts","../src/kernels/Floor.ts","../src/kernels/FloorDiv.ts","../src/kernels/FusedBatchNorm.ts","../src/kernels/FusedConv2D.ts","../src/kernels/FusedDepthwiseConv2D.ts","../src/kernels/GatherNd.ts","../src/kernels/GatherV2.ts","../src/kernels/Greater.ts","../src/kernels/GreaterEqual.ts","../src/kernels/LeakyRelu.ts","../src/kernels/Less.ts","../src/kernels/LessEqual.ts","../src/kernels/Log.ts","../src/kernels/LogicalAnd.ts","../src/kernels/Max.ts","../src/kernels/Maximum.ts","../src/kernels/MaxPool.ts","../src/kernels/Mean.ts","../src/kernels/Min.ts","../src/kernels/Minimum.ts","../src/kernels/MirrorPad.ts","../src/kernels/Multiply.ts","../src/kernels/Neg.ts","../src/kernels/NonMaxSuppression_util.ts","../src/kernels/NonMaxSuppressionV3.ts","../src/kernels/NonMaxSuppressionV4.ts","../src/kernels/NonMaxSuppressionV5.ts","../src/kernels/NotEqual.ts","../src/kernels/OneHot.ts","../src/kernels/OnesLike.ts","../src/kernels/Pack.ts","../src/kernels/PadV2.ts","../src/kernels/Pow.ts","../src/kernels/Prelu.ts","../src/kernels/Prod.ts","../src/kernels/Range.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js","../src/kernels/RealDiv.ts","../src/kernels/Relu.ts","../src/kernels/Relu6.ts","../src/kernels/ResizeBilinear.ts","../src/kernels/Reverse.ts","../src/kernels/RotateWithOffset.ts","../src/kernels/Round.ts","../src/kernels/Rsqrt.ts","../src/kernels/ScatterNd.ts","../src/kernels/Select.ts","../src/kernels/Sigmoid.ts","../src/kernels/Sin.ts","../src/kernels/Softmax.ts","../src/kernels/SpaceToBatchND.ts","../src/kernels/SplitV.ts","../src/kernels/Sqrt.ts","../src/kernels/Square.ts","../src/kernels/SquaredDifference.ts","../src/kernels/Step.ts","../src/kernels/StridedSlice.ts","../src/kernels/Sub.ts","../src/kernels/Sum.ts","../src/kernels/Tan.ts","../src/kernels/Tanh.ts","../src/kernels/Tile.ts","../src/kernels/TopK.ts","../src/kernels/Transform.ts","../src/kernels/Unpack.ts","../src/kernels/ZerosLike.ts","../src/register_all_kernels.ts","../src/flags_wasm.ts","../wasm-out/tfjs-backend-wasm-threaded-simd.js","../wasm-out/tfjs-backend-wasm.js","../src/backend_wasm.ts","../wasm-out/tfjs-backend-wasm-threaded-simd.worker.js","../src/base.ts","../src/version.ts"],"sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n * =====\n *\n * This enum must align with the enum defined in cc/backend.h.\n * export enum CppDType {\n *   float32 = 0,\n *   int32 = 1,\n *   bool = 2,\n *   string = 3,\n *   complex64 = 4\n * }\n * Must match enum in cc/fusable_activations.h.\n * export
```

enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu = 6}\n"},/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { FusableActivation } from\n './types';\n\nlet wasmFusedMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n  bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n  transposeB: boolean, activation: number,\n  biasId: number,\n  preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul,\n  null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n    'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n    'number', // activation\n    'number', // biasId\n    'number', // preluActivationWeightsId\n    'number', //\n    leakyreluAlpha\n    'number' // out_id\n  ]);\n\n  function fusedBatchMatMul(args: {\n    inputs:\n      _FusedMatMulInputs,\n    backend: BackendWasm,\n    attrs: _FusedMatMulAttrs\n  }) {\n    const { inputs, backend,\n    attrs } = args;\n    const { a, b, bias, preluActivationWeights } = inputs;\n\n    if (a.dtype !== 'float32' || b.dtype !==\n    'float32') {\n      throw new Error(\n        ` _FusedMatMul for non non-float32 tensors not yet supported.`);\n    }\n\n    const { transposeA, transposeB, activation, leakyreluAlpha } = attrs;\n    const aId =\n    backend.dataIdMap.get(a.dataId).id;\n    const bId = backend.dataIdMap.get(b.dataId).id;\n\n    let biasId = 0;\n    if (bias != null) {\n      const biasData = backend.dataIdMap.get(bias.dataId);\n      if (biasData.shape.length !== 1) {\n        throw new Error(\n          ` _FusedMatMul only supports rank-1 bias but got ` +\n          `rank\n          ${biasData.shape.length}.`);\n      }\n      biasId = biasData.id;\n    }\n\n    const preluActivationWeightsId =\n    preluActivationWeights == null ?\n    0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n    const\n    fusedActivation =\n    FusableActivation[activation as { } as keyof typeof FusableActivation];\n    if\n    (fusedActivation == null) {\n      throw new Error(\n        ` ${activation} activation not yet supported for\n        FusedConv2D ` +\n        `in the wasm backend.`);\n    }\n\n    const leftDim = transposeA ? a.shape[2] : a.shape[1];\n    const rightDim = transposeB ? b.shape[1] : b.shape[2];\n    const batchDim = a.shape[0];\n\n    const out =\n    backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n    const outId =\n    backend.dataIdMap.get(out.dataId).id;\n\n    const aShapeBytes = new Uint8Array(new\n    Int32Array(a.shape).buffer);\n    const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n    wasmFusedMatMul(\n      aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n      transposeA,\n      transposeB, fusedActivation, biasId, preluActivationWeightsId,\n      leakyreluAlpha || 0, outId);\n\n    return\n    out;\n  }\n\n  export const fusedMatMulConfig: KernelConfig = {\n    kernelName: _FusedMatMul,\n    backendName:\n    'wasm',\n    setupFunc: setup,\n    kernelFunc: fusedBatchMatMul as { } as KernelFunc\n  };\n}\n"},/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { DataType, KernelConfig, TensorInfo, UnaryInputs, util } from '@tensorflow/tfjs-core';\n\nimport\n { BackendWasm } from '../backend_wasm';\n\nimport { CppDType } from './types';\n\nexport function\n createUnaryKernelConfig(\n  kernelName: string, outType?: DataType): KernelConfig {\n  let wasmFunc: (xId:
```

```

number, dtype: number, outId: number) => void;\n\n function setupFunc(backend: BackendWasm): void {\n
wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n  'number', // x_id\n  'number', // dtype\n  'number', // out_id\n  ]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}):\n
TensorInfo {\n  const {backend, inputs: {x}} = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const
out = backend.makeOutput(x.shape, outType || x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n
// Short-circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n\n
wasmFunc(xId, CppDType[x.dtype], outId);\n  return out;\n }\n\n return {kernelName, backendName: 'wasm',
setupFunc, kernelFunc};\n}\n\n", /*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*\n\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n\n", /*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*\n\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport
function createBinaryKernelConfig(\n  kernelName: string, supportsFullBroadcast: boolean,\n  dtype?:
DataType): KernelConfig {\n  let wasmFunc:\n    (aId: number, aShape: Uint8Array, aShapeLen: number, bId:
number,\n    bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n      void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /*
void */, [\n      'number', // a_id,\n      'array', // a_shape\n      'number', // a_shape.length\n      'number', // b_id\n      'array', // b_shape\n      'number', // b_shape.length\n      'number', // dtype\n      'number' // out_id\n    ]);\n  }\n\n  function kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}):\n    TensorInfo {\n    const {backend,
inputs} = args;\n    const {a, b} = inputs;\n    const aId = backend.dataIdMap.get(a.dataId).id;\n    const bId =
backend.dataIdMap.get(b.dataId).id;\n\n    const outputType = dtype != null ? dtype : a.dtype;\n    const newShape =
backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n    const out = backend.makeOutput(newShape,
outputType);\n\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(newShape) === 0) {\n      return
out;\n    }\n\n    const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n    const bShapeBytes =
new Uint8Array(new Int32Array(b.shape).buffer);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const kernelFunc = () => wasmFunc(\n      aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n      CppDType[a.dtype], outId);\n\n    // Currently only some float operations support full broadcast.\n    if
(supportsFullBroadcast && a.dtype === 'float32') {\n      kernelFunc();\n      return out;\n    }\n\n    const
aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n    const bBroadcastDims =
backend_util.getBroadcastDims(b.shape, newShape);\n    const loopsOverAllOfA = aBroadcastDims.every((v, i) =>
v === i);\n    const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n    if (loopsOverAllOfA &&
loopsOverAllOfB) {\n      kernelFunc();\n      return out;\n    } else {\n      throw new Error(\n        `Broadcasting
along outer dims is not yet `+\n        `supported for ${a.dtype} ${kernelName}.`);\n    }\n  }\n\n  return
{kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n}\n\n", /*\n * @license\n * Copyright 2019 Google

```

LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const addConfig: KernelConfig =\ncreateBinaryKernelConfig(Add, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmFunc:\n (inputIds: Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n 'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n ]);\n}\nfunction addn(args: {inputs: TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =\n backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n const inputIds = inputs.map(x =>\n backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,\n CCppType[out.dtype], outId);\n return out;\n}\nexport const addNConfig: KernelConfig = {\n kernelName: AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as { } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nexport function identity(args: {inputs: IdentityInputs, backend: BackendWasm}):\n TensorInfo {\n const {inputs, backend} = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const inVals = backend.typedArrayFromHeap(x);\n const outVals = backend.typedArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\nexport const identityConfig: KernelConfig = {\n kernelName: Identity,\n backendName: 'wasm',\n kernelFunc: identity as { } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the
```

License.\n *

```
=====\\n
*\\n\\nimport {KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs} from
'@tensorflow/tfjs-core';\\n\\nimport {BackendWasm} from './backend_wasm';\\n\\nimport {identity} from
'/Identity';\\n\\nimport {CppType} from './types';\\n\\nlet wasmTranspose: (\\n  xId: number, xShape: Uint8Array,
xShapeLength: number, dtype: CppDType,\\n  outId: number, perm: Uint8Array, permLength: number) =>
void;\\n\\nfunction setup(backend: BackendWasm) {\\n  wasmTranspose = backend.wasm.cwrap(Transpose, null /*
void */, [\\n    'number', // xId\\n    'array', // x.shape\\n    'number', // x.shape.length\\n    'number', // dtype\\n
'number', // outId\\n    'array', // perm\\n    'number', // perm.length\\n  ]);\\n}\\n\\nexport function transpose(\\n  args: \\n
  {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs}): \\n  TensorInfo {\\n  const {inputs,
backend, attrs} = args;\\n  // Reduce any dimensions with size one. Lower-rank transpose kernel performs\\n  // better
due to simpler memory access pattern.\\n  const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,
attrs.perm);\\n\\n  let permIsNoOp = true;\\n  for (let i = 0; i < perm.length; i++) {\\n    if (perm[i] !== i) {\\n
permIsNoOp = false;\\n    }\\n  }\\n  const outShape = computeOutShape(inputs.x.shape, attrs.perm);\\n  const x = {\\n
dataId: inputs.x.dataId,\\n  shape: reducedShape,\\n  dtype: inputs.x.dtype\\n };\\n\\n  if (permIsNoOp) {\\n  const
cloned = identity({inputs, backend});\\n  cloned.shape = outShape;\\n  return cloned;\\n }\\n\\n  const out =
backend.makeOutput(outShape, x.dtype);\\n  const xId = backend.dataIdMap.get(x.dataId).id;\\n  const outId =
backend.dataIdMap.get(out.dataId).id;\\n  const permBytes = new Uint8Array(new Int32Array(perm).buffer);\\n
const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\\n\\n  wasmTranspose(\\n    xId,
xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\\n    perm.length);\\n  return
out;}\\n}\\n\\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\\n  const outShape = new
Array(inShape.length);\\n  for (let i = 0; i < outShape.length; i++) {\\n    outShape[i] = inShape[perm[i]];\\n  }\\n
return outShape;}\\n}\\n\\nfunction removeOneSizeDims(\\n  shape: number[], perm: number[]): [number[], number[]]
{\\n  const newShape: number[] = [];\\n  const newPerm: number[] = [];\\n  for (let i = 0; i < shape.length; ++i) {\\n
if (shape[i] !== 1) {\\n    newShape.push(shape[i]);\\n  }\\n  if (shape[perm[i]] !== 1) {\\n
newPerm.push(perm[i]);\\n  }\\n }\\n  for (let i = 0; i < newPerm.length; ++i) {\\n    let minValIdx = -1;\\n    for (let j =
0; j < newPerm.length; ++j) {\\n      if (newPerm[j] >= i && (minValIdx === -1 || newPerm[minValIdx] >
newPerm[j])) {\\n        minValIdx = j;\\n      }\\n    }\\n    newPerm[minValIdx] = i;\\n  }\\n  return [newShape,
newPerm];\\n}\\n}\\n\\nexport const transposeConfig: KernelConfig = {\\n  kernelName: Transpose,\\n  backendName:
'wasm',\\n  kernelFunc: transpose as { } as KernelFunc,\\n  setupFunc: setup,\\n};\\n", "/*\\n * @license\\n * Copyright
2020 Google Inc. All Rights Reserved.\\n * Licensed under the Apache License, Version 2.0 (the "License");\\n *
you may not use this file except in compliance with the License.\\n * You may obtain a copy of the License at\\n *\\n *
http://www.apache.org/licenses/LICENSE-2.0\\n * Unless required by applicable law or agreed to in writing,
software\\n * distributed under the License is distributed on an "AS IS" BASIS,\\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\\n * See the License for the specific language
governing permissions and\\n * limitations under the License.\\n *
```

```
=====\\n
*\\n\\nimport {backend_util, TensorInfo, util} from '@tensorflow/tfjs-core';\\nimport {BackendWasm} from
'./backend_wasm';\\nimport {transpose} from './Transpose';\\n\\n/**\\n * Compute permutation axes and do a transpose
if necessary.\\n * Used by reduction ops.\\n * @param x input TensorInfo\\n * @param axis reduction axes\\n *
@param backend wasm backend instance\\n */\\nexport function permuteAxesAndTranspose(\\n  x: TensorInfo,
axis: number|number[], backend: BackendWasm): {\\n  transposed: TensorInfo|null,\\n  axes: number[],\\n
originalAxes: number[],\\n  inputWasTransposed: boolean\\n } {\\n  const xShape = x.shape;\\n  const xRank =
x.shape.length;\\n  const originalAxes = util.parseAxisParam(axis, xShape);\\n  let axes = originalAxes;\\n  const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\\n  let xTransposed = null;\\n  let
inputWasTransposed = false;\\n  if (permutedAxes !== null) {\\n    const newShape: number[] = new Array(xRank);\\n
for (let i = 0; i < newShape.length; i++) {\\n      newShape[i] = xShape[permutedAxes[i]];\\n    }\\n    axes =
backend_util.getInnerMostAxes(axes.length, xRank);\\n    xTransposed =\\n      transpose({inputs: {x}, attrs: {perm:
```



```

permutedAxes }, backend});\n\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const transposedId =
backend.dataIdMap.get(xTransposed.dataId).id;\n  if (transposedId !== xId) {\n    inputWasTransposed = true;\n
}\n }\n\n return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n\n", /**\n * @license\n *
Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAll: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAll = backend.wasm.cwrap(All, null
/*void*/, ['number, number, number']);\n}\n\nfunction all(args: { backend: BackendWasm, inputs: AllInputs, attrs:
AllAttrs }):\n  TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { axis, keepDims } = attrs;\n  const { x
} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const
{transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if
(inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input =
transposed;\n    inputId = transposedId;\n  }\n\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n  const [outShape, reduceShape] =\n  backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =
util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, x.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAll(inputId, reduceSize, outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n  return
out;\n}\n\nexport const allConfig: KernelConfig = {\n  kernelName: All,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: all as { } as KernelFunc\n};\n\n", /**\n * @license\n * Copyright 2021 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAny = backend.wasm.cwrap(Any,
null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: { backend: BackendWasm, inputs: AnyInputs,
attrs: AnyAttrs }):\n  TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { axis, keepDims } = attrs;\n  const { x
} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const
{transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis,
backend);\n\n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input =
transposed;\n    inputId = transposedId;\n  }\n\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n  const [outShape, reduceShape] =\n  backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =

```

```

util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmAny(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n  // dispose of the transposed tensor.\n
backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n  // reshape\n  const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n  out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const anyConfig: KernelConfig = {\n  kernelName: Any,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: any as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport { ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { permuteAxesAndTranspose } from
'/kernel_utils';\n\nimport { CppDType } from './types';\n\nlet wasmFunc: (\n  xId: number, dtype: number, outerSize:
number, innerSize: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n  'number', // x_id\n  'number', // dtype\n
'number', // outer_size\n  'number', // inner_size\n  'number' // out_id\n ]);\n}\n\nfunction argmax(\n  args:
{inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs}) {\n  const {backend, inputs, attrs} = args;\n
const {axis} = attrs as {} as ArgMaxAttrs;\n  const {x} = inputs as {} as ArgMaxInputs;\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const {transposed, axes,
inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n
const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n  if (transposedId !== xId) {\n  // transpose
was not a no-op. We will need to dispose of this\n  // once we are done.\n  input = transposed;\n  inputId =
transposedId;\n  }\n }\n\n  const outShape = input.shape.slice(0, -1);\n  const out =
backend.makeOutput(outShape, 'int32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const outerSize =
util.sizeFromShape(out.shape);\n  const innerSize = input.shape[axes[0]];\n  wasmFunc(inputId,
CppType[input.dtype], outerSize, innerSize, outId);\n\n  if (inputWasTransposed) {\n  // dispose of the
transposed tensor.\n  backend.disposeData(transposed.dataId);\n }\n\n  return out;\n}\n\nexport const
argMaxConfig: KernelConfig = {\n  kernelName: ArgMax,\n  backendName: 'wasm',\n  kernelFunc: argmax as {}
as KernelFunc,\n  setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport { AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmAvgPool: (\n  xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, strideHeight: number,\n
strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n  'number', // xId\n  'number', // batchSize\n
'number', // inputHeight\n  'number', // inputWidth\n  'number', // filterHeight\n  'number', // filterWidth\n
'number', // padTop\n  'number', // padRight\n  'number', // padBottom\n  'number', // padLeft\n  'number', //

```

```

strideHeight\n 'number', // strideWidth\n 'number', // channels\n 'number', // outId\n ]);\n}\n\nfunction
avgPool(\n  args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n  const {inputs, attrs,
backend} = args;\n\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n\n  const
{filterSize, strides, pad, dimRoundingMode} = attrs;\n  const convInfo = backend_util.computePool2DInfo(\n
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n  const filterHeight =
convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const
padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n  const padLeft =
convInfo.padInfo.left;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n
const channels = convInfo.inChannels;\n\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n
`wasm backend does not support dataFormat: ` +\n      `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n
}\n\n  if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n    throw new Error(\n
`was backend
only supports average pooling with dilation = [1, 1], ` +\n      `got [${convInfo.dilationHeight},
${convInfo.dilationWidth}].`);\n  }\n\n  const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const
outId = backend.dataIdMap.get(out.dataId).id;\n\n  wasmAvgPool(\n    xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n    padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n
outId);\n  return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n  kernelName: AvgPool,\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: avgPool as { } as KernelFunc\n};\n", "/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function reshape(\n  args: {inputs:
ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm}) {\n  const {inputs, attrs} = args;\n  const {x} =
inputs;\n  const {shape} = attrs;\n\n  const xSize = util.sizeFromShape(x.shape);\n  const $shape =
util.inferFromImplicitShape(shape, xSize);\n\n  util.assert(\n    xSize === util.sizeFromShape($shape),\n    () =>
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n      `shape must have the same number of
elements.`);\n\n  // Backend needs to track refCount for the dataId for reshape op\n  args.backend.incRef(x.dataId);\n
return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n
kernelName: Reshape,\n  backendName: 'wasm',\n  kernelFunc: reshape as { } as KernelFunc\n};\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {reshape} from
'./Reshape';\n\nlet wasmBatchMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n
bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n  transposeB: boolean, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,
null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n
'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n
'number' // out_id\n ]);\n}\n\nfunction batchMatMul(args: {\n  inputs: BatchMatMulInputs,\n  backend:

```

```

BackendWasm,\n attrs: BatchMatMulAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {a, b} = inputs;\n const {transposeA, transposeB} = attrs;\n\n if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n   throw new Error(\n     `BatchMatMul for non non-float32 tensors not yet supported.`);\n }\n\n const aRank = a.shape.length;\n const bRank = b.shape.length;\n\n const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n const innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n\n const outerShapeA = transposeA ? a.shape[aRank - 1] : a.shape[aRank - 2];\n const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank - 1];\n\n const outerDimsA = a.shape.slice(0, -2);\n const outerDimsB = b.shape.slice(0, -2);\n\n const batchDimA = util.sizeFromShape(outerDimsA);\n const batchDimB = util.sizeFromShape(outerDimsB);\n\n const batchDimsCompatible =\n   batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n\n util.assert(\n   aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n   () => `Error in matMul: the input batch dimensions must either be the ` +\n     `same or at least one input batch dimension must be 1. Got input ` +\n     `batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n\n const outShapeOuterDims =\n   batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\n const outShape =\n   outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n\n util.assert(\n   innerShapeA === innerShapeB,\n   () => `Error in matMul: inner shapes (${innerShapeA}) and ` +\n     `${innerShapeB} of Tensors with shapes ${a.shape} and ` +\n     `${b.shape} and transposeA=${transposeA} ` +\n     `and transposeB=${transposeB} must match.`);\n\n const a3dShape = transposeA ? [batchDimA, innerShapeA, outerShapeA] :\n   [batchDimA, outerShapeA, innerShapeA];\n const b3dShape = transposeB ? [batchDimB, outerShapeB,\n   innerShapeB] :\n   [batchDimB, innerShapeB, outerShapeB];\n\n // The rest of the implementation is designed to operate on rank-3 tensors\n const a3d = reshape({inputs: {x: a}, backend, attrs: {shape: a3dShape}});\n const b3d = reshape({inputs: {x: b}, backend, attrs: {shape: b3dShape}});\n\n const a3dId = backend.dataIdMap.get(a3d.dataId).id;\n const b3dId = backend.dataIdMap.get(b3d.dataId).id;\n\n const leftDim = transposeA ? a3d.shape[2] : a3d.shape[1];\n const rightDim = transposeB ? b3d.shape[1] : b3d.shape[2];\n const batchDim = Math.max(batchDimA, batchDimB);\n\n const out = backend.makeOutput([batchDim, leftDim, rightDim], a3d.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const aShapeBytes = new Uint8Array(new Int32Array(a3d.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b3d.shape).buffer);\n\n wasmBatchMatMul(\n   a3dId, aShapeBytes, a3d.shape.length, b3dId, bShapeBytes,\n   b3d.shape.length, transposeA, transposeB, outId);\n\n backend.disposeData(a3d.dataId);\n backend.disposeData(b3d.dataId);\n\n out.shape = outShape;\n return out;\n}\n\nexport const batchMatMulConfig:\n KernelConfig = {\n   kernelName: BatchMatMul,\n   backendName: 'wasm',\n   setupFunc: setup,\n   kernelFunc: batchMatMul as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\nimport { backend_util, buffer, Slice, slice_util, util } from '@tensorflow/tfjs-core';\nimport { assertNotComplex } from '../cpu_util';\nexport function sliceImpl(vals, begin, size, shape, dtype) {\n  const isContinous = slice_util.isSliceContinous(shape, begin, size);\n  const length = util.sizeFromShape(size);\n  const xStrides = util.computeStrides(shape);\n  if (isContinous) {\n    const flatOffset = slice_util.computeFlatOffset(begin, xStrides);\n    if (dtype === 'string') {\n      return vals.slice(flatOffset, flatOffset + length);\n    }\n    return vals.subarray(flatOffset, flatOffset + length);\n  }\n  const decodedData = dtype === 'string' ?\n    backend_util.fromUint8ToStringArray(vals) : vals;\n  const inBuf = buffer(shape, dtype, decodedData);\n  const outBuf = buffer(size, dtype);\n  for (let i = 0; i < outBuf.size; ++i) {\n    const outLoc = outBuf.indexToLoc(i);\n    const inLoc = outLoc.map((idx, j) => idx + begin[j]);\n    outBuf.set(inBuf.get(...inLoc), ...outLoc);\n  }\n  if (dtype === 'string') {\n    return

```


2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*
import { backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util }
from '@tensorflow/tfjs-core';
import { BackendWasm } from '../backend_wasm';
import { sliceImplCPU } from
'./kernel_utils/shared';
export function slice(
  args: { inputs: SliceInputs, attrs: SliceAttrs, backend:
BackendWasm }) {
  const { inputs: { x }, attrs: { begin, size }, backend } = args;
  const [begin_, size_] =
slice_util.parseSliceParams(x, begin, size);
  const isContinuous = slice_util.isSliceContinuous(x.shape, begin_,
size_);
  const xVals = backend.readSync(x.dataId);
  const out = backend.makeOutput(size_, x.dtype);
  const
xStrides = util.computeStrides(x.shape);
  const outData = backend.dataIdMap.get(out.dataId);
  if (isContinuous)
  {
    const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);
    if (x.dtype === 'string') {
      outData.stringBytes =
(xVals as Uint8Array[])
        .slice(flatOffset, flatOffset +
util.sizeFromShape(size_));
    } else {
      const outVals = backend.typedArrayFromHeap(out);
      outVals.set(
(xVals as TypedArray)
        .subarray(flatOffset, flatOffset +
util.sizeFromShape(size_)));
    }
  }
  return out;
}
if (x.dtype === 'string') {
  const res =
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);
  outData.stringBytes = res as Uint8Array[];
  return
out;
}
const outVals = backend.typedArrayFromHeap(out);
const rank = x.shape.length;
if (rank === 2)
{
  slice2d(
    xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],
size_ as
[number, number]);
} else if (rank === 3) {
  slice3d(
    xVals as TypedArray, xStrides[0], xStrides[1],
outVals,
    begin_ as [number, number, number], size_ as [number, number, number]);
} else if (rank === 4)
{
  slice4d(
    xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,
begin_ as [number,
number, number, number],
size_ as [number, number, number, number]);
} else {
  const res =
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;
  outVals.set(res);
}
return
out;
}
function slice2d(
  xVals: backend_util.TypedArray, xStride: number,
outVals:
backend_util.TypedArray, begin: [number, number],
size: [number, number]): void {
  let outOffset = 0;
  const beginI = begin[0];
  const beginJ = begin[1];
  const endI = beginI + size[0];
  for (let i = beginI; i < endI;
i++) {
    const xOffset = i * xStride + beginJ;
    outVals.set(xVals.subarray(xOffset, xOffset + size[1]),
outOffset);
    outOffset += size[1];
  }
}
function slice3d(
  xVals: backend_util.TypedArray, xStride1:
number, xStride2: number,
outVals: backend_util.TypedArray, begin: [number, number, number],
size:
[number, number, number]): void {
  let outOffset = 0;
  const beginI = begin[0];
  const beginJ = begin[1];
  const beginK = begin[2];
  const endI = beginI + size[0];
  const endJ = beginJ + size[1];
  for (let i = beginI; i <
endI; i++) {
    for (let j = beginJ; j < endJ; j++) {
      const xOffset = i * xStride1 + j * xStride2 + beginK;
      outVals.set(xVals.subarray(xOffset, xOffset + size[2]),
outOffset);
      outOffset += size[2];
    }
  }
}
function slice4d(
  xVals: backend_util.TypedArray, xStride1: number, xStride2: number,
xStride3:
number, outVals: backend_util.TypedArray,
begin: [number, number, number, number],
size: [number, number, number, number]): void {
  let outOffset = 0;
  const beginI = begin[0];
  const beginJ = begin[1];
  const beginK = begin[2];
  const endI = beginI + size[0];
  const endJ = beginJ + size[1];
  const endK = beginK
+ size[2];
  const beginL = begin[3];
  for (let i = beginI; i < endI; i++) {
    for (let j = beginJ; j < endJ; j++)
    {
      for (let k = beginK; k < endK; k++) {
        const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +
beginL;
        outVals.set(xVals.subarray(xOffset, xOffset + size[3]),
outOffset);
        outOffset += size[3];
      }
    }
  }
}
export const sliceConfig: KernelConfig = {
  kernelName: Slice,
  backendName: 'wasm',
  kernelFunc: slice as { } as KernelFunc,
};
/**
 * @license
 * Copyright 2021 Google LLC. All Rights
Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file
except in compliance with the License.
 * You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { reshape } from './Reshape';\nimport { slice } from './Slice';\nimport { transpose } from './Transpose';\n\nfunction batchToSpaceND(args: {\n  inputs: BatchToSpaceNDInputs,\n  backend: BackendWasm,\n  attrs: BatchToSpaceNDAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { blockShape, crops } = attrs;\n\n  const prod = blockShape.reduce((a, b) => a * b);\n  const reshaped = backend_util.getReshaped(x.shape, blockShape, prod);\n  const permuted = backend_util.getPermuted(reshaped.length, blockShape.length);\n  const reshapedPermuted = backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n  const sliceBeginCoords = backend_util.getSliceBeginCoords(crops, blockShape.length);\n  const sliceSize = backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n  const xReshaped = reshape({ inputs: { x }, backend, attrs: { shape: reshaped } });\n  const xTransposed = transpose({ inputs: { x: xReshaped }, backend, attrs: { perm: permuted } });\n  const xTransposedReshaped = reshape({ inputs: { x: xTransposed }, backend, attrs: { shape: reshapedPermuted } });\n  const result = slice({\n    inputs: { x: xTransposedReshaped },\n    backend,\n    attrs: { begin: sliceBeginCoords, size: sliceSize }\n  });\n\n  backend.disposeData(xReshaped.dataId);\n  backend.disposeData(xTransposed.dataId);\n  backend.disposeData(xReshaped.dataId);\n\n  return result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n  kernelName: BatchToSpaceND,\n  backendName: 'wasm',\n  kernelFunc: batchToSpaceND as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nexport function cast(\n  args: {\n    inputs: CastInputs,\n    attrs: CastAttrs,\n    backend: BackendWasm\n  }): TensorInfo {\n  const { inputs, attrs, backend } = args;\n  const out = backend.makeOutput(x.shape, dtype);\n  const inVals = backend.typedArrayFromHeap(x);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.set(inVals);\n\n  return out;\n}\n\nexport const castConfig: KernelConfig = {\n  kernelName: Cast,\n  backendName: 'wasm',\n  kernelFunc: cast as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, Ceil } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
```


law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmClip: (xId: number, min:\n number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmClip =\n    backend.wasm.cwrap(ClipByValue, null /* void */, [\n      'number', // x_id\n      'number', // min\n      'number', //\n      max\n      'number' // out_id\n    ]);\n\n  function clip(args: {\n    inputs: ClipByValueInputs,\n    backend:\n      BackendWasm,\n    attrs: ClipByValueAttrs\n  }) {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {clipValueMin, clipValueMax} = attrs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const out =\n      backend.makeOutput(x.shape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmClip(xId,\n      clipValueMin, clipValueMax, outId);\n    return out;\n  }\n\n  export const clipByValueConfig: KernelConfig = {\n    kernelName: ClipByValue,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: clip as {} as\n      KernelFunc\n  };}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */\n
```

```
=====\n*\n\nimport { backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { concatImplCPU } from\n '../kernel_utils/shared';\n\nimport { identity } from './Identity';\n\nimport { reshape } from './Reshape';\n\nexport function\n concat(\n  args: {\n    inputs: ConcatInputs, backend: BackendWasm, attrs: ConcatAttrs\n  }) {\n  const {inputs, backend}\n    = args;\n\n  const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n\n  let outShape =\n    backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n\n  // Keep only non-empty tensors (ignore tensors\n  with 0 in their shape).\n  const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n  if ($inputs.length ===\n    1) {\n    return identity({inputs: {x: $inputs[0]}, backend});\n  }\n\n  const out = backend.makeOutput(outShape,\n    inputs[0].dtype);\n\n  if (util.sizeFromShape(outShape) === 0) {\n    return out;\n  }\n\n  const shapes =\n    $inputs.map(t => t.shape);\n  backend_util.assertParamsConsistent(shapes, axis);\n\n  if ($inputs[0].dtype ===\n    'string') {\n    // Any concat of n-dimensional tensors across any axis can be reduced to\n    // a concatenation of two-\n    dimensional tensors across the axis 1 by first\n    // partitioning the axes of the original tensors into those less than\n    // axis to be concatenated and the rest. Then reshape the tensors\n    // into a two-dimensional tensor by\n    collapsing these two sets of axes and\n    // concatenate the resulting matrices across the axis 1, finally reshaping\n    // the result to have the proper shape.\n    const inputs2D = $inputs.map(t => {\n      const innerSize =\n        util.sizeFromShape(t.shape.slice(axis));\n      const shape = [-1, innerSize];\n      return reshape({inputs: {x: t},\n        backend, attrs: {shape}});\n    });\n\n    const inputsValShapes = inputs2D.map(t => {\n      return {vals:\n        backend.readSync(t.dataId, shape: t.shape)};\n    });\n\n    // Concat 2d tensors along axis=1.\n    outShape =\n      backend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);\n    const simplyConcat =\n      inputs2D[0].shape[0] === 1;\n    const outVals = concatImplCPU(\n      inputsValShapes, outShape,\n      inputs[0].dtype,\n      simplyConcat) as string[];\n\n    const finalOutShape =\n      backend_util.computeOutShape($inputs.map(t => t.shape), axis);\n    out.shape = finalOutShape;\n    const\n      outData = backend.dataIdMap.get(out.dataId);\n    outData.stringBytes =\n      backend_util.fromStringArrayToUint8(outVals);\n\n    inputs2D.forEach(t => backend.disposeData(t.dataId));\n\n    return out;\n  }\n\n  const batchDim = util.sizeFromShape($inputs[0].shape.slice(0, axis));\n  let sumInnerDims =\n    0;\n  const innerDims = $inputs.map(input => {\n    const innerDim = util.sizeFromShape(input.shape.slice(axis));\n
```



```

// filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n 'number', //
padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n 'number', //
dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number',
// outputChannels\n 'number', // outId\n );\n}\n\nfunction conv2d(\n  args: {inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs}) {\n  const {inputs, attrs, backend} = args;\n\n  const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n
const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n  const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n  const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n    pad, dimRoundingMode, false,
$dataFormat);\n\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const
padTop = convInfo.padInfo.top;\n  const padRight = convInfo.padInfo.right;\n  const padBottom =
convInfo.padInfo.bottom;\n  const padLeft = convInfo.padInfo.left;\n  const dilationHeight =
convInfo.dilationHeight;\n  const dilationWidth = convInfo.dilationWidth;\n  const strideHeight =
convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n  const inputChannels =
convInfo.inChannels;\n  const outputChannels = convInfo.outChannels;\n  const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm backend
Conv2D does not support dataFormat:` +\n      ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n  }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  wasmConv2d(\n    xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n    filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n    dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n    outputChannels, outId);\n  return out;\n}\n\nexport
const conv2DConfig: KernelConfig = {\n  kernelName: Conv2D,\n  backendName: 'wasm',\n  setupFunc: setup,\n
kernelFunc: conv2d as { } as KernelFunc\n};\n",`/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n  dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n  filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n
outHeight: number, outWidth: number, outChannels: number,\n  strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n  fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n
xRowStride: number, xColStride: number, xChannelStride: number,\n  yBatchStride: number, yRowStride:
number, yColStride: number,\n  yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n 'number', //
filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n 'number', //
outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number',
// fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number',
// yChannelStride\n 'number', // outId\n ];\n}\n\nfunction conv2DBackpropInput(args: {\n  backend:
BackendWasm,\n  inputs: Conv2DBackpropInputInputs,\n  attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const {backend, inputs, attrs} = args;\n  const {dy, filter} = inputs;\n  const {strides, pad, dataFormat,

```

```

dimRoundingMode, inputShape} = attrs;\n\n const dilations = 1;\n\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n const {\n batchSize,\n filterHeight,\n filterWidth,\n inChannels,\n
inHeight,\n inWidth,\n outChannels,\n outHeight,\n outWidth,\n strideHeight,\n strideWidth\n } =
convInfo;\n\n const topPad = filterHeight - 1 - convInfo.padInfo.top;\n const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n const dxStrides =
util.computeStrides(convInfo.inShape);\n const dyStrides = util.computeStrides(dy.shape);\n const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n const xBatchStride = dxStrides[0];\n const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n const xColStride = isChannelsLast ? dxStrides[2] : 1;\n const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n const yBatchStride = dyStrides[0];\n const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n const yColStride = isChannelsLast ? dyStrides[2] : 1;\n const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n const out = backend.makeOutput(convInfo.inShape,
'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const dyId =
backend.dataIdMap.get(dy.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
wasmConv2DBackpropInput(\n dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n
inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n topPad, leftPad, fltS0, fltS1, fltS2,
xBatchStride, xRowStride,\n xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n
yChannelStride, outId);\n return out;\n}\n\nexport const conv2DBackpropInputConfig: KernelConfig = {\n
kernelName: Conv2DBackpropInput,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { Cos, KernelConfig } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const cosConfig: KernelConfig = createUnaryKernelConfig(Cos);\n\n", "/*\n * @license\n *
Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { Cosh, KernelConfig } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const coshConfig: KernelConfig = createUnaryKernelConfig(Cosh);\n\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc,
TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport { cast }

```

```

from './Cast';\n\n// Must match enum in CropAndResize.cc\nenum InterpolationMethod {\n  bilinear = 0,\n  nearest = 1\n}\n\nlet wasmCropAndResize: (\n  imagesId: number, boxesId: number, boxIndId: number, numBoxes: number,\n  imagesShape: Uint8Array, cropHeight: number, cropWidth: number,\n  method: number, extrapolationValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n    'number', // imagesId\n    'number', // boxesId\n    'number', // boxIndId\n    'number', // numBoxes\n    'array', // images shape\n    'number', // cropHeight\n    'number', // cropWidth\n    'number', // method\n    'number', // extrapolation value\n    'number', // out id\n  ]);\n}\n\nfunction cropAndResize(args: {\n  backend: BackendWasm,\n  inputs: CropAndResizeInputs,\n  attrs: CropAndResizeAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {method, extrapolationValue, cropSize} = attrs;\n  const {image, boxes, boxInd} = inputs;\n  const numBoxes = boxes.shape[0];\n  const [cropHeight, cropWidth] = cropSize as [number, number];\n  const outShape = [numBoxes, cropHeight, cropWidth, image.shape[3]];\n  let imagesData = backend.dataIdMap.get(image.dataId);\n  let castedData;\n  if (image.dtype !== 'float32') {\n    castedData = cast({backend, inputs: {x: image}, attrs: {dtype: 'float32'}});\n    imagesData = backend.dataIdMap.get(castedData.dataId);\n  }\n  const imagesId = imagesData.id;\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n  const out = backend.makeOutput(outShape, 'float32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n  wasmCropAndResize(\n    imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,\n    cropWidth,\n    InterpolationMethod[method as {}] as keyof typeof InterpolationMethod,\n    extrapolationValue, outId);\n  if (castedData !== null) {\n    backend.disposeData(castedData.dataId);\n  }\n  return out;\n}\n\nexport const cropAndResizeConfig: KernelConfig = {\n  kernelName: CropAndResize,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: cropAndResize as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n\n*\n\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\nimport {transpose} from './Transpose';\n\nlet wasmCumsum: (xId: number, exclusive: number, reverse: number,\n  finalDim: number, outId: number, dtype: CCppType) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\n    'number', // x_id\n    'number', // exclusive\n    'number', // reverse\n    'number', // final_dim\n    'number', // out_id\n    'number', // dtype\n  ]);\n}\n\nexport function cumsum(\n  args: {\n    inputs: CumsumInputs, backend: BackendWasm, attrs: CumsumAttrs\n  }): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {axis, exclusive, reverse} = attrs;\n  const xRank = x.shape.length;\n  util.assert(x.dtype === 'float32' || x.dtype === 'int32',\n    () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\n  // permute required axis to inner most axis\n  const permutation = backend_util.getAxesPermutation([axis], xRank);\n  let permutedX = x;\n  if (permutation !== null) {\n    permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n  }\n  const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n  backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n  const permutedOut = backend.makeOutput(permutedX.shape, permutedX.dtype);\n  const finalDim = permutedX.shape[permutedAxis];\n  const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n  const permutedOutId = backend.dataIdMap.get(permutedOut.dataId).id;\n  wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0, finalDim,\n    permutedOutId, CCppType[x.dtype]);\n  // transpose data back if permuted\n  let out =

```

```

permutedOut;\n if (permutation !== null) {\n   const undoPermutation =
backend_util.getUndoAxesPermutation(permutation);\n   out = transpose(\n     {inputs: {x: permutedOut}, attrs:
{perm: undoPermutation}, backend});\n   backend.disposeData(permutedX.dataId);\n
backend.disposeData(permutedOut.dataId);\n };\n return out;\n}\n\nexport const cumsumConfig: KernelConfig =
{\n  kernelName: Cumsum,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: cumsum as { } as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace:
(\n  xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n  xStridesLength: number,
outputShape: Uint8Array, outputStrides: Uint8Array,\n  outSize: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n  wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\n    'number', // xId\n    'number', // blockSize\n    'number', // channelsLast\n    'array', // xStrides\n
'number', // xStridesLength\n    'array', // outputShape\n    'array', // outputStrides\n    'number', // outSize\n
'number', // outId\n  ]);\n}\n\nexport function depthToSpace(args: {\n  backend: BackendWasm,\n  inputs:
DepthToSpaceInputs,\n  attrs: DepthToSpaceAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n  const {blockSize, dataFormat} = attrs;\n\n  const batchSize = x.shape[0];\n  const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n  const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n  const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n  const
outputHeight = inputHeight * blockSize;\n  const outputWidth = inputWidth * blockSize;\n  const outputDepth =
inputDepth / (blockSize * blockSize);\n\n  const outputShape = (dataFormat === 'NHWC') ?\n    [batchSize,
outputHeight, outputWidth, outputDepth] :\n    [batchSize, outputDepth, outputHeight, outputWidth];\n\n  const
out = backend.makeOutput(outputShape, 'float32');\n\n  const xData = backend.dataIdMap.get(x.dataId);\n  const
xId = xData.id;\n  const xStridesBytes =\n    new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n  const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n  const outStridesBytes =\n    new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n  wasmDepthToSpace(\n    xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n    outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n  return
out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n  kernelName: DepthToSpace,\n  backendName:
'wasm',\n  setupFunc: setup,\n  kernelFunc: depthToSpace as { } as KernelFunc\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n  xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, padTop:

```

```

number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n  dilationHeight:
number, dilationWidth: number, strideHeight: number,\n  strideWidth: number, inputChannels: number,
outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmDepthwiseConv2d =\n  backend.wasm.cwrap(DepthwiseConv2dNative, null /* void */, [\n    'number', //
xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', //
filterId\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', //
padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', //
dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n
'number', // inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n\nfunction
depthwiseConv2d(args: {\n  inputs: DepthwiseConv2dNativeInputs,\n  backend: BackendWasm,\n  attrs:
DepthwiseConv2dNativeAttrs\n}) {\n  const {inputs, attrs, backend} = args;\n\n  const {x, filter} = inputs;\n
  const xId = backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n
  const {strides, dilations, pad, dimRoundingMode} = attrs;\n\n  const $dilations = dilations === null ? [1, 1] : dilations;\n\n
  const convInfo = backend_util.computeConv2DInfo(\n    (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n    ($dilations as number | [number, number]), pad, dimRoundingMode,\n    true /* depthwise */);\n\n
  const filterHeight = convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop =
convInfo.padInfo.top;\n  const padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n
  const padLeft = convInfo.padInfo.left;\n  const dilationHeight = convInfo.dilationHeight;\n  const dilationWidth =
convInfo.dilationWidth;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth =
convInfo.strideWidth;\n  const inputChannels = convInfo.inChannels;\n  const outputChannels =
convInfo.outChannels;\n  const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n  if
(convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm backend DepthwiseConv2dNative
does not support dataFormat:` +\n      `${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n  }\n\n  const out =
backend.makeOutput(convInfo.outShape, 'float32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
  wasmDepthwiseConv2d(\n    xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n    filterWidth,
padTop, padRight, padBottom, padLeft, isSamePad,\n    dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n    outputChannels, outId);\n  return out;\n}\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n  kernelName: DepthwiseConv2dNative,\n  backendName: 'wasm',\n  setupFunc: setup,\n
kernelFunc: depthwiseConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */\n\n
=====\n
*/\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n
*/\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const equalConfig: KernelConfig =\n  createBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n * Copyright 2019 Google

```


LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from './Reshape';\nexport function expandDims(args: {\n  inputs: ExpandDimsInputs,\n  attrs: ExpandDimsAttrs,\n  backend: BackendWasm\n}) {\n  const {inputs, attrs, backend} = args;\n  const {input} = inputs;\n  const {dim} = attrs;\n\n  const inputRank = input.shape.length;\n  const newShape = input.shape.slice();\n  let $dim = dim;\n  if (dim < 0) {\n    // Negative value is counted from the tail of rank.\n    util.assert(\n      -(inputRank + 1) <= dim,\n      () => `Axis must be in the interval [${-(inputRank + 1)}, ${\n        inputRank\n      }]`);\n    $dim = inputRank + dim + 1;\n  }\n  newShape.splice($dim, 0, 1);\n\n  return reshape({inputs: {x: input}, backend, attrs: {shape: newShape}});\n}\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'wasm',\n  kernelFunc: expandDims as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nexport function fill(args: {attrs: FillAttrs, backend: BackendWasm}) {\n  const {attrs: {shape, value, dtype}, backend} = args;\n  const out = backend.makeOutput(shape, dtype);\n  const outVals = backend.TypedArrayFromHeap(out);\n  outVals.fill(value as number);\n  return out;\n}\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName: 'wasm',\n  kernelFunc: fill as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nlet wasmFlipLeftRight: (\n  xId: number, batch:
```

```

number, imageHeight: number, imageWidth: number,\n  numChannels: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight,
null /* void */, [\n  'number', // xId\n  'number', // batch\n  'number', // imageHeight\n  'number', //
imageWidth\n  'number', // numChannels\n  'number', // outId\n  ]);\n}\n\nexport function flipLeftRight(\n
args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n  const {inputs, backend} = args;\n
const {image} = inputs;\n  const out = backend.makeOutput(image.shape, image.dtype);\n  const imageId =
backend.dataIdMap.get(image.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const [batch,
imageHeight, imageWidth, numChannels] = image.shape;\n\n  wasmFlipLeftRight(\n    imageId, batch,
imageHeight, imageWidth, numChannels, outId);\n  return out;\n}\n\nexport const flipLeftRightConfig:
KernelConfig = {\n  kernelName: FlipLeftRight,\n  backendName: 'wasm',\n  kernelFunc: flipLeftRight as {} as
KernelFunc,\n  setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing\n * permissions and\n * limitations under the License.\n *
=====\n
*\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing\n * permissions and\n * limitations under the License.\n *
=====\n
*\nimport {FloorDiv, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'./binary_kernel';\nconst supportsFullBroadcast = false;\nexport const floorDivConfig: KernelConfig =\ncreateBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing\n * permissions and\n * limitations under the License.\n *
=====\n
*\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc,
TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nlet
wasmBatchNorm: (\n  xId: number, meanId: number, varianceId: number, offsetId: number,\n  scaleId: number,
varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmBatchNorm = backend.wasm.cwrap(\n  FusedBatchNorm, null /* void */,\n  ['number', 'number',
'number', 'number', 'number', 'number']);\n}\n\nfunction fusedBatchNorm(args: {\n  backend:
BackendWasm,\n  inputs: FusedBatchNormInputs,\n  attrs: FusedBatchNormAttrs\n}): TensorInfo {\n  const
{backend, inputs, attrs} = args;\n  const {varianceEpsilon} = attrs;\n  const {x, mean, variance, offset, scale} =
inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const meanId =
backend.dataIdMap.get(mean.dataId).id;\n  const varianceId = backend.dataIdMap.get(variance.dataId).id;\n  const
offsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n  const scaleId = scale != null ?

```

```

backend.dataIdMap.get(scale.dataId).id : 0;\n\n const out = backend.makeOutput(x.shape, x.dtype);\n // Short-
circuit zero-sized tensors.\n if (util.sizeFromShape(x.shape) === 0) {\n return out;\n }\n\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n wasmBatchNorm(\n xId, meanId, varianceId, offsetId, scaleId,
varianceEpsilon, outId);\n return out;\n}\n\nexport const fusedBatchNormConfig: KernelConfig = {\n kernelName:
FusedBatchNorm,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchNorm as { } as
KernelFunc\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
*\n\nimport { backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc,
Tensor4D } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport
{ FusibleActivation } from './types';\n\nlet wasmFusedConv2d:\n (xId: number, batchSize: number, inputHeight:
number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number,\n biasId: number,
padTop: number, padRight: number, padBottom: number,\n padLeft: number, isSamePad: number,
dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n
inputChannels: number, outputChannels: number, activation: number,\n preluActivationWeightsId: number,
leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n
wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', //
inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n ]);\n\nfunction
fusedConv2d(args: {\n inputs: FusedConv2DInputs,\n backend: BackendWasm,\n attrs: FusedConv2DAttrs\n})
{\n const {inputs, attrs, backend} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const {\n
strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } =
attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as
Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode);\n\n const fusedActivation =\n
FusibleActivation[activation as { } as keyof typeof FusibleActivation];\n\n if (fusedActivation == null) {\n
throw
new Error(\n ` ${activation} activation not yet supported for FusedConv2D ` +\n ` in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n
if (bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `FusedConv2D only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}.`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not ` +\n `match the number of output channels
(${outputChannels})`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if

```

```

(dataFormat !== 'NHWC') {\n  throw new Error(\n    `wasm backend FusedConv2D does not support
dataFormat:` +\n    `${dataFormat}`. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n  0 :\n  backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n  xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n  biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n  dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n  fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n  kernelName: FusedConv2D,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `AS IS` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====*\n\nimport { backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from './backend_wasm';\n\nimport { FusibleActivation } from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n  (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number,\n  biasId: number, padTop: number, padRight:
number, padBottom: number,\n  padLeft: number, isSamePad: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:
number, activation: number,\n  preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedDepthwiseConv2d =\n  backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n    'number', // xId\n    'number', //
batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', //
filterHeight\n    'number', // filterWidth\n    'number', // biasId\n    'number', // padTop\n    'number', //
padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', //
dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n
'number', // inputChannels\n    'number', // outputChannels\n    'number', // activation\n    'number', //
preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number', // outId\n  ]);\n\nfunction
fusedDepthwiseConv2d(args: {\n  inputs: FusedDepthwiseConv2DInputs,\n  backend: BackendWasm,\n  attrs:
FusedDepthwiseConv2DAttrs\n}) {\n  const { inputs, attrs, backend } = args;\n  const { x, filter, bias,
preluActivationWeights } = inputs;\n  const {\n    strides,\n    pad,\n    dilations,\n    dataFormat,\n    dimRoundingMode,\n    activation,\n    leakyreluAlpha\n  } = attrs;\n\n  const convInfo =
backend_util.computeConv2DInfo(\n    (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n  pad, dimRoundingMode, true /* depthwise */);\n\n  const fusedActivation =\n    FusibleActivation[activation as {\n  as keyof typeof FusibleActivation\n}];\n  if (fusedActivation == null) {\n    throw new Error(\n      `${activation}
activation not yet supported for FusedDepthwiseConv2D`\n      +\n      `in the wasm backend.`);\n  }\n\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n  const
outputChannels = convInfo.outChannels;\n\n  let biasId = 0;\n  if (bias != null) {\n    const biasData =
backend.dataIdMap.get(bias.dataId);\n    if (biasData.shape.length !== 1) {\n      throw new Error(\n
`FusedDepthwiseConv2D only supports rank-1 bias but got`\n      +\n      `rank ${biasData.shape.length}.`);\n    }\n
if (biasData.shape[0] !== outputChannels) {\n      throw new Error(\n        `FusedDepthwiseConv2D bias shape
(${biasData.shape}) does not`\n        +\n        `match the number of output channels (${outputChannels})`);\n    }\n
biasId = biasData.id;\n  }\n\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth =

```

```

convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const
padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n   throw new Error(\n     `wasm backend FusedDepthwiseConv2D does not support
dataFormat:` +\n     `${dataFormat}`. Please use 'NHWC'.`);\n };\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n   0 :\n   backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedDepthwiseConv2d(\n   xId, batchSize,
inHeight, inWidth, filterId, filterHeight, filterWidth,\n   biasId, padTop, padRight, padBottom, padLeft,
isSamePad, dilationHeight,\n   dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n   fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n  kernelName: FusedDepthwiseConv2D,\n  backendName:
'wasm',\n  setupFunc: setup,\n  kernelFunc: fusedDepthwiseConv2d as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet
wasmGatherNd: (\n  xId: number, dtype: CCppType, indicesId: number, numSlices: number,\n  sliceRank:
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n    'number', // xId\n
'number', // dtype\n 'number', // indicesId\n 'number', // numSlices\n 'number', // sliceRank\n 'number', //
sliceSize\n 'array', // strides\n 'number' // outId\n ]);\n}\n\nfunction gatherNd(args: {backend: BackendWasm,
inputs: GatherNdInputs}): \n  TensorInfo {\n  const {backend, inputs} = args;\n  const {params, indices} =
inputs;\n\n  const [resultShape, numSlices, sliceSize, strides] =\n    gather_util.prepareAndValidate(params,
indices);\n\n  const out = backend.makeOutput(resultShape, params.dtype);\n  if (numSlices === 0) {\n    return
out;\n  }\n\n  const indicesShape = indices.shape;\n  const sliceRank = indicesShape[indicesShape.length - 1];\n\n
const xData = backend.dataIdMap.get(params.dataId);\n  const xId = xData.id;\n  const indicesData =
backend.dataIdMap.get(indices.dataId);\n  const indicesId = indicesData.id;\n\n  const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmGatherNd(\n    xId, CCppType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n    stridesBytes,
outId);\n\n  return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n  kernelName: GatherNd,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: gatherNd\n};\n\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,

```

```

TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {reshape} from './Reshape';\n\nimport {CppType} from './types';\n\nlet wasmGather:
(\n  xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n  indicesId: number, batchSize:
number, outStrides: Uint8Array,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n  'number', // xId\n  'number', // dtype\n  'array',
// xStrides\n  'number', // stridesSize\n  'number', // indicesId\n  'number', // batchSize\n  'array', //
outStrides\n  'number' // outId\n  ]);\n}\n\nfunction gatherV2(\n  args: {backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs}): \n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {x,
indices} = inputs;\n  const {axis, batchDims} = attrs;\n\n  // Throw error when any index is out of bound.\n  const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n  const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n  const axisDim = x.shape[parsedAxis];\n  for (let i = 0; i < indicesVals.length; ++i) {\n  const index
= indicesVals[i];\n  util.assert(\n    index <= axisDim - 1 && index >= 0,\n    () =>\n      `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]);\n  }\n\n  const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n    x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n  const flattenX = reshape({\n    inputs: {x},\n    attrs: {\n      shape: [\n        shapeInfo.batchSize,
shapeInfo.outerSize, shapeInfo.dimSize,\n        shapeInfo.sliceSize\n      ]\n    },\n    backend\n  });\n  const
indicesSize = util.sizeFromShape(indices.shape);\n  const flattenIndex = reshape({\n    inputs: {x: indices},\n    attrs:
{shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n    backend\n  });\n  const flattenOutputShape =
[\n    shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n    shapeInfo.sliceSize\n  ];\n\n  const out = backend.makeOutput(flattenOutputShape, x.dtype);\n  if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n  }\n\n  const stridesSize = flattenX.shape.length - 1;\n\n  const xData =
backend.dataIdMap.get(flattenX.dataId);\n  const xId = xData.id;\n\n  const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n  const indicesId = indicesData.id;\n\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n\n  const xStridesBytes = new Uint8Array(\n    new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n\n  const outStridesBytes = new Uint8Array(\n    new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n  wasmGather(\n    xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n    shapeInfo.batchSize, outStridesBytes, outId);\n\n  backend.disposeData(flattenX.dataId);\n  backend.disposeData(flattenIndex.dataId);\n\n  // reshape\n  out.shape =
shapeInfo.outputShape;\n  return out;\n}\n\nexport const gatherV2Config: KernelConfig = {\n  kernelName:
GatherV2,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: gatherV2 as { } as KernelFunc\n};\n\n"/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n
=====\n
*/\n\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const greaterConfig: KernelConfig =\n  createBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n\n"/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n
=====\n
*/\n\nimport {GreaterEqual, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig}

```

from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\n createBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from\n './types';\nlet wasmFunc: (\n  xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>\n  void;\nfunction setupFunc(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(LeakyRelu,\n    null /* void */, [\n      'number', // x_id\n      'number', // dtype\n      'number', // leakyrelu_alpha\n      'number', //\n      out_id\n    ]);\n}\n\nexport function leakyRelu(\n  args: {\n    inputs: LeakyReluInputs, attrs: LeakyReluAttrs,\n    backend: BackendWasm\n  }):\n  TensorInfo {\n    const { inputs: { x }, attrs: { alpha }, backend } = args;\n    const xId =\n      backend.dataIdMap.get(x.dataId).id;\n    // According to TF API, LeakyRelu returns float32 when input is either\n    float32\n    // or int32.\n    const out = backend.makeOutput(x.shape, 'float32');\n    if (util.sizeFromShape(x.shape)\n      !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmFunc(xId, CppDType[x.dtype], alpha,\n        outId);\n    }\n    return out;\n  }\n}\n\nexport const leakyReluConfig: KernelConfig = {\n  kernelName: LeakyRelu,\n  backendName: 'wasm',\n  setupFunc,\n  kernelFunc: leakyRelu as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Less } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\n  createBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, LessEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\n  createBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n
```

```
*/\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from\n './unary_kernel';\n\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from\n './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const logicalAndConfig: KernelConfig =\n createBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util} from\n '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmMax: (xId:\n number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:\n BackendWasm): void {\n  wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n\n  function max(args: {\n    backend:\n    BackendWasm, inputs: MaxInputs, attrs: MaxAttrs\n  }):\n    TensorInfo {\n    const {backend, inputs, attrs} = args;\n\n    const {reductionIndices: axis, keepDims} = attrs;\n\n    const {x} = inputs;\n\n    const xId =\n    backend.dataIdMap.get(x.dataId).id;\n\n    let inputId = xId;\n\n    let input = x;\n\n    const {transposed, axes, originalAxes,\n    inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n    const transposedId =\n    backend.dataIdMap.get(transposed.dataId).id;\n\n    input = transposed;\n\n    inputId =\n    transposedId;\n    }\n\n    const inputRank = input.shape.length;\n\n    backend_util.assertAxesAreInnerMostDims('max',\n    axes, inputRank);\n\n    const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, axes);\n\n    const reduceSize =\n    util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape, x.dtype);\n\n    if\n    (util.sizeFromShape(input.shape) !== 0) {\n    const outId =\n    backend.dataIdMap.get(out.dataId).id;\n\n    wasmMax(inputId, CCppType[x.dtype], reduceSize, outId);\n    }\n\n    if (inputWasTransposed) {\n    // dispose of the\n    transposed tensor.\n    backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n    // reshape\n    const\n    newShape =\n    backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n\n    out.shape = newShape;\n    }\n\n    return out;\n  }\n\n  export const maxConfig: KernelConfig = {\n    kernelName: Max,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: max as {\n    } as KernelFunc\n  };\n\n"/**\n * @license\n * Copyright 2019 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, Maximum} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
```



```

'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const maximumConfig: KernelConfig =\ncreateBinaryKernelConfig(Maximum, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n  

=====*\n\nimport { backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util }\nfrom '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nlet wasmMaxPool: (\n  xId:\n  number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:\n  number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:\n  number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n  wasmMaxPool =\n  backend.wasm.cwrap(MaxPool, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', //\n  inputHeight\n    'number', // inputWidth\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', //\n  padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', //\n  dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', //\n  inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n  function maxPool(\n    args:\n    {inputs: MaxPoolInputs, backend: BackendWasm, attrs: MaxPoolAttrs}) {\n    const {inputs, attrs, backend} =\n    args;\n    const x = inputs.x as Tensor4D;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    // TF API\n    supports int32 input. CPU and WebGL backend also support int32\n    // input. WASM backend doesn't support it\n    because it uses xnnpack which only\n    // supports float32.\n    // Add the following assert only for the WASM\n    backend instead of at core op\n    // level.\n    // TODO: add support for int32 input.\n    util.assert(\n      x.dtype\n    === 'float32',\n      () =>\n      `Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);\n    const\n    {filterSize, strides, pad, dimRoundingMode} = attrs;\n    const convInfo = backend_util.computePool2DInfo(\n      x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n    const filterHeight =\n    convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const padTop = convInfo.padInfo.top;\n    const\n    padRight = convInfo.padInfo.right;\n    const padBottom = convInfo.padInfo.bottom;\n    const padLeft =\n    convInfo.padInfo.left;\n    const dilationHeight = convInfo.dilationHeight;\n    const dilationWidth =\n    convInfo.dilationWidth;\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth =\n    convInfo.strideWidth;\n    const inputChannels = convInfo.inChannels;\n    const outputChannels =\n    convInfo.outChannels;\n    if (convInfo.dataFormat !== 'channelsLast') {\n      throw new Error(\n        `wasm\n        backend does not support dataFormat: ` +\n        `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n    }\n    const out = backend.makeOutput(convInfo.outShape, 'float32');\n    const outId =\n    backend.dataIdMap.get(out.dataId).id;\n    wasmMaxPool(\n      xId, x.shape[0], x.shape[1], x.shape[2],\n      filterHeight, filterWidth,\n      padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,\n      strideHeight, strideWidth, inputChannels, outputChannels, outId);\n    return out;\n  }\n  export const maxPoolConfig:\n  KernelConfig = {\n    kernelName: MaxPool,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: maxPool\n  } as KernelFunc;\n}"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed\n under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n *  

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *\n  

=====*\n\n

```

```

*\n\nimport {backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {cast} from './Cast';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmMean =\n  backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);\n}\n\nexport function mean(\n  args:
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs};\n  TensorInfo {\n    const {backend, inputs,
attrs} = args;\n    const {axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId =
backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const {transposed, axes, originalAxes,
inputWasTransposed} =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    let reductionAxes = axes;\n    if
(inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId
!== xId) {\n        // transpose was not a no-op. We will need to dispose of this\n        // once we are done.\n        input =
transposed;\n        inputId = transposedId;\n        reductionAxes = backend_util.getInnerMostAxes(\n
reductionAxes.length, input.shape.length);\n      }\n    }\n\n    backend_util.assertAxesAreInnerMostDims(\n      'mean',
reductionAxes, input.shape.length);\n    const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n    const reduceSize =
util.sizeFromShape(reduceShape);\n    let castedInput = input;\n    if (input.dtype !== 'float32') {\n      castedInput =\n      cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n      inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n    }\n\n    const out = backend.makeOutput(outShape, 'float32');\n    if
(util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmMean(inputId, reduceSize, outId);\n    }\n\n    if (inputWasTransposed) {\n      // dispose of the transposed
tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n      // reshape\n      const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n\n    if (input.dtype
!== 'float32') {\n      backend.disposeData(castedInput.dataId);\n    }\n\n    return out;\n}\n\nexport const meanConfig:
KernelConfig = {\n  kernelName: Mean,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: mean as {\n
as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmMin: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n}\n\nfunction min(args: {backend:
BackendWasm, inputs: MinInputs, attrs: MinAttrs};\n  TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const
{axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let
inputId = xId;\n    let input = x;\n\n    const {transposed, axes, originalAxes, inputWasTransposed} =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n      const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId !== xId) {\n        // transpose was not a no-op. We
will need to dispose of this\n        // once we are done.\n        input = transposed;\n        inputId = transposedId;\n      }\n    }\n\n    const inputRank = input.shape.length;\n\n    backend_util.assertAxesAreInnerMostDims('min', axes,
inputRank);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape,
axes);\n    const reduceSize = util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape,
input.dtype);\n    if (util.sizeFromShape(input.shape) !== 0) {\n      const outId =

```

```

backend.dataIdMap.get(out.dataId).id;\n  wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);\n } \n\n if
(inputWasTransposed) {\n // dispose of the transposed tensor.\n  backend.disposeData(transposed.dataId);\n
}\n\n if (keepDims) {\n // reshape\n  const newShape = backend_util.expandShapeToKeepDim(out.shape,
originalAxes);\n  out.shape = newShape;\n }\n\n return out;\n}\n\nexport const minConfig: KernelConfig = {\n
kernelName: Min,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: min as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport { KernelConfig, Minimum } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const minimumConfig: KernelConfig =\ncreateBinaryKernelConfig(Minimum, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2021 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport { KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs } from '@tensorflow/tfjs-
core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from './types';\n\n// Must match
enum in MirrorPad.cc\nenum MirrorPaddingMode {\n  reflect = 0,\n  symmetric = 1\n}\n\nlet wasmMirrorPad: (\n
  xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes:
  Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n  outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n  wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n
    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n
    'array', // pre-
    paddings\n    'array', // post-paddings\n    'number', // mode\n    'number', // outId\n  ]);\n}\n\nfunction
mirrorPad(args: {\n  inputs: MirrorPadInputs,\n  backend: BackendWasm,\n  attrs: MirrorPadAttrs\n}) {\n  const
{inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n  const outShape = paddings.map(\n    (p, i) => p[0] /*
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out =
backend.makeOutput(outShape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n  const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n  const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n    new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n  const
postPaddingsBytes =\n    new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n  wasmMirrorPad(\n
    xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n    postPaddingsBytes,
    MirrorPaddingMode[mode], outId);\n  return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n
kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as {} as KernelFunc,\n setupFunc:
setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

License.\n *

```
=====\n*\n\nimport { KernelConfig, Multiply } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\n\nconst supportsFullBroadcast = true;\nexport const multiplyConfig: KernelConfig =\n  createBinaryKernelConfig(Multiply, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, Neg } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { BackendWasm } from '../backend_wasm';\n\n// Analogous to `struct Result` in `non_max_suppression_impl.h`\ninterface Result {\n  pSelectedIndices: number;\n  selectedSize: number;\n  pSelectedScores: number;\n  pValidOutputs: number;\n}\n\n/**\n * Parse the result of the c++ method, which has the shape equivalent to\n * `Result`\n */\nexport function parseResultStruct(\n  backend: BackendWasm, resOffset: number): Result {\n  const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n  const pSelectedIndices = result[0];\n  const selectedSize = result[1];\n  const pSelectedScores = result[2];\n  const pValidOutputs = result[3];\n  // Since the result was allocated on the heap, we have to delete it.\n  backend.wasm._free(resOffset);\n  return {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs};\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,\n  NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n  boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number) => number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(\n    NonMaxSuppressionV3,\n    'number', // Result*\n    [\n      'number', // boxesId\n      'number', // scoresId\n      'number', // maxOutputSize\n      'number', // iouThreshold\n      'number', // scoreThreshold\n    ],\n  );\n\n  function kernelFunc(args: {\n    backend: BackendWasm,\n    inputs: NonMaxSuppressionV3Inputs,\n    attrs: NonMaxSuppressionV3Attrs\n  }): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {iouThreshold, maxOutputSize, scoreThreshold} = attrs;\n    const {boxes, scores} = inputs;\n\n    const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n    const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n    const
```

```

resOffset =\n    wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n\n const
{pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n    parseResultStruct(backend, resOffset);\n\n
// Since we are not using scores for V3, we have to delete it from the heap.\n
backend.wasm._free(pSelectedScores);\n backend.wasm._free(pValidOutputs);\n\n const selectedIndicesTensor
=\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n return
selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n kernelName:
NonMaxSuppressionV3,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc as {} as
KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs,
NonMaxSuppressionV4Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n    iouThreshold: number, scoreThreshold: number,\n    padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n    wasmFunc =
backend.wasm.cwrap(\n        NonMaxSuppressionV4,\n        'number', // Result*\n        [\n            'number', // boxesId\n            'number', // scoresId\n            'number', // maxOutputSize\n            'number', // iouThreshold\n            'number', //
scoreThreshold\n            'bool', // padToMaxOutputSize\n        ]);\n\n    function nonMaxSuppressionV4(args: {\n
backend: BackendWasm,\n        inputs: NonMaxSuppressionV4Inputs,\n        attrs: NonMaxSuppressionV4Attrs\n    }):
TensorInfo[] {\n        const {backend, inputs, attrs} = args;\n        const {iouThreshold, maxOutputSize, scoreThreshold,
padToMaxOutputSize} =\n            attrs;\n        const {boxes, scores} = inputs;\n\n        const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n        const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n        const
resOffset = wasmFunc(\n            boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n            padToMaxOutputSize);\n\n        const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n            parseResultStruct(backend, resOffset);\n\n        // Since we are not using scores for V4, we have to delete it from the
heap.\n        backend.wasm._free(pSelectedScores);\n\n        const selectedIndicesTensor =\n            backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n        const validOutputsTensor =
backend.makeOutput([], 'int32', pValidOutputs);\n\n        return [selectedIndicesTensor,
validOutputsTensor];\n    }\n\n    export const nonMaxSuppressionV4Config: KernelConfig = {\n        kernelName:
NonMaxSuppressionV4,\n        backendName: 'wasm',\n        setupFunc: setup,\n        kernelFunc: nonMaxSuppressionV4 as {}
as KernelFunc,\n    };
\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,
NonMaxSuppressionV5Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc:\n    (\n        boxesId: number, scoresId: number, maxOutputSize: number,\n        iouThreshold: number, scoreThreshold: number,\n        softNmsSigma: number) =>\n        number;\n\nfunction setup(backend: BackendWasm): void {\n    wasmFunc =

```

```

backend.wasm.cwrap(\n NonMaxSuppressionV5,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n 'number', // softNmsSigma\n ]);\n\nfunction kernelFunc(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV5Inputs,\n attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[] {\n const {backend, inputs, attrs} = args;\n const {iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma} = attrs;\n const {boxes, scores} = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n softNmsSigma);\n\n const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n parseResultStruct(backend, resOffset);\n\n // Since we are not using validOutputs for V5, we have to delete it from the\n // heap.\n backend.wasm._free(pValidOutputs);\n\n const selectedIndicesTensor =\n backend.makeOutput([selectedSize, 'int32', pSelectedIndices);\n const selectedScoresTensor =\n backend.makeOutput([selectedSize, 'float32', pSelectedScores);\n\n return [selectedIndicesTensor, selectedScoresTensor];\n}\n\nexport const nonMaxSuppressionV5Config: KernelConfig = {\n kernelName: NonMaxSuppressionV5,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc\n} as KernelFunc;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*/\nimport {KernelConfig, NotEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const notEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmOneHot: (\n indicesId: number, depth: number, onValue: number, offValue: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n 'number', // indices_id\n 'number', // depth,\n 'number', // onValue\n 'number', // offValue\n 'number' // out_id\n ]);\n}\n\nfunction oneHot(\n args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n const {inputs, backend, attrs} = args;\n const {indices} = inputs;\n const {depth, onValue, offValue} = attrs;\n\n const out = backend.makeOutput([...indices.shape, depth], 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const indicesData = backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n wasmOneHot(indicesId, depth, onValue, offValue, outId);\n\n return out;\n}\n\nexport const oneHotConfig: KernelConfig = {\n kernelName: OneHot,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: oneHot\n} as KernelFunc;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

```

implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nfunction onesLike(args: {inputs: OnesLikeInputs, backend: BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outVals = backend.tensorArrayFromHeap(out);\n  outVals.fill(1);\n  return out;\n}\n\nexport const onesLikeConfig: KernelConfig = {\n  kernelName: OnesLike,\n  backendName: 'wasm',\n  kernelFunc: onesLike as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {concat} from './Concat';\nimport {expandDims} from './ExpandDims';\n\nexport function pack(\n  args: {inputs: PackInputs, backend: BackendWasm, attrs: PackAttrs}):\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {axis} = attrs;\n\n  if (inputs.length === 1) {\n    return expandDims(\n      {inputs: {input: inputs[0]}, backend, attrs: {dim: axis}});\n  }\n\n  const shape = inputs[0].shape;\n  const dtype = inputs[0].dtype;\n\n  inputs.forEach(t => {\n    util.assertShapesMatch(\n      shape, t.shape, 'All tensors passed to stack must have matching shapes');\n    util.assert(\n      dtype === t.dtype, 'All tensors passed to stack must have matching dtypes');\n  });\n\n  const intermediateTensorInfos: TensorInfo[] = [];\n  const expandedTensors = inputs.map(t => {\n    const expandedT =\n      expandDims({input: t}, backend, attrs: {dim: axis});\n    intermediateTensorInfos.push(expandedT);\n    return expandedT;\n  });\n\n  const result = concat({inputs: expandedTensors, backend, attrs: {axis}});\n\n  intermediateTensorInfos.forEach(t => backend.disposeData(t.dataId));\n\n  return result;\n}\n\nexport const packConfig: KernelConfig = {\n  kernelName: Pack,\n  backendName: 'wasm',\n  kernelFunc: pack as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {fill} from './Fill';\nimport {CppType} from './types';\n\nlet wasmPadV2: (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array, constantValue: number, outId: number)\n  => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmPadV2 = backend.wasm.cwrap(PadV2, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'array', // pre-paddings\n    'array', // post-paddings\n    'number', // constantValue\n    'number', // outId\n  ]);\n\n  function pad(\n    args: {inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs}) {\n    const {inputs: {x}, backend, attrs: {paddings, constantValue}} = args;\n\n    const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n    if (util.sizeFromShape(x.shape) === 0) {\n      // Short-circuit the computation, since x doesn't have value, only\n      // the shape is used to compute output shape to pad.\n
```

```

return fill({\n  backend,\n  attrs: {shape: outShape, value: constantValue, dtype: x.dtype}\n });\n }\n\n const
xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n const
outTensorData = backend.dataIdMap.get(out.dataId);\n const outId = outTensorData.id;\n\n const xShapeBytes =
new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple =>
padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n const prePaddingsBytes =\n  new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const postPaddingsBytes =\n  new
Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmPadV2(\n  xId, xShapeBytes, x.shape.length,
CppType[x.dtype], prePaddingsBytes,\n  postPaddingsBytes, constantValue, outId);\n return out;\n}\n\nexport
const padV2Config: KernelConfig = {\n kernelName: PadV2,\n backendName: 'wasm',\n kernelFunc: pad as {} as
KernelFunc,\n setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport {KernelConfig, Pow} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const powConfig: KernelConfig =\n  createBinaryKernelConfig(Pow, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, KernelFunc, Prelu, PreluInputs} from '@tensorflow/tfjs-core';\nimport
{BackendWasm} from '../backend_wasm';\nimport {cast} from './Cast';\n\nlet wasmPrelu: (xId: number,
weightsId: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmPrelu =
backend.wasm.cwrap(Prelu, null /* void */, [\n    'number', // x_id\n    'number', // weights_id\n    'number' //
out_id\n  ]);\n\n  function prelu(args: {inputs: PreluInputs, backend: BackendWasm}) {\n    const {inputs, backend}
= args;\n    const {x, alpha} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const weightsId =
backend.dataIdMap.get(alpha.dataId).id;\n\n    let inputId = xId;\n    const input = x;\n    let castedInput = input;\n    if
(input.dtype !== 'float32') {\n      castedInput = cast({backend, inputs: {x}, attrs: {dtype: 'float32'}});\n      inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n    }\n\n    const out = backend.makeOutput(x.shape, 'float32');\n
const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmPrelu(inputId, weightsId, outId);\n\n    if (input.dtype
!== 'float32') {\n      backend.disposeData(castedInput.dataId);\n    }\n\n    return out;\n  }\n\n  export const preluConfig:
KernelConfig = {\n    kernelName: Prelu,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: prelu as {} as
KernelFunc\n  };\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util} from

```



```

'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmProd: (\n
xId: number, reduceSize: number,\n  dtype: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n  'number',\n  'number',\n  'number',\n  'number'\n  ]);\n}\n\nfunction prod(args: {\n  backend: BackendWasm,\n  inputs: ProdInputs,\n  attrs:
ProdAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x}
= inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const
{transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  let
reductionAxes = axes;\n  if (inputWasTransposed) {\n    const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n      // transpose was not a no-op. We
will need to dispose of this\n      // once we are done.\n      input = transposed;\n      inputId = transposedId;\n
      reductionAxes = backend_util.getInnerMostAxes(\n        reductionAxes.length, input.shape.length);\n    }\n  }\n\n  backend_util.assertAxesAreInnerMostDims(\n    'prod', reductionAxes, input.shape.length);\n  const [outShape,
reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n  const reduceSize
= util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, input.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n
    wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of
the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n  return out;\n}\n\nexport const prodConfig: KernelConfig = {\n  kernelName: Prod,\n  backendName: 'wasm',\n
setupFunc: setup,\n  kernelFunc: prod as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport {KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nimport {rangeImplCPU} from './kernel_utils/shared';\n\nexport const
range =\n  (args: {\n    backend: BackendWasm, attrs: RangeAttrs\n}): TensorInfo => {\n    const {backend, attrs} =
args;\n    const {start, stop, step, dtype} = attrs;\n    const values = rangeImplCPU(start, stop, step, dtype);\n\n    const out = backend.makeOutput([values.length], dtype);\n    const outVals =
backend.toArrayFromHeap(out);\n    outVals.set(values);\n    return out;\n  };\n\nexport const rangeConfig:
KernelConfig = {\n  kernelName: Range,\n  backendName: 'wasm',\n  kernelFunc: range as { } as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *\n
=====\n
*/\n\nimport {util} from '@tensorflow/tfjs-core';\n\nexport function rangeImpl(start, stop, step, dtype) {\n  const
sameStartStop = start === stop;\n  const increasingRangeNegativeStep = start < stop && step < 0;\n  const
decreasingRangePositiveStep = stop < start && step > 1;\n  if (sameStartStop || increasingRangeNegativeStep ||\n    decreasingRangePositiveStep) {\n    return util.makeZerosTypedArray(0, dtype);\n  }\n  const numElements
= Math.abs(Math.ceil((stop - start) / step));\n  const values = util.makeZerosTypedArray(numElements, dtype);\n

```


YWx1ZXNbaV0gPSB2YWx1ZXNbaSAtdFdcSgc3RlcDtcbiAgfVxuICByZXR1cm4gdmFsdWVzO1xufVxuIl19"
,"/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License,
Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by
applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, RealDiv } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from  
 './binary_kernel';\n\nconst supportsFullBroadcast = true;\nexport const realDivConfig: KernelConfig =\n createBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n",/*\n * @license\n * Copyright 2019 Google LLC.  
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this  
file except in compliance with the License.\n * You may obtain a copy of the License at\n *  
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Relu } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from  
 './unary_kernel';\n\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n",/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
 \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Relu6 } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from  
 './unary_kernel';\n\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n",/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,  
util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { cast } from  
 './Cast';\n\nlet wasmResizeBilinear: (\n  xId: number, batch: number, oldHeight: number, oldWidth: number,\n  numChannels: number, newHeight: number, newWidth: number,\n  alignCorners: number, halfPixelCenters:  
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmResizeBilinear =  
backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n    'number', // xId\n    'number', // batch\n    'number', //  
oldHeight\n    'number', // oldWidth\n    'number', // numChannels\n    'number', // newHeight\n    'number', //  
newWidth\n    'number', // alignCorners\n    'number', // halfPixelCenters\n    'number' // outId\n  ]);\n\n  function  
resizeBilinear(args: {\n    backend: BackendWasm,\n    inputs: ResizeBilinearInputs,\n    attrs: ResizeBilinearAttrs\n  }):  
TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { images } = inputs;\n    const { alignCorners,  
halfPixelCenters, size } = attrs;\n    const [newHeight, newWidth] = size;\n    const [batch, oldHeight, oldWidth,  
numChannels] = images.shape;\n    const outShape = [batch, newHeight, newWidth, numChannels];\n    let xData =
```

```

backend.dataIdMap.get(images.dataId);\n let castedData;\n if (xData.dtype !== 'float32') {\n  castedData =\n  cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n  xData =\n  backend.dataIdMap.get(castedData.dataId);\n }\n const xId = xData.id;\n\n const out =\n  backend.makeOutput(outShape, 'float32');\n if (util.sizeFromShape(images.shape) === 0) {\n  return out;\n }\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmResizeBilinear(\n  xId, batch, oldHeight,\n  oldWidth, numChannels, newHeight, newWidth,\n  alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n if\n  (castedData != null) {\n  backend.disposeData(castedData.dataId);\n }\n\n return out;\n}\n\nexport const\n  resizeBilinearConfig: KernelConfig = {\n  kernelName: ResizeBilinear,\n  backendName: 'wasm',\n  setupFunc:\n  setup,\n  kernelFunc: resizeBilinear as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC.\n All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from\n '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {identity} from\n './Identity';\n\nimport {reshape} from './Reshape';\n\nlet wasmReverse: (\n  xId: number, axes: Uint8Array,\n  axesLength: number, outShape: Uint8Array,\n  outShapeLength: number, outId: number) => void;\n\nfunction\n  setup(backend: BackendWasm) {\n  wasmReverse = backend.wasm.cwrap(Reverse, null, [\n    'number', // x_id\n    'array', // axes\n    'number', // axes_length\n    'array', // out_shape\n    'number', // out_shape_length\n    'number'\n    // out_id\n  ]);\n}\n\nexport function reverse(\n  args: {inputs: ReverseInputs, backend: BackendWasm, attrs:\n  ReverseAttrs});\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {dims} =\n  attrs;\n\n  const axes = util.parseAxisParam(dims, x.shape);\n\n  if (x.shape.length === 0) {\n  return\n  identity({inputs: {x}, backend});\n }\n\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const xId =\n  backend.dataIdMap.get(x.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const axesBytes =\n  new Uint8Array(new Int32Array(axes).buffer);\n  const outShapeBytes = new Uint8Array(new\n  Int32Array(x.shape).buffer);\n\n  wasmReverse(\n    xId, axesBytes, axes.length, outShapeBytes, x.shape.length,\n    outId);\n\n  const reshaped =\n  reshape({inputs: {x: out}, attrs: {shape: x.shape}, backend});\n\n  backend.disposeData(out.dataId);\n  return reshaped;\n}\n\nexport const reverseConfig: KernelConfig = {\n  kernelName: Reverse,\n  backendName: 'wasm',\n  kernelFunc: reverse as {} as KernelFunc,\n  setupFunc:\n  setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,\n TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport\n {BackendWasm} from '../backend_wasm';\n\nlet wasmRotate: (\n  xId: number, batch: number, imageHeight:\n  number, imageWidth: number,\n  numChannels: number, radians: number, centerX: number, centerY: number,\n  fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction\n  setup(backend: BackendWasm) {\n  wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n    'number', // xId\n    'number', //\n    batch\n    'number', // imageHeight\n    'number', // imageWidth\n    'number', // numChannels\n    'number', //\n    radians\n    'number', // centerX\n    'number', // centerY\n    'array', // fillBytes\n    'number', // fillLength\n
```

```
'number', // outId\n ]);\n}\n\nexport function rotateWithOffset(args: {\n  inputs: RotateWithOffsetInputs,\n  backend: BackendWasm,\n  attrs: RotateWithOffsetAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {image} = inputs;\n  const {radians, fillValue, center} = attrs;\n  const out = backend.makeOutput(image.shape, image.dtype);\n  const imageId = backend.dataIdMap.get(image.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n  const [centerX, centerY] = backend_util.getImageCenter(center, imageHeight, imageWidth);\n  const fillIsBlack = fillValue === 0;\n  const fullOpacityValue = 255;\n  const fillValues = typeof fillValue === 'number' ? [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] : [...fillValue, fullOpacityValue];\n  const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n  wasmRotate(\n    imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX, centerY, fillBytes, fillValues.length, outId);\n  return out;\n}\n\nexport const rotateWithOffsetConfig: KernelConfig = {\n  kernelName: RotateWithOffset,\n  backendName: 'wasm',\n  kernelFunc: rotateWithOffset as {} as KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nlet wasmScatterNd: (\n  indicesId: number, updatesId: number, dtype: CppDType, sliceRank: number,\n  numUpdates: number, sliceSize: number, strides: Uint8Array,\n  outputSize: number, outId: number)\n=> void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmScatterNd = backend.wasm.cwrap(ScatterNd, null /*void*/, [\n    'number', // indicesId\n    'number', // updatesId\n    'number', // dtype\n    'number', // sliceRank\n    'number', // numUpdates\n    'number', // sliceSize\n    'array', // strides\n    'number', // outputSize\n    'number' // outId\n  ]);\n}\n\nfunction scatterNd(\n  args: {\n    backend: BackendWasm, inputs: ScatterNdInputs, attrs: ScatterNdAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {indices, updates} = inputs;\n  const {shape} = attrs;\n  const out = backend.makeOutput(shape, updates.dtype);\n  if
```

```
(util.sizeFromShape(shape) === 0) {\n  return out;\n } \n\n const { sliceRank, numUpdates, sliceSize, strides,
outputSize } =\n  scatter_util.calculateShapes(updates, indices, shape);\n\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const updatesData =
backend.dataIdMap.get(updates.dataId);\n const updatesId = updatesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmScatterNd(\n  indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n  sliceSize,
stridesBytes, outputSize, outId);\n\n return out;\n }\n\n\nexport const scatterNdConfig: KernelConfig = {\n
kernelName: ScatterNd,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: scatterNd as { } as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, Select, SelectInputs, util } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from '../backend_wasm';\n\nlet wasmSelect: (\n  conditionId: number, tId: number, eId: number,
offset: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmSelect =
backend.wasm.cwrap('SelectV2', null, [\n    'number', // conditionId\n    'number', // tId\n    'number', // eId\n    'number', // offset\n    'number', // outId\n  ]);\n\nfunction select(args: { inputs: SelectInputs, backend:
BackendWasm }) {\n  const { inputs, backend } = args;\n  const { condition, t, e } = inputs;\n  const conditionId =
backend.dataIdMap.get(condition.dataId).id;\n  const tId = backend.dataIdMap.get(t.dataId).id;\n  const eId =
backend.dataIdMap.get(e.dataId).id;\n  const out = backend.makeOutput(t.shape, t.dtype);\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  const cRank = condition.shape.length;\n  const tRank =
t.shape.length;\n  const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n    1 :\n  util.sizeFromShape(t.shape.slice(1));\n  wasmSelect(conditionId, tId, eId, offset, outId);\n  return out;\n }\n\n\nexport
const selectConfig: KernelConfig = {\n  kernelName: Select,\n  backendName: 'wasm',\n  kernelFunc: select as { }
as KernelFunc,\n  setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Sigmoid, null /*
void */,\n  ['number', 'number']);\n\nfunction sigmoid(args: { backend: BackendWasm, inputs: SigmoidInputs }):\n  TensorInfo {\n  const { backend, inputs: { x } } = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out
= backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  // Short-
circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n  wasmFunc(xId,
outId);\n  return out;\n }\n\n\nexport const sigmoidConfig: KernelConfig = {\n  kernelName: 'Sigmoid',\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: sigmoid as { } as KernelFunc\n};\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
```

agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Sin} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nlet wasmFunc: (xId: number, outId: number, channels: number, batch: number) =>\n  void;\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n    'number', // xId\n    'number', // outId\n    'number', // channels\n    'number' // batch\n  ]);\n}\nfunction softmax(\n  args: {backend: BackendWasm, inputs: SoftmaxInputs, attrs: SoftmaxAttrs}): \n  TensorInfo {\n  const {backend, inputs: {logits}, attrs: {dim}} = args;\n  const xId = backend.dataIdMap.get(logits.dataId).id;\n  const out = backend.makeOutput(logits.shape, logits.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const channels = logits.shape[dim];\n  const batch = util.sizeFromShape(logits.shape) / channels;\n  // Short-circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n  wasmFunc(xId, outId, channels, batch);\n  return out;\n}\nexport const softmaxConfig: KernelConfig = {\n  kernelName: Softmax,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: softmax as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND, SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {padV2Config} from './PadV2';\nimport {reshape} from './Reshape';\nimport {transpose} from './Transpose';\nfunction spaceToBatchND(\n  args: {\n    inputs: SpaceToBatchNDInputs,\n    backend: BackendWasm,\n    attrs: SpaceToBatchNDAttrs\n  }) {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {blockShape, paddings} = attrs;\n  const prod = util.sizeFromShape(blockShape);\n  const completePaddings: Array<number, number> = [[0, 0]];\n  completePaddings.push(...(paddings as Array<number, number>));\n  for (let i = 1 + blockShape.length; i < x.shape.length; ++i) {\n    completePaddings.push([0, 0]);\n  }\n  const paddedX = padV2Config.kernelFunc(\n    {\n      inputs: {x},\n      backend,\n      attrs: {paddings: completePaddings, constantValue: 0}\n    } as TensorInfo\n  );\n  const reshapedPaddedShape =\n    backend_util.getReshaped(paddedX.shape, blockShape, prod, false);\n  const permutedReshapedPaddedPermutation = backend_util.getPermuted(\n    reshapedPaddedShape.length, blockShape.length, false);\n  const flattenShape =\n    backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n  const reshapeInputs: ReshapeInputs = {x: paddedX};\n  const reshapeAttrs: ReshapeAttrs = {shape: reshapedPaddedShape};\n  const paddedXReshaped =\n    reshape({inputs: reshapeInputs, backend, attrs: reshapeAttrs});\n  const transposeInputs:
```

```

TransposeInputs = {x: paddedXReshaped};\n const transposeAttrs:\n   TransposeAttrs = {perm:
permutedReshapedPaddedPermutation};\n const paddedXT =\n   transpose({inputs: transposeInputs, backend,
attrs: transposeAttrs});\n\n const resultReshapeInputs: ReshapeInputs = {x: paddedXT};\n const
resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};\n const result = reshape(\n   {inputs:
resultReshapeInputs, backend, attrs: resultReshapeAttrs});\n\n backend.disposeData(paddedX.dataId);\n
backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n\n return
result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n backendName: 'wasm',\n kernelFunc: spaceToBatchND as {} as KernelFunc\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\nimport {slice} from './Slice';\n\nexport function splitV(\n  args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {\n  const {inputs, attrs, backend} = args;\n  const {x} = inputs;\n  const
{numOrSizeSplits, axis} = attrs;\n\n  const $axis = util.parseAxisParam(axis, x.shape)[0];\n\n  const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n  const begin = new Array(x.shape.length).fill(0);\n
const size = x.shape.slice();\n  return splitSizes.map(s => {\n    const xSliceSize = [...size];\n    xSliceSize[$axis] =
s;\n    const xSlice =\n      slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});\n    begin[$axis] += s;\n
return xSlice;\n  });\n}\n\nexport const splitVConfig: KernelConfig = {\n kernelName: SplitV,\n backendName:
'wasm',\n kernelFunc: splitV as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, Sqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

```


the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig =\n  createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n
```

```
=====\n\n*\nimport {KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nlet wasmStep: (xId: number, alpha: number, dtype: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n    'number', // x_id\n    'number', // alpha\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\nfunction step(\n  backend: BackendWasm, inputs: StepInputs, attrs: StepAttrs):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {alpha} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmStep(xId, alpha, CCppType[x.dtype], outId);\n  return out;\n}\nexport const stepConfig: KernelConfig = {\n  kernelName: Step,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: step as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n
```

```
=====\n\n*\nimport {KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from './Reshape';\nimport {slice} from './Slice';\nlet wasmStridedSlice: (\n  xId: number, xStridesBytes: Uint8Array, xRank: number,\n  beginBytes: Uint8Array, endBytes: Uint8Array, stridesBytes: Uint8Array,\n  outShapeBytes: Uint8Array, outStridesBytes: Uint8Array,\n  outShapeLength: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n    'number', // xId\n    'array', // xStrides\n    'number', // xRank\n    'array', // beginBytes\n    'array', // endBytes\n    'array', // stridesBytes\n    'array', // outShapeBytes\n    'array', // outStridesBytes\n    'number', // outShapeLength\n    'number', // outId\n  ]);\n}\nexport function stridedSlice(\n  backend: BackendWasm, inputs: StridedSliceInputs, attrs: StridedSliceAttrs):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {x} = inputs;\n  const {\n    begin, end, strides, beginMask, endMask, ellipsisMask, newAxisMask,\n    shrinkAxisMask\n  } = attrs;\n  const {\n    finalShapeSparse, finalShape, isIdentity, sliceDim0, isSimpleSlice,\n    begin: $begin, end: $end, strides: $strides\n  } = slice_util.sliceInfo(\n    x.shape, begin, end, strides, beginMask, endMask, ellipsisMask,\n    newAxisMask, shrinkAxisMask);\n  let result;\n  if (isIdentity) {\n    // Optimization #1, slice is a no-op plus reshape\n    result = reshape({inputs: {x}, backend, attrs: {shape: finalShape}});\n  } else if (sliceDim0 || isSimpleSlice) {\n    // Optimization #2, slice is memory contiguous (only occurs in dim 0)\n    util.assert(\n      x.shape.length >= 1, () => `Input must have rank at least 1, got: ${x.shape.length}`);\n    const size = slice_util.computeOutShape($begin, $end, $strides);\n    // To tolerate begin[0] > end[0] (a 0-output slice), we min(begin, end).\n    const sliced = slice({inputs: {x},\n
```

```

backend, attrs: {begin: $begin, size});\n  result =\n    reshape({inputs: {x: sliced}, backend, attrs: {shape:
finalShape}});\n  backend.disposeData(sliced.dataId);\n } else {\n  const out =
backend.makeOutput(finalShapeSparse, 'float32');\n\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const
xStridesBytes =\n    new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n  const beginBytes
= new Uint8Array(new Int32Array($begin).buffer);\n  const endBytes = new Uint8Array(new
Int32Array($end).buffer);\n  const stridesBytes = new Uint8Array(new Int32Array($strides).buffer);\n\n  const
outputShapeBytes =\n    new Uint8Array(new Int32Array(finalShapeSparse).buffer);\n  const outStridesBytes =
new Uint8Array(\n    new Int32Array(util.computeStrides(finalShapeSparse)).buffer);\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n\n  wasmStridedSlice(\n    xId, xStridesBytes, x.shape.length,
beginBytes, endBytes, stridesBytes,\n    outputShapeBytes, outStridesBytes, finalShapeSparse.length, outId);\n\n  result = reshape({inputs: {x: out}, backend, attrs: {shape: finalShape}});\n\n  backend.disposeData(out.dataId);\n
}\n\n  return result;\n}\n\nexport const stridedSliceConfig: KernelConfig = {\n  kernelName: StridedSlice,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: stridedSlice as { } as KernelFunc\n};\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = true;\nexport const subConfig: KernelConfig =\ncreateBinaryKernelConfig(Sub, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmSum: (xId:
number, reduceSize: number, dtype: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n    'number', // input_id\n
'number', // reduce_size\n    'number', // dtype\n    'number', // out_id\n  ]);\n\n  function sum(args: {backend:
BackendWasm, inputs: SumInputs, attrs: SumAttrs}):\n    TensorInfo {\n    const {backend, inputs, attrs} = args;\n
const {axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n
let\n    inputId = xId;\n    let input = x;\n\n    const {transposed, axes, originalAxes, inputWasTransposed} =\n
permuteAxesAndTranspose(x, axis, backend);\n\n    let reductionAxes = axes;\n    if (inputWasTransposed) {\n    const
transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n    // transpose was
not a no-op. We will need to dispose of this\n    // once we are done.\n    input = transposed;\n    inputId =
transposedId;\n    reductionAxes = backend_util.getInnerMostAxes(\n      reductionAxes.length,\n      input.shape.length);\n    }\n  }\n\n  backend_util.assertAxesAreInnerMostDims(\n    'sum', reductionAxes,\n    input.shape.length);\n  const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n  const reduceSize =
util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, input.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n

```

```
wasmSum(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n\n if (inputWasTransposed) {\n // dispose of\n the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const\n newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return out;\n}\n\nexport const sumConfig: KernelConfig = {\n kernelName: Sum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: sum as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *  
=====\\n
```

```
*\\nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core';\\nimport {createUnaryKernelConfig} from\n './unary_kernel';\\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *  
=====\\n
```

```
*\\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\\nimport {createUnaryKernelConfig} from\n './unary_kernel';\\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *  
=====\\n
```

```
*\\n\\nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\\nimport\n {BackendWasm} from './backend_wasm';\\nimport {CppType} from './types';\\n\\nlet wasmTile: (\\n xId:\n number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\\n newShapeSize: number, dtype:\n number, outId: number) => void;\\n\\nfunction setup(backend: BackendWasm) {\n wasmTile =\n backend.wasm.cwrap(Tile, null /* void */, [\\n 'number', // x_id\\n 'array', // x_shape\\n 'number', //\n x_shape.length\\n 'array', // new_shape\\n 'number', // new_shape.length\\n 'number' // out_id\\n\n ]);\n}\\n\\nfunction tile(\\n args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n const {inputs,\n backend, attrs} = args;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const {reps} =\n attrs;\n\n const newShape: number[] = new Array(x.shape.length);\n for (let i = 0; i < newShape.length; i++) {\n newShape[i] = x.shape[i] * reps[i];\n }\n\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n\n const out =\n backend.makeOutput(newShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmTile(\\n\n xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\\n\n CppDType[out.dtype], outId);\n\n return\n out;\n}\n\nexport const tileConfig: KernelConfig = {\n kernelName: Tile,\\n\n backendName: 'wasm',\\n\n setupFunc:\n setup,\\n\n kernelFunc: tile as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *  
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\nlet wasmTopK: (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n  xDtype: CppDType, k: number, sorted: boolean, outValuesId: number,\n  outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'number', // k\n    'bool', // sorted\n    'number', // outValuesId\n    'number', // outIndicesId\n  ]);\n\n  export const topk: (\n    args: { inputs: TopKInputs, backend: BackendWasm, attrs: TopKAttrs }) =>\n    TensorInfo[] | TensorInfo = ({ inputs, backend, attrs }) => {\n      const { x } = inputs;\n      const { k, sorted } = attrs;\n      const xId = backend.dataIdMap.get(x.dataId).id;\n      const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n      const outputShape = x.shape.slice();\n      outputShape[outputShape.length - 1] = k;\n      const outValues = backend.makeOutput(outputShape, x.dtype);\n      const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n      const outIndices = backend.makeOutput(outputShape, 'int32');\n      const outIndicesId = backend.dataIdMap.get(outIndices.dataId).id;\n      wasmTopK(\n        xId, xShapeBytes, x.shape.length, CppDType[x.dtype], k, sorted,\n        outValuesId, outIndicesId);\n      return [outValues, outIndices];\n    };\n\n  export const topKConfig: KernelConfig = {\n    kernelName: TopK,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: topk as { } as KernelFunc,\n  };,\n  /**\n   * @license\n   * Copyright 2021 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the \"License\");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * http://www.apache.org/licenses/LICENSE-2.0\n   * Unless required by applicable law or agreed to in writing,\n   * software\n   * distributed under the License is distributed on an \"AS IS\" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   */\n}
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmTransform: (\n  imageId: number, transformsId: number, isBatchTransform: boolean,\n  batch: number, outHeight: number, outWidth: number, numChannels: number,\n  imageWidth: number, imageHeight: number, strides: Uint8Array,\n  stridesLength: number, interpolationModeId: number, fillModeId: number,\n  fillValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmTransform = backend.wasm.cwrap(Transform, null /* void */, [\n    'number', // imageId\n    'number', // transformsId\n    'bool', // isBatchTransform\n    'number', // batch\n    'number', // outHeight\n    'number', // outWidth\n    'number', // numChannels\n    'number', // imageWidth\n    'number', // imageHeight\n    'array', // strides\n    'number', // stridesLength\n    'number', // interpolationModeId\n    'number', // fillModeId\n    'number', // fillValue\n    'number', // outId\n  ]);\n\n  function transform(\n    args: {\n      backend: BackendWasm, inputs: TransformInputs, attrs: TransformAttrs\n    }):\n    TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { image, transforms } = inputs;\n    const { interpolation, fillMode, fillValue, outputShape } = attrs;\n    const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n    const [outHeight, outWidth] =\n      outputShape != null ? outputShape : [imageHeight, imageWidth];\n    const outShape =\n      [batch, outHeight, outWidth, numChannels] as [number, number, number, number];\n    const strides =\n      new Uint8Array(new Int32Array(util.computeStrides(image.shape)).buffer);\n    const out = backend.makeOutput(outShape, image.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const imageData = backend.dataIdMap.get(image.dataId);\n    const imageId = imageData.id;\n    const transformsData = backend.dataIdMap.get(transforms.dataId);\n    const transformsId = transformsData.id;\n    const
```

```

interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n let fillModeId;\n switch (fillMode) {\n case
'constant':\n fillModeId = 1;\n break;\n case 'reflect':\n fillModeId = 2;\n break;\n case 'wrap':\n
fillModeId = 3;\n break;\n case 'nearest':\n fillModeId = 4;\n break;\n default:\n fillModeId = 1;\n
break;\n }\n\n wasmTransform(\n imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n
outWidth, numChannels, imageWidth, imageHeight, strides,\n image.shape.length - 1, interpolationModeId,
fillModeId, fillValue,\n outId);\n\n return out;\n}\n\nexport const transformConfig: KernelConfig = {\n
kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as { } as
KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { slice } from
'./Slice';\n\nfunction unpack(\n args: { inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs }):\n
TensorInfo[] {\n const { inputs, backend, attrs } = args;\n const { value } = inputs;\n let { axis } =
attrs;\n if (axis < 0) {\n axis += value.shape.length;\n }\n\n const numOutputs = value.shape[axis];\n const
rank = value.shape.length;\n const outShape: number[] = new Array(rank - 1);\n let outIndex = 0;\n for (let i = 0; i < rank;\n i++) {\n if (i !== axis) {\n outShape[outIndex++] = value.shape[i];\n }\n }\n const outs: TensorInfo[] = new
Array(numOutputs);\n const begin = new Array(rank).fill(0);\n const size = value.shape.slice();\n size[axis] = 1;\n
for (let i = 0; i < outs.length; i++) {\n begin[axis] = i;\n outs[i] = slice({ inputs: { x: value },
attrs: { begin, size },\n backend});\n }\n return outs.map(({ dataId, dtype }) => ({ dataId, dtype, shape:
outShape }));\n}\n\nexport const\nunpackConfig: KernelConfig = {\n kernelName: Unpack,\n backendName: 'wasm',\n kernelFunc: unpack as { } as
KernelFunc,\n};\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs } from 'tensorflow/tfjs-core';\nimport
{ BackendWasm } from '../backend_wasm';\n\nfunction zerosLike(args: { inputs: ZerosLikeInputs, backend:
BackendWasm }) {\n const { inputs: { x }, backend } = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(0);\n return out;\n}\n\nexport const
zerosLikeConfig: KernelConfig = {\n kernelName: ZerosLike,\n backendName: 'wasm',\n kernelFunc: zerosLike
as { } as KernelFunc,\n};\n\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n *\n\n//

```

We explicitly import the modular kernels so they get registered in the global registry when we compile the

library. A modular build would replace the contents of this file and import only the kernels that are needed.

```

import {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';
import {fusedMatMulConfig} from './kernels/_FusedMatMul';
import {absConfig} from './kernels/Abs';
import {addConfig} from './kernels/Add';
import {addNConfig} from './kernels/AddN';
import {allConfig} from './kernels/All';
import {anyConfig} from './kernels/Any';
import {argMaxConfig} from './kernels/ArgMax';
import {avgPoolConfig} from './kernels/AvgPool';
import {batchMatMulConfig} from './kernels/BatchMatMul';
import {batchToSpaceNDConfig} from './kernels/BatchToSpaceND';
import {castConfig} from './kernels/Cast';
import {ceilConfig} from './kernels/Ceil';
import {clipByValueConfig} from './kernels/ClipByValue';
import {concatConfig} from './kernels/Concat';
import {conv2DConfig} from './kernels/Conv2D';
import {conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';
import {cosConfig} from './kernels/Cos';
import {coshConfig} from './kernels/Cosh';
import {cropAndResizeConfig} from './kernels/CropAndResize';
import {cumsumConfig} from './kernels/Cumsum';
import {depthToSpaceConfig} from './kernels/DepthToSpace';
import {depthwiseConv2dNativeConfig} from './kernels/DepthwiseConv2dNative';
import {eluConfig} from './kernels/Elu';
import {equalConfig} from './kernels/Equal';
import {expConfig} from './kernels/Exp';
import {expandDimsConfig} from './kernels/ExpandDims';
import {fillConfig} from './kernels/Fill';
import {flipLeftRightConfig} from './kernels/FlipLeftRight';
import {floorConfig} from './kernels/Floor';
import {floorDivConfig} from './kernels/FloorDiv';
import {fusedBatchNormConfig} from './kernels/FusedBatchNorm';
import {fusedConv2DConfig} from './kernels/FusedConv2D';
import {fusedDepthwiseConv2DConfig} from './kernels/FusedDepthwiseConv2D';
import {gatherNdConfig} from './kernels/GatherNd';
import {gatherV2Config} from './kernels/GatherV2';
import {greaterConfig} from './kernels/Greater';
import {greaterEqualConfig} from './kernels/GreaterEqual';
import {identityConfig} from './kernels/Identity';
import {leakyReluConfig} from './kernels/LeakyRelu';
import {lessConfig} from './kernels/Less';
import {lessEqualConfig} from './kernels/LessEqual';
import {logConfig} from './kernels/Log';
import {logicalAndConfig} from './kernels/LogicalAnd';
import {maxConfig} from './kernels/Max';
import {maximumConfig} from './kernels/Maximum';
import {maxPoolConfig} from './kernels/MaxPool';
import {meanConfig} from './kernels/Mean';
import {minConfig} from './kernels/Min';
import {minimumConfig} from './kernels/Minimum';
import {mirrorPadConfig} from './kernels/MirrorPad';
import {multiplyConfig} from './kernels/Multiply';
import {negConfig} from './kernels/Neg';
import {nonMaxSuppressionV3Config} from './kernels/NonMaxSuppressionV3';
import {nonMaxSuppressionV4Config} from './kernels/NonMaxSuppressionV4';
import {nonMaxSuppressionV5Config} from './kernels/NonMaxSuppressionV5';
import {notEqualConfig} from './kernels/NotEqual';
import {oneHotConfig} from './kernels/OneHot';
import {onesLikeConfig} from './kernels/OnesLike';
import {packConfig} from './kernels/Pack';
import {padV2Config} from './kernels/PadV2';
import {powConfig} from './kernels/Pow';
import {preluConfig} from './kernels/Prelu';
import {prodConfig} from './kernels/Prod';
import {rangeConfig} from './kernels/Range';
import {realDivConfig} from './kernels/RealDiv';
import {reluConfig} from './kernels/Relu';
import {relu6Config} from './kernels/Relu6';
import {reshapeConfig} from './kernels/Reshape';
import {resizeBilinearConfig} from './kernels/ResizeBilinear';
import {reverseConfig} from './kernels/Reverse';
import {rotateWithOffsetConfig} from './kernels/RotateWithOffset';
import {roundConfig} from './kernels/Round';
import {rsqrtConfig} from './kernels/Rsqrt';
import {scatterNdConfig} from './kernels/ScatterNd';
import {selectConfig} from './kernels/Select';
import {sigmoidConfig} from './kernels/Sigmoid';
import {sinConfig} from './kernels/Sin';
import {sliceConfig} from './kernels/Slice';
import {softmaxConfig} from './kernels/Softmax';
import {spaceToBatchNDConfig} from './kernels/SpaceToBatchND';
import {splitVConfig} from './kernels/SplitV';
import {sqrtConfig} from './kernels/Sqrt';
import {squareConfig} from './kernels/Square';
import {squaredDifferenceConfig} from './kernels/SquaredDifference';
import {stepConfig} from './kernels/Step';
import {stridedSliceConfig} from './kernels/StridedSlice';
import {subConfig} from './kernels/Sub';
import {sumConfig} from './kernels/Sum';
import {tanConfig} from './kernels/Tan';
import {tanhConfig} from './kernels/Tanh';

```

```

{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
 './kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
 './kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n  absConfig,\n  addConfig,\n  addNConfig,\n  allConfig,\n  anyConfig,\n
  argMaxConfig,\n  avgPoolConfig,\n  batchMatMulConfig,\n  batchToSpaceNDConfig,\n  castConfig,\n
  ceilConfig,\n  clipByValueConfig,\n  concatConfig,\n  conv2DConfig,\n  conv2DBackpropInputConfig,\n
  cosConfig,\n  coshConfig,\n  cropAndResizeConfig,\n  cumsumConfig,\n  depthToSpaceConfig,\n
  depthwiseConv2dNativeConfig,\n  eluConfig,\n  equalConfig,\n  expConfig,\n  expandDimsConfig,\n  fillConfig,\n
  flipLeftRightConfig,\n  floorConfig,\n  floorDivConfig,\n  fusedMatMulConfig,\n  fusedBatchNormConfig,\n
  fusedConv2DConfig,\n  fusedDepthwiseConv2DConfig,\n  gatherNdConfig,\n  gatherV2Config,\n  greaterConfig,\n
  greaterEqualConfig,\n  identityConfig,\n  leakyReluConfig,\n  lessConfig,\n  lessEqualConfig,\n  logConfig,\n
  logicalAndConfig,\n  maxConfig,\n  maximumConfig,\n  maxPoolConfig,\n  meanConfig,\n  minConfig,\n
  minimumConfig,\n  mirrorPadConfig,\n  multiplyConfig,\n  negConfig,\n  nonMaxSuppressionV3Config,\n
  nonMaxSuppressionV4Config,\n  nonMaxSuppressionV5Config,\n  notEqualConfig,\n  oneHotConfig,\n
  onesLikeConfig,\n  packConfig,\n  padV2Config,\n  powConfig,\n  preluConfig,\n  prodConfig,\n  rangeConfig,\n
  realDivConfig,\n  reluConfig,\n  relu6Config,\n  reshapeConfig,\n  resizeBilinearConfig,\n  reverseConfig,\n
  rotateWithOffsetConfig,\n  rsqrtConfig,\n  roundConfig,\n  scatterNdConfig,\n  selectConfig,\n  sigmoidConfig,\n
  sinConfig,\n  sliceConfig,\n  softmaxConfig,\n  spaceToBatchNDConfig,\n  splitVConfig,\n  sqrtConfig,\n
  squareConfig,\n  squaredDifferenceConfig,\n  stepConfig,\n  stridedSliceConfig,\n  subConfig,\n  sumConfig,\n
  tanConfig,\n  tanhConfig,\n  tileConfig,\n  topKConfig,\n  transformConfig,\n  transposeConfig,\n  unpackConfig,\n
  zerosLikeConfig\n];\n\nfor (const kernelConfig of kernelConfigs) {\n  registerKernel(kernelConfig);\n}\n\n"/**\n *
 @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
  the specific language governing permissions and\n * limitations under the License.\n *
  =====\n
*\n\nimport {env} from '@tensorflow/tfjs-core';\nconst ENV = env();\n\n/**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
  passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
  contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
  Uint8Array([\n  0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n  2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
  11\n ]));\n\n/**\n * True if threads are supported.\n *\n// From: https://github.com/GoogleChromeLabs/wasm-
  feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
  TODO(annxingyuan): Enable node support once this is resolved:\n //
  https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n  return false;\n }\n\n try {\n //
  Test for transferability of SABs (needed for Firefox)\n //
  https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
  MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
  program containing threaded\n // instructions.\n  return WebAssembly.validate(new Uint8Array([\n  0, 97,
  115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n  4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
  11\n ]));\n } catch (e) {\n  return false;\n };\n\n", "nvar WasmBackendModuleThreadedSimd = (function() {\n
  var _scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
  undefined;\n  if (typeof __filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n  return
  (\nfunction(WasmBackendModuleThreadedSimd) {\n  WasmBackendModuleThreadedSimd =
  WasmBackendModuleThreadedSimd || {};\n\nfunction
  GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}

```

```

return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}}return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}}return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram="/.this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module["ENVIRONMENT_IS_PTHREAD"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module["buffer"];var scriptDirectory="";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
dirname(scriptDirectory)+"\\"}else{scriptDirectory=__dirname+"\\"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"\\");arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"]("unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["insp
ect"]=function(){return"[Emscripten Module object]"};var
nodeWorkerThreads;try{nodeWorkerThreads=require("worker_threads")}catch(e){console.error("The
\"worker_threads\" module is not supported in this node.js build - perhaps a newer version is needed?");throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
arguments!="undefined"){arguments_=arguments}if(typeof
quit==="function"){quit_=function(status){quit(status)}}if(typeof print!="undefined"){if(typeof
console==="undefined")console={};console.log=print;console.warn=console.error=typeof
printErr!="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire

```



```

ctory=self.location.href}else if(typeof
document!=="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !== "undefined" &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf("\\")+1)}else{scriptDirectory=""}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret}else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
===200||xhr.status===0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)
}setWindowTitle=function(title){document.title=title}else{if(ENVIRONMENT_IS_NODE){if(typeof
performance==="undefined"){global.performance=require("perf_hooks").performance}}var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module["arguments"])arguments_=Module["arguments"];if(Module["thisProgram"])thisProgram=
Module["thisProgram"];if(Module["quit"])quit_=Module["quit"];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)}}var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!=="object"){abort("no native wasm
support detected")}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str="";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var

```

```

u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAtAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAtAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var
len=0;for(var i=0;i<str.length;++i){var
u=str.charCodeAtAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10)|str.charCodeAtAt(++i)&1023;if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmM
emory=Module["wasmMemory"];buffer=Module["buffer"]}else{if(Module["wasmMemory"]){wasmMemory=
Module["wasmMemory"]}else{wasmMemory=new
WebAssembly.Memory({"initial":INITIAL_MEMORY/65536,"maximum":2147483648/65536,"shared":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err("requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag");if(ENVIRONMENT_IS_NODE){console.log("(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)")}throw Error("bad
memory")}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlob
alBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctor
s()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]="function")Module["preRun"]=Module["preRun"];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof

```

```

Module["postRun"]]=="function")Module["postRun"]=[Module["postRun"];while(Module["postRun"].length){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)function addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,"addRunDependency cannot be used in a pthread worker");runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}}function removeRunDependency(id){runDependencies--;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDependencies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}if(dependenciesFulfilled){var callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module["preloadedAudios"]={};function abort(what){if(Module["onAbort"]){Module["onAbort"](what)}if(ENVIRONMENT_IS_PTHREAD)console.error("Pthread aborting at "+(new Error).stack);what+="\n";err(what);ABORT=true;EXITSTATUS=1;what+="abort("+what+"). Build with -s ASSERTIONS=1 for more info.";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://";function isFileURI(filename){return hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-wasm-threaded-simd.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the wasm failed"}}catch(err){abort(err)}}function getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof fetch==="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:"same-origin"}).then(function(response){if(!response["ok"]){throw"failed to load wasm binary file at "+wasmBinaryFile+""}return response["arrayBuffer"]()).catch(function(){return getBinary(wasmBinaryFile)})}else{if(readAsync){return new Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new Uint8Array(response))},reject)}))}return Promise.resolve().then(function(){return getBinary(wasmBinaryFile)})}function createWasm(){var info={"a":asmLibraryArg};function receiveInstance(instance,module){var exports=instance.exports;Module["asm"]=exports;wasmTable=Module["asm"]["T"];wasmModule=module;if(!ENVIRONMENT_IS_PTHREAD){var numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.loadWasmModuleToWorker(w,function(){if(--numWorkersToLoad)removeRunDependency("wasm-instantiate")})})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency("wasm-instantiate")}}function receiveInstantiatedSource(output){receiveInstance(output["instance"],output["module"])}function instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err("failed to asynchronously prepare wasm: "+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof WebAssembly.instantiateStreaming==="function"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFile)&&typeof fetch==="function"){return fetch(wasmBinaryFile,{credentials:"same-origin"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return result.then(receiveInstantiatedSource,function(reason){err("wasm streaming compile failed: "+reason);err("falling

```

```

back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource))})))else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module["instantiateWasm"]){try{var
exports=Module["instantiateWasm"](info,receiveInstance);return exports}catch(e){err("Module.instantiateWasm
callback failed with error: "+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}var
ASM_CONSTS={10520:function(){throw"Canceled!"},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0}}};function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback=="function"){callback(Module);continue}var func=callback.func;if(typeof
func=="number"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg
)}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,E
BADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOSIG:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADF:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14
8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5};function
__emscripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return
1}}var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw"Atomics.notify returned an unexpected value
"+ret}Module["_emscripten_futex_wake"]=__emscripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! killThread() can only ever be
called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
killThread!";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.pthreads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker.pthread=undefined}functio
n cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! cancelThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
cancelThread!";var
pthread=PThread.pthreads[pthread_ptr];pthread.worker.postMessage({"cmd":"cancel"})}function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! cleanupThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in

```

```

cleanupThread!";var
pthread=PThread pthreads[thread_ptr];if(pthread){GROWABLE_HEAP_I32()[thread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)}}var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}},initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,1,ENVIRON
MENT_IS_WORKER,1);__emscripten_register_main_browser_thread_id(tb)},initWorker:function(){ pthreads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self())__pthread
_tsd_run_dtors()},runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=_pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({"cmd":"exit"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({"cmd":"cancelDone"})}},terminateAllThreads:function(){for(var t in
PThread pthreads){var
pthread=PThread pthreads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)}}PThre
ad pthreads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[],freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread pthreads[worker pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker pthread);worker pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e["data"];var
cmd=d["cmd"];if(worker pthread)PThread.currentProxiedOperationCallerThread=worker pthread.threadInfoStruct;
if(d["targetThread"]&&d["targetThread"]!="_pthread_self"){var
thread=PThread pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d["transferList"])}}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\" to target pthread '+d["targetThread"]+'\", but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\"processQueuedMainThread
Work\"){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\"spawnThread\"){spawnThread(e.data)}else
if(cmd===\"cleanupThread\"){cleanupThread(d["thread"])}}else
if(cmd===\"killThread\"){killThread(d["thread"])}}else

```

```

if(cmd===\cancelThread"){cancelThread(d[\thread\])}else
if(cmd===\loaded"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\print"){out(\Thread \"+d[\threadId\"]+\":
\"+d[\text\])}else if(cmd===\printErr"){err(\Thread \"+d[\threadId\"]+\": \"+d[\text\])}else
if(cmd===\alert"){alert(\Thread \"+d[\threadId\"]+\": \"+d[\text\])}else if(cmd===\exit"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}}else
if(cmd===\exitProcess"){try{exit(d[\returnCode\])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\cancelDone"){PThread.returnWorkerToPool(worker)}else
if(cmd===\objectTransfer"){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\setimmediate"){worker.postMessage(e.data)}else{err(\worker sent an unknown command
\"+cmd)}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\pthread sent
an error! \"+e.filename+\":\"+e.lineno+\":
\"+e.message)};if(ENVIRONMENT_IS_NODE){worker.on(\message\",function(data){worker.onmessage({data:d
ata})});worker.on(\error\",function(data){worker.onerror(data)});worker.on(\exit\",function(data){})}worker.post
Message({\"cmd\":\load\",\"urlOrBlob\":Module[\mainScriptUrlOrBlob\]|_scriptDir,\"wasmMemory\":wasmMe
memory,\"wasmModule\":wasmModule}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile(\tfjs-
backend-wasm-threaded-simd.worker.js\");PThread.unusedWorkers.push(new
Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}}};function
establishStackSpace(stackTop,stackMax){_emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module[\establishStackSpace\"]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module[\getNoExitRuntime\"]=getNoExitRuntime;function invokeEntryPoint(ptr,argv){return
wasmTable.get(ptr)(argv)}Module[\invokeEntryPoint\"]=invokeEntryPoint;function
__assert_fail(condition,filename,line,func){abort(\Assertion failed: \"+UTF8ToString(condition)+\", at:
\"+[filename?UTF8ToString(filename):\unknown filename\",line,func?UTF8ToString(func):\unknown
function\])}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
_emscripten_get_now;if(ENVIRONMENT_IS_NODE){_emscripten_get_now=function(){var
t=process[\hrtime\]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){_emscripten_get_now=function(){return performance.now()-
Module[\__performance_now_clock_drift\]}}else if(typeof
dateNow!=\"undefined"){_emscripten_get_now=dateNow}else _emscripten_get_now=function(){return
performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return
value}function _atexit(func,argv){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(1,1,func,argv)}function
__emscripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessag
e({\"cmd\":\processQueuedMainThreadWork\})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({\"targetThread\":targetThreadId,\"cmd\":\processThreadQueu
e\})}else{var pthread=PThread.pthreads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({\"cmd\":\processThreadQueue\})}ret
urn 1}function _abort(){abort()}function _emscripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emscripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emscripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\timed-out\")return-

```

```

73;if(ret===\"not-equal\")return-6;if(ret===\"ok\")return 0;throw\"Atoms.wait returned an unexpected value
\"+ret}else{if(Atoms.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_mai
n_thread_futex>>2,0);return-
73}lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emscripten_main_thread_process_queued_calls();if(Atoms.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atoms.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr)}return
0}}function
_emscripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emscripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require(\"os\").cpus().length;return
navigator[\"hardwareConcurrency\"]}function _emscripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emscripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retu
rn ret}var _emscripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emscripten_receive_on_main_thread_js(index,numCallArgs,args){_emscripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emscripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emscripten_receive_on_main_thread_js_callArgs)}function
_emscripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emscripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmmemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var
oldSize=_emscripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListen
ers:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))}{return}}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList

```

```

});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence}),removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){ var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){ var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){ var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{ var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return\"";if(target==window)return\"#window\";
if(target==screen)return\"#screen\";return
target&&target.nodeName?target.nodeName:\"\"},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){ var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){ var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas);GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emscripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emscripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):\"\";_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=\"undefined\"?document:0,typeof window!=\"undefined\"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=\"undefined\"?document.querySelector(target):undefined);return domElement}function

```



```

findCanvasEventTarget(target){return findEventTarget(target)}function
_emsripten_set_canvas_element_size_calling_thread(target,width,height){var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){canvas.GLctxObject.GLctx.viewport(0,0,width,height)}}else
if(canvas.canvasSharedPtr){var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emsripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1}else{return-4}return 0}function
_emsripten_set_canvas_element_size_main_thread(target,width,height){if(ENVIRONMENT_IS_PTHREAD)retur
n _emsripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emsripten_set_canvas_element_size(target,width,height){var
canvas=findCanvasEventTarget(target);if(canvas){return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}else{return
_emsripten_set_canvas_element_size_main_thread(target,width,height)}}function
_emsripten_set_current_thread_status(newStatus){}function
_emsripten_set_thread_name(threadId,name){}function __webgl_enable_ANGLE_instanced_arrays(ctx){var
ext=ctx.getExtension("ANGLE_instanced_arrays");if(ext){ctx["vertexAttribDivisor"]=function(index,divisor){ext["vertexAttribDivisorANGLE"](index,divisor)};ctx["drawArraysInstanced"]=function(mode,first,count,primcount){ext["drawArraysInstancedANGLE"](mode,first,count,primcount)};ctx["drawElementsInstanced"]=function(mode,count,type,indices,primcount){ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount)};return 1}}function __webgl_enable_OES_vertex_array_object(ctx){var
ext=ctx.getExtension("OES_vertex_array_object");if(ext){ctx["createVertexArray"]=function(){return
ext["createVertexArrayOES"]();};ctx["deleteVertexArray"]=function(vao){ext["deleteVertexArrayOES"](vao)};
ctx["bindVertexArray"]=function(vao){ext["bindVertexArrayOES"](vao)};ctx["isVertexArray"]=function(vao)
{return ext["isVertexArrayOES"](vao)};return 1}}function __webgl_enable_WEBGL_draw_buffers(ctx){var
ext=ctx.getExtension("WEBGL_draw_buffers");if(ext){ctx["drawBuffers"]=function(n,bufs){ext["drawBuffers
WEBGL"](n,bufs)};return 1}}function
__webgl_enable_WEBGL_multi_draw(ctx){return!!(ctx.multiDrawWebgl=ctx.getExtension("WEBGL_multi_dra
w"))}var
GL={counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{},offscreenCanvases:{},timerQueriesEXT:[],programInfos:{},stringCache:{},unpackAlignment:4,recordError:
function recordError(errorCode){if(!GL.lastError){GL.lastError=errorCode}},getNewId:function(table){var
ret=GL.counter++;for(var i=table.length;i<ret;i++){table[i]=null}return
ret},getSource:function(shader,count,string,length){var source="";for(var i=0;i<count;++i){var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return
source},createContext:function(canvas,webGLContextAttributes){var
ctx=canvas.getContext("webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle},registerContext:function(ctx,webGLContextAttributes){var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:

```

```

ctx};if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault===undefined){webGLContextAttributes.enableExtensions
ByDefault}{GL.initExtensions(context)}return
handle},makeContextCurrent:function(contextHandle){GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){return
GL.contexts[contextHandle]},deleteContext:function(contextHandle){if(GL.currentContext===GL.contexts[contex
tHandle])GL.currentContext=null;if(typeof
JSEvents===undefined){JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null},initExtensions:f
unction(context){if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("
EXT_disjoint_timer_query");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){if(ext.indexOf("lose_context")<0&&ext.inde
xOf("debug")<0){GLctx.getExtension(ext)}}),populateUniformTable:function(program){var
p=GL.programs[program];var
ptable=GL.programInfos[program]={uniforms:{},maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1};var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)===`\`){name=name.slice(0,name.lastIndexOf(``))}var loc=GLctx.getUniformLocation(p,name);if(loc){var
id=GLctx.getNewId(GLctx.uniforms);utable[name]=[u.size,id];GLctx.uniforms[id]=loc;for(var j=1;j<u.size;++j){var
n=name+`\`+j+`\`;loc=GLctx.getUniformLocation(p,n);id=GLctx.getNewId(GLctx.uniforms);GLctx.uniforms[id]=loc}}
};var __emscripten_webgl_power_preferences=["default","low-power","high-performance"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],"failIfMajorPerf
ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)]};var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GLctx.createContext(canvas,contextAttributes);return contextHandle}function
__emscripten_webgl_create_context(a0,a1){return __emscripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){stream===1?out:err}(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
__fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return __emscripten_proxy_to_main_thread_js(3,1,fd);return
0}function __fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return

```

```

_emsripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
_fd_write(fd,iiov,iiovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(5,1,fd,iiov,iiovcnt,pnum);var num=0;for(var i=0;i<iiovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iiov+i*8>>2];var len=GROWABLE_HEAP_I32()[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j])}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function _pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
_pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasmTable.get(routine)(arg)})}function
_spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw`Internal Error! spawnThread()
can only ever be called from main application thread!`;var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw`Internal
error!`;if(!threadParams.pthread_ptr)throw`Internal error, no pthread
ptr!`;PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;++i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthread_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);Atomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),tis+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emsripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthread=pthread;var
msg={"cmd":"run","\start_routine":threadParams.startRoutine,"\arg":threadParams.arg,"\threadInfoStruct":threadParams.pthread_ptr,"\stackBase":threadParams.stackBase,"\stackSize":threadParams.stackSize};worker.runPthread=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded){worker.runPthread();delete worker.runPthread}}function
_pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===`undefined`){err(`Current environment does not support SharedArrayBuffer, pthreads are not available!`);return 6}if(!pthread_ptr){err(`pthread_create called with a null thread pointer!`);return 28}var transferList=[];var error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return _emsripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==(0)}else{stackSize=2097152}var allocatedOwnStack=stackBase==0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var i=0;i<228>>2;++i)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_ptr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_PTHREAD){threadParams.cmd=`spawnThread`;postMessage(threadParams,transferList)}else{spawnThread(threadParams)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var

```

```

tb=_pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled==2)throw\Canceled!\}function
_emsripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce(\Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread\)}function
_emsripten_do_pthread_join(thread,status,block){if(!thread){err(\pthread_join attempted on a null thread
pointer!\);return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self()===thread){err(\PThread
\'+thread+\ is attempting to join to itself!\);return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emsripten_main_browser_thread_id()===thread){err(\Main thread
\'+thread+\ is attempting to join to itself!\);return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!===thread){err(\pthread_join attempted on thread
\'+thread+\, which does not point to a valid thread, or does not exist anymore!\);return
ERRNO_CODES.ESRCH}var
detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err(\Attempted to join thread
\'+thread+\, which was already detached!\);return
ERRNO_CODES.EINVAL}if(block){_emsripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus==1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage(\cmd:\cleanupThread\,thread\);return
0}if(!block){return
ERRNO_CODES.EBUSY}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emsripten_main_thre
ad_process_queued_calls();_emsripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}function _pthread_join(thread,status){return _emsripten_do_pthread_join(thread,status,true)}function
_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\object\)return navigator[\hardwareConcurrency\]|1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emsripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wr
ite,_sysconf];var
asmLibraryArg={\e\:__assert_fail,\r\:__call_main,\x\:__emsripten_notify_thread_queue,\b\:_abort,\y\__:
_emsripten_asm_const_int,\j\__:emsripten_conditional_set_current_thread_status,\d\__:emsripten_futex_wait,\
c\__:emsripten_futex_wake,\f\__:emsripten_get_now,\p\__:emsripten_memcpy_big,\A\__:emsripten_num_l
ogical_cores,\u\__:emsripten_receive_on_main_thread_js,\q\__:emsripten_resize_heap,\v\__:emsripten_set_ca

```

```

nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory||Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"C\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"E\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"F\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"G\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"H\"]).apply(
null,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"J\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"K\"]).apply(null,argumen
ts)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"L\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"M\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"N\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"O\"]).ap
ply(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"P\"]).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"][\"Q\"]).apply(null,arguments)};var
_Ceil=Module[\"_Ceil\"]=function(){return(_Ceil=Module[\"_Ceil\"]=Module[\"asm\"][\"R\"]).apply(null,argument
s)};var
_ClipByValue=Module[\"_ClipByValue\"]=function(){return(_ClipByValue=Module[\"_ClipByValue\"]=Module[
\"asm\"][\"S\"]).apply(null,arguments)};var
_Conv2D=Module[\"_Conv2D\"]=function(){return(_Conv2D=Module[\"_Conv2D\"]=Module[\"asm\"][\"T\"]).app
ly(null,arguments)};var
_Conv2DBackpropInput=Module[\"_Conv2DBackpropInput\"]=function(){return(_Conv2DBackpropInput=Modul
e[\"_Conv2DBackpropInput\"]=Module[\"asm\"][\"U\"]).apply(null,arguments)};var
_Cos=Module[\"_Cos\"]=function(){return(_Cos=Module[\"_Cos\"]=Module[\"asm\"][\"V\"]).apply(null,arguments
)};var
_Cosh=Module[\"_Cosh\"]=function(){return(_Cosh=Module[\"_Cosh\"]=Module[\"asm\"][\"W\"]).apply(null,argu
ments)};var
_CropAndResize=Module[\"_CropAndResize\"]=function(){return(_CropAndResize=Module[\"_CropAndResize\"]
=Module[\"asm\"][\"X\"]).apply(null,arguments)};var

```

```

_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][_"Y"]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][_"Z"]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][_"_" ]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][_"$"]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][_"aa"]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][_"ba"]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][_"ca"]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][_"da"]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][_"ea"]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][_"fa"]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][_"ga"]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][_"ha"]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][_"ia"]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][_"ja"]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][_"ka"]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][_"la"]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][_"ma"]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][_"na"]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][_"oa"]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][_"pa"]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][_"qa"]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][_"ra"]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][_"sa"]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][_"ta"]).apply(null,arguments)};var

```

```

_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][_"ua"]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][_"va"]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][_"wa"]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][_"xa"]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][_"ya"]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][_"za"]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][_"Aa"]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][_"Ba"]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][_"Ca"]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][_"Da"]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][_"Ea"]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][_"Fa"]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][_"Ga"]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][_"Ha"]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][_"Ia"]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][_"Ja"]).apply(null,arguments)};var
_Relu=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][_"Ka"]).apply(null,arguments)};var
_Relu6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][_"La"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][_"Ma"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][_"Na"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][_"Oa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][_"Pa"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][_"Qa"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][_"Ra"]).apply(null,arguments)};var

```

```

_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"]["Sa"]);
apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"]["Ta"]);ap
ply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"]["Ua"]);.apply(null,arguments)
};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Va"]);.a
pply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Wa"]);.apply(null,argume
nts)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Xa"]);.apply(n
ull,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_Squared
Difference"]=Module["asm"]["Ya"]);.apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Za"]);.apply(null,argume
nts)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["as
m"]["_a"]);.apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["$a"]);.apply(null,argument
s)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["ab"]);.apply(null,argume
nts)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["bb"]);.apply(null,argument
s)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["cb"]);.apply(null,argu
ments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["db"]);.apply(null,argument
s)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"]["eb"]);.apply(null,ar
guments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"]["fb
b"]);.apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"]["gb
b"]);.apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"]["hb"]);.apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"]["ib"]);.apply(nul
l,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"]["jb"]);.apply(null,arguments
)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"]["kb"]);.apply(null,arguments)};var
_emsripten_get_global_libc=Module["_emsripten_get_global_libc"]=function(){return(_emsripten_get_global
_libc=Module["_emsripten_get_global_libc"]=Module["asm"]["lb"]);.apply(null,arguments)};var
_pthread_self=Module["_pthread_self"]=function(){return(_pthread_self=Module["_pthread_self"]=Module["as
m"]["mb"]);.apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=M
odule["__pthread_tsd_run_dtors"]=Module["asm"]["nb"]);.apply(null,arguments)};var

```



```

_emsripten_main_thread_process_queued_calls=Module["_emsripten_main_thread_process_queued_calls"]=function(){return(_emsripten_main_thread_process_queued_calls=Module["_emsripten_main_thread_process_queued_calls"]=Module["asm"][["ob"]]).apply(null,arguments)};var
_emsripten_current_thread_process_queued_calls=Module["_emsripten_current_thread_process_queued_calls"]=function(){return(_emsripten_current_thread_process_queued_calls=Module["_emsripten_current_thread_process_queued_calls"]=Module["asm"][["pb"]]).apply(null,arguments)};var
_emsripten_register_main_browser_thread_id=Module["_emsripten_register_main_browser_thread_id"]=function(){return(_emsripten_register_main_browser_thread_id=Module["_emsripten_register_main_browser_thread_id"]=Module["asm"][["qb"]]).apply(null,arguments)};var
_emsripten_main_browser_thread_id=Module["_emsripten_main_browser_thread_id"]=function(){return(_emsripten_main_browser_thread_id=Module["_emsripten_main_browser_thread_id"]=Module["asm"][["rb"]]).apply(null,arguments)};var
__emsripten_do_dispatch_to_thread=Module["__emsripten_do_dispatch_to_thread"]=function(){return(__emsripten_do_dispatch_to_thread=Module["__emsripten_do_dispatch_to_thread"]=Module["asm"][["sb"]]).apply(null,arguments)};var
_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=function(){return(_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=Module["asm"][["tb"]]).apply(null,arguments)};var
_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=function(){return(_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=Module["asm"][["ub"]]).apply(null,arguments)};var
__emsripten_call_on_thread=Module["__emsripten_call_on_thread"]=function(){return(__emsripten_call_on_thread=Module["__emsripten_call_on_thread"]=Module["asm"][["vb"]]).apply(null,arguments)};var
_emsripten_tls_init=Module["_emsripten_tls_init"]=function(){return(_emsripten_tls_init=Module["_emsripten_tls_init"]=Module["asm"][["wb"]]).apply(null,arguments)};var
__emsripten_thread_init=Module["__emsripten_thread_init"]=function(){return(__emsripten_thread_init=Module["__emsripten_thread_init"]=Module["asm"][["xb"]]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][["yb"]]).apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"][["zb"]]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][["Ab"]]).apply(null,arguments)};var
_emsripten_stack_set_limits=Module["_emsripten_stack_set_limits"]=function(){return(_emsripten_stack_set_limits=Module["_emsripten_stack_set_limits"]=Module["asm"][["Bb"]]).apply(null,arguments)};var
_memalign=Module["_memalign"]=function(){return(_memalign=Module["_memalign"]=Module["asm"][["Cb"]]).apply(null,arguments)};var
__emsripten_allow_main_runtime_queued_calls=Module["__emsripten_allow_main_runtime_queued_calls"]=10512;var
__emsripten_main_thread_futex=Module["__emsripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasmMemory"]=wasmMemory;Module["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromiseResolve(Module);initRuntime();postMessage({"cmd":"loaded"});return}preRun();if(runDependencies>0){return}function

```

```

doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus\"])Module["setStatus\"]("Running...");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus\"]("\n"),1);doRun(),1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":"exitProcess","returnCode":status});throw new
ExitStatus(status)}else{}}if(noExitRuntime){}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunti
me();if(Module["onExit\"])Module["onExit"](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module["preInit\"])if(typeof
Module["preInit"]===\function\"){Module["preInit"]=[Module["preInit"]];while(Module["preInit"].length>0){
Module["preInit"].pop()}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n);nif (typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports["WasmBackendModuleThreadedSimd"] =
WasmBackendModuleThreadedSimd;\n", "\nvar WasmBackendModule = (function() {\n var _scriptDir = typeof
document !== 'undefined' && document.currentScript ? document.currentScript.src : undefined;\n if (typeof
__filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n
WasmBackendModule = WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!=="undefined"?WasmBackendModule:{};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\.\/this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory=""";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\path\").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\fs");if(!nodePath)nodePath=require(\path");filename=n
odePath["normalize\"](filename);return
nodeFS["readFileSync"](filename,binary?null:\utf8");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,\^");arguments_=process["arg
v"].slice(2);process["on"](\uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"](\unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["insp
ect"]=function(){return["Emscripten Module object"]}]}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,\binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof

```

```

arguments!=="undefined"){arguments_=arguments}if(typeof
quit===\function\){quit_=function(status){quit(status)}if(typeof print!=="undefined"){if(typeof
console===\undefined\})console={};console.log=print;console.warn=console.error=typeof
printErr!=="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(!_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf(\blob:\")!=0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf(\^")+1)}else{scriptDirectory=""}}read_=function(url){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} }else{ }var
out=Module[\print\]||console.log.bind(console);var err=Module[\printErr\]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} }moduleOverr
ides=null;if(Module[\arguments\])arguments_=Module[\arguments\];if(Module[\thisProgram\])thisProgram=
Module[\thisProgram\];if(Module[\quit\])quit_=Module[\quit\];var
wasmBinary;if(Module[\wasmBinary\])wasmBinary=Module[\wasmBinary\];var
noExitRuntime=Module[\noExitRuntime\]||true;if(typeof WebAssembly!=="object"){abort(\no native wasm
support detected\)}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort(\Assertion failed: "+text)}}function getCFunc(ident){var
func=Module[\_]+ident];assert(func,\Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC=\string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len);return ret},\array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType===\string\)return UTF8ToString(ret);if(returnType===\boolean\)return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\number\});var
numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}var UTF8Decoder=typeof
TextDecoder!=="undefined"?new TextDecoder("utf8"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{var
str="";while(idx<endPtr){var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}}return str}function

```

```

UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;+i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]="function")Module["preRun"]=Module["preRun"];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]="function")Module["postRun"]=Module["postRun"];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"](runDependencies)}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepen
dencies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}
}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what="abort(\n"+what+"\n). Build with -s ASSERTIONS=1 for more info.";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-
wasm.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function

```

```

getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"} }catch(err){abort(err)} }function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\function\&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\same-
origin\}).then(function(response){if(!response[\ok\]){throw"failed to load wasm binary file at
\""+wasmBinaryFile+\"}return response[\arrayBuffer\]()}).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\a\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\asm\"]=exports;wasmMemory=Module[\asm\"][\j\"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module[\asm\"][\r\"];removeRunDependency(\wasm-
instantiate\)}addRunDependency(\wasm-instantiate\");function
receiveInstantiatedSource(output){receiveInstance(output[\instance\"]);function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\function\&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\function\"){return fetch(wasmBinaryFile,{credentials:\same-
origin\}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\wasm streaming compile failed: \"+reason);err(\falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\instantiateWasm\"]){try{var
exports=Module[\instantiateWasm\"](info,receiveInstance);return exports }catch(e){err(\Module.instantiateWasm
callback failed with error: \"+e);return false }}instantiateAsync().catch(rejectPromise);return{ }}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\function\"){callback(Module);continue }var func=callback.func;if(typeof
func===\number\"){if(callback.arg===undefined){wasmTable.get(func)()}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}function _abort(){abort()}function
_emscripten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscripten_get_heap_size(){return HEAPU8.length}function
emscripten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var oldSize=_emscripten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false }for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true }}return false }var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){var num=0;for(var

```

```

i=0;i<iocvnt;i++){ var ptr=HEAP32[iov+i*8>>2];var len=HEAP32[iov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _pthread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]|1;return 1 } }setErrNo(28);return-1 }var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
___wasm_call_ctors=Module[\"___wasm_call_ctors\"]=function(){return(___wasm_call_ctors=Module[\"___wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"s\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"t\"]).apply(null,argument
s)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"u\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"v\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"w\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"x\"]).app
ly(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"y\"]).a
pply(null,arguments)};var

```

```

_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"])[["z"]]).apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"])[["A"]]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"])[["B"]]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"])[["C"]]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["asm"])[["D"]]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"])[["E"]]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"])[["F"]]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"])[["G"]]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"])[["H"]]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"])[["I"]]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["asm"])[["J"]]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"])[["K"]]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"])[["L"]]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"])[["M"]]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"])[["N"]]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"])[["O"]]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"])[["P"]]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"])[["Q"]]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"])[["R"]]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["asm"])[["S"]]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"])[["T"]]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"])[["U"]]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"])[["V"]]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"])[["W"]]).apply(null,arguments)};var

```

```

_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"]["X"]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"]["Y"]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"]["Z"]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"]["_"]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"]["$"]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"]["aa"]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"]["ba"]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"]["ca"]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"]["da"]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"]["ea"]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"]["fa"]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"]["ga"]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"]["ha"]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"]["ia"]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"]["ja"]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"]["ka"]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"]["la"]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"]["ma"]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"]["na"]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"]["oa"]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"]["pa"]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"]["qa"]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"]["ra"]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"]["sa"]).apply(null,arguments)};var

```



```

_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"]["ta"]).apply(null,arguments)};var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"]["ua"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"]["va"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"]["wa"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"]["xa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"]["ya"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"]["za"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"]["Aa"]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"]["Ba"]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"]["Ca"]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"]["Da"]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Ea"]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Fa"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Ga"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"]["Ha"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Ia"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"]["Ja"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["Ka"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["La"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["Ma"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["Na"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["Oa"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"]["Pa"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"]["Qa"]).apply(null,arguments)};var

```

```

_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][["Ra
a")]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"][["Sa")]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"][["Ta")]).apply(nu
ll,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"][["Ua")]).apply(null,argument
s)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"][["Va")]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][["Wa")]).
apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"
][["Xa")]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][["Ya"
]).apply(null,arguments)};Module["cwrap"]=cwrap;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("Running...");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"](""),1);doRun(),1})else{doRun()}}Module["run"]=run;if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop()}run();\n\n\n return WasmBackendModule.ready\n\n\n);};\n\n\nif (typeof exports ===
'object' && typeof module === 'object')\n module.exports = WasmBackendModule;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModule; });\nelse if (typeof exports ===
'object')\n exports["WasmBackendModule"] = WasmBackendModule;\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport './flags_wasm';\n\nimport {backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,
engine, env, KernelBackend, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasmModule,
WasmFactoryConfig} from './wasm-out/tfjs-backend-wasm';\n\nimport {BackendWasmThreadedSimdModule} from
'./wasm-out/tfjs-backend-wasm-threaded-simd';\n\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-
backend-wasm-threaded-simd.js';\n// @ts-ignore\nimport {wasmWorkerContents} from './wasm-out/tfjs-backend-
wasm-threaded-simd.worker.js';\n\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\n\ninterface
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:
number;\n /** Only used for string tensors, storing encoded bytes. */\n stringBytes?: Uint8Array[];\n}\n\nexport
type DataId = object; // object instead of {} to force non-primitive.\n\nexport class BackendWasm extends
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:
DataStorage<TensorData>;\n\n constructor(public wasm:
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n

```

```

this.wasm.tfjs.initWithThreadsCount(threadsCount);\n  actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n  this.dataIdMap = new DataStorage(this, engine());\n  }\n\n  write(values: backend_util.BackendValues, shape:\n  number[], dtype: DataType):\n    DataId {\n      const dataId = {id: this.dataIdNextNumber++};\n      this.move(dataId, values, shape, dtype, 1);\n      return dataId;\n    }\n\n  numDataIds(): number {\n    return\n    this.dataIdMap.numDataIds();\n  }\n\n  async time(f: () => void): Promise<BackendTimingInfo> {\n    const start =\n    util.now();\n    f();\n    const kernelMs = util.now() - start;\n    return {kernelMs};\n  }\n\n  move(\n    dataId:\n    DataId, values: backend_util.BackendValues, shape: number[],\n    dtype: DataType, refCount: number): void {\n    const id = this.dataIdNextNumber++;\n    if (dtype === 'string') {\n      const stringBytes = values as Uint8Array[];\n      this.dataIdMap.set(\n        dataId,\n        {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n    }\n    return;\n  }\n\n  const size = util.sizeFromShape(shape);\n  const numBytes = size *\n  util.bytesPerElement(dtype);\n  const memoryOffset = this.wasm._malloc(numBytes);\n  this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n  this.wasm.tfjs.registerTensor(id, size,\n  memoryOffset);\n  if (values != null) {\n    this.wasm.HEAPU8.set(\n      new Uint8Array(\n        (values\n        as backend_util.TypedArray).buffer,\n        (values as backend_util.TypedArray).byteOffset, numBytes),\n      memoryOffset);\n  }\n  }\n\n  read(dataId: DataId): Promise<backend_util.BackendValues> {\n    return\n    this.readSync(dataId);\n  }\n\n  readSync(dataId: DataId): backend_util.BackendValues {\n    const {memoryOffset,\n    dtype, shape, stringBytes} =\n    this.dataIdMap.get(dataId);\n    if (dtype === 'string') {\n      return stringBytes;\n    }\n    const bytes = this.wasm.HEAPU8.slice(\n      memoryOffset,\n      memoryOffset +\n      util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n    return typedArrayFromBuffer(bytes.buffer, dtype);\n  }\n\n  /**\n   * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n   * is released, false\n   * otherwise.\n   * @param dataId\n   * @oaram force Optional, remove the data regardless of refCount\n   */\n  disposeData(dataId: DataId, force = false): boolean {\n    if (this.dataIdMap.has(dataId)) {\n      const data =\n      this.dataIdMap.get(dataId);\n      data.refCount--;\n      if (!force && data.refCount > 0) {\n        return false;\n      }\n      this.wasm._free(data.memoryOffset);\n      this.wasm.tfjs.disposeData(data.id);\n    }\n    this.dataIdMap.delete(dataId);\n    return true;\n  }\n\n  /** Return refCount of a `TensorData`. */\n  refCount(dataId: DataId): number {\n    if (this.dataIdMap.has(dataId)) {\n      const tensorData =\n      this.dataIdMap.get(dataId);\n      return tensorData.refCount;\n    }\n    return 0;\n  }\n\n  incRef(dataId: DataId) {\n    const data = this.dataIdMap.get(dataId);\n    if (data != null) {\n      data.refCount++;\n    }\n  }\n\n  floatPrecision():\n  32 {\n    return 32;\n  }\n\n  // Returns the memory offset of a tensor. Useful for debugging and unit\n  // testing.\n  getMemoryOffset(dataId: DataId): number {\n    return this.dataIdMap.get(dataId).memoryOffset;\n  }\n\n  dispose() {\n    this.wasm.tfjs.dispose();\n    if ('PThread' in this.wasm) {\n      this.wasm.PThread.terminateAllThreads();\n    }\n    this.wasm = null;\n  }\n\n  memory() {\n    return {unreliable:\n    false};\n  }\n\n  /**\n   * Make a tensor info for the output of an op. If `memoryOffset` is not\n   * present, this\n   * method allocates memory on the WASM heap. If `memoryOffset`\n   * is present, the memory was allocated\n   * elsewhere (in c++) and we just record\n   * the pointer where that memory lives.\n   */\n  makeOutput(shape:\n  number[], dtype: DataType, memoryOffset?: number):\n  TensorInfo {\n    let dataId: {};\n    if (memoryOffset\n    == null) {\n      dataId = this.write(null /* values */, shape, dtype);\n    } else {\n      const id =\n      this.dataIdNextNumber++;\n      dataId = {id};\n      this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,\n      refCount: 1});\n      const size = util.sizeFromShape(shape);\n      this.wasm.tfjs.registerTensor(id, size,\n      memoryOffset);\n    }\n    return {dataId, shape, dtype};\n  }\n\n  typedArrayFromHeap({shape, dtype, dataId}:\n  TensorInfo):\n  backend_util.TypedArray {\n    const buffer = this.wasm.HEAPU8.buffer;\n    const\n    {memoryOffset} = this.dataIdMap.get(dataId);\n    const size = util.sizeFromShape(shape);\n    switch (dtype) {\n      case 'float32':\n        return new Float32Array(buffer, memoryOffset, size);\n      case 'int32':\n        return new\n        Int32Array(buffer, memoryOffset, size);\n      case 'bool':\n        return new Uint8Array(buffer, memoryOffset,\n        size);\n      default:\n        throw new Error(`Unknown dtype ${dtype}`);\n    }\n  }\n\n  function\n  createInstantiateWasmFunc(path: string) {\n    // this will be replace by rollup plugin patchWechatWebAssembly in\n    // miniprogram's output.\n    // tslint:disable-next-line:no-any\n    return (imports: any, callback: any) => {\n      util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n        if (!response['ok']) {\n
```



```

});\n });\n\nfunction typedArrayFromBuffer(\n  buffer: ArrayBuffer, dtype: DataType):
backend_util.TypedArray {\n  switch (dtype) {\n    case 'float32':\n      return new Float32Array(buffer);\n    case
'int32':\n      return new Int32Array(buffer);\n    case 'bool':\n      return new Uint8Array(buffer);\n    default:\n
throw new Error(`Unknown dtype ${dtype}`);\n  }\n}\n\nconst wasmBinaryNames = [\n  'tfjs-backend-
wasm.wasm', 'tfjs-backend-wasm-simd.wasm',\n  'tfjs-backend-wasm-threaded-simd.wasm'\n] as const ;\n\nconst
WasmBinaryName = typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix:
string = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet
customFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `.wasm` file
which will be fetched when the wasm\n * backend is initialized. See\n *
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more
details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch
to download\n * the wasm file, default to false.\n * \n * @doc {heading: 'Environment', namespace: 'wasm'}\n
*\n * export function setWasmPath(path: string, usePlatformFetch = false): void {\n  deprecationWarn(\n
'setWasmPath has been deprecated in favor of setWasmPaths and' +\n    ' will be removed in a future release.);\n  if
(initAborted) {\n    throw new Error(\n      'The WASM backend was already initialized. Make sure you call ' +\n
      '\n      `setWasmPath()` before you call `tf.setBackend()` or `tf.ready()`);\n  }\n  wasmPath = path;\n  customFetch =
usePlatformFetch;\n}\n\n/**\n * Configures the locations of the WASM binaries.\n * \n * \n * \n * setWasmPaths({\n
* 'tfjs-backend-wasm.wasm': 'renamed.wasm',\n * 'tfjs-backend-wasm-simd.wasm': 'renamed-simd.wasm',\n *
'tfjs-backend-wasm-threaded-simd.wasm': 'renamed-threaded-simd.wasm'\n * });\n * \n * tf.setBackend('wasm');\n *
\n * \n * @param prefixOrFileMap This can be either a string or object:\n * - (string) The path to the directory
where the WASM binaries are located.\n * Note that this prefix will be used to load each binary (vanilla,\n *
SIMD-enabled, threading-enabled, etc.).\n * - (object) Mapping from names of WASM binaries to custom\n *
full paths specifying the locations of those binaries. This is useful if\n * your WASM binaries are not all located
in the same directory, or if your\n * WASM binaries have been renamed.\n * @param usePlatformFetch optional
boolean to use platform fetch to download\n * the wasm file, default to false.\n * \n * @doc {heading:
'Environment', namespace: 'wasm'}\n * \n * export function setWasmPaths(\n  prefixOrFileMap: string|{\n    [key in
WasmBinaryName]?: string\n  },\n  usePlatformFetch = false): void {\n    if (initAborted) {\n      throw new Error(\n
'The WASM backend was already initialized. Make sure you call ' +\n        '\n        `setWasmPaths()` before you call
`tf.setBackend()` or ' +\n          '\n          `tf.ready()`);\n    }\n\n    if (typeof prefixOrFileMap === 'string') {\n      wasmPathPrefix
= prefixOrFileMap;\n    } else {\n      wasmFileMap = prefixOrFileMap;\n      const missingPaths =\n        wasmBinaryNames.filter(name => wasmFileMap[name] == null);\n      if (missingPaths.length > 0) {\n        throw new
Error(\n          `There were no entries found for the following binaries: ` +\n            `${missingPaths.join(',')}. Please
either call setWasmPaths with a ` +\n              '\n              `map providing a path for each binary, or with a string indicating ` +\n
                '\n                `the directory where all the binaries can be found.`);\n        }\n      }\n\n      customFetch = usePlatformFetch;\n    }\n\n    /**
Used in unit tests. *\n * export function resetWasmPath(): void {\n  wasmPath = null;\n  wasmPathPrefix = null;\n
wasmFileMap = {};\n  customFetch = false;\n  initAborted = false;\n}\n\nlet threadsCount = -1;\nlet
actualThreadsCount = -1;\n\n/**\n * Sets the number of threads that will be used by XNNPACK to create\n *
threadpool (default to the number of logical CPU cores).\n * \n * This must be called before calling
`tf.setBackend('wasm')`.\n * \n * export function setThreadsCount(numThreads: number) {\n  threadsCount =
numThreads;\n}\n\n/**\n * Gets the actual threads count that is used by XNNPACK.\n * \n * It is set after the
backend is initialized.\n * \n * export function getThreadsCount(): number {\n  if (actualThreadsCount === -1) {\n
throw new Error(`WASM backend not initialized.`);\n  }\n  return actualThreadsCount;\n}\n\n",\n  export const
wasmWorkerContents = `var Module={};function threadPrintErr(){var
text=Array.prototype.slice.call(arguments).join("\\ ");console.error(text)}function threadAlert(){var
text=Array.prototype.slice.call(arguments).join("\\ ");postMessage({cmd:"alert",text:text,threadId:Module["_pthread_self"]()})}var
err=threadPrintErr;this.alert=threadAlert;Module["instantiateWasm"]=function(info,receiveInstance){var
instance=new

```

```

WebAssembly.Instance(Module["wasmModule"],info);Module["wasmModule"]=null;receiveInstance(instance);r
return instance.exports};function
moduleLoaded(){this.onmessage=function(e){try{if(e.data.cmd===\"load\"){Module["wasmModule"]=e.data.wa
smModule;Module["wasmMemory"]=e.data.wasmMemory;Module["buffer"]=Module["wasmMemory"].buffer;
Module["ENVIRONMENT_IS_PTHREAD"]=true;if(typeof
e.data.urlOrBlob===\"string\"){importScripts(e.data.urlOrBlob)}else{var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)}
WasmBackendModuleThreadedSimd(Module).then(function(instance){Module=instance;moduleLoaded()})}else
if(e.data.cmd===\"objectTransfer\"){Module["PThread"].receiveObjectTransfer(e.data)}else
if(e.data.cmd===\"run\"){Module["__performance_now_clock_drift"]=performance.now()-
e.data.time;Module["__emscripten_thread_init\""](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module["establishStackSpace\""](top,max);Module["__emscripten_tls_init\""](
);Module["PThread"].receiveObjectTransfer(e.data);Module["PThread"].setThreadStatus(Module["__pthread_self
\"](),1);try{var
result=Module["invokeEntryPoint\""](e.data.start_routine,e.data.arg);if(!Module["getNoExitRuntime\""]())Module["
PThread"].threadExit(result)}catch(ex){if(ex===\"Canceled!\"){Module["PThread"].threadCancel()}else
if(ex!==\"unwind\")if(ex instanceof
Module["ExitStatus\"]){if(Module["getNoExitRuntime\""]()){else{Module["PThread"].threadExit(ex.status)}}el
se{Module["PThread"].threadExit(-2);throw ex}}}}else
if(e.data.cmd===\"cancel\")if(Module["__pthread_self\""]()){Module["PThread"].threadCancel()}else
if(e.data.target===\"setimmediate\")else
if(e.data.cmd===\"processThreadQueue\")if(Module["__pthread_self\""]){Module["__emscripten_current_thread_
process_queued_calls\""]()}else{err(\"worker.js received unknown command
\"+e.data.cmd);err(e.data)}catch(ex){err(\"worker.js onmessage() captured an uncaught exception:
\"+ex);if(ex&&ex.stack)err(ex.stack);throw ex}};if(typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof process.versions.node===\"string\"){self={location:{href:__filename}}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require(\"worker_threads\");global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on(\"message\",function(data){onmessage({data:data})});var
nodeFS=require(\"fs\");var nodeRead=function(filename){return nodeFS.readFileSync(filename,\"utf8\")};function
globalEval(x){global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));postMessage=function(msg){parentPort.postMessage(msg)};if(typeof
performance===\"undefined\"){performance={now:function(){return Date.now()}}}};\"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport './flags_wasm';\n\nimport {registerBackend} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm,
init} from './backend_wasm';\n\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath,
setWasmPaths} from './backend_wasm';\n\nexport {version as version_wasm} from './version';\n\nconst
WASM_PRIORITY = 2;\n\nregisterBackend('wasm', async () => {\n\n  const {wasm} = await init();\n\n  return new
BackendWasm(wasm);\n\n}, WASM_PRIORITY);\n\n\"/** @license See the LICENSE file. *\n\n// This code is
auto-generated, do not modify this file!\n\nconst version = '3.11.0';\n\nexport
{version};\n\n\"names\":[\"CppType\",\"FusableActivation\",\"wasmFusedMatMul\",\"fusedMatMulConfig\",\"kernelNa
me\",\"_FusedMatMul\",\"backendName\",\"setupFunc\",\"backend\",\"wasm\",\"cwrap\",\"kernelFunc\",\"args\",\"inputs\",
\"attrs\"

```

,"a","b","bias","preluActivationWeights","dtype","Error","transposeA","transposeB","activation","leakyreluAlpha",
"aId","dataIdMap","get","dataId","id","bId","biasId","biasData","shape","length","preluActivationWeightsId","fuse
dActivation","leftDim","rightDim","batchDim","out","makeOutput","outId","aShapeBytes","UInt8Array","Int32Arr
ay","buffer","bShapeBytes","createUnaryKernelConfig","outType","wasmFunc","x","xId","util","sizeFromShape",
absConfig","Abs","createBinaryKernelConfig","supportsFullBroadcast","outputType","newShape","backend_util",
assertAndGetBroadcastShape","aBroadcastDims","getBroadcastDims","bBroadcastDims","loopsOverAllOfA","eve
ry","v","i","loopsOverAllOfB","addConfig","Add","addNConfig","AddN","inputIds","map","inputIdsBytes","identi
ty","inVals","typedArrayFromHeap","set","identityConfig","Identity","wasmTranspose","transpose","reducedShape
","perm","newPerm","push","minValIdx","j","removeOneSizeDims","permIsNoOp","outShape","inShape","Array",
"computeOutShape","cloned","permBytes","xShapeBytes","transposeConfig","Transpose","permuteAxesAndTrans
pose","axis","xShape","xRank","originalAxes","parseAxisParam","axes","permutedAxes","getAxesPermutation","x
Transposed","inputWasTransposed","getInnerMostAxes","transposed","wasmAll","allConfig","All","keepDims","i
nputId","input","inputRank","assertAxesAreInnerMostDims","reduceShape","computeOutAndReduceShapes","redu
ceSize","disposeData","expandShapeToKeepDim","wasmAny","anyConfig","Any","argMaxConfig","ArgMax","tra
nsposedId","slice","outerSize","innerSize","wasmAvgPool","avgPoolConfig","AvgPool","filterSize","strides","pad
","dimRoundingMode","convInfo","computePool2DInfo","filterHeight","filterWidth","padTop","padInfo","top","pad
Right","right","padBottom","bottom","padLeft","left","strideHeight","strideWidth","channels","inChannels","dataF
ormat","dilationWidth","dilationHeight","reshape","xSize","\$shape","inferFromImplicitShape","assert","incRef","re
shapeConfig","Reshape","wasmBatchMatMul","batchMatMulConfig","BatchMatMul","aRank","bRank","innerSha
peA","innerShapeB","outerShapeA","outerShapeB","outerDimsA","outerDimsB","batchDimA","batchDimB","batc
hDimsCompatible","concat","b3dShape","a3d","b3d","a3dId","b3dId","Math","max","sliceImpl","vals","begin","siz
e","isContinous","slice_util","isSliceContinous","xStrides","computeStrides","flatOffset","computeFlatOffset","sub
array","decodedData","fromUInt8ToStringArray","inBuf","outBuf","outLoc","indexToLoc","inLoc","idx","fromStri
ngArrayToUInt8","values","begin_","size_","parseSliceParams","xVals","readSync","outData","stringBytes","res",
sliceImplCPU","outVals","rank","xStride","outOffset","beginI","beginJ","endI","xOffset","slice2d","xStride1","xStr
ide2","beginK","endJ","slice3d","xStride3","endK","beginL","k","slice4d","sliceConfig","Slice","batchToSpaceND
Config","BatchToSpaceND","blockShape","crops","prod","reduce","reshaped","getReshaped","permuted","getPerm
uted","reshapedPermuted","getReshapedPermuted","sliceBeginCoords","getSliceBeginCoords","sliceSize","getSlic
eSize","xReshaped","result","cast","castConfig","Cast","ceilConfig","Ceil","wasmClip","clipByValueConfig","Clip
ByValue","clipValueMin","clipValueMax","t","\$inputs","filter","shapes","assertParamsConsistent","inputs2D","inp
utsValShapes","simplyConcat","getArrayFromDType","offset","forEach","colOffset","tIdx","row","resIdx","col","c
oncatImplCPU","finalOutShape","sumInnerDims","innerDims","innerDim","inOffset","concatConfig","Concat","w
asmConv2d","conv2DConfig","Conv2D","filterId","dilations","\$dataFormat","convertConv2DDataFormat","compu
teConv2DInfo","inputChannels","outputChannels","outChannels","isSamePad","type","wasmConv2DBackpropInpu
t","conv2DBackpropInputConfig","Conv2DBackpropInput","dy","inputShape","batchSize","inHeight","inWidth",
outHeight","outWidth","topPad","leftPad","isChannelsLast","dxStrides","dyStrides","fltS0","fltS1","fltS2","xBatch
Stride","xRowStride","xColStride","xChannelStride","yBatchStride","yRowStride","yColStride","yChannelStride",
"dyId","cosConfig","Cos","coshConfig","Cosh","InterpolationMethod","wasmCropAndResize","cropAndResizeCo
nfig","CropAndResize","method","extrapolationValue","cropSize","image","boxes","boxInd","numBoxes","cropHe
ight","cropWidth","castedData","imagesData","imagesId","boxesId","boxIndId","imagesShapeBytes","wasmCumsum
","cumsumConfig","Cumsum","exclusive","reverse","permutation","permutedX","permutedAxis","permutedOut",
"finalDim","permutedXId","permutedOutId","getUndoAxesPermutation","wasmDepthToSpace","depthToSpaceCo
nfig","DepthToSpace","blockSize","outputHeight","outputWidth","outputDepth","outputShape","xStridesBytes","o
utputShapeBytes","outStridesBytes","wasmDepthwiseConv2d","depthwiseConv2dNativeConfig","DepthwiseConv2
dNative","\$dilations","eluConfig","Elu","equalConfig","Equal","expConfig","Exp","expandDims","dim","\$dim","s
plice","expandDimsConfig","ExpandDims","fill","value","fillConfig","Fill","wasmFlipLeftRight","flipLeftRightCo
nfig","FlipLeftRight","imageId","batch","imageHeight","imageWidth","numChannels","floorConfig","Floor","floor
DivConfig","FloorDiv","wasmBatchNorm","fusedBatchNormConfig","FusedBatchNorm","varianceEpsilon","mean

","variance","scale","meanId","varianceId","offsetId","scaleId","wasmFusedConv2d","fusedConv2DConfig","FusedConv2D","wasmFusedDepthwiseConv2d","fusedDepthwiseConv2DConfig","FusedDepthwiseConv2D","wasmGatherNd","gatherNdConfig","GatherNd","params","indices","resultShape","numSlices","gather_util","prepareAndValidate","indicesShape","sliceRank","indicesId","stridesBytes","wasmGather","gatherV2Config","GatherV2","batchDims","parsedAxis","indicesVals","axisDim","index","shapeInfo","segment_util","collectGatherOpShapeInfo","flattenX","dimSize","indicesSize","flattenIndex","flattenOutputShape","stridesSize","greaterConfig","Greater","greaterEqualConfig","GreaterEqual","leakyReluConfig","LeakyRelu","alpha","lessConfig","Less","lessEqualConfig","LessEqual","logConfig","Log","logicalAndConfig","LogicalAnd","wasmMax","maxConfig","Max","reductionIndices","maximumConfig","Maximum","wasmMaxPool","maxPoolConfig","MaxPool","wasmMean","meanConfig","Mean","reductionAxes","castedInput","wasmMin","minConfig","Min","minimumConfig","Minimum","MirrorPaddingMode","wasmMirrorPad","mirrorPadConfig","MirrorPad","paddings","mode","p","prePaddingsFlat","padTuple","postPaddingsFlat","prePaddingsBytes","postPaddingsBytes","multiplyConfig","Multiply","negConfig","Neg","parseResultStruct","resOffset","HEAPU8","pSelectedIndices","selectedSize","pSelectedScores","pValidOutputs","_free","nonMaxSuppressionV3Config","NonMaxSuppressionV3","iouThreshold","maxOutputSize","scoreThreshold","scores","scoresId","nonMaxSuppressionV4Config","NonMaxSuppressionV4","padToMaxOutputSize","nonMaxSuppressionV5Config","NonMaxSuppressionV5","softNmsSigma","notEqualConfig","NotEqual","wasmOneHot","oneHotConfig","OneHot","depth","onValue","offValue","onesLikeConfig","OnesLike","packConfig","Pack","assertShapesMatch","intermediateTensorInfos","expandedT","wasmPadV2","padV2Config","PadV2","constantValue","powConfig","Pow","wasmPrelu","preluConfig","Prelu","weightsId","wasmProd","prodConfig","Prod","rangeConfig","Range","start","stop","step","makeZerosTypedArray","numElements","abs","ceil","rangeImplCPU","realDivConfig","RealDiv","reluConfig","Relu","relu6Config","Relu6","wasmResizeBilinear","resizeBilinearConfig","ResizeBilinear","images","alignCorners","halfPixelCenters","newHeight","newWidth","oldHeight","oldWidth","xData","wasmReverse","reverseConfig","Reverse","dims","axesBytes","outShapeBytes","wasmRotate","rotateWithOffsetConfig","RotateWithOffset","radians","fillValue","center","centerX","centerY","getImageCenter","fillValues","fillBytes","roundConfig","Round","rsqrtConfig","Rsqrt","wasmScatterNd","scatterNdConfig","ScatterNd","updates","numUpdates","outputSize","scatter_util","calculateShapes","updatesId","wasmSelect","selectConfig","Select","condition","e","conditionId","tId","eId","cRank","tRank","sigmoidConfig","Sigmoid","sinConfig","Sin","softmaxConfig","Softmax","logits","spaceToBatchNDConfig","SpaceToBatchND","completePaddings","paddedX","reshapedPaddedShape","permutedReshapedPaddedPermutation","flattenShape","paddedXReshaped","paddedXT","splitVConfig","SplitV","numOrSizeSplits","\$axis","splitSizes","prepareSplitSize","s","xSliceSize","xSlice","sqrtConfig","Sqrt","squareConfig","Square","squaredDifferenceConfig","SquaredDifference","wasmStep","stepConfig","Step","wasmStridedSlice","stridedSliceConfig","StridedSlice","end","beginMask","endMask","ellipsisMask","newAxisMask","shrinkAxisMask","finalShapeSparse","finalShape","isIdentity","sliceDim0","isSimpleSlice","\$begin","\$end","\$strides","sliceInfo","sliced","beginBytes","endBytes","subConfig","Sub","wasmSum","sumConfig","Sum","tanConfig","Tan","tanhConfig","Tanh","wasmTile","tileConfig","Tile","reps","newShapeBytes","wasmTopK","topKConfig","TopK","sorted","outValues","outValuesId","outIndices","outIndicesId","wasmTransform","transformConfig","Transform","transforms","interpolation","fillMode","transformsId","interpolationModeId","fillModeId","unpackConfig","Unpack","numOutputs","outIndex","outs","zerosLikeConfig","ZerosLike","kernelConfigs","kernelConfig","registerKernel","ENV","env","registerFlag","async","WebAssembly","validate","MessageChannel","port1","postMessage","SharedArrayBuffer","_scriptDir","WasmBackendModuleThreadedSimd","document","currentScript","src","undefined","__filename","GROWABLE_HEAP_I8","wasmMemory","updateGlobalBufferAndViews","HEAP8","GROWABLE_HEAP_U8","GROWABLE_HEAP_I32","HEAP32","GROWABLE_HEAP_U32","HEAPU32","GROWABLE_HEAP_F64","HEAPF64","readyPromiseResolve","readyPromiseReject","Module","Promise","resolve","reject","key","moduleOverrides","hasOwnProperty","quit_","status","toThrow","ENVIRONMENT_IS_WEB","ENVIRONMENT_IS_WORKER","ENVIRONMENT_IS_NODE","ENVIRONMENT_IS_SHELL","window","importScripts","process","versions","node","ENVIRONMENT_IS_PTHREAD","read_","readAsync","readBinary","nodeFS","nodePath","scriptDirectory","locateFile","path","nodeWorkerThreads","require\$\$0","dirname","__dirname","filename","binary","require\$\$1","ret","replace","ex","ExitStatus","abort","require\$\$2","console","error","global","Worker","read","f","da

ta","readbuffer","scriptArgs","quit","print","log","warn","printErr","self","location","href","indexOf","substr","lastIndexOf","url","xhr","XMLHttpRequest","open","send","responseText","responseType","response","onload","onerror","performance","require\$\$3","wasmBinary","bind","err","warnOnce","text","shown","wasmModule","noExitRuntime","ABORT","getCFunc","ident","func","ccall","returnType","argTypes","opts","toC","string","str","len","stringToUTF8","stackAlloc","array","arr","writeArrayToMemory","cArgs","stack","converter","stackSave","apply","UTF8ToString","Boolean","convertReturnValue","stackRestore","numericArgs","arguments","UTF8ArrayToString","heap","maxBytesToRead","endIdx","u0","u1","u2","String","fromCharCode","ch","ptr","stringToUTF8Array","outIdx","maxBytesToWrite","startIdx","u","charCodeAt","outPtr","lengthBytesUTF8","alignUp","multiple","buf","Int8Array","Int16Array","Uint16Array","Uint32Array","Float32Array","Float64Array","wasmTable","INITIAL_MEMORY","Memory","initial","maximum","shared","byteLength","__ATPRERUN__","__ATINIT__","__ATMAIN__","__ATPOSTRUN__","preRun","addOnPreRun","shift","callRuntimeCallbacks","initRuntime","preMain","postRun","addOnPostRun","cb","unshift","__wasm_call_ctors","runDependencies","dependenciesFulfilled","addRunDependency","removeRunDependency","callback","what","RuntimeError","hasPrefix","prefix","prototype","startsWith","dataURIPrefix","isDataURI","fileURIPrefix","isFileURI","wasmBinaryFile","getBinary","file","getBinaryPromise","fetch","credentials","then","catch","createWasm","info","asmLibraryArg","receiveInstance","instance","module","exports","numWorkersToLoad","PThread","unusedWorkers","w","loadWasmModuleToWorker","receiveInstantiatedSource","output","instantiateArrayBuffer","receiver","instantiate","reason","instantiateStreaming","ASM_CONSTS","10520","10538","\$0","\$1","setTimeout","__emscripten_do_dispatch_to_thread","initPthreadsJS","callbacks","arg","ERRNO_CODES","EPERM","ENOENT","ESRCH","EINTR","EIO","ENXIO","E2BIG","ENOEXEC","EBADF","ECHILD","EAGAIN","EWOULDBLOCK","ENOMEM","EACCES","EFAULT","ENOTBLK","EBUSY","EEXIST","EXDEV","ENODEV","ENOTDIR","EISDIR","EINVAL","ENFILE","EMFILE","ENOTTY","ETXTBSY","EFBIG","ENOSPC","ESPIPE","EROFS","EMLINK","EPIPE","EDOM","ERANGE","ENOMSG","EIDRM","ECHRNG","EL2NSYNC","EL3HLT","EL3RST","ELNRNG","EUNATCH","ENOCSI","EL2HLT","EDEADLK","ENOLCK","EBADE","EBADR","EXFULL","ENOANO","EBADRQC","EBADSLT","EDEADLOCK","EBFONT","ENOSTR","ENODATA","ETIME","ENOSR","ENONET","ENOPKG","EREMOTE","ENOLINK","EADV","ESRMNT","ECOMM","EPROTO","EMULTIHOP","EDOTDOT","EBADMSG","ENOTUNIQU","EBADFD","EREMCHG","ELIBACC","ELIBBAD","ELIBSCN","ELIBMAX","ELIBEXEC","ENOSYS","ENOTEMPTY","ENAMETOOLONG","ELOOP","EOPNOTSUPP","EPFNOSUPPORT","ECONNRESET","ENOBUFS","EAFNOSUPPORT","EPROTOTYPE","ENOTSOCK","ENOPROTOOPT","ESHUTDOWN","ECONNREFUSED","EADDRINUSE","ECONNABORTED","ENETUNREACH","ENETDOWN","ETIMEDOUT","EHOSTDOWN","EHOSTUNREACH","EINPROGRESS","EALREADY","EDESTADDRREQ","EMSGSIZE","EPROTONOSUPPORT","ESOCKTNOSUPPORT","EADDRNOTAVAIL","ENETRESET","EISCONN","ENOTCONN","ETOOMANYREFS","EUSERS","EDQUOT","ESTALE","ENOTSUP","ENOMEDIUM","EILSEQ","EOVERFLOW","ECANCELED","ENOTRECOVERABLE","EOWNERDEAD","ESTRPIPE","_emscripten_futex_wake","addr","count","Infinity","mainThreadWaitAddress","Atomics","load","__emscripten_main_thread_futex","mainThreadWoken","compareExchange","notify","killThread","pthread_ptr","pthread","pthreads","worker","terminate","freeThreadData","runningWorkers","cancelThread","cmd","cleanupThread","returnWorkerToPool","_emscripten_get_now","initMainThreadBlock","allocateUnusedWorker","tb","_malloc","headPtr","tlsMemory","store","_emscripten_thread_init","_emscripten_register_main_browser_thread_id","initWorker","threadExitHandlers","setThreadStatus","runExitHandlers","pop","_pthread_self","__pthread_tsd_run_dtors","runExitHandlersAndDeinitThread","exitCode","threadExit","threadCancel","terminateAllThreads","threadInfoStruct","allocatedOwnStack","stackBase","runWithoutMainThreadQueuedCalls","__emscripten_allow_main_runtime_queued_calls","receiveObjectTransfer","onFinishedLoading","onmessage","d","currentProxiedOperationCallerThread","thread","targetThread","_emscripten_main_thread_process_queued_calls","spawnThread","loaded","runPthread","alert","exit","target","lineno","message","on","urlOrBlob","pthreadMainJs","getNewWorker","busySpinWait","msecs","now","establishStackSpace","stackTop","stackMax","_emscripten_stack_set_limits","getNoExitRuntime","invokeEntryPoint","__assert_fail","line","__call_main","argc","argv","_main","setErrNo","__errno_location","_atexit","_emscripten_proxy_to_main_thread_js","_emscripten_notify_thread_queue","targetThreadId","mainThreadId","_abort","_emscripten_asm_const_int","code","sigPtr","argbuf","

readAsmConstArgs", "_emscripten_conditional_set_current_thread_status", "expectedStatus", "newStatus", "_emscripten_futex_wait", "val", "timeout", "tNow", "tEnd", "exchange", "wait", "_emscripten_memcpy_big", "dest", "num", "copyWithin", "_emscripten_num_logical_cores", "require\$\$4", "cpus", "navigator", "sync", "numCallArgs", "serializedNumCallArgs", "_emscripten_run_in_main_runtime_thread_js", "dateNow", "_emscripten_receive_on_main_thread_js_callArgs", "readAsmConstArgsArray", "double", "_emscripten_receive_on_main_thread_js", "proxiedFunctionTable", "_emscripten_get_heap_size", "emscripten_realloc_buffer", "grow", "_emscripten_resize_heap", "requestedSize", "oldSize", "maxHeapSize", "cutDown", "overGrownHeapSize", "min", "JSEvents", "inEventHandler", "removeAllEventListeners", "eventHandlers", "_removeHandler", "deferredCalls", "registerRemoveEventListeners", "removeEventListenersRegistered", "deferCall", "targetFunction", "precedence", "argsList", "arraysHaveEqualContent", "arrA", "arrB", "call", "sort", "y", "removeDeferredCalls", "canPerformEventHandlerRequests", "currentEventHandler", "allowsDeferredCalls", "runDeferredCalls", "removeAllHandlersOnTarget", "eventTypeString", "h", "removeEventListener", "eventListenerFunc", "useCapture", "registerOrRemoveHandler", "eventHandler", "jsEventHandler", "event", "handlerFunc", "callbackfunc", "addEventListener", "queueEventHandlerOnThread_iiii", "eventHandlerFunc", "eventTypeId", "eventData", "userData", "varargs", "__emscripten_call_on_thread", "getTargetThreadForEventCallback", "getNodeNameForTarget", "screen", "nodeName", "fullscreenEnabled", "webkitFullscreenEnabled", "stringToNewUTF8", "jsString", "cString", "_emscripten_set_offscreencanvas_size_on_target_thread_js", "targetCanvas", "width", "height", "targetCanvasPtr", "_emscripten_set_offscreencanvas_size_on_target_thread", "maybeCStringToJsString", "specialHTMLTargets", "findEventTarget", "querySelector", "findCanvasEventTarget", "_emscripten_set_canvas_element_size_calling_thread", "canvas", "canvasSharedPtr", "offscreenCanvas", "controlTransferredOffscreen", "autoResizeViewport", "GLctxObject", "GLctx", "prevViewport", "getParameter", "viewport", "_emscripten_set_canvas_element_size_main_thread", "_emscripten_set_canvas_element_size", "_emscripten_set_current_thread_status", "_emscripten_set_thread_name", "threadId", "name", "__webgl_enable_ANGLE_instanced_arrays", "ctx", "ext", "getExtension", "divisor", "first", "primcount", "__webgl_enable_OES_vertex_array_object", "vao", "__webgl_enable_WEBGL_draw_buffers", "n", "bufs", "__webgl_enable_WEBGL_multi_draw", "multiDrawWebgl", "GL", "counter", "buffers", "programs", "framebuffers", "renderbuffers", "textures", "uniforms", "shaders", "vaos", "contexts", "offscreenCanvases", "timerQueriesEXT", "programInfos", "stringCache", "unpackAlignment", "recordError", "errorCode", "lastError", "getNewId", "table", "getSource", "shader", "source", "createContext", "webGLContextAttributes", "getContext", "registerContext", "handle", "context", "attributes", "version", "majorVersion", "enableExtensionsByDefault", "initExtensions", "makeContextCurrent", "contextHandle", "currentContext", "deleteContext", "initExtensionsDone", "disjointTimerQueryExt", "getSupportedExtensions", "populateUniformTable", "program", "ptable", "maxUniformLength", "maxAttributeLength", "maxUniformBlockNameLength", "utable", "numUniforms", "getProgramParameter", "getActiveUniform", "loc", "getUniformLocation", "_emscripten_webgl_power_preferences", "_emscripten_webgl_do_create_context", "powerPreference", "contextAttributes", "stencil", "antialias", "premultipliedAlpha", "preserveDrawingBuffer", "failIfMajorPerformanceCaveat", "minorVersion", "explicitSwapControl", "proxyContextToMainThread", "renderViaOffscreenBackBuffer", "_emscripten_webgl_create_context", "a0", "a1", "SYSCALLS", "mappings", "printChar", "stream", "curr", "getStr", "get64", "low", "high", "_fd_close", "fd", "_fd_seek", "offset_low", "offset_high", "whence", "newOffset", "_fd_write", "iov", "iovcnt", "pnnum", "_pthread_cleanup_pop", "execute", "routine", "_pthread_cleanup_push", "threadParams", "stackHigh", "stackSize", "tis", "detached", "global_locale", "_emscripten_get_global_libc", "msg", "start_routine", "startRoutine", "time", "transferList", "_pthread_create", "attr", "_emscripten_sync_run_in_main_thread_4", "_memalign", "_pthread_testcancel_js", "_emscripten_check_blocking_allowed", "_emscripten_do_pthread_join", "block", "_emscripten_main_browser_thread_id", "threadStatus", "threadExitCode", "_pthread_join", "_sysconf", "calledRun", "r", "c", "A", "q", "l", "g", "o", "z", "m", "this", "run", "doRun", "implicit", "returnCode", "runCaller", "ready", "WasmBackendModule", "UTF8Decoder", "TextDecoder", "endPtr", "decode", "BackendWasm", "KernelBackend", "[object Object]", "super", "tfjs", "initWithThreadsCount", "threadsCount", "actualThreadsCount", "getThreadsCount", "DataStorage", "engine", "dataIdNextNumber", "move", "numDataIds", "kernelMs", "refCount", "memoryOffset", "numBytes", "bytesPerElement", "registerTensor", "byteOffset", "typedArrayFromBuffer", "force", "has", "delete", "dispose", "unreliable", "write", "getPathToWasmBinary", "simdSupported", "threadsSupported", "wasmModuleFolder", "wasmPath", "wasmFileMap", "init", "all", "getAsync", "factoryConfig", "endsWith", "blob", "Blob", "URL", "createObjectURL", "wasmPath

Prefix","customFetch","instantiateWasm","imports","arrayBuffer","createInstantiateWasmFunc","initialized","onAbort","initAborted","mainScriptUrlOrBlob","wasmFactoryThreadedSimd","toString","wasmFactory","wasmBinaryNames","numThreads","usePlatformFetch","deprecationWarn","prefixOrFileMap","missingPaths","join"],"mappings":":;;;;;;;;;;;;;oeAkBA,IAAYA,EASAC,ECJZ,IAAIC,iVDLJ,SAAYF,GACVA,yBACAA,qBACAA,mBACAA,uBACAA,6BALF,CAAYA,IAAAA,OASZ,SAAYC,GACVA,uBACAA,mBACAA,qBACAA,qBACAA,6BACAA,yBACAA,iBAPF,CAAYA,IAAAA,OC6EL,MAAME,EAaKc,CAC7CC,WAAyc,eACZC,YAAa,OACbC,UA7EF,SAaEc,GACbN,EAaKBM,EAaQC,KAAKc,MAAML,eAAc,KAAiB,CACIE,SACA,QACA,SACA,SACA,QACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAgEFM,WA5DF,SAA0BC,GAKxB,MAAMC,OAACA,EAAML,QAAEA,EAaOM,MAAEA,GAASF,GAC3BG,EAACA,EAACC,EAAEA,EAACC,KAAEA,EAaIC,uBAAEA,GAa0BL,EAE7C,GAAgB,YAAZE,EAAEI,OAaMc,YAAZH,EAAEG,MAC7B,MAAM,IAAIC,MACN,+DAGN,MAAMC,WAAcA,EAaUC,WAAEA,EAaUC,WAAEA,EAaUC,eAAEA,GAAkBV,EACvDW,EAAMjB,EAaQkB,UAAUC,IAAIZ,EAAEa,QAAQC,GACtCC,EAAMtB,EAaQkB,UAAUC,IAAIX,EAAEY,QAAQC,GAE5C,IAAIE,EAAS,EACb,GAAY,MAARd,EAaC,CACbB,MAAMe,EAAWxB,EAaQkB,UAAUC,IAAIV,EAaKW,QAC5C,GAA8B,IAA1BI,EAASC,MAAMC,OACjB,MAAM,IAAId,MAEN,uDAAQY,EAASC,MAAMC,WAE7BH,EAASC,EAASH,GAEPb,MAAMM,EAaQD,MAA1BjB,EAC7B,EACAV,EAaQkB,UAAUC,IAAIT,EAaUbu,QAAQC,GACnDO,EACFnC,EAaKbSb,GACtB,GAaUB,MAAnBa,EACF,MAAM,IAAIhB,MACN,GAAGG,uEAIT,MAAMc,EAaUhB,EAaAn,EAaEkB,MAAM,GAaKIB,EAaEkB,MAAM,GAC5CK,EAaWhB,EAaAn,EAaEiB,MAAM,GAaKjB,EAaEiB,MAAM,GAC7CM,EAAWxB,EAaEkB,MAAM,GAEnBO,EAAMhC,EAaQiC,WAAW,CACF,EAaUF,EAASC,GAAWvB,EAaEI,OAC1DuB,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAE1Cc,EAaC,IAAIC,WAAW,IAAIC,WAAW9B,EAaEkB,OAAOa,QACrDC,EAaC,IAAIH,WAAW,IAAIC,WAAW7B,EAaEiB,OAAOa,QAO3D,OALA5C,EACIuB,EAaKkB,EAaA5B,EAaEkB,MAAMC,OAAQJ,EAaKiB,EAaA/B,EAaEiB,MAAMC,OAC5Db,EAAYC,EAAYc,EAaIBL,EAaQI,EACjDX,GAAKB,EAAGkB,GAEIBF,aC9EOQ,EACZ5C,EAaOb6C,GACtB,IAAIC,EA0BJ,MAAO,CAAC9C,WAAAA,EAAYE,YAAa,OAAQC,UAXBzC,SAAmBC,GACjB0C,EAAW1C,EAaQC,KAAKc,MAAMN,EAAY,KAAiB,CACzD,SACA,SACA,YAObgDO,WAhBpD,SAAoBC,GAEIB,MAAMJ,QAACA,EAASK,QAAQsC,EAACA,IAAMvC,EACzBwC,EAAM5C,EAaQkB,UAAUC,IAAIwB,EAaEvB,QAAQC,GACtCW,EAAMhC,EAaQiC,WAAWU,EAaEIB,MAAOgB,GAaWE,EAaEHc,OAC/CuB,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAGhD,OAAcS,IAaICwB,OAAKc,cAAcd,EAaIP,QAI3BiB,EAASE,EAaKpD,EAASmD,EAaEHc,OAAQuB,GAHxBF,ICxBN,MAAMe,EAa0BP,EAawBQ,gBCG/CC,EACZrD,EAaObSd,EACpBvC,GACF,IAAI+B,EA6DJ,MAAO,CAAC9C,WAAAA,EAAYE,YAAa,OAAQC,UAXDzC,SAAmBC,GACjB0C,EAAW1C,EAaQC,KAAKc,MAAMN,EAAY,KAAiB,CACzD,SACA,QAACA,SACA,SACA,QACA,SACA,SACA,YA+CgDO,WA3CpD,SAAoBC,GAEIB,MAAMJ,QAACA,EAaOK,OAaEA,GAAUD,GACpBG,EAACA,EAACC,EAAEA,GAaKH,EACTY,EAAMjB,EAaQkB,UAAUC,IAAIZ,EAaEa,QAAQC,GACtCC,EAAMtB,EAaQkB,UAAUC,IAAIX,EAAEY,QAAQC,GAEtC8B,EAASB,MAATxC,EAaGBA,EAaQJ,EAaEI,MACvCyC,EAAWC,eAAaC,2BAA2B/C,EAaEkB,MAAOjB,EAaEiB,OAC9DO,EAAMhC,EAaQiC,WAAWmB,EAaUD,GAGzC,GAAqC,IAAjCN,OAAKc,cAAcM,GACrB,OAAOpB,EAGT,MAAMG,EAaC,IAAIC,WAAW,IAAIC,WAAW9B,EAaEkB,OAAOa,QACrDC,EAaC,IAAIH,WAAW,IAAIC,WAAW7B,EAaEiB,OAAOa,QACrDJ,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAC1CIB,EAaA,IAAMuC,EACrBzB,EAaKkB,EAaA5B,EAaEkB,MAAMC,OAAQJ,EAaKiB,EAaA/B,EAaEiB,MAAMC,OAC5DIC,EAaSe,EAaEI,OAaQuB,GAGvB,GAAIgB,GAAqC,YAAZ3C,EAaEI,MAE7B,OADAR,IACO6B,EAGT,MAAMuB,EAaIBF,eAAAG,iBAaIBjD,EAaEkB,MAAO2B,GACxDK,EAaIBJ,eAAAG,iBAaIBhD,EAaEiB,MAAO2B,GACxDM,EAaKBH,EAaEI,OAAM,CAACC,EAAGC,IAAMD,IAAMC,IACvDC,EAaKBH,EAaE,OAAM,CAACC,EAAGC,IAAMD,IAAMC,IAC7D,GAaIH,GAaMBI,EAERb,OADA3D,IACO6B,EAEP,MAAM,IAAIpB,MAEN,0DAAiBL,EAaEI,SAASf,QC9DiC,MAEamE,EACTd,EAaYBe,OAHC,GCE9B,IAAIhB,EA8BG,MAAMuB,EAa2B,CACtCrE,WAAySE,OACZpE,YAAa,OACbC,UA7BF,SAAmBC,GACjB0C,EAAW1C,EAaQC,KAAKc,MAAMgE,OAAM,KAAiB,CACnD,QACA,SACA,SACA,YAyBF/D,WArBF,SAaC,GACZ,MAAMC,OAACA,EAAML,QAAEA,GAaWI,EACpB4B,EAAMhC,EAaQiC,WAAW5B,EAaO,GAAGoB,MAAOpB,EAaO,GAAGM,OAG1D,GAASc,IAaICkC,OAAKc,cAAcd,EAaIP,OACzB,OAAOO,EAGT,MAAMmC,EAAW9D,EAaO+D,KAAIZB,GAAK3C,EAaQkB,UAAUC,IAAIwB,EAaEvB,QAAQC,KAC3DgD,EAaGB,IAAIjC,WAAW,IAAIC,WAAW8B,GAAU7B,

QACxDJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAGhD,OAFaQb,EAAS2B,EAAeF,EAASzC,OA
AQIC,EAASwC,EAAIrB,OAAQuB,GAEvDF,aC5B0sC,EAASIE,GAEvB,MAAOC,QAAQsC,EAACA,GAAE3C,
QAAEA,GAAWI,EACzB4B,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAEhC,OACpC4D,EAASvE,E
AAQwE,mBAAMb7B,GAG1C,OAFgB3C,EAAQwE,mBAAMbxC,GACnCyC,IAAIF,GACLvC,EAGF,MAAM0C
,EAA+B,CAC1C9E,WAAy+E,WACZ7E,YAAa,OACbK,WAAyME,GCXd,IAAIM,WAgBYC,EACZzE,GAGF,M
AAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAG1B0E,EAACc,GAYcVb,SACItD,EAAlBsD,G
ACnB,MAAM3B,EAAqB,GACrB4B,EAAoB,GAC1B,IAAK,IAAIb,EAAI,EAAGA,EAAIpC,EAAMC,SAAUm
C,EACjB,IAAbpC,EAAMoC,IACRT,EAAS6B,KAAKxD,EAAMoC,IAEC,IAAnBpC,EAAMsD,EAAKIB,KACbm
B,EAAQC,KAAKF,EAAKIB,IAGtB,IAAK,IAAIA,EAAI,EAAGA,EAAImB,EAAQtD,SAAUmC,EAAG,CACvC,
IAAIqB,GAAa,EACjB,IAAK,IAAIC,EAAI,EAAGA,EAAIH,EAAQtD,SAAUyD,EACHCH,EAAQG,IAAMtB,KA
CE,IAAfqB,GAAoBF,EAAQE,GAAaF,EAAQG,MACpDD,EAAYC,GAGhBH,EAAQE,GAAarB,EAEvB,MAAO,
CAACT,EAAU4B,GA/DWI,CAAKb/E,EAAOsC,EAAEIB,MAAOnB,EAAMyE,MAErE,IAAIM,GAAa,EACjB,IA
AK,IAAIxB,EAAI,EAAGA,EAAIkB,EAAKrD,OAAQmC,IAC3BkB,EAAKIB,KAAOA,IACdwB,GAAa,GAGjB,
MAAMC,EAYBR,SAAyBC,EAAMBR,GAC1C,MAAMO,EAAW,IAAIE,MAAMD,EAAQ7D,QACnC,IAAK,IAA
ImC,EAAI,EAAGA,EAAIyB,EAAS5D,OAAQmC,IACnCyB,EAASzB,GAAK0B,EAAQR,EAAKIB,IAE7B,OAA
OyB,EA9BUG,CAAgBpF,EAAOsC,EAAEIB,MAAOnB,EAAMyE,MACjDpC,EAAI,CACrVb,OAAQf,EAAOsC,
EAAEvB,OACjBK,MAAOqD,EACPnE,MAAON,EAAOsC,EAAEhC,OAGIB,GAAl0E,EAAY,CACd,MAAMK,E
AASpB,EAAS,CAACjE,OAAAA,EAAQL,QAAAA,IAEjC,OADA0F,EAAOjE,MAAQ6D,EACRI,EAGT,MAAM
1D,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,OACrCiC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEv
B,QAAQC,GACtCa,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CsE,EAAY,IAAIvD,WAAW,IAA
IC,WAAW0C,GAAMzC,QACHDsD,EAAc,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QAK3D,OAHA
sC,EACIhC,EAAKgD,EAAajD,EAAEIB,MAAMC,OAAQIC,EAASmD,EAAEhC,OAAQuB,EAAOyD,EAC5DZ,
EAAKrD,QACFM,EAoCF,MAAM6D,EAAgC,CAC3CjG,WAAykG,YACzhG,YAAa,OACbK,WAAy0E,EACZ9
E,UAZFF,SAAeC,GACb4E,EAAgB5E,EAAQC,KAAKC,MAAM4F,YAAW,KAAiB,CAC7D,SACA,QACA,SAC
A,SACA,SACA,QACA,sBCPYC,EACZpD,EAAeqD,EAAuBhG,GAMxC,MAAMiG,EAAStD,EAAEIB,MACXyE
,EAAQvD,EAAEIB,MAAMC,OAehByE,EAAetD,OAAKuD,eAAeJ,EAAMC,GAC/C,IAAII,EAAOF,EACX,MA
AMG,EAAejD,eAAakD,mBAAMBF,EAAMH,GAC3D,IAAIM,EAAC,KACdC,GAAqB,EACzB,GAAoB,MAAhB
H,EAASB,CACxB,MAAMID,EAAqB,IAAIoC,MAAMU,GACrC,IAAK,IAAIrC,EAAI,EAAGA,EAAIT,EAAS1B,
OAAQmC,IACnCT,EAASS,GAAKoC,EAAOK,EAAazC,IAGpCwC,EAAOhD,eAAaqD,iBAAiBL,EAAK3E,OAA
QwE,GACIDM,EACI3B,EAAU,CAACxE,OAAQ,CAACsC,EAAAA,GAAlrC,MAAO,CAACyE,KAAmUB,GAAe
tG,QAAAA,IAEzD,MAAM4C,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACvBrB,EAAQkB,U
AAUC,IAAIqF,EAAYpF,QAAQC,KAC1CuB,IACnB6D,GAAqB,GAlzB,MAAO,CAACE,WAAyH,EAAaL,aAA
AA,EAACe,KAAAA,EAAMI,mBAAAA,GCTcVd,IAAIG,EAKDG,MAAMC,EAA0B,CACrCjH,WAAyKH,MAC
ZHH,YAAa,OACbC,UAnDF,SAAeC,GACb4G,EAAU5G,EAAQC,KAAKC,MAAM4G,MAAK,KAAe,CAAC,4B
AmDID3G,WAhDF,SAAaC,GAEX,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,K
AACA,EAAIe,SAAEA,GAAYzG,GACnBqC,EAACA,GAAKtC,EAEZ,IAAI2G,EADQhH,EAAQkB,UAAUC,IA
AIwB,EAAEvB,QAAQC,GAExC4F,EAAQtE,EAEZ,MAAMgE,WAAcA,EAAUN,KAAEA,EAAIF,aAAEA,EA
YM,mBAAEA,GACnCV,EAAwBpD,EAAGqD,EAAMhG,GAErC,GAAYyG,EAAoB,CAEtBQ,EAAQN,EACRK,
EAFqBhH,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAKhE,MAAM6F,EAAYD,EAAMxF,MAAMC,OAC
9B2B,eAAa8D,2BAA2B,MAAOd,EAAMa,GACrD,MAAO5B,EAAU8B,GACb/D,eAAagE,0BAA0BJ,EAAMxF,
MAAO4E,GACIDiB,EAAazE,OAAKC,cAAcsE,GAehCpF,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,O
AC3C,GAAwC,IAApCkC,OAAKC,cAAcmE,EAAMxF,OAAC,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IA
AIa,EAAIZ,QAAQC,GACHduF,EAAQI,EAASM,EAAYpF,GAQ/B,GAlIuE,GAEFzG,EAAQuH,YAAyZ,EA
AWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,eAAamE,qBAAqBxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MA
AQ2B,EAGd,OAAOpB,IC/CT,IAAIyF,EAKDG,MAAMC,EAA0B,CACrC9H,WAAy+H,MACZ7H,YAAa,OACb
C,UAnDF,SAAeC,GACbyH,EAAUzH,EAAQC,KAAKC,MAAMyH,MAAK,KAAe,CAAC,4BAmDIDxH,WAhDF
,SAAaC,GAEX,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAAACA,EAAIe,SAA
EA,GAAYzG,GACnBqC,EAACA,GAAKtC,EAEZ,IAAI2G,EADQhH,EAAQkB,UAAUC,IAAIwB,EAAEvB,QA

AQC,GAExC4F,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAIF,aAAEA,EAAYM,mBAAEA,GA
CnCV,EAAwBpD,EAAGqD,EAAMhG,GAERc,GAAIyG,EAAoB,CAEtBQ,EAAQN,EACRK,EAfQbH,EAAQk
B,UAAUC,IAAIwF,EAAWvF,QAAQC,GAKhE,MAAM6F,EAAYD,EAAMxF,MAAMC,OAC9B2B,eAAa8D,2B
AA2B,MAAOd,EAAMa,GACrD,MAAO5B,EAAU8B,GACb/D,eAAagE,0BAA0BJ,EAAMxF,MAAO4E,GACIDi
B,EAAazE,OAAKC,cAAcsE,GAehCpF,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,OAC3C,GAAwC,IA
ApCkC,OAAKC,cAAcmE,EAAMxF,OAAc,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQ
C,GACHDoG,EAAQT,EAASM,EAAYpF,GAQ/B,GALluE,GAEFzG,EAAQuH,YAAYZ,EAAWvF,QAG7B2F,EA
AU,CAEZ,MAAM3D,EAAWC,eAAamE,qBAaQbxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OA
AOpB,IC9CT,IAAIU,EAmDG,MAAMkF,EAA6B,CACxChI,WAAyiI,SACZ/H,YAAa,OACbK,WAXCF,SACIC,
GACF,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,GAAQ1F,GACTqC,E
AACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2F,EAUpE,
EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAII,mBAAEA,GACrBV,EAAwBpD,EAAGq
D,EAAMhG,GAERc,GAAIyG,EAAoB,CACtB,MAAMqB,EAAe9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAA
QC,GAC1DyG,IAAIbIF,IAGnBqE,EAAQN,EACRK,EAAUc,GAId,MAAMxC,EAAW2B,EAAMxF,MAAMsG,M
AAM,GAAL,GACjC/F,EAAMhC,EAAQiC,WAAWqD,EAAU,SACnCPD,EAAQIC,EAAQkB,UAAUC,IAAIa,EA
AIZ,QAAQC,GAC1C2G,EAAYnF,OAAKC,cAAcd,EAAIP,OACnCWG,EAAYhB,EAAMxF,MAAM4E,EAAK,IA
QnC,OAPA3D,EAASsE,EAASxH,EAASyH,EAAMtG,OAAQqH,EAAWC,EAAW/F,GAe3DuE,GAEFzG,EAAQ
uH,YAAYZ,EAAWvF,QAG1BY,GAOPjC,UAnDF,SAAeC,GACb0C,EAAW1C,EAAQC,KAAKC,MAAM2H,SA
AQ,KAAiB,CACrD,SACA,SACA,SACA,SACA,aCbJ,IAAIK,EAoEG,MAAMC,EAA8B,CACzCvI,WAAyWl,UA
CZtI,YAAa,OACbC,UajEF,SAAeC,GACbKI,EAAClI,EAAQC,KAAKC,MAAMkI,UAAS,KAAiB,CACzD,SACA,
SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAmDFjI,WA/CF,SACIC,G
ACF,MAAMC,OAACA,EAAMC,MAAEA,EAACK,QAAEA,GAAWI,EAE3BuC,EAAItC,EAAOsC,EACXC,EA
AM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,IAEtCgH,WAACA,EAAUC,QAAEA,EAAOC,IAAEA,EA
AGC,gBAAEA,GAAMbII,EAC9CmI,EAAWpF,eAAaqF,kBAC1B/F,EAAEIB,MAAO4G,EAAYC,EAAS,EAAMb
C,EAACK,GAEPdG,EAAeF,EAASE,aACxBC,EAACh,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EA
AWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EAAXU,EAASK,QAAQO,KAC3BC,EA
Aeb,EAASa,aACxBC,EAACd,EAASc,YACvBC,EAAWf,EAASgB,WAE1B,GAA4B,iBAAsBhB,EAASiB,WACX
,MAAM,IAAI9I,MAEN,6CAAG6H,EAASiB,2CAG1B,GAA+B,IAA3BjB,EAASKB,eAAmD,IAA5BIB,EAASmB,
eAC3C,MAAM,IAAIhJ,MAEN,0EAAQ6H,EAASmB,mBAAmBnB,EAASKB,mBAGnD,MAAM3H,EAAMhC,EA
AQiC,WAAWwG,EAASnD,SAAU,WAC5CPD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OA
JA6G,EACItF,EAAKD,EAAEIB,MAAM,GAAlkB,EAAEIB,MAAM,GAAlkB,EAAEIB,MAAM,GAAlkH,EAACc
,EACvDC,EAAQG,EAAUE,EAAWE,EAASE,EAACc,EAAaC,EACjEtH,GACGF,aCjEO6H,EACZzJ,GACF,MA
AMC,OAACA,EAAMC,MAAEA,GAASF,GACIBuC,EAACA,GAAKtC,GACNoB,MAACA,GAASnB,EAEvWJ,
EAAQjH,OAAKC,cAAcH,EAAEIB,OAC7BsI,EAASIH,OAAKmH,uBAAuBvI,EAAOqI,GASID,OAPAJH,OAAK
oH,OACDH,IAAUjH,OAAKC,cAAciH,IAC7B,IAAM,cAAcA,iBAAsBpH,EAAEIB,0EAIhDrB,EAAKJ,QAAQkK
,OAAOvH,EAAEvB,QACf,CAACA,OAAQuB,EAAEvB,OAAQK,MAAOsI,EAAQpJ,MAAOgC,EAAEhC,OAG7
C,MAAMwJ,EAA8B,CACzCvK,WAAyWk,UACZtK,YAAa,OACbK,WAAy0J,GCPbD,IAAIQ,EAqGG,MAAM
C,EAACc,CAC7C1K,WAAy2K,cACZzK,YAAa,OACbC,UAnGF,SAAeC,GACbqK,EAakBrK,EAAQC,KAAKC
,MAAMqK,cAAa,KAAiB,CACjE,SACA,QACA,SACA,SACA,QACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YA0FFpK,WAtFF,S
AAqBC,GAKnB,MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BG,EAACA,EAACC,E
AAEA,GAACKH,GACTQ,WAACA,EAAUC,WAAEA,GAACr,EAEjC,GAAGb,YAAZC,EAAEI,OAAMc,YAAZ
H,EAAEG,MAC7B,MAAM,IAAIC,MACN,8DAGN,MAAM4J,EAAQjK,EAAEkB,MAAMC,OACb+I,EAAQjK,
EAAEiB,MAAMC,OAehBgJ,EAAc7J,EAAaN,EAAEkB,MAAM+I,EAAQ,GAACKjK,EAAEkB,MAAM+I,EAAQ,
GACHeg,EAAc7J,EAAaN,EAAEiB,MAAMgJ,EAAQ,GAACKjK,EAAEiB,MAAMgJ,EAAQ,GAehEG,EAAc/J,E
AAaN,EAAEkB,MAAM+I,EAAQ,GAACKjK,EAAEkB,MAAM+I,EAAQ,GACHek,EAAc/J,EAAaN,EAAEiB,MA
AMgJ,EAAQ,GAACKjK,EAAEiB,MAAMgJ,EAAQ,GAehEK,EAAvK,EAAEkB,MAAMsG,MAAM,GAAL,GAC/
BgD,EAAvK,EAAEiB,MAAMsG,MAAM,GAAL,GAE/BiD,EAAYnI,OAAKC,cAAcGI,GAC/BG,EAAYpI,OA
KC,cAAciI,GAEBG,EACFF,IAAcC,GAA2B,IAAdD,GAaiC,IAAdC,EAEIDpI,OAAKoH,OACDO,GAAS,GAAC

C,GAAS,GAACKS,GAC5B,IAEI,uJAAwBJ,WAAoBC,QAEPd,MAEMzF,GADF0F,EAAYC,EAAY1K,EAAEkB,MAAMsG,MAAM,GAAl,GAACKvH,EAAEiB,MAAMsG,MAAM,GAAl,IACICoD,OAAO,CAACP,EAAaC,IAExDhI,OAAKoH,OACDS,IAAgBC,GACHb,IAAM,kCAAKCD,WACjCC,6BAAuCPk,EAAEkB,aACzCjB,EAAEiB,wBAAwBZ,oBACVC,kBAE3B,MAEMsK,EAAWtK,EAAa,CAACmK,EAAWJ,EAAaF,GACzB,CAACM,EAAWN,EAAaE,GAGjdQ,EAAMxB,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGpC,GAAIP,QAAAA,EAASM,MAAO,CAACmB,MANrCZ,EAAa,CAACmK,EAAWN,EAAaE,GACzB,CAACI,EAAWJ,EAAaF,MAMjdY,EAAMzB,EA AQ,CAACxJ,OAAQ,CAACsC,EAAGnC,GAAIR,QAAAA,EAASM,MAAO,CAACmB,MAAO2J,KAEvDG,EAA QvL,EAAQkB,UAAUC,IAAIkK,EAAIjK,QAAQC,GAC1CmK,EAAQxL,EAAQkB,UAAUC,IAAIImK,EAAIiK,Q AAQC,GAE1CQ,EAAUhB,EAAawK,EAAI5J,MAAM,GAACK4J,EAAI5J,MAAM,GACHdK,EAAWhB,EAAawK, EAAI7J,MAAM,GAACK6J,EAAI7J,MAAM,GACjDM,EAAW0J,KAAKC,IAAIV,EAAWC,GAE/BjJ,EAAMhC,E AAQiC,WAAW,CAACF,EAAUF,EAASC,GAAWuJ,EAAI1K,OAC5DuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,GAE1Cc,EAAc,IAAIC,WAAW,IAAIC,WAAWgJ,EAAI5J,OAAOa,QACvDC,EAAc,IAAIH,WAA W,IAAIC,WAAWiJ,EAAI7J,OAAOa,QU7D,OARA+H,EACIkB,EAAOpJ,EAAakJ,EAAI5J,MAAMC,OAAQ8J, EAAOjJ,EAC7C+I,EAAI7J,MAAMC,OAAQb,EAAYC,EAAYoB,GAE9CIC,EAAQuH,YAAy8D,EAAIjK,QACx BpB,EAAQuH,YAAy+D,EAAIiK,QAExBY,EAAIP,MAAQ6D,EACLtD,ICvGF,SAAS2J,EAAUC,EAAMC,EAA OC,EAAMrK,EAAOd,GACHd,MAAMoL,EAAcC,aAAWC,iBAAiBxK,EAAOoK,EAAOC,GACxDpK,EAAsmB, OAAKC,cAAcgJ,GAC5BI,EAAWrJ,OAAKsJ,eAAe1K,GACrC,GAAIsK,EAAa,CACb,MAAMK,EAAaJ,aAAWK, kBAakBR,EAAOK,GACvD,MAAc,WAAVvL,EACOIL,EAACK7D,MAAMqE,EAAYA,EAAa1K,GAExCkK,EAA KU,SAASF,EAAYA,EAAa1K,GAEID,MAAM6K,EAAwB,WAAV5L,EACHb0C,eAAamJ,uBAAuBZ,GACpCA,E ACEa,EAAQnK,SAAOb,EAAOd,EAAO4L,GAC7BG,EAASpK,SAAOwJ,EAAMnL,GAC5B,IAAK,IAAIkD,EAA I,EAAGA,EAAI6I,EAAOZ,OAAQjI,EAAG,CACIC,MAAM8I,EAASD,EAAOE,WAAW/I,GAC3BgJ,EAAQF,EA AOvI,KAAI,CAAC0I,EAACK3H,IAAM2H,EAAMjB,EAAM1G,KACjDuH,EAAOjI,IAAIgI,EAAMtL,OAAO0L,M AAWF,GAEvC,MAAc,WAAVhM,EACO0C,eAAa0J,uBAAuBL,EAAOM,QAe/CN,EAAOM,gBCpBFjF,EACZ3 H,GACF,MAAOC,QAAQsC,EAACA,GAAIrC,OAAOuL,MAACA,EAACK,KAAEA,GAACK9L,QAAEA,GAAWI ,GAE9C6M,EAAQC,GAASIB,aAAWmB,iBAAiBxK,EAAGkJ,EAAOC,GAExDC,EAAcC,aAAWC,iBAAiBtJ,EA AEIB,MAAOwL,EAAQC,GAC3DE,EAAQpN,EAAQqN,SAAS1K,EAAEvB,QAC3BY,EAAMhC,EAAQiC,WAA WiL,EAAOvK,EAAEhC,OACICuL,EAAWrJ,OAAKsJ,eAAexJ,EAAEIB,OACjC6L,EAAUtN,EAAQkB,UAAUC, IAAIa,EAAIZ,QAe1C,GAAI2K,EAAa,CACf,MAAMK,EAAaJ,aAAWK,kBAakBY,EAAQf,GAExD,GAAGb,W AAZvJ,EAAEhC,MACJ2M,EAAQC,YACHH,EACIrF,MAAMqE,EAAYA,EAAavJ,OAAKC,cAAcoK,QACtD,C ACWIN,EAAQwE,mBAAMbxC,GACnCyC,IACH2I,EACId,SAASF,EAAYA,EAAavJ,OAAKC,cAAcoK,KAGhE ,OAAOIL,EAGT,GAAGb,WAAZW,EAAEhC,MAAOB,CACxB,MAAM6M,EAAMC,EAAaL,EAAOH,EAAQC,E AAOvK,EAAEIB,MAAOkB,EAAEhC,OAE1D,ODA2M,EAAQC,YAAcC,EACfxL,EAGT,MAAM0L,EAAU1N, EAAQwE,mBAAMbxC,GACrC2L,EAAOhL,EAAEIB,MAAMC,OACrB,GAAa,IAATiM,GAsBN,SACIP,EAAGC Q,EACHf,EAACK7B,EACICC,GACF,IAAI+B,EAAY,EACHb,MAAMC,EAASjC,EAAM,GACfkC,EAASIC,EA AM,GACfmC,EAAOF,EAAShC,EAACK,GAC3B,IAAK,IAAIjI,EAAIiK,EAAQjK,EAAImK,EAAMnK,IAAK,CA CIC,MAAMoK,EAAUpK,EAAI+J,EAAUG,EAC9BL,EAAQjJ,IAAI2I,EAAMd,SAAS2B,EAASA,EAAUnC,EAA K,IAAK+B,GACxDA,GAAa/B,EAACK,IAhCIBoC,CACId,EAAqBIB,EAAS,GAAIwB,EAASST,EAC3CC,QACC,G AAa,IAATS,GaiCb,SACIP,EAAGCe,EAACKBC,EACIDV,EAACK7B,EACICC,GACF,IAAI+B,EAAY,EACHb,MA AMC,EAASjC,EAAM,GACfkC,EAASIC,EAAM,GACfwC,EAASxC,EAAM,GACfmC,EAAOF,EAAShC,EAACK, GACrBwC,EAAOP,EAASjC,EAACK,GAC3B,IAAK,IAAIjI,EAAIiK,EAAQjK,EAAImK,EAAMnK,IAC7B,IAAK, IAAIsB,EAAI4I,EAAQ5I,EAAImJ,EAAMnJ,IAAK,CACIC,MAAM8I,EAAUpK,EAAIsK,EAAWhJ,EAAIjI,EAA WC,EAC9CX,EAAQjJ,IAAI2I,EAAMd,SAAS2B,EAASA,EAAUnC,EAACK,IAAK+B,GACxDA,GAAa/B,EAACK, IA9CpByC,CACInB,EAAqBIB,EAAS,GAAIA,EAAS,GAAIwB,EAC/CT,EAAoCC,QACnC,GAAa,IAATS,GAGD b,SACIP,EAAGCe,EAACKBC,EACIDI,EAACKbD,EACIB7B,EACAC,GACF,IAAI+B,EAAY,EACHb,MAAMC,EAA SjC,EAAM,GACfkC,EAASIC,EAAM,GACfwC,EAASxC,EAAM,GACfmC,EAAOF,EAAShC,EAACK,GACrBwC, EAAOP,EAASjC,EAACK,GACrB2C,EAAOJ,EAASvC,EAACK,GACrB4C,EAAS7C,EAAM,GAERb,IAAK,IAAIhI, EAAIiK,EAAQjK,EAAImK,EAAMnK,IAC7B,IAAK,IAAIsB,EAAI4I,EAAQ5I,EAAImJ,EAAMnJ,IAC7B,IAAK, IAAIwJ,EAAIN,EAAQM,EAAIF,EAAME,IAAK,CACIC,MAAMV,EAAUpK,EAAIsK,EAAWhJ,EAAIjI,EAAW

O,EAAlH,EAWE,EAC7DhB,EAQjJ,IAAI2I,EAAMd,SAAS2B,EAASA,EAUnC,EAk,IAAK+B,GACxDA,
GAAa/B,EAk,IAIEtB8C,CACIxB,EAQbIB,EAAS,GAAIA,EAAS,GAAIA,EAAS,GAAIwB,EAC5DT,EACAC,
OACC,CACL,MAAMM,EACFC,EAAL,EAaOH,EAQc,EAaOvK,EAaEIB,MAAOkB,EAaEhC,OACID+M,E
AAQjJ,IAAI+I,GAGd,OAaOxL,EA8DF,MAAM6M,EA4B,CACvCjP,WAAykP,QACZhp,YAAa,OACbK,WAA
Y4H,GChFP,MAAMgH,EAQc,CACChDnP,WAAyOP,iBACZIP,YAAa,OACbK,WAZCF,SAAwBC,GAKtB,MAA
MC,OAACA,EAAML,QAAEA,EAaOM,MAAEA,GAASF,GAC3BuC,EAACA,GAAKtC,GACN4O,WAACA,EA
AUC,MAAEA,GAAS5O,EAEtB6O,EAaOF,EAaWG,QAAO,CAAC7O,EAAGC,IAAMD,EAaIC,IAEvC6O,EA
WhM,eAAaiM,YAAy3M,EAaEIB,MAAOwN,EAAYE,GACzDI,EAaWIM,eAAamM,YAAyH,EAAS3N,OAaQ
uN,EAaWvN,QACHE+N,EACFpM,eAAaqM,oBAAoB/M,EAaEIB,MAAOwN,EAAYE,GACpDQ,EACFtM,eAA
auM,oBAAoBV,EAaOD,EAaWvN,QACjDmO,EACFxM,eAAayM,aAAaL,EAakBP,EAaOD,EAaWvN,QAE5D
qO,EAAYIG,EAaQ,CAACxJ,OAaQ,CAACsC,EAAAA,GAAI3C,QAAAA,EAASM,MAAO,CAACmB,MAAO4
N,KAC1D7I,EACF3B,EAaU,CAACxE,OAaQ,CAACsC,EAaGoN,GAAY/P,QAAAA,EAASM,MAAO,CAACyE
,KAAMwK,KAGxDS,EAASjI,EAAM,CACnB1H,OAaQ,CAACsC,EAHiBkH,EACxB,CAACxJ,OAaQ,CAACsC
,EAAG6D,GAACxG,QAAAA,EAASM,MAAO,CAACmB,MAAOgO,MAGrDzP,QAAAA,EACAM,MAAO,CAA
CuL,MAAO8D,EAakB7D,KAAM+D,KAOzC,OAJA7P,EAaQuH,YAAyWl,EAaU3O,QAC9BpB,EAaQuH,YA
AYf,EAAYpF,QACChpB,EAaQuH,YAAyWl,EAaU3O,QAEvB4O,aCtCOC,EACZ7P,GAEF,MAAOC,QAAQsC
,EAACA,GAAIrC,OAaOK,MAACA,GAAMX,QAAEA,GAAWI,EACzC4B,EAAMhC,EAaQiC,WAAWU,EA
EIB,MAAOd,GACIC4D,EAASvE,EAaQwE,mBAAmB7B,GAG1C,OAFgB3C,EAaQwE,mBAAmBxC,GACnCy
C,IAaIF,GACLvC,EAGF,MAAMkO,EAa2B,CACtCtQ,WAAyUq,OACZrQ,YAAa,OACbK,WAAy8P,GChBDG
,EAa2B5N,EAawB6N,QCChE,IAaIC,EA0BG,MAAMC,EAakC,CAC7C3Q,WAAy4Q,cACZ1Q,YAAa,OACbC
,UA3BF,SAAeC,GACBsQ,EAaWtQ,EAaQC,KAAKC,MAAMsQ,cAAa,KAAiB,CAC1D,SACA,SACA,SACA,Y
AuBFRQ,WAnBF,SAAcC,GAKZ,MAAMC,OAACA,EAAML,QAAEA,EAaOM,MAAEA,GAASF,GAC3BuC,EA
ACA,GAAKtC,GACNoQ,aACA,EAAYC,aAAEA,GAAGBpQ,EAC/BsC,EAAM5C,EAaQkB,UAAUC,IAAIwB,
EAaEvB,QAAQC,GACtCW,EAAMhC,EAaQiC,WAAWU,EAaEIB,MAAOkB,EAaEhC,OACpCuB,EAaQIC,E
AAQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAehD,OADaiP,EAAS1N,EAak6N,EAaC,EAaCxO,GACnCF,aCp
BomJ,EACZ/K,GACF,MAAMC,OAACA,EAAML,QAAEA,GAAWI,EAepB4F,EAaOnD,OAakuD,eAAehG,E
AAKE,MAAM0F,KAAM3F,EAaO,GAAGoB,OAaO,GAEnE,IAAI6D,EAaWjC,eAAaoC,gBAAGBpF,EAaO+D,
KAAIuM,GAAKA,EAaEIP,QAAQuE,GAGtE,MAAM4K,EAaUvQ,EAaOwQ,QAAOF,GAak9N,OAaKC,cAA
c6N,EAaEIP,OAAS,IACjE,GAaUB,IAAnBmP,EAaQIP,OACV,OAaO4C,EAAS,CAACjE,OAaQ,CAACsC,EA
AGiO,EAaQ,IAAK5Q,QAAAA,IAG5C,MAAMgC,EAAMhC,EAaQiC,WAAWqD,EAaUjF,EAaO,GAAGM,O
AEnD,GAaQc,IAAjCkC,OAaKC,cAAcwC,GACrB,OAaOtD,EAGT,MAAM8O,EAASF,EAaQxM,KAAIuM,G
AAKA,EAaEIP,QAGIC,GAFA4B,eAAa0N,uBAaUBD,EAaQ9K,GAEnB,WAArB4K,EAaQ,GAAGjQ,MAAOB,
CAQjC,MAAMqQ,EAaWJ,EAaQxM,KAAIuM,IAC3B,MAAM1I,EAAYpF,OAaKC,cAAc6N,EAaEIP,MAAMs
G,MAAM/B,IAEnD,OAaO6D,EAaQ,CAACxJ,OAaQ,CAACsC,EAAGgO,GAAI3Q,QAAAA,EAASM,MAAO,
CAACmB,MADnC,EAaE,EAAGwG,SAIfgJ,EAakBD,EAAS5M,KAAIuM,IAC5B,CAAC/E,KAAM5L,EAaQqN
,SAASd,EAaEvP,QAASK,MAAOkP,EAaEIP,UAIrD6D,EACIjC,eAAaoC,gBAAGBuL,EAAS5M,KAAIuM,GA
AKA,EAaEIP,QAAQ,GAC7D,MAAMyP,EAawC,IAAZBF,EAAS,GAAGvP,MAAM,GACjCiM,ECpDH,SAAoBr
N,EAaQiF,EAaU3E,EAaOuQ,GACChD,MAAMxD,EAaU7K,OAaKsO,kBAakBxQ,EAaOkC,OAaKC,cAAcw
C,IACjE,GAAI4L,GAA0B,WAAVvQ,EAaOB,CAEpC,IAAIyQ,EAAS,EACb/Q,EAaOgR,SAAQpK,IACX,MAA
M6E,EAaOjJ,OAaKC,cAAcmE,EAAMxF,OACtCiM,EAaQjJ,IAAIwC,EAAM2E,KAAMwF,GACxBA,GAAUtF
,SAGb,CACD,IAAIwF,EAAY,EACbJr,EAaOgR,SAAQpK,IACX,MAAMsF,EAawB,WAAV5L,EACb0C,eA
AamJ,uBAaUBvF,EAAM2E,MAC1C3E,EAAM2E,KACV,IAAI2F,EAaO,EACX,IAAK,IAaIC,EAAM,EAAGA,
EAAMvK,EAAMxF,MAAM,KAAM+P,EAak,CAC3C,MAAMC,EAASD,EAAMIM,EAAS,GAakGm,EACnC,I
AAK,IAaII,EAAM,EAAGA,EAAMzK,EAAMxF,MAAM,KAAMiQ,EACtChE,EAaQ+D,EAASC,GAAOnF,EA
AYgF,KAG5CD,GAAarK,EAAMxF,MAAM,MAGjC,OAaOiM,EDyBSiE,CACIV,EAaiB3L,EAaUjF,EAaO,GA
AGM,MACrCuQ,GAEdU,EACFvO,eAAaoC,gBAAGBmL,EAaQxM,KAAIuM,GAAKA,EAaEIP,QAAQuE,GA
E5DhE,EAaIP,MAAQmQ,EAMZ,OALgB5R,EAaQkB,UAAUC,IAAIa,EAaIZ,QACICmM,YAAcIK,eAAa0J,uBA
AuBW,GAe1DsD,EAASK,SAAQV,GAak3Q,EAaQuH,YAAyOj,EAaEvP,UAErCY,EAGT,MAAMD,EAawC,

OAAKC,cAAc8N,EAAQ,GAAGnP,MAAMsG,MAAM,EAAG/B,IAC9D,IAAI6L,EA Ae,EACnB,MAAMC,EAA Y
IB,EAAQxM,KAAI6C,IAC5B,MAAM8K,EA AWIP,OAAKC,cAAcme,EAAMxF,MAAMsG,MAAM/B,IAEtD,O
ADA6L,GAAgBE,EACTA,KA EHxN,EAASqM,EAAQxM,KAAI6C,GAASjH,EAAQwE,mBAAMByC,KACzDyG
,EAAU1N,EAAQwE,mBAAMBxC,GAC3C,IAAK,IAAIxB,EAAI,EAAGA,EAAIuB,EAAUvB,IAAK,CACjC,IAA
IqN,EAA YrN,EAAIqR,EACpB,IAAK,IAAIhO,EAAI,EAAGA,EAAIU,EAAO7C,OAAQmC,IAAK,CACtC,MAA
MkO,EA AWd,EAAUjO,GACrBmO,EA AWxR,EAAIuR,EACfnG,EAAOrH,EAAOV,GAAGyI,SAAS0F,EAAUA,
EA AWd,GACrDrE,EAAQjJ,IAAIImH,EAAMiC,GACIBA,GAAakE,GAGjB,OAAO/P,EAGF,MAAMiQ,EAA6B,
CACxCrS,WAA YsS,SACZpS,YAAa,OACbK,WAA YgL,GEzFd,IAAIgH,EA4EG,MAAMC,EAA6B,CACxCxS,W
AA YyS,SACZvS,YAAa,OACbC,UAvEF,SA AeC,GACbmS,EAAanS,EAAQC,KAAKC,MAAMmS,SA AQ,KAAi
B,CACvD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SA
CA,SACA,SACA,SACA,YAoDFIS,WAhDF,SACIC,GACF,MAAMC,OAACA,EAAMC,MAAEA,EA AKN,QAAE
A,GA AWI,GA E3BuC,EAACA,EAACKO,OAAEA,GAAUxQ,EACduC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EA
AEvB,QAAQC,GACiCiR,EA AWtS,EAAQkB,UAAUC,IAAI0P,EAAOzP,QAAQC,IAEHdIH,QAACA,EAAOiK,
UAAEA,EAASHK,IAAEA,EAAGC,gBAAEA,EA AeKb,WAAEA,GAACPJ,EACzDkS,EAAcnP,eAAaoP,wBAAw
B/I,GACnDjB,EA AWpF,eAAaqP,kBACzB/P,EA AeIb,MAAQoP,EAAoBpP,MAAO6G,EAASiK,EAC5DhK,EA
KC,GAAiB,EAAOgK,GA E3B7J,EA AeF,EAASE,aACxBC,EA AcH,EAASG,YACvBC,EAASJ,EAASK,QAAQC,I
AC1BC,EA AWp,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EA AUX,EAASK,QAAQO,K
AC3BO,EAAiBnB,EAASmB,eAC1BD,EAAGbIB,EAASKb,cACzBL,EA AeB,EAASa,aACxBC,EAACd,EAASc,Y
ACvBoJ,EAAGbIK,EAASgB,WACzBmJ,EA AiBnK,EAASoK,YAC1BC,EAAsC,SA A1BrK,EAASK,QAAQiK,K
AAkB,EAAI,EA EzD,GAA4B,iBA AxBtK,EAASiB,WACX,MAAM,IAAI9I,MAEN,oDAAG6H,EAASiB,2CAGIB,
MAAM1H,EAAMhC,EAAQiC,WAAWwG,EAASnD,SA AU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EA
AIZ,QAAQC,GAMhD,OALA8Q,EACiVp,EA AKD,EA AEIb,MAAM,GA AIkB,EA AEIb,MAAM,GA AIkB,EA AEI
B,MAAM,GA AI6Q,EAAU3J,EACnDC,EA AaC,EAAQG,EAAUE,EAAWE,EAAS0J,EACnDIJ,EAAGBD,EA AeL,
EA AcC,EAAaoJ,EAC1DC,EAAGb1Q,GACbF,ICzET,IAAIgR,EAqGG,MAAMC,EAA0C,CACrDrT,WAA YsT,sB
ACZpT,YAAa,OACbC,UA9FF,SA AeC,GACbgT,EA A0BhT,EAAQC,KAAKC,MAAMgT,sBAAqB,KAAM,CACt
E,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SAC
A,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SAC
A,SAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B+S,GAACA,EA AEtC,OAAEA,GAAUxQ,G
ACfiI,QAACA,EAAOC,IAAEA,EAAGmB,WAAEA,EAAUIB,gBAAEA,EA Ae4K,WAAEA,GAAC9S,EA I1DkS,E
AAcnP,eAAaoP,wBAAwB/I,GACnDjB,EA AWpF,eAAaqP,kBAC1BU,EAA YvC,EAAOpP,MAA2C6G,EAJhD,E
AKHC,EA AKC,GAAiB,EA AuBgK,IACtDa,UACJA,EAAS1K,aACTA,EAAYC,YACZA,EA AWa,WACXA,EA
U6J,SACVA,EAAQC,QACRA,EAAOV,YACPA,EA AWW,UACXA,EAASC,SACTA,EAAQnK,aACRA,EAAYC
,YACZA,GACEd,EA EEiL,EAAS/K,EA Ae,EA AIF,EAASK,QAAQC,IAC7C4K,EAAU/K,EA Ac,EA AIH,EAASK,
QAAQO,KA E7CuK,EA AyC,iBA AxBnL,EAASiB,WAC1BmK,EAAYhR,OAAKsJ,eAAe1D,EAASID,SACzCuO,
EAAYjR,OAAKsJ,eAAegH,EAAG1R,QACICsS,EAAOC,EAAOC,GAASpR,OAAKsJ,eAAe0E,EAAOpP,OACnD
yS,EA AeL,EAAU,GACzBM,EAAaP,EA AiBC,EAAU,GAACA,EAAU,GACvDO,EAAaR,EA AiBC,EAAU,GA AK
,EAC7CQ,EA AiBT,EA AiB,EA AIC,EAAU,GACbDS,EA AeR,EAAU,GACzBS,EA Ax,EA AiBE,EAAU,GAACA,
EA AU,GACvDU,EA AaZ,EA AiBE,EAAU,GA AK,EAC7CW,EA AiBb,EA AiB,EA AIE,EAAU,GA EHd9R,EAAMh
C,EAAQiC,WAAWwG,EAASID,QAAS,WAC3CrD,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,GAC1C
qT,EAAO1U,EAAQkB,UAAUC,IAAIgS,EAAG/R,QAAQC,GACxCiR,EA AWtS,EAAQkB,UAAUC,IAAI0P,EA
AOzP,QAAQC,GAQtD,OANA2R,EACI0B,EAAMpC,EA AUe,EA AW1K,EA AcC,EAAa0K,EAAUC,EACHe9J,E
AA Y+J,EA AWC,EA AUZ,EA AvJ,EA AcC,EAC5DmK,EAAQC,EA ASI,EAAOC,EAAOC,EAAOC,EAAcC,EAC
pDC,EAAYC,EAAGBC,EA AcC,EAAYC,EACtDC,EAAGBvS,GACbF,ICIGI2S,EAA0BnS,EA AwBoS,OCDIDC,E
AA2BrS,EA AwBsS,QCIhE,IAAKC,EAKL,IAAIC,GALJ,SA AKD,GACHA,2BACAA,yBAFF,CAAKA,IAAAA,O
AoEE,MAAME,GA AoC,CAC/CrV,WAA YsV,gBACZpV,YAAa,OACbC,UA7DF,SA AeC,GACbgV,EA AoBhV,E
AAQC,KAAKC,MAAMgV,gBA Ae,KAAe,CACnE,SACA,SACA,SACA,SACA,QACA,SACA,SACA,SACA,SAC
A,YAmDF/U,WA/CF,SA AuBC,GAKrB,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B
+U,OAACA,EAAMC,mBAAEA,EA AKBC,SAAEA,GAAY/U,GACzCgV,MAACA,EA AKC,MAAEA,EA AKC,O

ACX,MAAM,IAAI9I,MAEN,mEAAG6H,EAASiB,2CAGIB,MAAM1H,EAAMhC,EAAQiC,WAAWwG,EAASnD
,SAAU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OALaQW,GACI9U,EAAKD,E
AAEIB,MAAM,GAAIkB,EA AEIB,MAAM,GAAIkB,EA AEIB,MAAM,GAAI6Q,EAAU3J,EACnDC,EAAaC,EA
QG,EAAUE,EAWE,EAAS0J,EACnDIJ,EAAGBD,EA AeL,EAACc,EAAaoJ,EAC1DC,EAAGB1Q,GACbF,ICjFI8
V,GAA0BtV,EA AwBuV,OCCIDC,GACT/U,EA AyBgV,SAFC,EAE6B,QCF9CC,GAA0B1V,EA AwB2V,MAAK,o
BCEpDC,GA AWhY,GAKzB,MAAMC,OAACA,EAAMC,MAAEA,EA AKN,QAAEA,GA AWI,GAC3B6G,MAA
CA,GAAS5G,GACVgY,IAACA,GA AO/X,EAER4G,EAAYD,EAAMxF,MAAMC,OACxB0B,EA AW6D,EAAMx
F,MAAMsG,QAC7B,IAAIuQ,EAAOD,EA WX,OAVIA,EAAM,IAERxV,OA AKoH,SACC/C,EAAY,IAAMmR,G
ACpB,IAAM,mCAAoCnR,EAAY,OACIDA,OACRoR,EAAOpR,EAAYmR,EAAM,GA E3BjV,EAASmV,OA AO
D,EAAM,EAAG,GA EIBzO,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGsE,GAAQjH,QAAAA,EAASM,MAAO,CA
ACmB,MAAO2B,KAGvD,MAAMoV,GA AiC,CAC5C5Y,WAA Y6Y,aACZ3Y,YAAa,OACbK,WAA YiY,aC5BE
M,GA AKtY,GACnB,MAAOE,OAAOmB,MAACA,EA AKkX,MAAEA,EA AKhY,MAAEA,GA AMX,QAAEA,G
AAWI,EAC1C4B,EAAMhC,EAAQiC,WAAWR,EA AOd,GAGtC,OAFgBX,EAAQwE,mBA AmBxC,GACnC0W,
KA AKC,GACN3W,EAGF,MAAM4W,GAA2B,CACiChZ,WAA YiZ,OACZ/Y,YAAa,OACbK,WAA YuY,ICZd,IA
AII,GA+BG,MAAMC,GA AoC,CAC/CnZ,WAA YoZ,gBACZIZ,YAAa,OACbK,oBA IBEC,GACF,MAAMC,OA
CA,EAAML,QAAEA,GA AWI,GACpBkV,MAACA,GAASjV,EA EV2B,EAAMhC,EAAQiC,WAAWqT,EAAM7T
,MAAO6T,EAAM3U,OAC5CsY,EA AUjZ,EAAQkB,UAAUC,IAAI mU,EAAMIU,QAAQC,GAC9Ca,EAAQIC,EA
AQkB,UAAUC,IAAIa,EAAIZ,QAAQC,IAEZC6X,EAAOC,EAAaC,EAAYC,GA Ae/D,EAAM7T,MAI5D,OAFaQ
X,GACIG,EAASC,EAAOC,EAAaC,EAAYC,EA AanX,GACnDF,GAOPjC,UA/BF,SAAeC,GACb8Y,GAAoB9Y,
EA AQC,KA AKC,MAAM8Y,gBA Ae,KA AiB,CACrE,SACA,SACA,SACA,SACA,SACA,aCbSM,GAA4B9W,EA
AwB+W,SCGpDC,GACTvW,EA AyBwW,YAFC,GCA9B,IAAIC,GAqCG,MAAMC,GA AQc,CACHD/Z,WAA Yga
,iBACZ9Z,YAAa,OACbC,UApCF,SAAeC,GACb0Z,GAAgB1Z,EA AQc,KA AKC,MACzB0Z,iBA AgB,KACHb,C
AAC,SAAU,SAAU,SAAU,SAAU,SAAU,SAAU,YAkCjEzZ,WA/BF,SAAwBC,GAKtB,MAAMJ,QAACA,EA AO
K,OAAEA,EAAMC,MAAEA,GAASF,GAC3ByZ,gBAACA,GA AmBvZ,GACpBqC,EAACA,EAACmX,KAAEA,
EA AIC,SAAEA,EAAQ3I,OAAEA,EAAM4I,MAAEA,GAAS3Z,EACrCuC,EAAM5C,EAAQkB,UAAUC,IAAIwB
,EA AEvB,QAAQC,GACtC4Y,EAASja,EAAQkB,UAAUC,IAAI2Y,EA AK1Y,QAAQC,GAC5C6Y,EA Aala,EA
QkB,UAAUC,IAAI4Y,EAAS3Y,QAAQC,GACpD8Y,EA AQb,MAAV/I,EA AiBpR,EAAQkB,UAAUC,IAAIiQ,EA
AOHQ,QAAQC,GA AK,EA CtE+Y,EA AmB,MAATJ,EA AgBha,EAAQkB,UAAUC,IAAI6Y,EAAM5Y,QAAQC,G
AAK,EA EnEW,EAAMhC,EAAQiC,WAAWU,EA AEIB,MAAOkB,EA AEhC,OAE1C,GA AoC,IA AhCkC,OA AKC
,cAAcH,EA AEIB,OACvB,OAAOO,EAGT,MAAME,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GA IhD
,OAFaQY,GACI9W,EA AKqX,EAAQC,EAAYC,EA AUC,EAASP,EA AiB3X,GAC1DF,ICHT,IAAIqY,GA6HG,
MAAMC,GA AKc,CAC7C1a,WAA Y2a,cACZza,YAAa,OACbC,UAtHF,SAAeC,GACbqa,GA AkBra,EAAQC,KA
AKC,MAAMqa,cAAa,KA AiB,CACjE,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SA
CA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,
YA+FFpa,WA3FF,SAAqBC,GA
AKnB,MAAMC,OAACA,EAAMC,MAAEA,EA AKN,QAAEA,GA AWI,GAC3BuC,EAACA,EAACKo,OAAEA,E
AAMpQ,KAAEA,EA AIC,uBAAEA,GAA0BL,GAC5CiI,QACJA,EAAOC,IACPA,EAAGgK,UACHA,EAAS7I,W
ACTA,EA AUIB,gBACVA,EA AezH,WACfA,EA AUC,eACVA,GACEV,EA EEmI,EA AWpF,eAAaqP,kBACzB/P,
EA AeIB,MAAQoP,EA AoBpP,MAAO6G,EAASiK,EAC5DhK,EA AKC,GA EH5G,EACFnC,EA AkBsB,GACtB,G
AAuB,MAAnBa,EACF,MAAM,IAAIhB,MACN,GAAGG,uEAIT,MAAM6B,EAAM5C,EAAQkB,UAAUC,IAAI
wB,EA AEvB,QAAQC,GACiCiR,EA AWtS,EAAQkB,UAAUC,IAAI0P,EAAOzP,QAAQC,GA EhDuR,EA AiBnK,
EAASoK,YAEhC,IAAI tR,EAAS,EACb,GAAY,MAARd,EA Ac,CACHB,MAAMe,EA AWxB,EAAQkB,UAAUC,I
AAIV,EA AKW,QAC5C,GAA8B,IAAI1B,EAASC,MAAMC,OACjB,MAAM,IAAI d,MAEN,sDAAQY,EAASC,M
AAMC,WAE7B,GA AIF,EAASC,MAAM,KAAOmR,EACxB,MAAM,IAAIhS,MACN,2BAA2BY,EAASC,wDAC
ImR,MAE9CrR,EAASC,EAASH,GAGpB,MAAMsH,EA AeF,EAASE,aACxBC,EA AcH,EAASG,YACvBC,EAAS
J,EAASK,QAAQC,IAC1BC,EA AWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EA AUX,
EAASK,QAAQO,KAC3BO,EA AiBnB,EAASmB,eAC1BD,EA AgBIB,EAASKb,cACzBL,EA AeB,EAASa,aACxB
C,EA Acd,EAASc,YACvBoJ,EA AgBIK,EAASgB,WACzBqJ,EAASc,SAA1BrK,EAASK,QAAQiK,KA AkB,EA AI,
EACnDM,EAAY5K,EAAS4K,UACrBC,EA AW7K,EAAS6K,SACpBC,EA AU9K,EAAS8K,QA EzB,GA AmB,SA

Af7J,EACF,MAAM,IAAI9I,MAEN,yDAAG8I,0BAGT,MAAM1H,EAAMhC,EAAQiC,WAAWwG,EAASnD,SA
AU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CM,EAAqD,MAA1BjB,EAC7B,EAC
AV,EAAQkB,UAAUC,IAAIT,EAAuBU,QAAQC,GAQzD,OANAgZ,GACIzX,EAAKyQ,EAAWC,EAAUC,EAA
SjB,EAAU3J,EAACc,EAC3DrH,EAAQsH,EAAQG,EAAUE,EAWE,EAAS0J,EAAWIJ,EACzDD,EAAeL,EAAC
C,EAAaoJ,EAAeC,EACzDhR,EAAiBD,EAA0BX,GAakB,EAAGkB,GAE7DF,IC1HT,IAAIwY,GA8HG,MAAM
C,GAA2C,CACtD7a,WAAy8a,uBACZ5a,YAAa,OACbC,UAvHF,SAAeC,GACbwa,GACIxa,EAAQC,KAAKC,M
AAMwa,uBAAsB,KAAiB,CACxD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,
SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YA+FNva,WA3FF,SAA8BC,GAK
5B,MAAMC,OAACA,EAAMC,MAAEA,EAANK,QAAEA,GAAWI,GAC3BuC,EAACA,EAACKO,OAAEA,EAA
MpQ,KAAEA,EAAIC,uBAAEA,GAA0BL,GAC5CiI,QACJA,EAAOC,IACPA,EAAGgK,UACHA,EAAS7I,WAC
TA,EAAUIB,gBACVA,EAAezH,WACfA,EAAUC,eACVA,GACEV,EAEmI,EAAWpF,eAAaqP,kBACzB/P,EA
AeL,MAAQoP,EAAoBpP,MAAO6G,EAASiK,EAC5DhK,EAAKC,GAAiB,GAEPB5G,EACFnC,EAakBsB,GAC
tB,GAAuB,MAAnBa,EACF,MAAM,IAAIhB,MACN,GAAGG,gFAIT,MAAM6B,EAAM5C,EAAQkB,UAAUC,I
AAIwB,EAAEvB,QAAQC,GACiCiR,EAAWtS,EAAQkB,UAAUC,IAAI0P,EAAOzP,QAAQC,GAehDuR,EAAiB
nK,EAASoK,YAEhC,IAAIrR,EAAS,EACb,GAAY,MAARd,EAAC,CACHB,MAAME,EAAWxB,EAAQkB,UAAU
C,IAAIv,EAAKW,QAC5C,GAA8B,IAA1BI,EAASC,MAAMC,OACjB,MAAM,IAAIId,MAEN,+DAAQY,EAAS
C,MAAMC,WAE7B,GAAIF,EAASC,MAAM,KAAOmR,EACxB,MAAM,IAAIhS,MACN,oCAAoCY,EAASC,w
DAcLMr,MAE9CrR,EAASC,EAASH,GAGpB,MAAMsH,EAAeF,EAASE,aACxBC,EAAcH,EAASG,YACvBC,
EAASJ,EAASK,QAAQC,IAC1BC,EAAWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EA
AUX,EAASK,QAAQO,KAC3BO,EAAiBnB,EAASmB,eAC1BD,EAAGBIB,EAASKb,cACzBL,EAAeb,EAASa,aA
CxBC,EAACd,EAASc,YACvBoJ,EAAGBIK,EAASgB,WACzBqJ,EAAsC,SAA1BrK,EAASK,QAAQiK,KAAkB,E
AAI,EACnDM,EAAy5K,EAAS4K,UACrBC,EAAW7K,EAAS6K,SACpBC,EAAU9K,EAAS8K,QAeZB,GAAmB
,SAAf7J,EACF,MAAM,IAAI9I,MAEN,kEAAG8I,0BAGT,MAAM1H,EAAMhC,EAAQiC,WAAWwG,EAASnD,
SAAU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CM,EAAqD,MAA1BjB,EAC7B,E
ACAV,EAAQkB,UAAUC,IAAIT,EAAuBU,QAAQC,GAQzD,OANAmZ,GACI5X,EAAKyQ,EAAWC,EAAUC,E
AASjB,EAAU3J,EAACc,EAC3DrH,EAAQsH,EAAQG,EAAUE,EAWE,EAAS0J,EAAWIJ,EACzDD,EAAeL,E
AAcC,EAAaoJ,EAAeC,EACzDhR,EAAiBD,EAA0BX,GAakB,EAAGkB,GAE7DF,IC3HT,IAAI2Y,GAiDG,MA
AMC,GAA+B,CAC1Chb,WAAyib,WACZ/a,YAAa,OACbC,UA/CF,SAAeC,GACb2a,GAAe3a,EAAQC,KAAKC,
MAAM2a,WAAU,KAAe,CACzD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,QACA,YAuCF1a,WAnCF,SAakBC,
GAehB,MAAMJ,QAACA,EAAOK,OAAEA,GAAUD,GACpB0a,OAACA,EAAMC,QAAEA,GAAW1a,GAEnB2
a,EAAaC,EAAWpL,EAAWvH,GACtC4S,cAAyC,mBAAmBL,EAAQC,GAErC/Y,EAAMhC,EAAQiC,WAAW+
Y,EAAaF,EAAOna,OACnD,GAakB,IAAdsA,EACF,OAAOjZ,EAGT,MAAMoZ,EAAeL,EAAQtZ,MACvB4Z,EA
AYD,EAAaA,EAAa1Z,OAAS,GAG/CkB,EADQ5C,EAAQkB,UAAUC,IAAI2Z,EAAO1Z,QACzBC,GAEZia,EA
Dctb,EAAQkB,UAAUC,IAAI4Z,EAAQ3Z,QACpBC,GAExBka,EAAe,IAAIInZ,WAAW,IAAIC,WAAWiG,GAAS
hG,QAETDJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAKhD,OJAsZ,GACI/X,EAAKpD,EAASsb,E
AAOna,OAAQ2a,EAAWL,EAAWI,EAAWxL,EAC9D0L,EAAcrZ,GAEXF,IC7CT,IAAIwZ,GA4FG,MAAMC,G
AA+B,CAC1C7b,WAAy8b,WACZ5b,YAAa,OACbC,UA1FF,SAAeC,GACbwb,GAAaxb,EAAQC,KAAKC,MAA
M,SAAU,KAAe,CACvD,SACA,SACA,QACA,SACA,SACA,SACA,QACA,YakFFC,WA9EF,SACIC,GAEF,MA
AMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BuC,EAACA,EAACoY,QAAEA,GAAW1a,G
ACf2F,KAACA,EAAI2V,UAAEA,GAAarb,EAGpBsb,EAAa/Y,OAAKuD,eAAeJ,EAAMrD,EAAEIB,OAAO,GA
ChDoa,EAAc7b,EAAQqN,SAAS0N,EAAQ3Z,QACvC0a,EAAUnZ,EAAEIB,MAAMma,GACxB,IAAK,IAAI/X,E
AAI,EAAGA,EAAIgY,EAAYna,SAAUmC,EAAG,CAC3C,MAAMky,EAAQF,EAAYhY,GAC1BhB,OAAKoH,
OACD8R,GAASD,EAAU,GAAKC,GAAS,GACjC,IACI,6BAA6BA,mBAAuBD,EAAU,OAGxH,MAAME,EAAY
3Y,eAAa4Y,aAAaC,yBACxCvZ,EAAaoY,EAAMBa,EAAYD,GAe1CQ,EAAWtS,EAAQ,CACvBxJ,OAAQ,CAA
CsC,EAAAA,GACTrC,MAAO,CACLMb,MAAO,CACLua,EAAU3I,UAAW2I,EAAUhU,UAAWgU,EAAUI,QA
CpDJ,EAAUnM,YAGd7P,QAAAA,IAEIqc,EAACzZ,OAAKC,cAAciY,EAAQtZ,OACzC6a,EAAezS,EAAQ,CAC
3BxJ,OAAQ,CAACsC,EAAGoY,GACZza,MAAO,CAACmB,MAAO,CAACua,EAAU3I,UAAWgJ,EAAcL,EAA
U3I,YAC7DrT,QAAAA,IAEIuc,EAAqB,CACzBP,EAAU3I,UAAW2I,EAAUhU,UAAWqU,EAAcL,EAAU3I,UA

CIE2I,EAAUnM,WAGN7N,EAAMhC,EAAQIC,WAAWsa,EAAoB5Z,EAAEhC,OACrD,GAAoC,IAAhCkC,OAA KC,cAAcH,EAAEIB,OACvB,OAAOO,EAET,MAAMwa,EAACl,EAAS1a,MAAMC,OAAS,EAGtCkB,EADQ5C, EAAQkB,UAAUC,IAAIgb,EAAS/a,QAC3BC,GAGZia,EADctb,EAAQkB,UAAUC,IAAImb,EAAalb,QACzBC,G AExBa,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAE1CkW,EAAGb,IAAIInV,WACtB,IAAIC,WAA WQ,OAAKsJ,eAAegQ,EAAS1a,QAAQa,QACIDmV,EAakB,IAAIrV,WACxB,IAAIC,WAAWQ,OAAKsJ,eAAeo Q,IAAqBja,QAW5D,OATAkZ,GACI5Y,EAakpD,EAASmD,EAAEhC,OAAQ4W,EAAeiF,EAAalB,EACpDU,E AAU3I,UAAWoE,EAAiBvV,GAE1CIC,EAAQuH,YAAY4U,EAAS/a,QAC7BpB,EAAQuH,YAAY+U,EAAalb,Q AGjCY,EAAIP,MAAQua,EAAUIE,YACftV,IC5FIya,GACTxZ,EAAyByZ,WAFC,EAE+B,QCDhDC,GACT1Z,E AAYB2Z,gBAFC,EAEoC,QCCIE,IAAIla,GA+BG,MAAMma,GAAgC,CAC3Cjd,WAAykd,YACZhd,YAAa,iBA9 Bf,SAAMBE,GACjB0C,GAAW1C,EAAQC,KAAKC,MAAM4c,YAAW,KAAiB,CACxD,SACA,SACA,SACA,Y A2BF3c,oBAAtBEC,GAGF,MAAOC,QAAQsC,EAACA,GAAIrC,OAAOyc,MAACA,GAAM/c,QAAEA,GAAWI,E AEzCwC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAGtCW,EAAMhC,EAAQIC,WAAWU,EA AEIB,MAAO,WAExC,GAAoC,IAAhCoB,OAAKC,cAAcH,EAAEIB,OAAc,CACrC,MAAMS,EAAQIC,EAAQkB ,UAAUC,IAAIa,EAAIZ,QAAQC,GACHdQb,GAASE,EAakpD,EAASmD,EAAEhC,OAAQoc,EAAO7a,GAG1C, OAAOF,IC/BIgb,GACT/Z,EAAyBga,QAFc,EAE4B,QCA7CC,GACTja,EAAyBka,aAFC,EAEiC,QCHIDC,GAA0 B5a,EAAWb6a,OCIDC,GACTra,EAAyBsa,cAFC,EAekC,QCGhE,IAAIC,GAwDG,MAAMC,GAA0B,CACrC7d ,WAAy8d,MACZ5d,YAAa,OACbC,UAXDF,SAAeC,GACbwd,GAAUxd,EAAQC,KAAKC,MAAMwd,MAAK,K AAe,CAC/C,SACA,SACA,SACA,YAoDFvd,WAhDF,SAAaC,GAEX,MAAMJ,QAACA,EAAOK,OAAEA,EAA MC,MAAEA,GAASF,GAC1Bud,iBAakB3X,EAAIe,SAAEA,GAAYzG,GACrCqC,EAACA,GAAKtC,EAEZ,IAA I2G,EADQhH,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAExC4F,EAAQte,EAEZ,MAAMgE,WAACA,E AAUN,KAAEA,EAAIF,aAAEA,EAAyM,mBAAEA,GACnCV,EAAwBpD,EAAGqD,EAAMhG,GAERc,GAAIyG ,EAAoB,CAEtBQ,EAAQN,EACRK,EAfQbHh,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAKhE,MAAM6 F,EAAYD,EAAMxF,MAAMC,OAC9B2B,eAAa8D,2BAA2B,MAAOd,EAAMa,GACrD,MAAO5B,EAAU8B,GA Cb/D,eAAagE,0BAA0BJ,EAAMxF,MAAO4E,GACIDiB,EAAazE,OAAKC,cAAcE,GAehCpF,EAAMhC,EAAQi C,WAAWqD,EAAU3C,EAAEhC,OAC3C,GAAwC,IAApCkC,OAAKC,cAAcmE,EAAMxF,OAAc,CACzC,MAA MS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHdmc,GAAQxW,EAASxH,EAASmD,EAAEhC,O AAQ2G,EAAyPf,GAQID,GALluE,GAEFzG,EAAQuH,YAAYZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D, EAAWC,eAAamE,qBAAqBxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OAAOpB,ICzDI4b,GACT 3a,EAAyB4a,WAFC,GCE9B,IAAIC,GAkFG,MAAMC,GAA8B,CACzCne,WAAyoe,UACZle,YAAa,OACbC,UA 9EF,SAAeC,GACb8d,GAac9d,EAAQC,KAAKC,MAAM8d,UAAAS,KAAiB,CACzD,SACA,SACA,SACA,SACA, SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA, YA6DF7d,WAZDF,SACIC, GACF,MAAMC,OAACA,EAAMC,MAAEA,EAANK,QAAEA,GAAWI,EAE3BuC,EAAItC,EAAOsC,EACXC,E AAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAU5CwB,OAAKoH,OACW,YAAZtH,EAAEhC,OAC F,IACI,0DAA0DgC,EAAEhC,WAEpE,MAAM0H,WAACA,EAAUC,QAAEA,EAAOC,IAAEA,EAAGC,gBAAE A,GAAMbII,EAC9CmI,EAAWpF,eAAaqF,kBAC1B/F,EAAEIB,MAAO4G,EAAYC,EAAS,EAAMBC,EAAKC,G AEpDG,EAAeF,EAASE,aACxBC,EAAcH,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EAAWP,EAAS K,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EAAUX,EAASK,QAAQO,KAC3BO,EAAiBnB,EAA SmB,eAC1BD,EAAGBIB,EAASKB,cACzBL,EAAeb,EAASa,aACxBC,EAACd,EAASc,YACvBoJ,EAAGBIK,EAA SgB,WACzBmJ,EAAiBnK,EAASoK,YAEhC,GAA4B,iBAAXBpK,EAASiB,WACX,MAAM,IAAI9I,MAEN,6CA AG6H,EAASiB,2CAGIB,MAAM1H,EAAMhC,EAAQIC,WAAWwG,EAASnD,SAAU,WAC5CpD,EAAQIC,EAA QkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OAJAyc,GACIib,EAakD,EAAEIB,MAAM,GAAIkB,EAAEIB,M AAM,GAAIkB,EAAEIB,MAAM,GAAIkH,EAAc,EACvDC,EAAQG,EAAUE,EAWE,EAASQ,EAAGBD,EACt DL,EAAc,EAAaoJ,EAAeC,EAAGB1Q,GACvDF,IC5ET,IAAIic,GAqEG,MAAMC,GAA2B,CACtCte,WAAyue, OACZre,YAAa,OACbC,UAtEF,SAAeC,GACbie,GACIje,EAAQC,KAAKC,MAAMie,OAAM,KAAe,CAAC,4BA qE7Che,oBAjEEC,GAEF,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,E AAIE,SAAEA,GAAYzG,GACnBqC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEv B,QAAQC,GAC5C,IAAI2F,EAAUpE,EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAIF,a AAEA,EAAyM,mBAAEA,GACnCV,EAAwBpD,EAAGqD,EAAMhG,GAERc,IAAIoe,EAAGB/X,EACpB,GAII

,EAAoB,CACtB,MAAMqB,EAAe9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAiBIF,IAGnBqE,EAAQN,EACRK,EAAUc,EACVsW,EAAGb/a,eAAaqD,iBACzB0X,EAAC1c,OAAQuF,EAAMxF,MAAMC,SAI1C2B,eAAa8D,2BACT,OAAQiX,EAAenX,EAAMxF,MAAMC,QACvC,MAAO4D,EAAU8B,GACb/D,eAAa gE,0BAA0BJ,EAAMxF,MAAO2c,GACID9W,EAAszE,OAAKC,cAAcsE,GACtC,IAAliX,EAACPX,EACE,YAAh BA,EAAMtG,QACR0d,EACIpO,EAAK,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC,EAAGsE,GAAQ3G,MAA O,CAACK,MAAO,aACtDqG,EAAUhH,EAAQkB,UAAUC,IAAIkd,EAAyjd,QAAQC,IAGtD,MAAMW,EAAMh C,EAAQiC,WAAWqD,EAAU,WACzC,GAAwC,IAApCzC,OAAKC,cAAcmE,EAAMxF,OAAc,CACzC,MAAMS ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHd4c,GAASjX,EAASM,EAAypF,GAQhC,GALiUE,G AEFzG,EAAQuH,YAAyz,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,eAAamE,qBAAqBxF,EAAIP ,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAOD,MAJoB,YAAhB6D,EAAMtG,OACRX,EAAQuH,YAAy8W,EA AYjd,QAG3BY,ICIET,IAAIsc,GA6DG,MAAMC,GAA0B,CACrC3e,WAAY4e,MACZ1e,YAAa,OACbC,UA7DF, SAAeC,GACbse,GAAUte,EAAQC,KAAKC,MAAMse,MAAK,KAAe,CAC/C,SACA,SACA,SACA,YAyDFre,W ArDF,SAAaC,GAEX,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,EAAlE ,SAAEA,GAAYzG,GACnBqC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QA AQc,GAC5C,IAAI2F,EAAUpE,EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAlF,aAAEA ,EAAyM,mBAAEA,GACnCV,EAAwBpD,EAAGqD,EAAMhG,GAERc,GAAIyG,EAAoB,CACtB,MAAMqB,EA Ae9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAiBIF,IAGnBqE,EAAQN,EACRK,EAAUc, GAId,MAAMZ,EAAyD,EAAMxF,MAAMC,OAE9B2B,eAAa8D,2BAA2B,MAAOd,EAAMa,GACrD,MAAO5B, EAAU8B,GACb/D,eAAagE,0BAA0BJ,EAAMxF,MAAO4E,GACIDiB,EAAszE,OAAKC,cAAcsE,GAehCpF,EA AMhC,EAAQiC,WAAWqD,EAAU2B,EAAMtG,OAC/C,GAAwC,IAApCkC,OAAKC,cAAcmE,EAAMxF,OAAc, CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHdid,GAAQtX,EAASxH,EAASmD, EAAehC,OAAQ2G,EAAypF,GAQID,GALiUE,GAEFzG,EAAQuH,YAAyz,EAAWvF,QAG7B2F,EAAU,CAEZ, MAAM3D,EAAWC,eAAamE,qBAAqBxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OAAOpB,IC9 DIyc,GACTxb,EAAyByb,WAFC,GCK9B,IAAKC,GAKL,IAAIC,IALJ,SAAKD,GACHA,yBACAA,6BAFF,CAA KA,KAAAA,QAKDE,MAAME,GAAGc,CAC3Cjf,WAAYkf,YACZhf,YAAa,OACbK,WA9BF,SAAmBC,GAKjB, MAAOc,QAAQsC,EAACA,GAAE3C,QAAEA,EAASM,OAAOye,SAACA,EAAQC,KAAEA,IAAS5e,EAEIDkF, EAAWyZ,EAAS3a,KACtB,CAAC6a,EAAGpb,IAAMob,EAAE,GAAqBtc,EAAEIB,MAAMoC,GAAKob,EAAE, KAC9Crc,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCW,EAAMhC,EAAQiC,WAAWqD,E AAU3C,EAAehC,OACrCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CuE,EAAC,IAAIxD,WA AW,IAAIC,WAAWM,EAAEIB,OAAOa,QAERd4c,EAakBH,EAAS3a,KAAI+a,GAAYA,EAAS,KACpDC,EAAM BL,EAAS3a,KAAI+a,GAAYA,EAAS,KACrDE,EACF,IAAIjd,WAAW,IAAIC,WAAW6c,GAAiB5c,QAC7Cgd,E ACF,IAAIld,WAAW,IAAIC,WAAW+c,GAakB9c,QAKpD,OAHAsc,GACIhc,EAAKGD,EAAajD,EAAEIB,MAA MC,OAAQIC,EAASmD,EAAehC,OAAQ0e,EACrDC,EAAMBX,GAakBK,GAAO9c,GACzCF,GAOPjC,UA5CF, SAAeC,GACb4e,GAAGb5e,EAAQC,KAAKC,MAAM4e,YAAW,KAAiB,CAC7D,SACA,QACA,SACA,SACA,Q ACA,QACA,SACA,aCrBSS,GACTtc,EAAyBuc,YAFC,GCFjBC,GAA0Bjd,EAAwBkd,gBCW/CC,GACZ3f,EAAs B4f,GACxB,MAAM5P,EAAS,IAAI3N,WAAWrc,EAAQC,KAAK4f,OAAOvd,OAAQsd,EAAW,GAC/DE,EAAM B9P,EAAO,GAC1B+P,EAAe/P,EAAO,GACtBgQ,EAakBhQ,EAAO,GACzBiQ,EAAgBjQ,EAAO,GAG7B,OAD AhQ,EAAQC,KAAKigB,MAAMN,GACZ,CAACE,iBAAAA,EAakBC,aAAAA,EAACc,gBAAAA,EAaiBC,cAA AA,GChB3D,IAAIvd,GA6CG,MAAMyd,GAA0C,CACrDvgB,WAAywgB,sBACZtgB,YAAa,OACbC,UA5CF,S AAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MACpBkgB,sBACA,SACA,CACE,SACA,SACA,SACA,SACA,YA oCNjgB,WAhCF,SAAoBC,GAKIB,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BigB,a AACA,EAAYC,cAAEA,EAaAc,eAAEA,GAakBjgB,GACHdiV,MAACA,EAakIL,OAAEA,GAAUngB,EAEIB0 V,EAAU/V,EAAQkB,UAAUC,IAAIoU,EAAMnU,QAAQC,GAC9Cof,EAAWzgB,EAAQkB,UAAUC,IAAIqf,EA AOpf,QAAQC,GAehDue,EACfId,GAASqT,EAAS0K,EAAUH,EAAeD,EAAcE,IAEvDT,iBAACA,EAAGBC,aA AEA,EAAYC,gBAAEA,EAAcC,cAAEA,GACpDN,GAakB3f,EAAS4f,GAS/B,OANA5f,EAAQC,KAAKigB,MA AMF,GACnBhgB,EAAQC,KAAKigB,MAAMD,GAGfjgB,EAAQiC,WAAW,CAAC8d,GAAe,QAASD,KCxCID,IA AIpd,GakDG,MAAMge,GAA0C,CACrD9gB,WAAy+gB,sBACZ7gB,YAAa,OACbC,UhDF,SAAeC,GACb0C ,GAAW1C,EAAQC,KAAKC,MACpBygB,sBACA,SACA,CACE,SACA,SACA,SACA,SACA,SACA,SACA,UAuCNxgB,

WAnCF,SAA6BC,GAK3B,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BigB,aACA,EAAYC,cAAEA,EAAaC,eAAEA,EAaCk,mBAAEA,GAChtgB,GACEiV,MAACA,EAaKiL,OAAEA,GAAUngB,EAElB0V,EAAU/V,EAaQkB,UAAUC,IAAIoU,EAAMnU,QAAQC,GAC9Cof,EAaWzgB,EAaQkB,UAAUC,IAAIqf,EAaOpf,QAAQC,GAehDue,EAAYld,GACdqT,EAAS0K,EAaUH,EAaEd,EAaCe,EACChDK,IAEEed,iBAACA,EAaGBC,aAAEA,EAAYC,gBAAEA,EAaEc,cAAEA,GACpDN,GAaKB3f,EAAS4f,GAU/B,OAPA5f,EAaQC,KAaKiG,MAAMF,GAOZ,CAJHhgB,EAaQiC,WAAW,CAAC8d,GAAe,QAASD,GAERb9f,EAaQiC,WAAW,GAaI,QAASge,MC7C7D,IAAIvd,GakDG,MAAMme,GAA0C,CACrDjhB,WAAyKhB,sBACZhhB,YAAa,OACbC,UAhDF,SAAeC,GACb0C,GAaW1C,EAaQC,KAaKC,MACpB4gB,sBACA,SACA,CACE,SACA,SACA,SACA,SACA,SACA,YAuCN3gB,WAnCF,SAAoBC,GAKIB,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BigB,aACA,EAAYC,cAAEA,EAAaC,eAAEA,EAaCq,aAAEA,GAaGbzgB,GAC9DiV,MAACA,EAaKiL,OAAEA,GAAUngB,EAElB0V,EAAU/V,EAaQkB,UAAUC,IAAIoU,EAAMnU,QAAQC,GAC9Cof,EAaWzgB,EAaQkB,UAAUC,IAAIqf,EAaOpf,QAAQC,GAehDue,EAAYld,GACdqT,EAAS0K,EAaUH,EAaEd,EAaCe,EACChDQ,IAEEjB,iBAACA,EAaGBC,aAAEA,EAAYC,gBAAEA,EAaEc,cAAEA,GACpDN,GAaKB3f,EAAS4f,GAU/B,OAPA5f,EAaQC,KAaKiG,MAAMD,GAOZ,CAJHjgB,EAaQiC,WAAW,CAAC8d,GAAe,QAASD,GAe5C9f,EAaQiC,WAAW,CAAC8d,GAAe,UAAWC,MChDvcgB,GACT/d,EAaYbge,YAFc,EAEGc,QCA9D,IAaIC,GA+BG,MAAMC,GAA6B,CACxCvhB,WAAywhB,SACZthB,YAAa,OACbC,UA9BF,SAAeC,GACbkhB,GAaahB,EAaQC,KAaKC,MAAMkhB,SAAQ,KAAiB,CACvD,SACA,SACA,SACA,SACA,YAyBFjhB,WArBF,SACIC,GACF,MAAMC,OAACA,EAAML,QAAEA,EAaOM,MAAEA,GAASF,GAC3B2a,QAACA,GAaW1a,GACZghB,MAACA,EAaKC,QAAEA,EAaOC,SAAEA,GAAYjhB,EAe7B0B,EAAMhC,EAaQiC,WAAW,IAAI8Y,EAaQz,MAAO4f,GAaQ,SACpDnf,EAaQIC,EAaQkB,UAAUC,IAAIa,EAaIZ,QAaQC,GAG1Cia,EADctb,EAaQkB,UAAUC,IAAI4Z,EAaQ3Z,QACpBC,GAI9B,OAFa6f,GAaW5F,EAaW+F,EAaOC,EAASC,EAaUrf,GAeZCF,ICpBF,MAAMwf,GAa+B,CAC1C5hB,WAAy6hB,WACZ3hB,YAAa,OACbK,WAXF,SAAkBC,GACChB,MAaOC,QAaQsC,EAACA,GAaE3C,QAAEA,GAaWI,EACzB4B,EAAMhC,EAaQiC,WAAWU,EAElB,MAAOkB,EAaEhC,OAG1C,OAFgBX,EAaQwE,mBAaMBxC,GACnC0W,KAaK,GACN1W,ICmCF,MAAM0f,GAaA2B,CACtC9hB,WAAy+hB,OACZ7hB,YAAa,OACbK,oBAxCEC,GAEF,MAAMC,OAACA,EAAML,QAAEA,EAaOM,MAAEA,GAASF,GAC3B4F,KAACA,GAaQ1F,EAef,GAAsB,IAaIBD,EAaOqB,OACT,OAaO0W,GACH,CAAC/X,OAaQ,CAAC4G,MAAO5G,EAaO,IAaKL,QAAAA,EAASM,MAAO,CAAC+X,IAaKrS,KAGzD,MAAMvE,EAaQpB,EAaO,GAAGoB,MACIBd,EAaQN,EAaO,GAAGM,MAExBN,EAaOgR,SAAQV,IACb9N,OAaK+e,kBACDngB,EAaOkP,EAaEIP,MACT,yDACJoB,OAaKoH,OACDtJ,IAaUgQ,EAaEhQ,OACZ,IAAM,6DAGZ,MAAMkhB,EAawC,GAQxCT7R,EAAS7E,EAaO,CAAC9K,OAPCA,EAaO+D,KAAIuM,IACjC,MAAMmR,EACF1J,GAaW,CAAC/X,OAaQ,CAAC4G,MAAO0J,GAaI3Q,QAAAA,EAASM,MAAO,CAAC+X,IAaKrS,KAE1D,OADA6b,EAawB5c,KAaK6c,GACtBA,KAGuC9hB,QAAAA,EAASM,MAAO,CAAC0F,KAAaA,KAIjE,OAFa6b,EAawBxQ,SAAQV,GAaK3Q,EAaQuH,YAAyOj,EAaEvP,UAEPd4O,ICjCT,IAAI+R,GASDG,MAAMC,GAA4B,CACvCpiB,WAAyqiB,QACZniB,YAAa,OACbK,WAvCF,SACIC,GACF,MAaOC,QAaQsC,EAACA,GAaE3C,QAAEA,EAASM,OAAOye,SAACA,EAaQmD,cAAEA,IAaKB9hB,EAe3DkF,EAaWyzE,AAS3a,KACtB,CAAC6a,EAAGpb,IAAMob,EAaE,GAaQbTc,EAaEIB,MAAMoC,GAaKob,EAaE,KAEPd,GAaOC,IAAhCpc,OAaKC,cAAcH,EAaEIB,OAGvB,OAaOiX,GAaK,CACV1Y,QAAAA,EACAM,MAAO,CAACmB,MAAO6D,EAaUqT,MAAOuJ,EAaevhB,MAAOgC,EAaEhC,SAI5D,MAAMiC,EAAM5C,EAaQkB,UAAUC,IAAIwB,EAaEvB,QAaQC,GACtCW,EAAMhC,EAaQiC,WAAWqD,EAaU3C,EAaEhC,OAERcuB,EADgBlC,EAaQkB,UAAUC,IAAIa,EAaIZ,QACpBC,GAETbuE,EAaC,IAAIxD,WAAW,IAaIC,WAAWM,EAaEIB,OAaOa,QAERd4c,EAaKBH,EAAS3a,KAAI+a,GAAYa,EAAS,KACpDC,EAaMBL,EAAS3a,KAAI+a,GAAYa,EAAS,KACrDE,EACF,IAAIjd,WAAW,IAaIC,WAAW6c,GAaIB5c,QAC7Cgd,EACF,IAAIld,WAAW,IAaIC,WAAW+c,GAaKB9c,QAkPd,OAHAyf,GACInf,EAaKgD,EAaAjD,EAaEIB,MAAMC,OAaQIC,EAASmD,EAaEhC,OAaQ0e,EACrDC,EAaMB4C,EAaehgB,GAC/BF,GAOPjC,UArDF,SAAeC,GACb+hB,GAAY/hB,EAaQC,KAaKC,MAAM+hB,QAaO,KAAiB,CACrD,SACA,QACA,SACA,SACA,QACA,QACA,SACA,SACA,aCnBSE,GACTIf,EAAYbmf,OAFc,GCI9B,IAaIC,GaKCG,MAAMC,GAA4B,CACvC1iB,WAAy2iB,QACZziB,YAAa,OACbC,UANCF,SAAeC,GACbqiB,GAAYriB,EAaQC,KAaKC,MAAMqiB,QAaO,KAAiB,CACrD,SACA,SACA,YAGCFpiB,WA5BF,SAAeC,GACb,MAAMC,OAACA,EAAML,QAAEA,GAaWI,GACpBuC,EAACA,EAACoa,MAAEA,GA

AS1c,EACbuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCmhB,EAAyxiB,EAAQkB,UAAUC,IAAI4b,EAAM3b,QAAQC,GAEtD,IAAI2F,EAAUpE,EACd,MAAMqE,EAAQtE,EACd,IAAI0b,EAACpX,EA CE,YAAhBA,EAAMtG,QACR0d,EAACpO,EAAK,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC,EAAAA,GAAIr C,MAAO,CAACK,MAAO,aACzDqG,EAAUUhH,EAAQkB,UAAUC,IAAIkd,EAAyjd,QAAQC,IAGtD,MAAMW, EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAO,WACICS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,G AMhD,OALAgHb,GAAUrb,EAASwb,EAAWtgB,GAEV,YAAhB+E,EAAMtG,OACRX,EAAQuH,YAAy8W,EA AYjd,QAE3BY,IC7BT,IAAIygB,GAmEG,MAAMC,GAA2B,CACtC9iB,WAAy+iB,OACZ7iB,YAAa,OACbC,U AIEF,SAAeC,GACbyiB,GAAWziB,EAAQC,KAAKC,MAAMyiB,OAAM,KAAe,CACjD,SACA,SACA,SACA,Y A8DFxiB,WA1DF,SAAcC,GAKZ,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KA ACA,EAAIe,SAAEA,GAAyZg,GACnBqC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,E AAEvB,QAAQC,GAC5C,IAAI2F,EAAUpE,EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EA AIF,aAAEA,EAAYM,mBAAEA,GACnCV,EAAWBpD,EAAGqD,EAAMhG,GAERc,IAAIoe,EAAGb/X,EACpB,G AAI,EAAb,CACTb,MAAMqB,EAAe9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAIbIF,I AGnBqE,EAAQN,EACRK,EAAUc,EACVsW,EAAGb/a,eAAaqD,iBACzB0X,EAAc1c,OAAQuF,EAAMxF,MAA MC,SAI1C2B,eAAa8D,2BACT,OAAQiX,EAAenX,EAAMxF,MAAMC,QACvC,MAAO4D,EAAU8B,GACb/D,e AAagE,0BAA0BJ,EAAMxF,MAAO2c,GACID9W,EAAazE,OAAKC,cAAcsE,GAehCpF,EAAMhC,EAAQiC,WA AWqD,EAAU2B,EAAMtG,OAC/C,GAAwC,IAApCkC,OAAKC,cAAcmE,EAAMxF,OAAC,CACzC,MAAMS,EA AQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACDohB,GAASzb,EAASM,EAAy9H,EAASwC,EAAIrB,O AAQuB,GAQRd,GALuE,GAEFzG,EAAQuH,YAAyZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,e AAamE,qBAAqBxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OAAOpB,ICvDI4gB,GAA4B,CACv ChjB,WAAyijB,QACZ/iB,YAAa,OACbK,WAdGC,IACC,MAAMJ,QAACA,EAAOM,MAAEA,GAASF,GACnB 0iB,MAACA,EAAKC,KAAEA,EAAIC,KAAEA,EAAIrB,MAAEA,GAASL,EAC7B0M,ECTL,SAAMb8V,EAA OC,EAAMC,EAAMriB,GAIzC,GAHsBmiB,IAAUC,GACID,EAAQC,GAAQC,EAAO,GACvBD,EAAOD,GAAS E,EAAO,EAGvD,OAAOngB,OAAKogB,oBAAoB,EAAGtiB,GAEvC,MAAMuiB,EAACzX,KAAK0X,IAAI1X,K AAK2X,MAAML,EAAOD,GAASE,IACIDhW,EAASnK,OAAKogB,oBAAoBC,EAAaviB,GACjDoiB,EAAOD,G AAKB,IAATE,IAGhBA,GAAQ,GAEZhw,EAAO,GAAK8V,EACZ,IAAK,IAAIjf,EAAI,EAAGA,EAAImJ,EAAOt L,OAAQmC,IAC/BmJ,EAAOnJ,GAAKmJ,EAAOnJ,EAAI,GAAKmf,EAehC,OAAOhW,EDVUqW,CAAaP,EAA OC,EAAMC,EAAMriB,GAezCqB,EAAMhC,EAAQiC,WAAW,CAAC+K,EAAOtL,QAASf,GAGhD,OAFgBX,E AAQwE,mBAAmBxC,GACnCyC,IAAIuI,GACLhL,IETAshB,GACTrgB,EAAyBsgB,WAFC,GCFjBC,GAA2Bhh B,EAAWBiHb,QCAnDC,GAA4BlhB,EAAWBmhB,SCIje,IAAIC,GA4DG,MAAMC,GAAqC,CAChDjkB,WAAyK kB,iBACzhkB,YAAa,OACbC,UA1DF,SAAeC,GACb4jB,GAAqB5jB,EAAQC,KAAKC,MAAM4jB,iBAAGb,KA Ae,CACrE,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAgDF3jB,WA5CF,SAAWBC,GAKt B,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAE3B2jB,OAACA,GAAU1jB,GACX2jB,aA ACA,EAAyC,iBAAEA,EAAGbnY,KAAEA,GAAQxL,GACx4jB,EAAWC,GAAyRy,GAEvBoN,EAAOKL,EAA WC,EAAUHL,GAAe0K,EAAOtIb,MACnD6D,EAAW,CAAC4T,EAAOgL,EAAWC,EAAU9K,GAE9C,IACzD,E ADA0O,EAAQtKb,EAAQkB,UAAUC,IAAI4iB,EAAO3iB,QAERb,YAAhBkjB,EAAM3jB,QACRiV,EACI3F,EA AK,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC,EAAGohB,GAASzjB,MAAO,CAACK,MAAO,aACvD2jB,EAA QtKb,EAAQkB,UAAUC,IAAIyU,EAAWxU,SAE3C,MAAMwB,EAAM0hB,EAAMjjB,GAZW,EAAMhC,EAA QiC,WAAWqD,EAAU,WACzC,GAAyC,IAArCzC,OAAKC,cAAcihB,EAAOtIb,OAC5B,OAAOO,EAET,MAAM E,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAUhd,OARAUiB,GACIhhB,EAAKsW,EAAOKL,EAAW C,EAAUHL,EAAa6K,EAAWC,EACzDH,EAAe,EAAI,EAAGC,EAAMb,EAAI,EAAG/hB,GAEIC,MAAd0T,GAC F5V,EAAQuH,YAAyqO,EAAWxU,QAG1BY,ICxDt,IAAIuiB,GA6CG,MAAMC,GAA8B,CACzC5kB,WAAy6 kB,UACZ3kB,YAAa,OACbK,oBAhCEC,GAEF,MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF ,GAC3BuC,EAACA,GAAKtC,GACnqkB,KAAACA,GAAQpkB,EAET+F,EAAOxD,OAAKuD,eAAese,EAAM/hB, EAAEIB,OAezC,GAAuB,IAAnBkB,EAAEIB,MAAMC,OACV,OAAO4C,EAAS,CAACjE,OAAQ,CAACsC,EAA AA,GAAI3C,QAAAA,IAGhC,MAAMgC,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAehC,OACpCiC ,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCa,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,Q AAQC,GAE1CsJ,EAAY,IAAIviB,WAAW,IAAIC,WAAWgE,GAAM/D,QACHdsiB,EAAGb,IAAIxiB,WAAW,I

AAIC,WAAWM,EAAEIB,OAAOa,QAE7DiiB,GACI3hB,EAAK+hB,EAAWte,EAAK3E,OAAQkjB,EA AEIb,MAAMC,OAAQQ,GAeHhE,MAAMmN,EACFxF,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGX,GAAM1B,MA AO,CAACmB,MAAOkB,EA AEIb,OAAQzB,QAAAA,IAGxD,OADAA,EAAQuH,YAAYvF,EA AIZ,QACjBiO,G AOPt,UA7CF,SAAeC,GACbukB,GAACvkB,EAAQC,KAAKC,MAAMukB,UAAS,KAAM,CAC9C,SACA,QAC A,SACA,QACA,SACA,aCbJ,IAAII,GAqDG,MAAMC,GAAuC,CACIDIIb,WAAymIb,mBACZjIb,YAAa,OACb K,oBAnC+BC,GAK/B,MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BkV,MAACA,GA ASjV,GACV2kB,QAACA,EAAOC,UAAEA,EAASC,OAAEA,GAAU5kB,EAE/B0B,EAAMhC,EAAQIC,WAAW qT,EAAM7T,MAAO6T,EAAM3U,OAC5CsY,EAAUjZ,EAAQkB,UAAUC,IAAIImU,EAAMIU,QAAQC,GAC9Ca ,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,IAEzC6X,EAAOC,EAAaC,EAAYC,GAAe/D,EAAM7T,OA ErD0jB,EAASC,GACZ/hB,eAAagiB,eAAeH,EAAQ/L,EAAaC,GAK/CkM,EAAKc,iBAAdL,EACtB,CAACA,EA AWA,EAAWA,EAJO,IAAdA,EAIGc,EAH3B,KAIrB,IAAIA,EAJiB,KAKnBM,EAAY,IAAIInjB,WAAW,IAAIC, WAAWijB,GAAYhjB,QAK5D,OAHauIb,GACI5L,EAASC,EAAOC,EAAaC,EAAYC,EAAa2L,EAASG,EAC/D C,EAASG,EAAWD,EAAW5jB,OAAQQ,GACpCF,GAOPjC,UApDF,SAAeC,GACb6kB,GAAa7kB,EAAQC,KAA KC,MAAM6kB,mBAaKB,KAAiB,CACjE,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,QACA,SACA ,aCnBSS,GAA4BhjB,EA AWbijB,SCDpDC,GAA4BljB,EA AWbmjB,SCIjE,IAAIC,GAmDG,MAAMC,GAAgC,C AC3CjmB,WAAymB,YACZhmB,YAAa,OACbC,UAjDF,SAAeC,GACb4Ib,GAAGb5Ib,EAAQC,KAAKC,MA AM4Ib,YAAW,KAAe,CAC3D,SACA,SACA,SACA,SACA,SACA,SACA,QACA,SACA,YAwCF3Ib,WApCF,SA CIC,GAGF,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B2a,QAACA,EAAOgL,QAAE A,GAAW1Ib,GACrBoB,MAACA,GAASnB,EA EV0B,EAAMhC,EAAQIC,WAAWR,EAAOsKb,EAAQplB,OAC9 C,GAAKc,IAA9BkC,OA AKC,cAAcrB,GACrB,OAAOO,EAGT,MAAMqZ,UAAACA,EAAS2K,WAAEA,EAAUn W,UAAEA,EAASvH,QAAEA,EAAO2d,WAAEA,GAC9CC,eAAaC,gBAAGBJ,EAASHL,EAAStZ,GAG7C6Z,EA Dctb,EAAQkB,UAAUC,IAAI4Z,EAAQ3Z,QACpBC,GAGxB+kB,EADcpmB,EAAQkB,UAAUC,IAAI4kB,EA A Q3kB,QACpBC,GAExBka,EAAe,IAAIInZ,WAAW,IAAIC,WAAWiG,GAASHg,QAeIDJ,EAAQIC,EAAQkB,UA AUC,IAAIa,EA AIZ,QAAQC,GAKhD,OAJAukB,GACiK,EA AW8K,EA AW5mB,EAASumB,EAAQplB,OAAQ0a ,EA AW2K,EAC1DnW,EA AW0L,EAAC0K,EAAY/jB,GAELCF,ICIDT,IAAIqkB,GAmCG,MAAMC,GAA6B,CAC xC1mB,WAAy2mB,SACZzmB,YAAa,OACbK,WAXBF,SAAGBC,GACd,MAAMC,OAACA,EAAML,QAAEA,G AAWI,GACpBomB,UAAACA,EAAS7V,EAAEA,EAAC8V,EAAEA,GA AKpmB,EA EPbqmB,EAAC1mB,EAAQk B,UAAUC,IAAIqIb,EA AUplB,QAAQC,GACtDsIb,EAAM3mB,EAAQkB,UAAUC,IAAIwP,EA AEvP,QAAQC,G ACtCulB,EAAM5mB,EAAQkB,UAAUC,IAAIslB,EA AErlB,QAAQC,GACtCW,EAAMhC,EAAQIC,WAAW00, EA AEIP,MAAOkP,EA AEhQ,OACpCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,GAELCwIb,EAAQ L,EA AU/kB,MAAMC,OACxBolB,EA AQnW,EA AEIP,MAAMC,OA EHb0P,EA AmB,IAAVyV,GAAeA,EAAQ,G AAe,IAAVC,EACvC,EACAjKb,OA AKC,cAAc6N,EA AEIP,MAAMsG,MAAM,IAGrC,OADase,GA AWK,EA Aa C,EA AKC,EA AKxV,EA AQIP,GACnCF,GAOPjC,UAnCF,SAAeC,GACbqmB,GAAarmB,EAAQC,KAAKC,MAA M,WAAy,KAAM,CACHd,SACA,SACA,SACA,SACA,aCVJ,IAAIwC,GAsBG,MAAMqkB,GAA8B,CACzCnnB, WAAy,UACZE,YAAa,OACbC,UAvBF,SAAeC,GACb0C,GA AW1C,EAAQC,KAAKC,MAAM8mB,UAAS,KAA iB,CAAC,SAAU,YAuBnE7mB,WApBF,SA AiBC,GA Ef,MAAMJ,QAACA,EAASK,QAAQsC,EAACA,IAAMvC, EACzBwC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EA AEvB,QAAQC,GACtCW,EAAMhC,EAAQIC,WAAWU,E AA EIb,MAAOkB,EA AEhC,OACpCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,GAGhD,OAAsC,IA AICwB,OA AKC,cAAcd,EA AIP,QAI3BiB,GAASE,EA AKV,GAHLF,ICjBEiIb,GAA0BzkB,EA AWB0kB,OCE/D,IA AIxkB,GAGCG,MAAMykB,GAA8B,CACzCvnB,WAAywnB,UACZtnB,YAAa,OACbC,UAhCF,SAAeC,GACb 0C,GA AW1C,EAAQC,KAAKC,MAAMknB,UAAS,KAAiB,CACtD,SACA,SACA,SACA,YA4BFjnB,WAXBF,SA CIC,GA EF,MAAMJ,QAACA,EAASK,QAAQgnB,OAACA,GAAS/mB,OAAO+X,IAACA,IAAQjY,EAC5CwC,E AAM5C,EAAQkB,UAAUC,IAAIkmB,EA AOjmB,QAAQC,GAC3CW,EAAMhC,EAAQIC,WAAWolB,EA AO5IB ,MAAO4Ib,EA AO1mB,OAC9CuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,GAELCmI,EA AW6d,EA AO5IB,MAAM4W,GACxBa,EA AQrW,OA AKC,cAAcukB,EA AO5IB,OAAS+H,EAGjD,OAAsC,IAAIC3G,OA AKC,cAAcd,EA AIP,QAI3BiB,GAASE,EA AKV,EA AO5H,EA AU0P,GAHtBIX,ICmCJ,MAAMslB,GAAqC,CACHD 1nB,WAAy2nB,iBACZznB,YAAa,OACbK,WA3DF,SAAwBC,GAKtB,MAAMC,OAACA,EAAML,QAAEA,EA AOM,MAAEA,GAASF,GAC3BuC,EAACA,GA AKtC,GACN4O,WAAACA,EA AU8P,SAAEA,GAAYze,EA EzB6O

,EAAOtM,OAAKC,cAAcmM,GAE1BuY,EAA4C,CAAC,CAAC,EAAG,IACvDA,EAAiBviB,QAAS8Z,GAE1B,I
AAK,IAAI1b,EAAI,EAAIoL,EAAWvN,OAAQmC,EAAI1B,EAAE1B,MAAMC,SAAUmC,EACxD2jB,EAAiBviB,
KAAK,CAAC,EAAG,IAG5B,MAAMwiB,EAAUzF,GAAY7hB,WAAW,CACrCE,OAAQ,CAACsC,EAAAA,GA
CT3C,QAAAA,EACAM,MAAO,CAACye,SAAUyI,EAakBtF,cAAe,KAG/CwF,EACFrkB,eAAaiM,YAAyM,Y,E
AAQhmB,MAAOwN,EAAYE,GAAM,GAExDwY,EAAoCtkB,eAAamM,YACnDkY,EAAoBhmB,OAAQuN,EA
AWvN,QAAQ,GAE7CkmB,EACFvkB,eAAaqM,oBAAoB+X,EAAQhmB,MAAOwN,EAAYE,GAAM,GAIhE0Y,
EACFhe,EAAQ,CAACxJ,OAHwB,CAACsC,EAAG8kB,GAGLznB,QAAAA,EAASM,MAFV,CAACmB,MAAOi
mB,KAOrcI,EACFjjB,EAAU,CAACxE,OAJ0B,CAACsC,EAAGk1B,GAIL7nB,QAAAA,EAASM,MAF5B,CAAC
yE,KAAM4iB,KAMtB3X,EAASnG,EACX,CAACxJ,OAHsC,CAACsC,EAAGmlB,GAGb9nB,QAAAA,EAASM,
MAFF,CAACmB,MAAOmmB,KAQjD,OAJA5nB,EAAQuH,YAAykgB,EAAQrmB,QAC5BpB,EAAQuH,YAAy
sgB,EAAGBzmB,QACpCpB,EAAQuH,YAAyugB,EAAS1mB,QAETB4O,ICjCF,MAAM+X,GAA6B,CACxCnoB,
WAAyooB,SACZloB,YAAa,OACbK,oBAvBEC,GACF,MAAMC,OAACA,EAAMC,MAAEA,EAACKN,QAAEA,
GAAWI,GAC3BuC,EAACA,GAAKtC,GACN4nB,gBAACA,EAaejiB,KAAEA,GAAQ1F,EAE1B4nB,EAAQrlB,
OAAKuD,eAAeJ,EAAMrD,EAAE1B,OAAO,GAE3C0mB,EAAa9kB,eAAa+kB,iBAaiBz1B,EAAGs1B,EAAiBC,G
AC/Drc,EAAQ,IAAIrG,MAAM7C,EAAE1B,MAAMC,QAAQgX,KAAK,GACvC5M,EAAOnJ,EAAE1B,MAAMs
G,QACrB,OAAOogB,EAAW/jB,KAAIikB,IACpB,MAAMC,EAAa,IAAIxc,GACvBwc,EAAWJ,GAASG,EACpB,
MAAME,EACFxgB,EAAM,CAAC1H,OAAQ,CAACsC,EAAAA,GAAIrC,MAAO,CAACuL,MAAAA,EAAOC,K
AAMwc,GAAatoB,QAAAA,IAE1D,OADA6L,EAAMqc,IAAUG,EACTE,OCrBEC,GAA2BhmB,EAawBimB,QC
DnDC,GAA6BlmB,EAawBmmB,UCArDC,GACT31B,EAAYb41B,qBAFC,GCK9B,IAAIC,GA0BG,MAAMC,GA
A2B,CACtCnpB,WAAyopB,OACZlpB,YAAa,OACbC,UA1BF,SAAeC,GACb8oB,GAAW9oB,EAAQC,KAAKC,
MAAM8oB,OAAM,KAAe,CACjD,SACA,SACA,SACA,YAsBF7oB,WAIBF,SACIC,GAEF,MAAMJ,QAACA,E
AAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B2c,MAACA,GAASzc,GACVqC,EAACA,GAAKtC,EACNuC,
EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAETCW,EAAMhC,EAAQiC,WAAWU,EAAE1B,MA
AOKB,EAAEHc,OACpCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAehD,OADAynB,GAASlmB,
EAAKma,EAAOvd,EAASmD,EAAEHc,OAAQuB,GACjCF,ICvBT,IAAIinB,GAmGG,MAAMC,GAAmC,CAC9
CtpB,WAAyupB,eACZrpB,YAAa,OACbC,UahGF,SAAeC,GACbipB,GAAmbjpB,EAAQC,KAAKC,MAAMipB
,eAAc,KAAe,CACjE,SACA,QACA,SACA,QACA,QACA,QACA,QACA,QACA,SACA,YAsFFhpB,oBAIF2BC,G
AK3B,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BuC,EAACA,GAAKtC,GAENwL,
MACJA,EAAKud,IACLA,EAAG9gB,QACHA,EAAO+gB,UACPA,EAASC,QACTA,EAAOC,aACPA,EAAYC,Y
ACZA,EAAWC,eACXA,GACEnpB,GAEEopB,iBACJA,EAAGBC,WACHBA,EAauc,WACVA,EAauc,UACV
A,EAASC,cACTA,EACAje,MAAOke,EACPX,IAAKY,EACL1hB,QAAS2hB,GAEPje,aAAWke,UACPvnB,EAA
E1B,MAAOoK,EAAOud,EAAK9gB,EAAS+gB,EAAWC,EAASC,EACIDC,EAAaC,GAERb,IAAIzZ,EAEJ,GAAI4
Z,EAEF5Z,EAASnG,EAAQ,CAACxJ,OAAQ,CAACsC,EAAAA,GAAI3C,QAAAA,EAASM,MAAO,CAACmB,
MAAOkoB,UACID,GAAIE,GAAaC,EAAe,CAErCjnB,OAAKoH,OACDth,EAAE1B,MAAMC,QAAU,GACIB,IA
AM,yCAAyCiB,EAAE1B,MAAMC,WAE3D,MAAMoK,EAAOE,aAAWvG,gBAAGbSkB,EAAQC,EAAMC,GA
hDE,EAASpiB,EAAM,CAAC1H,OAAQ,CAACsC,EAAAA,GAAI3C,QAAAA,EAASM,MAAO,CAACuL,MAA
Oke,EAAQje,KAAAA,KACnEkE,EACInG,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGwnB,GAASnqB,QAAAA,E
AASM,MAAO,CAACmB,MAAOkoB,KAC1D3pB,EAAQuH,YAAy4iB,EAAO/oB,YACtB,CACL,MAAMY,EA
AMhC,EAAQiC,WAAWynB,EAakB,WAE3C9mB,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,G
ACtCkW,EACF,IAAIInV,WAAW,IAAIC,WAAWQ,OAAKsJ,eAAexJ,EAAE1B,QAAQa,QAC1D8nB,EAAa,IAAIh
oB,WAAW,IAAIC,WAAW0nB,GAAQznB,QACnD+nB,EAaw,IAAIjoB,WAAW,IAAIC,WAAW2nB,GAAM1n
B,QAC/CiZ,EAAe,IAAIInZ,WAAW,IAAIC,WAAW4nB,GAAU3nB,QAevDkV,EACF,IAAIpV,WAAW,IAAIC,W
AAWqnB,GAakBpnB,QAC9CmV,EAakB,IAAIrV,WACxB,IAAIC,WAAWQ,OAAKsJ,eAAeud,IAAmBpnB,QA
CpDJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAehD4nB,GACIrmB,EAAK2U,EAAe5U,EAAE1B,
MAAMC,OAAQ0oB,EAAYC,EAAU9O,EAC1D/D,EAakBC,EAaiBiS,EAaiBhoB,OAAQQ,GAehE8N,EAASn
G,EAAQ,CAACxJ,OAAQ,CAACsC,EAAGX,GAAMhC,QAAAA,EAASM,MAAO,CAACmB,MAAOkoB,KAE5
D3pB,EAAQuH,YAAyvF,EAAIZ,QAG1B,OAAO4O,ICpGIsa,GACTrmB,EAAYbsnB,OAFc,GCM9B,IAAIC,GA
+DG,MAAMC,GAA0B,CACrC7qB,WAAy8qB,MACZ5qB,YAAa,OACbC,UA/DF,SAAeC,GACbwqB,GAAUxq

B,EAAQC,KAACK,MAAMwqB,MAAK,KAAe,CAC/C,SACA,SACA,SACA,YA2DFvqB,WAvDF,SAAaC,GAE X,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,EAAIe,SAAEA,GAAYzG, GACnBqC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2 F,EAAUpE,EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAIF,aAAEA,EAAYM,mBAAEA ,GACnCV,EAAwBpD,EAAGqD,EAAMhG,GAErC,IAAIoe,EAAGB/X,EACpB,GAAIL,EAAoB,CACtB,MAAMqB ,EAAe9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAIbIF,IAGnBqE,EAAQN,EACRK,EAA Uc,EACVsW,EAAgB/a,eAAaqD,iBACzB0X,EAAc1c,OAAQuF,EAAMxF,MAAMC,SAI1C2B,eAAa8D,2BACT, MAAOiX,EAAenX,EAAMxF,MAAMC,QACtC,MAAO4D,EAAU8B,GACb/D,eAAAgE,0BAA0BJ,EAAMxF,MA AO2c,GACID9W,EAAazE,OAAKC,cAAcsE,GAehCpF,EAAMhC,EAAQiC,WAAWqD,EAAU2B,EAAMtG,OAC /C,GAAwC,IAApCkC,OAAKC,cAAcmE,EAAMxF,OAAc,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa, EAAIZ,QAAQC,GACHdmpB,GAAQxjB,EAASM,EAAY9H,EAASwC,EAAIrB,OAAQuB,GAQpD,GALuE,GAE FzG,EAAQuH,YAAYZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,eAAamE,qBAAqBxF,EAAIP,M AAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OAAOpB,ICjEI2oB,GAA0BnoB,EAAwBooB,OCAIDC,GAA2BroB ,EAAwBsoB,QCIhE,IAAIC,GAqCG,MAAMC,GAA2B,CACtCprB,WAAyqrB,OACZnrB,YAAa,OACbC,UApCF ,SAAeC,GACb+qB,GAAW/qB,EAAQC,KAACK,MAAM+qB,OAAM,KAAiB,CACnD,SACA,QACA,SACA,QA CA,SACA,YA8BF9qB,WA1BF,SACIC,GACF,MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF, GAC3BuC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,IACtC6pB,KA ACA,GAAQ5qB,EAET8C,EAAqB,IAAIoC,MAAM7C,EAAEIB,MAAMC,QAC7C,IAAK,IAAIImC,EAAI,EAAG A,EAAIT,EAAS1B,OAAQmC,IACnCT,EAASS,GAAKIB,EAAEIB,MAAMoC,GAAKqnB,EAAKrnB,GAEIC,MA AM+B,EAAc,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QACrD6oB,EAAgB,IAAIoB,WAAW,IAAIC ,WAAWe,GAAUd,QAExDN,EAAMhC,EAAQiC,WAAWmB,EAAUT,EAAEhC,OACrCuB,EAAQIC,EAAQkB,U AAUC,IAAIa,EAAIZ,QAAQC,GAIhD,OAHA0pB,GACInoB,EAAKgd,EAAajD,EAAEIB,MAAMC,OAAQypB,E AAe/nB,EAAS1B,OAC1DIC,EAASwC,EAAIrB,OAAQuB,GACIBF,ICnCT,IAAIopB,GAKBG,MAbMBC,GAA2B ,CACtCzrB,WAAy0rB,OACZxrB,YAAa,OACbC,UAtCF,SAAeC,GACborB,GAAWprB,EAAQC,KAACK,MAA MorB,OAAM,KAAiB,CACnD,SACA,QACA,SACA,SACA,SACA,OACA,SACA,YA8BFnrB,WAXbKc,EAAEE, OAAAA,EAAQL,QAAAA,EAASM,MAAAA,MAC7C,MAAMqC,EAACA,GAAKtC,GACNsO,EAACA,EAAC4 c,OAAEA,GAAUjrB,EAEdsC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCuE,EAAc,IAAIx D,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QACrDgV,EAAc3U,EAAEIB,MAAMsG,QAC5BuP,EAAYA,EA AY5V,OAAS,GAAKiN,EACtC,MAAM6c,EAAYxrB,EAAQiC,WAAWqV,EAAa3U,EAAEhC,OAC9C8qB,EAAc zrB,EAAQkB,UAAUC,IAAIqqB,EAAUpqB,QAAQC,GACtDqqB,EAAa1rB,EAAQiC,WAAWqV,EAAa,SAC7Cq U,EAAe3rB,EAAQkB,UAAUC,IAAIuqB,EAAWtqB,QAAQC,GAM9D,OAJA+pB,GACIXoB,EAAKgd,EAAajD, EAAEIB,MAAMC,OAAQIC,EAASmD,EAAEhC,OAAQgO,EAAG4c,EACxDE,EAAe,GAEV,CAACH,EAawe ,KCTc7B,IAAIE,GAKFG,MAAMC,GAAgC,CAC3CjsB,WAAyKsB,YACZhsB,YAAa,OACbC,UA9EF,SAAeC,G ACb4rB,GAAgB5rB,EAAQC,KAACK,MAAM4rB,YAAW,KAAe,CAC3D,SACA,SACA,OACA,SACA,SACA,S ACA,SACA,SACA,SACA,QACA,SACA,SACA,SACA,SACA,YA+DF3rB,WA3DF,SACIC,GAGF,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BkV,MAACA,EAAKyW,WAAEA,GAac1rB,GACtB2rB, cAACa,EAAaC,SAAEA,EAAQhH,UAAEA,EAAS3N,YAAEA,GAAehX,GAEnD4Y,EAAOC,EAAaC,EAAYC,G AAe/D,EAAM7T,OACrD+R,EAAWC,GACC,MAAf6D,EAAsBA,EAAc,CAAC6B,EAAaC,GACHd9T,EACF,CA AC4T,EAAO1F,EAAWC,EACIB4F,GACC/Q,EACF,IAAILG,WAAW,IAAIC,WAAWQ,OAAKsJ,eAAemJ,EAAM 7T,QAAQa,QAe9DN,EAAMhC,EAAQiC,WAAWqD,EAAUgQ,EAAM3U,OACzCuB,EAAQIC,EAAQkB,UAAU C,IAAIa,EAAIZ,QAAQC,GAG1C4X,EADYjz,EAAQkB,UAAUC,IAAIImU,EAAMIU,QACpBC,GAGpB6qB,EA DiBlS,EAAQkB,UAAUC,IAAI4qB,EAAW3qB,QACpBC,GAe9B8qB,EAAwC,YAAIBH,EAA8B,EAAI,EAC9D ,IAAIL,EACJ,OAAQH,GACN,IAAK,WACHG,EAAa,EACb,MACF,IAAK,UACHA,EAAa,EACb,MACF,IAAK,O ACHA,EAAa,EACb,MACF,IAAK,UACHA,EAAa,EACb,MACF,QACEA,EAAa,EAUjB,ONAR,GACI3S,EAAS iT,EAAeH,EAAWtqB,MAAM,GAAK,EAAIyX,EAAO1F,EACzDC,EAAU4F,EAAaD,EAAYD,EAAa7Q,EACHD gN,EAAM7T,MAAMC,OAAS,EAAGyqB,EAAqBC,EAAYnH,EACzD/iB,GAEGF,IC9CF,MAAMqqB,GAA6B,C ACxCzsB,WAAy0sB,SACZxsB,YAAa,OACbK,WaICF,SACIC,GAEF,MAAMC,OAACA,EAAML,QAAEA,EA AOM,MAAEA,GAASF,GAC3BuY,MAACA,GAAStY,EACHB,IAAI2F,KAACA,GAAQ1F,EAET0F,EAAO,IACT

B,MAAM5K,GAA4H,MAAzH6K,QAAQC,MAAM,2GAAiH9K,EAAE+K,GAAOC,OAAOhB,EAakBgB,YAAe/
B,GAAcS,oBAANgC,OAAmBzB,EAAM,SAAoB0B,GAAG,OAAOD,KAAKC,KAAIxB,EAAW,SAAoBwB,GA
AG,IAAIC,EAAK,MAAuB,mBAAbC,WAAgC,IAAIzvB,WAAWYvB,WAAWF,KAA0B1nB,EAaqB,iBAA3C2n
B,EAAKF,KAAKC,EAAE,YAAgDC,IAA4B,oBAAZE,YAAoCA,WAAwF,mBAAPC,OAAmB3C,EAAM,SAAS
C,GAAQ0C,KAAK1C,KAA2B,oBAAR2C,QAAyC,oBAAVV,UAAsBA,QAAQ,IAAGA,QAAQW,IAAID,MAA
MV,QAAQY,KAAKZ,QAAQC,MAAwB,oBAAXY,SAAuBA,SAASH,SAAzC,GAAoBC,KAA0BA,EAauBc,E
AAgB8B,KAAKC,SAASC,KAA+B,oBAAAX3E,UAAwBA,SAASC,gBAAe0C,EAAGB3C,SAASC,cAAcC,KAA6
B,oBAAfJ,GAA8BA,IAAY6C,EAAGB7C,GAAoD6C,EAaH,IAAnCA,EAAGBiC,QAAQ,SAa8BjC,EAAGBkC,O
AAO,EAAEIC,EAAGBmC,YAAy,KAAK,GAAwB,GAAMhD,GAAqBQ,EAAM,SAAoBY,EAASC,GAAuH,OAA
3GV,IAAOA,EAaOW,GAakBV,IAASA,EAASK,GAAGBG,EAASR,EAaOB,UAAEQ,GAAiBT,EAaqB,aAAES,
EAASC,EAaO,KAAK,SAASX,EAAW,SAaOBu,GAAU,IAAIG,EAaIf,EAAMY,GAAS,GAAiE,OAAvDG,EAaI
1uB,SAaQ0uB,EAaI,IAaI5uB,WAAW4uB,IAAK/mB,EAaO+mB,EAaI1uB,QAAe0uB,KAAUf,EAAM,SAASy
C,GAaK,IAaIC,EAaI,IAaIC,eAAwD,OAAzCD,EAaIE,KAAK,MAAMH,GAaI,GAAOC,EAaIG,KAAK,MAA
aH,EAaII,cAAiBvD,IAAuBW,EAAW,SAASuC,GAaK,IAaIC,EAaI,IAaIC,eAAuF,OAAxED,EAaIE,KAAK,M
AAMH,GAaI,GAAOC,EAaIK,aAAa,cAAcL,EAaIG,KAAK,MAAa,IAaI1wB,WAAWuwB,EAaIM,YAAW/C,E
AAU,SAASwC,EAaIQ,EAaOC,GAAS,IAAIR,EAaI,IAaIC,eAAeD,EAaIE,KAAK,MAAMH,GAaI,GAAMC,E
AAIK,aAAa,cAAcL,EAaIO,OAAO,WAA0B,KAAZP,EAaItD,QAAyB,GAAZsD,EAaItD,QAAWsD,EAaIM,SA
AUC,EAaOP,EAaIM,UAAiBE,KAAWR,EAaIQ,QAAQA,EAaQR,EAaIG,KAAK,SAaQErD,GAA6C,oBAAd2
D,cAA2B5B,GAAO4B,YAAyC,EAAsBD,aAAa,IAA4mBE,EAaxmBtxB,EAaI6sB,EAaC,OAAGyC,QAAQW,I
AAIsB,KAAKjC,SAaakC,EAaI3E,EAaIB,UAAgYc,QAAQY,KAAKqB,KAAKjC,SAAS,IAaIrC,KAAOC,EA
oBA,EAAGBC,eAAeF,KAAMJ,EAaOI,GAaKC,EAAGBD,IAAmL,SAASwE,EAASC,GAAUD,EAASE,QAAMF,
EAASE,MAAM,IAaOF,EAASE,MAAMD,KAAOD,EAASE,MAAMD,GAAM,EAaEF,EAaIE,IAA/RxE,EAAGB
,KAAQL,EAakB,WAAaA,EAakB,UAAKA,EAaOB,aAAcA,EAaOB,YAAKA,EAaA,OAAEO,EAAMP,EAaA,M
AA+PA,EAaMB,aAAEyE,EAAWzE,EAaMB,YAAE,IAA+HZ,EAaE2F,EAa1IC,EAaChF,EAAsB,gBAAG,EA
6B,iBAAd1B,aAAwBiE,GAAM,mCAaIE,IAAsqG9uB,EAaO6rB,EAAMtO,EAAsByO,EAaOE,EAAGBE,EA5t
GoF,GAAM,EAaqB,SAAS7pB,EAaOuc,EAaUkN,GAAUIN,GAAW4K,GAAM,qBAaQBsC,GAAO,SAASK,EA
ASC,GAAO,IAaIC,EAaKpF,EAaO,IAaImF,GAAuF,OAAhF/pB,EAaOgqB,EAaK,gCAAGCD,EAAM,8BAaQ
CC,EAaK,SAASC,EAAMF,EAAMG,EAaWC,EAaSh0B,EAaKi0B,GAAM,IAaIC,EAaI,CAACC,OAAS,SA
SC,GAaK,IAaIXD,EAaI,EAAE,GAAGwD,MAAAA,GAAMC,IAANA,EAaQ,CAAC,IAaIC,EAaOB,GAafD,E
AAI9yB,QAAQ,GAAYBgZB,EAaAF,EAajCxD,EAaI2D,GAAWF,GAA0BA,GAaK,OAAOzD,GAaK4D,MAAQ
,SAASC,GAaK,IAaI7D,EAaI2D,GAaWE,EAaInzB,QAAoC,OAA5BozB,GAAMBD,EAaI7D,GAAYA,IAAsJi
D,EAaKF,EAASC,GAaWe,EAAM,GAaOC,EAAM,EAAE,GAAG50B,EAAM,IAaI,IAaIyD,EAAE,EAAEA,E
AAEzD,EAaKsB,OAAOmC,IAaI,CAAC,IAaIoxB,EAaUX,EAaIF,EAASvWB,IAaOoxB,GAAsB,IAARD,IA
UA,EAAME,MAAYH,EAaMIxB,GAAGoxB,EAaU70B,EAaKyD,KAASkxB,EAaMIxB,GAAGzD,EAaKyD,G
AAK,IAaImtB,EAaIiD,EAaKkB,MAAM,KAAKJ,GAAoE,OAA7D/D,EAaRY,SAa4BA,GAaK,MAAGB,WAAb
mD,EAa6BiB,EAaApE,GAaqB,YAAbmD,EAa8BkB,QAAQR,E,GAAYA,EAaIQsE,CAAMbtE,GAAGB,IAARgE
,GAaUO,GAaAP,GAaChE,EAaI,SAAS9wB,EAAM8zB,EAAMG,EAaWC,EAASC,GAA4B,IAaImB,GAA1Bp
B,EAASA,GAAU,IAA4BzwB,OAAM,SAASoP,GAAM,MAAc,WAAPA,KAAuD,MAAT,WAAbohB,GAaQcQB,
IAAcnB,EAaAN,EAASC,GAaC,WAAW,OAAOE,EAAMF,EAAMG,EAaWC,EAASqB,YAAiB,SAASC,EAakB
C,EAaK7oB,EAaI8oB,GAAYD,IAAZC,IAaIC,EAaO/oB,EAaI8oB,EAaMBpB,EAaI,KAAW1nB,GAaK+oB,I
AAQ,CAAC,IAaIC,EAAGH,EAaK7oB,KAAO,IAaIgpB,EAAG,OAAOtB,EAaI,GAAQ,IAAHsB,EAAL,CAAo
D,IAaIC,EAaE,GAaZJ,EAaK7oB,KAAU,GAAa,MAAN,IAAHgpB,GAaJ,CAAMe,IAaIE,EAaE,GAaZL,EA
K7oB,KAAmG,IAAvEgpB,EAAL,MAAN,IAAHA,IAaqB,GAaha,IAAQ,GAAGC,GAaI,EAaEC,GAaE,EAaH
F,IAAO,GAAGC,GAaI,GAAGC,GAaI,EAaC,GAaZL,EAaK7oB,MAAGB,MAA00nB,GAaKyB,OAAOC,aAA
aJ,OAAQ,CAAC,IAaIK,EAAGL,EAAG,MAAMtB,GAaKyB,OAAOC,aAAa,MAAMC,GAaI,GAAG,MAAS,KA
AHA,SAa3Q3B,GAaKyB,OAAOC,cAAiB,GAaHJ,IAAQ,EAaEC,QAaIHvB,GAaKyB,OAAOC,aAAaJ,GAAO
U,OAAOtB,EAaI,SAASY,EAAGB,EAaIR,GAAGB,OAAOQ,EAaIV,EAaKbtH,IAAMBgI,EAaIR,GAAGB,GA
AG,SAASS,EAakB7B,EAaImB,EAaKW,EAaOC,GAaIB,KAAKA,EAAGB,GAAG,OAAO,EAa0D,IAAxD,IA

AIC,EAA SF,EA AWT,EA AOS,EA AOC,EA AgB,EA AU1yB,EA AE,EA AEA,EA AE2wB,EA AI9yB,SA ASmC,EA AE,CA AC,IA AI4yB,EA AEjC,EA AIkC,WA AW7yB,GA AOf,GA A9E4yB,GA AG,OA AOA,GA AG,QA AkCA,EA AE,QAAU,KAAFA,IA AS,IA AO,KAA9CjC,EA AIkC,aAAa7yB,IA AqC4yB,GA AG,IA AI,CA AC,GA AGH,GA AQT,EA AO,MA AMF,EA AKW,KAAUG,OA AO,GA AGA,GA AG,KA AK,CA AC,GA AGH,EA AO,GA AGT,EA AO,MA AMF,EA AKW,KAAU,IA AIG,GA AG,EA AEd,EA AKW,KAAU,IA AM,GA AFG,OA AU,GA AGA,GA AG,MA AM,CA AC,GA AGH,EA AO,GA AGT,EA AO,MA AMF,EA AKW,KAAU,IA AIG,GA AG,GA AGd,EA AKW,KAAU,IA AIG,GA AG,EA AE,GA AGd,EA AKW,KAAU,IA AM,GA AFG,MA AS,CA AC,GA AGH,EA AO,GA AGT,EA AO,MA AMF,EA AKW,KAAU,IA AIG,GA AG,GA AGd,EA AKW,KAAU,IA AIG,GA AG,GA AGd,EA AKW,KAAU,IA AIG,GA AG,EA AE,GA AGd,EA AKW,KAAU,IA AM,GA AFG,GA AqB,OA Afd,EA AKW,GA AQ,EA ASA,EA OE,EA AS,SA AS9B,EA AaF,EA AI mC,EA AOJ,GA AiB,OA AOF,EA AkB7B,EA AI pG,IA AmBuI,EA AOJ,GA AiB,SA ASK,EA AgBpC,GA Ae,IA AV,IA AIC,EA AI,EA AU5wB,EA AE,EA AEA,EA AE2wB,EA AI9yB,SA ASmC,EA AE,CA AC,IA AI4yB,EA AEjC,EA AIkC,WA AW7yB,GA AM4yB,GA AG,OA AOA,GA AG,QA AMA,EA AE,QAAU,KAAFA,IA AS,IA AwB,KA ApBjC,EA AIkC,aAAa7yB,IA AW4yB,GA AG,MA AMhC,EA AoBA,GA ARgC,GA AG,KAAU,EA AU,GA AG,MA AW,EA AY,EA AE,OA AOhC,EA AI,SA ASK,GA AmBF,EA AMtyB,GA AQ0rB,IA AmBvpB,IA AI mwB,EA AMtyB,GA AQ,SA ASu0B,GA AQl0B,EA AEm0B,GA AkD,OA ArCn0B,EA AEm0B,EA AS,IA AGn0B,GA AGm0B,EA ASn0B,EA AEm0B,GA AgBn0B,EA AwE,SA ASurB,GA A2B6I,GA AKz0B,EA AOy0B,EA AIII,EA AAc,MA AEv,EA AM,IA AI6I,UAAUD,GA AKII,EA Ae,OA AS,IA AIoI,WA AWF,GA AKII,EA Ae,OA AEP,EA AO,IA AIjsB,WA AW00B,GA AKII,EA Ae,OA AEhP,EA AO,IA AIzd,WA AW20B,GA AKII,EA AgB,QAAU,IA AIqI,YAA YH,GA AKII,EA AgB,QA AEL,EA AQ,IA AI2I,YAA YJ,GA AKII,EA AgB,QAAU,IA AIuI,aAAaL,GA AKII,EA AgB,QA AEH,EA AQ,IA AI2I,aAAaN,GA AK,IA Au3BO,GA An3BC,GA AeI,EA AuB,gBAAG,SA AS,GA AGmB,EA AwB/B,EA AWY,EA AmB,WA AEvsB,EA AOusB,EA Ae,YAAO,GA AGA,EA AmB,WA AGZ,EA AWY,EA AmB,gBAAoH,MA A7GZ,EA AW,IA AId,YAA YqK,OA AO,CA ACC,QA AUF,GA Ae,MA AMG,QA AU,MA AiBC,QA AS,KAAuBr1B,kBA AkBkrB,mBA AgZ,MA A5XgG,EA AI,+NA AKO/D,GA AQb6B,QA AQW,IA AI,qHAA2HrxB,MA AM,cAA MBqtB,IA AY3rB,EA AO2rB,EA AW3rB,QA AOi1B,GA AeJ1B,EA AO s1B,WA AW1J,GA A2B5rB,GA ASB,IA AIu1B,GA Aa,GA AOC,GA AW,GA AOC,GA AW,GA AyBC,GA Ac,GA A4I,SA ASC,KA AS,IA AGjI,EA AH,CA AiC,GA AGnB,EA Ae,OA A8E,IA A/C,mBA AI BA,EA Ae,SA AcA,EA Ae,OA AE,CA ACA,EA Ae,SA ASA,EA Ae,OA AEntB,QAA Qw2B,GA AYrJ,EA Ae,OA AEsJ,SAAUC,GA AQBP,KA Ac,SA ASQ,KA AyCrI,GA A8BoI,GA AQBN,IA AY,SAA SQ,KAA AtI,GA A8BoI,GA AQBL,IA AuF,SA ASQ,KAAU,IA AGvI,EA AH,CA AiC,GA AGnB,EA AgB,QA AiF,IA AjD,mBA AnBA,EA AgB,UA AcA,EA AgB,QA AE,CA ACA,EA AgB,UA ASA,EA AgB,QA AEntB,QA AQ82B,GA Aa3J,EA AgB,QA AEsJ,SAAUC,GA AQBJ,KA Ae,SA ASE,GA AYO,GA AIZ,GA Aaa,QA AQD,GA AI,SA ASD,GA AaC,GA AIT,GA AcU,QA AQD,GA Ap8BzI,GA AuB8H,GA AW7yB,KA AK,CA ACgvB,KA AK,WA AW0E,QA Ag5B,IA AIC,GA AgB,EA AoCC,GA ASB,KA AK,SA ASC,GA AiBz3B,GA AI4I,GA AQ+IB,EA AuB,uDA AuD4I,KAAqB/J,EA A+B,wBA AGA,EA A+B,uBA AE+J,IA AkB,SA ASG,GA AoB13B,GA A6G,GA AzGu3B,KAAqB/J,EA A+B,wBA AGA,EA A+B,uBA AE+J,IA AqC,GA AjBA,IA AqHC,GA ASB,CA AC,IA AIG,EA ASH,GA ASBA,GA ASB,KA AKG,KAAuE,SA AS5H,GA AM6H,GA ASpK,EA AgB,SA AGA,EA AgB,QA AEoK,GA ASjJ,GA AuBsB,QA AQC,MA AM,wBA AuB,IA AK3wB,OA AOo0B,OA AgBxB,EA ATyF,GA AM,IA AnF,GA AM,EA AkBmF,EA AK,SA ASA,EA AK,+CA A+C,IA AIxS,EA AE,IA AI0G,YAA Y+L,aAAaD,GA A4B,MA AtBrK,EA AmBnI,GA ASA,EA AE,SA AS0S,GA AU3E,EA AI4E,GA AQ,OA AOnD,OA AOoD,UAAUC,WA AW9E,EA AI8E,WA AWF,GA A8B,IA AtB5E,EA AIjC,QAAQ6G,GA AxEvK,EA AwB,gBA AE,GA AGA,EA AwB,gBA AE,GA A6b,IA AI0K,GA Ac,wCA AwC,SA ASC,GA AU3I,GA AU,OA AO sI,GA AUtI,EA AS0I,IA Ae,IA AIE,GA Ac,UAAU,SA ASC,GA AU7I,GA AU,OA AO sI,GA AUtI,EA AS4I,IA Ae,IA AIE,GA Ae,uCA AgH,SA ASC,GA AUC,GA AM,IA AI,GA AGA,GA AMF,IA AgBrG,EA AY,OA AO,IA AIx B,WA AWkxB,GA AY,GA AGnD,EA AY,OA AOA,EA AW0J,GA AW,KA AK,kDA AmD,MA AMrG,GA AKpC,GA AMoC,IA AM,SA ASsG,KA AmB,IA AIxG,IA Aa/D,GA AoBC,GA AuB,CA AC,GA AkB,mBA ARuK,QA AQBL,GA AUC,IA AiB,OA AOI,MA AMJ,GA Ae,CA ACK,YAA Y,gBA AgBC,MA AK,SA ASHh,GA AU,IA AIA,EA Aa,GA AG,KA AK,uCA AuC0G,GA Ae,IA AI,OA AO1G,EA ASB,iBA AMiH,OA AM,WA AW,OA AON,GA AUD,OA AuB,GA AGzJ,EA AW,OA AO,IA AIpB,SAAQ,SA ASC,EA AQC,GA AQkB,EA AUyJ,IA Ae,SA AS1G,GA AUIE,EA AQ,IA AI3sB,WA AW6wB,MA AYjE,MA AY,OA AOF,QA AQC,UAAUkL,MA AK,WA AW,OA AOL,GA AUD,OA AkB,SAA SQ,KAAa,IA AIC,EA AK,CA AC75B,EA AI85B,IA Ae,SA ASC,EA AgBC,EA ASC,GA AQ,IA AIC,EA AQF,EA

SE,QAA6E,GAAR5L,EAAY,IAAE4L,EAAQnD,GAAUzI,EAAY,IAAK,EAAE+E,EAAW4G,GAAWxK,EAAuB,CAAC,IAAI0K,EAaiBC,GAAQC,cAAcl5B,OAAOi5B,GAAQC,cAAcvpB,SAAQ,SAASwpB,GAAGF,GAAQG,uBAAuBD,GAAE,aAAiBH,GAAiB3B,YAA8G,SAASgC,EAA0BC,GAAQV,EAAGBU,EAaiB,SAAEA,EAae,QAAG,SAASC,EAAuBC,GAAU,OAAOpB,KAAmBG,MAAK,SAASnJ,GAAQ,OAAO3D,YAAygO,YAAyRk,EAAOsJ,MAAQH,KAAKiB,GAAS,SAASE,GAAQ5H,EAAL,0CAA0C4H,GAAQhK,GAAMgK,MAAomB,GAAP+BpL,GAAwB8I,KAA+8BjK,EAAwB,gBAAG,IAAgE,OAahDA,EAAwB,gBAAEuL,EAAKE,GAAGC,MAAM7T,GAAGe,OAA7D+M,EAAL,sDAAsD/M,IAAU,EAAoD,OAAxyB6M,GAAsD,mBAAnCnG,YAAyko,sBAAoC7B,GA AUG,KAAkBD,GAAUC,KAAgC,mBAARI,MAAsYkB,EAuBF,GAAYhB,MAAMJ,GAae,CAACK,YAAy,gBAAgBC,MAAK,SAAShH,GAAqE,OAahD9F,YAAyko,qBAaqBpI,EAASmH,GAAoBH,KAAKc,GAA0B,SAASK,GAAuG,OAA/F5H,EAAL,kCAAKC4H,GAAQ5H,EAAL,6CAAoDyH,EAuBF,UAAkTb,MAAMtL,GAA0B,GAA3hF4K,GAAUG,MAAiBA,GAAepJ,EAWoJ,KAAy+E,IAAI2B,GAAW,CAACC,MAAM,WAAW,KAAK,aAAaC,MAAM,SAASC,EAAGC,GAAIC,YAAW,WAAWC,GAAMCH,EAAGC,KAAK,KAAK,SAASG,KAAiBIB,GAAQtC,cAAc,SAASD,GAAqB0D,GAAW,KAAMA,EAUp6B,OAAO,GAAE,CAAC,IAAI3B,EAAS8C,EAU3D,QAAQ,GAAoB,mBAAVa,EAAV,CAA0D,IAAI/E,EAAK+E,EAAS/E,KAAsB,iBAAPA,OAAmCnG,IAAfKL,EAAS+C,IAAiBzE,GAAUn2B,IAAI8yB,EAAdqD,GAA2BA,GAAUn2B,IAAI8yB,EAAdqD,CAAoB0B,EAAS+C,KAAW9H,OAAoBnG,IAAfKL,EAAS+C,IAAgB,KAAK/C,EAAS+C,UAAxN/C,EAASnK,IAAsN,IAAIImN,GAAAY,CAACC,MAAM,GAAGC,OAAO,GAAGC,MAAM,GAAGC,MAAM,GAAGC,IAAI,GAAGC,MAAM,GAAGC,MAAM,EAaec,QAAQ,GAAGC,MAAM,EAaec,OAAO,GAAGC,OAAO,EAaec,YAAy,EAaec,OAAO,GAAGC,OAAO,EAaec,OAAO,GAAGC,QAAQ,IAAIC,MAAM,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,GAAGC,QAAQ,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,IAAIC,SAAS,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,GAAGC,OAAO,GAAGC,MAAM,IAAIC,MAAM,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,UAAU,GAAGC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,MAAM,IAAIC,MAAM,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,QAAQ,GAAGC,KAAK,IAAIC,OAAO,IAAIC,MAAM,IAAIC,OAAO,GAAGC,UAAU,GAAGC,QAAQ,IAAIC,QAAQ,EAaec,SAAS,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QA AQ,IAAIC,SAAS,IAAIC,OAAO,GAAGC,UAAU,GAAGC,aAAa,GAAGC,MAAM,GAAGC,WAAW,IAAIC,aAAa,IAAIC,WAAW,GAAGC,QAAQ,GAAGC,aAAa,EAaec,WAAW,GAAGC,SAAS,GAAGC,YAAy,GAAGC,UAAU,IAAIC,aAAa,GAAGC,WAAW,EAaec,aAAa,GAAGC,YAAy,GAAGC,SAAS,GAAGC,UAAU,GAAGC,UAAU,IAAIC,aAAa,GAAGC,YAAy,GAAGC,SAAS,EAaec,aAAa,GAAGC,SAAS,GAAGC,gBAAgB,GAAGC,gBAAgB,IAAIC,cAAc,EAaec,UAAU,GAAGC,QAAQ,GAAGC,SAAS,GAAGC,aAAa,IAAIC,OAAO,IAAIC,OAAO,GAAGC,OAAO,GAAGC,QAAQ,IAAIC,UAAU,IAAIC,OAAO,GAAGC,UAAU,GAAGC,UAAU,GAAGC,gBAAgB,GAAGC,WAAW,GAAGC,SAAS,KAAK,SAASC,GAAuBC,EAAKC,GAAO,GAAGD,GAAM,GAAGA,EA AK3V,IAAmBtsB,SAAa,EAALiiC,GAAWC,EAAM,EAAE,OAAO,GAAG,GAAU,GAAPA,EAAS,OAAO,EAAKA,GAAO,aAAWA,EAAMC,EAAAA,GAAS,IAAIC,EAAsBC,QAAQC,KAAK3V,IAAoB4V,IAAgC,GAAOC,EA AgB,EA AE,GAAGJ,GAAuBH,GAAqBI,QAAQI,gBAAgB9V,IAAoB4V,IAAgC,EA AEH,EAAsB,IAAkBA,IAA+BI,EAAGB,IAAtBN,GAakC,GAAE,OAAO,EAAG,IAAI5S,EAAL+S,QAAQK,OAAO/V,IAAoBsV,GAAM,EAEC,GAAO,GAAG5S,GAak,EA AE,OAAOA,EAALiK,EAAGB,KAAK,+CAA+CIT,EA4D,SAASqT,GAAWC,GA Aa,GAAGtU,EAuB,KAAK,qFAAQf,IAAI5U,EAAY,KAAK,kDAakDjW,IAAoBiW,EAAY,IAAI,GAAG,EA AE,IAAIC,EA AQ5J,GAAQ6J,SAASF,GAAaC,EA AQE,OAAOC,YAAy/J,GAAQgK,eAAeJ,GAAS5J,GAAQiK,eAA ersB,OAAOoiB,GAAQiK,eAAerS,QAAQgS,EA AQE,QAAQ,GAAGF,EA AQE,OAAOF,aAAQzW,EA AU,SAAS+W,GAAaP,GAAa,GAAGtU,EAuB,KAAK,uFAAuF,IAAI5U,EAAY,KAAK,oDAAGe3J,GAAQ6J,SAASF,GAAqBG,OAAOIX,YAAy,CAACuX,IAAM,WAAW,SAASC,GAACt,GAAa,GAAGtU,EAuB,KAAK,wFAAwF,IAAI sU,EAAY,KAAK,qDAAqD,IAAIC,EA AQ5J,GAAQ6J,SAASF,GAAa,GAAGC,EA AQ,CAACIW,IAAoBiW,EAAY,IAAI,GAAG,EA AE,IAAIG,EA OF,EA AQE,OAAO9J,GAAQqK,mBAAmBP,IAArsC5V,EAAB+uBAAE6U,GAA6qC,IAA0xMuB,GAAtxMtK,GAAQ,CAACC,cAAc,GAAGgK,eAAe,GAAGM,oBAAoB,WAAiC,IAAtB,IA A8BrhC,EA AE,EA AE,EA Ad,IAAkCA,EAAG82B,GAAQwK,wBAAyB9M,YAAy,WAA+B,IAApB,IAAI+M,E

AAGC,GAAQ,KAAaxhC,EAAE,EAAEA,EAAE,KAAQA,EAAE0qB,IAAoB6W,EAAG,EAAEvhC,GAAG,EAAE wqB,IAAoB+W,EAAG,IAAI,GAAGA,EAAG,IAAIE,EAAQF,EAAG,IAAI/W,IAAoBiX,GAAS,GAAGA,EAAQ,I AAIc,EAAUF,GAAQ,KAAK,IAAQxhC,EAAE,EAAEA,EAAE,MAAMA,EAAE0qB,IAAoBgX,EAAU,EAAE1h C,GAAG,EAAEkGc,QAAQyB,MAAMjX,IAAoB6W,EAAG,KAAK,EAAEG,GAAWxB,QAAQyB,MAAMjX,IA AoB6W,EAAG,IAAI,EAAEA,GAAIK,GAAyBL,GAAI5V,EAA5B,GAAGkW,GAA4CN,IAAKO,WAAW,aAAan B,SAAS,GAAGoB,mBAAmB,GAAGC,gBAAGb,aAAaC,gBAAGb,WAAW,KAAMnL,GAAQiL,mBAAmBlkC,O AAO,GAAGi5B,GAAQiL,mBAAmBG,KAA3BpL,GAAsC3K,GAAwBgW,MAAGBC,MAA4BC,+BAA+B,SAAS d,EAAGe,GAAUpC,QAAQyB,MAAMjX,IAAoB6W,EAAG,IAAI,EAAE,GAAGrB,QAAQyB,MAAMjX,IAAoB6 W,EAAG,IAAI,EAAE,GAAGzK,GAAQmL,kBAAkB/B,QAAQyB,MAAMjX,IAAoB6W,EAAG,GAAG,EAAEe, GAAUpC,QAAQyB,MAAMjX,IAAoB6W,EAAG,GAAG,EAAE,GAAG1B,GAAuB0B,EAAG,EAAE,YAAyK,G AAyB,EAAE,EAAE,IAAIW,WAAW,SAASD,GAAU,IAAI,EAAGY,KAAMbZ,IAAIzK,GAAQuL,+BAA+Bd,E AAGe,GAAanW,GAAwBzC,YAAy,CAACuX,IAAM,WAAyUB,aAAa,WAAW1L,GAAQuL,+BAA+BF,MAAiB, GAAGzY,YAAy,CAACuX,IAAM,gBAAGbWb,oBAAoB,WAAW,IAAI,IAAI31B,KAAKggB,GAAQ6J,UAAcD, EAAQ5J,GAAQ6J,SAAS7zB,KAAe4zB,EAAQE,QAAQ9J,GAAQqK,mBAAmBT,EAAQE,QAAS9J,GAAQ6J,S AAS,GAAG,IAAI,IAAI3gC,EAAE,EAAEA,EAAE82B,GAAQC,cAAc15B,SAASmC,GAAO4gC,EAAO9J,GAAQ C,cAAc/2B,IAAU6gC,YAAqC,IAAZB/J,GAAQC,cAAc,GAAW/2B,EAAE,EAAEA,EAAE82B,GAAQiK,eAAelJc ,SAASmC,EAAE,CAAC,IAAI4gC,EAAqCF,GAARCE,EAAO9J,GAAQiK,eAAe/gC,IAAsB0gC,QAAQ5J,GAAQg K,eAAeJ,GAASE,EAAOC,YAAy/J,GAAQiK,eAAe,IAAID,eAAe,SAASJ,GAAS,GAAIA,EAAJ,CAAmB,GAAG A,EAAQgC,iBAAiB,CAAC,IAAIhB,EAAUIX,IAAoBkW,EAAQgC,iBAAiB,KAAK,GAAGIY,IAAoBkW,EAAQ gC,iBAAiB,KAAK,GAAG,EAAErmB,GAAMq1B,GAAWr1B,GAAMqkB,EAAQgC,kBAAkBhC,EAAQgC,iBAAi B,EAAKhC,EAAQiC,mBAAmBjC,EAAQkC,WAAUvmB,GAAMqkB,EAAQkC,WAAW1C,EAAQkC,UAAU,EA AKIC,EAAQE,SAAOF,EAAQE,OAAOF,QAAQ,QAAMS,mBAAmB,SAASP,GAAQ9J,GAAQ+L,iCAAgC,kBA AkB/L,GAAQ6J,SAASC,EAAOF,QAAQgC,kBAAkB5L,GAAQC,cAAc31B,KAAKw/B,GAAQ9J,GAAQiK,eAA ersB,OAAOoiB,GAAQiK,eAAerS,QAAQkS,GAAQ,GAAG9J,GAAQgK,eAAeF,EAAOF,SAASE,EAAOF,aAAQz W,MAAa4Y,gCAAgC,SAASzS,GAAM5F,IAAoBsY,IAA8C,GAAG,EAAE,IAAI1S,IAAO,QAAQ5F,IAAoBsY,I AA8C,GAAG,IAAIC,sBAAsB,SAAShV,KAAQkJ,uBAAuB,SAAS2J,EAAOoC,GAAMbPc,EAAOqC,UAAU,SA ASrgB,GAAG,IAAIsgB,EAAEtgB,EAAQ,KAAMqe,EAAIc,EAAO,IAAGg,GAA3FtC,EAAOF,UAAQ5J,GAAQ qM,oCAAoCvC,EAAOF,QAAQgC,kBAAoBQ,EAAgB,cAAGA,EAAgB,cAAGf,KAAgB,CAAC,IAAIiB,EAAOt M,GAAQ6J,SAASuC,EAAEG,cAAoR,OAAAnQD,EAAQA,EAAOxC,OAAOIX,YAAy9G,EAAEmL,KAAKmV,E AAgB,cAAQzV,QAAQC,MAAM,0CAA0CuT,EAAI,uBAAuBiC,EAAgB,aAAE,4CAAuCPm,GAAQqM,yCAAo ClZ,GAAiB,GAAS,gCAANgX,EAAqCqC,UAAoD,GAAS,gBAANrC,EAAqBsC,GAAY3gB,EAAEmL,WAAW,G AAS,kBAANKT,EAAuBC,GAAcgC,EAAU,aAAQ,GAAS,eAANjC,EAAoBT,GAAW0C,EAAU,aAAQ,GAAS,iB AANjC,EAA5BD,GAAakC,EAAU,aAAQ,GAAS,WAANjC,EAAgBL,EAAO4C,QAAO,EAAQR,GAakBA,EAAk BpC,GAAWA,EAAO6C,aAAY7C,EAAO6C,oBAAoB7C,EAAO6C,iBAAiB,GAAS,UAAANxC,EAAe9iC,EAAI,U AAU+kC,EAAy,SAAE,KAAKA,EAAQ,WAAQ,GAAS,aAANjC,EAAkBT,EAAl,UAAUuT,EAAy,SAAE,KAA KA,EAAQ,WAAQ,GAAS,UAAANjC,EAAeyC,MAAM,UAAUR,EAAy,SAAE,KAAKA,EAAQ,WAAQ,GAAS,SA ANjC,EAA2BL,EAAOF,SAASR,QAAQC,KAAKzV,IAAoBkW,EAAOF,QAAQgC,iBAAiB,IAAI,IAAgB5L,GA AQqK,mBAAmBP,QAAc,GAAS,gBAANK,EAAqB,IAAI0C,GAAKT,EAAc,YAAG,MAAMtgB,GAAG,GAAGA, aAAa0K,GAAW,OAAO,MAAM1K,MAAiB,eAANqe,EAAoBnK,GAAQqK,mBAAmBP,GAASB,mBAANK,EAA wBnK,GAAQiM,sBAAsBngB,EAAEmL,MAA8B,iBAAhBnL,EAAEmL,KAAK6V,OAAyBhD,EAAOIX,YAAy9 G,EAAEmL,MAAW4B,EAAI,kCAAKCsR,GAAKnK,GAAQqM,yCAAoClZ,GAAW2W,EAAOtR,QAAQ,SAAS1 M,GAAG+M,EAAI,0BAA0B/M,EAAEoK,SAAS,IAAIpK,EAAEihB,OAAO,KAAKjhB,EAAEkHb,UAAaY,IAA qBgV,EAAOmD,GAAG,WAAU,SAAShW,GAAM6S,EAAOqC,UAAU,CAACIV,KAAKA,OAAS6S,EAAOmD,G AAG,SAAQ,SAAShW,GAAM6S,EAAOtR,QAAQvB,MAAQ6S,EAAOmD,GAAG,QAAO,SAAShW,QAAS6S,E AAOIX,YAAy,CAACuX,IAAM,OAAO+C,UAAyH,z,EAA4B,qBAAGpB,EAAWQ,WAAaA,EAAW2F,WAAaA, KAAcuR,qBAAQb,WAAW,IAAI2C,EAAcvX,EAAW,6CAA6CoK,GAAQC,cAAc31B,KAAK,IAAIwsB,OAAOq W,KAAiBC,aAAa,WAAuI,OAA3F,GAA9BpN,GAAQC,cAAc15B,SAAWi5B,GAAQwK,uBAAuBxK,GAAQG,u BAAuBH,GAAQC,cAAc,KAAOD,GAAQC,cAAc15B,OAAO,EAASi5B,GAAQC,cAAcmL,MAAKB,MAAMiC,a

AAa, SAASC, GAAqC, IAA9B, IAAIt3B, EAAEyib, YAA Y8U, MAAMD, EAAY7U, YAA Y8U, MAAMv3B, OAAO, S
AASw3B, GAAoBC, EAASC, GAAUC, GAA6BF, EAASC, GAAU9S, GAAa6S, GAA4D, SAASG, KAAMB, OAAO1U
, EAA0D, SAAS2U, GAAiBpS, EAAI2F, GAAK, OAAOzE, GAAUn2B, IAAIi1B, EAAdkC, CAAMByE, GAAiD, SAAS
0M, GAAejiB, EAAUqK, EAAS6X, EAAKzU, GAAM7C, GAAM, qBAAqBgE, EAAa5O, GAAW, SAAS, CAACqK, E
AASuE, EAAavE, GAAU, mBAAmB6X, EAAKzU, EAAKmB, EAAanB, GAAM, qBAAqB, SAAS0U, GAAaC, EAAK
C, GAAqBC, MAAMF, EAAKC, GAA0Y, SAASE, GAASpWB, GAAyD, OAAID0V, IAAoB2a, MAaQB, GAAGrWB, E
AAaA, EAAM, SAASswB, GAAQhV, EAAK8H, GAAK, GAAG/L, EAAuB, OAAOkZ, GAAoC, EAAE, EAAEjV, EAA
K8H, GAAK, SAASoN, GAAiCC, EAAeC, GAAc, GAAGD, GAAgBC, EAAc9b, YAA Y, CAACuX, IAAM, qCAAqC, G
AAG9U, EAAwBzC, YAA Y, CAAC2Z, aAAekC, EAAetE, IAAM, 2BAA2B, CAAC, IAAIP, EAAQ5J, GAAQ6J, SAAS
4E, GAAoB3E, EAAOF, GAASA, EAAQE, OAAO, IAAIA, EAAQ, OAAOA, EAAOIX, YAA Y, CAACuX, IAAM, uBA
AuB, OAAO, EAAE, SAASwE, KAASIY, KAAQ, SAASmY, GAA0BC, EAAKC, EAAOC, GAAQ, IAAItpC, EAAKupC
, GAAiBF, EAAOC, GAAQ, OAAOpO, GAAWkO, GAAMrU, MAAM, KAAK/0B, GAAM, SAASwpC, GAakDC, EAA
eC, IAA Y, SAASC, GAAuBpG, EAAKqG, EAAIC, GAAS, GAAGtG, GAAM, GAAGA, EAAK3V, IAAmBtsB, SAAa, E
AALiiC, EAAU, OAAO, GAAG, GAAIpU, EAAgO, CAAC, GAAGwU, QAAQC, KAAK3V, IAAoBsV, GAAM, IAAIq
G, EAAK, OAAO, EAAE, IAAIE, EAAK9W, YAA Y8U, MAAUic, EAAKD, EAAKD, EAAK3V, IAA7EIg, QAAQqG, S
AAS/b, IAAoB4V, IAAgC, EAAEN, KAAc, CAawB, IAAvBuG, EAAK9W, YAA Y8U, OAAciC, EAAyF, OAA1EpG, Q
AAQqG, SAAS/b, IAAoB4V, IAAgC, EAAE, IAAU, GAAsF, GAAa, GAAvFF, QAAQqG, SAAS/b, IAAoB4V, IAAgC,
EAAE, GAAMB, MAaQD, GAA/CkD, KAAKdP, QAAQC, KAAK3V, IAAoBsV, GAAM, IAAIqG, EAAK, OAAO, E
AAWjG, QAAQqG, SAAS/b, IAAoB4V, IAAgC, EAAEN, GAAM, OAAO, EAAh1B, IAAI3S, EAAI+S, QAAQsG, KA
AKhc, IAAoBsV, GAAM, EAAEqG, EAAIC, GAAS, GAAS, cAANjZ, EAAkB, OAAO, GAAG, GAAS, cAANA, EAAK
B, OAAO, EAAE, GAAS, OAANA, EAAW, OAAO, EAAE, KAAK, 6CAA6CA, EAA+oB, SAASsZ, GAAuBC, EAAK1
c, EAAI2c, GAAKpc, IAAmBqc, WAAWF, EAAK1c, EAAIA, EAAI2c, GAAK, SAASE, KAAgC, OAAgjb, EAA2Bkb,
EAAcC, OAAOlpC, OAAcmpC, UAA+B, oBAAE, SAAS3B, GAAoCntB, EAAM+uB, GAAGk, IAA1J, IAAIC, EAAYt
V, UAAU/zB, OAAO, EAAMszB, EAAME, KAAgB8V, EAAsBD, EAAgB3qC, EAAKu0B, GAAiC, EAAtBqW, GAA6
BxqC, EAAEJ, GAAM, EAAUyD, EAAE, EAAEA, EAAEknC, EAAYlnC, IAAI, CAAC, IAAIk4B, EAAItG, UAAU, EA
AE5xB, GAAG4qB, IAAoBjuB, EAAEqD, GAAGk4B, EAAI, IAAI/K, EAAIia, GAA0ClvB, EAAMivB, EAAsB5qC, E
AAK0qC, GAA0B, OAApBvV, GAAaP, GAACH, EAA91GnC, EAA4B, oBAAEsZ, GAAqEtZ, EAAyB, iBAAE0Z, GA
AmF1Z, EAAyB, iBAAE2Z, GAA0VvD, GAARbxV, EAAyC, WAAW, IAAI9e, EAAEKf, QAAgB, SAAl, OAA Y, IAAAL
If, EAAE, GAAOA, EAAE, GAAG, KAAaqf, EAA4C, WAAW, OAAoD, YAA Y8U, MAAMrZ, EAAsC, +BAA4B, oB
AAVqc, QAA2CA, QAAiC, WAAW, OAAO9X, YAA Y8U, OAA+8E, IAAIid, GAA+C, GAAOC, GAAsB, GAAG, SA
ASzB, GAAiBF, EAAO1S, GAAoC, IAAIZ, EAAW, IAA9CiV, GAAsB1pC, OAAO, EAASq1B, IAAM, EAAQZ, EAAG
, H, IAAmBqb, MA AU, CAAC, IAAI4B, EAAOIV, EAAG, IAAOkV, GAAY, EAAJtU, GAAMA, IAAmqU, GAAsBnmC
, KAAKomC, EAAO5c, IAAoBsI, KAAO, GAAG1I, IAAoB0I, MAaQA, EAAI, OAAOqU, GAAsB, SAASE, GAAsCvv
B, EAAMgvB, EAA Y3qC, GAAM+qC, GAA+CzpC, OAAOqpC, EAA0B, IAAAd, IAAIvqC, EAAEJ, GAAM, EAAUyD,
EAAE, EAAEA, EAAEknC, EAAYlnC, IAAKsnC, GAA+CtnC, GAAG4qB, IAAoBjuB, EAAEqD, GAAoG, OAAhFkY
, EAAM, EAAqDuf, IAA Yvf, EAAM, GAA9CwvB, GAAqBxvB, IAAwCoZ, MAAM, KAAKgW, IAAgD, SAASK, KA
A4B, OAAOpd, IAAmB1sB, OAAO, SAAS+pC, GAA0B3/B, GAAM, IAAqG, OAAjGmiB, EAAWyd, KAAK5/B, EAA
KxJ, EAAOs1B, WAAW, QAAQ, IAAI1J, GAA2BD, EAAW3rB, QAAe, EAAE, MAAMmkB, KAAK, SAASK1B, GAA
wBC, GAAe, IAAIC, EAAQL, KAA4B, GAAGI, GAAeC, EAAS, OAAO, EAAM, IAAIC, EAAY, WAAW, GAAGF, EA
AcE, EAAa, OAAO, EAAM, IAAI, IAAIC, EAAQ, EAAEA, GAAS, EAAEA, GAAS, EAAE, CAAC, IAAIC, EAAKBH, G
AAS, EAAE, GAAGE, GAA6N, GAAPNC, EAAKBvgC, KAAKwgC, IAAID, EAAKBj, EAAC, WAAsHH, GAA/FhgC,
KAAKwgC, IAAIH, EAAYjV, GAAQprB, KAAKC, IAAIkgC, EAAcI, GAAMB, SAA2E, OAAO, EAAM, OAAO, EAA
M, IAAIE, GAAS, CAACC, eAAe, EAAEC, wBAawB, WAAW, IAAI, IAAIvoC, EAAEqoC, GAASG, cAAc3qC, OAAO
, EAAEmC, GAAG, IAAIA, EAAGqoC, GAASI, eAAezC, GAAGqoC, GAASG, cAAc, GAAGH, GAASK, cAAc, IAAI
C, 6BAA6B, WAAeN, GAASO, iCAAkFP, GAASO, gCAA+B, IAAOF, cAAc, GAAGG, UAAU, SAASC, EAAeC, EAA
WC, GAAU, SAASC, EAAuBC, EAAKC, GAAM, GAAGD, EAAKrrC, QAAQsrC, EAAKtrC, OAAO, OAAO, EAAM, I
AAI, IAAImC, KAAKkpC, EAAM, GAAGA, EAAKlpC, IAAImpC, EAAKnpC, GAAG, OAAO, EAAM, OAAO, EAAK,
IAAI, IAAIA, KAAKqoC, GAASK, cAAc, CAAC, IAAIU, EAAKf, GAASK, cAAc1oC, GAAG, GAAGopC, EAAKN, GB

AAgBA,GAAGBG,EAABG,EAACKJ,SAASA,GAAW,OAAQX,GAASK,cAAActnC,KAAK,CAAC0nC,eAAeA,EA
AeC,WAAWA,EAAWC,SAASA,IAAWX,GAASK,cAAcW,MAAK,SAASvqC,EAAEwqC,GAAG,OAAOxqC,EA
AEiqC,WAAWO,EAAEP,eAAcQ,oBAAoB,SAAST,GAAGB,IAAI,IAAI9oC,EAAE,EAAEA,EAAEqoC,GAASK,c
AAc7qC,SAASmC,EAAMqoC,GAASK,cAAc1oC,GAAG8oC,gBAAGBA,IAAgBT,GAASK,cAAch0B,OAAO1U,
EAAE,KAAKA,IAAKwpC,+BAA+B,WAAW,OAAOnB,GAASC,gBAAGBD,GAASoB,oBAAoBC,qBAAqBC,iB
AAiB,WAAW,GAAtB,GAASmB,iCAAYC,IAAI,IAAIxpC,EAAE,EAAEA,EAAEqoC,GAASK,cAAc7qC,SAAS
mC,EAAE,CAAC,IAAIopC,EAAKf,GAASK,cAAc1oC,GAAGqoC,GAASK,cAAch0B,OAAO1U,EAAE,KAAKA
,EAAEopC,EAAKN,eAAexX,MAAM,KAAK8X,EAACKJ,YAAYR,cAAc,GAAGoB,0BAA0B,SAAShG,EAAOiG,
GAAiB,IAAI,IAAI7pC,EAAE,EAAEA,EAAEqoC,GAASG,cAAc3qC,SAASmC,EAAMqoC,GAASG,cAAcxoC,G
AAG4jC,QAAQA,GAAUiG,GAAiBA,GAAiBxB,GAASG,cAAcxoC,GAAG6pC,iBAAkBxB,GAASI,eAAezoC,M
AAQyoC,eAAe,SAASzoC,GAAG,IAAI8pC,EAAEzB,GAASG,cAAcxoC,GAAG8pC,EAAEIG,OAAOmG,oBAAo
BD,EAAED,gBAAGBC,EAAEE,kBAAkBF,EAAEG,YAAY5B,GAASG,cAAc9zB,OAAO1U,EAAE,IAAIkqC,wB
AAwB,SAASC,GAAC,IAAIC,EAAe,SAAwBC,KAAShC,GAASC,eAAeD,GAASoB,oBAAoBU,EAAa9B,GAASs
B,mBAAMbQ,EAAaG,YAAYD,GAAOhC,GAASsB,qBAAqBtB,GAASC,gBAAGB,GAAG6B,EAAaI,aAAcJ,EA
AaH,kBAAkBI,EAAeD,EAAavG,OAAO4G,iBAAiBL,EAAaN,gBAAGBO,EAAeD,EAAaF,YAAY5B,GAASG,cA
AcpcC,KAAK+oC,GAAC9B,GAASM,oCAAoC,IAAI,IAAI3oC,EAAE,EAAEA,EAAEqoC,GAASG,cAAc3qC,SA
ASmC,EAAMqoC,GAASG,cAAcxoC,GAAG4jC,QAAQuG,EAAavG,QAAQyE,GAASG,cAAcxoC,GAAG6pC,iB
AAiBM,EAAaN,iBAAiBxB,GAASI,eAAezoC,MAASyqC,+BAA+B,SAASpH,EAAaH,EAAiBC,EAAyC,EAAU
C,GAAU,IAAIItG,EAASIT,KAAgByZ,EAAQha,GAAW,IAAIItG,IAAoBsgB,GAAS,GAAGH,EAAyngB,IAAoBsg
B,EAAQ,GAAG,GAAGF,EAAUpGB,IAAoBsgB,EAAQ,GAAG,GAAGD,EAASE,GAA4B,EAAE1H,EAAa,UAA
UqH,EAAiBE,EAAUE,GAASpZ,GAAa6S,IAAWyG,gCAAGC,SAAS3H,GAAC,OAAOA,GAAC,KAAK,EAAE,O
AAO,EAAE,KAAK,EAAE,OAAOvM,GAAQqM,oCAAoC,QAAQ,OAAOE,IAAe4H,qBAAqB,SAASrH,GAAQ,O
AAIA,EAAMBA,GAAQ9X,OAAa,UAAa8X,GAAQsH,OAAa,UAAiBtH,GAAQA,EAAOuH,SAASvH,EAAOuH,
SAAS,GAAaH,IAA0HC,kBAAkB,WAAW,OAAOthB,SAASshB,mBAAMbthB,SAASuhB,0BAA0B,SAASC,GA
AgBC,GAAU,IAAIItC,EAAOk1B,EAAGBwY,GAAU,EAAMC,EAAQhK,GAAQ3jC,GAA8C,OAAtCgzB,EAAa0
a,EAASC,EAAQ3tC,GAAe2tC,EAAQ,SAASC,GAAyDpI,EAAaQI,EAAaC,EAAMC,GAAQ,IAAIrH,EAASIT,KA
AgByZ,EAAQha,GAAW,IAAQ+a,EAAGB,EAAKH,IAACG,EAAGBP,GAAGBI,IAAclhB,IAAoBsgB,GAAS,GAA
Ge,EAAGBrhB,IAAoBsgB,EAAQ,GAAG,GAAGa,EAAMnhB,IAAoBsgB,EAAQ,GAAG,GAAGc,EAAOb,GAA4
B,EAAE1H,EAAa,UAAU,EAAEWI,EAAGBf,GAASpZ,GAAa6S,GAAU,SAASuH,GAASdzI,EAAaQI,EAAaC,EA
AMC,GAAgEH,GAAyDpI,EAAjHqI,EAAaA,EAAana,EAAama,GAAC,GAASFC,EAAMC,GAAQ,SAASG,GAAU
BP,GAAS,OAAOA,EAAQ,EAAEja,EAAaia,GAASA,EAAQ,IAAIQ,GAAMb,CAAC,EAAoB,oBAAXliB,SAAuB
A,SAAS,EAakB,oBAATgC,OAAqBA,OAAO,GAAG,SAASmgB,GAAGBrI,GAakK,OAA1JA,EAAOmI,GAAuB
nI,GAAuBoI,GAAMbpl,KAA4B,oBAAX9Z,SAAuBA,SAASoiB,cAAcI,QAAQ3Z,GAA6B,SAASkiB,GAASbvI,
GAAQ,OAAOqI,GAAGBrI,GAAQ,SAASwI,GAAMdxI,EAAO+H,EAAMC,GAAQ,IAAIS,EAAOF,GAASbvI,GA
AQ,IAAIyI,EAAO,OAAO,EAA0I,GAARIA,EAAOC,kBAAiB9hB,IAAoB6hB,EAAOC,iBAAiB,GAAGX,EAAMn
hB,IAAoB6hB,EAAOC,gBAAGB,GAAG,GAAGV,IAAUS,EAAOE,iBAakBF,EAAOG,4BAASd,OAAGH,EAAO
C,iBAAMFR,GAAjDthB,IAAoB6hB,EAAOC,gBAAGB,GAAG,GAASe1I,EAAO+H,EAAMC,GAAe,IAAc,EAAh
oBS,EAAOE,kBAAGBF,EAAOA,EAAOE,iBAAGB,IAAIE,GAAMb,EAAM,GAAGJ,EAAOK,aAAaL,EAAOK,Y
AAYC,MAAM,CAAC,IAAIC,EAAaP,EAAOK,YAAYC,MAAME,aAAa,MAAMJ,EAAqC,IAAIBG,EAAa,IAA0
B,IAAIBA,EAAa,IAAQA,EAAa,KAAKP,EAAOV,OAAOiB,EAAa,KAAKP,EAAOT,OAA4U,OAARUS,EAAOV,
MAAMA,EAAMU,EAAOT,OAAOA,EAAUa,GAAoBJ,EAAOK,YAAYC,MAAMG,SAAS,EAAE,EAAEnB,EA
MC,GAAiO,EAAE,SAASmB,GAAGDnJ,EAAO+H,EAAMC,GAAQ,OAAGzf,EAA8BkZ,GAAoC,EAAE,EAAEz
B,EAAO+H,EAAMC,GAAeQ,GAAMdxI,EAAO+H,EAAMC,GAAQ,SAASoB,GAAoCpJ,EAAO+H,EAAMC,GA
AiD,OAA9BO,GAASbvI,GAA0BwI,GAAMdxI,EAAO+H,EAAMC,GAAoBmB,GAAGDnJ,EAAO+H,EAAMC,G
AAS,SAASqB,GAASChH,IAAY,SAASiH,GAA4BC,EAASC,IAAO,SAASC,GAASCC,GAAK,IAAIC,EAAID,EA
AIE,aAAa,0BAA0B,GAAGD,EAAoX,OAAWD,EAAyB,oBAAE,SAASp1B,EAAMu1B,GAASF,EAA8B,yBAAE
r1B,EAAMu1B,IAAUH,EAAyB,oBAAE,SAASnyB,EAAKuyB,EAAM3N,EAAM4N,GAAWJ,EAA8B,yBAAEpy
B,EAAKuyB,EAAM3N,EAAM4N,IAAYL,EAA2B,sBAAE,SAASnyB,EAAK4kB,EAAM7wB,EAAKgI,EAAQy2

B,GAAWJ,EAAGC,2BAAEpyB,EA AK4kB,EAAM7wB,EA AKgI,EA AQy2B,IAAmB,EAAG,SAASC,GAAuCN,G
AAK,IAAIC,EA AID,EA AIE,aAAa,2BAA2B,GAAGD,EA AqS,OAAhSD,EA AuB,kBA AE,WAAW,OAAOC,EA
0B,wBA AKD,EA AuB,kBA AE,SAASO,GA AKN,EA A0B,qBA AEM,IAAMP,EA AqB,gBA AE,SAASO,GA AKN,E
AAwB,mBA AEM,IAAMP,EA AmB,cAAE,SAASO,GA AK,OAAON,EA AsB,iBA AEM,IAAa,EAAG,SAASC,GA
AkCR,GA AK,IAAIC,EA AID,EA AIE,aAAa,sBA AsB,GAAGD,EA A0E,OAArED,EA AiB,YAAE,SAASS,EA AEC,
GAAMT,EA AsB,iBA AEQ,EA AEC,IAAc,EAAG,SAASC,GA AGCX,GA AK,SAASA,EA AIY,eAAeZ,EA AIE,aAA
a,qBA AqB,IAAIW,GAAG,CAACC,QAAQ,EA AEC,QAAQ,GAAGC,SAAS,GAAGC,aAAa,GAAGC,cAAc,GAA
GC,SAAS,GAAGC,SAAS,GAAGC,QAAQ,GAAGC,KAAK,GAAGC,SAAS,GAAGC,kBA AkB,GAAGC,gBA Ag
B,GAAGC,aAAa,GAAGC,YAA Y,GAAGC,gBA AgB,EA AEC,YAA Y,SAAqBC,GAAejB,GAAGkB,YAAWIB,GA
AGkB,UAAUD,IAAYE,SAAS,SAASC,GAA4B,IAArB,IAAIpiB,EA AIghB,GAAGC,UAAkBpuC,EA AEuvC,EA
M1xC,OAAOmC,EA AEmtB,EA AIntB,IA AKuvC,EAAMvvC,GAAG,KAAK,OAAOmtB,GA AKqiB,UAAU,SAA
SC,EA AO1P,EAAMrP,EA AO7yB,GA AsB,IAAd,IAAI6xC,EA AO,GA AW1vC,EA AE,EA AEA,EA AE+/B,IAAQ//
B,EA AE,CAAC,IAAI4wB,EA AI/yB,EA AO2sB,IAAoB3sB,EA AS,EA AFmC,GA AK,IAAI,EA AE0vC,GAAQne,E
AAa/G,IAAoBkG,EA AS,EA AF1wB,GA AK,GAAG4wB,EA AI,OAAE3G,EA AU2G,GA AK,OAAO8e,GAAQC,cA
Ac,SAAStD,EA AOuD,GAAwB,IAAI tC,EA AIjB,EA AOwD,WAAW,QAAQD,GAAwB,OAAItC,EA AwBa,GAAG
2B,gBA AgBxC,EA AIsC,GA APc,GAA2EE,gBA AgB,SAASxC,EA AIsC,GAAwB,IAAIG,EA AOvO,GAAQ,GAA
GhX,IAAoBulB,EA AO,GAAG,GAAG5N,KAAgB,IAAI6N,EA AQ,CAACD,OAAOA,EA AOE,WAAWL,EA AuB
M,QAAQN,EA AuBO,aAAaxD,MAAMW,GAAqO,OAA7NA,EA AIjB,SAAOiB,EA AIjB,OAAOK,YAA YsD,GAA
Q7B,GAAGU,SAASKB,GAAQC,GAAqE,oBA AnDJ,EA AuBQ,2BA AyCR,EA AuBQ,4BAA2BjC,GAAGkB,eAAe
L,GAAGBD,GAAQO,mBA AmB,SAASC,GAAwH,OAAzGpC,GAAgqC,eAAerC,GAAGU,SAAS0B,GAAevlB,E
AAOSiB,IAAIX,GAAMwB,GAAGqC,gBA AgBrC,GAAGqC,eAAe7D,QAAc4D,IAAgB5D,KAAQkD,WAAW,SA
ASU,GAAe,OAAOpC,GAAGU,SAAS0B,IAAgBE,cAAc,SAASF,GA AkBpC,GAAgqC,iBA AiBrC,GAAGU,SAA
S0B,KAAepC,GAAGqC,eAAe,MAA0B,iBA AXnI,IAAoBA,GAASuB,0BAA0BuE,GAAGU,SAAS0B,GAAe5D,
MAAMN,QAAW8B,GAAGU,SAAS0B,IAAgBpC,GAAGU,SAAS0B,GAAe5D,MAAMN,SAAO8B,GAAGU,SA
AS0B,GAAe5D,MAAMN,OAAOK,iBA AYziB,GAAU5N,GAAM8xB,GAAGU,SAAS0B,GAAeR,QAAQ5B,GAA
GU,SAAS0B,GAAe,MAAMF,eAAe,SAASL,GAA+C,GAAICA,IAAQA,EA AQ7B,GAAGqC,iBA AkBR,EA AQU,
mBAAX,CAAqCV,EA AQU,oBA AmB,EA AK,IAAI/D,EA AMqD,EA AQrD,MAAMU,GAAsCV,GAAOiB,GAAu
CjB,GAAOmB,GA AkCnB,GAAOA,EA AMgE,sBA AsBhE,EA AMa,aAAa,4BAA4BS,GAAGCtB,IAAgBA,EA AMi
E,0BAA0B,IAAQpjC,SAAQ,SAAS+/B,GAAQA,EA AI7e,QAAQ.gBA AgB,GAAG6e,EA AI7e,QAAQ,SAAS,GAA
Gie,EA AMa,aAAaD,QAA SsD,qBA AqB,SAASC,GAA0O,IAAJ0,IAAI11B,EA AE+yB,GAAGG,SAASwC,GAAa
C,EA AO5C,GAAGa,aAAa8B,GAAS,CAACpC,SAAS,GAAGsC,iBA AiB,EA AEC,oBA AoB,EA AEC,2BAA2B,G
AAOC,EA AOJ,EA ORc,SAAa0C,EA AYzE,GAAM0E,oBA AOj2B,EA AE,OAAepb,EA AE,EA AEA,EA AEoxC,I
AAcpxC,EA AE,CAAC,IAAI4yB,EA AE+Z,GAAM2E,iBA AiB12B,EA AEpb,GAAOotC,EA AKxa,EA Ewa,KAAK
2D,EA AOC,iBA AiBppC,KAAKC,IAAIkpC,EA AOC,iBA AiB5D,EA AKvvC,OAAO,GAAsB,KAAhBuvC,EA AKI
pC,OAAO,KAA SkpC,EA KA,EA AKlpC,MAAM,EA AEkpC,EA Kxe,YAA Y,OAAM,IAAI2iB,EA AI5E,GAAM
6E,mBA AmBp2B,EA AEgyB,GAAM,GAAGmE,EA AI,CAAC,IAAI/zC,EA AG2wC,GAAGmB,SAASnB,GAAGO,
UAAUyC,EA AO/D,GAAM,CAACxa,EA AE3qB,KAAKzK,GA AI2wC,GAAGO,SAASlxC,GA AI+zC,EA AI,IAAI,
IAAIjwC,EA AE,EA AEA,EA AEsxB,EA AE3qB,OAAO3G,EA AE,CAAC,IAAIysC,EA AEX,EA AK,IAAI9rC,EA
E,IAAIiwC,EA AI5E,GAAM6E,mBA AmBp2B,EA AE2yB,GAAGvwC,EA AG2wC,GAAGmB,SAASnB,GAAGO,
UAAUP,GAAGO,SAASlxC,GA AI+zC,OAAaE,GAAqC,CAAC,UAAU,YAA Y,oBA AoB,SAASC,GAAoC9N,EA
AOqM,GAAY,IAAIvzC,EA AEuzC,GAAY,EAAM0B,EA AgBnnB,IAAoB9tB,KAAek1C,EA AkB,CAAC14B,QA
AU sR,IAAoB9tB,KAAU8gB,QAAUgN,IAAoB9tB,KAAUm1C,UAA YrmB,IAAoB9tB,KAAUo1C,YAA ActnB,IAA
oB9tB,KAAWq1C,qBA AuBvnB,IAAoB9tB,KAAWs1C,wBAA0BxnB,IAAoB9tB,KAAWi1C,gBA AkBF,GAAqC
E,GA AiBM,+BA AiCznB,IAAoB9tB,KAAWyzC,aAAa3lB,IAAoB9tB,KAAWw1C,aAAa1nB,IAAoB9tB,KAAW0
zC,0BAA0B5lB,IAAoB9tB,MAAWy1C,oBA AoB3nB,IAAoB9tB,MAAW01C,yBA AyB5nB,IAAoB9tB,MAAW2
1C,6BAA6B7nB,IAAoB9tB,OAAgB2vC,EA AOF,GAAsBvI,GAAQ,OAAIyI,EA AoBuF,EA AkBO,oBAA4B,EA
oBhE,GAAGwB,cAAActD,EA AOuF,GAA/F,EA AuI,SAASU,GAAiCC,EA AGC,GA AI,OAAOd,GAAoCa,EA AGC,
GA AI,IAA4sQ7F,GAAxsQ8F,GAAS,CAACC,SAAS,GAAGrE,QAAQ,CAAC,KAAK,GAAG,IAAIsE,UAAU,SA

ASC,EAAOC,GAAM,IAAIp0C,EAAOg0C,GAASpE,QAAQuE,GAakB,IAAPC,GAAiB,KAAPA,IAAqB,IAATD,
EAAWz0C,EAAIwxB,GAAKkC,EAakBpzB,EAAO,IAAIA,EAAOZ,OAAO,GAAOY,EAAO2C,KAAKyxC,IAA
Q/H,aAAQ7gB,EAAU3sB,IAAI,WAAkF,OAAvEm1C,GAAS3H,SAAS,EAAUtgB,IAAoBioB,GAAS3H,QAAQ,G
AAG,IAAegI,OAAO,SAASvgB,GAA+B,OAAIbB,EAAagB,IAAiBwgB,MAAM,SAASC,EAAIC,GAAM,OAAO
D,IAAM,SAASE,GAAUC,GAAI,OAAghB,EAA8BkZ,GAAoC,EAAE,EAAE8N,GAAW,EAAE,SAASC,GAAS
D,EAAGE,EAAWC,EAAyC,EAAOC,GAAW,GAAGmB,EAAuB,OAAOkZ,GAAoC,EAAE,EAAE8N,EAAGE,E
AAWC,EAAyC,EAAOC,GAAW,SAASC,GAAUN,EAAGO,EAAIC,EAAOC,GAAM,GAAGznB,EAAuB,OAAO
kZ,GAAoC,EAAE,EAAE8N,EAAGO,EAAIC,EAAOC,GAAGb,IAAV,IAAIjN,EAAI,EAAU3mC,EAAE,EAAEA,
EAAE2zC,EAAO3zC,IAAI,CAAqF,IAApF,IAAIuyB,EAAI/H,IAAoBkpB,EAAM,EAAf1zC,GAAK,GAAO4wB,
EAAIpG,IAAoBkpB,GAAO,EAAf1zC,EAAI,IAAI,GAAWsB,EAAE,EAAEA,EAAEsvB,EAAItvB,IAAKmxC,G
AASE,UAAUQ,EAAG5oB,IAAmBgI,EAAIjxB,IAAIqIC,GAAK/V,EAAqC,OAAjCpG,IAAoBopB,GAAM,GAA
GjN,EAAW,EAAE,SAASkN,GAAqBC,GAAS,IAAIC,EAAQjd,GAAQiL,mBAAmBG,MAAS4R,GAAQC,IAAU,
SAASC,GAAsBD,EAAQ7b,GAAKpB,GAAQiL,mBAAmB3gC,MAAK,WAAWqyB,GAAUn2B,IAAIy2C,EAAdt
gB,CAAuByE,MAAO,SAASqL,GAAY0Q,GAAC,GAAG9nB,EAAuB,KAAK,sFAAsF,IAAIyU,EAAO9J,GAAQo
N,eAAe,QAAoBja,IAAjB2W,EAAOF,QAAoB,KAAK,kBAakB,IAAIuT,EAAaxT,YAAY,KAAK,kCAakC3J,GA
AQiK,eAAe3/B,KAAkw/B,GAAqC,IAA7B,IAAIc,EAAUF,GAAQ,KAAexhC,EAAE,EAAEA,EAAE,MAAMA,E
AAGwqB,IAAoBkX,EAAy,EAAf1hC,GAAK,GAAG,EAAE,IAAIk0C,EAAUD,EAAarR,UAAUqR,EAAaE,UA
AczT,EAAQ5J,GAAQ6J,SAASsT,EAAaxT,aAAa,CAACG,OAAOA,EAAOgC,UAAUqR,EAAarR,UAAUuR,UA
AUF,EAAaE,UAAUxR,kBAakBsR,EAAarR,kBAakBD,iBAAiBuR,EAAaxT,aAAiB2T,EAAI1T,EAAQgC,kBA
AkB,EAAExC,QAAQyB,MAAMjX,IAAoB0pB,KAAyH,EAAaI,UAAUnU,QAAQyB,MAAMjX,IAAoB0pB,KA
Aa1S,GAAWxB,QAAQyB,MAAMjX,IAAoB0pB,KAAy1T,EAAQgC,kBAakBxC,QAAQyB,MAAMjX,IAAoB0
pB,KAAyH,EAAaE,WAAWjU,QAAQyB,MAAMjX,IAAoB0pB,KAAyF,GAAWH,U,QAAQyB,MAAMjX,IAAo
B0pB,KAAaH,EAAaE,WAAWjU,QAAQyB,MAAMjX,IAAoB0pB,KAAeF,GAAWH,U,QAAQyB,MAAMjX,IAAo
B0pB,KAAgBH,EAAaI,UAAU,IAAkDC,EAAICC,KAA4D,GAAGrU,QAAQyB,MAAMjX,IAAoB0pB,KAAaE,G
AAe1T,EAAOF,QAAQA,EAAQ,IAAI8T,EAAI,CAACvT,IAAM,MAAMwT,cAAGBR,EAAaS,aAAaxc,IAAM+b,
EAAa/b,IAAIwK,iBAAmBuR,EAAaxT,YAAYmC,UAAyqR,EAAarR,UAAUuR,UAAyF,EAAaE,WAAWvT,EA
AO6C,WAAW,WAAW+Q,EAAIG,KAAKpIB,YAAY8U,MAAMzD,EAAOIx,YAAY8qB,EAAIP,EAAaW,eAAk
BhU,EAAO4C,SAAQ5C,EAAO6C,oBAAoB7C,EAAO6C,YAAY,SAASoR,GAAGbP,U,EAAyqU,EAACL,EAAc
vc,GAAK,GAA8B,oBAApBvO,kBAA4H,OAA3FgG,EAAI,uFAA8F,EAAE,IAAI8Q,EAAeE,OAAzD9Q,EAAI,q
DAA4D,GAAG,IAAIiIB,EAAa,GAAe,GAAGzoB,GAA+C,IAAtByoB,EAAa/2C,OAAoB,OAAOk3C,GAAsC,UA
AUtU,EAAyqU,EAACL,EAAcvc,GAA2B,IAAIc,EAAU,EAAMvR,EAAU,EAAMyR,EAAS,EAAS,IAAa,GAA
PA,GAAUX,EAAU3pB,IAAoBsqB,GAAM,GAAGX,GAAW,MAAMvR,EAAUpY,IAAoBsqB,EAAC,GAAG,GA
AGT,EAA2C,IAAIC7pB,IAAoBsqB,EAAC,IAAI,IAAYX,EAAU,QAAQ,IAAIxR,EAA6B,GAAXC,EAAGBD,EA
AmBC,EAAUoS,GAAU,GAAGb,GAAqC/iC,GAARbW8B,GAAWuR,GAA2B,GAAqC,IAAIC,IAAIzR,EAAiBIB,
GAAQ,KAAaxhC,EAAE,EAAEA,EAAE,KAASA,EAAE0qB,KAAqBgY,GAakB,GAAG1c,GAAG,EAAEwqB,I
AAoBiW,GAAa,GAAGiC,EAAiBIY,IAAoBkY,EAAiB,IAAI,GAAGA,EAAiB,IAAIjB,EAAQiB,EAAiB,IAAIY,I
AAoBiX,GAAS,GAAGA,EAAQ,IAAIwS,EAAa,CAACrR,UAAUA,EAAUuR,UAAUA,EAAUxR,kBAakBA,EA
AkB0R,SAASA,EAASK,aAAaD,EAACHU,YAAYiC,EAAiBxK,IAAIA,EAAI0c,aAAaA,GAA8I,OAA7HzoB,GA
AwB8nB,EAAhT,IAAI,cAAcvX,YAAYuqB,EAAaW,IAAmBrR,GAAY0Q,GAAqB,EAAE,SAASgB,KAA0B,G
AAI9oB,EAAJ,CAAKC,IAAIoV,EAAGY,KAAgB,GAAIz,IAA6BrB,QAAQC,KAAKzV,IAAoB6W,EAAG,IAAI,
IAAGG,GAAvDrB,QAAQC,KAAKzV,IAAoB6W,EAAG,GAAG,GAakB,KAAK,aAAY,SAAS2T,KAAwCtpB,G
AA8BD,GAA6BiE,EAAS,4IAA4I,SAASuIB,GAA6B/R,EAAO5X,EAAO4pB,GAAO,IAAIhS,EAAgE,OAAxDzT,
EAAI,oDAA2DwI,GAAYG,MAAM,GAAGnM,GAAWBgW,MAAiBiB,EAAmE,OAA3DzT,EAAI,WAAWyT,EA
AO,qCAA4CjL,GAAY8C,QAAa,IAAI9O,GAAWBkpB,MAAsCjS,EAAuE,OAA/DzT,EAAI,eAAeyT,EAAO,qCA
A4CjL,GAAY8C,QAAmD,GAAIcZQ,IAAoB4Y,EAAO,IAAI,KAAaA,EAA+H,OAAvHzT,EAAI,oCAAoCyT,EA
AO,wEAA+EjL,GAAYG,MAAKE,GAA/C4H,QAAQC,KAAKzV,IAAoB0Y,EAAO,IAAI,GAAWF,OAAxEzT,EA
AI,4BAA4ByT,EAAO,iCAAwCjL,GAAYuB,OAAoS,IAA5C0b,GAOOF,OAA4C,CAAC,IAAI,EAApV,QAAQ
C,KAAKzV,IAAoB0Y,EAAO,GAAG,GAAG,GAaiB,GAAdkS,EAAgB,CAAC,IAAIC,EAAerV,QAAQC,KAAKz

V,IAAoB0Y,EAAO,GAAG,GAawN,OAAIN5X,IAAOhB,IAAoBgB,GAAQ,GAAG+pB,GAAerV,QAAQyB,MAAMjX,IAAoB0Y,EAAO,IAAI,EAAE,GAAOjX,EAakDzC,YAAy,CAACuX,IAAM,gBAAGBmC,OAASA,IAAvE IC,GAACKC,GAAYe,EAAE,IAAIgS,EAAO,OAAOjd,GAAYiB,MAAM6b,KAA8B9oB,GAAuBmX,KAA+C4C,GA AuB9C,EAAO,EAAEkS,EAAanpB,EAAuB,IAAI,IAAI,SAASqpB,GAAcsp,EAAO5X,GAAQ,OAAO2pB,GAA 6B/R,EAAO5X,GAAO,GAAM,SAASiqB,GAASrI,GAAM,GAAGjhB,EAAuB,OAAOkZ,GAAoC,EAAE,EAAE+ H,GAAM,OAaOA,GAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAA8B,OAAOnF,OAakB,KAAK,IAAI,KAA K,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KA AK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI, KAAK,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GA AG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAA K,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,GAAG,KAAK,GAAG,GAAG,GA AG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAA I,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAA K,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK, IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KA AK,GAAG,KAAK,GAAG,OAAO,EAAE,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,EAAE,K AAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KA AK,GAAG,KAAK,GAAG,OAAO,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,EA AE,OAAO,KAAK,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAAG,KAAK,GAAG,K AAK,GAAG,OAAO,WAAW,KAAK,GAAG,KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,KAAK,GAAG,OAAO ,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,KAAK,KAAK,EAAE,OAAO,QAAQ,KAAK,EAAE,OAAO,MAA M,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,O AAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,EAAE, OAAO,IAAI,KAAK,IAAI,OAAO,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,EAAE,OAAO,GAAG,KAAK,EA AE,OAAO,EAAE,KAAK,GAAG,OAAO,EAAE,KAAK,GAAI,MAAsB,iBAAZjB,WAA4BA,UAA+B,qBAAY,EA AgB,OAAb9B,GAAS,KAaW,EAAM/Y,GAAuB2K,GAAQuK,sBAAGC,IAA44fqU,GAAx4fhO,GAAqB,CAAC,K AAKiC,GAAQ2H,GAAGDmG,GAAUE,GAASK,GAAUgC,IAAcjf,GAAC,CAAC5T,EAAIgiB,GA Ae+Q,EAAI7Q, GAAahmC,EAAIwmC,GAAiC3oC,EAAI8oC,GAAO6D,EAAI5D,GAAO0BpkC,EAAIykC,GAAK7C,EAAIgD,G AAuB0P,EAAI/V,GA AuB/R,EAAIsT,GAAoBhmB,EAAIqrB,GA AuBoP,EAAIhP,GAA8BjU,EAAI6U,GAAsCqO ,EAAIhO,GA AwB/nC,EAAIitC,GAAoChtC,EAAIitC,GAAsCzoB,EAAI0oB,GAA4BIW,EAAIsb,GAAiCyD,EAA I7C,GAAUnF,EAAIqF,GAAS4C,EAAIvC,GAAUwC,EAAIje,GAAet7B,EAAI0tB,GAAYY,EAAMb,WAAEkrB, EAAIrc,GAAqB/oC,EAAIkpC,GAAsBik,EAAI+K,GAAGBsB,EAAIX,GAAC1oC,EAAI2oC,IAAmC3gB,IAAjBw B,KAAoCtL,EAA2B,mBAAE,WAAW,OAAO8J,GAAMB9J,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM, KAAKM,aaA6sV4P,IAAvrVxW,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAA M,KAAKM,YAAyC5G,EAAiC,yBAAE,WAAW,OAAgCA,EAAiC,yBAAEA,EAAY,IAAK,GAAGsG,MAAM,K AAKM,YAAmC5G,EAA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KA AKM,YAAiC5G,EAAyB,iBAAE,WAAW,OAAwBA,EAAyB,iBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM ,YAA8B5G,EAAAsB,cAAE,WAAW,OAAqBA,EAAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB 5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAA a,KAAE,WAAW,OAAya,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,W AA W,OAAya,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OA AaA,EAAc,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAya,EAA a,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAya,EAAa,KAAEA, EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAgB,QAAEA,EAAY,I AAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,G AAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG ,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,K AAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,

YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqC
5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,
EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MA
AE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAA
W,OAAsBA,EAAuB,eAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OA
AeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,E
AAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuC5G,EAA+B,uBAAE,WAAW,OAA8BA,EAA+B
,uBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,
EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAA
M,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG
,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAAW,OAAsBA,EAAuB,eAAEA,EAAY,IAAM,IAAGsG,MAAM
,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,Y
AA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5
G,EAAwB,gBAAE,WAAW,OAAuBA,EAAwB,gBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA6B5G,E
AAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsC5G,EAA8B,s
BAAE,WAAW,OAA6BA,EAA8B,sBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAA
E,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAA
W,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAA
gBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EA
AsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,
WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,E
AAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAA
Y,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IA
AGsG,MAAM,KAAKM,YAA4B5G,EAAoB,YAAE,WAAW,OAAmBA,EAAoB,YAAEA,EAAY,IAAM,IAAGsG,
MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KA
AKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,Y
AAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G
,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KA
AE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAA
W,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OA
AkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA
,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,K
AAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAE
A,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY
,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,
IAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGs
G,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,K
AAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YA
AuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EA
Ac,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,
WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,
OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EA
Ae,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAAwB,gBAAE,WAAW,OAAuBA,EAAwB,g
BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,
EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,OAAyBA,EAA0B,kBAAEA,EA
AY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IA
AGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAA

M,KAAKM,YAA2B5G,EAAMb,WAAE,WAAW,OAAkBA,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAaA,KAAE,WAAW,OAAyA,EAaA,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAagB,QAAE,WAAW,OAAeA,EAagB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAmC5G,EAa2B,mBAAE,WAAW,OAA0BA,EAa2B,mBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAaA,KAAE,WAAW,OAAyA,EAaA,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAaA,KAAE,WAAW,OAAyA,EAaA,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAaA,KAAE,WAAW,OAAyA,EAaA,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAMb,WAAE,WAAW,OAAkBA,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAMb,WAAE,WAAW,OAAkBA,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAagB,QAAE,WAAW,OAAOwW,GAAQxW,EAagB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAagBvV,GAAM2O,EAac,MAAE,WAAW,OAAO3O,GAAM2O,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBuT,GAakBna,EAa0B,kBAAE,WAAW,OAAOma,GAakBna,EAa0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB2iB,GAA4BvpB,EAaoC,4BAAE,WAAW,OAAOupB,GAA4BvpB,EAaoC,4BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBuQ,GAacnX,EAAsB,cAAE,WAAW,OAAOmX,GAacnX,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBwQ,GAAyBpX,EAaiC,yBAAE,WAAW,OAAOoX,GAAyBpX,EAaiC,yBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB0R,GAA6CtY,EAaqD,6CAAE,WAAW,OAAOsY,GAA6CtY,EAaqD,6CAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsSiQ,IAAt07W,EAawD,gDAAE,WAAW,OAAuDA,EAawD,gDAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA4D5G,EAaoD,4CAAE,WAAW,OAAO6W,GAA4C7W,EAaoD,4CAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAagByjB,GAAMCrqB,EAa2C,mCAAE,WAAW,OAAOqqB,GAAMCrqB,EAa2C,mCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmG,GAAMC/M,EAa2C,mCAAE,WAAW,OAAO+m,GAAMC/M,EAa2C,mCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmjB,GAAsC/pB,EAa8C,sCAAE,WAAW,OAAO+pB,GAAsC/pB,EAa8C,sCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBwV,GAA0Cpc,EAakD,0CAAE,WAAW,OAAOoc,GAA0Cpc,EAakD,0CAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmZ,GAA4B/f,EAaoC,4BAAE,WAAW,OAAO+f,GAA4B/f,EAaoC,4BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0LgQ,IAArJ5W,EAa6B,qBAAE,WAAW,OAA4BA,EAa6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyC5G,EAaiC,yBAAE,WAAW,OAAO4W,GAAyB5W,EAaiC,yBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAagBP,GAAUrG,EAakB,UAAE,WAAW,OAAOqG,GAAUrG,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBF,GAAa1G,EAaqB,aAAE,WAAW,OAAO0G,GAAa1G,EAaqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBd,GAAW9F,EAAMb,WAAE,WAAW,OAAO8F,GAAW9F,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB6S,GAA6BzZ,EAaqC,6BAAE,WAAW,OAAOyZ,GAA6BzZ,EAaqC,6BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBojB,GAAUhqB,EAakB,UAAE,WAAW,OAAOgqB,GAAUhqB,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBkr,GAA6C9X,EAaqD,6CAAE,MAAUoV,GAA+BpV,EAauC,+BAAE,MAA8J,SAASsC,GAAW9B,GAAQ4qB,KAAKhJ,KAAK,aAAagJ,KAAKtS,QAAQ,gCAAgCtY,EAao,IAAI4qB,KAAK5qB,OAAOA,EAaqH,SAAS6qB,GAAI95C,GAA4B,KAAgW4B,GAAgB,GAAnB,CAA6B,GAAG5I,EAAGG,OAAxErB,EAaoBE,GAAQwJ,UAAc9K,YAAY,CAACuX,IAAM,WAAkB7M,KAAyW,GAAGB,IAA2O/J,EAakB,WAAGA,EAakB,UAAE,cAAc8M,YAAW,WAAWA,YAAW,WAAW9M,EAakB,UAAE,MAAK,GAGsrB,MAAS,IAAQA,KAAjX,SAASA,IAAWZ,KAAiBA,IAAU,EAak1qB,EAakB,WAAE,EAaqiF,IAAAuE,KAAcC,KAAU3J,EAaoBE,GAAWA,EAa6B,sBAAEA,EAa6B,uBAAI0J,QAAwL,SAASiP,GAaknY,EAao+qB,

GAAU,IAAGA,IAAUvmB,GAAwB,IAATxE,EAA5B,CAA+C,IAAI+qB,GAAapqB,EAA+E,MAAvDzC,YAAY,C AACuX,IAAM,cAAcuV,WAAahrB,IAAe,IAAI8B,GAAW9B,GAAkBwE,IAAqB8G,GAAQ2L,sBAAyDzX,EAAe ,QAAEA,EAAe,OAAEQ,GAAQyE,GAAM,GAACK1E,EAAMC,EAAO,IAAI8B,GAAW9B,KAAS,GAA32CR,EA Ac,MAAE3uB,EAAM2uB,EAAGB,QAAE8L,GAAQ9L,EAAGB,QAAE8L,GAAQ9L,EAAMb,WAAEZ,EAAWY, EAAMb,WAAEsC,GAAuJ0H,GAAsB,SAASyhB,IAAGBf,IAAUW,KAAUX,KAAU1gB,GAAsByhB,IAA2IBzrB, EAAy,IAAEqrB,GAA4YrrB,EAAGB,QAAiF,IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAG B,UAAASA,EAAGB,QAAEntB,OAAO,GAAGmtB,EAAGB,QAAEkX,KAAIBIX,GAG5ymE,OAHO0mEmB,IAAw B6D,GAAc,EAAM8G,GAAQgL,cAAauU,KAGp4mExsB,EAA8B6sB,QAkRc/f,UAAiB9M,8BCfnB,IACMD,EA DF+sB,GACE/sB,EAAiC,oBAAbE,UAA4BA,SAASC,cAAgBD,SAASC,cAAcC,SAAMC,EACHf,oBAAfC,aAA4 BN,EAAaA,GAAcM,qBAE3DysB,GAGT,IAA2E7rB,EAaOBC,EAA3FC,EAakC,oBAFpC2rB,EAAoBA,GAAqB ,IAEOA,EAakB,GAA8C3rB,EAAC,MAAE,IAAIC,SAAQ,SAASC,EAAQC,GAAQL,EAAoBI,EAAQH,EAAMBI, KAAS,IAA2BC,EAAvBC,EAAGB,GAAW,IAAID,KAAOJ,EAAWA,EAAOM,eAAeF,KAAMC,EAAGBD,GAACK J,EAAOI,IAAM,IAAyGM,GAAMb,EAUC,GAAsB,EAUC,GAaOB,EAUC,GAAqB,EAAMH,EAAMc,iBAA TI,OAAkBH,EAA6C,mBAAhBI,cAA2BH,EAAGqC,iBAAVI,SAA8C,iBAAnBA,QAAQC,UAAoD,iBAAXBD,QA AQC,SAASC,KAAGBL,GAAsBH,IAAqBE,IAAsBD,EAAsB,IAA4JS,EAAMC,EAUC,EA8BC,EAAWC,EAaj NC,EAAGB,GAAG,SAASC,EAAWC,GAAM,OAAG3B,EAAMb,WAAUA,EAAMb,WAAE2B,EAakF,GAAwB A,EAAGBE,EAA8Ef,GAA+Ca,EAAvBd,EAACkB,EAAGBC,QAAQL,GAAiB,IAAyBM,UAAU,IAAIX,EAAM, SAAoBY,EAASC,GAAuH,OAA3GV,IAAOA,EAAOW,GAakBV,IAASA,EAASK,GAAgBG,EAASR,EAAoB,U AAEQ,GAAiBT,EAAGB,aAAES,EAASC,EAAO,KAACK,SAASX,EAAW,SAAoBU,GAAU,IAAIG,EAAIf,EAAM Y,GAAS,GAAiE,OAAdG,EAAI1uB,SAAQ0uB,EAAI,IAAI5uB,WAAW4uB,IAAK/mB,EAAO+mB,EAAI1uB, QAAe0uB,GAAQnB,QAAc,KAAEnuB,OAAO,GAAGmuB,QAAc,KAAE,GAAGoB,QAAQ,MAAM,KAAgBpB,Q AAAC,KAAE9nB,MAAM,GAAG8nB,QAAy,GAAE,qBAAoB,SAASqB,GAAI,KAAKA,aAAcC,IAAa,MAAMD,K AAMrB,QAAy,GAAE,qBAAqBuB,IAAuDvC,EAAGB,QAAE,WAAW,MAAM,+BAAsCa,GAAsC,oBAANgC,O AAMbZB,EAAM,SAAoB0B,GAAG,OAAD,KAAKC,KAAIxB,EAAW,SAAoBwB,GAAG,IAAIC,EAAM,MAA uB,mBAAbC,WAAgC,IAAIzvB,WAAWyvB,WAAWF,KAA0B1nB,EAAGB,iBAA3C2nB,EAakF,KAAKC,EA E,YAAgDC,IAA4B,oBAAZE,YAAoCA,WAA2J,oBAARE,QAAyC,oBAAVV,UAAsBA,QAAQ,IAAGA,QAAQ W,IAAID,MAAMV,QAAQY,KAAKZ,QAAQC,MAAwB,oBAAXY,SAAuBA,SAASH,SAAezC,GAAoBC,KAA0 BA,EAAuBc,EAAGB8B,KAAKC,SAASC,KAA+B,oBAAX3E,UAAwBA,SAASC,gBAAe0C,EAAGB3C,SAASC, cAAcC,KAAOJ,IAAY6C,EAAGB7C,GAAoD6C,EAH,IAAnCA,EAAGBiC,QAAQ,SAA8BjC,EAAGBkC,OAAO, EAAEIC,EAAGBmC,YAAY,KAAK,GAAwB,GAAIxC,EAAM,SAASyC,GAACK,IAAIC,EAAL,IAAIC,eAAwD,OA AzCD,EAAIE,KAAK,MAAMH,GAAL,GAAGOC,EAAIG,KAAK,MAAaH,EAAII,cAAiBvD,IAAuBW,EAAW,SA ASuC,GAACK,IAAIC,EAAL,IAAIC,eAAuF,OAAxED,EAAIE,KAAK,MAAMH,GAAL,GAAGOC,EAAIK,aAAa,cA AcL,EAAIG,KAAK,MAAa,IAAI1wB,WAAWuwB,EAAIM,YAAW/C,EAAU,SAASwC,EAAIQ,EAAGOC,GAAS,IA AIR,EAAL,IAAIC,eAAeD,EAAIE,KAAK,MAAMH,GAAL,GAAMC,EAAIK,aAAa,cAAcL,EAAIO,OAAO,WA A0B,KAAZP,EAALtD,QAAyB,GAAZsD,EAALtD,QAAWsD,EAAIM,SAAUC,EAAGOC,EAAIM,UAAiBE,KAAR R,EAAIQ,QAAQA,EAAGR,EAAIG,KAAK,QAAkE,IAAiYQ,EAakMrF,EAA/jBjsB,EAAI6sB,EAAc,OAAGyC, QAAQW,IAAIsB,KAAKjC,SAAakC,EAAI3E,EAAiB,UAGyC,QAAQY,KAAKqB,KAAKjC,SAAS,IAAIrC,KA AOC,EAAoBA,EAAGBC,eAAeF,KAAMJ,EAAOI,GAACK,EAAGBD,IAAMC,EAAGB,KAAQL,EAakB,WAAaA ,EAakB,UAAKA,EAAoB,aAAcA,EAAoB,YAAKA,EAAa,MAAQA,EAAa,KAAoBA,EAAMb,aAAEY,EAAWz E,EAAMb,YAAoBA,EAAsB,cAAgC,iBAAd1B,aAAwBiE,GAAM,mCAAKD,IAAI0C,GAAM,EAAGB,SAAS7pB, EAAGOC,EAAUkN,GAAUIN,GAAW4K,GAAM,qBAAqBsC,GAAO,SAASK,EAASC,GAAO,IAAIC,EAAGpF,E AAO,IAAIImF,GAAuF,OAAhF/pB,EAAGqB,EAAGC,gCAAGCD,EAAM,8BAAqCC,EAAG,SAASC,EAAMF,EA AMG,EAAGOC,EAASh0B,EAAGi0B,GAAM,IAAIC,EAAL,CAACC,OAAS,SAASC,GAACK,IAAIxD,EAAL,EAAE ,GAAGwD,MAAAA,GAAmC,IAANA,EAAQ,CAAC,IAAIC,EAAoB,GAAfD,EAAI9yB,QAAQ,GAAyBgzB,EA AaF,EAAjCxD,EAAI2D,GAAGW,GAA0BA,GAACK,OAAOzD,GAAG4D,MAAQ,SAASC,GAACK,IAAI7D,EAAI2 D,GAAWE,EAAInzB,QAAoC,OAA5BozB,EAAMBD,EAAI7D,GAAYA,IAAsJiD,EAAGF,EAASC,GAAWe,EA AM,GAAOC,EAAM,EAAE,GAAG50B,EAAM,IAAI,IAAIyD,EAAE,EAAEA,EAAEzD,EAAGsB,OAAOmC,IAA I,CAAC,IAAIoxB,EAAGUX,EAAIF,EAASvW,IAAOoxB,GAAsB,IAARD,IAAUUA,EAAME,MAAYH,EAAMlxB,

GAAGoxB,EAAU70B,EAAKyD,KAASkxB,EAAMIxB,GAAGzD,EAAKyD,GAAK,IAAImtB,EAAIiD,EAAKkB,MAAM,KAAKJ,GAAoE,OAA7D/D,EAARy,SAA4BA,GAAK,MAAgB,WAAbM,D,EAA6BiB,EAAapE,GAAqB,YAAbmD,EAA8BkB,QAAQrE,GAAYA,EAaiQsE,CAAmBtE,GAAGb,IAARgE,GAAUO,GAAAp,GAAchE,EAai,SAAS9wB,EAAM8zB,EAAMG,EAAWC,EAASC,GAA4B,IAAImB,GAA1BpB,EAASA,GAAU,IAA4BzwB,OAAm,SAASoP,GAAM,MAAc,WAAPA,KAAuD,MAAT,WAAbohB,GAAqCqB,IAAcnB,EAAaN,EAASC,GAAC,WAAW,OAAOE,EAAMF,EAAMG,EAAWC,EAASqB,YAAiB,IAAgzDnzB,EAAO6rB,EAAMtO,EAAsByO,EAA/0DmsB,EAAiC,oBAAdC,YAA0B,IAAIA,YAAY,aAAQ5sB,EAAU,SAAS4H,EAAkBC,EAAK7oB,EAAI8oB,GAA6D,IAA7C,IAAIC,EAAO/oB,EAAI8oB,EAAMb+kB,EAAO7tC,EAAU6oB,EAAKglB,MAAWA,GAAQ9kB,MAAU8kB,EAAO,GAAGA,EAAO7tC,EAAI,IAAI6oB,EAAKrpB,UAAUmuC,EAAa,OAAOA,EAAYG,OAAOjlB,EAAKrpB,SAASQ,EAAI6tC,IAAyB,IAAX,IAAIInB,EAAI,GAAS1nB,EAAI6tC,GAAO,CAAC,IAAI7kB,EAAGH,EAAK7oB,KAAO,GAAQ,IAAHgpB,EAAL,CAAoD,IAAIC,EAAe,GAAZJ,EAAK7oB,KAAU,GAAa,MAAN,IAAHgpB,GAAJ,CAAmE,IAAIE,EAAe,GAAZL,EAAK7oB,KAAmG,IAAvEgpB,EAAL,MAAN,IAAHA,IAAqB,GAAHA,IAAQ,GAAGC,GAAI,EAAEC,GAAe,EAHF,IAAO,GAAGC,GAAI,GAAGC,GAAI,EAAc,GAAZL,EAAK7oB,MAAgB,MAAO0nB,GAAKyB,OAAOC,aAAaJ,OAAQ,CAAC,IAAIK,EAAGL,EAAG,MAAMtB,GAAKyB,OAAOC,aAAa,MAAMC,GAAI,GAAG,MAAS,KAAHA,SAA3Q3B,GAAKyB,OAAOC,cAAiB,GAAHJ,IAAQ,EAAEC,QAAIHvB,GAAKyB,OAAOC,aAAaJ,GAA2U,OAAOtB,EAAI,SAASY,EAAagB,EAAIR,GAAgB,OAAOQ,EAAIV,EAAkB7V,EAAOuW,EAAIR,GAAgB,GAAG,SAASS,EAAkB7B,EAAImB,EAAKW,EAAOC,GAAiB,KAAKA,EAAGB,GAAG,OAAO,EAA0D,IAAxD,IAAIC,EAASF,EAAWT,EAAOS,EAAOC,EAAGB,EAU1yB,EAAE,EAAEA,EAAE2wB,EAAI9yB,SAASmC,EAAE,CAAC,IAAI4yB,EAAEjC,EAAIkC,WAAW7yB,GAAoF,GAA9E4yB,GAAG,OAAOA,GAAG,QAAkCA,EAAE,QAAU,KAAFA,IAAS,IAAO,KAA9CjC,EAAIkC,aAAa7yB,IAAqC4yB,GAAG,IAAI,CAAC,GAAGH,GAAQT,EAAO,MAAMF,EAAKW,KAAUG,OAAO,GAAGA,GAAG,KAAK,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,GAAG,EAAEd,EAAKW,KAAU,IAAM,GAAFG,OAAU,GAAGA,GAAG,MAAM,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,GAAG,GAAGd,EAAKW,KAAU,IAAIG,GAAG,EAAE,GAAGd,EAAKW,KAAU,IAAM,GAAFG,MAAS,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,GAAG,GAAGd,EAAKW,KAAU,IAAIG,GAAG,GAAGd,EAAKW,KAAU,IAAM,GAAFG,GAAqB,OAAfd,EAAKW,GAAQ,EAASA,EAAOE,EAAS,SAAS9B,EAAaF,EAAImC,EAAOJ,GAAiB,OAAOF,EAAkB7B,EAAI3U,EAAO8W,EAAOJ,GAAiB,SAASzB,EAAmBF,EAAMtyB,GAAQ6rB,EAAm1pB,IAAImwB,EAAMtyB,GAAQ,SAASu0B,EAAQl0B,EAAEm0B,GAakD,OAArCn0B,EAAEm0B,EAAS,IAAGn0B,GAAGm0B,EAASn0B,EAAEm0B,GAAgBn0B,EAAwE,SAASurB,EAA2B6I,GAAKz0B,EAAOy0B,EAAIII,EAAc,MAAEV,EAAM,IAAI6I,UAAUD,GAAKII,EAAe,OAAS,IAAIoI,WAAWF,GAAKII,EAAe,OAAEP,EAAO,IAAIjsB,WAAW00B,GAAKII,EAAe,OAAEhP,EAAO,IAAIzd,WAAW20B,GAAKII,EAAGB,QAAU,IAAIqI,YAAYH,GAAKII,EAAGB,QAAU,IAAIsl,YAAYJ,GAAKII,EAAGB,QAAU,IAAIuI,aAAaL,GAAKII,EAAGB,QAAU,IAAIwI,aAAaN,GAAwBII,EAAuB,eAA1C,IAA0DyI,EAAcO,EAAa,GAAOC,EAAW,GAAOC,EAAW,GAAOC,EAAc,GAAyF,SAASC,IAAS,GAAGpJ,EAAe,OAA8E,IAA/C,mBAAlBA,EAAe,SAACa,EAAe,OAAE,CAACA,EAAe,SAA SA,EAAe,OAAEntB,QAAQw2B,EAAYrJ,EAAe,OAAEsJ,SAAUC,GAAqBP,GAAc,SAASQ,IAAsCD,GAAqBN,GAAY,SAASQ,IAAUF,GAAqBL,GAAY,SAASQ,IAAU,GAAG1J,EAAGB,QAAiF,IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UAA SA,EAAGB,QAAEntB,QAAQ82B,EAAa3J,EAAGB,QAAEsJ,SAAUC,GAAqBJ,GAAe,SAASE,EAAYO,GAAIZ,EAAaa,QAAQD,GAAI,SAASD,EAAaC,GAAIT,EAAcU,QAAQD,GA A9tBX,EAAW7yB,KAAK,CAACgvB,KAAK,WAAW0E,QAAisB,IAAIC,EAAGB,EAAoCC,EAAsB,KAAK,SAASC,GAAiBz3B,GAAIu3B,IAAqB/J,EAA+B,wBAAGA,EAA+B,uBAAE+J,GAAkB,SAASG,GAAoB13B,GAA6G,GAAzGu3B,IAAqB/J,EAA+B,wBAAGA,EAA+B,uBAAE+J,GAAqC,GAAjBA,GAAqHC,EAAsB,CAAC,IAAI G,EAASH,EAAsBA,EAAsB,KAAKG,KAAuE,SAAS5H,GAAM6H,GAASpK,EAAGB,SAAGA,EAAGB,QAAEoK ,GAAezF,EAATyF,GAAM,IAAanF,GAAM,EAakBmF,EAAG,SAASA,EAAG,+CAA+C,IAAIxS,EAAE,IAAI0G,YAAY+L,aAAaD,GAA4B,MAAtBrK,EAAMbnI,GAASA,EAAE,SAAS0S,GAAU3E,EAAI4E,GAAQ,OAAOnD,OAAOoD,UAAUC,WAAW9E,EAAI8E,WAAWF,GAA8B,IAAtB5E,EAAIjC,QAAQ6G,GAAZvK,EAAwB,gBA AE,GAAGA,EAAwB,gBAAE,GAA2W,IAAI0K,GAAC,wCAAwC,SAASC,GAAU3I,GAAU,OAAOsI,GAAUtI,E AAS0I,IAAe,IAAIE,GAAc,UAAU,SAASC,GAAU7I,GAAU,OAAOsI,GAAUtI,EAAS4I,IAAe,IAAIE,GAAe,yBA

AkG,SAASC,GAAUC,GAAM,IAAI,GAAGA,GAAMF,IAAgBrG,EAAY,OAAO,IAAIx B, WAAWkxB,GAAY,G
AAGnD,EAAY,OAAOA,EAAW0J,GAAW,KAAK,kDAAMd,MAAMrG,GAAKpC,GAAMoC,IAAM,SAASsG,K
AAmB,IAAIxG,IAAa/D,GAAoBC,GAAuB,CAAC,GAakB,mBAARuK,QAAqBL,GAAUC,IAAiB,OAAOI,MAA
MJ,GAAe,CAACK,YAAY,gBAAGBC,MAAK,SAAShH,GAAU,IAAIA,EAAa,GAAG,KAAK,uCAAuC0G,GAAe,
IAAI,OAAO1G,EAA sB,iBAAMiH,OAAM,WAAW,OAAON,GAAUD,OAAuB,GAAGzJ,EAAW,OAAO,IAAIpB,
SAAQ,SAASC,EAAQC,GAAQkB,EAAUyJ,IAAe,SAAS1G,GAAUIE,EAAQ,IAAI3sB,WAAW6wB,MAAYjE,M
AAY,OAAOF,QAAQC,UAAUkL,MAAK,WAAW,OAAOL,GAAUD,OAAkB,SAASQ,KAAa,IAAIC,EAAK,CAA
C75B,EAAI85B,IAAe,SAASC,EAAgBC,EAASC,GAAQ,IAAIC,EAAQF,EAASE,QAAQ5L,EAAY,IAAE4L,EA
sCvM,GAA9BD,EAAWY,EAAY,IAAK,GAAwCvsB,QAAQg1B,EAAUzI,EAAY,IAAK,EAAEkK,KAA6E,SAAS
gC,EAA0BC,GAAQV,EAAgBU,EAAiB,UAG,SAASC,EAAuBC,GAAU,OAAOpB,KAAmBG,MAAK,SAASnJ,
GAAQ,OAAO3D,YAAYgO,YAAYrK,EAAOsJ,MAAQH,KAAKiB,GAAS,SAASE,GAAQ5H,EAAI,0CAA0C4H,
GAAQhK,GAAMgK,MAAomB,GAA37BtC,KAA87BjK,EAAwB,gBAAG,IAAgE,OAAhDA,EAAwB,gBAAEuL,
EAAKE,GAAgC,MAAM7T,GAAgE,OAA7D+M,EAAI,sDAAsD/M,IAAU,EAAoD,OAAxyB6M,GAAsD,mBAA
nCnG,YAAYkO,sBAAoC7B,GAAUG,KAAkBD,GAAUC,KAAgC,mBAARI,MAAsYkB,EAAuBF,GAAlYhB,M
AAMJ,GAAe,CAACK,YAAY,gBAAGBC,MAAK,SAAShH,GAAqE,OAAhD9F,YAAYkO,qBAAqBpI,EAASmH,
GAAoBH,KAAKc,GAA0B,SAASK,GAAuG,OAA/F5H,EAAI,kCAAKC4H,GAAQ5H,EAAI,6CAAoDyH,EAAuB
F,UAAkTb,MAAMtL,GAA0B,GAAG,SAASwJ,GAAqB0D,GAAW,KAAMA,EAAUp6B,OAAO,GAAE,CAAC,I
AAIs3B,EAAS8C,EAAU3D,QAAQ,GAAoB,mBAAVa,EAAV,CAA0D,IAAI/E,EAAK+E,EAAS/E,KAA sB,iBAA
PA,OAAmCnG,IAAfkL,EAAS+C,IAAiBzE,EAAUn2B,IAAI8yB,EAAdqD,GAA2BA,EAAUn2B,IAAI8yB,EAAd
qD,CAAoB0B,EAAS+C,KAAW9H,OAAoBnG,IAAfkL,EAAS+C,IAAgB,KAAK/C,EAAS+C,UAAxN/C,EAASn
K,IAAsN,SAASya,KAASIY,KAAQ,SAASkZ,GAAuBC,EAAK1c,EAAI2c,GAAK3qB,EAAO4qB,WAAWF,EAA
K1c,EAAIA,EAAI2c,GAAK,SAASgB,KAA4B,OAAO3rB,EAAOne,OAAO,SAAS+pC,GAA0B3/B,GAAM,IAAq
G,OAAjGmiB,EAAWyd,KAAK5/B,EAAKxJ,EAAOs1B,WAAW,QAAQ,IAAI1J,EAA2BD,EAAW3rB,QAAe,EA
AE,MAAMmkB,KAAK,SAASk1B,GAAwBC,GAAe,IAAIC,EAAQL,KAAgCM,EAAY,WAAW,GAAGF,EAACe,
EAAa,OAAO,EAAM,IAAI,IAAIC,EAAQ,EAAEA,GAAS,EAAEA,GAAS,EAAE,CAAC,IAAIC,EAAkBH,GAAS
,EAAE,GAAGE,GAA6N,GAApNC,EAAkBvgC,KAAKwgC,IAAID,EAAkBJ,EAAc,WAA sHH,GAA/FhgC,KAA
KwgC,IAAIH,EAAYjv,EAAQprB,KAAKC,IAAIkgC,EAACi,GAAMb,SAA2E,OAAO,EAAM,OAAO,EAAhgHx
S,GAAUG,MAAiBA,GAAepJ,EAAWoj,KAAi9G,IAAI2c,GAAS,CAACC,SAAS,GAAGrE,QAAQ,CAAC,KAAK
,GAAG,IAAI sE,UAAU,SAASC,EAAOC,GAAM,IAAIp0C,EAAOg0C,GAASpE,QAAQuE,GAakB,IAAPC,GAAi
B,KAAPA,IAAQb,IAATD,EAAWz0C,EAAIwxB,GAAKkC,EAAkBpzB,EAAO,IAAIA,EAAOZ,OAAO,GAAOY,
EAAO2C,KAAKyxC,IAAQ/H,aAAQ7gB,EAAU3sB,IAAI,WAAqE,OAA1Dm1C,GAAS3H,SAAS,EAAUrgB,EA
AOgoB,GAAS3H,QAAQ,GAAG,IAAegI,OAAO,SAASvgB,GAA+B,OAAIbHb,EAAgB,IAAiBwgB,MAAM,SA
ASC,EAAIC,GAAM,OAAOD,IAAM,SAASE,GAAUC,GAAl,OAAO,EAAE,SAASC,GAASD,EAAGE,EAAWC,
EAAYC,EAAOC,IAAY,SAASC,GAAUN,EAAGO,EAAIC,EAAOC,GAAgB,IAAV,IAAIjN,EAAL,EAAU3mC,E
AAE,EAAEA,EAAE2zC,EAAO3zC,IAAI,CAA2D,IAAI1D,IAAIuyB,EAAI9H,EAAOipB,EAAM,EAAlzC,GAA
K,GAAO4wB,EAAInG,EAAOipB,GAAO,EAAlzC,EAAI,IAAI,GAAWsB,EAAE,EAAEA,EAAEsV,EAAItvB,I
AAKmxC,GAASE,UAAUQ,EAAGn3B,EAAOuW,EAAIjxB,IAAIqlC,GAAK/V,EAAwB,OAApBnG,EAAOmpB,
GAAM,GAAGjN,EAAW,EAAE,SAASkO,KAAkB,OAAO,EAAE,SAASW,KAAgB,OAAO,GAAG,SAAStQ,GA
ASpwB,GAA4C,OAArC2V,EAAO0a,MAAqB,GAAGrwB,EAAaA,EAAM,SAAS2gC,GAASrI,GAAM,OAAOA,
GAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAA8B,OAAOnF,OAAkB,KAAK,IAAI,KAAK,IAAI,KAAK,GA
AG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,
GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KAA
K,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,K
AAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,G
AAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,K
AAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IA
AK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IA
AI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI

,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,
GAAG,OAAO,EAAE,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,I
AAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,G
AAG,OAAO,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,EAAE,OAAO,KAAK,K
AAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,
WAAW,KAAK,GAAG,KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAA
G,KAAK,GAAG,OAAO,KAAK,KAAK,EAAE,OAAO,QAAQ,KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,OA
AO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,IAAI,KAAK,G
AAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,EAAE,OAAO,IAAI,KAAK,I
AAI,OAAO,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,EAAE,OAAO,GAAG,KAAK,EAAE,OAAO,EAAE,KA
AK,GAAG,OAAO,EAAE,KAAK,GAAI,MAAsB,iBAAZjB,WAA4BA,UAA+B,qBAAY,EAAGb,OAAb9B,GAAS
,KAAW,EAAE,IAA0zXwQ,GAAtzXlf,GAAC,CAAC95B,EAAI+oC,GAAOvC,EAAIuD,GAAuB7jB,EAAIkIb,GA
AwBha,EAAIoIb,GAAU0C,EAAIxC,GAASz2C,EAAI82C,GAAU3J,EAAI+K,GAAGbMmB,EAAIR,GAACx1C,EA
AIy1C,IAAmC3gB,IAAjBwB,KAAoCtL,EAA2B,mBAAE,WAAW,OAAO8J,GAAmB9J,EAA2B,mBAAEA,EAA
Y,IAAK,GAAGsG,MAAM,KAAKM,aAAG6VuT,IAA14Vna,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EA
AY,IAAK,GAAGsG,MAAM,KAAKM,YAAyC5G,EAAiC,yBAAE,WAAW,OAAgCA,EAAiC,yBAAEA,EAAY,I
AAK,GAAGsG,MAAM,KAAKM,YAAmC5G,EAA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IA
AK,GAAGsG,MAAM,KAAKM,YAAiC5G,EAAyB,iBAAE,WAAW,OAAwBA,EAAyB,iBAAEA,EAAY,IAAK,G
AAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,
MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,
KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,Y
AAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,E
AAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAA
E,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,
OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAGb,QAAE,WAAW,OAAeA,
EAAGb,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,
SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA
,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IA
AK,GAAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GA
AGsG,MAAM,KAAKM,YAAwB5G,EAAGb,QAAE,WAAW,OAAeA,EAAGb,QAAEA,EAAY,IAAK,GAAGsG,
MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAK,GAAGsG,MA
AM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAK
M,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA+B
5G,EAAuB,eAAE,WAAW,OAAsBA,EAAuB,eAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EA
AGb,QAAE,WAAW,OAAeA,EAAGb,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cA
AE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuC5G,EAA+B,uBAAE,W
AAW,OAA8BA,EAA+B,uBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,
OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,E
AAe,OAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAA
EA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAAW,OAAsBA,EAAuB,eAAEA,EA
AY,IAAK,GAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAK,
GAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAK,GAAG
sG,MAAM,KAAKM,YAAgC5G,EAawB,gBAAE,WAAW,OAAuBA,EAawB,gBAAEA,EAAY,IAAK,GAAGsG,
MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM
,KAAKM,YAAc5G,EAA8B,sBAAE,WAAW,OAA6BA,EAA8B,sBAAEA,EAAY,IAAK,GAAGsG,MAAM,KA
AKM,YAAwB5G,EAAGb,QAAE,WAAW,OAAeA,EAAGb,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,Y
AA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB
5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAA

sB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA2B5G,EAAMB,WA
AE,WAAW,OAAkBA,EAAMB,WAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,W
AAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA2B5G,EAAMB,WAAE,WAAW,O
AAkBA,EAAMB,WAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA
,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA4B5G,EAAoB,YAAE,WAAW,OAAmBA,EAAo
B,YAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA,EAAa,KAAEA,
EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,I
AAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IA
AGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MA
AM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAK
M,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2
B5G,EAAMB,WAAE,WAAW,OAAkBA,EAAMB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G
,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,
KAAE,WAAW,OAYYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,
WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WA
AW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,
OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAi
BA,EAAkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EA
AGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAE
A,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA,EAAa,KAAEA,EAAY,I
AAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAG
sG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,
KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM
,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G
,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAawB,gB
AAE,WAAW,OAAuBA,EAawB,gBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,
WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAA
W,OAAyBA,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAA
cA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,O
AAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAMB,WAAE,WAAW,OAAkBA,EAAMB,WAAE
A,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAAkB,UAAE,WAAW,OAAiBA,EAAkB,UAAEA,EA
Y,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM
,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,
MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,
KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,Y
AAwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAmC5
G,EAA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,E
AAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAA
E,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW
,OAYYA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA,E
AAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAYYA,EAAa,KAAE
A,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,I
AAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAA
GsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAA
M,KAAKM,YAA2B5G,EAAMB,WAAE,WAAW,OAAkBA,EAAMB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,K
AAKM,YAA2B5G,EAAMB,WAAE,WAAW,OAAkBA,EAAMB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAA
KM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YA
AwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,

EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kB
AAE,WAAW,OAAOma,GAakBna,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAAgBP,GAAU
rG,EAakB,UAAE,WAAW,OAAOqG,GAAUrG,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA
gBF,GAAa1G,EAAqB,aAAE,WAAW,OAAO0G,GAAa1G,EAAqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAA
KM,YAAgBd,GAAW9F,EAAMb,WAAE,WAAW,OAAO8F,GAAW9F,EAAMb,WAAEA,EAAY,IAAM,IAAGs
G,MAAM,KAAKM,YAAgD,SAAStE,GAAW9B,GAAQ4qB,KAAKhJ,KAAK,aAAagJ,KAAKtS,QAAQ,gCAAgC
tY,EAAO,IAAI4qB,KAAK5qB,OAAOA,EAAqH,SAAS6qB,GAAl95C,GAA+F,SAAS+5C,IAAWZ,KAAiBA,IA
AU,EAak1qB,EAakB,WAAE,EAAQIF,IAAauE,IAAcC,IAAU3J,EAAoBE,GAAWA,EAA6B,sBAAEA,EAA6B,
uBAAI0J,MAApRK,EAAGB,IAAUx,IAAYW,EAAGB,IAA2O/J,EAakB,WAAGA,EAakB,UAAE,cAAc8M,YAA
W,WAAWA,YAAW,WAAW9M,EAakB,UAAE,MAAK,GAAGsrB,MAAS,IAAQA,MAA2B,GAAxwBtrB,EAAC
,MAAE3uB,EAakJ24B,EAAsB,SAASyhB,IAAGBf,IAAUW,KAAUX,KAAU1gB,EAAsByhB,IAAifzrB,EAAY,I
AAEQrB,GAAOrR,EAAGB,QAAiF,IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UAA
S,A,EAAGB,QAAEntB,OAAO,GAAGmtB,EAAGB,QAAEkX,KAAIBIX,GAGx14B,OAHM34BqrB,KAG524BM,EA
AkBD,QAKzB/f,UAAiBggB,WCUbNK,WAAoBC,gBAK/BC,YAAmB96C,GACjB+6C,QADiBf,UAAAh6C,EAH
Xg6C,sBAAMb,EAkzBA,KAAKh6C,KAAKg7C,KAAKC,qBAAqBC,IACpCC,GAAqBnB,KAAKh6C,KAAKg7
C,KAAKI,kBACpCpB,KAAK/4C,UAAy,IAAIo6C,cAAyRb,KAAmsB,YAGzCR,MAAM/tC,EAAoCvL,EAaiBd,
GAEzD,MAAMS,EAAS,CAACC,GAAl44C,KAAKuB,oBAEzB,OADAvB,KAAKwB,KAAKr6C,EAAQ4L,EA
QvL,EAAOd,EAAO,GACjCS,EAGT25C,aACE,OAAOd,KAAK/4C,UAAUw6C,aAGxBX,WAAWppB,GACT,M
AAM7O,EAAGjgB,OAAKqIC,MACnBvW,IAEA,MAAO,CAACgqB,SADS94C,OAAKqIC,MAAQpIB,GAIhCi4
B,KACI35C,EAAGB4L,EAAoCvL,EACpDd,EAaiBi7C,GACnB,MAAMv6C,EAAK44C,KAAKuB,mBACHb,GA
Ac,WAAV76C,EAAoB,CACtB,MAAM4M,EAACp,EAIPb,YAHaitC,KAAK/4C,UAAUuD,IACXrD,EACA,CAA
CC,GAAAA,EAAlkM,YAAAA,EAaA9L,MAAAA,EAAOd,MAAAA,EAAOk7C,aAAc,KAAmD,SAAAA,IAIID,
MAAM9vC,EAAOjJ,OAAKC,cAAcrB,GAC1Bq6C,EAAWhwC,EAAOjJ,OAAKk5C,gBAAGBp7C,GACvCk7C,E
AAe5B,KAAKh6C,KAAKoiC,QAAQyW,GAEvC7B,KAAK/4C,UAAUuD,IAAIrD,EAAQ,CAACC,GAAAA,EA
Alw6C,aAAAA,EAACP6C,MAAAA,EAAOd,MAAAA,EAAOi7C,SAAAA,IAE5D3B,KAAKh6C,KAAKg7C,KA
AKe,eAAe36C,EAAlYk,EAAM+vC,GAElB,MAAV7uC,GACFitC,KAAKh6C,KAAK4f,OAAOpb,IACb,IAAIrC,
WACC4K,EAAMc1K,OACnC0K,EAAMCivC,WAAYH,GACpDD,GAIRd,WAAW35C,GACT,OAAO64C,KAA
K5sC,SAASjM,GAGvB25C,SAAS35C,GACP,MAAMy6C,aACA,EAAYI7C,MAAEA,EAAKc,MAAEA,EAAK
8L,YAAEA,GAC/B0sC,KAAK/4C,UAAUC,IAAIC,GACvB,GAAC,WAAVT,EACF,OAAO4M,EAKT,OAIQJ,SA
CIjL,EAAGB3B,GACvB,OAAQA,GACN,IAAK,UACH,OAAO,IAAIy2B,aAAa90B,GAC1B,IAAK,QACH,OAAO
,IAAID,WAAWC,GACxB,IAAK,OACH,OAAO,IAAIF,WAAWE,GACxB,QACE,MAAM,IAAI1B,MAAM,iBAA
iBD,MA3Q5Bu7C,CAHOjC,KAAKh6C,KAAK4f,OAAO9X,MAC3B8zC,EACAA,EAeh5C,OAAKC,cAAcrB,G
AASoB,OAAKk5C,gBAAGBp7C,IACIC2B,OAAQ3B,GAS5Co6C,YAAY35C,EAAGB+6C,GAAQ,GACIC,GAAl
C,KAAK/4C,UAAUk7C,IAAIh7C,GAAS,CAC9B,MAAMwwB,EAAOqoB,KAAK/4C,UAAUC,IAAIC,GAehC,G
ADAwWb,EAAGqB,YACAO,GAASvqB,EAAGqB,SAAW,EAC5B,OAAO,EAGT3B,KAAKh6C,KAAKigB,M
AAM0R,EAAKiqB,cACrB5B,KAAKh6C,KAAKg7C,KAAK1zC,YAAYqqB,EAAKvW,IAChC44C,KAAK/4C,U
AAUm7C,OAAOj7C,GAExB,OAAO,EAIT25C,SAAS35C,GACP,GAAl64C,KAAK/4C,UAAUk7C,IAAIh7C,GA
AS,CAE9B,OADmB64C,KAAK/4C,UAAUC,IAAIC,GACpBw6C,SAEPb,OAAO,EAGTb,OAAO35C,GACL,MA
AMwwB,EAAOqoB,KAAK/4C,UAAUC,IAAIC,GACpB,MAARwwB,GACFA,EAAGqB,WAITb,iBACE,OAAO
,GAKTA,gBAAGB35C,GACd,OAAO64C,KAAK/4C,UAAUC,IAAIC,GAAQy6C,aAGpCd,UACED,KAAKh6C,K
AAKg7C,KAAKqB,UACX,YAAarC,KAAKh6C,MACpBg6C,KAAKh6C,KAAK06B,QAAQ2L,sBAEPb2T,KAA
Kh6C,KAAO,KAGd86C,SACE,MAAO,CAACwB,YAAY,GAStBxB,WAAWt5C,EAaiBd,EAaiBk7C,GAe3C,IA
Alz6C,EACJ,GAAoB,MAAhBy6C,EACFz6C,EAAS64C,KAAKuC,MAAM,KAAmB/6C,EAAOd,OACzC,CACL,
MAAMU,EAAK44C,KAAKuB,mBACHBp6C,EAAS,CAACC,GAAAA,GACV44C,KAAK/4C,UAAUuD,IAAIrD,
EAAQ,CAACC,GAAAA,EAAlw6C,aAAAA,EAACP6C,MAAAA,EAAOd,MAAAA,EAAOi7C,SAAU,IACtE,MA
AM9vC,EAAOjJ,OAAKC,cAAcrB,GACChw4C,KAAKh6C,KAAKg7C,KAAKe,eAAe36C,EAAlYk,EAAM+vC,
GAElC,MAAO,CAACz6C,OAAAA,EAQK,MAAAA,EAAOd,MAAAA,GAGzBo6C,oBAAMbT5C,MAACA,E
AAKd,MAAEA,EAAS,OAEEA,IAEHc,MAAMkB,EAAS23C,KAAKh6C,KAAK4f,OAAOvd,QAC1Bu5C,aAA

CA,GAAgB5B,KAAK/4C,UAAUC,IAAIC,GACpC0K,EAAOjJ,OAAKC,cAAcrB,GACHc,OAAQd,GACN,IAAK,
UACH,OAAO,IAAIy2B,aAAa90B,EAAQu5C,EAAC/vC,GACHd,IAAK,QACH,OAAO,IAAIzJ,WAAWC,EAAQu
5C,EAAC/vC,GAC9C,IAAK,OACH,OAAO,IAAI1J,WAAWE,EAAQu5C,EAAC/vC,GAC9C,QACE,MAAM,IAAI
L,MAAM,iBAAiBD,OA8BzC,SAAS87C,GACLC,EAawBC,EACxBC,GACF,GAAgB,MAAZC,GAGF,OAAOA,
GAGT,IAAIrsB,EAauB,yBAO3B,OANiKsB,GAAiBC,EACnBnsB,EAAO,uCACEksB,IACTIsB,EAAO,+BAGU,
MAAfsB,IACuB,MAArBA,GAAYtsB,GACpssB,GAAYtsB,GAIhBosB,EAAMbPsB,EAUrBtD,eAAe6vB,KACp
B,MAAOL,EAAeC,SAA0B7tB,QAAQkuB,IAAI,CAC1DhwB,QAAMiwB,SAAS,yBACfjwB,QAAMiwB,SAAS,k
CAGjB,OAAO,IAAIInuB,SAAQ,CAACC,EAASC,KAC3B,MAAMkuB,EAAMc,CAOzC3sB,WAA2B,CAACC,E
AAM4I,KACHc,GAAI5I,EAAK2sB,SAAS,cAAe,CAC/B,MACMC,EAAO,IAAIC,KAAK,CC9RI,mkGD8RQ,CA
ACtqC,KAAM,2BACzC,OAAOuqC,IAAIC,gBAAGbH,GAG7B,OAAI5sB,EAAK2sB,SAAS,SACTV,GACHC,EA
A0BC,EACR,MAAIba,GAAYBA,GAAiBpkB,GAezCA,EAAS5I,IAMditB,KACFP,EAACq,gBA1FpB,SAAMCltB
,GAIjC,MAAO,CAACmtB,EAAC3kB,KACpBn2B,OAAKk3B,MAAMvJ,EAAM,CAACwJ,YAAa,gBAAGBC,MA
AMhH,IAC9CA,EAAa,IACHb0qB,EAAQ3wB,IAAIzsB,EAAE,uCAAuCiWb,MAEvDyC,EAAS2qB,cAAc3jB,M
AAKnJ,IAC1B3D,YAAyG0,YAAyRk,EAAQ6sB,GAAS1jB,MAAKe,IAC5ChC,EAASgC,EAAOT,SAAUS,EAA
OR,iBAIhC,IA4EDqjB,CAA0BpB,GACtBC,EAA0BC,EACR,MAAIba,GAAYBA,GAAiB,MAGpD,IaKBIv9C,EA
lBA69C,GAAC,EACIBZ,EAACA,QAAU,KACtB,GAAID,EAef,OAEF,GAAIE,GAGF,OAEFA,IAAc,EAI DhvB,EA
AO,CAAC2Y,QAFJ,qMAOfgV,GAAoBD,GAA6B,MAAZG,IACvCK,EAACE,oBAASB,IAAIZ,KACpC,CAAC,u
CACAA,gAAwBC,YAcZB,CAACprC,KAAM,oBACX9S,EAAOi+C,GAAwBhB,IAG/Bj9C,EAAOm+C,GAAYIB
,GAKrBj9C,EAAG6B,MAAMO,IACtSjB,GAAC,EACdE,IAAc,EAI dxjB,EAAOygB,KAAO,CACZ8B,KAAMvi
B,EAAOt6B,MAAM,OAAQ,KAAM,IACjCg7C,qBACI1gB,EAAOt6B,MAAM,0BAA2B,KAAM,CAAC,WACnD
m7C,gBAAiB7gB,EAAOt6B,MAAM,oBAAqB,SAAU,IAC7D87C,eAAgBxhB,EAAOt6B,MACnB,kBAAMB,KA
CnB,CACE,SACA,SACA,WAENqH,YAAaizB,EAAOt6B,MAAM,eAdG,KAC6B,CAAC,WAC3Do8C,QAAS9hB,
EAAOt6B,MAAM,UafO,KAeOB,KAGnD6uB,EAAQ,CAAC9uB,KAAMu6B,UAMBrB,MAAM6jB,GAakB,CAC
tB,yBAA0B,8BAC1B,wCAIF,IAAIxB,GAAMB,KACnBW,GAAYB,KACzBV,GAakD,GACIDkB,IAAc,EACdP,I
AAc,EAyFIB,IAAIc,IAAgB,EACHBC,IAASB,oBEvcV,QAAQuB,UACtB,MAAMjtB,KAACA,SAAC88C,KACr
B,OAAO,IAAIIC,GAAY56C,KAHH,iDF0dpB,IAA4B,IAAxBm7C,GACF,MAAM,IAAIx6C,MAAM,iCAEIB,OA
AOw6C,+BAbuBkD,GAC9BnD,GAAemD,0BARFw9tB,EAAC+tB,GAAMB,GAI3D,GAHAC,kBACI,qGAEAR,G
ACF,MAAM,IAAIp9C,MACN,kiAGNi8C,GAAWrsB,EACXitB,GAACC,2BA6BZE,EACAF,GAAMB,GACrB,GA
AIP,GACF,MAAM,IAAIp9C,MACN,mIAKN,GAA+B,iBAApB69C,EACTjB,GAAiBiB,MACZ,CACL3B,GAAC2
B,EACd,MAAMC,EACFL,GAAGBxtC,QAAOogC,GAA6B,MAArB6L,GAAY7L,KAC/C,GAAIyN,EAAAh9C,OA
AS,EACxB,MAAM,IAAIId,MAEN,2DAAG89C,EAAaC,KAAK,qKAM7BIB,GAACC,kBGldA }

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.es2017.min.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Cumsum.js","sourceRoot":"","sources":["../../src/kernels/Cumsum.ts"],"names":[],"mappings":  
AAAA;;;;;;;;;;GAG;AAEH,OAAO,EAAC,YAAY,EAA4B,MAAM,EAAYC,IAAI,EAAC,MAAM,uBAAuB,C  
AAC;AaIII,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,OAAO,EAAC,SAAS,EAAC,MAAM,aA  
Aa,CAAC;AAEtC,IAAI,UACsE,CAAC;AAE3E,SAAS,KAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CA  
AC,IAAI,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,CAAC,UAAU,EAAE;QACvD,QAAQ;QACR,QAAQ;QACR  
,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
MAAM,UAAU,MAAM,CACpB,IAASe;IAEtE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAA  
G,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,IAAI,EAAE,  
SAAS,EAAE,OAAO,EAAC,GAAG,KAAK,CAAC;IACzC,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,  
MAAM,CAAC;IAE7B,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KA  
AK,KAAK,OAAO,EACtD,GAAG,EAAE,CAAC,2BAA2B,CAAC,CAAC,KAAK,8BAA8B,CAAC,CAAC;IAC1E,
```

2CAA2C;IAC3C,MAAM,WAAW,GAAG,YAAY,CAAC,kBAaKB,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IACnE,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,SAAS,GAAG,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,WAAW,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;KAC3E;IACD,MAAM,YAAY,GAAG,YAAY,CAAC,gBAaGB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IACHe,YAAY,CAAC,0BAA0B,CAAC,QAAQ,EAAE,CAAC,YAAY,CAAC,EAAE,KAAK,CAAC,CAAC;IAEzE,MAAM,WAAW,GAAG,OAAO,CAAC,UAAU,CAAC,SAAS,CAAC,KAAK,EAAE,SAAS,CAAC,KAAK,CAAC,CAAC;IACzE,MAAM,QAAQ,GAAG,SAAS,CAAC,KAAK,CAAC,YAAY,CAAC,CAAC;IAC/C,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/D,MAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnE,UAAU,CAAC,WAAW,EAAE,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,OAAO,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,QAAQ,EACzD,aAAa,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC;IAE7C,kCAaKc;IACIC,IAAI,GAAG,GAAG,WAAW,CAAC;IACtB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,MAAM,eAAe,GAAG,YAAY,CAAC,sBAAsB,CAAC,WAAW,CAAC,CAAC;QACzE,GAAG,GAAG,SAAS,CACb,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,eAAe,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;QACvE,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;QACtC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IACD,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,YAAY,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,MAA0B;CACvC,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\nimport {transpose} from './Transpose';\n\nlet wasmCumsum: (xId: number, exclusive: number, reverse: number,\n              finalDim: number, outId: number, dtype: CppDType) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\n    'number', // x_id\n    'number', // exclusive\n    'number', // reverse\n    'number', // final_dim\n    'number', // out_id\n    'number' // dtype\n  ]);\n}\n\nexport function cumsum(\n  args: {inputs: CumsumInputs, backend: BackendWasm, attrs: CumsumAttrs});\n\nTensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {axis, exclusive, reverse} = attrs;\n  const xRank = x.shape.length;\n  util.assert(x.dtype === 'float32' || x.dtype === 'int32',\n    () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\n  // permute required axis to inner most axis\n  const permutation = backend_util.getAxesPermutation([axis], xRank);\n  let permutedX = x;\n  if (permutation !== null) {\n    permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n  }\n  const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n  backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n  const permutedOut = backend.makeOutput(permutedX.shape, permutedX.dtype);\n  const finalDim = permutedX.shape[permutedAxis];\n  const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n  const permutedOutId = backend.dataIdMap.get(permutedOut.dataId).id;\n  wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0, finalDim,\n    permutedOutId, CppDType[x.dtype]);\n  // transpose data back if permuted\n  let out = permutedOut;\n  if (permutation !== null) {\n    const undoPermutation = backend_util.getUndoAxesPermutation(permutation);\n    out = transpose(\n      {inputs: {x: permutedOut}, attrs: {perm: undoPermutation}, backend});\n  }\n  backend.disposeData(permutedX.dataId);\n  backend.disposeData(permutedOut.dataId);\n}\n\nreturn out;\n}\n\nexport const cumsumConfig: KernelConfig =
```

```
{\n kernelName: Cumsum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: cumsum as { } as\n KernelFunc\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cumsum.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Slice.js","sourceRoot":"","sources":["../../src/kernels/Slice.ts"],"names":[],"mappings":"AAAA;;  
;;;;;;;;;;GAeG;AAEH,OAAO,EAAyC,KAaK,EAAE,UAAU,EAAuC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AA  
G3I,OAAO,EAAC,YAAY,EAAC,MAAM,wBAAwB,CAAC;AAEpD,MAAM,UAAU,KAaK,CACjB,IAAoE;IACt  
E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAaK,EAAE,EAAC,KAaK,EAAE,IAAI,EAAC,E  
AAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEID,MAAM,CAAC,MAAM,EAAE,KAaK,CAAC,GAAG,UAAU,C  
AAC,gBAAgB,CAAC,CAAC,EAAE,KAaK,EAAE,IAAI,CAAC,CAAC;IAEpE,MAAM,WAAW,GAAG,UAAU,  
CAAC,gBAAgB,CAAC,CAAC,CAAC,KAaK,EAAE,MAAM,EAAE,KAaK,CAAC,CAAC;IACxE,MAAM,KAA  
K,GAAG,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IACzC,MAAM,GAAG,GAAG,OA  
AO,CAAC,UAAU,CAAC,KAaK,EAAE,CAAC,CAAC,KAaK,CAAC,CAAC;IAC/C,MAAM,QAAQ,GAAG,IAA  
I,CAAC,cAAc,CAAC,CAAC,CAAC,KAaK,CAAC,CAAC;IAC9C,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,  
CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEID,IAAI,WAAW,EAAE;QACf,MAAM,UAAU,G  
AAG,UAAU,CAAC,iBAAiB,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC;QAEIE,IAAI,CAAC,CAAC,KAaK,K  
AAK,QAAQ,EAAE;YACxB,OAAO,CAAC,WAAW;gBACd,KAAaB;qBACIB,KAaK,CAAC,UAAU,EAAE,UAA  
U,GAAG,IAAI,CAAC,aAAa,CAAC,KAaK,CAAC,CAAC,CAAC;SACpE;aAAM;YAACL,MAAM,OAAO,GAAG,  
OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;YAChD,OAAO,CAAC,GAAG,CACN,KAAoB;iBACHb,Q  
AAQ,CAAC,UAAU,EAAE,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,KAaK,CAAC,CAAC,CAAC,CAAC;SACx  
E;QAED,OAAO,GAAG,CAAC;KACZ;IAED,IAAI,CAAC,CAAC,KAaK,KAaK,QAAQ,EAAE;QACxB,MAAM,  
GAAG,GAAG,YAAY,CAAC,KAaK,EAAE,MAAM,EAAE,KAaK,EAAE,CAAC,CAAC,KAaK,EAAE,CAAC,C  
AAC,KAaK,CAAC,CAAC;QACjE,OAAO,CAAC,WAAW,GAAG,GAaMB,CAAC;QAC1C,OAAO,GAAG,CAA  
C;KACZ;IAED,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;IACbD,MAAM,IA  
AI,GAAG,CAAC,CAAC,KAaK,CAAC,MAAM,CAAC;IAC5B,IAAI,IAAI,KAaK,CAAC,EAAE;QACd,OAAO,  
CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EAAE,MAA0B,EACrE,KAAyB,CAAC,CAA  
C;KACbC;SAAM,IAAI,IAAI,KAaK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC  
,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACtD,MAAkC,EAAE,KAAiC,CAAC,CAAC;KAC5  
E;SAAM,IAAI,IAAI,KAaK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,  
EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACnE,MAA0C,EAC1C  
,KAAyC,CAAC,CAAC;KACbD;SAAM;QAACL,MAAM,GAAG,GACL,YAAY,CAAC,KAaK,EAAE,MAAM,EA  
AE,KAaK,EAAE,CAAC,CAAC,KAaK,EAAE,CAAC,CAAC,KAaK,CAAe,CAAC;QACvE,OAAO,CAAC,GAA  
G,CAAC,GAAG,CAAC,CAAC;KACIB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,OAAO,CACZ,  
KAA8B,EAAE,OAAe,EAC/C,OAAgC,EAAE,KAAuB,EACzD,IAAsB;IACxB,IAAI,SAAS,GAAG,CAAC,CAAC;  
IACIB,MAAM,MAAM,GAAG,KAaK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAaK,CAA  
C,CAAC,CAAC,CAAC;IACxB,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,  
KAaK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC1C,MAAM,OA  
AO,GAAG,CAAC,GAAG,OAAO,GAAG,MAAM,CAAC;QACrC,OAAO,CAAC,GAAG,CAAC,KAaK,CAAC,Q  
AAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;QACn  
E,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;KACtB;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,E  
AAE,QAAgB,EAAE,QAAgB,EACIE,OAAgC,EAAE,KAA+B,EACjE,IAA8B;IACbC,IAAI,SAAS,GAAG,CAAC,  
CAAC;IACIB,MAAM,MAAM,GAAG,KAaK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAA  
K,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAaK,CAAC,CAAC,CAAC,CAAC;IACxB,MA  
AM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,IAAI,GAAG,MAAM,GAA
```

G,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EA
AE,CAAC,EAAE,EAAE;QACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,
EAAE,EAAE;YACIC,MAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAA
M,CAAC;YACrD,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI
,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;YACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAA
C;SACtB;KACF;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,QA
AgB,EAAE,OAAgC,EACID,KAAuC,EACvC,IAAsC;IACxC,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,MAAM,
MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAA
C,CAAC;IACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,IAAI,GAAG,MA
AM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,
CAAC,CAAC;IAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,
MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IAExB,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,G
AAG,IAAI,EAAE,CAAC,EAAE,EAAE;QACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,
EAAE,CAAC,EAAE,EAAE;YACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAA
C,EAAE,EAAE;gBACIC,MAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,CA
AC,GAAG,QAAQ,GAAG,MAAM,CAAC;gBACpE,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,
OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;gBACnE,SAAS,IA
AI,IAAI,CAAC,CAAC,CAAC,CAAC;aACtB;SACF;KACF;AACH,CAAC;AAED,MAAM,CAAC,MAAM,WAA
W,GAAiB;IACvC,UAAU,EAAE,KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC,C
AAC", "sourcesContent": ["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */

```
=====\n*\n\nimport {backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util}  
from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {sliceImplCPU} from  
 './kernel_utils/shared';\nexport function slice(\n  args: {inputs: SliceInputs, attrs: SliceAttrs, backend:  
BackendWasm}) {\n  const {inputs: {x}, attrs: {begin, size}, backend} = args;\n\n  const [begin_, size_] =  
slice_util.parseSliceParams(x, begin, size);\n\n  const isContinuous = slice_util.isSliceContinuous(x.shape, begin_,  
size_);\n  const xVals = backend.readSync(x.dataId);\n  const out = backend.makeOutput(size_, x.dtype);\n  const  
xStrides = util.computeStrides(x.shape);\n  const outData = backend.dataIdMap.get(out.dataId);\n  if (isContinuous)  
{\n  const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);\n\n  if (x.dtype === 'string') {\n  outData.stringBytes =\n    (xVals as Uint8Array[]).slice(flatOffset, flatOffset +  
util.sizeFromShape(size_));\n  } else {\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.set(\n    (xVals as TypedArray).subarray(flatOffset, flatOffset +  
util.sizeFromShape(size_));\n  )\n\n  return out;\n  }\n\n  if (x.dtype === 'string') {\n  const res =  
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);\n  outData.stringBytes = res as Uint8Array[];\n  return  
out;\n  }\n\n  const outVals = backend.typedArrayFromHeap(out);\n  const rank = x.shape.length;\n  if (rank === 2)  
{\n  slice2d(\n    xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],\n    size_ as [number, number]);\n  } else if (rank === 3) {\n  slice3d(\n    xVals as TypedArray, xStrides[0], xStrides[1],  
outVals,\n    begin_ as [number, number, number], size_ as [number, number, number]);\n  } else if (rank === 4)  
{\n  slice4d(\n    xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,\n    begin_ as [number, number, number, number],\n    size_ as [number, number, number, number]);\n  } else {\n  const res =\n  sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;\n  outVals.set(res);\n  }\n\n  return  
out;\n}\n\nfunction slice2d(\n  xVals: backend_util.TypedArray, xStride: number,\n  outVals:
```



```

backend_util.TypedArray, begin: [number, number],\n size: [number, number]): void {\n let outOffset = 0;\n
const beginI = begin[0];\n const beginJ = begin[1];\n const endI = beginI + size[0];\n for (let i = beginI; i < endI;
i++) {\n const xOffset = i * xStride + beginJ;\n outVals.set(xVals.subarray(xOffset, xOffset + size[1]),
outOffset);\n outOffset += size[1];\n }\n}\n\nfunction slice3d(\n xVals: backend_util.TypedArray, xStride1:
number, xStride2: number,\n outVals: backend_util.TypedArray, begin: [number, number, number],\n size:
[number, number, number]): void {\n let outOffset = 0;\n const beginI = begin[0];\n const beginJ = begin[1];\n
const beginK = begin[2];\n const endI = beginI + size[0];\n const endJ = beginJ + size[1];\n for (let i = beginI; i <
endI; i++) {\n for (let j = beginJ; j < endJ; j++) {\n const xOffset = i * xStride1 + j * xStride2 + beginK;\n
outVals.set(xVals.subarray(xOffset, xOffset + size[2]), outOffset);\n outOffset += size[2];\n }\n}\n}\n\nfunction slice4d(\n xVals: backend_util.TypedArray, xStride1: number, xStride2: number,\n xStride3:
number, outVals: backend_util.TypedArray,\n begin: [number, number, number, number],\n size: [number,
number, number, number]): void {\n let outOffset = 0;\n const beginI = begin[0];\n const beginJ = begin[1];\n
const beginK = begin[2];\n const endI = beginI + size[0];\n const endJ = beginJ + size[1];\n const endK = beginK +
size[2];\n const beginL = begin[3];\n\n for (let i = beginI; i < endI; i++) {\n for (let j = beginJ; j < endJ; j++)
{\n for (let k = beginK; k < endK; k++) {\n const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +
beginL;\n outVals.set(xVals.subarray(xOffset, xOffset + size[3]), outOffset);\n outOffset += size[3];\n
}\n }\n }\n}\n\nexport const sliceConfig: KernelConfig = {\n kernelName: Slice,\n backendName: 'wasm',\n
kernelFunc: slice as { } as KernelFunc,\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Slice.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"ScatterNd.js","sourceRoot":"","sources":["../../src/kernels/ScatterNd.ts"],"names":[],"mappings"
:":AAAA;:::;GAeG;AAEH,OAAO,EAA2B,YAAY,EAAE,SAAS,EAA+C,IAAI,EAAC,MAAM,uBAAuB,C
AAC;AAI3I,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,aAG0C,CAAC;AAE/C,SAAS,KA
AK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,SAAS,EAAE,IAAI,CAAC,Q
AAQ,EAAE;QAC3D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,
OAAO;QACP,QAAQ;QACR,QAAQ,CAAG,QAAQ;KACpB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,SAAS,C
ACd,IAC0E;IAE5E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MA
AM,EAAC,OAAO,EAAE,OAAO,EAAC,GAAG,MAAM,CAAC;IACIC,MAAM,EAAC,KAAK,EAAC,GAAG,KA
AK,CAAC;IAEtB,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,OAAO,CAAC,KAAK,CA
AC,CAAC;IACrD,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACnC,OAAO,GAAG,
CAAC;KACZ;IAED,MAAM,EAAC,SAAS,EAAE,UAAU,EAAE,SAAS,EAAE,OAAO,EAAE,UAAU,EAAC,GA
CzD,YAAY,CAAC,eAAe,CAAC,OAAO,EAAE,OAAO,EAAE,KAAK,CAAC,CAAC;IAE1D,MAAM,WAAW,G
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,MAAM,SAAS,G
AAG,WAAW,CAAC,EAAE,CAAC;IAEjC,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,MAA
M,YAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,
MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,
CAAC;IACnD,aAAa,CACT,SAAS,EAAE,SAAS,EAAE,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC,EAAE,SAA
S,EAAE,UAAU,EACpE,SAAS,EAAE,YAAY,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;IAEhD,OAAO,GAAG,
CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAAW,
EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,SAA6B;CAC1C,CAAC","sourcesContent":["/*
*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License,
Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by

```

applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from './types';\n\nlet wasmScatterNd: (\n  indicesId: number, updatesId: number, dtype: CppDType, sliceRank: number,\n  numUpdates: number, sliceSize: number, strides: Uint8Array,\n  outputSize: number, outId: number)\n=> void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmScatterNd = backend.wasm.cwrap(ScatterNd, null /*void*/, [\n    'number', // indicesId\n    'number', // updatesId\n    'number', // dtype\n    'number', // sliceRank\n    'number', // numUpdates\n    'number', // sliceSize\n    'array', // strides\n    'number', // outputSize\n    'number' // outId\n  ]);\n\n  function scatterNd(\n    args: {\n      backend: BackendWasm, inputs: ScatterNdInputs, attrs: ScatterNdAttrs\n    }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { indices, updates } = inputs;\n    const { shape } = attrs;\n\n    const out = backend.makeOutput(shape, updates.dtype);\n    if (util.sizeFromShape(shape) === 0) {\n      return out;\n    }\n\n    const { sliceRank, numUpdates, sliceSize, strides, outputSize } =\n      scatter_util.calculateShapes(updates, indices, shape);\n\n    const indicesData = backend.dataIdMap.get(indices.dataId);\n    const indicesId = indicesData.id;\n\n    const updatesData = backend.dataIdMap.get(updates.dataId);\n    const updatesId = updatesData.id;\n\n    const stridesBytes = new Uint8Array(new Int32Array(strides).buffer);\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmScatterNd(\n      indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n      sliceSize, stridesBytes, outputSize, outId);\n\n    return out;\n  }\n\n  export const scatterNdConfig: KernelConfig = {\n    kernelName: ScatterNd,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: scatterNd as KernelFunc\n  };\n}
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ScatterNd.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Add.js","sourceRoot":"","sources":["../../src/kernels/Add.ts"],"names":[],"mappings":"AAAA;;;;GAeG;AAEH,OAAO,EAAC,GAAG,EAAe,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AAEzD,MAAM,qBAAqB,GAAG,IAAI,CAAC;AAEnC,MAAM,CAAC,MAAM,SAAS,GACIB,wBAAwB,CAAC,GAAG,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\nimport { Add, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const addConfig: KernelConfig =\n  createBinaryKernelConfig(Add, supportsFullBroadcast);\n}"]
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Add.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"register_all_kernels.js","sourceRoot":"","sources":["../src/register_all_kernels.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;;GAeG;AACH,yEAAyE;AACzE,6EAA6E;AAC7E,yEAAyE;AACzE,OAAO,EAAe,cAAc,EAAC,MAAM,uBAAuB,CAAC;AAEnE,OAAO,EAAC,iBAAiB,EAAC,MAAM,wBAAwB,CAAC;AACzD,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,YAAY,EAAC,MAAM,kBAAkB,CAAC;AAC9C,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,iBAAiB,EAAC,MAAM,uBAAuB,CAAC;AACxD,OAAO,EAAC,oBAAoB,EAAC,MAAM,0BAA0B,CAAC;AAC9D,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,iBAAiB,EAAC,MAAM,uBAAuB,CAAC;AACxD,OAAO,EAAC,YAAY,EAAC,MAAM,kBAAkB,CAAC;AAC9C,OAAO,EAAC,YAAY,EAAC,MAAM,kBAAkB,CAAC;AAC9C,OAAO,EAAC,yBAAyB,EAAC,MAAM,+BAA+B,CAAC;AACxE,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,mBAAmB,EAAC,MAAM,yBAAyB,CAAC;AAC5D,OAAO,EAAC,YAAY,EAAC,MAAM,kBAAkB,CAAC;AAC9C,OAAO,EAAC,kBAAkB,EAAC,MAAM,wBAAwB,CAAC;AAC1D,OAAO,EAAC,2BAA2B,EAAC,MAAM,iCAAiC,CAAC;AAC5E,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,gBAAgB,EAAC,MAAM,sBAAsB,CAAC;AACTd,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,mBAAmB,EAAC,MAAM,yBAAyB,CAAC;AAC5D,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,oBAAoB,EAAC,MAAM,0BAA0B,CAAC;AAC9D,OAAO,EAAC,iBAAiB,EAAC,MAAM,uBAAuB,CAAC;AACxD,OAAO,EAAC,0BAA0B,EAAC,MAAM,gCAAgC,CAAC;AACIE,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,kBAAkB,EAAC,MAAM,wBAAwB,CAAC;AAC1D,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,eAAe,EAAC,MAAM,qBAAqB,CAAC;AACpD,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,eAAe,EAAC,MAAM,qBAAqB,CAAC;AACpD,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,gBAAgB,EAAC,MAAM,sBAAsB,CAAC;AACTd,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,eAAe,EAAC,MAAM,qBAAqB,CAAC;AACpD,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,yBAAyB,EAAC,MAAM,+BAA+B,CAAC;AACxE,OAAO,EAAC,yBAAyB,EAAC,MAAM,+BAA+B,CAAC;AACxE,OAAO,EAAC,yBAAyB,EAAC,MAAM,+BAA+B,CAAC;AACxE,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,YAAY,EAAC,MAAM,kBAAkB,CAAC;AAC9C,OAAO,EAAC,cAAc,EAAC,MAAM,oBAAoB,CAAC;AACID,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,UAAU,EAAC,MAAM,gBAAgB,CAAC;AAC1C,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,oBAAoB,EAAC,MAAM,0BAA0B,CAAC;AAC9D,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,sBAAsB,EAAC,MAAM,4BAA4B,CAAC;AACIE,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,WAAW,EAAC,MAAM,iBAAiB,CAAC;AAC5C,OAAO,EAAC,eAAe,EAAC,MAAM,qBAAqB,CAAC;AACpD,OAAO,EAAC,YAAY,EAAC,MAAM,kBAAkB,CAAC;AAC9C,OAAO,EAAC,aAAa,EAAC,MAAM,mBAAmB,CAAC;AAChD,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,WAAW,EAAC
```

,MAAM,iBAaiB,CAAC;AAC5C,OAAO,EAAC,aAAa,EAAC,MAAM,mBAaMB,CAAC;AAChD,OAAO,EAAC, oBAAoB,EAAC,MAAM,0BAA0B,CAAC;AAC9D,OAAO,EAAC,YAAy,EAAC,MAAM,kBAaKB,CAAC;AAC9 C,OAAO,EAAC,UAAU,EAAC,MAAM,gBAaGB,CAAC;AAC1C,OAAO,EAAC,YAAy,EAAC,MAAM,kBAaKB ,CAAC;AAC9C,OAAO,EAAC,uBAaUB,EAAC,MAAM,6BAA6B,CAAC;AACpE,OAAO,EAAC,UAAU,EAAC, MAAM,gBAaGB,CAAC;AAC1C,OAAO,EAAC,kBAaKB,EAAC,MAAM,wBAawB,CAAC;AAC1D,OAAO,EA AC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAA O,EAAC,SAAS,EAAC,MAAM,eAAe,CAAC;AACxC,OAAO,EAAC,UAAU,EAAC,MAAM,gBAaGB,CAAC;AA C1C,OAAO,EAAC,UAAU,EAAC,MAAM,gBAaGB,CAAC;AAC1C,OAAO,EAAC,UAAU,EAAC,MAAM,gBAa GB,CAAC;AAC1C,OAAO,EAAC,eAAe,EAAC,MAAM,qBAaqB,CAAC;AACpD,OAAO,EAAC,eAAe,EAAC,M AAM,qBAaqB,CAAC;AACpD,OAAO,EAAC,YAAy,EAAC,MAAM,kBAaKB,CAAC;AAC9C,OAAO,EAAC,e AAe,EAAC,MAAM,qBAaqB,CAAC;AAEpD,+BAA+B;AAC/B,MAAM,aAAa,GAaMB;IACpC,SAAS;IACT,SA AS;IACT,UAAU;IACV,SAAS;IACT,SAAS;IACT,YAAy;IACZ,aAAa;IACb,iBAaiB;IACjB,oBAAoB;IACpB,U AAU;IACV,UAAU;IACV,iBAaiB;IACjB,YAAy;IACZ,YAAy;IACZ,yBAayB;IACzB,SAAS;IACT,UAAU;IAC V,mBAaMB;IACnB,YAAy;IACZ,kBAaKB;IACIB,2BAA2B;IAC3B,SAAS;IACT,WAAW;IACX,SAAS;IACT,g BAaGB;IAChB,UAAU;IACV,mBAaMB;IACnB,WAAW;IACX,cAAc;IACd,iBAaiB;IACjB,oBAAoB;IACpB,iB AAiB;IACjB,0BAA0B;IAC1B,cAAc;IACd,cAAc;IACd,aAAa;IACb,kBAaKB;IACIB,cAAc;IACd,eAAe;IACf,UA AU;IACV,eAAe;IACf,SAAS;IACT,gBAaGB;IAChB,SAAS;IACT,aAAa;IACb,aAAa;IACb,UAAU;IACV,SAAS;I ACT,aAAa;IACb,eAAe;IACf,cAAc;IACd,SAAS;IACT,yBAayB;IACzB,yBAayB;IACzB,yBAayB;IACzB,cAAc; IACd,YAAy;IACZ,cAAc;IACd,UAAU;IACV,WAAW;IACX,SAAS;IACT,WAAW;IACX,UAAU;IACV,WAAW; IACX,aAAa;IACb,UAAU;IACV,WAAW;IACX,aAAa;IACb,oBAAoB;IACpB,aAAa;IACb,sBAaSB;IACtB,WAA W;IACX,WAAW;IACX,eAAe;IACf,YAAy;IACZ,aAAa;IACb,SAAS;IACT,WAAW;IACX,aAAa;IACb,oBAAoB ;IACpB,YAAy;IACZ,UAAU;IACV,YAAy;IACZ,uBAaUB;IACvB,UAAU;IACV,kBAaKB;IACIB,SAAS;IACT,S AAS;IACT,SAAS;IACT,UAAU;IACV,UAAU;IACV,UAAU;IACV,eAAe;IACf,eAAe;IACf,YAAy;IACZ,eAAe;C AChB,CAAC;AAEF,KAaK,MAAM,YAAy,IAAI,aAAa,EAaE;IACxC,cAAc,CAAC,YAAy,CAAC,CAAC;CAC 9B", "sourcesContent":["/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */

```
===== \n *\n// We explicitly import the modular kernels so they get registered in the\n// global registry when we compile the library. A modular build would replace\n// the contents of this file and import only the kernels that are needed.\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {fusedMatMulConfig} from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {addConfig} from './kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport {anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {avgPoolConfig} from './kernels/AvgPool';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport {batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {castConfig} from './kernels/Cast';\nimport {ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport {concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport {conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {cosConfig} from './kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from './kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {depthToSpaceConfig} from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from './kernels/DepthwiseConv2dNative';\nimport {eluConfig} from './kernels/Elu';\nimport {equalConfig} from './kernels/Equal';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from
```

```

./kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from
./kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from
./kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport
{fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from
./kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport
{gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport
{greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport
{leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport
{lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport
{logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport
{maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport
{meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
./kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from
./kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
./kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
./kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
./kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
./kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
./kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
{rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
./kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
./kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
./kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
./kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
./kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
./kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
./kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
./kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
./kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
./kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
./kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n  \n absConfig,\n  \n addConfig,\n  \n addNConfig,\n  \n allConfig,\n  \n anyConfig,\n
  \n argMaxConfig,\n  \n avgPoolConfig,\n  \n batchMatMulConfig,\n  \n batchToSpaceNDConfig,\n  \n castConfig,\n
  \n ceilConfig,\n  \n clipByValueConfig,\n  \n concatConfig,\n  \n conv2DConfig,\n  \n conv2DBackpropInputConfig,\n
  \n cosConfig,\n  \n coshConfig,\n  \n cropAndResizeConfig,\n  \n cumsumConfig,\n  \n depthToSpaceConfig,\n
  \n depthwiseConv2dNativeConfig,\n  \n eluConfig,\n  \n equalConfig,\n  \n expConfig,\n  \n expandDimsConfig,\n
  \n fillConfig,\n  \n flipLeftRightConfig,\n  \n floorConfig,\n  \n floorDivConfig,\n  \n fusedMatMulConfig,\n
  \n fusedBatchNormConfig,\n  \n fusedConv2DConfig,\n  \n fusedDepthwiseConv2DConfig,\n  \n gatherNdConfig,\n
  \n gatherV2Config,\n  \n greaterConfig,\n  \n greaterEqualConfig,\n  \n identityConfig,\n  \n leakyReluConfig,\n
  \n lessConfig,\n  \n lessEqualConfig,\n  \n logConfig,\n  \n logicalAndConfig,\n  \n maxConfig,\n  \n maximumConfig,\n
  \n maxPoolConfig,\n  \n meanConfig,\n  \n minConfig,\n  \n minimumConfig,\n  \n mirrorPadConfig,\n  \n multiplyConfig,\n
  \n negConfig,\n  \n nonMaxSuppressionV3Config,\n  \n nonMaxSuppressionV4Config,\n  \n nonMaxSuppressionV5Config,\n
  \n notEqualConfig,\n  \n oneHotConfig,\n  \n onesLikeConfig,\n  \n packConfig,\n  \n padV2Config,\n  \n powConfig,\n
  \n preluConfig,\n  \n prodConfig,\n  \n rangeConfig,\n

```

```
realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n zerosLikeConfig\n];\n\nfor (const kernelConfig of kernelConfigs) {\n  registerKernel(kernelConfig);\n}\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/register_all_kernels.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Floor.js","sourceRoot":"","sources":["../../src/kernels/Floor.ts"],"names":[],"mappings":"AAAA; ;;;;;;GAG;AACH,OAAO,EAAC,KAAK,EAAE,MAAM,uBAAuB,CAAC;AAEID,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AACvD,MAAM,CAAC,MAAM,WAAW,GAAsB,uBAAuB,CAAC,KAAK,CAAC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
```

```
*\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Floor.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"All.js","sourceRoot":"","sources":["../../src/kernels/All.ts"],"names":[],"mappings":"AAAA; ;;;;;;GAG;AAEH,OAAO,EAAC,GAAG,EAAuB,YAAY,EAAwC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIzH,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AAEvD,IAAI,OAAiE,CAAC;AAEtE,SAAS,KAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,EAAE,IAAI,CAAC,QAAQ,EAAE,CAAC,wBAAwB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAAkB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,kBAAkB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAK,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,YAAY,CAAC;KACxB;IAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,YAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IAChE,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;IAC9D,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAI,IAAI,CAAC,a
```

AAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAAC,S
AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,E
AAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACrC;IAED,IAAI,kBAaKB,EAAE;QACtB,oCAAoC;QACpC,OAAO
,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;QACZ,UAAU;
QACV,MAAM,QAAQ,GAAG,YAA Y,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAA Y,CAAC,CAA
C;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAE
D,MAAM,CAAC,MAAM,SAAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAA
S,EAAE,KAAK;IACbB,UAAU,EAAE,GAAuB;CACpC,CAAC", "sourcesContent":["/**\n *
Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n

```
\n*\n\nimport { All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from  
'@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport  
{ permuteAxesAndTranspose } from './kernel_utils';\nlet wasmAll: (xId: number, reduceSize: number, outId:  
number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmAll = backend.wasm.cwrap(All, null  
/*void*/, [number, number, number]);\n}\nfunction all(args: { backend: BackendWasm, inputs: AllInputs, attrs:  
AllAttrs }):\n  TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { axis, keepDims } = attrs;\n    const { x }  
= inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n    const  
{ transposed, axes, originalAxes, inputWasTransposed } =\n      permuteAxesAndTranspose(x, axis, backend);\n    if  
(inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      input =  
transposed;\n      inputId = transposedId;\n    }\n    const inputRank = input.shape.length;\n    backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape, axes);\n    const reduceSize =  
util.sizeFromShape(reduceShape);\n    const out = backend.makeOutput(outShape, x.dtype);\n    if  
(util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmAll(inputId, reduceSize, outId);\n    }\n    if (inputWasTransposed) {\n      // dispose of the transposed tensor.\n      backend.disposeData(transposed.dataId);\n    }\n    if (keepDims) {\n      // reshape\n      const newShape =  
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n    return  
out;\n}\nexport const allConfig: KernelConfig = {\n  kernelName: All,\n  backendName: 'wasm',\n  setupFunc:  
setup,\n  kernelFunc: all as { } as KernelFunc;\n};\n
```

Found in path(s):

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/All.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Conv2D.js","sourceRoot":"","sources":["../../src/kernels/Conv2D.ts"],"names":[],"mappings":"A  
AAA;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,YAA Y,EAAE,MAAM,EAAG,MAAM,uBAAuB,CAAC;AAIH,IA  
AI,UAMsB,CAAC;AAE3B,SAAS,KAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KA  
AK,CAAC,MAAM,EAAE,IAAI,CAAC,UAAU,EAAE;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QA  
AQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QA  
CR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QA  
AQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,MAAM,CACX,IAAsE;IACxE,MAAM,EAAC,MAAM,EA  
AE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEtC,MAAM,EAAC,CAAC,EAAE,MAAM,EAAC,GAA
```

G,MAAM,CAAC;IAC3B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,EAAC,OAAO,EAAE,SAAS,EAAE,GAAG,EA AE,eAAe,EAAE,UAAU,EAAC,GAAG,KAAK,CAAC;IACrE,MAAM,WAAW,GAAG,YAA Y,CAAC,uBAAuB,C AAC,UAAU,CAAC,CAAC;IACrE,MAAM,QAAQ,GAAG,YAA Y,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAK, EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EAAE,KAAK,EAAE,W AAW,CAAC,CAAC;IAE9C,MAAM,YAA Y,GAAG,QAAQ,CAAC,YAA Y,CAAC;IAC3C,MAAM,WAAW,GAA G,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IA CpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,C AAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IA CtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,MAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC; IAC7C,MAAM,YAA Y,GAAG,QAAQ,CAAC,YAA Y,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WA AAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,MAAM,cAAc,GAAG,QAAQ,CA AC,WAAW,CAAC;IAC5C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,CAAC,CA AC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC;IAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE; QAC1C,MAAM,IAAI,KAAK,CACX,mDAAmD;YACnD,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC; KAC5D;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC, CAAC;IAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC ,CAAC,EAAE,CAAC;IACnD,UAAU,CACN,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,C AAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EA AE,YAA Y,EAC/D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cA Ac,EAAE,aAAa,EAAE,YAA Y,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;IAC3B, OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,YAA Y,GAAiB;IACxC,UAAU,EAAE,MAA M;IACIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,MAA0B;CACvC,CAAC", "s

sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nlet wasmConv2d: (\n  xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, padTop: number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n  dilationHeight: number, dilationWidth: number, strideHeight: number,\n  strideWidth: number, inputChannels: number, outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmConv2d = backend.wasm.cwrap(Conv2D, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', // dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n\n  function conv2d(\n    args: {inputs: Conv2DInputs, backend: BackendWasm, attrs: Conv2DAttrs}) {\n    const {inputs, attrs, backend} = args;\n    const {x, filter} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const filterId = backend.dataIdMap.get(filter.dataId).id;\n    const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n    const $dataFormat = backend_util.convertConv2DDataFormat(dataFormat);\n    const convInfo = backend_util.computeConv2DInfo(\n
```



```
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n  pad, dimRoundingMode, false,\n  $dataFormat);\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const\n padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom =\n convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =\n convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =\n convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =\n convInfo.inChannels;\n const outputChannels = convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type\n === 'SAME' ? 1 : 0;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n  throw new Error(\n    `wasm backend\n Conv2D does not support dataFormat: ` +\n    `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =\n backend.dataIdMap.get(out.dataId).id;\n\n wasmConv2d(\n  xId, x.shape[0], x.shape[1], x.shape[2], filterId,\n  filterHeight,\n  filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n  dilationHeight,\n  dilationWidth, strideHeight, strideWidth, inputChannels,\n  outputChannels, outId);\n\n return out;\n}\n\nexport\n const conv2DConfig: KernelConfig = {\n  kernelName: Conv2D,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: conv2d as { } as KernelFunc\n};\n\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Conv2D.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"tf-backend-wasm.node.js","sources":["../src/kernels/types.ts","../src/kernels/_FusedMatMul.ts","../src/kernels/unary_kernel.ts","../src/kernels/Abs.ts","../src/kernels/binary_kernel.ts","../src/kernels/Add.ts","../src/kernels/AddN.ts","../src/kernels/Identity.ts","../src/kernels/Transpose.ts","../src/kernels/kernel_utils.ts","../src/kernels/All.ts","../src/kernels/Any.ts","../src/kernels/ArgMax.ts","../src/kernels/AvgPool.ts","../src/kernels/Reshape.ts","../src/kernels/BatchMatMul.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Slice.js","../src/kernels/Slice.ts","../src/kernels/BatchToSpaceND.ts","../src/kernels/Cast.ts","../src/kernels/Ceil.ts","../src/kernels/ClipByValue.ts","../src/kernels/Concat.ts","../src/kernels/Conv2D.ts","../src/kernels/Conv2DBackpropInput.ts","../src/kernels/Cos.ts","../src/kernels/Cosh.ts","../src/kernels/CropAndResize.ts","../src/kernels/Cumsum.ts","../src/kernels/DepthToSpace.ts","../src/kernels/DepthwiseConv2dNative.ts","../src/kernels/Elu.ts","../src/kernels/Equal.ts","../src/kernels/Exp.ts","../src/kernels/ExpandDims.ts","../src/kernels/Fill.ts","../src/kernels/FlipLeftRight.ts","../src/kernels/Floor.ts","../src/kernels/FloorDiv.ts","../src/kernels/FusedBatchNorm.ts","../src/kernels/FusedConv2D.ts","../src/kernels/FusedDepthwiseConv2D.ts","../src/kernels/GatherNd.ts","../src/kernels/GatherV2.ts","../src/kernels/Greater.ts","../src/kernels/GreaterEqual.ts","../src/kernels/LeakyRelu.ts","../src/kernels/Less.ts","../src/kernels/LessEqual.ts","../src/kernels/Log.ts","../src/kernels/LogicalAnd.ts","../src/kernels/Max.ts","../src/kernels/Maximum.ts","../src/kernels/MaxPool.ts","../src/kernels/Mean.ts","../src/kernels/Min.ts","../src/kernels/Minimum.ts","../src/kernels/MirrorPad.ts","../src/kernels/Multiply.ts","../src/kernels/Neg.ts","../src/kernels/NonMaxSuppression_util.ts","../src/kernels/NonMaxSuppressionV3.ts","../src/kernels/NonMaxSuppressionV4.ts","../src/kernels/NonMaxSuppressionV5.ts","../src/kernels/NotEqual.ts","../src/kernels/OneHot.ts","../src/kernels/OnesLike.ts","../src/kernels/Pack.ts","../src/kernels/PadV2.ts","../src/kernels/Pow.ts","../src/kernels/Prelu.ts","../src/kernels/Prod.ts","../src/kernels/Range.ts","../src/kernels/RealDiv.ts","../src/kernels/Relu.ts","../src/kernels/Relu6.ts","../src/kernels/ResizeBilinear.ts","../src/kernels/Reverse.ts","../src/kernels/RotateWithOffset.ts","../src/kernels/Round.ts","../src/kernels/Rsqrt.ts","../src/kernels/ScatterNd.ts","../src/kernels/Select.ts","../src/kernels/Sigmoid.ts","../src/kernels/Sin.ts","../src/kernels/Softmax.ts","../src/kernels/SpaceToBatchND.ts","../src/kernels/SplitV.ts","../src/kernels/Sqrt.ts","../src/kernels/Square.ts","../src/kernels/SquaredDifference.ts","../src/kernels/Step.ts","../src/kernels/StridedSlice.ts","../src/kernels/Sub.ts","../src/kernels/Sum.ts","../src/kernels/Tan.ts","../src/kernels/Tanh.ts","../src/kernels/Tile.ts","../src/kernels/TopK.ts","../
```

```

src/kernels/Transform.ts", "../src/kernels/Unpack.ts", "../src/kernels/ZerosLike.ts", "../src/register_all_kernels.ts", "../src/
c/flags_wasm.ts", "../wasm-out/tfjs-backend-wasm-threaded-simd.js", "../wasm-out/tfjs-backend-wasm-threaded-
simd.worker.js", "../wasm-out/tfjs-backend-
wasm.js", "../src/backend_wasm.ts", "../src/version.ts", "../src/base.ts"], "sourcesContent": ["/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\n// This enum must align with the enum defined in cc/backend.h.\nexport enum CppDType {\n float32 = 0,\n int32 = 1,\n bool = 2,\n string = 3,\n complex64 = 4\n}\n\n// Must match enum in cc/fusable_activations.h.\nexport
enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu
= 6\n}\n", /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { FusableActivation } from
'./types';\n\nlet wasmFusedMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, activation: number,\n biasId: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul,\n null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n
'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n
'number', // activation\n 'number', // biasId\n 'number', // preluActivationWeightsId\n 'number', //
leakyreluAlpha\n 'number' // out_id\n ]);\n\nfunction fusedBatchMatMul(args: {\n inputs:\n _FusedMatMulInputs,\n backend: BackendWasm,\n attrs: _FusedMatMulAttrs\n}) {\n const {inputs, backend,\n attrs} = args;\n const {a, b, bias, preluActivationWeights} = inputs;\n\n if (a.dtype !== 'float32' || b.dtype !==
'float32') {\n throw new Error(\n ` _FusedMatMul for non non-float32 tensors not yet supported.`);\n }\n\n const {transposeA, transposeB, activation, leakyreluAlpha} = attrs;\n const aId =
backend.dataIdMap.get(a.dataId).id;\n const bId = backend.dataIdMap.get(b.dataId).id;\n\n let biasId = 0;\n if
(bias !== null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n ` _FusedMatMul only supports rank-1 bias but got ` +\n `rank\n
${biasData.shape.length}.`);\n }\n biasId = biasData.id;\n }\n const preluActivationWeightsId =
preluActivationWeights == null ?\n 0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n const
fusedActivation =\n FusableActivation[activation as { } as keyof typeof FusableActivation];\n if
(fusedActivation == null) {\n throw new Error(\n `${activation} activation not yet supported for
FusedConv2D ` +\n `in the wasm backend.`);\n }\n\n const leftDim = transposeA ? a.shape[2] : a.shape[1];\n
const rightDim = transposeB ? b.shape[1] : b.shape[2];\n const batchDim = a.shape[0];\n\n const out =
backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const aShapeBytes = new Uint8Array(new
Int32Array(a.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n
wasmFusedMatMul(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n transposeA,

```

```
transposeB, fusedActivation, biasId, preluActivationWeightsId,\n    leakyreluAlpha || 0, outId);\n\n return\n out;}\n\n\nexport const fusedMatMulConfig: KernelConfig = {\n  kernelName: _FusedMatMul,\n  backendName:\n  'wasm',\n  setupFunc: setup,\n  kernelFunc: fusedBatchMatMul as {} as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport {DataType, KernelConfig, TensorInfo, UnaryInputs, util} from '@tensorflow/tfjs-core';\nimport\n {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nexport function\n createUnaryKernelConfig(\n  kernelName: string, outType?: DataType): KernelConfig {\n  let wasmFunc: (xId:\n  number, dtype: number, outId: number) => void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n      'number', // x_id\n      'number', // dtype\n      'number', // out_id\n    ]);\n\n    function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}): \n    TensorInfo {\n      const {backend, inputs: {x}} = args;\n      const xId = backend.dataIdMap.get(x.dataId).id;\n      const\n      out = backend.makeOutput(x.shape, outType || x.dtype);\n      const outId = backend.dataIdMap.get(out.dataId).id;\n\n      // Short-circuit zero-sized tensors.\n      if (util.sizeFromShape(out.shape) === 0) {\n        return out;\n      }\n\n      wasmFunc(xId, CppDType[x.dtype], outId);\n      return out;\n    }\n\n    return {kernelName, backendName: 'wasm',\n      setupFunc, kernelFunc};\n  }\n\n  ",/**\n  * @license\n  * Copyright 2019 Google LLC. All Rights Reserved.\n  * Licensed under the Apache License, Version 2.0 (the \"License\");\n  * you may not use this file except in\n  * compliance with the License.\n  * You may obtain a copy of the License at\n  * http://www.apache.org/licenses/LICENSE-2.0\n  * Unless required by applicable law or agreed to in writing,\n  * software\n  * distributed under the License is distributed on an \"AS IS\" BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n  * See the License for the specific language\n  * governing permissions and\n  * limitations under the License.\n  *
```

```
=====\n\n*/\n\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\n\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-\n  core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nexport\n function createBinaryKernelConfig(\n  kernelName: string, supportsFullBroadcast: boolean,\n  dtype?:\n  DataType): KernelConfig {\n  let wasmFunc:\n  (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n  number,\n  bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n  void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /*\n    void */, [\n      'number', // a_id,\n      'array', // a_shape\n      'number', // a_shape.length\n      'number', // b_id\n      'array', // b_shape\n      'number', // b_shape.length\n      'number', // dtype\n      'number' // out_id\n    ]);\n\n    function kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}): \n    TensorInfo {\n      const {backend,\n      inputs} = args;\n      const {a, b} = inputs;\n      const aId = backend.dataIdMap.get(a.dataId).id;\n      const bId =\n      backend.dataIdMap.get(b.dataId).id;\n\n      const outputType = dtype != null ? dtype : a.dtype;\n      const newShape =
```

```

backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n  const out = backend.makeOutput(newShape,
outputType);\n\n  // Short-circuit zero-sized tensors.\n  if (util.sizeFromShape(newShape) === 0) {\n    return
out;\n  }\n\n  const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n  const bShapeBytes =
new Uint8Array(new Int32Array(b.shape).buffer);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
const kernelFunc = () => wasmFunc(\n    aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n  CppDType[a.dtype], outId);\n\n  // Currently only some float operations support full broadcast.\n  if
(supportsFullBroadcast && a.dtype === 'float32') {\n    kernelFunc();\n    return out;\n  }\n\n  const
aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n  const bBroadcastDims =
backend_util.getBroadcastDims(b.shape, newShape);\n  const loopsOverAllOfA = aBroadcastDims.every((v, i) =>
v === i);\n  const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n  if (loopsOverAllOfA &&
loopsOverAllOfB) {\n    kernelFunc();\n    return out;\n  } else {\n    throw new Error(\n      `Broadcasting
along outer dims is not yet ` +\n      `supported for ${a.dtype} ${kernelName}.`);\n  }\n}\n\nreturn
{kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n}"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const addConfig: KernelConfig =\ncreateBinaryKernelConfig(Add, supportsFullBroadcast);\n}"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmFunc:\n  (inputIds:
Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n    void;\n\nfunction setupFunc(backend:
BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n    'array', // input_ids\n
'number', // input_ids.length\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\n\nfunction addn(args: {inputs:
TensorInfo[], backend: BackendWasm}) {\n  const {inputs, backend} = args;\n  const out =
backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n\n  // Short-circuit zero-sized tensors.\n  if
(util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n\n  const inputIds = inputs.map(x =>
backend.dataIdMap.get(x.dataId).id);\n  const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n
const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmFunc(inputIdsBytes, inputIds.length,
CppType[out.dtype], outId);\n  return out;\n}\n\nexport const addNConfig: KernelConfig = {\n  kernelName:
AddN,\n  backendName: 'wasm',\n  setupFunc,\n  kernelFunc: addn as { } as KernelFunc,\n};\n}"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*/\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport
{TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function
identity(args: {inputs: IdentityInputs, backend: BackendWasm}):\n  TensorInfo {\n  const {inputs: {x}, backend} =
args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const inVals = backend.typedArrayFromHeap(x);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.set(inVals);\n  return out;\n}\n\nexport const
identityConfig: KernelConfig = {\n  kernelName: Identity,\n  backendName: 'wasm',\n  kernelFunc: identity as {} as
KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*/\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs} from
 '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {identity} from
 './Identity';\nimport {CppType} from './types';\n\nlet wasmTranspose: (\n  xId: number, xShape: Uint8Array,
xShapeLength: number, dtype: CppDType,\n  outId: number, perm: Uint8Array, permLength: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTranspose = backend.wasm.cwrap(Transpose, null /*
void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // dtype\n    'number', // outId\n    'array', // perm\n    'number', // perm.length\n  ]);\n}\n\nexport function transpose(\n  args:\n    {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs}):\n    TensorInfo {\n  const {inputs,
backend, attrs} = args;\n  // Reduce any dimensions with size one. Lower-rank transpose kernel performs\n  // better
due to simpler memory access pattern.\n  const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,
attrs.perm);\n\n  let permIsNoOp = true;\n  for (let i = 0; i < perm.length; i++) {\n    if (perm[i] !== i) {\n
permIsNoOp = false;\n    }\n  }\n  const outShape = computeOutShape(inputs.x.shape, attrs.perm);\n  const x = {\n
dataId: inputs.x.dataId,\n  shape: reducedShape,\n  dtype: inputs.x.dtype\n};\n\n  if (permIsNoOp) {\n    const
cloned = identity({inputs, backend});\n    cloned.shape = outShape;\n    return cloned;\n  }\n\n  const out =
backend.makeOutput(outShape, x.dtype);\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n  const permBytes = new Uint8Array(new Int32Array(perm).buffer);\n  const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n  wasmTranspose(\n    xId,\n    xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\n    perm.length);\n  return
out;\n}\n\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\n  const outShape = new
Array(inShape.length);\n  for (let i = 0; i < outShape.length; i++) {\n    outShape[i] = inShape[perm[i]];\n  }\n
return outShape;\n}\n\nfunction removeOneSizeDims(\n  shape: number[], perm: number[]): [number[], number[]]\n
{\n  const newShape: number[] = [];\n  const newPerm: number[] = [];\n  for (let i = 0; i < shape.length; ++i) {\n
if (shape[i] !== 1) {\n    newShape.push(shape[i]);\n  }\n  if (shape[perm[i]] !== 1) {\n
newPerm.push(perm[i]);\n  }\n  }\n  for (let i = 0; i < newPerm.length; ++i) {\n    let minValIdx = -1;\n    for (let j =
0; j < newPerm.length; ++j) {\n      if (newPerm[j] >= i &&\n        (minValIdx === -1 || newPerm[minValIdx] >
newPerm[j])) {\n        minValIdx = j;\n      }\n    }\n    newPerm[minValIdx] = i;\n  }\n  return [newShape,
newPerm];\n}\n\nexport const transposeConfig: KernelConfig = {\n  kernelName: Transpose,\n  backendName:
'wasm',\n  kernelFunc: transpose as {} as KernelFunc,\n  setupFunc: setup,\n};\n"/**\n * @license\n * Copyright
2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
=====

```

governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport { backend_util, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { transpose } from './Transpose';\n\n/**\n * Compute permutation axes and do a transpose if necessary.\n *\n * Used by reduction ops.\n *\n * @param x input TensorInfo\n * @param axis reduction axes\n * @param backend wasm backend instance\n */\nexport function permuteAxesAndTranspose(\n  x: TensorInfo,\n  axis: number|number[],\n  backend: BackendWasm): {\n  transposed: TensorInfo|null,\n  axes: number[],\n  originalAxes: number[],\n  inputWasTransposed: boolean\n} {\n  const xShape = x.shape;\n  const xRank = x.shape.length;\n\n  const originalAxes = util.parseAxisParam(axis, xShape);\n  let axes = originalAxes;\n  const permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n  let xTransposed = null;\n  let inputWasTransposed = false;\n  if (permutedAxes != null) {\n    const newShape: number[] = new Array(xRank);\n    for (let i = 0; i < newShape.length; i++) {\n      newShape[i] = xShape[permutedAxes[i]];\n    }\n    axes = backend_util.getInnerMostAxes(axes.length, xRank);\n    xTransposed =\n      transpose({inputs: {x}, attrs: {perm: permutedAxes}, backend});\n\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const transposedId = backend.dataIdMap.get(xTransposed.dataId).id;\n    if (transposedId !== xId) {\n      inputWasTransposed = true;\n    }\n  }\n\n  return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```
=====\n\n*\n\nimport { All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\n\nlet wasmAll: (xId: number, reduceSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAll = backend.wasm.cwrap(All, null /*void*/, [number, number, number]);\n}\n\nfunction all(args: {backend: BackendWasm, inputs: AllInputs, attrs: AllAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input = transposed;\n    inputId = transposedId;\n  }\n\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize = util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, x.dtype);\n  if (util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAll(inputId, reduceSize, outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n  return out;\n}\n\nexport const allConfig: KernelConfig = {\n  kernelName: All,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: all as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n
```

```

=====
*/\n\nimport {Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAny = backend.wasm.cwrap(Any,
null /*void*/, [number, number, number]);\n}\n\nfunction any(args: {backend: BackendWasm, inputs: AnyInputs,
attrs: AnyAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis,
backend);\n\n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input = transposed;\n    inputId = transposedId;\n  }\n\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =
util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, x.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAny(inputId, reduceSize, outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n  return
out;\n}\n\nexport const anyConfig: KernelConfig = {\n  kernelName: Any,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: any as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {permuteAxesAndTranspose} from
'./kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmFunc: (\n  xId: number, dtype: number, outerSize:
number, innerSize: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
  wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // outer_size\n    'number', // inner_size\n    'number' // out_id\n  ]);\n}\n\nfunction argmax(\n  args:
{inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs}) {\n  const {backend, inputs, attrs} = args;\n
  const {axis} = attrs as {} as ArgMaxAttrs;\n  const {x} = inputs as {} as ArgMaxInputs;\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const {transposed, axes,
inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n
  const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n  if (transposedId !== xId) {\n    // transpose
was not a no-op. We will need to dispose of this\n    // once we are done.\n    input = transposed;\n    inputId =
transposedId;\n  }\n}\n\n  const outShape = input.shape.slice(0, -1);\n  const out =
backend.makeOutput(outShape, 'int32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const outerSize =
util.sizeFromShape(out.shape);\n  const innerSize = input.shape[axes[0]];\n  wasmFunc(inputId,
CppType[input.dtype], outerSize, innerSize, outId);\n\n  if (inputWasTransposed) {\n    // dispose of the
transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  return out;\n}\n\nexport const
argMaxConfig: KernelConfig = {\n  kernelName: ArgMax,\n  backendName: 'wasm',\n  kernelFunc: argmax as {}
as KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *

```

<http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/\n\nimport {AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmAvgPool: (\n  xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, strideHeight: number,\n  strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n  'number', // xId\n  'number', // batchSize\n  'number', // inputHeight\n  'number', // inputWidth\n  'number', // filterHeight\n  'number', // filterWidth\n  'number', // padTop\n  'number', // padRight\n  'number', // padBottom\n  'number', // padLeft\n  'number', //
strideHeight\n  'number', // strideWidth\n  'number', // channels\n  'number', // outId\n  ]);\n}\n\nfunction
avgPool(\n  args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n  const {inputs, attrs,
backend} = args;\n\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n\n  const
{filterSize, strides, pad, dimRoundingMode} = attrs;\n  const convInfo = backend_util.computePool2DInfo(\n
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n  const filterHeight =
convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const
padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n  const padLeft =
convInfo.padInfo.left;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n
const channels = convInfo.inChannels;\n\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n
`wasm backend does not support dataFormat: ` +\n      `${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n
}\n\n  if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n    throw new Error(\n
`was backend
only supports average pooling with dilation = [1, 1], ` +\n      `got [${convInfo.dilationHeight},
${convInfo.dilationWidth}].`);\n  }\n\n  const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const
outId = backend.dataIdMap.get(out.dataId).id;\n\n  wasmAvgPool(\n    xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n    padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n
outId);\n  return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n  kernelName: AvgPool,\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: avgPool as {} as KernelFunc\n};\n\n"/**\n * @license\n
 * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====
*/\n\nimport {KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nexport function reshape(\n  args: {inputs:
ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm}) {\n  const {inputs, attrs} = args;\n  const {x} =
inputs;\n  const {shape} = attrs;\n\n  const xSize = util.sizeFromShape(x.shape);\n  const $shape =
util.inferFromImplicitShape(shape, xSize);\n\n  util.assert(\n    xSize === util.sizeFromShape($shape),\n    () =>
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n      `shape must have the same number of
elements.`);\n\n  // Backend needs to track refCount for the dataId for reshape op\n  args.backend.incRef(x.dataId);\n
return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n
kernelName: Reshape,\n  backendName: 'wasm',\n  kernelFunc: reshape as {} as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a
```


copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {reshape} from
'./Reshape';\n\nlet wasmBatchMatMul: (\n  aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n  bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n  transposeB: boolean, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,
null /* void */, [\n    'number', // a_id\n    'array', // a_shape\n    'number', // a_shape.length\n    'number', // b_id\n    'array', // b_shape\n    'number', // b_shape.length\n    'number', // transpose_a\n    'number', // transpose_b\n    'number' // out_id\n  ]);\n\n  function batchMatMul(args: {\n    inputs: BatchMatMulInputs,\n    backend:
BackendWasm,\n    attrs: BatchMatMulAttrs\n  }) {\n    const {inputs, backend, attrs} = args;\n    const {a, b} = inputs;\n    const {transposeA, transposeB} = attrs;\n\n    if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n      throw new Error(\n        `BatchMatMul for non non-float32 tensors not yet supported.`);\n    }\n\n    const aRank = a.shape.length;\n    const
bRank = b.shape.length;\n\n    const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n    const
innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n\n    const outerShapeA = transposeA ?
a.shape[aRank - 1] : a.shape[aRank - 2];\n    const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank -
1];\n\n    const outerDimsA = a.shape.slice(0, -2);\n    const outerDimsB = b.shape.slice(0, -2);\n\n    const batchDimA =
util.sizeFromShape(outerDimsA);\n    const batchDimB = util.sizeFromShape(outerDimsB);\n\n    const
batchDimsCompatible =\n      batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n\n    util.assert(\n      aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n      () => `Error in matMul: the input
batch dimensions must either be the ` +\n        `same or at least one input batch dimension must be 1. Got input `
+\n        `batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n\n    const outShapeOuterDims =\n      batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\n\n    const outShape =
outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n\n    util.assert(\n      innerShapeA === innerShapeB,\n      () => `Error in matMul: inner shapes (${innerShapeA}) and (` +\n        `${innerShapeB}) of Tensors with shapes
${a.shape} and ` +\n        `${b.shape} and transposeA=${transposeA}` +\n        ` and transposeB=${transposeB}
must match.`);\n\n    const a3dShape = transposeA ? [batchDimA, innerShapeA, outerShapeA] :\n      [batchDimA, outerShapeA, innerShapeA];\n    const b3dShape = transposeB ? [batchDimB, outerShapeB,\n      innerShapeB] :\n      [batchDimB, innerShapeB, outerShapeB];\n\n    // The rest of the
implementation is designed to operate on rank-3 tensors\n    const a3d = reshape({inputs: {x: a}, backend, attrs:
{shape: a3dShape}});\n    const b3d = reshape({inputs: {x: b}, backend, attrs: {shape: b3dShape}});\n\n    const a3dId
= backend.dataIdMap.get(a3d.dataId).id;\n    const b3dId = backend.dataIdMap.get(b3d.dataId).id;\n\n    const leftDim
= transposeA ? a3d.shape[2] : a3d.shape[1];\n    const rightDim = transposeB ? b3d.shape[1] : b3d.shape[2];\n\n    const
batchDim = Math.max(batchDimA, batchDimB);\n\n    const out = backend.makeOutput([batchDim, leftDim,\n      rightDim], a3d.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const aShapeBytes = new
Uint8Array(new Int32Array(a3d.shape).buffer);\n    const bShapeBytes = new Uint8Array(new
Int32Array(b3d.shape).buffer);\n\n    wasmBatchMatMul(\n      a3dId, aShapeBytes, a3d.shape.length, b3dId,\n      bShapeBytes,\n      b3d.shape.length, transposeA, transposeB, outId);\n\n    backend.disposeData(a3d.dataId);\n    backend.disposeData(b3d.dataId);\n\n    out.shape = outShape;\n    return out;\n  }\n\n  export const batchMatMulConfig:
KernelConfig = {\n    kernelName: BatchMatMul,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc:
batchMatMul as {} as KernelFunc\n  };
}

/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
```


VUZW5zb3JJbmZvKCRzaXpILCB4LmR0eXBILCBvdXRWYWxzKTtcbn1cblxuZXhwb3J0IGNvbnN0IHNSaWN
IQ29uZmlnOiBLZXJwZwDb25maWcgPSB7XG4gIGtcm5lbE5hbWU6IFNsaWNILFxcuICBiYWNRZW5kTmFtZ
TogJ2NwdScsXG4gIGtcm5lbEZ1bmM6IHNSaWNIGFzIHt9IGFzIEtcm5lbEZ1bmNcbn07XG4iXX0=","/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util}  
from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {sliceImplCPU} from  
 '../kernel_utils/shared';\n\nexport function slice(\n  args: {inputs: SliceInputs, attrs: SliceAttrs, backend:  
BackendWasm}) {\n  const {inputs: {x}, attrs: {begin, size}, backend} = args;\n\n  const [begin_, size_] =  
slice_util.parseSliceParams(x, begin, size);\n\n  const isContinuous = slice_util.isSliceContinuous(x.shape, begin_,  
size_);\n\n  const xVals = backend.readSync(x.dataId);\n\n  const out = backend.makeOutput(size_, x.dtype);\n\n  const  
xStrides = util.computeStrides(x.shape);\n\n  const outData = backend.dataIdMap.get(out.dataId);\n\n  if (isContinuous)  
{\n  const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);\n\n  if (x.dtype === 'string') {\n  outData.stringBytes =\n    (xVals as Uint8Array[]).slice(flatOffset, flatOffset +  
util.sizeFromShape(size_));\n  } else {\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.set(\n    (xVals as TypedArray).subarray(flatOffset, flatOffset +  
util.sizeFromShape(size_));\n  )\n  }\n\n  return out;\n  }\n\n  if (x.dtype === 'string') {\n  const res =  
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);\n  outData.stringBytes = res as Uint8Array[];\n  return  
out;\n  }\n\n  const outVals = backend.typedArrayFromHeap(out);\n  const rank = x.shape.length;\n  if (rank === 2)  
{\n  slice2d(\n    xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],\n    size_ as [number, number]);\n  } else if (rank === 3) {\n  slice3d(\n    xVals as TypedArray, xStrides[0], xStrides[1],  
outVals,\n    begin_ as [number, number, number], size_ as [number, number, number]);\n  } else if (rank === 4)  
{\n  slice4d(\n    xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,\n    begin_ as [number,  
number, number, number],\n    size_ as [number, number, number, number]);\n  } else {\n  const res =\n  sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;\n  outVals.set(res);\n  }\n\n  return  
out;\n}\n\nfunction slice2d(\n  xVals: backend_util.TypedArray, xStride: number,\n  outVals:  
backend_util.TypedArray, begin: [number, number],\n  size: [number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const endI = beginI + size[0];\n  for (let i = beginI; i < endI;  
i++) {\n  const xOffset = i * xStride + beginJ;\n  outVals.set(xVals.subarray(xOffset, xOffset + size[1]),  
outOffset);\n  outOffset += size[1];\n  }\n}\n\nfunction slice3d(\n  xVals: backend_util.TypedArray, xStride1:  
number, xStride2: number,\n  outVals: backend_util.TypedArray, begin: [number, number, number],\n  size:  
[number, number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const beginK = begin[2];\n  const endI = beginI + size[0];\n  const endJ = beginJ + size[1];\n  for (let i = beginI; i <  
endI; i++) {\n  for (let j = beginJ; j < endJ; j++) {\n  const xOffset = i * xStride1 + j * xStride2 + beginK;\n  outVals.set(xVals.subarray(xOffset, xOffset + size[2]), outOffset);\n  outOffset += size[2];\n  }\n  }\n}\n\nfunction slice4d(\n  xVals: backend_util.TypedArray, xStride1: number, xStride2: number,\n  xStride3:  
number, outVals: backend_util.TypedArray,\n  begin: [number, number, number, number],\n  size: [number,  
number, number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const beginK = begin[2];\n  const endI = beginI + size[0];\n  const endJ = beginJ + size[1];\n  const endK = beginK  
+ size[2];\n  const beginL = begin[3];\n  for (let i = beginI; i < endI; i++) {\n  for (let j = beginJ; j < endJ; j++)  
{\n  for (let k = beginK; k < endK; k++) {\n  const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +  
beginL;\n  outVals.set(xVals.subarray(xOffset, xOffset + size[3]), outOffset);\n  outOffset += size[3];\n  }\n  }\n  }\n}\n\nexport const sliceConfig: KernelConfig = {\n  kernelName: Slice,\n  backendName: 'wasm',\n}
```

kernelFunc: slice as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { reshape } from './Reshape';\nimport { slice } from './Slice';\nimport { transpose } from './Transpose';\n\nfunction batchToSpaceND(args: {\n  inputs: BatchToSpaceNDInputs,\n  backend: BackendWasm,\n  attrs: BatchToSpaceNDAttrs\n}) {\n  const { inputs, backend, attrs } = args;\n  const { x } = inputs;\n  const { blockShape, crops } = attrs;\n\n  const prod = blockShape.reduce((a, b) => a * b);\n  const reshaped = backend_util.getReshaped(x.shape, blockShape, prod);\n  const permuted = backend_util.getPermuted(reshaped.length, blockShape.length);\n  const reshapedPermuted = backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n  const sliceBeginCoords = backend_util.getSliceBeginCoords(crops, blockShape.length);\n  const sliceSize = backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n  const xReshaped = reshape({ inputs: { x }, backend, attrs: { shape: reshaped } });\n  const xTransposed = transpose({ inputs: { x: xReshaped }, backend, attrs: { perm: permuted } });\n  const xTransposedReshaped = reshape({ inputs: { x: xTransposed }, backend, attrs: { shape: reshapedPermuted } });\n  const result = slice({ inputs: { x: xTransposedReshaped }, backend, attrs: { begin: sliceBeginCoords, size: sliceSize } });\n\n  backend.disposeData(xReshaped.dataId);\n  backend.disposeData(xTransposed.dataId);\n  backend.disposeData(xReshaped.dataId);\n\n  return result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n  kernelName: BatchToSpaceND,\n  backendName: 'wasm',\n  kernelFunc: batchToSpaceND as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nexport function cast(\n  args: { inputs: CastInputs, attrs: CastAttrs, backend: BackendWasm }):\n  TensorInfo {\n  const { inputs: { x }, attrs: { dtype }, backend } = args;\n  const out = backend.makeOutput(x.shape, dtype);\n  const inVals = backend.toArrayFromHeap(x);\n  const outVals = backend.toArrayFromHeap(out);\n  outVals.set(inVals);\n  return out;\n}\n\nexport const castConfig: KernelConfig = {\n  kernelName: Cast,\n  backendName: 'wasm',\n  kernelFunc: cast as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Ceil } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from
```



```
./unary_kernel';\n\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n", "/*\n *  
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc } from  
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmClip: (xId: number, min:  
number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmClip =  
backend.wasm.cwrap(ClipByValue, null /* void */, [\n    'number', // x_id\n    'number', // min\n    'number', //  
max\n    'number' // out_id\n  ]);\n\n  function clip(args: {\n    inputs: ClipByValueInputs,\n    backend:  
BackendWasm,\n    attrs: ClipByValueAttrs\n  }) {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {clipValueMin, clipValueMax} = attrs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const out =  
backend.makeOutput(x.shape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmClip(xId,  
clipValueMin, clipValueMax, outId);\n    return out;\n  }\n\n  export const clipByValueConfig: KernelConfig = {\n    kernelName: ClipByValue,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: clip as } as  
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the  
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *
```

```
=====\n*\n\nimport { backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util } from  
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { concatImplCPU } from  
../kernel_utils/shared';\n\nimport { identity } from './Identity';\n\nimport { reshape } from './Reshape';\n\nexport function  
concat(\n  args: {\n    inputs: ConcatInputs, backend: BackendWasm, attrs: ConcatAttrs\n  }) {\n    const {inputs, backend}  
= args;\n\n    const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n\n    let outShape =  
backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n\n    // Keep only non-empty tensors (ignore tensors  
with 0 in their shape).\n    const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n\n    if ($inputs.length ===  
1) {\n      return identity({inputs: {x: $inputs[0]}, backend});\n    }\n\n    const out = backend.makeOutput(outShape,  
inputs[0].dtype);\n\n    if (util.sizeFromShape(outShape) === 0) {\n      return out;\n    }\n\n    const shapes =  
$inputs.map(t => t.shape);\n\n    backend_util.assertParamsConsistent(shapes, axis);\n\n    if ($inputs[0].dtype ===  
'string') {\n      // Any concat of n-dimensional tensors across any axis can be reduced to\n      // a concatenation of two-  
dimensional tensors across the axis 1 by first\n      // partitioning the axes of the original tensors into those less than  
the\n      // axis to be concatenated and the rest. Then reshape the tensors\n      // into a two-dimensional tensor by  
collapsing these two sets of axes and\n      // concatenate the resulting matrices across the axis 1, finally reshaping\n      // the result to have the proper shape.\n      const inputs2D = $inputs.map(t => {\n        const innerSize =  
util.sizeFromShape(t.shape.slice(axis));\n        const shape = [-1, innerSize];\n        return reshape({inputs: {x: t},  
backend, attrs: {shape}});\n      });\n\n      const inputsValShapes = inputs2D.map(t => {\n        return {vals:  
backend.readSync(t.dataId), shape: t.shape};\n      });\n\n      // Concat 2d tensors along axis=1.\n      outShape =\n      backend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);\n      const simplyConcat =  
inputs2D[0].shape[0] === 1;\n      const outVals = concatImplCPU(\n        inputsValShapes, outShape,  
inputs[0].dtype,\n        simplyConcat) as string[];\n\n      const finalOutShape =\n      backend_util.computeOutShape($inputs.map(t => t.shape), axis);\n      out.shape = finalOutShape;\n      const
```

```

outData = backend.dataIdMap.get(out.dataId);\n  outData.stringBytes =
backend_util.fromStringArrayToUint8(outVals);\n  inputs2D.forEach(t => backend.disposeData(t.dataId));\n  return out;\n  }\n  const batchDim = util.sizeFromShape($inputs[0].shape.slice(0, axis));\n  let sumInnerDims =
0;\n  const innerDims = $inputs.map(input => {\n    const innerDim = util.sizeFromShape(input.shape.slice(axis));\n    sumInnerDims += innerDim;\n    return innerDim;\n  });\n  const inVals = $inputs.map(input =>
backend.typedArrayFromHeap(input));\n  const outVals = backend.typedArrayFromHeap(out);\n  for (let b = 0; b <
batchDim; b++) {\n    let outOffset = b * sumInnerDims;\n    for (let i = 0; i < inVals.length; i++) {\n      const
innerDim = innerDims[i];\n      const inOffset = b * innerDim;\n      const vals = inVals[i].subarray(inOffset,
inOffset + innerDim);\n      outVals.set(vals, outOffset);\n      outOffset += innerDim;\n    }\n  }\n  return
out;\n  }\n  \nexport const concatConfig: KernelConfig = {\n  kernelName: Concat,\n  backendName: 'wasm',\n  kernelFunc: concat as {} as KernelFunc;\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, KernelConfig, KernelFunc, Tensor4D} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmConv2d: (\n  xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number,
filterWidth: number, padTop: number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad:
number,\n  dilationHeight: number, dilationWidth: number, strideHeight: number,\n  strideWidth: number,
inputChannels: number, outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n  wasmConv2d = backend.wasm.cwrap(Conv2D, null /* void */, [\n    'number', // xId\n
'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n
'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', // padRight\n
'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', // dilationHeight\n
'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // inputChannels\n
'number', // outputChannels\n    'number', // outId\n  ]);\n  \nfunction conv2d(\n  args: {inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs}) {\n    const {inputs, attrs, backend} = args;\n    const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n    const filterId = backend.dataIdMap.get(filter.dataId).id;\n
const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n    const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n    const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n    pad, dimRoundingMode, false,
$dataFormat);\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n
const padTop = convInfo.padInfo.top;\n    const padRight = convInfo.padInfo.right;\n    const padBottom =
convInfo.padInfo.bottom;\n    const padLeft = convInfo.padInfo.left;\n    const dilationHeight =
convInfo.dilationHeight;\n    const dilationWidth = convInfo.dilationWidth;\n    const strideHeight =
convInfo.strideHeight;\n    const strideWidth = convInfo.strideWidth;\n    const inputChannels =
convInfo.inChannels;\n    const outputChannels = convInfo.outChannels;\n    const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n    if (convInfo.dataFormat !== 'channelsLast') {\n      throw new Error(\n        `wasm backend
Conv2D does not support dataFormat: ` +\n        ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n    }\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n    const outId =
backend.dataIdMap.get(out.dataId).id;\n    wasmConv2d(\n      xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n      filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n      dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n      outputChannels, outId);\n    return out;\n  }\n  \nexport
const conv2DConfig: KernelConfig = {\n    kernelName: Conv2D,\n    backendName: 'wasm',\n    setupFunc: setup,\n

```

kernelFunc: conv2d as { } as KernelFunc\n};\n",/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

=====
*\n\nimport {backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n  dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n  filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n  outHeight: number, outWidth: number, outChannels: number,\n  strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n  fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n  xRowStride: number, xColStride: number, xChannelStride: number,\n  yBatchStride: number, yRowStride:
number, yColStride: number,\n  yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n    'number', // dyId\n    'number', // filterId\n    'number', // batchSize\n    'number', // filterHeight\n    'number', //
filterWidth\n    'number', // inHeight\n    'number', // inWidth\n    'number', // inChannels\n    'number', //
outHeight\n    'number', // outWidth\n    'number', // outChannels\n    'number', // strideHeight\n    'number', //
strideWidth\n    'number', // topPad\n    'number', // leftPad\n    'number', // fltS0\n    'number', // fltS1\n    'number', //
fltS2\n    'number', // xBatchStride\n    'number', // xRowStride\n    'number', // xColStride\n    'number', //
xChannelStride\n    'number', // yBatchStride\n    'number', // yRowStride\n    'number', // yColStride\n    'number', //
yChannelStride\n    'number', // outId\n  ]);\n\n  function conv2DBackpropInput(args: {\n    backend:
BackendWasm,\n    inputs: Conv2DBackpropInputInputs,\n    attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {dy, filter} = inputs;\n    const {strides, pad, dataFormat,
dimRoundingMode, inputShape} = attrs;\n\n    const dilations = 1;\n\n    const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n    const convInfo = backend_util.computeConv2DInfo(\n    inputShape, filter.shape as [number, number, number, number], strides,\n    dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n    const {\n      batchSize,\n      filterHeight,\n      filterWidth,\n      inChannels,\n      inHeight,\n      inWidth,\n      outChannels,\n      outHeight,\n      outWidth,\n      strideHeight,\n      strideWidth\n    } =
convInfo;\n\n    const topPad = filterHeight - 1 - convInfo.padInfo.top;\n    const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n    const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n    const dxStrides =
util.computeStrides(convInfo.inShape);\n    const dyStrides = util.computeStrides(dy.shape);\n    const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n    const xBatchStride = dxStrides[0];\n    const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n    const xColStride = isChannelsLast ? dxStrides[2] : 1;\n    const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n    const yBatchStride = dyStrides[0];\n    const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n    const yColStride = isChannelsLast ? dyStrides[2] : 1;\n    const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n    const out = backend.makeOutput(convInfo.inShape,
'float32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const dyId =
backend.dataIdMap.get(dy.dataId).id;\n    const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n    wasmConv2DBackpropInput(\n      dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n      inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n      topPad, leftPad, fltS0, fltS1, fltS2,\n      xBatchStride, xRowStride,\n      xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n      yChannelStride, outId);\n    return out;\n  }\n\n  export const conv2DBackpropInputConfig: KernelConfig = {\n    kernelName: Conv2DBackpropInput,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n",/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file

```

except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { Cos, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const cosConfig: KernelConfig = createUnaryKernelConfig(Cos);\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { Cosh, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const coshConfig: KernelConfig = createUnaryKernelConfig(Cosh);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc,\n TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { cast }\n from './Cast';\n// Must match enum in CropAndResize.cc\nenum InterpolationMethod {\n  bilinear = 0,\n  nearest\n  = 1\n}\nlet wasmCropAndResize: (\n  imagesId: number, boxesId: number, boxIndId: number, numBoxes:\n  number,\n  imagesShape: Uint8Array, cropHeight: number, cropWidth: number,\n  method: number,\n  extrapolationValue: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n    'number', // imagesId\n    'number', // boxesId\n    'number', // boxIndId\n    'number', // numBoxes\n    'array', // images shape\n    'number',\n    // cropHeight\n    'number', // cropWidth\n    'number', // method\n    'number', // extrapolation value\n    'number'\n    // out id\n  ]);\n  function cropAndResize(args: {\n    backend: BackendWasm,\n    inputs: CropAndResizeInputs,\n    attrs: CropAndResizeAttrs\n  }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { method,\n      extrapolationValue, cropSize } = attrs;\n    const { image, boxes, boxInd } = inputs;\n    const numBoxes =\n      boxes.shape[0];\n    const [cropHeight, cropWidth] = cropSize as [number, number];\n    const outShape =\n      [numBoxes, cropHeight, cropWidth, image.shape[3]];\n    let imagesData =\n      backend.dataIdMap.get(image.dataId);\n    let castedData;\n    if (image.dtype !== 'float32') {\n      castedData =\n        cast({ backend, inputs: { x: image }, attrs: { dtype: 'float32' }});\n      imagesData =\n        backend.dataIdMap.get(castedData.dataId);\n    }\n    const imagesId = imagesData.id;\n    const boxesId =\n      backend.dataIdMap.get(boxes.dataId).id;\n    const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n    const\n      out = backend.makeOutput(outShape, 'float32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const\n      imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n    wasmCropAndResize(\n      imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,\n      cropWidth,\n      InterpolationMethod[method as {}] as keyof typeof InterpolationMethod,\n      extrapolationValue, outId);\n    if\n      (castedData !== null) {\n      backend.disposeData(castedData.dataId);\n    }\n    return out;\n  }\n  export const\n    cropAndResizeConfig: KernelConfig = {\n    kernelName: CropAndResize,\n    backendName: 'wasm',\n    setupFunc:
```

setup,\n kernelFunc: cropAndResize as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nimport {transpose} from './Transpose';\n\nlet wasmCumsum: (xId: number, exclusive: number, reverse: number,\n                finalDim: number, outId: number, dtype: CppDType) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\n    'number', // x_id\n    'number', // exclusive\n    'number', // reverse\n    'number', // final_dim\n    'number', // out_id\n    'number' // dtype\n  ]);\n}\n\nexport function cumsum(\n  args: {inputs: CumsumInputs, backend: BackendWasm, attrs: CumsumAttrs}):\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {axis, exclusive, reverse} = attrs;\n  const xRank = x.shape.length;\n  util.assert(x.dtype === 'float32' || x.dtype === 'int32',\n    () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\n  // permute required axis to inner most axis\n  const permutation = backend_util.getAxesPermutation([axis], xRank);\n  let permutedX = x;\n  if (permutation !== null) {\n    permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n  }\n  const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n  backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n  const permutedOut = backend.makeOutput(permutedX.shape, permutedX.dtype);\n  const finalDim = permutedX.shape[permutedAxis];\n  const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n  const permutedOutId = backend.dataIdMap.get(permutedOut.dataId).id;\n  wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0, finalDim,\n    permutedOutId, CppDType[x.dtype]);\n  // transpose data back if permuted\n  let out = permutedOut;\n  if (permutation !== null) {\n    const undoPermutation = backend_util.getUndoAxesPermutation(permutation);\n    out = transpose(\n      {inputs: {x: permutedOut}, attrs: {perm: undoPermutation}, backend});\n  }\n  backend.disposeData(permutedX.dataId);\n  backend.disposeData(permutedOut.dataId);\n}\n\nreturn out;\n}\n\nexport const cumsumConfig: KernelConfig = {\n  kernelName: Cumsum,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: cumsum as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace: (\n  xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n  xStridesLength: number, outputShape: Uint8Array, outputStrides: Uint8Array,\n  outSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null /*void*/, [\n    'number', // xId\n    'number', // blockSize\n    'number', // channelsLast\n    'array', // xStrides\n    'number', // xStridesLength\n    'array', // outputShape\n    'array', // outputStrides\n    'number', // outSize\n    'number', // outId\n  ]);\n}\n\nexport function depthToSpace(args: {\n  backend: BackendWasm,\n  inputs: DepthToSpaceInputs,\n  attrs: DepthToSpaceAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n
```

```

const {x} = inputs;\n const {blockSize, dataFormat} = attrs;\n\n const batchSize = x.shape[0];\n const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n const
outputHeight = inputHeight * blockSize;\n const outputWidth = inputWidth * blockSize;\n const outputDepth =
inputDepth / (blockSize * blockSize);\n\n const outputShape = (dataFormat === 'NHWC') ?\n [batchSize,
outputHeight, outputWidth, outputDepth] :\n [batchSize, outputDepth, outputHeight, outputWidth];\n\n const
out = backend.makeOutput(outputShape, 'float32');\n\n const xData = backend.dataIdMap.get(x.dataId);\n const
xId = xData.id;\n const xStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n const outStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n wasmDepthToSpace(\n xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n return
out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n kernelName: DepthToSpace,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: depthToSpace as {} as KernelFunc\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====

```

```

*\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number, padTop:
number,\n padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n dilationHeight:
number, dilationWidth: number, strideHeight: number,\n strideWidth: number, inputChannels: number,
outputChannels: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmDepthwiseConv2d =\n backend.wasm.cwrap(DepthwiseConv2dNative, null /* void */, [\n 'number', //
xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', //
filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
'number', // inputChannels\n 'number', // outputChannels\n 'number', // outId\n ]);\n}\n\nfunction
depthwiseConv2d(args: {\n inputs: DepthwiseConv2dNativeInputs,\n backend: BackendWasm,\n attrs:
DepthwiseConv2dNativeAttrs\n}) {\n const {inputs, attrs, backend} = args;\n\n const {x, filter} = inputs;\n const
xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n const
{strides, dilations, pad, dimRoundingMode} = attrs;\n\n const $dilations = dilations === null ? [1, 1] : dilations;\n\n
const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n ($dilations as number | [number, number]), pad, dimRoundingMode,\n true /* depthwise */);\n\n
const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop =
convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n
const padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n if
(convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend DepthwiseConv2dNative

```

```

does not support dataFormat: ` +\n      \`${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n } \n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmDepthwiseConv2d(\n      xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n      filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n      dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n      outputChannels, outId);\n return out;\n }\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n kernelName: DepthwiseConv2dNative,\n backendName: 'wasm',\n setupFunc: setup,\n
kernelFunc: depthwiseConv2d as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n", "/*\n * @license\n
* Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const equalConfig: KernelConfig =\ncreateBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {reshape} from
'./Reshape';\n\nexport function expandDims(args: {\n inputs: ExpandDimsInputs,\n attrs: ExpandDimsAttrs,\n
backend: BackendWasm\n}) {\n const {inputs, attrs, backend} = args;\n const {input} = inputs;\n const {dim} =
attrs;\n\n const inputRank = input.shape.length;\n const newShape = input.shape.slice();\n let $dim = dim;\n if
(dim < 0) {\n // Negative value is counted from the tail of rank.\n util.assert(\n      -(inputRank + 1) <= dim,\n

```

```

    () => `Axis must be in the interval [${- (inputRank + 1)}, ${\n      inputRank}]);\n  $dim = inputRank + dim
+ 1;\n }\n newShape.splice($dim, 0, 1);\n\n return reshape({inputs: {x: input}, backend, attrs: {shape:
newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'wasm',\n  kernelFunc: expandDims as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nexport function fill(args: {attrs:
FillAttrs, backend: BackendWasm}) {\n  const {attrs: {shape, value, dtype}, backend} = args;\n  const out =
backend.makeOutput(shape, dtype);\n  const outVals = backendtypedArrayFromHeap(out);\n  outVals.fill(value as
number);\n  return out;\n}\n\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName:
'wasm',\n  kernelFunc: fill as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFlipLeftRight: (\n  xId: number, batch:
number, imageHeight: number, imageWidth: number,\n  numChannels: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight,
null /* void */, [\n    'number', // xId\n    'number', // batch\n    'number', // imageHeight\n    'number', //
imageWidth\n    'number', // numChannels\n    'number', // outId\n  ]);\n}\n\nexport function flipLeftRight(\n
args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n  const {inputs, backend} = args;\n
const {image} = inputs;\n  const out = backend.makeOutput(image.shape, image.dtype);\n  const imageId =
backend.dataIdMap.get(image.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const [batch,
imageHeight, imageWidth, numChannels] = image.shape;\n\n  wasmFlipLeftRight(\n    imageId, batch,
imageHeight, imageWidth, numChannels, outId);\n  return out;\n}\n\nexport const flipLeftRightConfig:
KernelConfig = {\n  kernelName: FlipLeftRight,\n  backendName: 'wasm',\n  kernelFunc: flipLeftRight as {} as
KernelFunc,\n  setupFunc: setup\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a

```


copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*\n\nimport {FloorDiv, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const floorDivConfig: KernelConfig =\n  createBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====  
*\n\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmBatchNorm: (\n  xId: number, meanId: number, varianceId: number, offsetId: number,\n  scaleId: number, varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmBatchNorm = backend.wasm.cwrap(\n    FusedBatchNorm, null /* void */,\n    ['number', 'number', 'number', 'number', 'number', 'number', 'number'];\n  );\n\n  function fusedBatchNorm(args: {\n    backend: BackendWasm,\n    inputs: FusedBatchNormInputs,\n    attrs: FusedBatchNormAttrs\n  }): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {varianceEpsilon} = attrs;\n    const {x, mean, variance, offset, scale} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const meanId = backend.dataIdMap.get(mean.dataId).id;\n    const varianceId = backend.dataIdMap.get(variance.dataId).id;\n    const offsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n    const scaleId = scale != null ? backend.dataIdMap.get(scale.dataId).id : 0;\n\n    const out = backend.makeOutput(x.shape, x.dtype);\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(x.shape) === 0) {\n      return out;\n    }\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmBatchNorm(xId, meanId, varianceId, offsetId, scaleId, varianceEpsilon, outId);\n\n    return out;\n  }\n\n  export const fusedBatchNormConfig: KernelConfig = {\n    kernelName: FusedBatchNorm,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: fusedBatchNorm as {\n      KernelFunc\n    },\n  }, "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====  
*\n\nimport {backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {FusableActivation} from './types';\n\nlet wasmFusedConv2d: (\n  xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number,\n  biasId: number, padTop: number, padRight: number, padBottom: number,\n  padLeft: number, isSamePad: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels: number, activation: number,\n  preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n    'number', // xId\n    'number', //
```

```

batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', //
inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n );\n}\n\nfunction
fusedConv2d(args: {\n inputs: FusedConv2DInputs,\n backend: BackendWasm,\n attrs: FusedConv2DAttrs\n})
{\n const {inputs, attrs, backend} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const {\n
strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } =
attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as
Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode);\n\n const fusedActivation =\n
FusableActivation[activation as {} as keyof typeof FusableActivation];\n if (fusedActivation == null) {\n throw
new Error(\n ` ${activation} activation not yet supported for FusedConv2D ` +\n ` in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if
(bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `FusedConv2D only supports rank-1 bias but got ` +\n ` rank
${biasData.shape.length}.`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not ` +\n ` match the number of output channels
(${outputChannels})`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedConv2D does not support
dataFormat:` +\n ` ${dataFormat}'. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n
backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n kernelName: FusedConv2D,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nimport {FusableActivation} from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n
filterId: number, filterHeight: number, filterWidth: number,\n biasId: number, padTop: number, padRight:

```

```

number, paddingBottom: number,\n  padLeft: number, isSamePad: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:
number, activation: number,\n  preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedDepthwiseConv2d =\n  backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n    'number', // xId\n    'number', //
batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', //
filterHeight\n    'number', // filterWidth\n    'number', // biasId\n    'number', // padTop\n    'number', //
padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', //
dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n
'number', // inputChannels\n    'number', // outputChannels\n    'number', // activation\n    'number', //
preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number', // outId\n  ]);\n\nfunction
fusedDepthwiseConv2d(args: {\n  inputs: FusedDepthwiseConv2DInputs,\n  backend: BackendWasm,\n  attrs:
FusedDepthwiseConv2DAttrs\n}) {\n  const {inputs, attrs, backend} = args;\n  const {x, filter, bias,
preluActivationWeights} = inputs;\n  const {\n    strides,\n    pad,\n    dilations,\n    dataFormat,\n
dimRoundingMode,\n    activation,\n    leakyreluAlpha\n  } = attrs;\n\n  const convInfo =
backend_util.computeConv2DInfo(\n    (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n
pad, dimRoundingMode, true /* depthwise */);\n\n  const fusedActivation =\n    FusableActivation[activation as {\n
as key of typeof FusableActivation)];\n  if (fusedActivation == null) {\n    throw new Error(\n      `${activation}
activation not yet supported for FusedDepthwiseConv2D` +\n      `in the wasm backend.`);\n  }\n\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n  const
outputChannels = convInfo.outChannels;\n\n  let biasId = 0;\n  if (bias != null) {\n    const biasData =
backend.dataIdMap.get(bias.dataId);\n    if (biasData.shape.length !== 1) {\n      throw new Error(\n
`FusedDepthwiseConv2D only supports rank-1 bias but got ` +\n        `rank ${biasData.shape.length}.`);\n    }\n
if (biasData.shape[0] !== outputChannels) {\n      throw new Error(\n        `FusedDepthwiseConv2D bias shape
(${biasData.shape}) does not ` +\n        `match the number of output channels (${outputChannels})`);\n    }\n
biasId = biasData.id;\n  }\n\n  const filterHeight = convInfo.filterHeight;\n  const filterWidth =
convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const padRight = convInfo.padInfo.right;\n  const
padBottom = convInfo.padInfo.bottom;\n  const padLeft = convInfo.padInfo.left;\n  const dilationHeight =
convInfo.dilationHeight;\n  const dilationWidth = convInfo.dilationWidth;\n  const strideHeight =
convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n  const inputChannels =
convInfo.inChannels;\n  const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n  const batchSize =
convInfo.batchSize;\n  const inHeight = convInfo.inHeight;\n  const inWidth = convInfo.inWidth;\n\n  if
(dataFormat !== 'NHWC') {\n    throw new Error(\n      `wasm backend FusedDepthwiseConv2D does not support
dataFormat:` +\n      `${dataFormat}`. Please use 'NHWC'.`);\n  }\n\n  const out =
backend.makeOutput(convInfo.outShape, 'float32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const
preluActivationWeightsId = preluActivationWeights == null ?\n    0 :\n    backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n  wasmFusedDepthwiseConv2d(\n    xId, batchSize,
inHeight, inWidth, filterId, filterHeight, filterWidth,\n    biasId, padTop, padRight, padBottom, padLeft,
isSamePad, dilationHeight,\n    dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n
fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n  return out;\n}\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n  kernelName: FusedDepthwiseConv2D,\n  backendName:
'wasm',\n  setupFunc: setup,\n  kernelFunc: fusedDepthwiseConv2d as {\n    as KernelFunc\n};\n};\n\n/*\n * @license\n
 * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
*\n\nimport {gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\nlet
wasmGatherNd: (\n  xId: number, dtype: CppDType, indicesId: number, numSlices: number,\n  sliceRank:
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n  'number', // xId\n
'number', // dtype\n  'number', // indicesId\n  'number', // numSlices\n  'number', // sliceRank\n  'number', //
sliceSize\n  'array', // strides\n  'number' // outId\n  ]);\n}\n\nfunction gatherNd(args: {backend: BackendWasm,
inputs: GatherNdInputs}):\n  TensorInfo {\n  const {backend, inputs} = args;\n  const {params, indices} =
inputs;\n\n  const [resultShape, numSlices, sliceSize, strides] =\n    gather_util.prepareAndValidate(params,
indices);\n\n  const out = backend.makeOutput(resultShape, params.dtype);\n  if (numSlices === 0) {\n    return
out;\n  }\n\n  const indicesShape = indices.shape;\n  const sliceRank = indicesShape[indicesShape.length - 1];\n\n
const xData = backend.dataIdMap.get(params.dataId);\n  const xId = xData.id;\n  const indicesData =
backend.dataIdMap.get(indices.dataId);\n  const indicesId = indicesData.id;\n\n  const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmGatherNd(\n  xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n  stridesBytes,
outId);\n\n  return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n  kernelName: GatherNd,\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: gatherNd\n};\n\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,
TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
 './backend_wasm';\n\nimport {reshape} from './Reshape';\n\nimport {CppType} from './types';\n\nlet
wasmGather: (\n  xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n  indicesId: number, batchSize:
number, outStrides: Uint8Array,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n  'number', // xId\n  'number', // dtype\n  'array',
// xStrides\n  'number', // stridesSize\n  'number', // indicesId\n  'number', // batchSize\n  'array', //
outStrides\n  'number' // outId\n  ]);\n}\n\nfunction gatherV2(\n  args: {backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {x,
indices} = inputs;\n  const {axis, batchDims} = attrs;\n\n  // Throw error when any index is out of bound.\n  const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n  const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n  const axisDim = x.shape[parsedAxis];\n  for (let i = 0; i < indicesVals.length; ++i) {\n    const index
= indicesVals[i];\n    util.assert(\n      index <= axisDim - 1 && index >= 0,\n      () =>\n        `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]);\n  }\n\n  const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n    x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n  const flattenX = reshape({\n    inputs: {x},\n    attrs: {\n      shape: [\n        shapeInfo.batchSize,
shapeInfo.outerSize, shapeInfo.dimSize,\n        shapeInfo.sliceSize\n      ]\n    },\n    backend\n  });\n  const
indicesSize = util.sizeFromShape(indices.shape);\n  const flattenIndex = reshape({\n    inputs: {x: indices},\n    attrs:
{\n      shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize],\n      backend\n    });\n  const
flattenOutputShape = [\n    shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n    shapeInfo.sliceSize\n  ];\n\n
const out = backend.makeOutput(flattenOutputShape, x.dtype);\n  if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n  }\n\n  const stridesSize = flattenX.shape.length - 1;\n\n  const xData =
backend.dataIdMap.get(flattenX.dataId);\n  const xId = xData.id;\n\n  const indicesData =

```

```

backend.dataIdMap.get(flattenIndex.dataId);\n const indicesId = indicesData.id;\n\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const xStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n const outStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n wasmGather(\n xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n shapeInfo.batchSize, outStridesBytes, outId);\n\n
backend.disposeData(flattenX.dataId);\n backend.disposeData(flattenIndex.dataId);\n\n // reshape\n out.shape =
shapeInfo.outputShape;\n return out;\n}\n\nexport const gatherV2Config: KernelConfig = {\n kernelName:
GatherV2,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherV2 as { } as KernelFunc\n};\n", "/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport { Greater, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\ncreateBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n", "/**\n
* @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport { GreaterEqual, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig }
from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n", "/**\n
* @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util } from
 '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from
 './types';\n\nlet wasmFunc: (\n xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>
void;\n\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(LeakyRelu,
null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // leakyrelu_alpha\n 'number', //
out_id\n ]);\n}\n\nexport function leakyRelu(\n args:\n {inputs: LeakyReluInputs, attrs: LeakyReluAttrs,
backend: BackendWasm}): TensorInfo {\n const {inputs: {x}, attrs: {alpha}, backend} = args;\n\n const xId =
backend.dataIdMap.get(x.dataId).id;\n // According to TF API, LeakyRelu returns float32 when input is either
float32\n // or int32.\n const out = backend.makeOutput(x.shape, 'float32');\n\n if (util.sizeFromShape(x.shape)
!== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(xId, CppDType[x.dtype], alpha,
outId);\n }\n\n return out;\n}\n\nexport const leakyReluConfig: KernelConfig = {\n kernelName: LeakyRelu,\n
backendName: 'wasm',\n setupFunc,\n kernelFunc: leakyRelu as { } as KernelFunc,\n};\n", "/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the

```

\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Less} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, LessEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\ncreateBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\nlet wasmMax: (xId:
```

```

number, dtype: number, reduceSize: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n  'number', // x_id\n  'number', // dtype\n  'number', // reduce_size\n  'number', // out_id\n  ]);\n}\n\nfunction max(args: {backend:
BackendWasm, inputs: MaxInputs, attrs: MaxAttrs}): \n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {reductionIndices: axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId =
backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n\n  const {transposed, axes, originalAxes,
inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n
const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n  input = transposed;\n  inputId =
transposedId;\n  }\n\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('max',
axes, inputRank);\n  const [outShape, reduceShape] =\n  backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =
util.sizeFromShape(reduceShape);\n\n  const out = backend.makeOutput(outShape, x.dtype);\n  if
(util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmMax(inputId, CppDType[x.dtype], reduceSize, outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of the
transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n\n
return out;\n}\n\nexport const maxConfig: KernelConfig = {\n  kernelName: Max,\n  backendName: 'wasm',\n
setupFunc: setup,\n  kernelFunc: max as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {KernelConfig, Maximum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'./binary_kernel';\nconst supportsFullBroadcast = false;\nexport const maximumConfig: KernelConfig =\ncreateBinaryKernelConfig(Maximum, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport {backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util}
from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmMaxPool: (\n  xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, dilationHeight: number,\n
dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmMaxPool =
backend.wasm.cwrap(MaxPool, null /* void */, [\n  'number', // xId\n  'number', // batchSize\n  'number', //
inputHeight\n  'number', // inputWidth\n  'number', // filterHeight\n  'number', // filterWidth\n  'number', //
padTop\n  'number', // padRight\n  'number', // padBottom\n  'number', // padLeft\n  'number', //
dilationHeight\n  'number', // dilationWidth\n  'number', // strideHeight\n  'number', // strideWidth\n  'number',
// inputChannels\n  'number', // outputChannels\n  'number', // outId\n  ]);\n}\n\nfunction maxPool(\n  args:
{inputs: MaxPoolInputs, backend: BackendWasm, attrs: MaxPoolAttrs}) {\n  const {inputs, attrs, backend} =
args;\n\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n\n  // TF API

```

```

supports int32 input. CPU and WebGL backend also support int32\n // input. WASM backend doesn't support it
because it uses xnnpack which only\n // supports float32.\n /\n // Add the following assert only for the WASM
backend instead of at core op\n // level.\n /\n // TODO: add support for int32 input.\n util.assert(\n   x.dtype
=== 'float32',\n   () =>\n     `Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);\n\n const
{filterSize, strides, pad, dimRoundingMode} = attrs;\n const convInfo = backend_util.computePool2DInfo(\n
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight =
convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const
padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft =
convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n   throw new Error(\n     `wasm
backend does not support dataFormat:` +\n     ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n wasmMaxPool(\n   xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n   padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,\n
strideHeight, strideWidth, inputChannels, outputChannels, outId);\n return out;\n}\n\nexport const maxPoolConfig:
KernelConfig = {\n  kernelName: MaxPool,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: maxPool
as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport {backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {cast} from './Cast';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmMean =\n  backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);\n}\n\nexport function mean(\n  args:
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs};\n  TensorInfo {\n    const {backend, inputs,
attrs} = args;\n    const {axis, keepDims} = attrs;\n    const {x} = inputs;\n    const xId =
backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const {transposed, axes, originalAxes,
inputWasTransposed} =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    let reductionAxes = axes;\n    if
(inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId
!== xId) {\n        // transpose was not a no-op. We will need to dispose of this\n        // once we are done.\n        input =
transposed;\n        inputId = transposedId;\n        reductionAxes = backend_util.getInnerMostAxes(\n
reductionAxes.length, input.shape.length);\n      }\n    }\n\n    backend_util.assertAxesAreInnerMostDims(\n      'mean',
reductionAxes, input.shape.length);\n    const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n    const reduceSize =
util.sizeFromShape(reduceShape);\n    let castedInput = input;\n    if (input.dtype !== 'float32') {\n      castedInput =\n      cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n      inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n    }\n\n    const out = backend.makeOutput(outShape, 'float32');\n    if
(util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmMean(inputId, reduceSize, outId);\n    }\n\n    if (inputWasTransposed) {\n      // dispose of the transposed
tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n      // reshape\n      const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n\n    if (input.dtype

```



```
!:= 'float32') {\n  backend.disposeData(castedInput.dataId);\n } \n\n return out;\n}\n\nexport const meanConfig:  
KernelConfig = {\n  kernelName: Mean,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: mean as {  
as KernelFunc\n};\n"}, /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under  
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *
```

```
=====\n *\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from  
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport  
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmMin: (xId:  
number, dtype: number, reduceSize: number, outId: number) =>\n  void;\n\nfunction setup(backend:  
BackendWasm): void {\n  wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n}\n\nfunction min(args: {backend:  
BackendWasm, inputs: MinInputs, attrs: MinAttrs}):  
TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let  
inputId = xId;\n  let input = x;\n\n  const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n    const transposedId =  
backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n      // transpose was not a no-op. We  
will need to dispose of this\n      // once we are done.\n      input = transposed;\n      inputId = transposedId;\n    }\n  }\n\n  const inputRank = input.shape.length;\n\n  backend_util.assertAxesAreInnerMostDims('min', axes,  
inputRank);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape,  
axes);\n  const reduceSize = util.sizeFromShape(reduceShape);\n  const out = backend.makeOutput(outShape,  
input.dtype);\n  if (util.sizeFromShape(input.shape) !== 0) {\n    const outId =  
backend.dataIdMap.get(out.dataId).id;\n    wasmMin(inputId, CCppType[x.dtype], reduceSize, outId);\n  }\n\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n\n  if (keepDims) {\n    // reshape\n    const newShape = backend_util.expandShapeToKeepDim(out.shape,  
originalAxes);\n    out.shape = newShape;\n  }\n\n  return out;\n}\n\nexport const minConfig: KernelConfig = {\n  kernelName: Min,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: min as {  
as KernelFunc\n};\n"}, /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the  
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *
```

```
=====\n *\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from  
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const minimumConfig: KernelConfig =\n  createBinaryKernelConfig(Minimum, supportsFullBroadcast);\n"}, /**\n * @license\n * Copyright 2021 Google  
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not  
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\n// Must match enum in MirrorPad.cc\nenum MirrorPaddingMode {\n  reflect = 0,\n  symmetric = 1\n}\n\nlet wasmMirrorPad: (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'array', // pre-paddings\n    'array', // post-paddings\n    'number', // mode\n    'number', // outId\n  ]);\n}\n\nfunction mirrorPad(args: {\n  inputs: MirrorPadInputs,\n  backend: BackendWasm,\n  attrs: MirrorPadAttrs\n}) {\n  const {inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n  const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out = backend.makeOutput(outShape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n  const prePaddingsFlat = paddings.map(padTuple => padTuple[0]);\n  const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n  const prePaddingsBytes = new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n  const postPaddingsBytes = new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n  wasmMirrorPad(xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n    postPaddingsBytes, MirrorPaddingMode[mode], outId);\n  return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n  kernelName: MirrorPad,\n  backendName: 'wasm',\n  kernelFunc: mirrorPad as {} as KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
=====

```

```

=====
*\n\nimport {KernelConfig, Multiply} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\n  createBinaryKernelConfig(Multiply, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
=====

```

```

=====
*\n\nimport {KernelConfig, Neg} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from './unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
=====

```

```

=====
*\n\nimport {BackendWasm} from './backend_wasm';\n\n// Analogous to `struct Result` in

```

```

`non_max_suppression_impl.h`.ninterface Result {\n pSelectedIndices: number;\n selectedSize: number;\n
pSelectedScores: number;\n pValidOutputs: number;\n}\n/**\n * Parse the result of the c++ method, which has the
shape equivalent to\n * `Result`. \n * ^\nexport function parseResultStruct(\n backend: BackendWasm, resOffset:
number): Result {\n const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n const
pSelectedIndices = result[0];\n const selectedSize = result[1];\n const pSelectedScores = result[2];\n const
pValidOutputs = result[3];\n // Since the result was allocated on the heap, we have to delete it.\n
backend.wasm._free(resOffset);\n return {pSelectedIndices, selectedSize, pSelectedScores,
pValidOutputs};\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the `License`);\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an `AS IS` BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

===== \n
*/\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,
NonMaxSuppressionV3Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number)
=> number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n
NonMaxSuppressionV3,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n
'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n
]);\n\nfunction kernelFunc(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV3Inputs,\n attrs:
NonMaxSuppressionV3Attrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {iouThreshold,
maxOutputSize, scoreThreshold} = attrs;\n const {boxes, scores} = inputs;\n\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const
resOffset =\n wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n\n const
{pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n parseResultStruct(backend, resOffset);\n\n
// Since we are not using scores for V3, we have to delete it from the heap.\n
backend.wasm._free(pSelectedScores);\n backend.wasm._free(pValidOutputs);\n\n const selectedIndicesTensor
=\n backend.makeOutput([selectedSize, 'int32', pSelectedIndices);\n\n return
selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n kernelName:
NonMaxSuppressionV3,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc as {} as
KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the `License`);\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an `AS IS` BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

===== \n
*/\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs,
NonMaxSuppressionV4Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n
padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =
backend.wasm.cwrap(\n NonMaxSuppressionV4,\n 'number', // Result*\n [\n 'number', // boxesId\n
'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', //

```

```

scoreThreshold\n    'bool', // padToMaxOutputSize\n    ]);\n\nfunction nonMaxSuppressionV4(args: {\n
backend: BackendWasm,\n inputs: NonMaxSuppressionV4Inputs,\n attrs: NonMaxSuppressionV4Attrs\n}):
TensorInfo[] {\n const {backend, inputs, attrs} = args;\n const {iouThreshold, maxOutputSize, scoreThreshold,
padToMaxOutputSize} =\n    attrs;\n const {boxes, scores} = inputs;\n\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const
resOffset = wasmFunc(\n    boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n
padToMaxOutputSize);\n\n const {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n
parseResultStruct(backend, resOffset);\n\n // Since we are not using scores for V4, we have to delete it from the
heap.\n backend.wasm._free(pSelectedScores);\n\n const selectedIndicesTensor =\n
backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n const validOutputsTensor =
backend.makeOutput([], 'int32', pValidOutputs);\n\n return [selectedIndicesTensor,
validOutputsTensor];\n}\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n kernelName:
NonMaxSuppressionV4,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV4 as { }
as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,
NonMaxSuppressionV5Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc:\n
(boxesId: number, scoresId: number, maxOutputSize: number,\n    iouThreshold: number, scoreThreshold: number,
softNmsSigma: number) =>\n    number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =
backend.wasm.cwrap(\n    NonMaxSuppressionV5,\n    'number', // Result*\n    [\n    'number', // boxesId\n
'number', // scoresId\n    'number', // maxOutputSize\n    'number', // iouThreshold\n    'number', //
scoreThreshold\n    'number', // softNmsSigma\n    ]);\n}\n\nfunction kernelFunc(args: {\n backend:
BackendWasm,\n inputs: NonMaxSuppressionV5Inputs,\n attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[]
{\n const {backend, inputs, attrs} = args;\n const {iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma}
= attrs;\n const {boxes, scores} = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const
scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n    boxesId, scoresId,
maxOutputSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n\n const {pSelectedIndices, selectedSize,
pSelectedScores, pValidOutputs} =\n    parseResultStruct(backend, resOffset);\n\n // Since we are not using
validOutputs for V5, we have to delete it from the\n // heap.\n backend.wasm._free(pValidOutputs);\n\n const
selectedIndicesTensor =\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n const
selectedScoresTensor =\n    backend.makeOutput([selectedSize], 'float32', pSelectedScores);\n\n return
[selectedIndicesTensor, selectedScoresTensor];\n}\n\nexport const nonMaxSuppressionV5Config: KernelConfig =
{\n kernelName: NonMaxSuppressionV5,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc
as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n

```

```

*\nimport {KernelConfig, NotEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'./binary_kernel';\nconst supportsFullBroadcast = false;\nexport const notEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmOneHot: (\n  indicesId: number, depth:
number, onValue: number, offValue: number,\n  outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n  wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n    'number', // indices_id\n
'number', // depth,\n    'number', // onValue\n    'number', // offValue\n    'number' // out_id\n  ]);\n}\n\nfunction
oneHot(\n  args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n  const {inputs,
backend, attrs} = args;\n  const {indices} = inputs;\n  const {depth, onValue, offValue} = attrs;\n  const out =
backend.makeOutput([...indices.shape, depth], 'int32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n
const indicesData = backend.dataIdMap.get(indices.dataId);\n  const indicesId = indicesData.id;\n\n  wasmOneHot(indicesId, depth, onValue, offValue, outId);\n\n  return out;\n}\n\nexport const oneHotConfig:
KernelConfig = {\n  kernelName: OneHot,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: oneHot as
{ } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs} from '@tensorflow/tfjs-core';\nimport
{BackendWasm} from './backend_wasm';\n\nfunction onesLike(args: {inputs: OnesLikeInputs, backend:
BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.toArrayFromHeap(out);\n  outVals.fill(1);\n  return out;\n}\n\nexport const
onesLikeConfig: KernelConfig = {\n  kernelName: OnesLike,\n  backendName: 'wasm',\n  kernelFunc: onesLike as
{ } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\nimport {concat} from './Concat';\nimport
{expandDims} from './ExpandDims';\n\nexport function pack(\n  args: {inputs: PackInputs, backend:
BackendWasm, attrs: PackAttrs}):\n  TensorInfo {\n  const {inputs, backend, attrs} = args;\n  const {axis} =
attrs;\n\n  if (inputs.length === 1) {\n    return expandDims(\n      {inputs: {input: inputs[0]}, backend, attrs: {dim:
axis}});\n  }\n\n  const shape = inputs[0].shape;\n  const dtype = inputs[0].dtype;\n\n  inputs.forEach(t => {\n

```


<http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====  
*  
import { KernelConfig, KernelFunc, Prelu, PreluInputs } from '@tensorflow/tfjs-core';  
import { BackendWasm } from '../backend_wasm';  
import { cast } from './Cast';  
let wasmPrelu: (xId: number, weightsId: number, outId: number) => void;  
function setup(backend: BackendWasm) {  
  wasmPrelu = backend.wasm.cwrap(Prelu, null /* void */, [  
    'number', // x_id  
    'number', // weights_id  
    'number' // out_id  
  ]);  
  function prelu(args: { inputs: PreluInputs, backend: BackendWasm }) {  
    const { inputs, backend } = args;  
    const { x, alpha } = inputs;  
    const xId = backend.dataIdMap.get(x.dataId).id;  
    const weightsId = backend.dataIdMap.get(alpha.dataId).id;  
    let inputId = xId;  
    const input = x;  
    let castedInput = input;  
    if (input.dtype !== 'float32') {  
      castedInput = cast({ backend, inputs: { x }, attrs: { dtype: 'float32' });  
      inputId = backend.dataIdMap.get(castedInput.dataId).id;  
    }  
    const out = backend.makeOutput(x.shape, 'float32');  
    const outId = backend.dataIdMap.get(out.dataId).id;  
    wasmPrelu(inputId, weightsId, outId);  
    if (input.dtype !== 'float32') {  
      backend.disposeData(castedInput.dataId);  
    }  
    return out;  
  }  
  export const preluConfig: KernelConfig = {  
    kernelName: Prelu,  
    backendName: 'wasm',  
    setupFunc: setup,  
    kernelFunc: prelu as { } as KernelFunc  
  };  
  "/*  
  * @license  
  * Copyright 2020 Google LLC. All Rights Reserved.  
  * Licensed under the Apache License, Version 2.0 (the "License");  
  * you may not use this file except in compliance with the License.  
  * You may obtain a copy of the License at  
  * http://www.apache.org/licenses/LICENSE-2.0  
  * Unless required by applicable law or agreed to in writing, software  
  * distributed under the License is distributed on an "AS IS" BASIS,  
  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
  * implied. See the License for the specific language governing  
  * permissions and limitations under the License.  
  */  
  "  
}
```

```
=====  
*  
import { backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util } from '@tensorflow/tfjs-core';  
import { BackendWasm } from '../backend_wasm';  
import { permuteAxesAndTranspose } from './kernel_utils';  
import { CppDType } from './types';  
let wasmProd: (xId: number, reduceSize: number, dtype: number, outId: number) => void;  
function setup(backend: BackendWasm): void {  
  wasmProd = backend.wasm.cwrap(Prod, null /* void */, [  
    'number',  
    'number',  
    'number',  
    'number'  
  ]);  
  function prod(args: { backend: BackendWasm, inputs: ProdInputs, attrs: ProdAttrs }) {  
    const { backend, inputs, attrs } = args;  
    const { axis, keepDims } = attrs;  
    const { x } = inputs;  
    const xId = backend.dataIdMap.get(x.dataId).id;  
    let inputId = xId;  
    let input = x;  
    const { transposed, axes, originalAxes, inputWasTransposed } =  
      permuteAxesAndTranspose(x, axis, backend);  
    let reductionAxes = axes;  
    if (inputWasTransposed) {  
      const transposedId = backend.dataIdMap.get(transposed.dataId).id;  
      if (transposedId !== xId) {  
        // transpose was not a no-op. We will need to dispose of this  
        // once we are done.  
        input = transposed;  
        inputId = transposedId;  
        reductionAxes = backend_util.getInnerMostAxes(  
          reductionAxes.length, input.shape.length);  
      }  
      backend_util.assertAxesAreInnerMostDims('prod', reductionAxes, input.shape.length);  
      const [outShape, reduceShape] =  
        backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);  
      const reduceSize = util.sizeFromShape(reduceShape);  
      const out = backend.makeOutput(outShape, input.dtype);  
      if (util.sizeFromShape(input.shape) !== 0) {  
        const outId = backend.dataIdMap.get(out.dataId).id;  
        wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);  
      }  
      if (inputWasTransposed) {  
        // dispose of the transposed tensor.  
        backend.disposeData(transposed.dataId);  
      }  
      if (keepDims) {  
        // reshape  
        const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);  
        out.shape = newShape;  
      }  
      return out;  
    }  
    export const prodConfig: KernelConfig = {  
      kernelName: Prod,  
      backendName: 'wasm',  
      setupFunc: setup,  
      kernelFunc: prod as { } as KernelFunc  
    };  
    "/*  
    * @license  
    * Copyright 2020 Google LLC. All Rights Reserved.  
    * Licensed under the Apache License, Version 2.0 (the "License");  
    * you may not
```

use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * <http://www.apache.org/licenses/LICENSE-2.0>\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo } from '@tensorflow/tfjs-core';\nimport\n{ BackendWasm } from '../backend_wasm';\nimport { rangeImplCPU } from '../kernel_utils/shared';\n\nexport const\nrange =\n  (args: { backend: BackendWasm, attrs: RangeAttrs }): TensorInfo => {\n    const { backend, attrs } =\nargs;\n    const { start, stop, step, dtype } = attrs;\n    const values = rangeImplCPU(start, stop, step, dtype);\n\nconst out = backend.makeOutput([values.length], dtype);\n    const outVals =\nbackend.typedArrayFromHeap(out);\n    outVals.set(values);\n    return out;\n  };\n\nexport const rangeConfig:\nKernelConfig = {\n  kernelName: Range,\n  backendName: 'wasm',\n  kernelFunc: range as { } as\nKernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\nApache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\nLicense.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\non an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\nimplied.\n * See the License for the specific language governing permissions and\n * limitations under the\nLicense.\n *
```

```
=====\n*\n\nimport { KernelConfig, RealDiv } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const realDivConfig: KernelConfig =\ncreateBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC.\nAll Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this\nfile except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Relu } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n'/unary_kernel';\n\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\nLicense at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Relu6 } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n'/unary_kernel';\n\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```



```

=====
*\n\nimport {KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {cast} from
 './Cast';\n\nlet wasmResizeBilinear: (\n  xId: number, batch: number, oldHeight: number, oldWidth: number,\n  numChannels: number, newHeight: number, newWidth: number,\n  alignCorners: number, halfPixelCenters:
  number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmResizeBilinear =
  backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n    'number', // xId\n    'number', // batch\n    'number', //
  oldHeight\n    'number', // oldWidth\n    'number', // numChannels\n    'number', // newHeight\n    'number', //
  newWidth\n    'number', // alignCorners\n    'number', // halfPixelCenters\n    'number' // outId\n  ]);\n\nfunction
  resizeBilinear(args: {\n    backend: BackendWasm,\n    inputs: ResizeBilinearInputs,\n    attrs: ResizeBilinearAttrs\n  }):
  TensorInfo {\n    const {backend, inputs, attrs} = args;\n\n    const {images} = inputs;\n    const {alignCorners,
  halfPixelCenters, size} = attrs;\n    const [newHeight, newWidth] = size;\n\n    const [batch, oldHeight, oldWidth,
  numChannels] = images.shape;\n    const outShape = [batch, newHeight, newWidth, numChannels];\n\n    let xData =
  backend.dataIdMap.get(images.dataId);\n    let castedData;\n    if (xData.dtype !== 'float32') {\n      castedData =\n
  cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n      xData =
  backend.dataIdMap.get(castedData.dataId);\n    }\n\n    const xId = xData.id;\n\n    const out =
  backend.makeOutput(outShape, 'float32');\n    if (util.sizeFromShape(images.shape) === 0) {\n      return out;\n    }\n
  const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmResizeBilinear(\n      xId, batch, oldHeight,
  oldWidth, numChannels, newHeight, newWidth,\n      alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n    if
  (castedData !== null) {\n      backend.disposeData(castedData.dataId);\n    }\n\n    return out;\n  }\n\nexport const
  resizeBilinearConfig: KernelConfig = {\n    kernelName: ResizeBilinear,\n    backendName: 'wasm',\n    setupFunc:
  setup,\n    kernelFunc: resizeBilinear as {} as KernelFunc\n  };n", "/**\n * @license\n * Copyright 2020 Google LLC.
  All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
  file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
  http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
  governing permissions and\n * limitations under the License.\n *
  =====

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {identity} from
 './Identity';\n\nimport {reshape} from './Reshape';\n\nlet wasmReverse: (\n  xId: number, axes: Uint8Array,
  axesLength: number, outShape: Uint8Array,\n  outShapeLength: number, outId: number) => void;\n\nfunction
  setup(backend: BackendWasm) {\n  wasmReverse = backend.wasm.cwrap(Reverse, null, [\n    'number', // x_id\n
  'array', // axes\n    'number', // axes_length\n    'array', // out_shape\n    'number', // out_shape_length\n
  'number' // out_id\n  ]);\n\nexport function reverse(\n  args: {inputs: ReverseInputs, backend: BackendWasm, attrs:
  ReverseAttrs}): \n  TensorInfo {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {dims} =
  attrs;\n\n    const axes = util.parseAxisParam(dims, x.shape);\n\n    if (x.shape.length === 0) {\n      return
  identity({inputs: {x}, backend});\n    }\n\n    const out = backend.makeOutput(x.shape, x.dtype);\n    const xId =
  backend.dataIdMap.get(x.dataId).id;\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const axesBytes =
  new Uint8Array(new Int32Array(axes).buffer);\n    const outShapeBytes = new Uint8Array(new
  Int32Array(x.shape).buffer);\n\n    wasmReverse(\n      xId, axesBytes, axes.length, outShapeBytes, x.shape.length,
  outId);\n\n    const reshaped =\n      reshape({inputs: {x: out}, attrs: {shape: x.shape}, backend});\n\n    backend.disposeData(out.dataId);\n    return reshaped;\n  }\n\nexport const reverseConfig: KernelConfig = {\n
  kernelName: Reverse,\n  backendName: 'wasm',\n  kernelFunc: reverse as {} as KernelFunc,\n  setupFunc:
  setup\n  };n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
  Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
  License.\n * You may obtain a copy of the License at\n * \n *
  http://www.apache.org/licenses/LICENSE-2.0\n * \n *
  =====

```

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied. See the License for the specific language governing permissions and
limitations under the License.

```
=====
*\n\nimport {KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,
TensorInfo} from '@tensorflow/tfjs-core';\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nlet wasmRotate: (\n  xId: number, batch: number, imageHeight:
number, imageWidth: number,\n  numChannels: number, radians: number, centerX: number, centerY: number,\n  fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n  'number', // xId\n  'number', //
batch\n  'number', // imageHeight\n  'number', // imageWidth\n  'number', // numChannels\n  'number', //
radians\n  'number', // centerX\n  'number', // centerY\n  'array', // fillBytes\n  'number', // fillLength\n
'number', // outId\n  ]);\n\nexport function rotateWithOffset(args: {\n  inputs: RotateWithOffsetInputs,\n
backend: BackendWasm,\n  attrs: RotateWithOffsetAttrs\n}): TensorInfo {\n  const {inputs, backend, attrs} =
args;\n  const {image} = inputs;\n  const {radians, fillValue, center} = attrs;\n\n  const out =
backend.makeOutput(image.shape, image.dtype);\n  const imageId = backend.dataIdMap.get(image.dataId).id;\n
const outId = backend.dataIdMap.get(out.dataId).id;\n\n  const [batch, imageHeight, imageWidth, numChannels] =
image.shape;\n\n  const [centerX, centerY] =\n    backend_util.getImageCenter(center, imageHeight,
imageWidth);\n\n  const fillIsBlack = fillValue === 0;\n  const fullOpacityValue = 255;\n\n  const fillValues =
typeof fillValue === 'number' ?\n    [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] :\n    [...fillValue, fullOpacityValue];\n  const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n\n
wasmRotate(\n    imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n    centerY, fillBytes, fillValues.length, outId);\n  return out;\n}\n\nexport const rotateWithOffsetConfig: KernelConfig = {\n
kernelName: RotateWithOffset,\n  backendName: 'wasm',\n  kernelFunc: rotateWithOffset as {} as KernelFunc,\n
setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n */
=====
```

```
=====
*\n\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n */
=====
```

```
=====
*\n\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
=====
```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { CppDType } from './types';\n\nlet wasmScatterNd: (\n  indicesId: number, updatesId: number, dtype: CppDType, sliceRank: number,\n  numUpdates: number, sliceSize: number, strides: Uint8Array,\n  outputSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmScatterNd = backend.wasm.cwrap(ScatterNd, null /*void*/, [\n    'number', // indicesId\n    'number', // updatesId\n    'number', // dtype\n    'number', // sliceRank\n    'number', // numUpdates\n    'number', // sliceSize\n    'array', // strides\n    'number', // outputSize\n    'number' // outId\n  ]);\n\n  function scatterNd(\n    args: {\n      backend: BackendWasm, inputs: ScatterNdInputs, attrs: ScatterNdAttrs\n    }):\n    TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { indices, updates } = inputs;\n    const { shape } = attrs;\n\n    const out = backend.makeOutput(shape, updates.dtype);\n    if (util.sizeFromShape(shape) === 0) {\n      return out;\n    }\n\n    const { sliceRank, numUpdates, sliceSize, strides, outputSize } =\n      scatter_util.calculateShapes(updates, indices, shape);\n\n    const indicesData = backend.dataIdMap.get(indices.dataId);\n    const indicesId = indicesData.id;\n\n    const updatesData = backend.dataIdMap.get(updates.dataId);\n    const updatesId = updatesData.id;\n\n    const stridesBytes = new Uint8Array(new Int32Array(strides).buffer);\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmScatterNd(\n      indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n      sliceSize, stridesBytes, outputSize, outId);\n\n    return out;\n  }\n\n  export const scatterNdConfig: KernelConfig = {\n    kernelName: ScatterNd,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: scatterNd as {} as KernelFunc\n  };}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, Select, SelectInputs, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmSelect: (\n  conditionId: number, tId: number, eId: number, offset: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmSelect = backend.wasm.cwrap('SelectV2', null, [\n    'number', // conditionId\n    'number', // tId\n    'number', // eId\n    'number', // offset\n    'number', // outId\n  ]);\n\n  function select(args: { inputs: SelectInputs, backend: BackendWasm }) {\n    const { inputs, backend } = args;\n    const { condition, t, e } = inputs;\n\n    const conditionId = backend.dataIdMap.get(condition.dataId).id;\n    const tId = backend.dataIdMap.get(t.dataId).id;\n    const eId = backend.dataIdMap.get(e.dataId).id;\n    const out = backend.makeOutput(t.shape, t.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const cRank = condition.shape.length;\n    const tRank = t.shape.length;\n\n    const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n      1 : 0;\n\n    util.sizeFromShape(t.shape.slice(1));\n\n    wasmSelect(conditionId, tId, eId, offset, outId);\n    return out;\n  }\n\n  export const selectConfig: KernelConfig = {\n    kernelName: Select,\n    backendName: 'wasm',\n    kernelFunc: select as {} as KernelFunc,\n    setupFunc: setup\n  };}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Sigmoid, null /*
void */, ['number', 'number']);\n}\n\nfunction sigmoid(args: {backend: BackendWasm, inputs: SigmoidInputs});\n
TensorInfo {\n  const {backend, inputs: {x}} = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out
= backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  // Short-
circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n\n  wasmFunc(xId,
outId);\n  return out;\n}\n\nexport const sigmoidConfig: KernelConfig = {\n  kernelName: 'Sigmoid',\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: sigmoid as {} as KernelFunc\n};\n", "/*\n * @license\n
 * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, Sin} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n", "/*\n * @license\n
 * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId:
number, channels: number, batch: number) =>\n  void;\n\nfunction setup(backend: BackendWasm): void {\n
  wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n    'number', // xId\n    'number', // outId\n
    'number', // channels\n    'number' // batch\n  ]);\n}\n\nfunction softmax(\n  args: {backend: BackendWasm,
inputs: SoftmaxInputs, attrs: SoftmaxAttrs});\n  TensorInfo {\n    const {backend, inputs: {logits}, attrs: {dim}} =
args;\n    const xId = backend.dataIdMap.get(logits.dataId).id;\n    const out = backend.makeOutput(logits.shape,
logits.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const channels = logits.shape[dim];\n
const batch = util.sizeFromShape(logits.shape) / channels;\n\n    // Short-circuit zero-sized tensors.\n    if
(util.sizeFromShape(out.shape) === 0) {\n      return out;\n    }\n\n    wasmFunc(xId, outId, channels, batch);\n
return out;\n}\n\nexport const softmaxConfig: KernelConfig = {\n  kernelName: Softmax,\n  backendName: 'wasm',\n
setupFunc: setup,\n  kernelFunc: softmax as {} as KernelFunc\n};\n", "/*\n * @license\n
 * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n
 * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n
 * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,
SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {padV2Config} from

```

```

./PadV2';\nimport {reshape} from './Reshape';\nimport {transpose} from './Transpose';\n\nfunction
spaceToBatchND(args: {\n inputs: SpaceToBatchNDInputs,\n backend: BackendWasm,\n attrs:
SpaceToBatchNDAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {blockShape,
paddings} = attrs;\n\n const prod = util.sizeFromShape(blockShape);\n\n const completePaddings: Array<[number,
number]> = [[0, 0]];\n completePaddings.push(...(paddings as Array<[number, number]>));\n\n for (let i = 1 +
blockShape.length; i < x.shape.length; ++i) {\n completePaddings.push([0, 0]);\n }\n\n const paddedX =
padV2Config.kernelFunc({\n inputs: {x},\n backend,\n attrs: {paddings: completePaddings, constantValue:
0}\n }) as TensorInfo;\n\n const reshapedPaddedShape =\n backend_util.getReshaped(paddedX.shape,
blockShape, prod, false);\n\n const permutedReshapedPaddedPermutation = backend_util.getPermuted(\n
reshapedPaddedShape.length, blockShape.length, false);\n\n const flattenShape =\n backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n\n const reshapeInputs:
ReshapeInputs = {x: paddedX};\n const reshapeAttrs: ReshapeAttrs = {shape: reshapedPaddedShape};\n const
paddedXReshaped =\n reshape({inputs: reshapeInputs, backend, attrs: reshapeAttrs});\n\n const transposeInputs:
TransposeInputs = {x: paddedXReshaped};\n const transposeAttrs:\n TransposeAttrs = {perm:
permutedReshapedPaddedPermutation};\n const paddedXT =\n transpose({inputs: transposeInputs, backend,
attrs: transposeAttrs});\n\n const resultReshapeInputs: ReshapeInputs = {x: paddedXT};\n const
resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};\n const result = reshape(\n {inputs:
resultReshapeInputs, backend, attrs: resultReshapeAttrs});\n\n backend.disposeData(paddedX.dataId);\n
backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n\n return
result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n
backendName: 'wasm',\n kernelFunc: spaceToBatchND as {} as KernelFunc\n};\n\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {slice} from './Slice';\n\nexport function splitV(\n args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {\n const {inputs, attrs, backend} = args;\n const {x} = inputs;\n const
{numOrSizeSplits, axis} = attrs;\n\n const $axis = util.parseAxisParam(axis, x.shape)[0];\n\n const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n const begin = new Array(x.shape.length).fill(0);\n
const size = x.shape.slice();\n return splitSizes.map(s => {\n const xSliceSize = [...size];\n xSliceSize[$axis] =
s;\n const xSlice =\n slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});\n begin[$axis] += s;\n
return xSlice;\n });\n}\n\nexport const splitVConfig: KernelConfig = {\n kernelName: SplitV,\n
backendName: 'wasm',\n kernelFunc: splitV as {} as KernelFunc\n};\n\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, Sqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the

```

"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig =\n  createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmStep: (xId: number, alpha: number, dtype: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n    'number', // x_id\n    'number', // alpha\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\nfunction step(\n  args: {\n    backend: BackendWasm,\n    inputs: StepInputs,\n    attrs: StepAttrs\n  }): TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {alpha} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmStep(xId, alpha, CCppType[x.dtype], outId);\n  return out;\n}\n\nexport const stepConfig: KernelConfig = {\n  kernelName: Step,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: step as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {reshape} from './Reshape';\nimport {slice} from './Slice';\nlet wasmStridedSlice: (\n  xId: number,\n  xStridesBytes: Uint8Array,\n  xRank: number,\n  beginBytes: Uint8Array,\n  endBytes: Uint8Array,\n  stridesBytes: Uint8Array,\n  outShapeBytes: Uint8Array,\n  outStridesBytes: Uint8Array,\n  outShapeLength: number,\n  outId: number\n) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n
```

```

'number', // xId\n 'array', // xStrides\n 'number', // xRank\n 'array', // beginBytes\n 'array', // endBytes\n
'array', // stridesBytes\n 'array', // outShapeBytes\n 'array', // outStridesBytes\n 'number', //
outShapeLength\n 'number', // outId\n ]);\n\nexport function stridedSlice(args: {\n backend: BackendWasm,\n
inputs: StridedSliceInputs,\n attrs: StridedSliceAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n\n const {\n begin,\n end,\n strides,\n beginMask,\n endMask,\n ellipsisMask,\n
newAxisMask,\n shrinkAxisMask\n } = attrs;\n\n const {\n finalShapeSparse,\n finalShape,\n isIdentity,\n
sliceDim0,\n isSimpleSlice,\n begin: $begin,\n end: $end,\n strides: $strides\n } =\n slice_util.sliceInfo(\n
x.shape, begin, end, strides, beginMask, endMask, ellipsisMask,\n newAxisMask, shrinkAxisMask);\n\n
let result;\n\n if (isIdentity) {\n // Optimization #1, slice is a no-op plus reshape\n result = reshape({inputs: {x},
backend, attrs: {shape: finalShape}});\n } else if (sliceDim0 || isSimpleSlice) {\n // Optimization #2, slice is
memory contiguous (only occurs in dim 0)\n util.assert(\n x.shape.length >= 1,\n () => `Input must have
rank at least 1, got: ${x.shape.length}`);\n\n const size = slice_util.computeOutShape($begin, $end, $strides);\n
// To tolerate begin[0] > end[0] (a 0-output slice), we min(begin, end).\n const sliced = slice({inputs: {x},
backend, attrs: {begin: $begin, size}});\n result =\n reshape({inputs: {x: sliced}, backend, attrs: {shape:
finalShape}});\n backend.disposeData(sliced.dataId);\n } else {\n const out =
backend.makeOutput(finalShapeSparse, 'float32');\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const
xStridesBytes =\n new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n const beginBytes
= new Uint8Array(new Int32Array($begin).buffer);\n const endBytes = new Uint8Array(new
Int32Array($end).buffer);\n const stridesBytes = new Uint8Array(new Int32Array($strides).buffer);\n\n const
outputShapeBytes =\n new Uint8Array(new Int32Array(finalShapeSparse).buffer);\n const outStridesBytes =
new Uint8Array(\n new Int32Array(util.computeStrides(finalShapeSparse)).buffer);\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n wasmStridedSlice(\n xId, xStridesBytes, x.shape.length,
beginBytes, endBytes, stridesBytes,\n outputShapeBytes, outStridesBytes, finalShapeSparse.length, outId);\n\n
result = reshape({inputs: {x: out}, backend, attrs: {shape: finalShape}});\n\n backend.disposeData(out.dataId);\n
}\n\n return result;\n}\n\nexport const stridedSliceConfig: KernelConfig = {\n kernelName: StridedSlice,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: stridedSlice as {} as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'./binary_kernel';\nconst supportsFullBroadcast = true;\nexport const subConfig: KernelConfig =\n createBinaryKernelConfig(Sub, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmSum: (xId:
number, reduceSize: number, dtype: number, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n 'number', // input_id\n

```



```

x_shape.length\n 'array', // new_shape\n 'number', // new_shape.length\n 'number' // out_id\n
]);\n}\n\nfunction tile(\n  args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n  const {inputs,\n  backend, attrs} = args;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const {reps} =\n  attrs;\n\n  const newShape: number[] = new Array(x.shape.length);\n  for (let i = 0; i < newShape.length; i++) {\n  newShape[i] = x.shape[i] * reps[i];\n  }\n  const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n  const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n  const out =\n  backend.makeOutput(newShape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmTile(\n  xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n  CppDType[out.dtype], outId);\n  return\n  out;\n}\n\nexport const tileConfig: KernelConfig = {\n  kernelName: Tile,\n  backendName: 'wasm',\n  setupFunc:\n  setup,\n  kernelFunc: tile as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights\n  Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n  except in compliance with the License.\n * You may obtain a copy of the License at\n *  

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *  

=====\  

*/\n\nimport {KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs} from '@tensorflow/tfjs-\n  core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmTopK:\n  (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n  xDtype: CppDType, k: number, sorted:\n  boolean, outValuesId: number,\n  outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n  'number', // xId\n  'array', // x.shape\n  'number',\n  // x.shape.length\n  'number', // x.dtype\n  'number', // k\n  'bool', // sorted\n  'number', // outValuesId\n  'number', // outIndicesId\n  ]);\n}\n\nexport const topk:\n  (\n  args: {inputs: TopKInputs, backend: BackendWasm,\n  attrs: TopKAttrs}) =>\n  TensorInfo[] | TensorInfo = ({inputs, backend, attrs}) => {\n  const {x} = inputs;\n  const {k, sorted} = attrs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const xShapeBytes\n  = new Uint8Array(new Int32Array(x.shape).buffer);\n  const outputShape = x.shape.slice();\n  outputShape[outputShape.length - 1] = k;\n  const outValues = backend.makeOutput(outputShape, x.dtype);\n  const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n  const outIndices =\n  backend.makeOutput(outputShape, 'int32');\n  const outIndicesId =\n  backend.dataIdMap.get(outIndices.dataId).id;\n  wasmTopK(\n  xId, xShapeBytes, x.shape.length,\n  CppDType[x.dtype], k, sorted,\n  outValuesId, outIndicesId);\n  return [outValues, outIndices];\n};\n\nexport const topKConfig: KernelConfig = {\n  kernelName: TopK,\n  backendName: 'wasm',\n  setupFunc:\n  setup,\n  kernelFunc: topk as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All\n  Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this\n  file except in compliance with the License.\n * You may obtain a copy of the License at\n *  

http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *  

=====\  

*/\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util} from\n  '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmTransform: (\n  imageId:\n  number, transformsId: number, isBatchTransform: boolean,\n  batch: number, outHeight: number, outWidth:\n  number, numChannels: number,\n  imageWidth: number, imageHeight: number, strides: Uint8Array,\n  stridesLength: number, interpolationModeId: number, fillModeId: number,\n  fillValue: number, outId: number)\n  => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmTransform = backend.wasm.cwrap(Transform,\n  null /*void*/, [\n  'number', // imageId\n  'number', // transformsId\n  'bool', // isBatchTransform\n  'number',

```

```
// batch\n 'number', // outHeight\n 'number', // outWidth\n 'number', // numChannels\n 'number', //
imageWidth\n 'number', // imageHeight\n 'array', // strides\n 'number', // stridesLength\n 'number', //
interpolationModeId\n 'number', // fillModeId\n 'number', // fillValue\n 'number' // outId\n
]);\n\nfunction transform(\n  args:\n    {backend: BackendWasm, inputs: TransformInputs, attrs:
TransformAttrs});\n  TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {image, transforms} = inputs;\n    const {interpolation, fillMode, fillValue, outputShape} = attrs;\n    const [batch, imageHeight, imageWidth,
numChannels] = image.shape;\n    const [outHeight, outWidth] =\n      outputShape != null ? outputShape :
[imageHeight, imageWidth];\n    const outShape =\n      [batch, outHeight, outWidth,\n        numChannels] as
[number, number, number, number];\n    const strides =\n      new Uint8Array(new
Int32Array(util.computeStrides(image.shape)).buffer);\n    const out = backend.makeOutput(outShape,
image.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const imageData =
backend.dataIdMap.get(image.dataId);\n    const imageId = imageData.id;\n    const transformsData =
backend.dataIdMap.get(transforms.dataId);\n    const transformsId = transformsData.id;\n    const
interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n    let fillModeId;\n    switch (fillMode) {\n      case
'constant':\n        fillModeId = 1;\n        break;\n      case 'reflect':\n        fillModeId = 2;\n        break;\n      case 'wrap':\n        fillModeId = 3;\n        break;\n      case 'nearest':\n        fillModeId = 4;\n        break;\n      default:\n        fillModeId = 1;\n    }\n    break;\n  }\n  wasmTransform(\n    imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n    outWidth, numChannels, imageWidth, imageHeight, strides,\n    image.shape.length - 1, interpolationModeId,
fillModeId, fillValue,\n    outId);\n  }\n  return out;\n}\n\nexport const transformConfig: KernelConfig = {\n  kernelName: Transform,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: transform as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {slice} from
'./Slice';\n\nfunction unpack(\n  args: {inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs});\n  TensorInfo[] {\n    const {inputs, backend, attrs} = args;\n    const {value} = inputs;\n    let {axis} = attrs;\n    if (axis <
0) {\n      axis += value.shape.length;\n    }\n    const numOutputs = value.shape[axis];\n    const rank =
value.shape.length;\n    const outShape: number[] = new Array(rank - 1);\n    let outIndex = 0;\n    for (let i = 0; i < rank;\n    i++) {\n      if (i !== axis) {\n        outShape[outIndex++] = value.shape[i];\n      }\n    }\n    const outs: TensorInfo[] = new
Array(numOutputs);\n    const begin = new Array(rank).fill(0);\n    const size = value.shape.slice();\n    size[axis] = 1;\n    for (let i = 0; i < outs.length; i++) {\n      begin[axis] = i;\n      outs[i] = slice({inputs: {x: value}, attrs: {begin, size},
backend});\n    }\n    return outs.map(({dataId, dtype}) => ({dataId, dtype, shape: outShape}));\n  }\n  \nexport const
unpackConfig: KernelConfig = {\n    kernelName: Unpack,\n    backendName: 'wasm',\n    kernelFunc: unpack as {} as
KernelFunc,\n  };\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-core';\nimport
```

```
{BackendWasm} from './backend_wasm';\n\nfunction zerosLike(args: {inputs: ZerosLikeInputs, backend: BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n  const outVals = backend.typedArrayFromHeap(out);\n  outVals.fill(0);\n  return out;\n}\n\nexport const zerosLikeConfig: KernelConfig = {\n  kernelName: ZerosLike,\n  backendName: 'wasm',\n  kernelFunc: zerosLike\n} as KernelConfig;\n";\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n */
```

```
We explicitly import the modular kernels so they get registered in the\n// global registry when we compile the library. A modular build would replace\n// the contents of this file and import only the kernels that are needed.\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {fusedMatMulConfig} from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {addConfig} from './kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport {anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {avgPoolConfig} from './kernels/AvgPool';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport {batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {castConfig} from './kernels/Cast';\nimport {ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport {concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport {conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {cosConfig} from './kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from './kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {depthToSpaceConfig} from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from './kernels/DepthwiseConv2dNative';\nimport {eluConfig} from './kernels/Elu';\nimport {equalConfig} from './kernels/Equal';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from './kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from './kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from './kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport {fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from './kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport {gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport {greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport {leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport {lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport {logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport {maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport {meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from './kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from './kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from './kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from './kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from './kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig} from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from './kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from './kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
```

```

{rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
 './kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
 './kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
 './kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
 './kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
 './kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
 './kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
 './kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
 './kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
 './kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
 './kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
 './kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n  absConfig,\n  addConfig,\n  addNConfig,\n  allConfig,\n  anyConfig,\n
  argMaxConfig,\n  avgPoolConfig,\n  batchMatMulConfig,\n  batchToSpaceNDConfig,\n  castConfig,\n
  ceilConfig,\n  clipByValueConfig,\n  concatConfig,\n  conv2DConfig,\n  conv2DBackpropInputConfig,\n
  cosConfig,\n  coshConfig,\n  cropAndResizeConfig,\n  cumsumConfig,\n  depthToSpaceConfig,\n
  depthwiseConv2dNativeConfig,\n  eluConfig,\n  equalConfig,\n  expConfig,\n  expandDimsConfig,\n  fillConfig,\n
  flipLeftRightConfig,\n  floorConfig,\n  floorDivConfig,\n  fusedMatMulConfig,\n  fusedBatchNormConfig,\n
  fusedConv2DConfig,\n  fusedDepthwiseConv2DConfig,\n  gatherNdConfig,\n  gatherV2Config,\n  greaterConfig,\n
  greaterEqualConfig,\n  identityConfig,\n  leakyReluConfig,\n  lessConfig,\n  lessEqualConfig,\n  logConfig,\n
  logicalAndConfig,\n  maxConfig,\n  maximumConfig,\n  maxPoolConfig,\n  meanConfig,\n  minConfig,\n
  minimumConfig,\n  mirrorPadConfig,\n  multiplyConfig,\n  negConfig,\n  nonMaxSuppressionV3Config,\n
  nonMaxSuppressionV4Config,\n  nonMaxSuppressionV5Config,\n  notEqualConfig,\n  oneHotConfig,\n
  onesLikeConfig,\n  packConfig,\n  padV2Config,\n  powConfig,\n  preluConfig,\n  prodConfig,\n  rangeConfig,\n
  realDivConfig,\n  reluConfig,\n  relu6Config,\n  reshapeConfig,\n  resizeBilinearConfig,\n  reverseConfig,\n
  rotateWithOffsetConfig,\n  rsqrtConfig,\n  roundConfig,\n  scatterNdConfig,\n  selectConfig,\n  sigmoidConfig,\n
  sinConfig,\n  sliceConfig,\n  softmaxConfig,\n  spaceToBatchNDConfig,\n  splitVConfig,\n  sqrtConfig,\n
  squareConfig,\n  squaredDifferenceConfig,\n  stepConfig,\n  stridedSliceConfig,\n  subConfig,\n  sumConfig,\n
  tanConfig,\n  tanhConfig,\n  tileConfig,\n  topKConfig,\n  transformConfig,\n  transposeConfig,\n  unpackConfig,\n
  zerosLikeConfig\n];\n\nfor (const kernelConfig of kernelConfigs) {\n  registerKernel(kernelConfig);\n}\n\n"/**\n *
 @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
  the specific language governing permissions and\n * limitations under the License.\n *
  =====\n
  *\nimport {env} from '@tensorflow/tfjs-core';\nconst ENV = env();\n\n**\n * True if SIMD is supported.\n
  *\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
  passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
  contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
  Uint8Array([\n  0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n  2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
  11\n ])));\n\n**\n * True if threads are supported.\n *\n// From: https://github.com/GoogleChromeLabs/wasm-
  feature-detect\nENV.registerFlag("WASM_HAS_MULTITHREAD_SUPPORT", async () => {\n //

```

```

TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n  return false;\n }\n\n try {\n  //
Test for transferability of SABs (needed for Firefox)\n  //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n  new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n  // This typed array is a WebAssembly
program containing threaded\n  // instructions.\n  return WebAssembly.validate(new Uint8Array([\n  0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n  4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
11\n  ]));\n } catch (e) {\n  return false;\n }\n});\n", "\nvar WasmBackendModuleThreadedSimd = (function() {\n
var _scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n return
(\nfunction(WasmBackendModuleThreadedSimd) {\n  WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\.this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module["ENVIRONMENT_IS_PTHREAD"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module["buffer"];var scriptDirectory=\.";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\`path\`).
dirname(scriptDirectory)+\`^\`}else{scriptDirectory=__dirname+\`^\`}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\`fs\`);if(!nodePath)nodePath=require(\`path\`);filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:\`utf8\`)};readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,\`^\`)}arguments_=process["arg
v"].slice(2);process["on"](\`uncaughtException\`,function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"](\`unhandledRejection\`,abort);quit_=function(status){process["exit"](status)};Module["inps

```

```

ect"]=function(){return"[Emscripten Module object]"};var
nodeWorkerThreads;try{nodeWorkerThreads=require("\worker_threads")}catch(e){console.error("The
\"worker_threads\" module is not supported in this node.js build - perhaps a newer version is needed?");throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
arguments!="undefined"){arguments_=arguments}if(typeof
quit==="function"){quit_=function(status){quit(status)}if(typeof print!="undefined"){if(typeof
console==="undefined")console={};console.log=print;console.warn=console.error=typeof
printErr!="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !=="undefined" &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf("^")+1)}else{scriptDirectory=""}}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret}}else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title}}else{if(ENVIRONMENT_IS_NODE){if(typeof
performance==="undefined"){global.performance=require("perf_hooks").performance}}var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module["arguments"]arguments_=Module["arguments"];if(Module["thisProgram"]thisProgram=
Module["thisProgram"];if(Module["quit"]quit_=Module["quit"];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)}}var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module["wasmBinary"]wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!="object"){abort("no native wasm
support detected")}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+"", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str===null&&str===undefined&&str===0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function

```

```

convertReturnValue(ret){if(returnType===\"string\")return UTF8ToString(ret);if(returnType===\"boolean\")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\"number\"});var
numericRet=returnType!==\"string\";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str=\"\";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):\"\"}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var
len=0;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10)|str.charCodeAt(++i)&1023;if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module[\"HEAP8\"]=HEAP8=new
Int8Array(buf);Module[\"HEAP16\"]=HEAP16=new Int16Array(buf);Module[\"HEAP32\"]=HEAP32=new
Int32Array(buf);Module[\"HEAPU8\"]=HEAPU8=new Uint8Array(buf);Module[\"HEAPU16\"]=HEAPU16=new
Uint16Array(buf);Module[\"HEAPU32\"]=HEAPU32=new
Uint32Array(buf);Module[\"HEAPF32\"]=HEAPF32=new
Float32Array(buf);Module[\"HEAPF64\"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module[\"INITIAL_MEMORY\"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmM
emory=Module[\"wasmMemory\"]};buffer=Module[\"buffer\"]}else{if(Module[\"wasmMemory\"]){wasmMemory=
Module[\"wasmMemory\"]}else{wasmMemory=new
WebAssembly.Memory({\"initial\":INITIAL_MEMORY/65536,\"maximum\":2147483648/65536,\"shared\":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err(\"requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag\");if(ENVIRONMENT_IS_NODE){console.log(\"(on node you may need: --experimental-wasm-threads --

```

```

experimental-wasm-bulk-memory and also use a recent version)\")}throw Error(\\"bad
memory\");}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlobalBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var __ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctors()});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module[\"preRun\"]){if(typeof Module[\"preRun\"]!==\"function\")Module[\"preRun\"]=[Module[\"preRun\"]];while(Module[\"preRun\"].length){addOnPreRun(Module[\"preRun\"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT__)}function preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module[\"postRun\"]){if(typeof Module[\"postRun\"]!==\"function\")Module[\"postRun\"]=[Module[\"postRun\"]];while(Module[\"postRun\"].length){addOnPostRun(Module[\"postRun\"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,\\\"addRunDependency cannot be used in a pthread worker\\");runDependencies++;if(Module[\\\"monitorRunDependencies\\\"]){Module[\\\"monitorRunDependencies\\\"](runDependencies)}}function removeRunDependency(id){runDependencies--;if(Module[\\\"monitorRunDependencies\\\"]){Module[\\\"monitorRunDependencies\\\"](runDependencies)}if(runDependencies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}if(dependenciesFulfilled){var callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module[\\\"preloadedImages\\\"]={};Module[\\\"preloadedAudios\\\"]={};function abort(what){if(Module[\\\"onAbort\\\"]){Module[\\\"onAbort\\\"](what)}if(ENVIRONMENT_IS_PTHREAD)console.error(\\\"Pthread aborting at \\\"+(new Error).stack);what+=\\\"\\\";err(what);ABORT=true;EXITSTATUS=1;what=\\\"abort(\\\"+what+\\\"). Build with -s ASSERTIONS=1 for more info.\\\";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var dataURIPrefix=\\\"data:application/octet-stream;base64,\\\";function isDataURI(filename){return hasPrefix(filename,dataURIPrefix)}var fileURIPrefix=\\\"file://\\\";function isFileURI(filename){return hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile=\\\"tfjs-backend-wasm-threaded-simd.wasm\\\";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw\\\"both async and sync fetching of the wasm failed\\\"}}catch(err){abort(err)}}function getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof fetch===\\\"function\\\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\\\"same-origin\\\"}).then(function(response){if(!response[\\\"ok\\\"]){throw\\\"failed to load wasm binary file at \\\"+wasmBinaryFile+\\\"\\\"}return response[\\\"arrayBuffer\\\"]()}).catch(function(){return getBinary(wasmBinaryFile)})}else{if(readAsync){return new Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new Uint8Array(response))},reject)})}}return Promise.resolve().then(function(){return getBinary(wasmBinaryFile)})}function createWasm(){var info={\\\"a\\\":asmLibraryArg};function receiveInstance(instance,module){var

```



```

exports=instance.exports;Module["asm"]=exports;wasmTable=Module["asm"]["I"];wasmModule=module;if(!ENVIRONMENT_IS_PTHREAD){var
numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.load
WasmModuleToWorker(w,function(){if(--numWorkersToLoad)removeRunDependency("\wasm-
instantiate\");}})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency("\wasm-instantiate")}function
receiveInstantiatedSource(output){receiveInstance(output["instance"],output["module"]);}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)).then(receiver,function(reason){err("\failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\function\&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFile)
&&typeof fetch===\function\){return fetch(wasmBinaryFile,{credentials:\same-
origin\}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err("\wasm streaming compile failed: \"+reason);err("\falling
back to ArrayBuffer instantiation");return instantiateArrayBuffer(receiveInstantiatedSource)})})}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module["instantiateWasm"]){try{var
exports=Module["instantiateWasm"](info,receiveInstance);return exports}catch(e){err("\Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(rejectPromiseReject);return{}}var
ASM_CONSTS={10520:function(){throw\Canceled!\"},10538:function($0,$1){setTimeout(function(){__emscripten_
do_dispatch_to_thread($0,$1),0});function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\function\){callback(Module);continue}var func=callback.func;if(typeof
func===\number\){if(callback.arg===undefined){wasmTable.get(func)()}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,EB
ADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOCSI:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADE:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14
8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5};function
__emscripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return
1}}var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return

```

```

ret+mainThreadWoken;throw\"Atomics.notify returned an unexpected value
\"+ret}Module[\"_emscripten_futex_wake\"]=_emscripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! killThread() can only ever be
called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in
killThread!\";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.threads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker pthread=undefined}functio
n cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! cancelThread() can only
ever be called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in
cancelThread!\";var
pthread=PThread.threads[pthread_ptr];pthread.worker.postMessage({\"cmd\\\": \"cancel\\\"})}function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! cleanupThread() can only
ever be called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in
cleanupThread!\";var
pthread=PThread.threads[pthread_ptr];if(pthread){GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)} } var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}},initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,!ENVIRON
MENT_IS_WORKER,1);__emscripten_register_main_browser_thread_id(tb);initWorker:function(){,threads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){ while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&_pthread_self())__pthread
_tsd_run_dtors(),runExitHandlersAndDeinitThread:function(tb,exitCode){ Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=_pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({\"cmd\\\": \"exit\\\"})}}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({\"cmd\\\": \"cancelDone\\\"})},terminateAllThreads:function(){for(var t in
PThread.threads){var
pthread=PThread.threads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)} }PThre
ad.threads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[]},freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker pthread=null },returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread.threads[worker pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker pthread);worker pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m

```

```

ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e[\"data\"];var
cmd=d[\"cmd\"];if(worker.pthread)PThread.currentProxiedOperationCallerThread=worker.pthread.threadInfoStruct;
if(d[\"targetThread\"]&&d[\"targetThread\"]!=_pthread_self()){var
thread=PThread.pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d[\"transferList\"])}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\" to target pthread '+d[\"targetThread\"]+'\", but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\"processQueuedMainThread
Work\"){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\"spawnThread\"){spawnThread(e.data)}else
if(cmd===\"cleanupThread\"){cleanupThread(d[\"thread\"])}else
if(cmd===\"killThread\"){killThread(d[\"thread\"])}else
if(cmd===\"cancelThread\"){cancelThread(d[\"thread\"])}else
if(cmd===\"loaded\"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\"print\"){out(\"Thread \"+d[\"threadId\"]+\":
'+d[\"text\"])}else if(cmd===\"printErr\"){err(\"Thread \"+d[\"threadId\"]+\": \"+d[\"text\"])}else
if(cmd===\"alert\"){alert(\"Thread \"+d[\"threadId\"]+\": \"+d[\"text\"])}else if(cmd===\"exit\"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}else
if(cmd===\"exitProcess\"){try{exit(d[\"returnCode\"])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\"cancelDone\"){PThread.returnWorkerToPool(worker)}else
if(cmd===\"objectTransfer\"){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\"setimmediate\"){worker.postMessage(e.data)}else{err(\"worker sent an unknown command
'+cmd')}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\"pthread sent
an error! \"+e.filename+\":'+e.lineno+\":
'+e.message)};if(ENVIRONMENT_IS_NODE){worker.on(\"message\",function(data){worker.onmessage({data:d
ata})});worker.on(\"error\",function(data){worker.onerror(data)});worker.on(\"exit\",function(data){})}worker.post
Message({\"cmd\":\"load\",urlOrBlob\":Module[\"mainScriptUrlOrBlob\"]||_scriptDir,\"wasmMemory\":wasmMe
memory,\"wasmModule\":wasmModule}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile(\"tfjs-
backend-wasm-threaded-simd.worker.js\");PThread.unusedWorkers.push(new
Worker(pthreadMainJs)},getNewWorker:function(){if(PThread.unusedWorkers.length===0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}};function
establishStackSpace(stackTop,stackMax){__emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module[\"establishStackSpace\"]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module[\"getNoExitRuntime\"]=getNoExitRuntime;function invokeEntryPoint(ptr,arg){return
wasmTable.get(ptr)(arg)}Module[\"invokeEntryPoint\"]=invokeEntryPoint;function
__assert_fail(condition,filename,line,func){abort(\"Assertion failed: \"+UTF8ToString(condition)+\", at:
'+[filename?UTF8ToString(filename):\"unknown filename\",line,func?UTF8ToString(func):\"unknown
function\"])}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
__emscripten_get_now;if(ENVIRONMENT_IS_NODE){__emscripten_get_now=function(){var
t=process[\"hrtime\"]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){__emscripten_get_now=function(){return performance.now()-
Module[\"__performance_now_clock_drift\"]}}else if(typeof
dateNow!=\"undefined\"){__emscripten_get_now=dateNow}else __emscripten_get_now=function(){return
performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return

```

```

value}function _atexit(func,arg){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(1,1,func,arg)}function
__emsripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessage
e({"cmd\":"processQueuedMainThreadWork"})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({"targetThread\":targetThreadId,"cmd\":"processThreadQueue
e"})}else{var pthread=PThread.pthreads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({"cmd\":"processThreadQueue"})}ret
urn 1}function _abort(){abort()}function _emsripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emsripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emsripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\"timed-out\")return-
73;if(ret===\"not-equal\")return-6;if(ret===\"ok\")return 0;throw\"Atomics.wait returned an unexpected value
\"+ret}else{if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_mai
n_thread_futex>>2,0);return-
73}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emsripten_main_thread_process_queued_calls();if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,addr)}return
0}}function
_emsripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emsripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require(\"os\").cpus().length;return
navigator[\"hardwareConcurrency\"]}function _emsripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emsripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retu
rn ret}var _emsripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emsripten_receive_on_main_thread_js(index,numCallArgs,args){_emsripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emsripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emsripten_receive_on_main_thread_js_callArgs)}function
_emsripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emsripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmmemory.buffer);return
1}catch(e){}}function _emsripten_resize_heap(requestedSize){var
oldSize=_emsripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var

```

```

overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListen
ers:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))){return}}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList
});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence})},removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThre
ad,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return"";if(target==window)return"#window";
if(target==screen)return"#screen";return
target&&target.nodeName?target.nodeName:""},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}},function stringToNewUTF8(jsString){var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){var

```

```

stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas)}GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;_emscripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emscripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):"";_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=="undefined"?document:0,typeof window!=="undefined"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=="undefined"?document.querySelector(target):undefined);return domElement}function
findCanvasEventTarget(target){return findEventTarget(target)}function
_emscripten_set_canvas_element_size_calling_thread(target,width,height){var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){canvas.GLctxObject.GLctx.viewport(0,0,width,height)}else
if(canvas.canvasSharedPtr){var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emscripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1}else{return-4}return 0}function
_emscripten_set_canvas_element_size_main_thread(target,width,height){if(ENVIRONMENT_IS_PTHREAD)retur
n _emscripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emscripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emscripten_set_canvas_element_size(target,width,height){var
canvas=findCanvasEventTarget(target);if(canvas){return
_emscripten_set_canvas_element_size_calling_thread(target,width,height)}else{return
_emscripten_set_canvas_element_size_main_thread(target,width,height)}}function
_emscripten_set_current_thread_status(newStatus){}function
_emscripten_set_thread_name(threadId,name){}function __webgl_enable_ANGLE_instanced_arrays(ctx){var
ext=ctx.getExtension("ANGLE_instanced_arrays");if(ext){ctx["vertexAttribDivisor"]=function(index,divisor){ex
t["vertexAttribDivisorANGLE"](index,divisor)};ctx["drawArraysInstanced"]=function(mode,first,count,primcou
nt){ext["drawArraysInstancedANGLE"](mode,first,count,primcount)};ctx["drawElementsInstanced"]=function(
mode,count,type,indices,primcount){ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount)};
return 1}}function __webgl_enable_OES_vertex_array_object(ctx){var
ext=ctx.getExtension("OES_vertex_array_object");if(ext){ctx["createVertexArray"]=function(){return
ext["createVertexArrayOES"]();};ctx["deleteVertexArray"]=function(vao){ext["deleteVertexArrayOES"](vao)};
ctx["bindVertexArray"]=function(vao){ext["bindVertexArrayOES"](vao)};ctx["isVertexArray"]=function(vao)
{return ext["isVertexArrayOES"](vao)};return 1}}function __webgl_enable_WEBGL_draw_buffers(ctx){var
ext=ctx.getExtension("WEBGL_draw_buffers");if(ext){ctx["drawBuffers"]=function(n,bufs){ext["drawBuffers
WEBGL"](n,bufs)};return 1}}function
__webgl_enable_WEBGL_multi_draw(ctx){return!(ctx.multiDrawWebgl=ctx.getExtension("WEBGL_multi_dra
w"))}var

```

```

GL={ counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{ },offscreenCanvases:{ },timerQueriesEXT:[],programInfos:{ },stringCache:{ },unpackAlignment:4,recordError:
function recordError(errorCode){ if(!GL.lastError){ GL.lastError=errorCode } },getNewId:function(table){ var
ret=GL.counter++;for(var i=table.length;i<ret;++){ table[i]=null }return
ret },getSource:function(shader,count,string,length){ var source="\\";for(var i=0;i<count;++){ var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return
source },createContext:function(canvas,webGLContextAttributes){ var
ctx=canvas.getContext("\webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle },registerContext:function(ctx,webGLContextAttributes){ var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={ handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:
ctx };if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault==="\undefined"||webGLContextAttributes.enableExtensions
ByDefault){ GL.initExtensions(context) }return
handle },makeContextCurrent:function(contextHandle){ GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){ return
GL.contexts[contextHandle] },deleteContext:function(contextHandle){ if(GL.currentContext===GL.contexts[context
Handle])GL.currentContext=null;if(typeof
JSEvents==="\object")JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null },initExtensions:f
unction(context){ if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("\
EXT_disjoint_timer_query");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){ if(ext.indexOf("\lose_context")<0&&ext.inde
xOf("\debug")<0){ GLctx.getExtension(ext) } } ),populateUniformTable:function(program){ var
p=GL.programs[program];var
ptable=GL.programInfos[program]={ uniforms:{ },maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1 };var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++){ var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)!="\"){ name=name.slice(0,name.lastIndexOf("\[")) }var loc=GLctx.getUniformLocation(p,name);if(loc){ var
id=GL.getNewId(GL.uniforms);utable[name]=[u.size,id];GL.uniforms[id]=loc;for(var j=1;j<u.size;++){ var
n=name+"\["+j+"\]";loc=GLctx.getUniformLocation(p,n);id=GL.getNewId(GL.uniforms);GL.uniforms[id]=loc } }
} };var __emscripten_webgl_power_preferences=["default","\low-power","\high-performance"];function
_emscripten_webgl_do_create_context(target,attributes){ var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],"failIfMajorPerf
ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],

```

```

minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
_HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)];var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GL.createContext(canvas,contextAttributes);return contextHandle}function
_emsripten_webgl_create_context(a0,a1){return _emsripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
_fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return _emsripten_proxy_to_main_thread_js(3,1,fd);return
0}function _fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
_fd_write(fd,iow,iovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(5,1,fd,iow,iovcnt,pnum);var num=0;for(var i=0;i<iovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iow+i*8>>2];var len=GROWABLE_HEAP_I32()[iow+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j])}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function _pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
_pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasmTable.get(routine)(arg)})}f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! spawnThread()
can only ever be called from main application thread!";var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw"Internal
error!";if(!threadParams.pthread_ptr)throw"Internal error, no pthread
ptr!";PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;++){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emsripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr
ead=pthread;var
msg={"cmd":"run","start_routine":threadParams.startRoutine,"arg":threadParams.arg,"threadInfoStruct":thre
adParams.pthread_ptr,"stackBase":threadParams.stackBase,"stackSize":threadParams.stackSize};worker.runPthr
ead=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded
){worker.runPthread();delete worker.runPthread}}function
_pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer==="undefined"){err("Current
environment does not support SharedArrayBuffer, pthreads are not available!");return
6}if(!pthread_ptr){err("pthread_create called with a null thread pointer!");return 28}var transferList=[];var
error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return

```



```

_emsripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var
stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-
1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+
8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==(0)}else{stackSize=2097152}var
allocatedOwnStack=stackBase==0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=
stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var
i=0;i<228>>2;++)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_p
tr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var
headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var
threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached
,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_P
THREAD){threadParams.cmd="spawnThread";postMessage(threadParams,transferList)}else{spawnThread(thread
Params)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var
tb=__pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled==2)throw"Canceled!"}function
_emsripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce("Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/threads.html#blocking-on-the-main-browser-thread")}function
__emsripten_do_pthread_join(thread,status,block){if(!thread){err("pthread_join attempted on a null thread
pointer!");return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&__pthread_self()==thread){err("PThread
"+thread+" is attempting to join to itself!");return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emsripten_main_browser_thread_id()==thread){err("Main thread
"+thread+" is attempting to join to itself!");return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!==thread){err("pthread_join attempted on thread
"+thread+", which does not point to a valid thread, or does not exist anymore!");return
ERRNO_CODES.ESRCH}var
detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err("Attempted to join thread
"+thread+", which was already detached!");return
ERRNO_CODES.EINVAL}if(block){_emsripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus==1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage({"cmd":"cleanupThread","thread":thread});return
0}if(!block){return
ERRNO_CODES.EBUSY}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emsripten_main_thre
ad_process_queued_calls();_emsripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}}function __pthread_join(thread,status){return __emsripten_do_pthread_join(thread,status,true)}function
__sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case

```

```

93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\"object\")return navigator[\"hardwareConcurrency\"]|1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emscripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wr
ite,_sysconf];var
asmLibraryArg={\"e\":__assert_fail,\"r\":__call_main,\"x\":__emscripten_notify_thread_queue,\"b\":_abort,\"y\":
_emscripten_asm_const_int,\"j\":_emscripten_conditional_set_current_thread_status,\"d\":_emscripten_futex_wait,\"
c\":_emscripten_futex_wake,\"f\":_emscripten_get_now,\"p\":_emscripten_memcpy_big,\"A\":_emscripten_num_l
ogical_cores,\"u\":_emscripten_receive_on_main_thread_js,\"q\":_emscripten_resize_heap,\"v\":_emscripten_set_ca
nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory|Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"C\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"E\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"F\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"G\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"H\"]).apply(
null,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"J\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"K\"]).apply(null,argumen
ts)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"L\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"M\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"N\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"O\"]).ap
ply(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"P\"]).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"][\"Q\"]).apply(null,arguments)};var
_Ceil=Module[\"_Ceil\"]=function(){return(_Ceil=Module[\"_Ceil\"]=Module[\"asm\"][\"R\"]).apply(null,argument

```

```

s});var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][["S"]]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][["T"]]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=Module["asm"][["U"]]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][["V"]]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][["W"]]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][["X"]]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][["Y"]]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][["Z"]]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][["_"]]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][["$"]]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][["aa"]]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][["ba"]]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][["ca"]]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][["da"]]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][["ea"]]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][["fa"]]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][["ga"]]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][["ha"]]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][["ia"]]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][["ja"]]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][["ka"]]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][["la"]]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][["ma"]]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][["na"]]).apply(null,arguments)};var

```

```

nts});var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][["o
a"]]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][["pa"]]).apply(null,argument
s)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm
"][["qa"]]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][["ra"]]).apply(null,argume
nts)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][["sa"]]).
apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][["t
a"]]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][["ua"]]).apply(null,ar
guments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][["va"]]).apply(null,argumen
ts)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][["wa
"]]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][["x
a"]]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][["ya"]]).a
pply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][["za"]]).apply(null,argumen
ts)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Mod
ule["_NonMaxSuppressionV3"]=Module["asm"][["Aa"]]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Mod
ule["_NonMaxSuppressionV4"]=Module["asm"][["Ba"]]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Mod
ule["_NonMaxSuppressionV5"]=Module["asm"][["Ca"]]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][["Da\
"]]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][["Ea"]]).apl
y(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][["Fa"]]).apply(nu
ll,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][["Ga"]]).apply(null,argume
nts)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][["Ha"]]).apply(null,arg
uments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][["Ia"]]).apply(null,argum
ents)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][["Ja"]]).app
ly(null,arguments)};var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][["Ka"]]).apply(null,argum
ents)};var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][["La"]]).apply(null,a

```

```

arguments));var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][["Ma"]]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][["Na"]]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][["Oa"]]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][["Pa"]]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][["Qa"]]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][["Ra"]]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][["Sa"]]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][["Ta"]]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][["Ua"]]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][["Va"]]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][["Wa"]]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][["Xa"]]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"][["Ya"]]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][["Za"]]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"][["_a"]]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][["$a"]]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][["ab"]]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][["bb"]]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][["cb"]]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][["db"]]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][["eb"]]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][["fb"]]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][["gb"]]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"])=

```

```

Module["asm"][["hb"]].apply(null,arguments);var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"][["ib"]]).apply(nu
l,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"][["jb"]]).apply(null,arguments
)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"][["kb"]]).apply(null,arguments)};var
_emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=function(){return(_emscripten_get_global
_libc=Module["_emscripten_get_global_libc"]=Module["asm"][["lb"]]).apply(null,arguments)};var
_thread_self=Module["_thread_self"]=function(){return(_thread_self=Module["_thread_self"]=Module["asm"]
["mb"]).apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=Modu
le["__pthread_tsd_run_dtors"]=Module["asm"][["nb"]]).apply(null,arguments)};var
_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=fun
ction(){return(_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_que
ued_calls"]=Module["asm"][["ob"]]).apply(null,arguments)};var
_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]
=function(){return(_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_proc
ess_queued_calls"]=Module["asm"][["pb"]]).apply(null,arguments)};var
_emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=functi
on(){return(_emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_
id"]=Module["asm"][["qb"]]).apply(null,arguments)};var
_emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=function(){return(_emsc
ripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=Module["asm"][["rb"]]).app
ly(null,arguments)};var
__emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=function(){return(__emsc
ripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=Module["asm"][["sb"]]).apply(n
ull,arguments)};var
_emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=function(){retur
n(_emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=Module["asm"]
["tb"]).apply(null,arguments)};var
_emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=function(
){return(_emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=
Module["asm"][["ub"]]).apply(null,arguments)};var
__emscripten_call_on_thread=Module["__emscripten_call_on_thread"]=function(){return(__emscripten_call_on_t
hread=Module["__emscripten_call_on_thread"]=Module["asm"][["vb"]]).apply(null,arguments)};var
_emscripten_tls_init=Module["_emscripten_tls_init"]=function(){return(_emscripten_tls_init=Module["_emscrip
ten_tls_init"]=Module["asm"][["wb"]]).apply(null,arguments)};var
__emscripten_thread_init=Module["__emscripten_thread_init"]=function(){return(__emscripten_thread_init=Mod
ule["__emscripten_thread_init"]=Module["asm"][["xb"]]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][["yb"]]).a
pply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"]
["zb"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][["Ab"]
]).apply(null,arguments)};var
_emscripten_stack_set_limits=Module["_emscripten_stack_set_limits"]=function(){return(_emscripten_stack_set
limits=Module["_emscripten_stack_set_limits"]=Module["asm"][["Bb"]]).apply(null,arguments)};var

```

```

__memalign=Module[["_memalign"]=function(){return(__memalign=Module[["_memalign"]=Module[["asm\"]]["Cb
\"]).apply(null,arguments)};var
__emscripten_allow_main_runtime_queued_calls=Module[["_emscripten_allow_main_runtime_queued_calls"]=1
0512;var
__emscripten_main_thread_futex=Module[["_emscripten_main_thread_futex"]=12148;Module[["cwrap"]=cwrap
;Module[["PThread"]=PThread;Module[["PThread"]=PThread;Module[["wasmMemory"]=wasmMemory;Module
[["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name=_"ExitStatus";this.message=_"Program terminated with
exit(\"+status+\")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromis
eResolve(Module);initRuntime();postMessage({"cmd":_"loaded"});return}preRun();if(runDependencies>0){retur
n}function
doRun(){if(calledRun)return;calledRun=true;Module[["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module[["onRuntimeInitialized"]])Module[["onRuntimeInitialized"]]()};postRun(
)}if(Module[["setStatus\"]]){Module[["setStatus\"]](_"Running...");setTimeout(function(){setTimeout(function(){Mo
dule[["setStatus\"]](_"\\"),1);doRun()},1)}else{doRun()}}Module[["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":_"exitProcess","returnCode":_status});throw new
ExitStatus(status)}else{}}if(noExitRuntime){}}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunTi
me();if(Module[["onExit"]])Module[["onExit"]](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module[["preInit"]]){if(typeof
Module[["preInit"]]==_"function")Module[["preInit"]]=[Module[["preInit"]]];while(Module[["preInit"].length>0){
Module[["preInit"].pop()}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n);}\nif (typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports[_"WasmBackendModuleThreadedSimd"] =
WasmBackendModuleThreadedSimd;\n", "export const wasmWorkerContents = 'var Module={};function
threadPrintErr(){var text=Array.prototype.slice.call(arguments).join(" ");console.error(text)}function
threadAlert(){var text=Array.prototype.slice.call(arguments).join(
\");postMessage({cmd:"alert",text:text,threadId:Module[["_pthread_self"]]()})}var
err=threadPrintErr;this.alert=threadAlert;Module[["instantiateWasm"]=function(info,receiveInstance){var
instance=new
WebAssembly.Instance(Module[["wasmModule"],info);Module[["wasmModule"]=null;receiveInstance(instance);r
eturn instance.exports};function
moduleLoaded(){this.onmessage=function(e){try{if(e.data.cmd===_"load"){Module[["wasmModule"]=e.data.wa
smModule;Module[["wasmMemory"]=e.data.wasmMemory;Module[["buffer"]=Module[["wasmMemory"].buffer;
Module[["ENVIRONMENT_IS_PTHREAD"]=true;if(typeof
e.data.urlOrBlob===_"string"){importScripts(e.data.urlOrBlob)}else{var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)}
WasmBackendModuleThreadedSimd(Module).then(function(instance){Module=instance;moduleLoaded()}))}else
if(e.data.cmd===_"objectTransfer"){Module[["PThread"].receiveObjectTransfer(e.data)}else
if(e.data.cmd===_"run"){Module[["__performance_now_clock_drift"]=performance.now()-
e.data.time;Module[["__emscripten_thread_init"]](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module[["establishStackSpace"]](top,max);Module[["emscripten_tls_init"]](
);Module[["PThread"].receiveObjectTransfer(e.data);Module[["PThread"].setThreadStatus(Module[["_pthread_self
"]]()(),1);try{var

```

```

result=Module["invokeEntryPoint"](e.data.start_routine,e.data.arg);if(!Module["getNoExitRuntime"]())Module["PThread"].threadExit(result)}catch(ex){if(ex==="Canceled!"){Module["PThread"].threadCancel()}else
if(ex!="unwind"){if(ex instanceof
Module["ExitStatus"]){if(Module["getNoExitRuntime"]()){}}else{Module["PThread"].threadExit(ex.status)}}else
se{Module["PThread"].threadExit(-2);throw ex}}}}else
if(e.data.cmd==="cancel"){if(Module["_pthread_self"]()){Module["PThread"].threadCancel()}else
if(e.data.target==="setimmediate"){}}else
if(e.data.cmd==="processThreadQueue"){if(Module["_pthread_self"]()){Module["_emscripten_current_thread_
process_queued_calls"]()}else{err("worker.js received unknown command
"+e.data.cmd);err(e.data)}}catch(ex){err("worker.js onmessage() captured an uncaught exception:
"+ex);if(ex&&ex.stack)err(ex.stack);throw ex}};if(typeof process==="object"&&typeof
process.versions==="object"&&typeof process.versions.node==="string"){self={location:{href: __filename}}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require("worker_threads");global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on("message",function(data){onmessage({data:data})});var
nodeFS=require("fs");var nodeRead=function(filename){return nodeFS.readFileSync(filename,"utf8")};function
globalEval(x){global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));postMessage=function(msg){parentPort.postMessage(msg)};if(typeof
performance==="undefined"){performance={now:function(){return Date.now()}}};","nvar
WasmBackendModule = (function() {\n var _scriptDir = typeof document !== 'undefined' &&
document.currentScript ? document.currentScript.src : undefined;\n if (typeof __filename !== 'undefined')
_scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n WasmBackendModule =
WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!=="undefined"?WasmBackendModule: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram= "./this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory="";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"^")}arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"]("unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["inps
ect"]=function(){return "[Emscripten Module object]"}else if(ENVIRONMENT_IS_SHELL){if(typeof

```



```

read!=="undefined"){read_=function shell_read(f){return read(f)}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
arguments!="undefined"){arguments_=arguments}if(typeof
quit==="function"){quit_=function(status){quit(status)}}if(typeof print!="undefined"){if(typeof
console==="undefined")console={};console.log=print;console.warn=console.error=typeof
printErr!="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(!_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf("/")+1)}else{scriptDirectory=""}}read_=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
===200||xhr.status===0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)
}setWindowTitle=function(title){document.title=title} else {var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module["arguments"])arguments_=Module["arguments"];if(Module["thisProgram"])thisProgram=
Module["thisProgram"];if(Module["quit"])quit_=Module["quit"];var
wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!="object"){abort("no native wasm
support detected")}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len);return ret},},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}var UTF8Decoder=typeof
TextDecoder!="undefined"?new TextDecoder("utf8"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&(endPtr<endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{var
str="";while(idx<endPtr){var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue}var

```

```

u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAtAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAtAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=Module["preRun"];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]=="function")Module["postRun"]=Module["postRun"];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"](runDependencies)}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=nu
ll}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what+="abort(\n"+what+"\n). Build with -s ASSERTIONS=1 for more info.";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var

```

```

dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://^";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-
wasm.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch==="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:"same-
origin"}).then(function(response){if(!response["ok"]){throw"failed to load wasm binary file at
"+wasmBinaryFile+""}return response["arrayBuffer"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={"a":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module["asm"]=exports;wasmMemory=Module["asm"]["j"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module["asm"]["r"];removeRunDependency("wasm-
instantiate")}addRunDependency("wasm-instantiate");function
receiveInstantiatedSource(output){receiveInstance(output["instance"]);}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err("failed to asynchronously prepare
wasm: "+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming==="function"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch==="function"){return fetch(wasmBinaryFile,{credentials:"same-
origin"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err("wasm streaming compile failed: "+reason);err("falling
back to ArrayBuffer instantiation");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module["instantiateWasm"]){try{var
exports=Module["instantiateWasm"](info,receiveInstance);return exports}catch(e){err("Module.instantiateWasm
callback failed with error: "+e);return false}}instantiateAsync().catch(Promise.reject);return{}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback==="function"){callback(Module);continue}var func=callback.func;if(typeof
func==="number"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}function _abort(){abort()}function
_emscripten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscripten_get_heap_size(){return HEAPU8.length}function
emscripten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var oldSize=_emscripten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));

```

```

buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iiov,iiovcnt,pnum){var num=0;for(var
i=0;i<iiovcnt;i++){var ptr=HEAP32[iiov+i*8>>2];var len=HEAP32[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _pthread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]|1;return 1}}setErrNo(28);return-1}var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
___wasm_call_ctors=Module[\"___wasm_call_ctors\"]=function(){return(___wasm_call_ctors=Module[\"___wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"s\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"t\"]).apply(null,argument
s)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"u\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"v\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"w\"]).apply(null,argumen
ts)};var

```

```

_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm"][["x"]]).apply(null,arguments)};var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm"][["y"]]).apply(null,arguments)};var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"][["z"]]).apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"][["A"]]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][["B"]]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][["C"]]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=Module["asm"][["D"]]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][["E"]]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][["F"]]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][["G"]]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][["H"]]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][["I"]]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][["J"]]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][["K"]]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][["L"]]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][["M"]]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][["N"]]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][["O"]]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][["P"]]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][["Q"]]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][["R"]]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][["S"]]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][["T"]]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][["U"]]).apply(null,arguments)};var

```

```

_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][_"V"]).apply(
null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][_"W"]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][_"X"]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][_"Y"]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][_"Z"]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][_" _"]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][_"$"]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][_"aa"]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][_"ba"]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][_"ca"]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][_"da"]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][_"ea"]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][_"fa"]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][_"ga"]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][_"ha"]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][_"ia"]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][_"ja"]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][_"ka"]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][_"la"]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][_"ma"]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][_"na"]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][_"oa"]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][_"pa"]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][_"qa"]).apply(null,arguments)};var

```

```

_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"]["ra"]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"]["sa"]).apply(null,arguments)};var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"]["ta"]).apply(null,arguments)};var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"]["ua"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"]["va"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"]["wa"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"]["xa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"]["ya"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"]["za"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"]["Aa"]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"]["Ba"]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"]["Ca"]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"]["Da"]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Ea"]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Fa"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Ga"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"]["Ha"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Ia"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"]["Ja"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["Ka"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["La"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["Ma"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["Na"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["Oa"]).apply(null,arguments)};var

```

```

_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][["Pa"]]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][["Qa"]]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][["Ra"]]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=Module["asm"][["Sa"]]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"][["Ta"]]).apply(null,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"][["Ua"]]).apply(null,arguments)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_location"]=Module["asm"][["Va"]]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][["Wa"]]).apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"][["Xa"]]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][["Ya"]]).apply(null,arguments)};Module["cwrap"]=cwrap;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("Running..");setTimeout(function(){setTimeout(function(){Module["setStatus"](""),1});doRun(),1)}else{doRun()}}Module["run"]=run;if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop()}run();\n\n\n return WasmBackendModule.ready\n\n\n);nif (typeof exports ===
'object' && typeof module === 'object')\n module.exports = WasmBackendModule;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModule; });\nelse if (typeof exports ===
'object')\n exports["WasmBackendModule"] = WasmBackendModule;\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\nimport './flags_wasm';\nimport {backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,
engine, env, KernelBackend, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasmModule,
WasmFactoryConfig} from './wasm-out/tfjs-backend-wasm';\nimport {BackendWasmThreadedSimdModule} from
'./wasm-out/tfjs-backend-wasm-threaded-simd';\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-
backend-wasm-threaded-simd.js';\n// @ts-ignore\nimport {wasmWorkerContents} from './wasm-out/tfjs-backend-
wasm-threaded-simd.worker.js';\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\ninterface
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:
number;\n /** Only used for string tensors, storing encoded bytes. */\n stringBytes?: Uint8Array[];\n}\n\nexport

```



```

type DataId = object; // object instead of {} to force non-primitive.\n\nexport class BackendWasm extends
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:
DataStorage<TensorData>;\n\n constructor(public wasm:
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n
this.wasm.tfjs.initWithThreadsCount(threadsCount);\n actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n
this.dataIdMap = new DataStorage(this, engine());\n }\n\n write(values: backend_util.BackendValues, shape:
number[], dtype: DataType):\n DataId {\n const dataId = {id: this.dataIdNextNumber++};\n
this.move(dataId, values, shape, dtype, 1);\n return dataId;\n }\n\n numDataIds(): number {\n return
this.dataIdMap.numDataIds();\n }\n\n async time(f: () => void): Promise<BackendTimingInfo> {\n const start =
util.now();\n f();\n const kernelMs = util.now() - start;\n return {kernelMs};\n }\n\n move(\n dataId:
DataId, values: backend_util.BackendValues, shape: number[],\n dtype: DataType, refCount: number): void {\n
const id = this.dataIdNextNumber++;\n if (dtype === 'string') {\n const stringBytes = values as Uint8Array[];\n
this.dataIdMap.set(\n dataId,\n {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n
return;\n }\n\n const size = util.sizeFromShape(shape);\n const numBytes = size *
util.bytesPerElement(dtype);\n const memoryOffset = this.wasm._malloc(numBytes);\n
this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n\n this.wasm.tfjs.registerTensor(id, size,
memoryOffset);\n\n if (values != null) {\n this.wasm.HEAPU8.set(\n new Uint8Array(\n (values
as backend_util.TypedArray).buffer,\n (values as backend_util.TypedArray).byteOffset, numBytes),\n
memoryOffset);\n }\n }\n\n read(dataId: DataId): Promise<backend_util.BackendValues> {\n return
this.readSync(dataId);\n }\n\n readSync(dataId: DataId): backend_util.BackendValues {\n const {memoryOffset,
dtype, shape, stringBytes} =\n this.dataIdMap.get(dataId);\n if (dtype === 'string') {\n return stringBytes;\n
}\n const bytes = this.wasm.HEAPU8.slice(\n memoryOffset,\n memoryOffset +
util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n return typedArrayFromBuffer(bytes.buffer, dtype);\n
}\n\n /**\n * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n * is released, false
otherwise.\n * @param dataId\n * @param force Optional, remove the data regardless of refCount\n */\n
disposeData(dataId: DataId, force = false): boolean {\n if (this.dataIdMap.has(dataId)) {\n const data =
this.dataIdMap.get(dataId);\n data.refCount--;\n if (!force && data.refCount > 0) {\n return false;\n
}\n\n this.wasm._free(data.memoryOffset);\n this.wasm.tfjs.disposeData(data.id);\n
this.dataIdMap.delete(dataId);\n }\n return true;\n }\n\n /** Return refCount of a `TensorData`. */\n
refCount(dataId: DataId): number {\n if (this.dataIdMap.has(dataId)) {\n const tensorData =
this.dataIdMap.get(dataId);\n return tensorData.refCount;\n }\n return 0;\n }\n\n incRef(dataId: DataId) {\n
const data = this.dataIdMap.get(dataId);\n if (data != null) {\n data.refCount++;\n }\n }\n\n floatPrecision():
32 {\n return 32;\n }\n\n // Returns the memory offset of a tensor. Useful for debugging and unit\n // testing.\n
getMemoryOffset(dataId: DataId): number {\n return this.dataIdMap.get(dataId).memoryOffset;\n }\n\n
dispose() {\n this.wasm.tfjs.dispose();\n if ('PThread' in this.wasm) {\n
this.wasm.PThread.terminateAllThreads();\n }\n this.wasm = null;\n }\n\n memory() {\n return {unreliable:
false};\n }\n\n /**\n * Make a tensor info for the output of an op. If `memoryOffset` is not\n * present, this
method allocates memory on the WASM heap. If `memoryOffset`\n * is present, the memory was allocated
elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n
makeOutput(shape:
number[], dtype: DataType, memoryOffset?: number):\n TensorInfo {\n let dataId: {};\n if (memoryOffset
== null) {\n dataId = this.write(null /* values */, shape, dtype);\n } else {\n const id =
this.dataIdNextNumber++;\n dataId = {id};\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,
refCount: 1});\n const size = util.sizeFromShape(shape);\n this.wasm.tfjs.registerTensor(id, size,
memoryOffset);\n }\n return {dataId, shape, dtype};\n }\n\n typedArrayFromHeap({shape, dtype, dataId}:
TensorInfo):\n backend_util.TypedArray {\n const buffer = this.wasm.HEAPU8.buffer;\n const
{memoryOffset} = this.dataIdMap.get(dataId);\n const size = util.sizeFromShape(shape);\n switch (dtype) {\n
case 'float32':\n return new Float32Array(buffer, memoryOffset, size);\n case 'int32':\n return new
Int32Array(buffer, memoryOffset, size);\n case 'bool':\n return new Uint8Array(buffer, memoryOffset,

```

```

size);\n  default:\n    throw new Error(`Unknown dtype ${dtype}`);\n  }\n}\n\nfunction
createInstantiateWasmFunc(path: string) {\n // this will be replace by rollup plugin patchWechatWebAssembly in\n
// miniprogram's output.\n // tslint:disable-next-line:no-any\n return (imports: any, callback: any) => {\n
util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n  if (!response['ok']) {\n
imports.env.a(`failed to load wasm binary file at '${path}'`);\n  }\n  response.arrayBuffer().then(binary => {\n
  WebAssembly.instantiate(binary, imports).then(output => {\n    callback(output.instance, output.module);\n
  });\n  });\n  });\n  return {};\n  });\n}\n\n/**\n * Returns the path of the WASM binary.\n * @param
simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n *
@param wasmModuleFolder the directory containing the WASM binaries.\n */\nfunction getPathToWasmBinary(\n
  simdSupported: boolean, threadsSupported: boolean,\n  wasmModuleFolder: string) {\n  if (wasmPath != null) {\n
  // If wasmPath is defined, the user has supplied a full path to\n  // the vanilla .wasm binary.\n  return
wasmPath;\n  }\n\n  let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n  if (simdSupported &&
threadsSupported) {\n    path = 'tfjs-backend-wasm-threaded-simd.wasm';\n  } else if (simdSupported) {\n    path =
'tfjs-backend-wasm-simd.wasm';\n  }\n\n  if (wasmFileMap != null) {\n    if (wasmFileMap[path] != null) {\n
return wasmFileMap[path];\n    }\n  }\n\n  return wasmModuleFolder + path;\n}\n\n/**\n * Initializes the wasm
module and creates the js <--> wasm bridge.\n * \n * NOTE: We wrap the wasm module in a object with property
'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in
Chrome 76).\n */\nexport async function init(): Promise<{wasm: BackendWasmModule}> {\n  const
[simdSupported, threadsSupported] = await Promise.all([\n    env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n
    env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n  ]);\n\n  return new Promise((resolve, reject) =>
{\n    const factoryConfig: WasmFactoryConfig = {};\n\n    /**\n     * This function overrides the Emscripten
module locateFile utility.\n     * @param path The relative path to the file that needs to be loaded.\n     * @param
prefix The path to the main JavaScript file's directory.\n     */\n    factoryConfig.locateFile = (path, prefix) => {\n
if (path.endsWith('.worker.js')) {\n      const response = wasmWorkerContents;\n      const blob = new
Blob([response], {type: 'application/javascript'});\n      return URL.createObjectURL(blob);\n    }\n\n    if
(path.endsWith('.wasm')) {\n      return getPathToWasmBinary(\n        simdSupported as boolean,\n
        threadsSupported as boolean,\n        wasmPathPrefix != null ? wasmPathPrefix : prefix);\n    }\n\n    return prefix
+ path;\n  });\n\n  // Use the instantiateWasm override when system fetch is not available.\n  // Reference:\n  //
https://github.com/emscripten-
core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7feecfa907/tests/manual\_wasm\_instantiate.html#L170\n
if (customFetch) {\n    factoryConfig.instantiateWasm =\n
createInstantiateWasmFunc(getPathToWasmBinary(\n      simdSupported as boolean, threadsSupported as
boolean,\n      wasmPathPrefix != null ? wasmPathPrefix : ''));\n  }\n\n  let initialized = false;\n
factoryConfig.onAbort = () => {\n    if (initialized) {\n      // Emscripten already called console.warn so no need to
double log.\n      return;\n    }\n    if (initAborted) {\n      // Emscripten calls `onAbort` twice, resulting in double
error\n      // messages.\n      return;\n    }\n    initAborted = true;\n    const rejectMsg =\n      `Make sure the
server can serve the `.wasm` file relative to the ' +\n      'bundled js file. For more details see
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers;\n
reject({message: rejectMsg});\n  });\n\n  let wasm: Promise<BackendWasmModule>;\n  // If `wasmPath` has
been defined we must initialize the vanilla module.\n  if (threadsSupported && simdSupported && wasmPath ==
null) {\n    factoryConfig.mainScriptUrlOrBlob = new Blob([\n      [var WasmBackendModuleThreadedSimd = `
+\n      wasmFactoryThreadedSimd.toString()],\n      {type: 'text/javascript'});\n    wasm =
wasmFactoryThreadedSimd(factoryConfig);\n  } else {\n    // The wasmFactory works for both vanilla and SIMD
binaries.\n    wasm = wasmFactory(factoryConfig);\n  }\n\n  // The WASM module has been successfully
created by the factory.\n  // Any error will be caught by the onAbort callback defined above.\n
wasm.then((module) => {\n    initialized = true;\n    initAborted = false;\n\n    const voidReturnType: string =
null;\n    // Using the tfjs namespace to avoid conflict with emscripten's API.\n    module.tfjs = {\n      init:
module.cwrap('init', null, []),\n      initWithThreadCount:\n        module.cwrap('init_with_threads_count', null,

```


Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport './flags_wasm';\n\nimport {registerBackend} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm,
init} from './backend_wasm';\n\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath,
setWasmPaths} from './backend_wasm';\n\nexport {version as version_wasm} from './version';\n\nconst
WASM_PRIORITY = 2;\n\nregisterBackend('wasm', async () => {\n\n  const {wasm} = await init();\n\n  return new
BackendWasm(wasm);\n\n},
WASM_PRIORITY);\n\n], "names": ["_FusedMatMul", "util", "Abs", "backend_util", "Add", "AddN", "Identity", "setup",
"Transpose", "All", "Any", "wasmFunc", "ArgMax", "AvgPool", "Reshape", "BatchMatMul", "slice_util", "buffer", "sliceI
mplCPU", "Slice", "BatchToSpaceND", "Cast", "Ceil", "ClipByValue", "concatImplCPU", "Concat", "Conv2D", "Conv2
DBackpropInput", "Cos", "Cosh", "CropAndResize", "Cumsum", "DepthToSpace", "DepthwiseConv2dNative", "Elu", "s
upportsFullBroadcast", "Equal", "Exp", "ExpandDims", "Fill", "FlipLeftRight", "Floor", "FloorDiv", "FusedBatchNorm",
"FusedConv2D", "FusedDepthwiseConv2D", "GatherNd", "GatherV2", "Greater", "GreaterEqual", "setupFunc", "Leaky
Relu", "Less", "LessEqual", "Log", "LogicalAnd", "Max", "Maximum", "MaxPool", "Mean", "Min", "Minimum", "Mirror
Pad", "Multiply", "Neg", "NonMaxSuppressionV3", "NonMaxSuppressionV4", "NonMaxSuppressionV5", "kernelFunc
", "NotEqual", "OneHot", "OnesLike", "Pack", "PadV2", "Pow", "Prelu", "Prod", "rangeImplCPU", "Range", "RealDiv", "R
elu", "Relu6", "ResizeBilinear", "Reverse", "RotateWithOffset", "Round", "Rsqrt", "ScatterNd", "Select", "Sigmoid", "Sin
", "Softmax", "SpaceToBatchND", "SplitV", "Sqrt", "Square", "SquaredDifference", "Step", "StridedSlice", "Sub", "Sum",
"Tan", "Tanh", "Tile", "TopK", "Transform", "Unpack", "ZerosLike", "registerKernel", "env", "require$$0", "require$$1",
"require$$2", "global", "require$$3", "require$$4", "tslib_1.__extends", "DataStorage", "engine", "KernelBackend", "wa
smFactoryThreadedSimd", "wasmFactory", "deprecationWarn", "registerBackend"], "mappings": ";;;;;;;;;;;;;
AAAA;;;;;;;;;;;;;AAiBA;ACA,IAAY,QAMX;AAND,WAAY,QAAQ;IACIB,6CAAW,CAAA;IACX,yCAAS,C
AAA;IACT,uCAAQ,CAAA;IACR,2CAAU,CAAA;IACV,iDAAa,CAAA;AACf,CAAC,EANW,QAAQ,KAAR,QA
AQ,QAMnB;AAED;ACA,IAAY,iBAQX;AARD,WAAY,iBAAiB;IAC3B,6DAAU,CAAA;IACV,yDAAQ,CAA
A;IACR,2DAAS,CAAA;IACT,2DAAS,CAAA;IACT,mEAAa,CAAA;IACb,+DAAW,CAAA;IACX,uDAAO,CAA
A;AACT,CAAC,EARW,iBAAiB,KAAjB,iBAAiB;AC3B7B;;;;;;;;;;;;;AAuBA,IAAI,eAKQ,CAAC;AAEb,SAAS,
KAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACA,qBAAy,EAAE,IAAI,a
AAa;QACIE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;Q
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;A
ACL,CAAC;AAED,SAAS,gBAAgB,CAAC,IAIzB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;I
AC/B,IAAA,YAAC,EAAE,YAAC,EAAE,kBAAI,EAAE,sDAAsB,CAAW;IAEpD,IAAI,CAAC,CAAC,KAAK,KA
AK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,EAAE;QACID,MAAM,IAAI,KAAK,CACX,6DAA6D,CAA
C,CAAC;KACpE;IAEM,IAAA,6BAAU,EAAE,6BAAU,EAAE,6BAAU,EAAE,qCAAc,CAAU;IACnE,IAAM,GA
AG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/
C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,
CAAC;IAE/C,IAAI,MAAM,GAAG,CAAC,CAAC;IACf,IAAI,IAAI,IAAI,IAAI,EAAE;QACb,IAAM,QAAQ,GA
AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;QACpD,IAAI,QAAQ,CAAC
,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;YAC/B,MAAM,IAAI,KAAK,CACX,iDAAiD;iBACjD,UAAQ,QA
AQ,CAAC,KAAK,CAAC,MAAM,MAAG,CAAA,CAAC,CAAC;SACvC;QACD,MAAM,GAAG,QAAQ,CAAC,E
AAE,CAAC;KACTb;IACD,IAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;QAC3D,CAAC;QACD,OAAO,CAAC,
SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC5D,IAAM,eAAe,GACjB,i
BAAiB,CAAC,UAAkD,CAAC,CAAC;IAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;QAC3B,MAAM,IAAI,KAAK,CAC
R,UAAU,mDAAgD;YAC7D,sBAAsB,CAAC,CAAC;KAC7B;IAED,IAAM,OAAO,GAAG,UAAU,GAAG,CAAC,
```

CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACrD,IAAM,Q
AAQ,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,C
AAC,CAAC,CAAC;IACtD,IAAM,QAAQ,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAE5B,IA
AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,CAA
C,CAAC,KAAK,CAAC,CAAC;IACvE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CA
AC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,IAAM,WAAW,GAAG,IAAI,UAAU,CAA
C,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,eAAe,CACX,GAAG,E
AAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,K
AAK,CAAC,MAAM,EACIE,UAAU,EAAE,UAAU,EAAE,eAAe,EAAE,MAAM,EAAE,wBAAwB,EACzE,cAAc,I
AAI,CAAC,EAAE,KAAK,CAAC,CAAC;IAEhC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,iBAAiB,GA
AiB;IAC7C,UAAU,EAAEA,qBAAY;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IAChB,UAAU
,EAAE,gBAAoC;CACjD;;AC7GD;;;;;;;;;;;;;;;SAuBgB,uBAAuB,CACnC,UAAkB,EAAE,OAAkB;IACxC,IAAI,Q
AA6D,CAAC;IAEIE,SAAS,SAAS,CAAC,OAAoB;QACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CA
AC,UAAU,EAAE,IAAI,aAAa;YACzD,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;KACJ;IAED,S
AAS,UAAU,CAAC,IAAiD;QAE5D,IAAA,sBAAO,EAAW,iBAAC,CAAU;QACpC,IAAM,GAAG,GAAG,OAAO,
CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,GAAG,G
AAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,OAAO,IAAI,CAAC,CAAC,KAAK,CAAC,CAA
C;QAC5D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA
C,EAAE,CAAC;;QAGnD,IAAIC,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;
YACvC,OAAO,GAAG,CAAC;SACZ;QAED,QAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,
CAAC,EAAE,KAAK,CAAC,CAAC;QACxC,OAAO,GAAG,CAAC;KACZ;IAED,OAAO,EAAC,UAAU,YAAA,E
AAE,WAAW,EAAE,MAAM,EAAE,SAAS,WAAA,EAAE,UAAU,YAAA,EAAC,CAAC;AACIE;;ACpDA;;;;;;;;
;;;;AAoBO,IAAM,SAAS,GAAiB,uBAAuB,CAACC,YAAG,CAAC;;ACpBnE;;;;;;;;;;;;;SAuBgB,wBAAwB,CAC
pC,UAAkB,EAAE,qBAA8B,EACID,KAAgB;IACIB,IAAI,QAGQ,CAAC;IAEb,SAAS,SAAS,CAAC,OAAoB;QA
CrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;YACzD,QAAQ;YACR,
OAAO;YACP,QAAQ;YACR,QAAQ;YACR,OAAO;YACP,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,C
AAC;KACJ;IAED,SAAS,UAAU,CAAC,IAAKD;QAE7D,IAAA,sBAAO,EAAE,oBAAM,CAAS;QACxB,IAAA,Y
AAC,EAAE,YAAC,CAAW;QACtB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CA
AC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CA
AC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAE/C,IAAM,UAAU,GAAG,KAAK,IAAI,IAAI,GAAG,
KAAK,GAAG,CAAC,CAAC,KAAK,CAAC;QACnD,IAAM,QAAQ,GAAGC,qBAAY,CAAC,0BAA0B,CAAC,C
AAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;QAC3E,IAAM,GAAG,GAAG,OAAO,CAAC,U
AAU,CAAC,QAAQ,EAAE,UAAU,CAAC,CAAC;;QAGrD,IAAIF,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,KA
AK,CAAC,EAAE;YACtC,OAAO,GAAG,CAAC;SACZ;QAED,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,
UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;QACnE,IAAM,WAAW,GAAG,IAAI,
UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;QACnE,IAAM,K
AAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;Q
ACnD,IAAM,UAAU,GAAG,cAAM,OAAA,QAAQ,CAC7B,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,
CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,QAAQ,CAAC
,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,GAAA,CAAC;;QAG9B,IAAI,qBAAqB,IAAI,CAAC,CAAC,
KAAK,KAAK,SAAS,EAAE;YACID,UAAU,EAAE,CAAC;YACb,OAAO,GAAG,CAAC;SACZ;QAED,IAAM,cA
Ac,GAAGE,qBAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;QACxE,IAAM,
cAAc,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;QACxE,IAA
M,eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,UAAc,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,KAAK,CAAC,G
AAA,CAAC,CAAC;QACHE,IAAM,eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,UAAc,CAAC,EAAE,CAAC,IAA
K,OAAA,CAAC,KAAK,CAAC,GAAA,CAAC,CAAC;QACHE,IAAI,eAAe,IAAI,eAAe,EAAE;YACtC,UAAU,EA
AE,CAAC;YACb,OAAO,GAAG,CAAC;SACZ;aAAM;YACL,MAAM,IAAI,KAAK,CACX,2CAA2C;iBAC3C,m

BAAiB,CAAC,CAAC,KAAK,SAAI,UAAU,MAAG,CAAA,CAAC,CAAC;SACHD;KACF;IAED,OAAO,EAAE,U
AAU,YAAA,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,WAAA,EAAE,UAAU,YAAA,EAAE,CAAC;AACIE;;
ACxFA;;,;,,;AAqBA,IAAM,qBAAqB,GAAG,IAAI,CAAC;AAE5B,IAAM,SAAS,GACIB,wBAAwB,CAAC
C,YAAG,EAAE,qBAAqB,CAAC;;ACxBxD;;,;,,;AAuBA,IAAI,QAEQ,CAAC;AAEb,SAAS,SAAS,CAAC,O
AAoB;IACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,aAAI,EAAE,IAAI,aAAa;QACnD,OAA
O;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,I
AAkD;IACvD,IAAA,oBAAM,EAAE,sBAAO,CAAS;IAC/B,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,
MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;;
IAGjE,IAAIJ,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACvC,OAAO,GA
AG,CAAC;KACZ;IAED,IAAM,QAAQ,GAAG,MAAM,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,OAAO
,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,GAAA,CAAC,CAAC;IACrE,I
AAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IACtE
,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,
CAAC;IACnD,QAAQ,CAAC,aAAa,EAAE,QAAQ,CAAC,MAAM,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,C
AAC,EAAE,KAAK,CAAC,CAAC;IAErE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,UAAU,GAAiB;IA
CtC,UAAU,EAAE,aAAI;IACHB,WAAW,EAAE,MAAM;IACnB,SAAS,WAAA;IACT,UAAU,EAAE,IAAwB;CA
CrC;;AC1DD;;,;,,;SAsBgB,QAAQ,CAAC,IAAoD;IAE3D,IAAA,iBAAC,EAAG,sBAAO,CAAS;IACpC,IAA
M,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAA
C;IACjD,IAAM,MAAM,GAAG,OAAO,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC;IAC7C,IAAM,OAAO,GA
AG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IACHD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,
CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,GAAiB;IAC1C,UAAU,EAAEC,iBAAQ;
IACpB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,QAA4B;CACzC;;ACpCD;;,;,,;AAwBA,IAAI,aAE4D
,CAAC;AAEjE,SAASC,OAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,
kBAAS,EAAE,IAAI,aAAa;QAC7D,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,O
AAO;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,SAAS,CACrB,IAC0E;IAErE,IAAA,oBAAM,EA
AE,sBAAO,EAAE,kBAAK,CAAS;;IAGhC,IAAA,kDAAoE,EAAnE,oBAAy,EAAE,YAAqD,CAAC;IAE3E,IAAI
,UAAU,GAAG,IAAI,CAAC;IACtB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAA
M,EAAE,CAAC,EAAE,EAAE;QACpC,IAAI,IAAI,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACjB,UAAU,G
AAG,KAAK,CAAC;SACpB;KACF;IACD,IAAM,QAAQ,GAAG,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,KA
AK,EAAE,KAAK,CAAC,IAAI,CAAC,CAAC;IAC7D,IAAM,CAAC,GAAG;QACR,MAAM,EAAE,MAAM,CAA
C,CAAC,CAAC,MAAM;QACvB,KAAK,EAAE,YAAy;QACnB,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,K
AAK;KACtB,CAAC;IAEF,IAAI,UAAU,EAAE;QACd,IAAM,MAAM,GAAG,QAAQ,CAAC,EAAC,MAAM,QA
AA,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;QAC3C,MAAM,CAAC,KAAK,GAAG,QAAQ,CAAC;QACxB,O
AAO,MAAM,CAAC;KACf;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CA
AC,KAAK,CAAC,CAAC;IACID,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAA
C,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAA
U,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9D,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,U
AAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,aAAa,CACT,GAAG,EAAE,WA
AW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KA
AK,EAAE,SAAS,EACrE,IAAI,CAAC,MAAM,CAAC,CAAC;IACjB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,
SAAS,eAAe,CAAC,OAAiB,EAAE,IAAc;IACxD,IAAM,QAAQ,GAAG,IAAI,KAAK,CAAC,OAAO,CAAC,MAA
M,CAAC,CAAC;IAC3C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,
CAAC,EAAE,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CA
AC,CAAC;KACHC;IACD,OAAO,QAAQ,CAAC;AACIB,CAAC;AAED,SAAS,iBAAiB,CACtB,KAAe,EAAE,IA
Ac;IACjC,IAAM,QAAQ,GAAa,EAAE,CAAC;IAC9B,IAAM,OAAO,GAAa,EAAE,CAAC;IAC7B,KAAK,IAAI,C
AAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QACrC,IAAI,KA
AK,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACIB,QAAQ,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC

,CAAC,CAAC;SACzB;QACD,IAAI,KAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE;YACxB,OOAO,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;SACvB;KACF;IACD,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OOAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QACvC,IAAI,SAAS,GAAG,CAAC,CAAC,CAAC;QACnB,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OOAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;YACvC,IAAI,OOAO,CAAC,CAAC,CAAC,IAAI,CAAC;iBACd,SAAS,KAAC,CAAC,CAAC,IAAI,OOAO,CAAC,SAAS,CAAC,GAAG,OOAO,CAAC,CAAC,CAAC,CAAC,EAAE;gBACzD,SAAS,GAAG,CAAC,CAAC;aACf;SACF;QACD,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC;KACxB;IACD,OOAO,CAAC,QAAQ,EAAE,OOAO,CAAC,CAAC;AAC7B,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEA,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAED,OAAC;CACjB;;ACtHD;;;;;;;;;;;;;;AAqBA;;;;;;;;SAQgB,uBAAuB,CACnC,CAAa,EAAE,IAAQb,EAAE,OOAoB;IAM5D,IAAM,MAAM,GAAG,CAAC,CAAC,KAAC,CAAC;IACvB,IAAM,KAAC,GAAG,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC;IAE7B,IAAM,YAAY,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;IACvD,IAAI,IAAI,GAAG,YAAY,CAAC;IACxB,IAAM,YAAY,GAAGE,qBAAY,CAAC,kBAaKB,CAAC,IAAI,EAAE,KAAC,CAAC,CAAC;IACIE,IAAI,WAAW,GAAG,IAAI,CAAC;IACvB,IAAI,kBAaKB,GAAG,KAAC,CAAC;IAC/B,IAAI,YAAY,IAAI,IAAI,EAAE;QACxB,IAAM,QAAQ,GAAa,IAAI,KAAC,CAAC,KAAC,CAAC,CAAC;QAC5C,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,CAAC,CAAC;SACvC;QAED,IAAI,GAAGA,qBAAY,CAAC,gBAAGb,CAAC,IAAI,CAAC,MAAM,EAAE,KAAC,CAAC,CAAC;QACzD,WAAW;YACP,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAC,EAAE,EAAC,IAAI,EAAE,YAAY,EAAC,EAAE,OOAO,SAAA,EAAC,CAAC,CAAC;QAEEnE,IAAM,GAAG,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,YAAY,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACIE,IAAI,YAAY,KAAC,GAAG,EAAE;YACxB,kBAaKB,GAAG,IAAI,CAAC;SAC3B;KACF;IAED,OOAO,EAAC,UAAU,EAAE,WAAW,EAAE,YAAY,cAAA,EAAE,IAAI,MAAA,EAAE,kBAaKB,oBAAA,EAAC,CAAC;AAC3E;;AC9DA;;;;;;;;;;;;AAuBA,IAAI,OAaiE,CAAC;AAEtE,SAASI,OAAC,CAAC,OOAoB;IACjC,OOAO,GAAAG,OOAO,CAAC,IAAI,CAAC,KAAC,CAACE,YAAG,EAAE,IAAI,WAAW,CAAC,wBAawB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAC,AAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OOAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAC,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,OBAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,OCACM,CAAC;IAE9C,IAAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAC,GAAG,UAAU,CAAC;QACnB,OOAO,GAAG,YAAY,CAAC;KACxB;IAED,IAAM,SAAS,GAAG,KAAC,CAAC,KAAC,CAAC,MAAM,CAAC;IACrCN,qBAAY,CAAC,OBAA0B,CAAC,KAAC,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACID,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;IAC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,OOAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACID,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAC,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACzC,IAAM,KAAC,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OOAO,CAAC,OOAO,EAAE,UAAU,EAAE,KAAC,CAAC,CAAC;KACrC;IAED,IAAI,kBAaKB,EAAE;;QAEtB,OOAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAC,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAC,GAAG,QAAQ,CAAC;KACtB;IAED,OOAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,SAAS,GAAiB;IACrC,UAAU,EAAEM,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEF,OAAC;IACbB,UAAU,EAAE,GAAuB;CACpC;;AC9ED;;;;;;;;;;AAuBA,IAAI,OAaiE,CAAC;AAEtE,SAASA,OAAC,CAAC,OOAoB;IACjC,OOAO,GAAG,OOAO,CAAC,IAAI,CAAC,KAAC,CAACG,YAAG,EAAE,IAAI,WAAW,CAAC,wBAawB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAC,AAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,

CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAA
K,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CA
AC;IAE9C,IAAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UA
AU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAK,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,Y
AAY,CAAC;KACxB;IAED,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrCP,qBAAY,
CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACID,IAAA,uEACuD,EADtD,gBAA
Q,EAAE,mBAC4C,CAAC;IAC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAE
nD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACI
D,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,
OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACrC;IAED,IAAI,kBAaKB,EAAE;;QAEtB,
OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,I
AAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC
5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAA
M,SAAS,GAAiB;IACrC,UAAU,EAAEO,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEH,OAAK;IA
ChB,UAAU,EAAE,GAAuB;CACpC;;AC9ED;;;;;;;AAwBA,IAAII,UAESB,CAAC;AAE3B,SAASJ,OAAK,C
AAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,eAAM,EAAE,IAAI,aAAa;QA
CrD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,CAAC;AA
ED,SAAS,MAAM,CACX,IAAsE;IACjE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;IAC/B,IAAA,iBA
AI,CAA+B;IACnC,IAAA,YAAC,CAAiC;IACzC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA
C,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,K
AAK,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,0CACoB,CAAC;IAE9C,I
AAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,M
AAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,C
AAC;YACnB,OAAO,GAAG,YAAY,CAAC;SACxB;KACF;IAED,IAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,C
AAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACIC,IAAM,GAAG,GAAG,OAAO,CAAC,UA
AU,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;IACID,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA
G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,SAAS,GAAGX,aAAI,CAAC,aAAa,
CAAC,GAAG,CAAC,KAAK,CAAC,CAAC;IACnD,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CA
AC,CAAC,CAAC,CAAC,CAAC;IACvCU,UAAQ,CAAC,OAAO,EAAE,QAAQ,CAAC,KAAK,CAAC,KAAK,CA
AC,EAAE,SAAS,EAAE,SAAS,EAAE,KAAK,CAAC,CAAC;IAEtE,IAAI,kBAaKB,EAAE;;QAEtB,OAAO,CAA
C,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAE
M,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEC,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,M
AA0B;IACtC,SAAS,EAAEL,OAAK;CACjB;;AChFD;;;;;;;AAqBA,IAAI,WAI6D,CAAC;AAEIE,SAASA,O
AAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACM,gBAAO,EAAE,IAAI,a
AAa;QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;Q
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,C
AAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IACnE,IAAA,oBAAM,EAAE,kBAaK,EAAE,sB
AAO,CAAS;IAEtC,IAAM,CAAC,GAAG,MAAM,CAAC,CAAa,CAAC;IAC/B,IAAM,GAAG,GAAG,OAAO,CA
AC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAExC,IAAA,6BAAU,EAA
E,uBAAO,EAAE,eAAG,EAAE,uCAAe,CAAU;IACID,IAAM,QAAQ,GAAGV,qBAAY,CAAC,iBAAiB,CAC3C,
CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,kBAaKB,GAAG,EAAE,eAAe,CAAC,CAAC;I
AE3E,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,
CAAC;IACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,IAAM,QAAQ,GAAG,
QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,
CAAC;IACIC,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,IAAM,YAAY,GAAG,QA
AQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,QAAQ,G
AAG,QAAQ,CAAC,UAAU,CAAC;IAErC,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QACIC,MAAM,IAA

I,KAAK,CACX,4CAA4C;aACzC,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;KAC5D;IAED,IAAI,QA
AQ,CAAC,aAAa,KAAK,CAAC,IAAI,QAAQ,CAAC,cAAc,KAAK,CAAC,EAAE;QACjE,MAAM,IAAI,KAAK,C
ACX,oEAAoE;aACpE,UAAQ,QAAQ,CAAC,cAAc,UAAK,QAAQ,CAAC,aAAa,OAAI,CAAA,CAAC,CAAC;KA
CrE;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAA
C;IAC7D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA
C,EAAE,CAAC;IAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,
CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,YAAY,EAAE,W
AAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAAE,WAAW,EAAE,QAAQ,E
ACzE,KAAK,CAAC,CAAC;IACX,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UA
AU,EAAEU,gBAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEN,OAAK;IACbB,UAAU,EAAE,OAA2
B;CACxC;;AC9FD;;;;;;;SAqBgB,OAAO,CACnB,IAAwE;IACnE,IAAA,oBAAM,EAAE,kBAAK,CAAS;IA
CtB,IAAA,YAAC,CAAW;IACZ,IAAA,mBAAK,CAAU;IAEtB,IAAM,KAAK,GAAGN,aAAI,CAAC,aAAa,CAA
C,CAAC,CAAC,KAAK,CAAC,CAAC;IAC1C,IAAM,MAAM,GAAGA,aAAI,CAAC,sBAAsB,CAAC,KAAK,EA
AE,KAAK,CAAC,CAAC;IAEzDA,aAAI,CAAC,MAAM,CACP,KAAK,KAAKA,aAAI,CAAC,aAAa,CAAC,MA
AM,CAAC,EACpC,cAAM,OAAA,gBAAc,MAAM,qBAAgB,CAAC,CAAC,KAAK,yBAAsB;QACnE,8CAA8C,G
AAA,CAAC,CAAC;;IAGxD,IAAI,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IA
C9B,OAAO,EAAE,MAAM,EAAE,CAAC,CAAC,MAAM,EAAE,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,C
AAC,CAAC,KAAK,EAAE,CAAC;AAC3D,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAEa,gBAAO;
IACnB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,OAA2B;CACxC;;AC5CD;;;;;;;AAuBA,IAAI,eAG2C,
CAAC;AAEHd,SAASP,OAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACQ
,oBAAW,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,Q
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,WAAW,C
AAC,IAIpB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,EAAE,YAAC,CA
AW;IACf,IAAA,6BAAU,EAAE,6BAAU,CAAU;IAEvC,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,
CAAC,KAAK,KAAK,SAAS,EAAE;QACID,MAAM,IAAI,KAAK,CACX,4DAA4D,CAAC,CAAC;KACnE;IAED,
IAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAC7B,IAAM,KAAK,GAAG,CAAC,CAAC,
KAAK,CAAC,MAAM,CAAC;IAE7B,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK
,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IACzE,IAAM,
WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,
KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,
KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,
CAAC;IACzE,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,
GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,IAAM,UAAU,GAAG,CAAC,C
AAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACxC,IAAM,UAAU,GAAG,CA
AC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IAExC,IAAM,SAAS,GAAG
d,aAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;IACjD,IAAM,SAAS,GAAGA,aAAI,CAAC,aAAa,CAAC,UA
AU,CAAC,CAAC;IAEjD,IAAM,mBAAmB,GACrB,SAAS,KAAK,SAAS,IAAI,SAAS,KAAK,CAAC,IAAI,SAAS
,KAAK,CAAC,CAAC;IAEIEA,aAAI,CAAC,MAAM,CACP,KAAK,IAAI,CAAC,IAAI,KAAK,IAAI,CAAC,IAAI,
mBAAmB,EAC/C,cAAM,OAAA,iEAAiE;QACnE,kEAAkE;SACIE,0BAAwB,UAAU,eAAU,UAAU,OAAI,CAA
A,GAAA,CAAC,CAAC;IAEpE,IAAM,iBAAiB,GACnB,SAAS,GAAG,SAAS,GAAG,CAAC,CAAC,KAAK,CAA
C,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,
EAAE,CAAC,CAAC,CAAC,CAAC;IACxE,IAAM,QAAQ,GAAG,iBAAiB,CAAC,MAAM,CAAC,CAAC,WAA
W,EAAE,WAAW,CAAC,CAAC,CAAC;IAEtEA,aAAI,CAAC,MAAM,CACP,WAAW,KAAK,WAAW,EAC3B,c
AAM,OAAA,oCAAc,WAAW,YAAS;SACrD,WAAW,iCAA4B,CAAC,CAAC,KAAK,UAAO,CAAA;SACrD,C
AAC,CAAC,KAAK,wBAAmB,UAAU,iBAAc,CAAA,GAAA,CAAC,CAAC;IA
ErD,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;QACrC,CAAC,S
AAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;IACpE,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,SAAS,E
AAE,WAAW,EAAE,WAAW,CAAC;QACrC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;;IAGp

E,IAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,
SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IACzE,IAAM,GAAG,GA
AG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KAA
K,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAEzE,IAAM,KAAK,GAAG,OAAO,CAAC,
SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,KAAK,GAAG,O
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,OA
AO,GAAG,UAAU,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,GAAG,CAAC,KAAK,CAAC,CA
AC,CAAC,CAAC;IACzD,IAAM,QAAQ,GAAG,UAAU,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,GA
AG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAC1D,IAAM,QAAQ,GAAG,IAAI,CAAC,GAAG,CAA
C,SAAS,EAAE,SAAS,CAAC,CAAC;IAEhD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,
EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,GAAG,CAAC,KAAK,CAAC,CAAC;IACzE,IAAM,KAAK,GAAG,O
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,W
AAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAA
C;IACrE,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,M
AAM,CAAC,CAAC;IAErE,eAAe,CACX,KAAK,EAAE,WAAW,EAAE,GAAG,CAAC,KAAK,CAAC,MAAM,E
AAE,KAAK,EAAE,WAAW,EACxD,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,UAAU,EAAE,
KAAK,CAAC,CAAC;IAErD,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACChC,OAAO
,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEhC,GAAG,CAAC,KAAK,GAAG,QAAQ,CAA
C;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,iBAAiB,GAAiB;IAC7C,UAAU,EAAEc,oBAAW;IA
CvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAER,OAAK;IAChB,UAAU,EAAE,WAA+B;CAC5C;;ACjID;AAC
A;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AAE
O,SAAS,UAAU,CAAC,MAAM,EAAE,QAAQ,EAAE,KAAK,EAAE,YAA,Y,EAAE;AACIE,IAAI,MAAM,OAAO,
GAAGN,aAAI,CAAC,iBAAiB,CAAC,KAAK,EAAEA,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,CAAC,CAAC;
AACHf,IAAI,IAAI,YAA,Y,IAAI,KAAK,KAAK,QAAQ,EAAE;AAC5C;AACa,QAAQ,IAAI,MAAM,GAAG,CA
AC,CAAC;AACvB,QAAQ,MAAM,CAAC,OAAO,CAAC,KAAK,IAAI;AACHc,YAA,Y,MAAM,IAAI,GAAGA,a
AAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC;AACzD,YAA,Y,OAAO,CAAC,GAAG,CAAC,KA
AK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;AAC5C,YAA,Y,MAAM,IAAI,IAAI,CAAC;AAC3B,SAAS,CAAC
,CAAC;AACX,KAAK;AACL,SAAS;AACT,QAAQ,IAAI,SAAS,GAAG,CAAC,CAAC;AAC1B,QAAQ,MAAM,C
AAC,OAAO,CAAC,KAAK,IAAI;AACHc,YAA,Y,MAAM,WAAW,GAAG,KAAK,KAAK,QAAQ;AACID,gBAA
gBE,qBAAY,CAAC,sBAAsB,CAAC,KAAK,CAAC,IAAI,CAAC;AAC/D,gBAAgB,KAAK,CAAC,IAAI,CAAC;A
AC3B,YAA,Y,IAAI,IAAI,GAAG,CAAC,CAAC;AACzB,YAA,Y,KAAK,IAAI,GAAG,GAAG,CAAC,EAAE,GAA
G,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,EAAE;AAC3D,gBAAgB,MAAM,M
AAM,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC;AAC7D,gBAAgB,KAAK,IAAI,
GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,E
AAE;AAC/D,oBAAoB,OAAO,CAAC,MAAM,GAAG,GAAG,CAAC,GAAG,WAAW,CAAC,IAAI,EAAE,CAAC,
CAAC;AACHe,iBAAiB;AACjB,aAAa;AACb,YAA,Y,SAAS,IAAI,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,C
AAC;AACxC,SAAS,CAAC,CAAC;AACX,KAAK;AACL,IAAI,OAAO,OAAO,CAAC;AACnB;;AC7CA;AACa;
AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AAEO,
SAAS,SAAS,CAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KAAK,EAAE;AACpD,IAAI,MAAM,aAAa,GAAG,
KAAK,KAAK,IAAI,CAAC;AACzC,IAAI,MAAM,2BAA2B,GAAG,KAAK,GAAG,IAAI,IAAI,IAAI,GAAG,CAA
C,CAAC;AACjE,IAAI,MAAM,2BAA2B,GAAG,IAAI,GAAG,KAAK,IAAI,IAAI,GAAG,CAAC,CAAC;AACjE,I
AAI,IAAI,aAAa,IAAI,2BAA2B;AACpD,QAAQ,2BAA2B,EAAE;AACrC,QAAQ,OAAOF,aAAI,CAAC,mBAAm
B,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC;AACID,KAAK;AACL,IAAI,MAAM,WAAW,GAAG,IAAI,CAAC,
GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,KAAK,IAAI,IAAI,CAAC,CAAC,CAAC;AACnE,I
AAI,MAAM,MAAM,GAAGA,aAAI,CAAC,mBAAmB,CAAC,WAAW,EAAE,KAAK,CAAC,CAAC;AACHe,IA
AI,IAAI,IAAI,GAAG,KAAK,IAAI,IAAI,KAAK,CAAC,EAAE;AACpC;AACa;AACa,QAAQ,IAAI,GAAG,CAA
C,CAAC,CAAC;AACIB,KAAK;AACL,IAAI,MAAM,CAAC,CAAC,CAAC,GAAG,KAAK,CAAC;AACtB,IAAI,
KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;A

AC5C,QAAQ,MAAM,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,IAAI,C
AAC;AACzC,KAAK;AACL,IAAI,OAAO,MAAM,CAAC;AACIB;;ACrCA;AACA;AACA;AACA;AACA;AACA;
AACA;AACA;AACA;AACA;AACA;AACA;AACA;AACA;AACA;AACA;AAGO,SAAS,SAAS,CAAC,IAAI,EA
AE,KAAK,EAAE,IAAI,EAAE,KAAK,EAAE,KAAK,EAAE;AAC3D,IAAI,MAAM,WAAW,GAAGe,mBAAU,C
AAC,gBAAgB,CAAC,KAAK,EAAE,KAAK,EAAE,IAAI,CAAC,CAAC;AACxE,IAAI,MAAM,MAAM,GAAGf,a
AAI,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC;AAC5C,IAAI,MAAM,QAAQ,GAAGA,aAAI,CAAC,cAAc,CAAC,
KAAK,CAAC,CAAC;AAChD,IAAI,IAAI,WAAW,EAAE;AACrB,QAAQ,MAAM,UAAU,GAAGe,mBAAU,CAA
C,iBAAiB,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;AACzE,QAAQ,IAAI,KAAK,KAAK,QAAQ,EAAE;AACCh
C,YAAy,OAAO,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC;AAC/D,SAAS
;AACT,QAAQ,OAAO,IAAI,CAAC,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC;AAC9D,
KAAK;AACL,IAAI,MAAM,WAAW,GAAG,KAAK,KAAK,QAAQ;AAC1C,QAAQb,qBAAY,CAAC,sBAAsB,C
AAC,IAAI,CAAC;AACjD,QAAQ,IAAI,CAAC;AACb,IAAI,MAAM,KAAK,GAAGc,eAAM,CAAC,KAAK,EAA
E,KAAK,EAAE,WAAW,CAAC,CAAC;AACpD,IAAI,MAAM,MAAM,GAAGA,eAAM,CAAC,IAAI,EAAE,KA
AK,CAAC,CAAC;AACvC,IAAI,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,IAAI,
EAAE,EAAE,CAAC,EAAE;AAC1C,QAAQ,MAAM,MAAM,GAAG,MAAM,CAAC,UAAU,CAAC,CAAC,CAA
C,CAAC;AAC5C,QAAQ,MAAM,KAAK,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,GAAG,EAAE,CAAC,KA
AK,GAAG,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;AAC7D,QAAQ,MAAM,CAAC,GAAG,CAAC,K
AAK,CAAC,GAAG,CAAC,GAAG,KAAK,CAAC,EAAE,GAAG,MAAM,CAAC,CAAC;AACnD,KAAK;AACL,I
AAI,IAAI,KAAK,KAAK,QAAQ,EAAE;AAC5B,QAAQ,OAAOd,qBAAY,CAAC,sBAAsB,CAAC,MAAM,CAAC
,MAAM,CAAC,CAAC;AACIE,KAAK;AACL,IAAI,OAAO,MAAM,CAAC,MAAM,CAAC;AACzB;;AC3CA;;;;;
;;;;;;;SAsBgB,KAAK,CACjB,IAAoE;IACtD,IAAA,iBAAC,EAAG,eAAoB,EAAZ,gBAAK,EAAE,cAAI,EAAG,s
BAAO,CAAS;IAEpD,IAAA,yDAA6D,EAA5D,cAAM,EAAE,aAAoD,CAAC;IAEpE,IAAM,WAAW,GAAGa,mB
AAU,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;IACxE,IAAM,
KAAK,GAAG,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IACzC,IAAM,GAAG,GAAG,
OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAC/C,IAAM,QAAQ,GAAGf,a
AAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;IAC9C,IAAM,OAAO,GAAG,OAAO,CAAC,SA
S,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEID,IAAI,WAAW,EAAE;QACf,IAAM,UAAU,
GAAGe,mBAAU,CAAC,iBAAiB,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC;QAEIE,IAAI,CAAC,CAAC,KAA
K,KAAK,QAAQ,EAAE;YACxB,OAAO,CAAC,WAAW;gBACd,KAAsB;qBACIB,KAAK,CAAC,UAAU,EAAE,
UAAU,GAAGf,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC;SACpE;aAAM;YAACL,IAAM,SAAO,GA
AG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;YACChD,SAAO,CAAC,GAAG,CACN,KAAoB;iBACCh
B,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;
SACxE;QAED,OAAO,GAAG,CAAC;KACZ;IAED,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;QACxB,IA
AM,GAAG,GAAGiB,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,C
AAC,CAAC,KAAK,CAAC,CAAC;QACjE,OAAO,CAAC,WAAW,GAAG,GAAMb,CAAC;QAC1C,OAAO,GAA
G,CAAC;KACZ;IAED,IAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IACChD,IAA
M,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAC5B,IAAI,IAAI,KAAK,CAAC,EAAE;QACd,OA
AO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EAAE,MAA0B,EACrE,KAAyB,CAAC,
CAAC;kACChC;SAAM,IAAI,IAAI,KAAK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,C
AAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACtD,MAAkC,EAAE,KAAiC,CAAC,CAAC;K
AC5E;SAAM,IAAI,IAAI,KAAK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CA
AC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACnE,MAA0C,EA
C1C,KAAyC,CAAC,CAAC;KACChD;SAAM;QAACL,IAAM,GAAG,GACLA,SAAY,CAAC,KAAK,EAAE,MAAM,
EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAc,CAAC;QACvE,OAAO,CAAC,G
AAG,CAAC,GAAG,CAAC,CAAC;KACIB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,OAAO,CA
CZ,KAA8B,EAAE,OAAe,EAC/C,OAAgC,EAAE,KAAuB,EACzD,IAAsB;IACxB,IAAI,SAAS,GAAG,CAAC,CA
AC;IACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CA
AC,CAAC,CAAC,CAAC;IACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,

KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QACiC,IAAM,OAA
O,GAAG,CAAC,GAAG,OAAO,GAAG,MAAM,CAAC;QACrC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QA
AQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;QACnE
,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;KACtB;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EA
AE,QAAgB,EAAE,QAAgB,EACIE,OAAgC,EAAE,KAA+B,EACjE,IAA8B;IAChC,IAAI,SAAS,GAAG,CAAC,C
AAC;IACiB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,C
AAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,IA
AI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,C
AAC,CAAC,CAAC,CAAC;IAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAA
C,EAAE,EAAE;QACiC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,E
AAE;YACiC,IAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;
YACrD,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,C
AAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;YACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;SACtB;
KACf;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,QAAgB,EAA
E,OAAgC,EACID,KAAuC,EACvC,IAAsC;IACxC,IAAI,SAAS,GAAG,CAAC,CAAC;IACiB,IAAM,MAAM,GA
AG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IAC
xB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,
CAAC,CAAC,CAAC,CAAC;IAC9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC
9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,IAAM,MAAM,GAAG,KAAK,
CAAC,CAAC,CAAC,CAAC;IAExB,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CA
AC,EAAE,EAAE;QACiC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,
EAAE;YACiC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;gBA
CiC,IAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GA
AG,MAAM,CAAC;gBACpE,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,G
AAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;gBACnE,SAAS,IAAI,IAAI,CAAC,CAAC,
CAAC,CAAC;aACtB;SACf;KACf;AACH,CAAC;AAEM,IAAM,WAAW,GAAiB;IACvC,UAAU,EAAEC,cAAK
;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC;;AChJD;;;;;;;AAyBA,SAAS,cAAc,C
AAC,IAIvB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAA
A,6BAAU,EAAE,mBAAK,CAAU;IAEiC,IAAM,IAAI,GAAG,UAAU,CAAC,MAAM,CAAC,UAAU,CAAC,EAA
E,CAAC,IAAK,OAAA,CAAC,GAAG,CAAC,GAAA,CAAC,CAAC;IAEhD,IAAM,QAAQ,GAAGhB,qBAAY,CA
AC,WAAW,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IACrE,IAAM,QAAQ,GAAG
A,qBAAY,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC9E,IA
AM,gBAAgB,GACiBA,qBAAY,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAA
C,CAAC;IACrE,IAAM,gBAAgB,GACiBA,qBAAY,CAAC,mBAAmB,CAAC,KAAK,EAAE,UAAU,CAAC,MA
AM,CAAC,CAAC;IAC/D,IAAM,SAAS,GACXA,qBAAY,CAAC,YAAY,CAAC,gBAAgB,EAAE,KAAK,EAAE,
UAAU,CAAC,MAAM,CAAC,CAAC;IAEiE,IAAM,SAAS,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,C
AAC,GAAA,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAA
C,CAAC;IAC5E,IAAM,WAAW,GACb,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,SAAS,EAAC,
EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IACiE,IAA
M,mBAAmB,GAAG,OAAO,CAC/B,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,OAAO,S
AAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAC,EAAC,CAAC,CAAC;IAC3E,IAAM,MAAM,G
AAG,KAAK,CAAC;QACnB,MAAM,EAAE,EAAC,CAAC,EAAE,mBAAmB,EAAC;QACrC,OAAO,SAAA;QA
CP,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAE,IAAI,EAAE,SAAS,EAAC;KACiD,CAAC,CAAC;IAEH,
OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IACtC,OAAO,CAAC,WAAW,CAAC,WAA
W,CAAC,MAAM,CAAC,CAAC;IACxC,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IAE
tC,OAAO,MAAM,CAAC;AACb,CAAC;AAEM,IAAM,oBAAoB,GAAiB;IACrD,UAAU,EAAEiB,uBAAc;IAC1
B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAkC;CAC/C;;ACnED;;;;;;;SAsBgB,IAAI,CACb,IAAk
E;IAEpD,IAAA,iBAAC,EAAG,wBAAK,EAAG,sBAAO,CAAS;IACpD,IAAM,GAAG,GAAG,OAAO,CAAC,UA

AU,CAAC,CAAC,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;IAC/C,IAAM,MAAM,GAAG,OAAO,CAAC,kBA
AkB,CAAC,CAAC,CAAC,CAAC;IAC7C,IAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,C
AAC;IAChD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;A
AEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEC,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,I
AAwB;CACrC;;ACrCD;;;;;;;;;;;;;AAoBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;ACpBrE;;;;;;;;;
;;;;;;;;;AAqBA,IAAI,QAAwE,CAAC;AAE7E,SAASf,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,
IAAI,CAAC,KAAK,CAACgB,oBAAW,EAAE,IAAI,aAAa;QAC1D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,
QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACQ,IAAA,oBAAM,EAAE,sBAA
O,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,iCAAy,EAAE,iCAAy,CAAU;IAC3C,IAAM,
GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I
AC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,C
AAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CA
AC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,YAAy,EAAE,YAAy,EAAE,KAAK,CAAC,CAA
C;IACjD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,iBAaiB,GAAiB;IAC7C,UAAU,EAAEA,oBAAW;I
ACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEhB,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACpDD;;;;
;;;;;;;;;SAwBgB,MAAM,CACIB,IAAsE;IACjE,IAAA,oBAAM,EAAE,sBAAO,CAAS;IAE/B,IAAM,IAAI,GAA
GN,aAAI,CAAC,cAAc,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KA
AK,CAAC,CAAC,CAAC,CAAC,CAAC;IAEtE,IAAI,QAAQ,GAAGE,qBAAY,CAAC,eAAe,CAAC,MAAM,CAA
C,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,IAAI,CAAC,CAAC;;I
AG5E,IAAM,OAAO,GAAG,MAAM,CAAC,MAAM,CAAC,UAAA,CAAC,IAAI,OAAAF,aAAI,CAAC,aAAa,CA
AC,CAAC,CAAC,KAAK,CAAC,GAAG,CAAC,GAAA,CAAC,CAAC;IACpE,IAAI,OAAO,CAAC,MAAM,KAA
K,CAAC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,CAAC,CAA
C,CAAC,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;KACrD;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,
UAAU,CAAC,QAAQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;IAE1D,IAAIA,aAAI,C
AAC,aAAa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;QACtC,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,MAA
M,GAAG,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,CAAC;
IACzE,qBAAY,CAAC,sBAAsB,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC;IAE1D,IAAI,OAAO,CAAC,CAAC,
CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;;;;;;;;;QAQjC,IAAM,QAAQ,GAAG,OAAO,CAAC,GAAG,CAAC,UA
AA,CAAC;YAC5B,IAAM,SAAS,GAAGF,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAA
C,IAAI,CAAC,CAAC,CAAC;YAC1D,IAAM,KAAK,GAAG,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;Y
AC9B,OAAO,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EA
AE,KAAK,EAAE,EAAC,KAAK,OAAA,EAAC,EAAC,CAAC,CAAC;SAC3D,CAAC,CAAC;QAEH,IAAM,eAAe
,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,CAAC;YACpC,OAAO,EAAC,IAAI,EAAE,OAAO,CAAC,QAAQ,C
AAC,CAAC,CAAC,MAAM,CAAC,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,CAAC;SAC3D,CAAC,C
AAC;;QAGH,QAAQ;YACJE,qBAAY,CAAC,eAAe,CAAC,QAAQ,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,O
AAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,CAAC,YAAy,CAAC;QAC3E,IAAM,YAAy,GAAG,QAAQ,C
AAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;QACbD,IAAM,SAAO,GAAGqB,
UAAa,CACT,eAAe,EAAE,QAAQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,EAC1C,YAAy,CAAa,C
AAC;QAE9C,IAAM,aAAa,GACfrB,qBAAY,CAAC,eAAe,CAAC,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC,I
AAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,IAAI,CAAC,CAAC;QAE1E,GAAG,CAAC,KAAK,GAA
G,aAAa,CAAC;QAC1B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAA
M,CAAC,CAAC;QAC1D,OAAO,CAAC,WAAW,GAAGA,qBAAY,CAAC,sBAAsB,CAAC,SAAO,CAAC,CAAC;
QAE1E,QAAQ,CAAC,OAAO,CAAC,UAAA,CAAC,IAAI,OAAA,OAAO,CAAC,WAAW,CAAC,CAAC,CAAC,
MAAM,CAAC,GAAA,CAAC,CAAC;QAErD,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,QAAQ,GAAGF,aAAI,
CAAC,aAAa,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,IAAI,CAA
C,CAAC,CAAC;IACrE,IAAI,YAAy,GAAG,CAAC,CAAC;IACrB,IAAM,SAAS,GAAG,OAAO,CAAC,GAAG,C
AAC,UAAA,KAAK;QACjC,IAAM,QAAQ,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KA
AK,CAAC,IAAI,CAAC,CAAC,CAAC;QAC7D,YAAy,IAAI,QAAQ,CAAC;QACzB,OAAO,QAAQ,CAAC;KACj

C,UAAU,EAAE,MAAM,CAAC,KAAyC,EAAE,OAAO,EACrE,SAAS,EAAE,GAAG,EAAE,eAAe,EAAE,KAAC,
kBAaKb,WAAW,CAAC,CAAC;IAEvE,IAAA,8BAAS,EACT,oCAAY,EACZ,kCAAW,EACX,gCAAU,EACV,4B
AAQ,EACR,0BAAO,EACP,kCAAW,EACX,8BAAS,EACT,4BAAQ,EACR,oCAAY,EACZ,kCAAW,CACA;IAEb
,IAAM,MAAM,GAAG,YAAY,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACvD,IAAM
,OAAO,GAAG,WAAW,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IAExD,IAAM,cAAc,G
AAG,QAAQ,CAAC,UAAU,KAAK,cAAc,CAAC;IAC9D,IAAM,SAAS,GAAGF,aAAI,CAAC,cAAc,CAAC,QAA
Q,CAAC,OAAO,CAAC,CAAC;IACxD,IAAM,SAAS,GAAGA,aAAI,CAAC,cAAc,CAAC,EAAE,CAAC,KAAC,
CAAC,CAAC;IAC1C,IAAA,+CAAYD,EAAxD,aAAK,EAAE,aAAK,EAAE,aAA0C,CAAC;IACHe,IAAM,YAAY,
GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACIC,IAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CA
AC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACHe,IAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,
CAAC,GAAG,CAAC,CAAC;IACrD,IAAM,cAAc,GAAG,cAAc,GAAG,CAAC,GAAG,SAAS,CAAC,CAAC,CAA
C,CAAC;IACzD,IAAM,YAAY,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACIC,IAAM,UAAU,GAAG,cAAc,G
AAG,SAAS,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACHe,IAAM,UAAU,GAAG,cAA
c,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;IACrD,IAAM,cAAc,GAAG,cAAc,GAAG,CAAC,GA
AG,SAAS,CAAC,CAAC,CAAC,CAAC;IAEzD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAA
C,OAAO,EAAE,SAAS,CAAC,CAAC;IAC5D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GA
AG,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACjD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAA
S,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,uBAAuB,CACnB,IAAI,EA
AE,QAAQ,EAAE,SAAS,EAAE,YAAY,EAAE,WAAW,EAAE,QAAQ,EAAE,OAAO,EACvE,UAAU,EAAE,SAA
S,EAAE,QAAQ,EAAE,WAAW,EAAE,YAAY,EAAE,WAAW,EACvE,MAAM,EAAE,OAAO,EAAE,KAAK,EA
AE,KAAK,EAAE,KAAK,EAAE,YAAY,EAAE,UAAU,EAC9D,UAAU,EAAE,cAAc,EAAE,YAAY,EAAE,UAA
U,EAAE,UAAU,EACHe,cAAc,EAAE,KAAK,CAAC,CAAC;IAC3B,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,
IAAM,yBAAYB,GAAiB;IACrD,UAAU,EAAE0B,4BAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE
pB,OAAK;IACb,UAAU,EAAE,mBAAuC;CACpD;AC/HD;AAqBO,IAAM,SAAS,GAAiB,uBAAuB,
CAACqB,YAAG,CAAC;ACrBnE;AAoBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;AC
pBrE;AAuBA;ACA,IAAK,mBAGJ;AAHD,WAAK,mBAAmB;IACtB,qEAY,CAAA;IACZ,mEAAW
,CAA;AACb,CAAC,EAIH,mBAAmB,KAAmB,mBAAmB,QAGvB;AAED,IAAI,iBAGkE,CAAC;AAEvE,SAAS
B,OAAK,CAAC,OAAoB;IACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACuB,sBAaA,EAAE,IA
AI,WAAW;QACnE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,aAAa,CAA
C,IAItB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;IAC/B,IAAA,qBAAM,EAAE,6CAaKb,EA
AE,yBAAQ,CAAU;IAC9C,IAAA,oBAAK,EAAE,oBAAK,EAAE,sBAAM,CAAW;IAEtC,IAAM,QAAQ,GAAG,
KAAK,CAAC,KAAK,CAAC,CAAC,CAAC;IAE1B,IAAA,aAAsD,EAArD,kBAAU,EAAE,iBAAYC,CAA
C;IAC7D,IAAM,QAAQ,GAAG,CAAC,QAAQ,EAAE,UAAU,EAAE,SAAS,EAAE,KAAK,CAAC,KAAK,CAAC,
CAAC,CAAC,CAAC,CAAC;IAEnE,IAAI,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CA
AC,MAAM,CAAC,CAAC;IACrD,IAAI,UAAU,CAAC;IACf,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;Q
AC7B,UAAU,GAAG,IAAI,CAAC,EAAC,OAAO,SAAA,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EA
AC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QAC5E,UAAU,GAAG,OAA
O,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACvD;IAED,IAAM,QAAQ,GAAG,
UAAU,CAAC,EAAE,CAAC;IAC/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C
AAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C
AAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CA
AC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,gBAAGB,GAAG,IAAI,UAAU,CAAC,IA
AI,UAAU,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,iBAAiB,CACb,QAAQ,EA
AE,OAAO,EAAE,QAAQ,EAAE,QAAQ,EAAE,gBAAGB,EAAE,UAAU,EACnE,SAAS,EACT,mBAAmB,CAAC,
MAAGD,CAAC,EACrE,kBAaKb,EAAE,KAAK,CAAC,CAAC;IAE/B,IAAI,UAAU,IAAI,IAAI,EAAE;QACtB,O

AAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,
CAAC;AAEM,IAAM,mBAAmB,GAAiB;IAC/C,UAAU,EAAEA,sBAAa;IACzB,WAAW,EAAE,MAAM;IACnB,
SAAS,EAAEvB,OAAK;IACbB,UAAU,EAAE,aAAiC;CAC9C;;ACjGD;;;;;;;;;;;;;;;;AAyBA,IAAI,UACsE,CAAC;A
AE3E,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACwB,eAA
M,EAAE,IAAI,aAAa;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;
KACT,CAAC,CAAC;AACL,CAAC;SAEe,MAAM,CACpB,IAAsE;IAE/D,IAAA,oBAAM,EAAE,sBAAO,EAAE,
kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,iBAAI,EAAE,2BAAS,EAAE,uBAAO,CAAU;IACzC,I
AAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B9B,aAAI,CAAC,MAAM,CAAC,CAAC
,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,OAAO,EACtD,cAAM,OAAA,6BAA2B,CAAC,
CAAC,KAAK,iCAA8B,GAAA,CAAC,CAAC;;IAE1E,IAAM,WAAW,GAAGE,qBAAY,CAAC,kBAaKB,CAAC,
CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IACnE,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,IAAI,WAAW
,KAAK,IAAI,EAAE;QACxB,SAAS,GAAG,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,E
AAE,KAAK,EAAE,EAAC,IAAI,EAAE,WAAW,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;KAC3E;IAC
D,IAAM,YAAY,GAAGA,qBAAY,CAAC,gBAAGB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,CAAC,C
AAC;IAChEA,qBAAY,CAAC,0BAA0B,CAAC,QAAQ,EAAE,CAAC,YAAY,CAAC,EAAE,KAAK,CAAC,CAA
C;IAEzE,IAAM,WAAW,GAAG,OAAO,CAAC,UAAU,CAAC,SAAS,CAAC,KAAK,EAAE,SAAS,CAAC,KAAK,
CAAC,CAAC;IACzE,IAAM,QAAQ,GAAG,SAAS,CAAC,KAAK,CAAC,YAAY,CAAC,CAAC;IAC/C,IAAM,W
AAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA
C/D,IAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EA
AE,CAAC;IACnE,UAAU,CAAC,WAAW,EAAE,SAAS,GAAG,CAAC,GAAG,CAAC,EAAE,OAAO,GAAG,CA
AC,GAAG,CAAC,EAAE,QAAQ,EACzD,aAAa,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAA
C;;IAG7C,IAAI,GAAG,GAAG,WAAW,CAAC;IACtB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,IAAM,eAAe,G
AAGA,qBAAY,CAAC,sBAAsB,CAAC,WAAW,CAAC,CAAC;QACzE,GAAG,GAAG,SAAS,CACb,EAAC,MA
AM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,eAAe,EAAC,EAAE,O
AAO,SAAA,EAAC,CAAC,CAAC;QACvE,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;
QACtC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IACD,OAAO,GAAG,CA
AC;AACb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAE4B,eAAM;IACIB,WAAW,EAAE,MAAM;
IACnB,SAAS,EAAExB,OAAK;IACbB,UAAU,EAAE,MAA0B;CACvC;;ACIFD;;;;;;;;;;;;AAqBA,IAAI,gBAGu
C,CAAC;AAE5C,SAASA,OAAK,CAAC,OAAoB;IACjC,gBAAGB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,C
AACyB,qBAAY,EAAE,IAAI,WAAW;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,YAAY,
CAAC,IAI5B;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IA
AA,2BAAS,EAAE,6BAAU,CAAU;IAEtC,IAAM,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CA
AC;IAC7B,IAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CA
AC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACtE,IAAM,UAAU,GAAG,CAAC,UAAU,KAA
K,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,
CAAC;IACrE,IAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,C
AAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAErE,IAAM,YAAY,GAAG,WAAW,GAAG,S
AAS,CAAC;IAC7C,IAAM,WAAW,GAAG,UAAU,GAAG,SAAS,CAAC;IAC3C,IAAM,WAAW,GAAG,UAAU,I
AAI,SAAS,GAAG,SAAS,CAAC,CAAC;IAEzD,IAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM;QACtC,C
AAC,SAAS,EAAE,YAAY,EAAE,WAAW,EAAE,WAAW,CAAC;QACnD,CAAC,SAAS,EAAE,WAAW,EAAE,
YAAY,EAAE,WAAW,CAAC,CAAC;IAExD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE
,SAAS,CAAC,CAAC;IAEvD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M
AAM,CAAC,CAAC;IAC9C,IAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IACrB,IAAM,aAAa,GACf,IAAI,
UAAU,CAAC,IAAI,UAAU,CAAC/B,aAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MA
AM,CAAC,CAAC;IAExE,IAAM,gBAAGB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,WAAW,CAAC,CA
AC,MAAM,CAAC,CAAC;IAC5E,IAAM,eAAe,GACjB,IAAI,UAAU,CAAC,IAAI,UAAU,CAACA,aAAI,CAAC,c
AAc,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,IAAM,KAAK,GAAG,OAAO,CAAC,S

B,EAAPB,gBAAK,EAAE,gBAAK,EAAE,gBAAK,EAAG,sBAAO,CAAS;IACrD,IAAM,GAAG,GAAG,OAAO,C
AAC,UAAU,CAAC,KAAC,EAAE,KAAC,CAAC,CAAC;IAC7C,IAAM,OAAO,GAAG,OAAO,CAAC,kBAaKb,
CAAC,GAAG,CAAC,CAAC;IACbD,OAAO,CAAC,IAAI,CAAC,KAAe,CAAC,CAAC;IAC9B,OAAO,GAAG,CA
AC;AACb,CAAC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEC,aAAI;IACbB,WAAW,EAAE,MAAM;IA
CnB,UAAU,EAAE,IAAwB;CACrC;;ACICD;;;;;;;AAqBA,IAAI,iBAE2C,CAAC;AAEhD,SAAShC,OAAK,C
AAC,OAAoB;IACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACiC,sBAAa,EAAE,IAAI,aAAa;Q
ACrE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;A
ACL,CAAC;SAEe,aAAa,CACzB,IAAyD;IACpD,IAAA,oBAAM,EAAE,sBAAO,CAAS;IACxB,IAAA,oBAAK,C
AAW;IAEvB,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAC,CAAC,KAAC,EAAE,KAAC,CAAC,K
AAK,CAAC,CAAC;IACzD,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MA
AM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA
G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE7C,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,k
BAAU,EAAE,mBAA0B,CAAC;IAEIE,iBAAiB,CACb,OAAO,EAAE,KAAC,EAAE,WAAW,EAAE,UAAU,EAA
E,WAAW,EAAE,KAAC,CAAC,CAAC;IACjE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,mBAAmB,G
AAiB;IAC/C,UAAU,EAAEA,sBAAa;IACzB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,aAAiC;IAC7C,SAAS
,EAAEjC,OAAK;CACjB;;ACzDD;;;;;;;AAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACkC,cAAK,CAAC;;
ACnBvE;;;;;;;AAqBA,IAAMN,uBAAqB,GAAG,KAAC,CAAC;AAC7B,IAAM,cAAc,GACvB,wBAAwB,C
AACO,iBAAQ,EAAEP,uBAAqB,CAAC;;ACvB7D;;;;;;;AAqBA,IAAI,aAEgE,CAAC;AAErE,SAAS5B,OA
AK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAC9BoC,uBAAc,EAAE,IAAI,aAC
pB,CAAC,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,CAAC
,CAAC,CAAC;AAC9E,CAAC;AAED,SAAS,cAAc,CAAC,IAIvB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,k
BAAK,CAAS;IAC/B,IAAA,uCAAe,CAAU;IACzB,IAAA,YAAC,EAAE,kBAAI,EAAE,0BAAQ,EAAE,sBAAM,E
AAE,oBAAK,CAAW;IACID,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M
AAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,MAAM,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IA
AI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACrD,IAAM,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAA
G,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC7D,IAAM,QAAQ,GAAG,MAAM,IAAI,IAAI,
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,
CAAC;IAC9E,IAAM,OAAO,GAAG,KAAC,IAAI,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAA
K,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC;IAE3E,IAAM,GAAG,GAAG,OAAO,CAAC,UAA
U,CAAC,CAAC,CAAC,KAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;;IAEjD,IAAIIC,aAAI,CAAC,aAAa,
CAAC,CAAC,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,K
AAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA
EnD,aAAa,CACT,GAAG,EAAE,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,OAAO,EAAE,eAAe,EAAE,KAAC
,CAAC,CAAC;IACxE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,oBAAoB,GAAiB;IACbD,UAAU,EAA
E0C,uBAAc;IAC1B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEpC,OAAK;IACbB,UAAU,EAAE,cAAkC;CAC/
C;;AC/DD;;;;;;;AAuBA,IAAI,eAQQ,CAAC;AAEb,SAASA,OAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,O
AAO,CAAC,IAAI,CAAC,KAAC,CAACqC,oBAAW,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,QAAQ;QACR,Q
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,C
AAC;AAED,SAAS,WAAW,CAAC,IAIpB;IACQ,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;IAC/B,IA
AA,YAAC,EAAE,sBAAM,EAAE,kBAAI,EAAE,sDAAsB,CAAW;IAEvD,IAAA,uBAAO,EACP,eAAG,EACH,2
BAAS,EACT,6BAAU,EACV,uCAAe,EACf,6BAAU,EACV,qCAAc,CACN;IAEV,IAAM,QAAQ,GAAGzC,qBAA
Y,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAC,EAAG,MAAmB,CAAC,KAAC,EAAE,OAAO,EAAE,SAAS,EA
CrE,GAAG,EAAE,eAAe,CAAC,CAAC;IAE1B,IAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;IAC
1E,IAAI,eAAe,IAAI,IAAI,EAAE;QAC3B,MAAM,IAAI,KAAC,CACR,UAAU,mDAAGD;YAC7D,sBAAsB,CAA
C,CAAC;KAC7B;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAA
M,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM

,GAAG,CAAC;IACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAC,CAAC;IACxC,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAC,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;IAC3D,IAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;IACrC,IAAM,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC;IACnC,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC;IAEjC,IAAI,UAAU,KAAK,MAAM,EAAE;QACzB,MAAM,IAAI,KAAC,CACX,iEAAiE;aAC9D,UAAU,0BAAuB,CAAA,CAAC,CAAC;KAC3C;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;QAC3D,CAAC;QACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE5D,wBAAwB,CACpB,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,YAAY,EAAE,WAAW,EACtE,MAAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IAE3E,OAAO,GAAG,CAAC;AAcB,CAAC;AAEM,IAAM,0BAA0B,GAAiB;IACtD,UAAU,EAAE0C,6BAAoB;IAChC,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEtC,OAAK;IACbB,UAAU,EAAE,oBAAwC;CACrD;;AC1JD;;;;;;;;;;;;AAuBA,IAAI,YAGI,CAAC;AAET,SAASA,OAAK,CAAC,OAAoB;IACjC,YAAY,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACuC,iBAAQ,EAAE,IAAI,WAAW;QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CAAC,IAAoD;IAE7D,IAAA,sBAAO,EAAE,oBAAM,CAAS;IACxB,IAAA,sBAAAM,EAAE,wBAAO,CAAW;IAE3B,IAAA,6DAC6C,EAD5C,mBAAW,EAAE,iBAAS,EAAE,iBAAS,EAAE,eACS,CAAC;IAEpD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;IAC1D,IAAI,SAAS,KAAK,CAAC,EAAE;QACnB,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,YAAY,GAAG,OAAO,CAAC,KAAK,CAAC;IACnC,IAAM,SAAS,GAAG,YAAY,CAAC,YAAY,CAAC,MAAM,GAAG,CAAC,CAAC,CAAC;IAExD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;IACnD,IAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IACrB,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,C AAC,MAAM,CAAC,CAAC;IAC1D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,IAAM,YAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,YAAY,CACR,GAAG,EAAE,QAAQ,CAAC,MAAM,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,SAAS,EAAE,SAAS,EACvE,YAAY,EAAE,KAAK,CAAC,CAAC;IAEzB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,GAAiB;IAC1C,UAAU,EAAEA,iBAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEvC,OAAK;IACbB,UAAU,EAAE,QAAQ;CACrB;;AC7ED;;;;;;;;;;;;AAwBA,IAAI,UAGsB,CAAC;AAE3B,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,WAAW;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CACb,IAA0E;IAErE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,EAAE,wBAAO,CAAW;IACrB,IAAA,iBAAI,EAAE,2BAAS,CAAU;;IAGhC,IAAM,UAAU,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IACzD,IAAM,WAAW,GAAG,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAe,CAAC;IACnE,IAAM,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,CAAC;4BAC3B,CAAC;QACR,IAAM,KAAK,GAAG,WAAW,CAAC,CAAC,CAAC,CAAC;QAC7BA,aAAI,CAAC,MAAM,CACP,KAAK,IAAI,OAAO,GAAG,CAAC,IAAI,KAAK,IAAI,CAAC,EACiC;YACI,OAAA,+BAA6B,KAAK,wBAAKB,OAAO,GAAG,CAAC,OAAG;SAAA,CAAC,CAAC;;IAL9E,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,WAAW,CAAC,MAAM,EAAE,EAAE,CAAC;gBAAIC,CAAC;KAMT;IAED,IAAM,SAAS,GAAGE,qBAA Y,CAAC,YAAY,CAAC,wBAAwB,CACHE,CAAW,EAAE,OAAiB,EAAE,UAAU,EAAE,SAAS,CAAC,CAAC;IAE3D,IAAM,QAAQ,GAAG,OAAO,CAAC;QACvB,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC;QACX,KAAK,E

AAE;YAACL,KAACK,EAAE;gBACL,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,OAAO
;gBAC3D,SAAS,CAAC,SAAS;aACpB;SACF;QACD,OAAO,SAAA;KACR,CAAC,CAAC;IACH,IAAM,WAAW,
GAAGF,aAAI,CAAC,aAAa,CAAC,OAAO,CAAC,KAACK,CAAC,CAAC;IACtD,IAAM,YAAY,GAAG,OAAO,C
AAC;QAC3B,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,EAAC;QACpB,KAACK,EAAE,EAAC,KAACK,EAAE,C
AAC,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS,CAAC,EAAC;QACxE,OAAO,SAAA;KA
CR,CAAC,CAAC;IACH,IAAM,kBAaKB,GAAG;QACzB,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAA
E,WAAW,GAAG,SAAS,CAAC,SAAS;QAC3E,SAAS,CAAC,SAAS;KACpB,CAAC;IAEF,IAAM,GAAG,GAAG,
OAAO,CAAC,UAAU,CAAC,kBAaKB,EAAE,CAAC,CAAC,KAACK,CAAC,CAAC;IAC5D,IAAIA,aAAI,CAAC,a
AAa,CAAC,CAAC,CAAC,KAACK,CAAC,KAACK,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IACD,IAA
M,WAAW,GAAG,QAAQ,CAAC,KAACK,CAAC,MAAM,GAAG,CAAC,CAAC;IAE9C,IAAM,KAACK,GAAG,OA
AO,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IACrD,IAAM,GAAG,GAAG,KA
ACK,CAAC,EAAE,CAAC;IAErB,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,YAAY,CAA
C,MAAM,CAAC,CAAC;IAC/D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,IAAM,KAACK,GAAG
,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,a
AAa,GAAG,IAAI,UAAU,CAChC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,KAACK,CAAC
,CAAC,CAAC,MAAM,CAAC,CAAC;IACHE,IAAM,eAAe,GAAG,IAAI,UAAU,CACIC,IAAI,UAAU,CAACA,aA
AI,CAAC,cAAc,CAAC,kBAaKB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,UAAU,CACN,GAAG,EA
AE,QAAQ,CAAC,CAAC,CAAC,KAACK,CAAC,EAAE,aAAa,EAAE,WAAW,EAAE,SAAS,EAC7D,SAAS,CAAC
,SAAS,EAAE,eAAe,EAAE,KAACK,CAAC,CAAC;IAEjD,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,C
AAC,CAAC;IACrC,OAAO,CAAC,WAAW,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC;;IAGzC,GAAG,CAAC,
KAACK,GAAG,SAAS,CAAC,WAAW,CAAC;IACIC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,G
AAiB;IAC1C,UAAU,EAAE8C,iBAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAExC,OAAK;IACbB,U
AAU,EAAE,QAA4B;CACzC;;ACzHD;;;;;;;;;;;;AAoBA,IAAM4B,uBAAqB,GAAG,KAACK,CAAC;AAC7B,IAA
M,aAAa,GACtB,wBAAwB,CAACa,gBAAO,EAAEb,uBAAqB,EAAE,MAAM,CAAC;;ACtBpE;;;;;;;;;;AAoB
A,IAAMA,uBAAqB,GAAG,KAACK,CAAC;AAC7B,IAAM,kBAaKB,GAC3B,wBAAwB,CAACc,qBAAy,EAAEd
,uBAAqB,EAAE,MAAM,CAAC;;ACtBzE;;;;;;;;;;AAuBA,IAAIxB,UAC0E,CAAC;AAE/E,SAASuC,WAAS,C
AAC,OAAoB;IACrCvC,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAACK,CAACwC,kBAAS,EAAE,IAAI,aAAa;
QACxD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,SAAS,C
ACrB,IAC0E;IAE5D,IAAA,iBAAC,EAAW,wBAACK,EAAG,sBAAO,CAAS;IAEpD,IAAM,GAAG,GAAG,OAAO
,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;IAG/C,IAAM,GAAG,
GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAACK,EAAE,SAAS,CAAC,CAAC;IAEnD,IAAIID,aAAI,C
AAC,aAAa,CAAC,CAAC,CAAC,KAACK,CAAC,KAACK,CAAC,EAAE;QACrC,IAAM,KAACK,GAAG,OAAO,CA
AC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnDU,UAAQ,CAAC,G
AAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAACK,CAAC,EAAE,KAACK,EAAE,KAACK,CAAC,CAAC;KAChD;IA
ED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEwC,kBAAS;IACrB,
WAAW,EAAE,MAAM;IACnB,SAAS,aAAA;IACT,UAAU,EAAE,SAA6B;CAC1C;;AC3DD;;;;;;;;AAmBA,I
AAMhB,uBAAqB,GAAG,KAACK,CAAC;AAC7B,IAAM,UAAU,GACnB,wBAAwB,CAACiB,aAAI,EAAEjB,uB
AAqB,EAAE,MAAM,CAAC;;ACrBjE;;;;;;;;AAoBA,IAAMA,uBAAqB,GAAG,KAACK,CAAC;AAC7B,IAA
M,eAAe,GACxB,wBAAwB,CAACKB,kBAAS,EAAEIB,uBAAqB,EAAE,MAAM,CAAC;;ACtBtE;;;;;;;;AA
mBO,IAAM,SAAS,GAAiB,uBAAuB,CAACmB,YAAG,CAAC;;ACnBnE;;;;;;;;AAmBA,IAAMnB,uBAAqB,
GAAG,KAACK,CAAC;AAC7B,IAAM,gBAAgB,GACzB,wBAAwB,CAACoB,mBAAU,EAAEpB,uBAAqB,EAAE
,MAAM,CAAC;;ACrBvE;;;;;;;;AAwBA,IAAI,OACI,CAAC;AAET,SAAS5B,OAAK,CAAC,OAAoB;IACjC,
OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAACK,CAACiD,YAAG,EAAE,IAAI,WAAW;QAC/C,QAAQ;QACR,
QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;I
AEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAACK,CAAS;IAC/B,IAAA,6BAAsB,EAAE,yBAAQ,CAAU;IAC1
C,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,
MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAACK,GAAG,CA
AC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IA

ACzB,IAAI,kBAaKb,EAAE;QACtB,IAAM,YAAy,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,C
AAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAy,KAAK,GAAG,EAAE;;;YAGxB,KAAK,GAAG,
UAAU,CAAC;YACnB,OAAO,GAAG,YAAy,CAAC;YACvB,aAAa,GAAGxD,qBAAY,CAAC,gBAAgB,CACzC,
aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;KACF;IAEDA,qBAAY
,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACz
C,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;IACvE,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,C
AAC,WAAW,CAAC,CAAC;IACnD,IAAI,WAAW,GAAG,KAAK,CAAC;IACxB,IAAI,KAAK,CAAC,KAAK,KA
AK,SAAS,EAAE;QAC7B,WAAW;YACP,IAAI,CAAC,EAAC,OAAO,SAAS,EAAE,MAAM,EAAE,EAAC,CAA
C,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QACnE,
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;
KACxD;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,I
AAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GA
AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,QA
AQ,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACtC;IAED,IAAI,kBAaKb,EAAE;;QAEtB,OA
AO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAA
M,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAy,CAAC,CAAC;QAC5E,
GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QA
C7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IAED,OAAO,GAAG,CAAC;
AACb,CAAC;AAEM,IAAM,UAAU,GAaiB;IACtC,UAAU,EAAEwD,aAAI;IAChB,WAAW,EAAE,MAAM;IAC
nB,SAAS,EAAEpD,OAAK;IACb,UAAU,EAAE,IAAwB;CACrC;;ACIGD;;;;;;;;;;;;AAwBA,IAAI,OACI,CAA
C;AAET,SAASA,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACqD,YA
AG,EAAE,IAAI,WAAW;QAC/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AA
CL,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;IA
C/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CA
AC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,
GAAG,CAAC;IACiB,IAAI,KAAK,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EA
AE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IAAI,kBAaKb,EAAE;QACtB,IAAM,YAAy,GAAG,OAAO,CAAC,S
AAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAy,KAAK,GA
AG,EAAE;;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAy,CAAC;SACxB;KACF;IAED,I
AAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IAErCzD,qBAAY,CAAC,0BAA0B,CAAC,KA
AK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IAC1D,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;I
AC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,O
AAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAIA,aAAI,CAAC,aAA
a,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS
,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE
,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACxD;IAED,IAAI,kB
AaKb,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,
QAAQ,EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YA
AY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AA
Cb,CAAC;AAEM,IAAM,SAAS,GAaiB;IACrC,UAAU,EAAEyD,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,S
AAS,EAAErD,OAAK;IACb,UAAU,EAAE,GAauB;CACpC;;AC1FD;;;;;;;;;;;;AAmBA,IAAM4B,uBAAqB,G
AAG,KAAK,CAAC;AAC7B,IAAM,aAAa,GACtB,wBAAwB,CAAC0B,gBAAO,EAAE1B,uBAAqB,CAAC;;ACr
B5D;;;;;;;;;;;;AAuBA;ACA,IAAK,iBAGJ;AAHD,WAAK,iBAaiB;IACpB,+DAAW,CAAA;IACX,mEAAa,CA
AA;AACf,CAAC,EAHI,iBAaiB,KAAjB,iBAaiB,QAGrB;AAED,IAAI,aAGsB,CAAC;AAE3B,SAAS5B,OAAK,
CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACuD,kBAAS,EAAE,IAAI,aAAa;Q
AC7D,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,Q
AAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,SAAS,CAAC,IAIIB;IACiB,IAAA,iBAAC,EAAG,sBAA
O,EAAE,eAAuB,EAAf,sBAAQ,EAAE,cAAK,CAAS;IAE7D,IAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACz

B,UAAC,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,GAAA,gBAAgB,CAAC;IACvE,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,IAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;IAC9D,IAAM,gBAAgB,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;IAC/D,IAAM,gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;IAC3D,IAAM,iBAAiB,GACnB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5D,aAAa,CACT,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,gBAAgB,EACrE,iBAAiB,EAAE,iBAAiB,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IACvD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEA,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAEvD,OAAK;CACjB;;AC/ED;;;;;;;;;;AAqBA,IAAM4B,uBAaQb,GAAG,IAAI,CAAC;AAC5B,IAAM,cAAc,GACvB,wBAAwB,CAAC4B,iBAAQ,EAAE5B,uBAaQb,CAAC;;ACvB7D;;;;;;;;;;AAMBO,IAAM,SAAS,GAAiB,uBAAuB,CAAC6B,YAAG,CAAC;;ACnBnE;;;;;;;AA0BA;;;SAIgb,iBAAiB,CAC7B,OAAoB,EAAE,SAAiB;IACzC,IAAM,MAAM,GAAG,IAAI,UAAU,CAAC,OAAO,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,EAAE,SAAS,EAAE,CAAC,CAAC,CAAC;IACxE,IAAM,gBAAgB,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IACnCI,IAAM,YAAY,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IAC/B,IAAM,eAAe,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IACIC,IAAM,aAAa,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;;IAEhC,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC;IAC9B,OAAO,EAAE,gBAAgB,kBAAA,EAAE,YAAY,cAAA,EAAE,eAAe,iBAAA,EAAE,aAAa,eAAA,EAAE,CAAC;AAC1E;;ACxCa;;;;;;;;;;AAuBA,IAAIrD,UAEuD,CAAC;AAE5D,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzBsD,4BAAmB,EACnB,QAAQ;IACR;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,UAAU,CAAC,IAInB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iCAAY,EAAE,mCAAa,EAAE,qCAAc,CAAU;IACrD,IAAA,oBAAK,EAAE,sBAAM,CAAW;IAE/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,SAAS,GACXtD,UAAQ,CAAC,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,CAAC,CAAC;IAEvE,IAAA,0CACmC,EADIC,sCAAgB,EAAE,8BAAY,EAAE,oCAAE,EAAE,gCACf,CAAC;;IAG1C,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,eAAe,CAAC,CAAC;IACpC,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,aAAa,CAAC,CAAC;IAEIC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;IAEIE,OAAO,qBAAqB,CAAC;AAC/B,CAAC;AAEM,IAAM,yBAyB,GAAiB;IACrD,UAAU,EAAEsD,4BAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE1D,OAAK;IACHb,UAAU,EAAE,UAA8B;CAC3C;;ACzED;;;;;;;;;;AAuBA,IAAI,UGsC,CAAC;AAE3C,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzBuD,4BAAmB,EACnB,QAAQ;IACR;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;KACP,CAAC,CAAC;AACT,CAAC;AAED,SAAS,mBAAmB,CAAC,IAI5B;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iCAAY,EAAE,mCAAa,EAAE,qCAAc,EAAE,6CAAkB,CAC5D;IACH,IAAA,oBAAK,EAAE,sBAAM,CAAW;IAE/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,SAAS,GAAGvD,UAAQ,CACtB,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,kBAAkB,CAAC,CAAC;IAEIB,IAAA,0CACmC,EADIC,sCAAgB,EAAE,8BAAY,EAAE,oCAAE,EAAE,gCACf,CAAC;;IAG1C,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,eAAe,CAAC,CAAC;IAEpC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;IAEIE,IAAM,kBAAkB,GAAG,OAAO,CAAC,UAAU,CAAC,EAAE,EAAE,OAAO,EAAE,aAA

Aa,CAAC,CAAC;IAE1E,OAAO,CAAC,qBAAqB,EAAE,kBAAkB,CAAC,CAAC;AACrD,CAAC;AAEM,IAAM,
yBAAYB,GAaIB;IACrD,UAAU,EAAEuD,4BAAMb;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE3D,OA
AK;IACbB,UAAU,EAAE,mBAAuC;CACpD;;AC9ED;;;;;;;AAuBA,IAAI,UAGU,CAAC;AAEf,SAASJ,OA
AK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzBwD,4BAAMb,EACnB,QA
AQ;IACR;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAA
C,CAAC;AACT,CAAC;AAED,SAASC,YAAU,CAAC,IAInB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAA
K,CAAS;IAC/B,IAAA,iCAAY,EAAE,mCAAA,EAAE,qCAAc,EAAE,iCAAY,CAAU;IACnE,IAAA,oBAAK,EAA
E,sBAAM,CAAW;IAE/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAA
M,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAA
M,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,SAAS,GAAGzD,UAAQ,CACtB,OAAO,EAAE,QA
AQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,YAAY,CAAC,CAAC;IAEZ,IAAA,0CACmC,EADIC,sCAA
gB,EAAE,8BAAY,EAAE,oCAAE,EAAE,gCACf,CAAC;;IAI1C,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,aAAa
,CAAC,CAAC;IAEIC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAA
O,EAAE,gBAAgB,CAAC,CAAC;IACIE,IAAM,oBAAoB,GACtB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,C
AAC,EAAE,SAAS,EAAE,eAAe,CAAC,CAAC;IAEnE,OAAO,CAAC,qBAAqB,EAAE,oBAAoB,CAAC,CAAC;A
ACvD,CAAC;AAEM,IAAM,yBAAYB,GAaIB;IACrD,UAAU,EAAEwD,4BAAMb;IAC/B,WAAW,EAAE,MAA
M;IACnB,SAAS,EAAE5D,OAAK;IACbB,UAAU,EAAE6D,YAA8B;CAC3C;;AC9ED;;;;;;;AAmBA,IAAMj
C,uBAAqB,GAAG,KAAK,CAAC;AAC7B,IAAM,cAAc,GACvB,wBAAwB,CAACKc,iBAAQ,EAAEIC,uBAAqB,
EAAE,MAAM,CAAC;;ACrBrE;;;;;;;AAqBA,IAAI,UAESB,CAAC;AAE3B,SAAS5B,OAAK,CAAC,OAAo
B;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC+D,eAAM,EAAE,IAAI,aAAa;QACvD,QAAQ
;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AAEL,CAAC;AAED,SAAS,
MAAM,CACX,IAAsE;IACjE,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,wBAAO,CAA
W;IACIB,IAAA,mBAAK,EAAE,uBAAO,EAAE,yBAAQ,CAAU;IAEzC,IAAM,GAAG,GAAG,OAAO,CAAC,UA
AU,CAAK,OAAO,CAAC,KAAK,SAAE,KAAK,IAAG,OAAO,CAAC,CAAC;IACnE,IAAM,KAAK,GAAG,OAA
O,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,WAA
W,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,IAAM,SAA
S,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,UAAU,CAAC,SAAS,EAAE,KAAK,EAAE,OAAO,EAAE,QAAQ,
EAAE,KAAK,CAAC,CAAC;IAEvD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,YAAY,GAaIB;IACxC,
UAAU,EAAEA,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE/D,OAAK;IACbB,UAAU,EAAE,MA
A0B;CACvC;;ACzDD;;;;;;;AAqBA,SAAS,QAAQ,CAAC,IAAoD;IACpD,IAAA,iBAAC,EAAG,sBAAO,CA
AS;IACpC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAA
K,CAAC,CAAC;IACjD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;IACbD,OA
AO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACbB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,
GAaIB;IAC1C,UAAU,EAAEgE,iBAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,QAA4B;CACzC;;
ACjCD;;;;;;;SAuBgB,IAAI,CACHB,IAAkE;IAE7D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;I
AC/B,IAAA,iBAAI,CAAU;IAErB,IAAI,MAAM,CAAC,MAAM,KAAK,CAAC,EAAE;QACvB,OAAO,UAAU,C
ACb,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,EAAC,EAAE,OAAO,SAAS,EA
AE,KAAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;KACHE;IAED,IAAM,KAAK,GAAG,
MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;IAC9B,IAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,
CAAC,KAAK,CAAC;IAE9B,MAAM,CAAC,OAAO,CAAC,UAAA,CAAC;QACdtE,aAAI,CAAC,iBAAiB,CACI
B,KAAK,EAAE,CAAC,CAAC,KAAK,EACd,uDAAuD,CAAC,CAAC;QAC7DA,aAAI,CAAC,MAAM,CACP,KA
AK,KAAK,CAAC,CAAC,KAAK,EACjB.cAAM,OAAA,uDAAuD,GAAA,CAAC,CAAC;KACpE,CAAC,CAAC;I
AEH,IAAM,uBAAuB,GAaIB,EAAE,CAAC;IACjD,IAAM,eAAe,GAAG,MAAM,CAAC,GAAG,CAAC,UAAA,C
AAC;QACIC,IAAM,SAAS,GACX,UAAU,CAAC,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,CAAC,EAAC,EA
AE,OAAO,SAAS,EAAE,KAAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;QACIE,uBAAu
B,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC;QACxC,OAAO,SAAS,CAAC;KACIB,CAAC,CAAC;IAEH,IAAM,M
AAM,GAAG,MAAM,CAAC,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,SAAS,EAAE,KAAK,EAAE,EAAC,IA
AI,MAAA,EAAC,EAAC,CAAC,CAAC;IAEzE,uBAAuB,CAAC,OAAO,CAAC,UAAA,CAAC,IAAI,OAAA,OAA

O,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,GAAA,CAAC,CAAC;IAEpE,OAAO,MAAM,CAAC;AA
ChB,CAAC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEuE,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,
UAAU,EAAE,IAAwB;CACrC;;ACjED;;;;;;;AAyBA,IAAI,SAG6C,CAAC;AAEID,SAASjE,OAAK,CAAC,
OAAoB;IACjC,SAAS,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACkE,cAAK,EAAE,IAAI,aAAa;QACrD,Q
AAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;K
ACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CACR,IAAoE;IACtD,IAAA,iBAAC,EAAE,sBAAO,EA
AE,eAAgC,EAAxB,sBAAQ,EAAE,gCAAc,CAAS;IAEtE,IAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACzB,U
AAC,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,
CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,GAAA,gBAAGB,CAAC;IAEvE,IAAIxE,aAAI,CAAC,aAAa,C
AAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;;;QAGrC,OAAO,IAAI,CAAC;YACV,OAAO,SAAA;Y
ACP,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAE,KAAK,EAAE,aAAa,EAAE,KAAK,EAAE,CAAC,CAAC
,KAAK,EAAC;SAC/D,CAAC,CAAC;KACJ;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C
AAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CA
AC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,
GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACxD,IAAM,KAAK,GAAG,aAAa,CAAC,EAAE,CAAC;I
AE/B,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAA
M,CAAC,CAAC;IAEnE,IAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,C
AAC,CAAC,CAAC,GAAA,CAAC,CAAC;IAC9D,IAAM,gBAAGB,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,
QAAQ,IAAI,OAAA,QAAQ,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;IAC/D,IAAM,gBAAGB,GACIB,IAAI,U
AAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;IAC3D,IAAM,iBAAiB,GACnB,IA
AI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAGB,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5D,SAAS,CACL,GAA
G,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAA
C,EAAE,gBAAGB,EACrE,iBAAiB,EAAE,aAAa,EAAE,KAAK,CAAC,CAAC;IAC7C,OAAO,GAAG,CAAC;AA
Cb,CAAC;AAEM,IAAM,WAAW,GAAiB;IACvC,UAAU,EAAEwE,cAAK;IACjB,WAAW,EAAE,MAAM;IACnB
,UAAU,EAAE,GAAuB;IACnC,SAAS,EAAEIE,OAAK;CACjB;;ACpFD;;;;;;;AAmBA,IAAM4B,uBAaqB,G
AAG,KAAK,CAAC;AAC7B,IAAM,SAAS,GACIB,wBAAwB,CAACuC,YAAG,EAAEvC,uBAaqB,CAAC;;ACr
BxD;;;;;;;AAuBA,IAAI,SAaKE,CAAC;AAEvE,SAAS5B,OAAK,CAAC,OAAoB;IACjC,SAAS,GAAG,OA
AO,CAAC,IAAI,CAAC,KAAK,CAACoE,cAAK,EAAE,IAAI,aAAa;QACrD,QAAQ;QACR,QAAQ;QACR,QAA
Q;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,KAAK,CAAC,IAAiD;IACvD,IAAA,oBAAM,EAAE,sBAA
O,CAAS;IACxB,IAAA,YAAC,EAAE,oBAAK,CAAW;IAC1B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAA
C,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,SAAS,GAAG,OAAO,CAAC,
SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAI,OAAO,GAAG,G
AAG,CAAC;IACIB,IAAM,KAAK,GAAG,CAAC,CAAC;IACbB,IAAI,WAAW,GAAG,KAAK,CAAC;IACxB,IA
AI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,WAAW,GAAG,IAAI,CAAC,EAAC,OAAO,SAAA,EAA
E,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,C
AAC,CAAC;QACtE,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,
CAAC,EAAE,CAAC;KACxD;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,E
AAE,SAAS,CAAC,CAAC;IACnD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CA
AC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,SAAS,CAAC,OAAO,EAAE,SAAS,EAAE,KAAK,CAAC,CAA
C;IAErC,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAA
C,MAAM,CAAC,CAAC;KACzC;IACD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,WAAW,GAAiB;IAC
vC,UAAU,EAAEA,cAAK;IACjB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEpE,OAAK;IACbB,UAAU,EAAE,
KAAyB;CACtC;;AC9DD;;;;;;;AAyBA,IAAI,QAEqC,CAAC;AAE1C,SAASA,OAAK,CAAC,OAAoB;IACj
C,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACqE,aAAI,EAAE,IAAI,WAAW;QACjD,QAAQ;QACR
,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACQ
,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,
YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,
CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAA

C;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,G AAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;;Y AGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aAAa,GAAGzE,qBAAY,CA AC,gBAAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C; KACF;IAEDA,qBAAY,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MA AM,CAAC,CAAC;IACzC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;IACvE,IAAM,UAAU,GAAG F,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC, QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KA AK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GA AG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CA AC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KAC3D;IAED,IAAI,kBAaKB,EAAE;;QAEtB,OA AO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAA M,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E, GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,U AAU,GAAiB;IACtC,UAAU,EAAEY,E,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAErE,OAAK;IACb B,UAAU,EAAE,IAAwB;CACrC;;ACjGD;;;;;;;AAsBO,IAAM,KAAK,GACd,UAAc,IAA+C;IACvC,IAAA,s BAAO,EAAE,kBAaK,CAAS;IACvB,IAAA,mBAaK,EAAE,iBAaI,EAAE,iBAaI,EAAE,mBAaK,CAAU;IACzC ,IAAM,MAAM,GAAGsE,SAAY,CAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAEtD,IA AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAE,KAAK,CAAC,C AAC;IACvD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;IACbD,OAAO,CAAC, GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC,CAAC;AAEC,IAAM,WAAW, GAAiB;IACvC,UAAU,EAAEC,cAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC;;A CtCD;;;;;;;AAqBA,IAAM3C,uBAAqB,GAAG,IAAI,CAAC;AAC5B,IAAM,aAAa,GACtB,wBAAwB,CAAC 4C,gBAAO,EAAE5C,uBAAqB,CAAC;;ACvB5D;;;;;;;AAmBO,IAAM,UAAU,GAAiB,uBAAuB,CAAC6C,a AAI,CAAC;;ACnBrE;;;;;;;AAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACC,cAAK,CAAC;;ACnBvE;;;; ;AAuBA,IAAI,kBAGsE,CAAC;AAE3E,SAAS1E,OAAK,CAAC,OAAoB;IACjC,kBAaKB,GAAG,OAAO,C AAC,IAAI,CAAC,KAAK,CAAC2E,uBAAc,EAAE,IAAI,WAAW;QACrE,QAAQ;QACR,QAAQ;QACR,QAAQ;Q ACr,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,C AAC,CAAC;AACL,CAAC;AAED,SAAS,cAAc,CAAC,IAIvB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBA AK,CAAS;IAE/B,IAAA,sBAAM,CAAW;IACjB,IAAA,iCAAY,EAAE,yCAAgB,EAAE,iBAaI,CAAU;IAC9C,IA AA,mBAAS,EAAE,kBAAQ,CAAS;IAE7B,IAAA,iBAAwD,EAAvD,aAAK,EAAE,iBAAS,EAAE,gBAAQ,EAAE, mBAA2B,CAAC;IAC/D,IAAM,QAAQ,GAAG,CAAC,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,CAAC ,CAAC;IAE3D,IAAI,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC, CAAC;IACjD,IAAI,UAAU,CAAC;IACf,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,UAAU;YAC N,IAAI,CAAC,EAAC,OAAO,SAAS,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,KAAK,E AAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QACpE,KAAK,GAAG,OAAO,CAAC,SAAS,CA AC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACID;IACD,IAAM,GAAG,GAAG,KAAK,CAAC,EA AE,CAAC;IAErB,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACp D,IAAIjF,aAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QAC1C,OAAO,GAAG ,CAAC;KACZ;IACD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,C AAC,CAAC,EAAE,CAAC;IAEnD,kBAaKB,CACd,GAAG,EAAE,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,W AAW,EAAE,SAAS,EAAE,QAAQ,EACjE,YAAY,GAAG,CAAC,GAAG,CAAC,EAAE,gBAAgB,GAAG,CAAC, GAAG,CAAC,EAAE,KAAK,CAAC,CAAC;IAE3D,IAAI,UAAU,IAAI,IAAI,EAAE;QACtB,OAAO,CAAC,WAA W,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAA M,oBAAoB,GAAiB;IACbD,UAAU,EAAEiF,uBAAc;IAC1B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE3E,OA AK;IACbB,UAAU,EAAE,cAAkC;CAC/C;;ACxFD;;;;;;;AAwBA,IAAI,WAE8C,CAAC;AAEnD,SAASA,O AAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC4E,gBAAO,EAAE,IAAI,

CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,aAAa,CACT,SAAS,EAAE,SAAS,EAAE,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,UAAU,EACpE,SAAS,EAAE,YAAY,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;IAEhD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEsF,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEhF,OAAK;IACbB,UAAU,EAAE,SAA6B;CAC1C;;AC/ED;;;;;;AAqBA,IAAI,UAESb,CAAC;AAE3B,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,EAAE;QACbD,QA AQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAA S,MAAM,CAAC,IAAKD;IACzD,IAAA,oBAAM,EAAE,sBAAO,CAAS;IACxB,IAAA,4BAAS,EAAE,YAAC,EA AE,YAAC,CAAW;IAEjC,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MA AM,CAAC,CAAC,EAAE,CAAC;IAC/D,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAA C,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG, CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C AAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CA AC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,KAAK,GAA G,SAAS,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,IAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAA M,CAAC;IAE7B,IAAM,MAAM,GAAG,KAAK,KAAK,CAAC,IAAI,KAAK,GAAG,CAAC,IAAI,KAAK,KAAK, CAAC;QACID,CAAC;QACDN,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,C AAC,CAAC,CAAC;IAEzC,UAAU,CAAC,WAAW,EAAE,GAAG,EAAE,GAAG,EAAE,MAAM,EAAE,KAAK,C AAC,CAAC;IACjD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEuF, eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;IACtC,SAAS,EAAEjF,OAAK;CACjB;;AC 7DD;;;;;;AAqBA,IAAI,UAA8C,CAAC;AAEnD,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OA AO,CAAC,IAAI,CAAC,KAAK,CAAC8E,gBAAO,EAAE,IAAI,aAAa,CAAC,QAAQ,EAAE,QAAQ,CAAC,CAA C,CAAC;AChF,CAAC;AAED,SAAS,OAAO,CAAC,IAAmD;IAE3D,IAAA,sBAAO,EAAW,iBAAC,CAAU;IAC pC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAA E,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC, KAAK,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,M AAM,CAAC,CAAC,EAAE,CAAC;;IAGnD,IAAIxF,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KA AK,CAAC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAEDU,UAAQ,CAAC,GAAG,EAAE,KAAK,CAAC,CA AC;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAE,SAAS;IACrB ,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEjF,OAAK;IACbB,UAAU,EAAE,OAA2B;CACxC;;AChDD;;;;;; ;AAmBO,IAAM,SAAS,GAAiB,uBAAuB,CAACmF,YAAG,CAAC;;ACnBnE;;;;;;AAqBA,IAAI/E,UACI,C AAC;AAET,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACgF, gBAAO,EAAE,IAAI,aAAa;QACtD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;A ACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IAEnE,IAAA,sBAAO,EAAW,2BAAM,EAAW,oBAAG,CAAU; IACvD,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC, EAAE,CAAC;IACpD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK,EAAE,MAAM, CAAC,KAAK,CAAC,CAAC;IAC3D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,C AAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,QAAQ,GAAG,MAAM,CAAC,KAAK,CAAC,GAAG,C AAC,CAAC;IACnC,IAAM,KAAK,GAAG1F,aAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CAAC,GAAG,Q AAQ,CAAC;;IAG1D,IAAIA,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QAC vC,OAAO,GAAG,CAAC;KACZ;IAEDU,UAAQ,CAAC,GAAG,EAAE,KAAK,EAAE,QAAQ,EAAE,KAAK,CAA C,CAAC;IACtC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAEgF,gBA AO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEpF,OAAK;IACbB,UAAU,EAAE,OAA2B;CACxC;;AC1 DD;;;;;;AAyBA,SAAS,cAAc,CAAC,IAIvB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;I AC/B,IAAA,YAAC,CAAW;IACZ,IAAA,6BAAU,EAAE,yBAAQ,CAAU;IAErC,IAAM,IAAI,GAAGN,aAAI,CA AC,aAAa,CAAC,UAAU,CAAC,CAAC;IAE5C,IAAM,gBAAgB,GAA4B,CAAC,CAAC,CAAC,EAAE,CAAC,CA AC,CAAC,CAAC;IAC3D,gBAAgB,CAAC,IAAI,OAArB,gBAAgB,EAAU,QAAoC,EAAE;IAEhE,KAAK,IAAI,C AAC,GAAG,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,E

AAE,EAAE,CAAC,EAAE;QAC3D,gBAAgB,CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CA
AC;KAC/B;IAED,IAAM,OAAO,GAAG,WAAW,CAAC,UAAU,CAAC;QACrC,MAAM,EAAE,EAAC,CAAC,G
AAA,EAAC;QACX,OAAO,SAAA;QACP,KAAK,EAAE,EAAC,QAAQ,EAAE,gBAAgB,EAAE,aAAa,EAAE,CA
AC,EAAC;KACtD,CAAE,CAAC;IAEjB,IAAM,mBAAmB,GACrBE,qBAAY,CAAC,WAAW,CAAC,OAAO,CAA
C,KAAK,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAErE,IAAM,iCAAiC,GAAGA,qBAAY,CAA
C,WAAW,CAC9D,mBAAmB,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IAE1D
,IAAM,YAAY,GACdA,qBAAY,CAAC,mBAAmB,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,EAA
E,KAAK,CAAC,CAAC;IAE7E,IAAM,aAAa,GAaKB,EAAC,CAAC,EAAE,OAAO,EAAC,CAAC;IACID,IAAM,
YAAY,GAAiB,EAAC,KAAK,EAAE,mBAAmB,EAAC,CAAC;IACHe,IAAM,eAAe,GACjB,OAAO,CAAC,EAA
C,MAAM,EAAE,aAAa,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,YAAY,EAAC,CAAC,CAAC;IAEnE,IAAM,e
AAe,GAAoB,EAAC,CAAC,EAAE,eAAe,EAAC,CAAC;IAC9D,IAAM,cAAc,GACC,EAAC,IAAI,EAAE,iCAAiC,
EAAC,CAAC;IAC/D,IAAM,QAAQ,GACV,SAAS,CAAC,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,SAAA,EA
AE,KAAK,EAAE,cAAc,EAAC,CAAC,CAAC;IAEzE,IAAM,mBAAmB,GAaKB,EAAC,CAAC,EAAE,QAAQ,EA
AC,CAAC;IACzD,IAAM,kBAaKB,GAAiB,EAAC,KAAK,EAAE,YAAY,EAAC,CAAC;IAC/D,IAAM,MAAM,G
AAG,OAAO,CACIB,EAAC,MAAM,EAAE,mBAAmB,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,kBAaKB,EA
AC,CAAC,CAAC;IAEvE,OAAO,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IACpC,OAAO,C
AAC,WAAW,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC;IAC5C,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,
MAAM,CAAC,CAAC;IAErC,OAAO,MAAM,CAAC;AACHb,CAAC;AAEM,IAAM,oBAaOB,GAAiB;IAChD,U
AAU,EAAEyF,uBAAc;IAC1B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAcC;CAC/C;;ACrFD;;;;;;;
SAwBgB,MAAM,CACIB,IAAsE;IACjE,IAAA,oBAAM,EAAE,kBAaK,EAAE,sBAAO,CAAS;IAC/B,IAAA,YA
AC,CAAW;IACZ,IAAA,uCAAe,EAAE,iBAAI,CAAU;IAEtC,IAAM,KAAK,GAAG3F,aAAI,CAAC,cAAc,CAAC
,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IAEpD,IAAM,UAAU,GAAGE,qBAAY,
CAAC,gBAAgB,CAAC,CAAC,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC;IAC5E,IAAM,KAAK,GAAG,IAAI,K
AAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC;IAChD,IAA
M,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IAC7B,OAAO,UAAU,CAAC,GAAG,CAAC,
UAAA,CAAC;QACrB,IAAM,UAAU,GAAO,IAAI,QAAC,CAAC;QAC7B,UAAU,CAAC,KAAK,CAAC,GAAG,
CAAC,CAAC;QACtB,IAAM,MAAM,GACR,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,
EAAE,KAAK,EAAE,EAAC,KAAK,OAAA,EAAE,IAAI,EAAE,UAAU,EAAC,EAAE,OAAO,SAAA,EAAC,CAA
C,CAAC;QACpE,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;QACIB,OAAO,MAAM,CAAC;KACf,CAAC
,CAAC;AAEL,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAE0F,eAAM;IACIB,WAAW,EAAE,MA
AM;IACnB,UAAU,EAAE,MAA0B;CACvC;;ACjDD;;;;;;;AAoBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC
,aAAI,CAAC;;ACpBrE;;;;;;;AAmBO,IAAM,YAAY,GAAiB,uBAAuB,CAACC,eAAM,CAAC;;ACnBzE;;;;
;;;;;;;AAkBA,IAAM5D,uBAaqB,GAAG,IAAI,CAAC;AAC5B,IAAM,uBAAuB,GAChC,wBAawB,CAAC6D,0
BAAiB,EAAE7D,uBAaqB,CAAC;;ACpBtE;;;;;;;AAuBA,IAAI,QACI,CAAC;AAET,SAAS5B,OAAK,CAA
C,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC0F,aAAI,EAAE,IAAI,WAAW;QACj
D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AAEL,CAAC;AAED,SAAS,IAAI,C
ACT,IAAkE;IAE7D,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;IAC/B,IAAA,mBAaK,CAAU;IACf,I
AAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M
AAM,CAAC,CAAC,EAAE,CAAC;IAE/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KA
AK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA
G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,KAAK,EAA
E,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IAC/C,OAAO,GAAG,CAAC;AACb,
CAAC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEA,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS
,EAAE1F,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACtDD;;;;;;;AAuBA,IAAI,gBAI8C,CAAC;AAEn
D,SAASA,OAAK,CAAC,OAAoB;IACjC,gBAAgB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC2F,qBAAY,
EAAE,IAAI,WAAW;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,OAAO;QACP,OAAO;Q
ACP,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AAEL,CAAC;SAEe,YAAY,CAA
C,IAI5B;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;IAC/B,IAAA,YAAC,CAAW;IAGjB,IAAA,

mBAAK,EACL,eAAG,EACH,uBAAO,EACP,2BAAS,EACT,uBAAO,EACP,iCAAy,EACZ,+BAAW,EACX,qCA
Ac,CACN;IAEJ,IAAA,+HAY8B,EAXIC,sCAAgB,EACbB,0BAAU,EACV,0BAAU,EACV,wBAAS,EACT,gCAA
a,EACb,iBAAa,EACb,aAAS,EACT,qBAIkC,CAAC;IAErC,IAAI,MAAM,CAAC;IAEX,IAAI,UAAU,EAAE;;QAE
d,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAA,EAAE
,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;KACtE;SAAM,IAAI,SAAS,IAAI,aAAa
,EAAE;;QAErCjG,aAAI,CAAC,MAAM,CACP,CAAC,CAAC,KAAK,CAAC,MAAM,IAAI,CAAC,EACnB,cAA
M,OAAA,2CAAyC,CAAC,CAAC,KAAK,CAAC,MAAQ,GAAA,CAAC,CAAC;QAErE,IAAM,IAAI,GAAGe,mB
AAU,CAAC,eAAe,CAAC,MAAM,EAAE,IAAI,EAAE,QAAQ,CAAC,CAAC;;QAEhE,IAAM,MAAM,GAAG,KA
AK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAA
C,KAAK,EAAE,MAAM,EAAE,IAAI,MAAA,EAAC,EAAC,CAAC,CAAC;QAC3E,MAAM;YACF,OAAO,CAA
C,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,
KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;QACxE,OAAO,CAAC,WAAW,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC;KACpC;SAAM;QACL,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,gBAAgB,EAAE,SA
AS,CAAC,CAAC;QAE5D,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MA
AM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAACf,aAAI,CA
AC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;QACxE,IAAM,UAAU,GAA
G,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC;QACjE,IAAM,QAAQ,
GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;QAC7D,IAAM,YA
AY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;QAErE,IAAM,
gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;QAC5
D,IAAM,eAAe,GAAG,IAAI,UAAU,CACIC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,gBAAgB,CAAC,C
AAC,CAAC,MAAM,CAAC,CAAC;QACIE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G
AAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAEhD,gBAAgB,CACZ,GAAG,EAAE,aAAa,EAAE,CAAC,C
AAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,YAAY,EACtE,gBAAgB,EAAE,eAAe,EAAE,g
BAAgB,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;QAEvE,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EA
AE,EAAC,CAAC,EAAE,GAAG,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,
EAAC,EAAC,CAAC,CAAC;QAEIE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;KACj
C;IAED,OAAO,MAAM,CAAC;AChB,CAAC;AAEM,IAAM,kBAakB,GAAiB;IAC9C,UAAU,EAAEiG,qBAA
Y;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE3F,OAAK;IACbB,UAAU,EAAE,YAAGC;CAC7C;;AC/H
D;::::::::::AAkBA,IAAM4B,uBAAqB,GAAG,IAAI,CAAC;AAC5B,IAAM,SAAS,GACIB,wBAAwB,CAACgE,
YAAG,EAAEhE,uBAAqB,CAAC;;ACpBxD;::::::::::AAwBA,IAAI,OACI,CAAC;AAET,SAAS5B,OAAK,CA
AC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC6F,YAAG,EAAE,IAAI,WAAW;QA
C/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAA
G,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAA
Q,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC
,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KA
AK,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,C
AAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAakB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO
,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,K
AAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aAA
a,GAAGjG,qBAAy,CAAC,gBAAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,
CAAC,CAAC;SAC/C;KACF;IAEDA,qBAAy,CAAC,0BAA0B,CACnC,KAAK,EAAE,aAAa,EAAE,KAAK,CAA
C,KAAK,CAAC,MAAM,CAAC,CAAC;IACxC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;IACvE,
IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,OAAO,C
AAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAIA,aAAI,CAAC,aAAa,CAA
C,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC
,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,UAAU
,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KACID;IAED,IAAI,kBAakB,

EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,
EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAy,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAy,CA
AC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CA
AC;AAEM,IAAM,SAAS,GAAiB;IACrC,UAAU,EAAEiG,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EA
AE7F,OAAK;IACbB,UAAU,EAAE,GAAuB;CACpC;;AC5FD;;;;;;;AAmBO,IAAM,SAAS,GAAiB,uBAAuB
,CAAC8F,YAAG,CAAC;;ACnBnE;;;;;;;AAmBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;A
CnBrE;;;;;;;AAuBA,IAAI,QAE2D,CAAC;AAEhE,SAAS/F,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,O
AAO,CAAC,IAAI,CAAC,KAAK,CAACgG,aAAI,EAAE,IAAI,aAAa;QACnD,QAAQ;QACR,OAAO;QACP,QAA
Q;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CACT,IA
AkE;IAC7D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACnB,IAAM,G
AAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA
CxC,IAAA,iBAAI,CAAU;IAErB,IAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM
,CAAC,CAAC;IACrD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,C
AAC,EAAE,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,G
AAG,IAAI,CAAC,CAAC,CAAC,CAAC;KACpC;IACD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU
,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,IAAM,aAAa,GAAG,IAAI,UAAU,CA
AC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IAEtE,IAAM,GAAG,GAAG,OAAO,CAA
C,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAM,KAAK,GAAG,OAAO,CAAC,
SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CACJ,GAAG,E
AAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,aAAa,EAAE,QAAQ,CAAC,MAAM,EACHe,Q
AAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IAChC,OAAO,GAAG,CAAC;AACb,CA
AC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEA,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS,E
AAEhG,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACjED;;;;;;;AAsBA,IAAI,QAG6B,CAAC;AAEIC,S
AASA,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiG,aAAI,EAAE,I
AAI,aAAa;QACnD,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;QACN,Q
AAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAEM,IAAM,IAAI,GAEmB,UAAU,EAAwB;QAAvB,
kBAAm,EAAE,oBAAO,EAAE,gBAAK;IAC3C,IAAA,YAAC,CAAW;IACZ,IAAA,WAAC,EAAE,qBAAm,CAA
U;IAE1B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC
,EAAE,CAAC;IAC/C,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CA
AC,CAAC,MAAM,CAAC,CAAC;IACnE,IAAM,WAAW,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CA
AC;IACpC,WAAW,CAAC,WAAW,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC;IACxC,IAAM,S
AAS,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAC3D,IAAM,W
AAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA
C/D,IAAM,UAAU,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,OAAO,CAAC,CAAC;IAC5D,IAAM,YA
AY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEj
E,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAA
C,CAAC,KAAK,CAAC,EAAE,CAAC,EAAE,MAAM,EAC9D,WAAW,EAAE,YAAy,CAAC,CAAC;IAE/B,OAA
O,CAAC,SAAS,EAAE,UAAU,CAAC,CAAC;AACjC,CAAC,CAAC;AAEH,IAAM,UAAU,GAAiB;IACtC,UAAU
,EAAEA,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEjG,OAAK;IACbB,UAAU,EAAE,IAAwB;CA
CrC;;ACnED;;;;;;;AAqBA,IAAI,aAKyC,CAAC;AAE9C,SAASA,OAAK,CAAC,OAAoB;IACjC,aAAa,GAA
G,OAAO,CAAC,IAAI,CAAC,KAAK,CAACkG,kBAAS,EAAE,IAAI,WAAW;QAC3D,QAAQ;QACR,QAAQ;QA
CR,MAAM;QACN,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,OA
AO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAA
C;AAED,SAAS,SAAS,CACd,IAC0E;IAErE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,
oBAAK,EAAE,8BAAU,CAAW;IAC5B,IAAA,mCAAa,EAAE,yBAAQ,EAAE,2BAAS,EAAE,+BAAW,CAAU;IA
E1D,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,kBAAU,EAAE,mBAA0B,CAAC;IAC5D,IAAA,kE
AC2D,EAD1D,iBAAS,EAAE,gBAC+C,CAAC;IACIE,IAAM,QAAQ,GACV,CAAC,KAAK,EAAE,SAAS,EAAE,
QAAQ;QAC1B,WAAW,CAAqC,CAAC;IACtD,IAAM,OAAO,GACT,IAAI,UAAU,CAAC,IAAI,UAAU,CAACx

G,aAAI,CAAC,cAAc,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,IAAM,G
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAM,KA
AK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE
nD,IAAM,SAAS,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACt
D,IAAM,OAAO,GAAG,SAAS,CAAC,EAAE,CAAC;IAE7B,IAAM,cAAc,GAAG,OAAO,CAAC,SAAS,CAAC,G
AAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;IACHe,IAAM,YAAY,GAAG,cAAc,CAAC,EAAE,CAAC;IAE
vC,IAAM,mBAAmB,GAAG,aAAa,KAAK,SAAS,GAAG,CAAC,GAAG,CAAC,CAAC;IACHe,IAAI,UAAU,CAA
C;IACf,QAAQ,QAAQ;QACd,KAAK,UAAU;YACb,UAAU,GAAG,CAAC,CAAC;YACf,MAAM;QACR,KAAK,
SAAS;YACZ,UAAU,GAAG,CAAC,CAAC;YACf,MAAM;QACR,KAAK,MAAM;YACT,UAAU,GAAG,CAAC,
CAAC;YACf,MAAM;QACR,KAAK,SAAS;YACZ,UAAU,GAAG,CAAC,CAAC;YACf,MAAM;QACR;YACE,U
AAU,GAAG,CAAC,CAAC;YACf,MAAM;KACT;IAED,aAAa,CACT,OAAO,EAAE,YAAY,GAAG,UAAU,CAA
C,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,KAAK,EAAE,SAAS,EACIE,QAAQ,EAAE,WAAW,EAAE
,UAAU,EAAE,WAAW,EAAE,OAAO,EACvD,KAAK,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,EAAE,mBA
AmB,EAAE,UAAU,EAAE,SAAS,EACIE,KAAK,CAAC,CAAC;IAEX,OAAO,GAAG,CAAC;AACb,CAAC;AAE
M,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEWG,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEIG
,OAAK;IACb,UAAU,EAAE,SAA6B;CAC1C;;AC5GD;;;;;;;;;;AAuBA,SAAS,MAAM,CACX,IAAsE;IAEjE,I
AAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,oBAAK,CAAW;IACiB,IAAA,iBAAI,CAAU;I
AEnB,IAAI,IAAI,GAAG,CAAC,EAAE;QACZ,IAAI,IAAI,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;KAC5B;
IAED,IAAM,UAAU,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;IACrC,IAAM,IAAI,GAAG,KAA
K,CAAC,KAAK,CAAC,MAAM,CAAC;IAChC,IAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,IAAI,GAAG,CAAC,C
AAC,CAAC;IAC/C,IAAI,QAAQ,GAAG,CAAC,CAAC;IACjB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,
GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC7B,IAAI,CAAC,KAAK,IAAI,EAAE;YACd,QAAQ,CAAC,QAAQ
,EAAE,CAAC,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;SACvC;KACF;IACD,IAAM,IAAI,GA
AiB,IAAI,KAAK,CAAC,UAAU,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,IAAI,KAAK,CAAC,IAAI,CAAC,C
AAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACtC,IAAM,IAAI,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,
CAAC;IACjC,IAAI,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC;IACf,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,C
AAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACpC,KAAK,CAAC,IAAI,CAAC,GAAG,CAA
C,CAAC;QACb,IAAI,CAAC,CAAC,CAAC,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,
KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,OAAA,EAAE,IAAI,MAAA,EAAC,EAAE,OAAO,SAAS,EA
AC,CAAC,CAAC;KACIE;IACD,OAAO,IAAI,CAAC,GAAG,CAAC,UAAU,EAAE;YAAAd,kBAAM,EAAE,gBAA
K;QAAM,QAAC,EAAC,MAAM,QAAA,EAAE,KAAK,OAAA,EAAE,KAAK,EAAE,QAAQ,EAAC;KAAC,CAA
C,CAAC;AAC3E,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEmG,eAAM;IACiB,WAAW,EAAE,
MAAM;IACnB,UAAU,EAAE,MAA0B;CACvC;;AC1DD;;;;;;;;;;AAqBA,SAAS,SAAS,CAAC,IAAqD;IACtD,
IAAA,iBAAC,EAAG,sBAAO,CAAS;IACpC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,
KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,
GAAG,CAAC,CAAC;IACd,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC;IACb,OAAO,GAAG,CAAC;A
ACb,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEC,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,
UAAU,EAAE,SAA6B;CAC1C;;ACjCD;;;;;;;;;;AAshA;AACa,IAAM,aAAa,GAAM;IACpC,SAAS;IACT,SA
AS;IACT,UAAU;IACV,SAAS;IACT,SAAS;IACT,YAAY;IACZ,aAAa;IACb,iBAAiB;IACjB,oBAAoB;IACpB,U
AAU;IACV,UAAU;IACV,iBAAiB;IACjB,YAAY;IACZ,YAAY;IACZ,yBAAYB;IACzB,SAAS;IACT,UAAU;IAC
V,mBAAmB;IACnB,YAAY;IACZ,kBAAkB;IACiB,2BAA2B;IAC3B,SAAS;IACT,WAAW;IACX,SAAS;IACT,g
BAAgB;IACb,UAAU;IACV,mBAAmB;IACnB,WAAW;IACX,cAAc;IACd,iBAAiB;IACjB,oBAAoB;IACpB,iB
AAiB;IACjB,0BAA0B;IACiB,cAAc;IACd,cAAc;IACd,aAAa;IACb,kBAAkB;IACiB,cAAc;IACd,eAAe;IACf,UA
AU;IACV,eAAe;IACf,SAAS;IACT,gBAAgB;IACb,SAAS;IACT,aAAa;IACb,aAAa;IACb,UAAU;IACV,SAAS;I
ACT,aAAa;IACb,eAAe;IACf,cAAc;IACd,SAAS;IACT,yBAAYB;IACzB,yBAAYB;IACzB,yBAAYB;IACzB,cAAc;
IACd,YAAY;IACZ,cAAc;IACd,UAAU;IACV,WAAW;IACX,SAAS;IACT,WAAW;IACX,UAAU;IACV,WAAW;
IACX,aAAa;IACb,UAAU;IACV,WAAW;IACX,aAAa;IACb,oBAAoB;IACpB,aAAa;IACb,sBAASB;IACtB,WAA
W;IACX,WAAW;IACX,eAAe;IACf,YAAY;IACZ,aAAa;IACb,SAAS;IACT,WAAW;IACX,aAAa;IACb,oBAAoB

;IACpB,YAAY;IACZ,UAAU;IACV,YAAY;IACZ,uBAAuB;IACvB,UAAU;IACV,kBAaKB;IACIB,SAAS;IACT,S
AAS;IACT,SAAS;IACT,UAAU;IACV,UAAU;IACV,UAAU;IACV,eAAe;IACf,eAAe;IACf,YAAY;IACZ,eAAe;C
AChB,CAAC;AAEF,KAA2B,UAAa,EAAb,+BAAa,EAAb,2BAAa,EAAb,IAAa,EAAE;IAArC,IAAM,YAAY,sBA
AA;IACrBC,uBAAC,CAAC,YAAY,CAAC,CAAC;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;AAiBA,sBA0CA;AAxCA,IAAM,GAAG,GAAGC,YAAG,EAAE,CAAC;AAEIB;;;AAGA;AACA,GAAG,CAA
C,YAAY;AACZ;AACA;AACA;AACA,uBAAuB,EAAE;;QAAY,sBAAA,WAAW,CAAC,QAAQ,CAAC,IAAI,U
AAU,CAAC;gBACvE,CAAC,EAAE,EAAE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAE,CA
AC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC,EAAI,EAAE,EAAE,CAAC,EAAG,CAAC,EAAE,C
AAC;gBACrD,CAAC,EAAE,CAAC,EAAG,CAAC,EAAI,EAAE,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EA
AE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,GAAG,EAAE,EAAE,EAAE,EAAE,EAAE,EAAE;AACpD,CAAC,
CAAC,EAAA;;KAAA,CAAC,CAAC;AAET;;;AAGA;AACA,GAAG,CAAC,YAAY,CAAC,8BAA8B,EAAE;;;Q
AG/C,IAAI,GAAG,CAAC,GAAG,CAAC,SAAS,CAAC,EAAE;YACtB,sBAAO,KAAK,EAAC;SACd;QAED,IAA
I;;;YAGF,IAAI,cAAc,EAAE,CAAC,KAAK,CAAC,WAAW,CAAC,IAAI,iBAAiB,CAAC,CAAC,CAAC,CAAC,C
AAC;;;YAGjE,sBAAO,WAAW,CAAC,QAAQ,CAAC,IAAI,UAAU,CAAC;oBACzC,CAAC,EAAE,EAAE,EAAE,
GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EA
AE,CAAC,EAAG,EAAE,EAAE,CAAC,EAAI,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,E
AAE,CAAC;oBACpE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAI,CAAC,EAAI,CAAC,EAAE,EAAE,EAAE,EAA
E,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAG,GAAG,EAAE,EAAE,EAAE,CA
AC,EAAE,CAAC,EAAE,EAAE,EAAE,EAAE;IBACnE,CAAC,CAAC,EAAC;SACL;QAAC,OAAO,CAAC,EAAE
;YACV,sBAAO,KAAK,EAAC;SACd;;;KACF,CAAC;;;;;;;;;;;;;;;;;ACzDF,IAAI,6BAA6B,GAAG,CAAC,WAAW;AAC
hD,EAAE,IAAI,UAAU,GAAG,OAAO,QAAQ,KAAK,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,a
AAa,CAAC,GAAG,GAAG,SAAS,CAAC;AACtH,EAAE,IAAI,OAAO,UAAU,KAAK,WAAW,EAAE,UAAU,GA
AG,UAAU,IAAI,UAAU,CAAC;AAC/E,EAAE;AACF,SAAS,6BAA6B,EAAE;AACxC,EAAE,6BAA6B,GAAG,6
BAA6B,IAAI,EAAE,CAAC;AACtE;AACA,SAAS,gBAAgB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,
MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,KAAK,CAAC,SAAS,gBA
AgB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,
MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iBAAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAA
E,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iB
AAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC
,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,SAAS,iBAAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAA
E,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,IAAI,MA
AM,CAAC,OAAO,6BAA6B,GAAG,WAAW,CAAC,6BAA6B,CAAC,EAAE,CAAC,IAAI,mBAAmB,CAAC,kBA
AkB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CA
AC,mBAAmB,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,EAAE,C
AAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAAC,GAAG,
CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,IAAI,UA
AU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAgB,CAAC,IAAI,KAAK,CAAC,SAAS,MAAM,CAAC,OAA
O,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAaKB,CAAC,KAAK,CAAC,IAAI,qBAAqB,CAAC,KA
AK,CAAC,IAAI,mBAAmB,CAAC,KAAK,CAAC,IAAI,oBAAoB,CAAC,KAAK,CAAC,kBAaKB,CAAC,OAAO,
MAAM,GAAG,QAAQ,CAAC,qBAAqB,CAAC,OAAO,aAAa,GAAG,UAAU,CAAC,mBAAmB,CAAC,OAAO,O
AAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,C
AAC,IAAI,GAAG,QAAQ,CAAC,oBAAoB,CAAC,CAAC,kBAaKB,EAAE,CAAC,mBAAmB,EAAE,CAAC,qBA
AqB,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAwB,CAAC,EAAE,KAAK,CAAC,GAAG,sBAAsB,CAA
C,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,C
AAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAY,C
AAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,eAAe,CAAC,IAAI,KAAK,KAAK,CAAC,SAAS,CAAC,U
AAU,CAAgB,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAAqB,CAA
C,CAAC,eAAe,CAACC,IAAe,CAAC,OAAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAI,CAAC,eAAe,CAA

C,SAAS,CAAC,IAAG,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACC,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,GAAG,EAAC,CAAC,UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAAY,UAAU,CAAC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,oBAAoB,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,4BAA4B,CAAC,CAAC,IAAI,iBAAiB,CAAC,GAAG,CAAC,iBAAiB,CAACE,eAAyB,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,yGAAyG,CAAC,CAAC,MAAM,CAAC,CAACC,cAAM,CAAC,MAAM,CAAC,iBAAiB,CAAC,OAAM,CAAC,KAAK,GAAG,oBAAoB,CAAC,CAAC,GAAG,OAAO,IAAI,EAAE,WAAW,CAAC,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,OAAO,UAAU,GAAG,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,GAAG,OAAO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WAAU,CAAC,KAAK,GAAG,OAAO,SAAS,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,OAAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,EAAC,CAAC,GAAG,OAAO,KAAK,GAAG,WAAW,CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,OAAO,CAAC,IAAI,CAAC,OAAO,CAAC,KAAK,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAAK,GAAG,kBAAkB,EAAE,qBAAqB,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAAC,KAAI,CAAC,KAAK,GAAG,OAAO,QAAQ,GAAG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,GAAG,OAAO,UAAU,KAAK,WAAW,IAAI,UAAU,CAAC,CAAC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,eAAe,CAAC,GAAE,CAAC,GAAG,mBAAmB,CAAC,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACF,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,UAAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CA

AC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAO,GAAG,mBAAmB,CAAC,CAAC,GAAG,OAAO,WAAW,GAAG,WAAW,CAAC,CAACG,cAAM,CAAC,WAAW,CAACC,UAAqB,CAAC,YAAW,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAAa,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAAG,CAAC,QAAQ,CAAC,KAAK,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE,CAAC,GAAG,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,EAAC,CAAC,CAAmH,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG,OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAAiC,EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,KAAK,CAAC,KAAK,CAAgB,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QA AQ,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,+BAA+B,CAAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,QAAQ,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EA AE,GAAG,GAAG,SAAS,EAAE,GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAaKB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,QAAQ,CAAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,CAAC,OAAO,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAA K,CAAC,CAAC,IAAI,KAAK,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAA C,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAA C,IAAI,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,SA AS,CAAC,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,IAAI,CA AC,CAAC,EAAC,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CA AC,CAAC,GAAG,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,YAAY,CA AC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CA AC,IAAI,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAK, CAAC,SAAS,IAAI,CAAC,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU, GAAG,QAAQ,CAAC,GAAG,UAAU,EAAE,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,K AAk,CAAC,CAAC,OAAO,UAAU,CAAC,OAAO,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,S AAc,CAAC,CAAC,CAAC,SAAS,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,IAAI,MAAM, CAAC,GAAG,CAAC,cAAc,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,MAAM,EAAE,GAAG,EAAE,MAAM,CA AC,CAAC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,O AAO,GAAG,CAAC,GAAG,EAAE,EAAE,CAAC,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,Y AAY,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC, EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC, YAAY,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EA AE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,

C,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,EAAC,CAAC,KAA
I,CAAC,UAAU,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,KAAK,CAAC,S
AAS,CAAC,UAAU,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,GAAG,EAAE,UAAU,CAA
C,MAAM,YAAY,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,6NAA6N,CAAC,CAAC,GAAG,mBAAmB,CAA
C,CAAC,OAAO,CAAC,GAAG,CAAC,mHAAmH,EAAC,CAAC,MAAM,KAAK,CAAC,YAAY,CAAC,CAAC,C
AAC,CAAC,GAAG,UAAU,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,C
AAC,UAAU,CAAC,0BAA0B,CAAC,MAAM,CAAC,CAAC,IAAI,SAAS,CAAC,IAAI,YAAY,CAAC,EAAE,CA
AC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAmB,IAAI,aAAa,CAAC,EAAE,CAAsD,G
AAG,CAAC,sBAAsB,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,kBAaKB,GAAE,C
AAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,
QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,QAAQ,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,
QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,QAAQ,CAA
C,CAAC,MAAM,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,KAAK,EAAE,EAAC,CA
AC,CAAC,oBAAoB,CAAC,YAAY,EAAC,CAAC,SAAS,WAAW,EAAE,CAAYB,GAAG,sBAAsB,CAAC,OAAO
,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,oBAAoB,C
AAC,UAAU,EAAC,CAA4E,SAAS,OAAO,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,
SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,S
AAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,C
AAC,MAAM,CAAC,CAAC,YAAY,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,C
AAC,oBAAoB,CAAC,aAAa,EAAC,CAAC,SAAS,WAAW,CAAC,EAAE,CAAC,CAAC,YAAY,CAAC,OAAO,C
AAC,EAAE,EAAC,CAAC,SAAS,YAAY,CAAC,EAAE,CAAC,CAAC,aAAa,CAAC,OAAO,CAAC,EAAE,EAAC
,CAAC,IAAI,eAAe,CAAC,CAAC,CAA+B,IAAI,qBAAqB,CAAC,IAAI,CAAC,SAAS,gBAAgB,CAAC,EAAE,C
AAC,CAAC,MAAM,CAAC,CAAC,sBAAsB,CAAC,qDAAqD,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAA
M,CAAC,wBAAwB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,CAAC,
SAAS,mBAAmB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAAwB,CAAC,CA
AC,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,GAAG,eAAe,EAAE,CAAC,CAAC,CA
A+F,GAAG,qBAAqB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBAAqB,CAAC,qBAAqB,CAAC,IAAI,CAAC,QAAQ,
GAAE,CAAC,CAAC,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,EAAE,CAAC,MAAM,CAAC,iBAAiB,CAA
C,CAAC,EAAE,CAAC,SAAS,KAAK,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,C
AAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,CAAC,KAAK,CA
AC,sBAAsB,CAAC,CAAC,IAAI,KAAK,EAAE,KAAK,CAAC,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,CAAC,
IAAI,CAAC,CAAC,KAAK,CAAC,IAAI,CAAc,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,IAAI,C
AAC,CAAC,IAAI,WAAW,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,MA
AM,CAAC,CAAC,SAAS,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,MAAM,CAAC,SAAS,CA
AC,UAAU,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,C
AAC,GAAG,CAAC,CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAA
O,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,QAA
Q,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,sCAAsC,CAAC,G
AAG,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EAAC,CAAC,SAAS,S
AAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAAC,CAAC,OAAO,I
AAI,UAAU,CAAC,UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAA
C,KAAI,CAAC,MAAK,iDAAiD,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC,GAAG,EAAC,CA
AC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,GAAG,kBAaKB,EAAE,qBAAqB,CAAC,CAAC
,CAAC,GAAG,OAAO,KAAK,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,OAAO,K
AAK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,
CAAC,GAAG,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,C
AAC,OAAO,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,OAAO,SA
S,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CA

AC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,
CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,EAAC,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,CAAC,CA
AC,OAAO,OAAO,CAAC,OAAO,EAAE,CAAC,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,
CAAC,CAAC,CAAC,SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,
SAAS,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MA
AM,CAAC,KAAK,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CA
AC,CAAC,UAAU,CAAC,MAAM,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,IAAI,gBAAgB,CAAC,OAAO,C
AAC,aAAa,CAAC,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,OAA
O,CAAC,sBAAsB,CAAC,CAAC,CAAC,UAAU,CAAC,GAAG,CAAC,EAAE,gBAAgB,CAAC,mBAAmB,CAAm
B,EAAC,CAAC,EAAC,CAAC,EAAC,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,gBAAgB,CAAmB,E
AAC,CAAC,SAAS,yBAAyB,CAAC,MAAM,CAAC,CAAC,eAAe,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,
MAAM,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,sBAAsB,CAAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAA
E,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI
,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAAyC,
CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC
,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAAoB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc
,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,OAAO,KAAK,GAAG,UAAU,CAAC,CAAC,OAAO,KA
AK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,C
AAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAAoB,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,C
AAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,iCAAiC,CAAC,MAAM,CAAC,
CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CA
AC,CAAC,KAAI,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,
CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,IAAI,CAAC,eA
Ae,CAAC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,qDAAqD,CAAC,CAAC,C
AAC,CAAC,OAAO,KAAK,CAAC,CAAC,gBAAgB,EAAE,CAAC,KAAK,CAAC,kBAAkB,CAAC,CAAC,OAA
M,EAAE,CAAC,IAAI,UAAU,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,MAAK,WAAW,CAAC,CAAC,KAA
K,CAAC,SAAS,EAAE,CAAC,EAAE,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,kCAAkC,CAAC,EAAE,CAA
C,EAAE,EAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,SAAS,cAAc,EAAE,CAAC,OAAO,CAAC,W
AAW,GAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS,CAAC,CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,
CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAAK,EAAE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CA
AC,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,G
AAG,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAA
S,CAAC,GAAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAAI,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAA
C,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,KAAI,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,C
AAC,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,CAAC,KAAK,CAA
C,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,GAAG,
CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAAC,K
AAK,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,
CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,
GAAG,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,
CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,
MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,
CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,
EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,CAAC,MAAM,CA
AC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,QA
AQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,C
AAC,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,
EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,

CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,EAAE,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,YAA Y,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,UAAU,CAAC,GAAG,CAAC,YAA Y,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,YAA Y,CAAC,CAAC,CAAC,UAAU,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CAAC,YAA Y,CAAC,EAAE,CAAC,UAAU,CAAC,CAAC,CAAC,YAA Y,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CAAC,YAA Y,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,YAA Y,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,CAAC,SAAS,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,YAA Y,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,UAAU,CAAC,EAAE,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,KAAK,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,KAAK,EAAE,UAAU,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,qBAaQb,CAAC,OAAO,CAAC,IAAI,CAAC,iBAaiB,EAAE,CAAC,8BAa8B,EAAE,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,GAAG,qBAaQb,EAAE,IAAI,CAAC,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,eAAe,CAAC,iBAaiB,EAAE,CAAC,8BAa8B,EAAE,CAAC,CAAC,qBAaQb,CAAC,CAAC,CAAC,GAAG,UAAU,EAAE,qBAaQb,CAAC,CAAC,EAAE,KAAK,CAAC,eAAe,CAAC,CAAC,CAAC,GAAG,KAAK,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,iBAaiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,GAAG,EAAE,CAAC,CAAC,OAAO,GAAG,CAAC,eAAe,CAAC,MAAK,8CAA8C,CAAC,GAAG,CAAC,MAAM,CAAC,wBAawB,CAAC,CAAC,sBAAsB,CAAC,SAAS,UAAU,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,oFAAoF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,iDAaiD,CAAC,iBAaiB,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,EAAE,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,UAAU,CAAC,SAAS,YAA Y,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,sFAAsF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,mDAaD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,QAAQ,CAAC,EAAE,CAAC,SAAS,aAAa,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,uFAAuF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,oDAAoD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,GAAG,OAAO,CAAC,CAAC,iBAaiB,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,kBAakB,CAAC,MAAM,EAAE,CAAC,CAAC,IAAI,OAAO,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,mBAaB,CAAC,UAAU,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,oBAaB,GAAG,CAAC,CAAC,CAAC,WAAW,CAAC,UAAU,CAAC,IAAI,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,iBAaiB,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,EAAE,CAAC,IAAI,OAAO,CAAC,EAAE,C

AAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,SAAS,CAA
C,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EA
AE,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAA
O,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,CAAC,CAAC,
OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,EAAE,CAAC,C
AAC,wBAAwB,CAAC,EAAE,CAAC,CAAC,qBAaQB,CAAC,CAAC,CAAC,CAAC,2CAA2C,CAAC,EAAE,EA
AC,CAAC,CAAC,UAAU,CAAC,UAAU,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,kBAaKB,CAAC,EAAE,CA
AC,eAAe,CAAC,UAAU,EAAE,CAAC,eAAe,CAAC,UAAU,CAAC,MAAM,OAAO,CAAC,kBAaKB,CAAC,MA
AM,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,GAAG,EAAE,GAAE,CAAC,GAAG,sBAAsB,
EAAE,aAAa,EAAE,CAAC,wBAAwB,GAAE,CAAC,CAAC,8BAa8B,CAAC,SAAS,EAAE,CAAC,QAAQ,CAAC
,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,C
AAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CA
AC,CAAC,CAAC,OAAO,CAAC,eAAe,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAA
E,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC
,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,CAAC,
UAAU,CAAC,CAAC,wBAAwB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,UAAU,CAAC
,SAAS,QAAQ,CAAC,CAAC,IAAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,OAAO,CAA
C,8BAa8B,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,WAaW,CAAC,CAAC,K
AAK,CAAC,MAAM,CAAC,EAAC,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,UAAU,CAAC,OAAO,CAAC,8B
Aa8B,CAAC,aAAa,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,WAaW,CAAC,CAAC,KAAK,CAAC,YAAY,C
AAC,EAAC,CAAC,CAAC,mBAaMB,CAAC,UAAU,CAAC,IAAI,IAAI,CAAC,IAAI,OAAO,CAAC,QAAQ,CAA
C,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,OAAO,EAAE,OAAO,
CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAO,CAAC,MAAM,EAAC,CAAC,CAAC,OAA
O,CAAC,QAAQ,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,aA
Aa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,
CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,aAAa,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC
,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IA
AI,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,OAAO
,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,c
AAc,CAAC,GAAE,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAA
O,GAAG,OAAO,CAAC,gBAaGB,CAAC,CAAC,IAAI,SAAS,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gBA
AgB,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gBAaGB,CAAC,GAAG,
EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,OAAO,CAAC,gB
AAgB,EAAC,CAAC,OAAO,CAAC,gBAaGB,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,iBAAiB,EAAE,OAA
O,CAAC,SAAS,CAAC,KAAK,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,C
AAC,GAAG,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,KAAI,CAAC,CAAC,k
BAaKB,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,+BAA+B,CAAC,UAAU,CAAC,OAAO,OAAO,CAA
C,QAAQ,CAAC,MAAM,CAAC,OAAO,CAAC,gBAaGB,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC
,MAAM,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,
MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,
MAAM,CAAC,OAAO,CAAC,UAAS,CAAC,EAAC,CAAC,CAAC,+BAA+B,CAAC,SAAS,IAAI,CAAC,CAAC,i
BAAiB,EAAE,CAAC,4CAA4C,EAAE,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,GAAE,CAAC,O
AAO,CAAC,iBAAiB,EAAE,CAAC,4CAA4C,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,qBAaQ
B,CAAC,SAAS,IAAI,CAAC,EAAE,CAAC,sBAAsB,CAAC,SAAS,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAA
M,CAAC,SAAS,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,I
AAI,GAAG,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,m
CAAmC,CAAC,MAAM,CAAC,OAAO,CAAC,gBAaGB,CAAC,GAAG,CAAC,CAAC,cAAc,CAAC,EAAE,CAA
C,CAAC,cAAc,CAAC,EAAE,aAAa,EAAE,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,QAAQ,CAAC,CA

AC,CAAC,YAAY,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,cAAc,CAAC,EAAC,CAAC,KAAl,CAAC,OAAO,CAAC,KAAC,CAAC,yCAAYC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC,qCAAqC,EAAC,CAAC,OAAO,CAAC,mCAAmC,CAAC,SAAS,CAAC,MAAM,CAAC,GAAG,GAAG,GAAG,6BAA6B,CAAC,CAAC,4CAA4C,GAAE,CAAC,KAAC,GAAG,GAAG,GAAG,aAAa,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,eAAe,CAAC,CAAC,aAAa,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,YAAY,CAAC,CAAC,UAAU,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,cAAc,CAAC,CAAC,YAAY,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,IAAI,CAAC,GAAG,iBAiB,CAAC,iBAAiB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,UAAU,EAAE,CAAC,OAAO,MAAM,CAAC,WAAU,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG,OAAO,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,UAAU,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAAG,OAAO,CAAC,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,MAAM,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,OAAO,EAAE,OAAO,CAAC,IAAI,CAAC,iBAiB,EAAE,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAgB,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,MAAM,EAAC,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG,aAAa,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,CAAC,YAAY,CAAC,EAAC,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,YAAY,UAAU,CAAC,OAAO,MAAM,CAAC,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG,YAAY,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,MAAM,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,gBAAgB,CAAC,CAAC,OAAO,CAAC,qBAAqB,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAC,GAAG,CAAC,CAAC,IAAI,CAAC,MAAM,GAAG,cAAc,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAl,CAAC,GAAG,CAAC,iCAaiC,CAAC,GAAG,EAAC,CAAC,OAAO,CAAC,mCAAmC,CAAC,UAAS,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,yBAayB,CAAC,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,OAAO,EAAC,CAAC,CAAC,GAAG,mBAAmB,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,SAAS,IAAI,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,EAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,SAAS,IAAI,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,SAAS,IAAI,CAAC,EAAE,EAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,WAAW,CAAC,MAAM,CAAC,qBAAqB,CAAC,EAAE,UAAU,CAAC,YAAY,CAAC,UAAU,CAAC,YAAY,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,oBAAoB,CAAC,UAAU,CAAC,IAAI,aAAa,CAAC,UAAU,CAAC,2CAA2C,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC,IAAI,MAAM,CAAC,aAAa,CAAC,EAAC,CAAC,CAAC,YAAY,CAAC,UAAU,CAAC,GAAG,OAAO,CAAC,aAAa,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,oBAAoB,EAAE,CAAC,OAAO,CAAC,sBAAsB,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,CAAC,EAAC,CAAC,GAAG,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,aAAa,CAAC,GAAG,EAAE,CAAC,KAAC,OAAO,IAAI,CAAC,CAAC,YAAY,CAAC,SAAS,KAAC,CAAC,CAAC,IAAI,CAAC,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,KAAC,CAAC,MAAM,WAAW,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,mBAAmB,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,4BAA4B,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,MAAM,CAAC,qBAAqB,CAAC,CAAC,mBAAmB,CAAC,SAAS,gBAAgB,EAAE,CAAC,OAAO,aAAa,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,gBAAgB,CAAC,SAAS,gBAAgB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,gBAAgB,CAAC,SAAS,cAAc,CAAC,SAAS,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,oBAAoB,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,QAAQ,CAAC,CAAC,QAAQ,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,kBAakB,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,EAAC,CAAC,SAAS,YAAY,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,UAAU,CAAC,KAAC,CAAC,IAAI,CA

AC,IAAI,EAAC,CAAC,IAAI,mBAAmB,CAAC,GAAG,mBAAmB,CAAC,CAAC,mBAAmB,CAAC,UAAU,CAA
C,IAAI,CAAC,CAAC,OAAO,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,G
AAG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,EAAC,CAAC,KAAK,GAAG,sBAAsB,CAAC,CAAC,m
BAAmB,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,+BAA+B,CAAC,E
AAC,CAAC,KAAK,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,CAAC,mBAAmB,CAAC,QAAO,CAAC,KAA
K,mBAAmB,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,QAAQ,CAAC,K
AAK,CAAC,CAAC,iBAAiB,EAAE,CAAC,iBAAiB,EAAE,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,OAAO,K
AAK,CAAC,SAAS,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,
CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,SAAS,gCAAgC,CAAC,cAAc,CAAC,YA
AY,CAAC,CAAC,GAAG,cAAc,EAAE,YAAY,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,6BAA6B,C
AAC,EAAC,CAAC,KAAK,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,K
AAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,KAAI,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,cA
Ac,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,EAAE,OAAO,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CA
AC,CAAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,
OAAO,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,KAAK,GAAE,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,M
AAM,CAAC,MAAM,CAAC,CAAC,IAAI,IAAI,CAAC,gBAAgB,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,O
AAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,SAAS,iDAAiD,CAAC,
cAAc,CAAC,SAAS,CAAC,EAAE,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GA
AG,IAAI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,C
AAC,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,CAAC,kBAaKB,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,C
AAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAA
G,GAAG,GAAG,WAAW,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,WAAW,CAAC,OAAM,C
AAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,CAAC,OAAO,CAAC,CAAC,MAAK,4CAA4C,CAAC,GAAG,C
AAC,KAAI,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,EAAE,
GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,IA
AI,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,C
AAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,CAAC,WAAW,CA
AC,GAAG,EAAE,CAAC,GAAG,IAAI,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,i
BAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,QAAQ,
CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC
,GAAG,QAAQ,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,4CAA4C,EAAE,CAAC,GAAG,OAAO,CAAC,IAAI,
CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CA
AC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,EA
AC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAA
C,gBAAgB,EAAE,CAAC,UAAU,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,
6BAA6B,EAAE,CAAC,GAAG,mBAAmB,CAAC,OAAOC,EAAa,CAAC,IAAI,EAAE,CAAC,MAAM,CAAC,OA
AO,SAAS,CAAC,qBAAqB,CAAC,CAAC,SAAS,mCAAmC,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,IAAI,WA
AW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,SAAS,EAAE,CAAC,IAAI,qBAAqB
,CAAC,WAAW,CAAC,IAAI,IAAI,CAAC,UAAU,CAAC,qBAAqB,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CA
AC,IAAI,EAAE,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,E
AAE,CAAC,CAAC,IAAI,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAA
C,CAAC,CAAC,CAAC,CAAC,CAAC,IAAG,CAAC,IAAI,GAAG,CAAC,yCAAyC,CAAC,KAAK,CAAC,qBAAq
B,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,YAAY,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,8CA
A8C,CAAC,EAAE,CAAC,IAAI,qBAAqB,CAAC,EAAE,CAAC,SAAS,gBAAgB,CAAC,MAAM,CAAC,GAAG,C
AAC,CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,GAAG,GAAG,CAAC,CAAC,M
AAM,EAAE,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,C
AAC,GAAG,CAAC,GAAG,MAAM,EAAE,GAAG,CAAC,CAAC,CAAC,GAAG,EAAE,CAAC,qBAAqB,CAAC,I
AAI,CAAC,MAAM,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,C

AAC,GAAG,CAAC,CAAC,CAAC,EAAE,IAAG,CAAC,OAAO,qBAAqB,CAAC,SAAS,qCAAqC,CAAC,KAAK,CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,8CAA8C,CAAC,MAAM,CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,EAAE,CAAC,CAAC,8CAA8C,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,YAAY,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,YAAY,CAAC,oBAAoB,CAAC,KAAK,CAAC,CAAC,UAAU,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,8CAA8C,CAAC,CAAC,SAAS,yBAAyB,EAAE,CAAC,OAAO,gBAAgB,EAAE,CAAC,MAAM,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,UAAU,CAAC,KAAK,GAAG,EAAE,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,SAAS,uBAAuB,CAAC,aAAa,CAAC,CAAC,IAAI,OAAO,CAAC,yBAAyB,EAAE,CAAC,GAAG,aAAa,EAAE,OAAO,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,GAAG,aAAa,CAAC,WAAW,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,OAAO,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iBAAiB,CAAC,aAAa,CAAC,SAAS,CAAC,CAAC,IAAI,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,aAAa,CAAC,iBAAiB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,yBAAyB,CAAC,OAAO,CAAC,CAAC,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,QAAQ,CAAC,CAAC,cAAc,CAAC,CAAC,CAAC,uBAAuB,CAAC,UAAU,CAAC,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,EAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,GAAE,CAAC,CAAC,4BAA4B,CAAC,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,8BAA8B,CAAC,CAAmD,QAAQ,CAAC,8BAA8B,CAAC,KAAI,CAAC,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,SAAS,CAAC,SAAS,cAAc,CAAC,UAAU,CAAC,QAAQ,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,IAAI,CAAC,MAAM,CAAC,OAAO,KAAK,CAAC,IAAI,IAAI,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,EAAE,IAAI,CAAC,CAAC,CAAC,CAAC,OAAO,KAAK,CAAC,OAAO,IAAI,CAAC,IAAI,IAAI,CAAC,IAAI,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,cAAc,EAAE,cAAc,EAAE,sBAAsB,CAAC,IAAI,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,UAAU,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,CAAC,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,mBAAmB,CAAC,SAAS,cAAc,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,cAAc,EAAE,cAAc,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,EAAC,CAAC,CAAC,CAAC,CAAC,8BAA8B,CAAC,UAAU,CAAC,OAAO,QAAQ,CAAC,cAAc,EAAE,QAAQ,CAAC,mBAAmB,CAAC,mBAAmB,CAAC,CAAC,gBAAgB,CAAC,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,8BAA8B,EAAE,CAAC,CAAC,MAAM,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,cAAc,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,CAAC,QAAQ,EAAC,CAAC,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,MAAM,EAAE,MAAM,GAAG,CAAC,eAAe,EAAE,eAAe,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,cAAc,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,eAAe,CAAC,CAAC,CAAC,iBAAiB,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,uBAAuB,CAAC,SAAS,YAAY,CAAC,CAAC,

IAAI,cAAc,CAAC,SAAS,cAAc,CAAC,KAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,cAAc,CAAC,QAAQ,CAAC,
mBAAmB,CAAC,YAAY,CAAC,QAAQ,CAAC,gBAAgB,EAAE,CAAC,YAAY,CAAC,WAAW,CAAC,KAAC,C
AAC,CAAC,QAAQ,CAAC,gBAAgB,EAAE,CAAC,EAAE,QAAQ,CAAC,eAAc,CAAC,CAAC,GAAG,YAAY,C
AAC,YAAY,CAAC,CAAC,YAAY,CAAC,iBAAiB,CAAC,cAAc,CAAC,YAAY,CAAC,MAAM,CAAC,gBAAgB,
CAAC,YAAY,CAAC,eAAe,CAAC,cAAc,CAAC,YAAY,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC,aAAa,CAA
C,IAAI,CAAC,YAAY,CAAC,CAAC,QAAQ,CAAC,4BAA4B,GAAE,CAAC,KAAC,IAAI,IAAI,CAAC,CA
AC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,GAA
G,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,YAAY,CAAC,MAAM,EAAE,QAAQ,CAAC
,aAAa,CAAC,CAAC,CAAC,CAAC,eAAe,EAAE,YAAY,CAAC,eAAe,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC
,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,8BAA8B,CAAC,SAAS,YAAY,CAAC,gBAAgB,CAA
C,WAAW,CAAC,SAAS,CAAC,QAAQ,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,EAAE,CAAC,IAAI,OAAO,CA
AC,UAAU,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,WAAW,CA
AC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,iBAAiB,EAAE,CA
AC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,2BAA2B,CAAC,CAAC,CAAC,YAAY,CA
AC,SAAS,CAAC,gBAAgB,CAAC,SAAS,CAAC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,CA
AC,+BAA+B,CAAC,SAAS,YAAY,CAAC,CAAC,OAAO,YAAY,EAAE,KAAC,CAAC,CAAC,OAAO,CAAC,CA
AC,KAAC,CAAC,CAAC,OAAO,OAAO,CAAC,mCAAmC,CAAC,QAAQ,OAAO,YAAY,CAAC,CAAC,CAAC,o
BAAoB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,EAAE,CAAC,GAAG,MAA
M,EAAE,MAAM,CAAC,OAAM,SAAS,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,OAAM,SAAS,CAAC,OA
AO,MAAM,EAAE,MAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,iBAAiB,C
AAC,UAAU,CAAC,OAAO,QAAQ,CAAC,iBAAiB,EAAE,QAAQ,CAAC,uBAAuB,CAAC,CAAC,CAAC,SAAS,
eAAe,CAAC,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,eAAe,CAAC,QAAQ,CAAC,CAAC,CAAC,IAAI
,OAAO,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAA
C,CAAC,OAAO,OAAO,CAAC,SAAS,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,C
AAC,CAAC,IAAI,QAAQ,CAAC,SAAS,EAAE,CAAC,IAAI,OAAO,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,I
AAI,eAAe,CAAC,CAAC,CAAC,GAAG,YAAY,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,YAAY,EAAC,CAAC,i
BAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,eAAe,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,C
AAC,EAAE,CAAC,CAAC,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CA
AC,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,CAAC,eAAe,CA
AC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,SAAS,qDAAqD,CAAC,YAAY,CAAC,YAAY,C
AAC,KAAC,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,E
AAE,CAAC,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,SAAS,sBAAs
B,CAAC,OAAO,CAAC,CAAC,OAAO,OAAO,CAAC,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,OAAO
,CAAC,IAAI,kBAaKB,CAAC,CAAC,CAAC,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,CAAC
,CAAC,OAAO,MAAM,GAAG,WAAW,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,SAAS,eAAe,CAAC,MAA
M,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,kBAaKB,CAAC,M
AAM,CAAC,GAAG,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,S
AAS,CAAC,CAAC,OAAO,UAAU,CAAC,SAAS,qBAAqB,CAAC,MAAM,CAAC,CAAC,OAAO,eAAe,CAAC,M
AAM,CAAC,CAAC,SAAS,kDAaKD,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,
CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,CAAC,CAAC,CAAC,GA
AG,MAAM,CAAC,eAAe,CAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,EAAE,CAAC,CAAC,CAA
C,KAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAA
M,CAAC,GAAG,MAAM,CAAC,eAAe,EAAE,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,GAAG,MAAM,C
AAC,eAAe,CAAC,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,IAAI,kBAaKB,CAAC,KAAC,CAAC,GAAG,M
AAM,CAAC,WAAW,EAAE,MAAM,CAAC,WAAW,CAAC,KAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,
CAAC,WAAW,CAAC,KAAC,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAaKB,CAAC,YAAY,CAAC,CAAC,
CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,G
AAG,MAAM,CAAC,KAAC,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,OAAM,CAAC,MAAM,

CAAC,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,MAAM,CAAC,GAAG,kBAaKB,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,KAAK,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,CAAC,KAAK,GAAG,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,YAAY,CAAC,iBAaIB,EAAC,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,qDAaQD,CAAC,YAAY,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,KAAI,CAAC,OAAM,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,+CAA+C,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,OAAO,kDAaKD,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,qBAaQB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,OAAO,kDAaKD,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,KAAI,CAAC,OAAO,+CAA+C,CAAC,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,CAAC,SAAS,qCAAqC,CAAC,SAAS,CAAC,EAAE,SAAS,2BAA2B,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE,SAAS,qCAAqC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,wBAaWB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,qBAaQB,CAAC,CAAC,SAAS,KAAK,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,KAAK,CAAC,OAAO,EAAC,CAAC,CAAC,GAAG,CAAC,qBAaQB,CAAC,CAAC,SAAS,IAAI,CAAC,KAAK,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,KAAK,CAAC,SAAS,EAAC,CAAC,CAAC,GAAG,CAAC,uBAaUB,CAAC,CAAC,SAAS,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,4BAA4B,CAAC,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sCAAsC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,yBAaYB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,mBAaMB,CAAC,CAAC,UAAU,CAAC,OAAO,GAAG,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,mBAaMB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,iBAaIB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,oBAaOB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,eAAe,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,kBAaKB,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,iCAaIC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,oBAaOB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,+BAA+B,CAAC,GAAG,CAAC,CAAC,OAAM,CAAC,EAAE,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,YAAY,CAAC,kBAaKB,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,aAAa,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,iBAaIB,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,eAAe,CAAC,CAAC,CAAC,WAAW,CAAC,SAAS,WAAW,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,SAAS,CAAC,CAAC,EAAE,CAAC,SAAS,CAAC,UAAU,CAAC,CAAC,CAAC,QAAQ,CAAC,SAAS,KAAK,CAAC,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,OAAO,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,OAAO,GAAG,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,iBAaIB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,YAAY,CAAC,iBAaIB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,SAAS,CAAC,GAAG,EAAC,CAAC,OAAO,MAAM,CAAC,CAAC,aAAa,CAAC,SAAS,MAAM,CAAC,sBAAsB,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,OAAO,CAAC,sBAAsB,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,eAAe,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,OAAO,MAAM,CAAC,CAAC,eAAe,CAAC,SAAS,GAAG,CAAC,sBAAsB,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,iBAaIB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,aAA

a,EAAE,CAAC,IAAI,OAAO,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,UAAU,CAAC,sBAAsB,CAAC,OAAO,CAAC,sBAAsB,CAAC,YAAY,CAAC,KAAC,CAAC,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,GAAG,OAAO,sBAAsB,CAAC,yBAAYB,GAAG,WAAW,EAAE,sBAAsB,CAAC,yBAAYB,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,OAAO,EAAC,CAAC,OAAO,MAAM,CAAC,CAAC,kBAakB,CAAC,SAAS,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,KAAC,CAAC,EAAE,CAAC,cAAc,EAAE,EAAE,CAAC,cAAc,CAAC,KAAC,CAAC,OAAO,EAAE,aAAa,EAAE,CAAC,KAAC,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,aAAa,CAAC,CAAC,OAAO,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,aAAa,CAAC,SAAS,aAAa,CAAC,CAAC,GAAG,EAAE,CAAC,cAAc,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,IAAI,CAAC,GAAG,OAAO,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC,yBAAYB,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,EAAE,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,WAAW,CAAC,SAAS,CAAC,KAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAC,IAAI,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,EAAE,CAAC,cAAc,CAAC,GAAG,OAAO,CAAC,kBAakB,CAAC,OAAO,OAAO,CAAC,kBAakB,CAAC,IAAI,CAAC,IAAI,KAAC,CAAC,OAAO,CAAC,KAAC,CAAC,qCAAqC,CAAC,KAAC,CAAC,CAAC,sCAAsC,CAAC,KAAC,CAAC,CAAC,iCAAiC,CAAC,KAAC,CAAC,CAAC,KAAC,CAAC,qBAAqB,CAAC,KAAC,CAAC,YAAY,CAAC,0BAA0B,CAAC,CAAC,+BAA+B,CAAC,KAAC,CAAC,CAAC,IAAI,IAAI,CAAC,KAAC,CAAC,sBAAsB,EAAE,EAAE,EAAE,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,YAAY,CAAC,GAAG,EAAC,CAAC,CAAC,EAAC,CAAC,CAAC,oBAAoB,CAAC,SAAS,OAAO,CAAC,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,gBAAgB,CAAC,CAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,yBAAYB,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,IAAI,WAAW,CAAC,KAAC,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,gBAAgB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,CAAC,EAAC,CAAC,IAAI,GAAG,CAAC,KAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,KAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,IAAG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,oCAAoC,CAAC,CAAC,SAAS,CAAC,WAAW,CAAC,kBAakB,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,UAAU,EAAE,CAAC,CAAC,IAAI,eAAe,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,oBAAoB,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,uBAAuB,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,

EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,iBAAiB,CAAC,oCAAoC,CAAC,eAAe,CAAC,CAAC,8BAA8B,CAA
C,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,
iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,iBAAiB,EAAE,C
AAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,yBAAyB,CAAC,iBAAiB,EAAE,CAAC,CAAC,E
AAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,
EAAE,CAAC,CAAC,CAAC,CAAC,wBAAwB,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC
,CAAC,CAAC,CAAC,4BAA4B,CAAC,iBAAiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,
CAAC,CAAC,IAAI,MAAM,CAAC,qBAaQb,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,CAA
C,OAAO,CAAC,CAAC,GAAG,iBAAiB,CAAC,mBAAmB,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,aAAa,CAA
C,EAAE,CAAC,aAAa,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,OAAO,aAAa,CAAC,SAAS,gCAAgC,CAA
C,EAAE,CAAC,EAAE,CAAC,CAAC,OAAO,mCAAmC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,IAAI,QAAQ
,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CA
AC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,
MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,EAAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAAC,MAAM,GA
AG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBAAiB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,M
AAM,CAAC,MAAM,CAAC,EAAC,CAAC,KAAl,CAAC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,CAA
C,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,
IAAI,GAAG,CAAC,iBAAiB,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,O
AAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,YAAY,CAAC,GA
AG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,
GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAm
C,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,C
AAC,UAAU,CAAC,WAaW,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAA
mC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,UAAU,CAAC,WAaW,CAAC,MAAM,CAAC,SAAS,CA
AC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,GAAG,sBAAs
B,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IA
AI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,MA
AM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,iBAAiB,EAAE,CAAC,GAAG,CAAC,CAAC,CAA
C,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,C
AAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,
GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,SAAS,CAAC,EAAE,CAAC,gBAAgB,EAAE,CAAC,
GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,GAAG,EAAE,IAAG,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CA
AC,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,SAAS,oBAAoB,CAAC,OAAO,CAAC,CAAC,IAAI,OAA
O,CAAC,OAAO,CAAC,kBAakB,CAAC,GAAG,EAAE,CAAC,GAAG,OAAO,CAAC,OAAO,GAAG,CAAC,SA
AS,qBAaQb,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,IAAI,CAAC,UAAU,C
AAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,EAAC,CAAC,EAAC,CAAC,SAAS,WAaW,CA
AC,YAAY,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,qFAaqF,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,Y
AAY,EAAE,CAAC,GAAG,MAAM,CAAC,OAAO,GAAG,SAAS,CAAC,MAAK,iBAAiB,CAAC,GAAG,CAAC,
YAAY,CAAC,WAaW,CAAC,MAAK,iCAaiC,CAAC,OAAO,CAAC,cAAc,CAAC,IAAI,CAAC,MAAM,CAAC,
CAAC,IAAI,SAAS,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,
CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,C
AAC,CAAC,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,YAAY,
CAAC,SAAS,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,YAAY,CAAC,WAaW,CAAC,CAAC,C
AAC,MAAM,CAAC,MAAM,CAAC,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,SAAS,CAAC,YAAY,CAAC,SA
AS,CAAC,iBAAiB,CAAC,YAAY,CAAC,iBAAiB,CAAC,gBAAgB,CAAC,YAAY,CAAC,WAaW,CAAC,CAAC
,IAAI,GAAG,CAAC,OAAO,CAAC,gBAAgB,EAAE,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,
CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,K
AAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OA

AO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,OAAO,CAA
C,gBAAgB,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CA
AC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAA
G,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,
CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,K
AAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,CA
AC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,CAAC,EAAE,EAAE,CAA
C,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,IAAI,WAAW,CAAC,2BAA2B,EAAE,CAAC,IAAI,aAAa,
CAAC,WAAW,CAAC,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,
EAAE,CAAC,CAAC,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,IAAI,GAAG,CA
AC,CAAC,KAAK,CAAC,KAAK,CAAC,eAAe,CAAC,YAAY,CAAC,YAAY,CAAC,KAAK,CAAC,YAAY,CAA
C,GAAG,CAAC,kBAaKB,CAAC,YAAY,CAAC,WAAW,CAAC,WAAW,CAAC,YAAY,CAAC,SAAS,CAAC,W
AAW,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,CAAC,IA
AI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,WAAW,CAAC,GAAG,CAAC,YAAY,CAAC,Y
AAY,EAAC,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,UAAU,EAAE,CAAC,
OAAO,MAAM,CAAC,WAAU,CAAC,CAAC,SAAS,eAAe,CAAC,WAAW,CAAC,IAAI,CAAC,aAAa,CAAC,GA
AG,CAAC,CAAC,GAAG,OAAO,iBAAiB,GAAG,WAAW,CAAC,CAAC,GAAG,CAAC,qFAAqF,CAAC,CAAC,
OAAO,CAAC,CAAC,GAAG,CAAC,WAAW,CAAC,CAAC,GAAG,CAAC,mDAAmD,CAAC,CAAC,OAAO,EA
AE,CAAC,IAAI,YAAY,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,sBAAsB,GAAG,YAAY
,CAAC,MAAM,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,OAAO,qCAAqC,CAAC,SAAS,CAAC,WAA
W,CAAC,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,CAAU,IAAI,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAA
C,CAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,CAAC,GAAG,IAAI,EAAE,IAAI,EAAE,CAAC,CAAC,CAAC,CAA
C,SAAS,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,SAAS,EAAE,KAAK,CAAC,SAAS,CA
AC,iBAAiB,EAAE,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAA
C,IAAI,CAAC,EAAE,EAAE,CAAC,CAAC,GAAG,EAAC,CAAC,KAAI,CAAC,SAAS,CAAC,QAAO,CAAC,IA
AI,iBAAiB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,iBAAiB,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,EAA
E,CAAC,SAAS,EAAC,CAAC,KAAI,CAAC,SAAS,EAAE,SAAS,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,EA
AC,CAAC,IAAI,gBAAgB,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,
CAAC,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,gBAAgB,EAAE,
CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,WAAW,EAAE,CAAC,CAAC,CAAC,g
BAAgB,CAAC,iBAAiB,EAAE,CAAC,gBAAgB,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,gBAAgB,CAAC,IA
AI,OAAO,CAAC,gBAAgB,CAAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,O
AAO,CAAC,IAAI,YAAY,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,SAAS,CAAC,SAAS,CAAC,iBAAiB,CAAC
,iBAAiB,CAAC,QAAQ,CAAC,QAAQ,CAAC,YAAY,CAAC,aAAa,CAAC,WAAW,CAAC,gBAAgB,CAAC,GA
AG,CAAC,GAAG,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,YAAY,CAAC,G
AAG,CAAC,aAAa,CAAC,WAAW,CAAC,YAAY,CAAC,YAAY,EAAC,CAAC,KAAI,CAAC,WAAW,CAAC,YA
AY,EAAC,CAAC,OAAO,CAAC,CAAC,SAAS,uBAU,IAAI,EAAE,CAAC,GAAG,CAAC,sBAAsB,CAAC,OAAO,I
AAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,OAAO,IAAI,cAAc,CAAC,OAAO,CAAC,I
AAI,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,cAAc,CAAC,OAA
O,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,C
AAC,CAAC,GAAG,QAAQ,EAAE,CAAC,CAAC,MAAK,WAAW,CAAC,SAAS,kCAaK,EAAE,CAAC,GAAG,
mBAAmB,CAAC,OAAO,GAAG,qBAaQB,CAAC,OAAO,QAAQ,CAAC,0IAA0I,EAAC,CAAC,SAAS,4BAA4B,
CAAC,MAAM,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAA
C,kDAaKD,CAAC,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,GAAG,sBAAsB,EAAE,aAAa,EAAE,EAAE,M
AAM,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,mCAAmC,CAAC,CAAC,OAAO,WAAW,CA
AC,OAAO,CAAC,KAAK,GAAG,CAAC,sBAAsB,EAAE,kCAaK,EAAE,EAAE,MAAM,CAAC,CAAC,GAAG,
CAAC,cAAc,CAAC,MAAM,CAAC,mCAAmC,CAAC,CAAC,OAAO,WAAW,CAAC,OAAO,CAAC,IAAI,IAAI,
CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,IAAI,GAAG,MAAM,C

AAC,CAAC,GAAG,CAAC,mCAAmC,CAAC,MAAM,CAAC,sEAAsE,CAAC,CAAC,OAAO,WAAW,CAAC,KA
AK,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,
CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,GAAG,CAAC,2BAA2B,CAAC,MAAM,CAAC,+BAA+B,CA
AC,CAAC,OAAO,WAAW,CAAC,MAAM,CAAC,GAAG,KAAK,CAAC,CAAC,kCAaKc,GAAE,CAAC,OAAO,
CAAC,IAAI,YAAY,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CA
AC,CAAC,CAAC,GAAG,YAAY,EAAE,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,OAAO,CAAC,IAAI,CAAC,iB
AAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,EAAE,
CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,cAAc,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,
MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,aAAa,CAAC,
MAAM,CAAC,CAAC,KAAK,WAAW,CAAC,CAAC,KAAK,CAAC,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,
CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,
uBAAuB,EAAE,CAAC,GAAG,CAAC,sBAAsB,CAAC,4CAA4C,EAAE,CAAC,sBAAsB,CAAC,MAAM,CAAC,
CAAC,CAAC,YAAY,CAAC,sBAAsB,CAAC,GAAG,CAAC,CAAC,EAAC,CAAC,CAAC,SAAS,aAAa,CAAC,M
AAM,CAAC,MAAM,CAAC,CAAC,OAAO,4BAA4B,CAAC,MAAM,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,
SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAA
C,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,EAAE,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CA
AC,IAAI,WAAW,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,KAAK,GA
AG,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,GA
AG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,
CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,C
AAC,KAAK,CAAC,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CA
AC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAA
C,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,
KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,K
AAK,EAAE,CAAC,OAAO,MAAM,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,K
AAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KA
AK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KA
AK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KA
AK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAA
K,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAA
K,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,
EAAE,CAAC,KAAK,EAAE,CAAC,OAAM,CAAC,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,K
AAK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,K
AAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KA
AK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,KAA
K,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,IAAI,CAAC,KAAK,E
AAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EA
AE,CAAC,KAAK,EAAE,CAAC,OAAO,UAAU,CAAC,KAAK,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,KAA
K,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,
CAAC,OAAO,IAAI,CAAC,KAAK,CAAC,CAAC,OAAO,OAAO,CAAC,KAAK,CAAC,CAAC,OAAO,KAAK,C
AAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CA
AC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAA
C,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,CAAC,CAAC
,OAAO,GAAG,CAAC,KAAK,GAAG,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,
KAAK,CAAC,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,O
AAO,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,GAAG,OAAO,SAAS,GAAG,QAAQ,CAAC,OAAO,SAAS,CA
AC,qBAaqB,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,OA
AM,CAAC,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC,IAAI,KAAK,

CAAC,IAAI,oBAAoB,CAAC,CAAC,IAAI,CAAC,OAAO,CAAC,+CAA+C,CAAC,SAAS,CAAC,QAAQ,CAAC,S
AAS,CAAC,QAAQ,CAAC,CAAC,IAAI,aAAa,CAAC,CAAC,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,YAAY,
CAAC,GAAG,CAAC,gCAAgC,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,yBAAyB,CAAC,GAAG,CA
AC,iDAAIiD,CAAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,mBAAmB,CA
AC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,6BAA6B,CAAC,GAAG,CAAC,qCAAqC,CAAC,GAAG,CAA
C,uBAAuB,CAAC,GAAG,CAAC,mCAAmC,CAAC,GAAG,CAAC,qCAAqC,CAAC,GAAG,CAAC,2BAA2B,CA
AC,GAAG,CAAC,gCAAgC,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,SA
AS,CAAC,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,UAAU,EAAE,MAAM,CAAC,YAAY,CAAC,CAAC,GAA
G,CAAC,oBAAoB,CAAC,GAAG,CAAC,qBAAqB,CAAC,GAAG,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CA
AC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,EAAE,CAAC,IAAI,kBAakB,CAAC,MAA
M,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAAoB,CAA
C,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C
AAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CA
AC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CA
AC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,C
AAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAakB,CAA
C,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAAo
B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,C
AAC,CAAC,CAAC,IAAI,gBAAgB,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC
,gBAAgB,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,E
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,C
AAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,M
AAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA
AC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,
MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC
,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAA
G,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,O
AAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,
CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA
I,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,
MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAA
C,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAA
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CA
AC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CA
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,M
AAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA
AC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC
,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GA
AG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,c
AAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,C

AAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,
OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,
SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SA
AS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,C
AAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAA
C,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CA
AC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KA
AK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,C
AAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,
CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CA
AC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAA
c,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KA
AK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,C
AAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,
CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MA
AM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,
IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,M
AAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAA
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CA
AC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GA
AG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,
QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAA
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA
AI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAA
C,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CA
AC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAA
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC
,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CA
AC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,C
AAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAA
C,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAA
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CA
AC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,qBAaQB,CAAC,MAAM,CAAC,u
BAAuB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qBAaQB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,M
AAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,
IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,C
AAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,
SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,C
AAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC
,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,
MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CA

AC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,C
AAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,M
AAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAA
I,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OOAO,CAAC,CAAC,UAAU,CAAC,O
AAM,CAAC,KAAC,CAAC,MAAM,CAAC,OOAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,C
AAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAA
C,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,
CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM
,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAA
C,CAAC,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,WAA
W,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAA
U,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAA
C,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAA
C,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MA
AM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I
AAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,C
AAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAA
C,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OOAO,CAAC,CAAC,UAAU,CAAC,OAAM,
CAAC,KAAC,CAAC,MAAM,CAAC,OOAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,E
AAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,
CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,
MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC
,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAA
C,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC
,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAA
C,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBA
AoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAoB,CAAC,MAAM,CAA
C,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,
SAAS,CAAC,CAAC,CAAC,IAAI,oBAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OOA
M,CAAC,oBAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,C
AAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAoB,CAAC,MAAM,CAAC,sBA
AsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAA
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA
AI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CA
AC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC
,SAAS,CAAC,CAAC,CAAC,IAAI,OOAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,C
AAC,OOAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,
CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KA
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,
MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC

,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAA
C,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAA
C,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAA
I,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UA
AU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,C
AAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,K
AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,
OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SA
S,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC
,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,
KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAA
C,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAC,CA
AC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MA
AM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,C
AAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,
CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CA
AC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,C
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAA
U,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CA
AC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,C
AAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,
MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAA
M,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,C
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OA
AM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CA
AC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC
,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,C
AAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,
CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAA
C,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ
,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,C
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU
,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAA
C,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAA
C,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAA
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA
AI,kBAAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAAkB,CAAC,MA
AM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IA
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,
OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,
CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,K
AAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CA
AC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,C

AC,OAAM,CAAC,yCAAyC,CAAC,MAAM,CAAC,2CAA2C,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,2BAA2B,CAAC,MAAM,C
AAC,6BAA6B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,C
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,
CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CA
AC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CA
AC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,C
AAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,M
AAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA
C,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,
MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,
OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4BAA4B,CAAC,MAAM,CAAC,8B
AA8B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,4BAA4B,CAAC,MAAM,CAAC,8BAA8B,CAAC,CAAC,MA
AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I
AAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,C
AAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAA
C,SAAS,CAAC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM,CAAC,8CAA8C,CAAC,CAAC,KAAK,CAAC,IAA
I,8BAA8B,CAAC,MAAM,CAAC,gCAAgC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,
KAAK,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,
CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,
IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,C
AAC,OAAO,CAAC,+BAA+B,CAAC,MAAM,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,OAAM,CAAC,
qBAaqB,CAAC,SAAS,SAAS,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,EAAE,CAAC,GAAG,CAAC,S
AAS,CAAC,qBAaqB,CAAC,UAAU,CAAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAuB,GAAG,eAAe,CA
AC,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,sBAAsB,CAAC,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAA
C,WAAW,EAAE,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,MA
AM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,KAAK,EAAE,CAAC,GAA
G,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,IAAI,CAAC,GAAG,K
AAK,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAAC,GAA
G,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,EAAE,CAAC,OAAO,GAAE,CAAC,G
AAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,YAAY,CAAC,CAAC
,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,EAAE,EAAC
,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,GAAE,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,G
AAE,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,SAAS,IAAI,CAAC,MAAM,CAAC,QA
AQ,CAAC,CAAC,GAAG,QAAQ,EAAE,aAAa,EAAE,MAAM,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GA
AG,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,aAAa,CA
AC,YAAY,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,IAAI,UAAU,CAAC,MAAM,CAAC,CAAO,CAAC,GA
AG,aAAa,CAAC,CAAE,KAAI,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAIc,GAAG,MAAM,CAAC,QAAQ,C
AAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,KAAI,CAAC,KAAK,C
AAC,MAAM,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,EAAC,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CA
AC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CA
AC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CA
AC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,EAAE,GAAE,CAAC,CAAC,GAAG,sBA
AsB,CAAC,CAAC,aAAa,CAAC,KAAK,CAAC,OAAO,CAAC,UAAU,GAAE,CAAC,GAAG,EAAE,CAAC;AAC

n5mE;ACA;ACA,EAAE,OOAO,6BAA6B,CAAC,KAAK;AAC5C,CAAC;AACD,EAAE;AACF,CAAC,GAAG,CAAC;AAEH,cAAc,GAAG,6BAA6B;::;AChBzC,MAAM,kBAaKB,GAAG,ikGAaIkG;::;ACCnmG,IAAI,iBAaIB,GAAG,CAAC,WAAW;AACpC,EAAE,IAAI,UAAU,GAAG,OOAO,QAAQ,KAAK,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC,GAAG,GAAG,SAAS,CAAC;AACtH,EAAE,IAAI,OOAO,UAAU,KAAK,WAAW,EAAE,UAAU,GAAG,UAAU,IAAI,UAAU,CAAC;AAC/E,EAAE;AACF,SAAS,iBAaIB,EAAE;AAC5B,EAAE,iBAaIB,GAAG,iBAaIB,IAAI,EAAE,CAAC;AAC9C;ACA,IAAI,MAAM,CAAC,OOAO,iBAaIB,GAAG,WAAW,CAAC,iBAaIB,CAAC,EAAE,CAAC,IAAI,mBAaMB,CAAC,kBAaKB,CAAC,MAAM,CAAC,OOAO,CAAC,CAAC,IAAI,OOAO,CAAC,SAAS,OOAO,CAAC,MAAM,CAAC,CAAC,mBAaMB,CAAC,OOAO,CAAC,kBAaKB,CAAC,OOAO,CAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAaGB,CAAC,IAAI,KAAK,CAAC,SAAS,MAAM,CAAC,OOAO,CAAC,CAAC,MAAM,OOAO,CAAC,CAAC,IAAI,kBAaKB,CAAC,KAAK,CAAC,IAAI,qBAaQB,CAAC,KAAK,CAAC,IAAI,mBAaMB,CAAC,KAAK,CAAC,IAAI,oBAaOB,CAAC,KAAK,CAAC,kBAaKB,CAAC,OOAO,MAAM,GAAG,QAAQ,CAAC,qBAaQB,CAAC,OOAO,aAAa,GAAG,UAAU,CAAC,mBAaMB,CAAC,OOAO,OOAO,GAAG,QAAQ,EAAE,OOAO,OOAO,CAAC,QAAQ,CAAC,IAAI,GAAG,QAAQ,CAAC,oBAaOB,CAAC,CAAC,kBAaKB,EAAE,CAAC,mBAaMB,EAAE,CAAC,qBAaQB,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,OOAO,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OOAO,eAAe,CAAC,IAAI,KAAK,KAAK,CAAC,SAAS,CAAC,UAAU,CAAG,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,GAAG,mBAaMB,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,eAAe,CAACL,IAAe,CAAC,OOAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAI,CAAC,eAAe,CAAC,SAAS,CAAC,IAAG,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACC,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OOAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OOAO,GAAG,CAAC,CAAC,GAAG,OOAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,OOAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OOAO,CAAC,IAAI,CAAC,CAAC,mBAaMB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAAY,UAAU,CAAC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OOAO,CAAC,IAAI,CAAC,CAAC,oBAaOB,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,OOAO,CAAC,MAAM,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OOAO,4BAA4B,EAAC,CAAC,KAAK,GAAG,oBAaOB,CAAC,CAAC,GAAG,OOAO,IAAI,EAAE,WAAW,CAAC,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,OOAO,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,OOAO,UAAU,GAAG,UAAU,CAAC,CAAC,OOAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OOAO,IAAI,GAAG,QAAQ,CAAC,CAAC,OOAO,IAAI,CAAC,CAAC,GAAG,OOAO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WAAU,CAAC,KAAK,GAAG,OOAO,SAAS,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,OOAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,EAAC,CAAC,GAAG,OOAO,KAAK,GAAG,WAAW,CAAC,CAAC,GAAG,OOAO,OOAO,GAAG,WAAW,CAAC,OOAO,CAAC,EAAE,CAAC,OOAO,CAAC,GAAG,CAAC,KAAK,CAAC,OOAO,CAAC,IAAI,CAAC,OOAO,CAAC,KAAK,CAAC,OOAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAAK,GAAG,kBAaKB,EAAE,qBAaQB,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAAC,KAAI,CAAC,KAAK,GAAG,OOAO,QAAQ,GAAG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,GAAG,UAAU,CAAC,CAAC,eAAe,

CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,GAAG,CAAC,CAAC,CAAC,EAA C,CAAC,KAAI,CAAC,eAAe,CAAC,GAAE,CAAC,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GA AG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,G AAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAAqB,CA AC,CAAC,UAAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IA AI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAA C,SAAS,CAAC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CA AC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,a AAa,CAAC,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,G AAG,CAAC,MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,Q AAQ,CAAC,CAAC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,G AAG,CAAC,IAAI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAQ,IAAI,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC ,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UA AU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,IAAI,eAAe,CAA C,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,e AAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAA C,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAAa,CAAC,CAAC,WAAW,CA AC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAAM,C AAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,M AAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG, OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAAiC,EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,K AAK,CAAC,KAAK,CAAgB,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,SAAS,CAA C,CAAC,KAAK,CAAC,oBAAoB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QAAQ,CAAC,KAAK,CAAC,CAAC, IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,+BAA+B,C AAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,C AAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,QAAQ,CAAC,SAAS,GAAG,C AAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EAAE,GAAG,GAAG,SAAS,EAAE, GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,C AAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,GAAG,CAAC,G AAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAA C,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAaKB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OA AO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,QAAQ,C AAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,CAAC,OAAO,OAAO,CAAC,G AAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAAK,CAAC,CAAC,IAAI,KAAK, CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,C AAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,SAAS,CAAC,GAAG, CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,C AAC,KAAK,CAAC,SAAS,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC, CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,EAAC,CAAC,CAA C,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,kBA AkB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,YAAY,CAAC,KAAK,CAAC,CAAC,OA AO,GAAG,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,QAAQ ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAK,CAAC,SAAS,IAAI,CAAC,CA AC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU,GAAG,QAAQ,CAAC,GAAG, UAAU,EAAE,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,KAAK,CAAC,CAAC,OAAO,U AAU,CAAC,OAAO,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,SAAc,CAAC,CAAC,CAAC,IA

AI, WAAW, CAAC, OAAO, WAAW, GAAG, WAAW, CAAC, IAAI, WAAW, CAAC, MAAM, CAAC, CAAC, SAAS, C
AAC, SAAS, iBAAiB, CAAC, IAAI, CAAC, GAAG, CAAC, cAAc, CAAC, CAAC, IAAI, MAAM, CAAC, GAAG, CAAC
, cAAc, CAAC, IAAI, MAAM, CAAC, GAAG, CAAC, MAAM, IAAI, CAAC, MAAM, CAAC, EAAE, EAAE, MAAM, E
AAE, MAAM, CAAC, CAAC, EAAE, MAAM, CAAC, GAAG, MAAM, CAAC, GAAG, CAAC, EAAE, EAAE, IAAI, CA
AC, QAAQ, EAAE, WAAW, CAAC, CAAC, OAAO, WAAW, CAAC, MAAM, CAAC, IAAI, CAAC, QAAQ, CAAC, GA
AG, CAAC, MAAM, CAAC, CAAC, CAAC, KAAI, CAAC, IAAI, GAAG, CAAC, EAAE, CAAC, MAAM, GAAG, CAA
C, MAAM, CAAC, CAAC, IAAI, EAAE, CAAC, IAAI, CAAC, GAAG, EAAE, CAAC, CAAC, GAAG, EAAE, EAAE, CA
AC, GAAG, CAAC, CAAC, CAAC, GAAG, EAAE, MAAM, CAAC, YAAy, CAAC, EAAE, CAAC, CAAC, QAAQ, CA
AC, IAAI, EAAE, CAAC, IAAI, CAAC, GAAG, EAAE, CAAC, CAAC, EAAE, CAAC, GAAG, CAAC, EAAE, CAAC, G
AAG, GAAG, GAAG, CAAC, CAAC, GAAG, EAAE, MAAM, CAAC, YAAy, CAAC, CAAC, EAAE, CAAC, EAAE, G
AAG, CAAC, CAAC, EAAE, CAAC, CAAC, QAAQ, CAAC, IAAI, EAAE, CAAC, IAAI, CAAC, GAAG, EAAE, CAAC,
CAAC, EAAE, CAAC, GAAG, CAAC, EAAE, CAAC, GAAG, GAAG, GAAG, CAAC, CAAC, EAAE, CAAC, CAAC, E
AAE, CAAC, EAAE, GAAG, EAAE, CAAC, EAAE, EAAE, CAAC, CAAC, GAAE, CAAC, KAAI, CAAC, EAAE, CAAC
, CAAC, EAAE, CAAC, CAAC, GAAG, EAAE, CAAC, EAAE, EAAE, EAAE, CAAC, EAAE, EAAE, CAAC, CAAC, IAA
I, CAAC, GAAG, EAAE, CAAC, CAAC, GAAE, CAAC, GAAG, EAAE, CAAC, KAAK, CAAC, CAAC, GAAG, EAAE,
MAAM, CAAC, YAAy, CAAC, EAAE, EAAC, CAAC, KAAI, CAAC, IAAI, EAAE, CAAC, EAAE, CAAC, KAAK, CA
AC, GAAG, EAAE, MAAM, CAAC, YAAy, CAAC, KAAK, CAAC, EAAE, EAAE, EAAE, CAAC, KAAK, CAAC, EAA
E, CAAC, IAAI, EAAC, CAAC, CAAC, CAAC, OAAO, GAAG, CAAC, SAAS, YAAy, CAAC, GAAG, CAAC, cAAc, CA
AC, CAAC, OAAO, GAAG, CAAC, iBAAiB, CAAC, MAAM, CAAC, GAAG, CAAC, cAAc, CAAC, CAAC, EAAE, CA
AC, SAAS, iBAAiB, CAAC, GAAG, CAAC, IAAI, CAAC, MAAM, CAAC, eAAe, CAAC, CAAC, GAAG, EAAE, eAAe,
CAAC, CAAC, CAAC, CAAC, OAAO, CAAC, CAAC, IAAI, QAAQ, CAAC, MAAM, CAAC, IAAI, MAAM, CAAC, M
AAM, CAAC, eAAe, CAAC, CAAC, CAAC, IAAI, IAAI, CAAC, CAAC, CAAC, CAAC, CAAC, GAAG, CAAC,
MAAM, CAAC, EAAE, CAAC, CAAC, CAAC, IAAI, CAAC, CAAC, GAAG, CAAC, UAAU, CAAC, CAAC, CAAC, CA
AC, GAAG, CAAC, EAAE, KAAK, EAAE, CAAC, EAAE, KAAK, CAAC, CAAC, IAAI, EAAE, CAAC, GAAG, CAAC,
UAAU, CAAC, EAAE, CAAC, CAAC, CAAC, CAAC, CAAC, KAAK, EAAE, CAAC, CAAC, CAAC, IAAI, GAAG, EA
AE, CAAC, CAAC, EAAE, CAAC, KAAI, CAAC, GAAG, CAAC, EAAE, GAAG, CAAC, CAAC, GAAG, MAAM, EAA
E, MAAM, CAAC, MAAM, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, EAAC, CAAC, KAAK, GAAG, CAAC, EAAE
, IAAI, CAAC, CAAC, GAAG, MAAM, CAAC, CAAC, EAAE, MAAM, CAAC, MAAM, IAAI, CAAC, MAAM, EAAE, C
AAC, CAAC, GAAG, CAAC, CAAC, EAAE, CAAC, CAAC, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAA
C, CAAC, CAAC, GAAE, CAAC, KAAK, GAAG, CAAC, EAAE, KAAK, CAAC, CAAC, GAAG, MAAM, CAAC, CAA
C, EAAE, MAAM, CAAC, MAAM, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, EAAE, EAAE,
CAAC, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, EAAE, CAAC, CAAC, EAAE, CAAC, IAA
I, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, CAAC, GAAE, CAAC, KAAI, CAAC, GAAG, MAAM,
CAAC, CAAC, EAAE, MAAM, CAAC, MAAM, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, E
AAE, EAAE, CAAC, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, EAAE, EAAE, CAAC, EAA
E, CAAC, IAAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, EAAE, CAAC, CAAC, EAAE, CAAC, I
AAI, CAAC, MAAM, EAAE, CAAC, CAAC, GAAG, CAAC, CAAC, CAAC, GAAE, CAAC, CAAC, IAAI, CAAC, MAA
M, CAAC, CAAC, CAAC, CAAC, OAAO, MAAM, CAAC, QAAQ, CAAC, SAAS, YAAy, CAAC, GAAG, CAAC, MAA
M, CAAC, eAAe, CAAC, CAAC, OAAO, iBAAiB, CAAC, GAAG, CAAC, MAAM, CAAC, MAAM, CAAC, eAAe, CAA
C, CAAC, SAAS, kBAakB, CAAC, KAAK, CAAC, MAAM, CAAC, CAAC, KAAK, CAAC, GAAG, CAAC, KAAK, CA
AC, MAAM, EAAC, CAAC, SAAS, OAAO, CAAC, CAAC, CAAC, QAAQ, CAAC, CAAC, GAAG, CAAC, CAAC, QAA
Q, CAAC, CAAC, CAAC, CAAC, CAAC, EAAE, QAAQ, CAAC, CAAC, CAAC, SAAQ, CAAC, OAAO, CAAC, CAAC, I
AAI, MAAM, CAAC, KAAK, CAAC, MAAM, CAAC, MAAM, CAAC, OAAO, CAAC, MAAM, CAAC, OAAO, CAAC,
OAAO, CAAC, OAAO, CAAC, SAAS, 0BAA0B, CAAC, GAAG, CAAC, CAAC, MAAM, CAAC, GAAG, CAAC, MAA
M, CAAC, OAAO, CAAC, CAAC, KAAK, CAAC, IAAI, SAAS, CAAC, GAAG, CAAC, CAAC, MAAM, CAAC, QAAQ,
CAAC, CAAC, MAAM, CAAC, IAAI, UAAU, CAAC, GAAG, CAAC, CAAC, MAAM, CAAC, QAAQ, CAAC, CAAC,
MAAM, CAAC, IAAI, UAAU, CAAC, GAAG, CAAC, CAAC, MAAM, CAAC, QAAQ, CAAC, CAAC, MAAM, CAAC, I
AAI, UAAU, CAAC, GAAG, CAAC, CAAC, MAAM, CAAC, SAAS, CAAC, CAAC, OAAO, CAAC, IAAI, WAAW, CA

AC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,WAAW,CAAC,GAAG,CAA
C,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,CAAC,CAAC,MAAM,
CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,EAAC,CAAC,IAAI,cAAc,CAAC,MAA
M,CAAC,gBAAgB,CAAC,EAAE,QAAQ,CAAC,IAAI,SAAS,CAAC,IAAI,YAAY,CAAC,EAAE,CAAC,IAAI,UA
AU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,aAAa,CAAC,EAAE,CAA8B,UAAU,CAAC,IA
AI,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,kBAaKB,GAAE,CAAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAA
E,CAAC,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,QAAQ,CAAC,EAA
E,UAAU,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MA
AM,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,QAAQ,CAAC,
CAAC,KAAK,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,YAAY,EAAC,CAAC,SAAS,WAAW,EAAE,CAAY
B,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,CAAC,oBAAoB,CAAC,UAAU,EAAC,CAAC,SA
AS,OAAO,EAAE,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SA
AS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAA
C,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,MAAM,CAAC,SA
AS,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,aAAa,EAAC,CAAC,SAAS,WAAW,CA
AC,EAAE,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,EAAE,EAAC,CAAC,SAAS,YAAY,CAAC,EAAE,CAAC,
CAAC,aAAa,CAAC,OAAO,CAAC,EAAE,EAAC,CAAC,IAAI,eAAe,CAAC,CAAC,CAA+B,IAAI,qBAAqB,CA
AC,IAAI,CAAC,SAAS,gBAAgB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBA
AwB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,CAAC,SAAS,mBAAm
B,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAAwB,CAAC,CAAC,CAAC,MA
AM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,GAAG,eAAe,EAAE,CAAC,CAAC,CAA+F,GAAG,qB
AAqB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBAAqB,CAAC,qBAAqB,CAAC,IAAI,CAAC,QAAQ,GAAE,CAAC,
CAAC,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,EAAE,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,EAA
E,CAAC,SAAS,KAAK,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,
CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,K
AAK,CAAC,IAAI,CAAc,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,IAAI,CAAC,CAAC,IAAI,W
AAW,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,S
AAS,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,MAAM,CAAC,SAAS,CAAC,UAAU,CAAC,G
AAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,GAAG,CAAC,
CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QA
AQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OA
AO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,wBAAwB,CAAC,GAAG,CAAC,SAAS,
CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EAAC,CAAC,SAAS,SAAS,CAAC,IAAI,C
AAC,CAAC,GAAG,CAAC,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,
UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAI,CAAC,MA
AK,iDAAiD,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC,GAAG,EAAC,CAAC,CAAC,SAAS,gB
AAgB,EAAE,CAAC,GAAG,CAAC,UAAU,GAAG,kBAaKB,EAAE,qBAAqB,CAAC,CAAC,CAAC,GAAG,OAA
O,KAAK,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,OAAO,KAAK,CAAC,cAAc,C
AAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,GAAG,CAA
C,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,CAAC,OAAO,QAAQ,
CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAA
C,CAAC,CAAC,CAAC,KAAI,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CAAC,SAAS,OAAO,CA
AC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,CAAC,IAAI,UAAU,
CAAC,QAAQ,CAAC,EAAC,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,OAAO,C
AAC,OAAO,EAAE,CAAC,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,
SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,eAAe,CAAC,Q
AAQ,CAAC,MAAM,CAAC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,KAAK,C
AAC,CAAC,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,0BAA0B,

CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,
CAAC,mBAAmB,CAAmB,EAAC,CAAC,gBAAgB,CAAmB,CAAC,CAAC,SAAS,yBAAyB,CAAC,MAAM,CAA
C,CAAC,eAAe,CAAC,MAAM,CAAC,UAAU,CAAC,EAAC,CAAC,SAAS,sBAAsB,CAAC,QAAQ,CAAC,CAA
C,OAAO,gBAAgB,EAAE,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,WAAW,CAAC,WAAW,CA
AC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SAAS,MAAM,CAAC,CAAC,
GAAG,CAAC,yCAAyC,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,SAA
S,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAAoB,GAAG,UAAU,EAAE,C
AAC,SAAS,CAAC,cAAc,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,OAAO,KAAK,GAAG,UAAU,
CAAC,CAAC,OAAO,KAAK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAA
C,SAAS,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAAoB,CAAC,QAAQ,CAAC,IAAI,CAAC
,CAAC,OAAO,MAAM,CAAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,iCAAi
C,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,
CAAC,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,GAA
G,MAAM,CAAC,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,iBAAiB,CA
AC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,
qDAAqD,CAAC,CAAC,CAAC,CAAC,OAAO,KAAK,CAAC,CAAC,gBAAgB,EAAE,CAAC,KAAK,CAAC,kBA
AkB,CAAC,CAAC,OAAM,EAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS,CAAC,CAAC,MAAM,SAAS,CAAC,M
AAM,CAAC,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAAK,EAAE,CAAC,GAAG,OAAO,QAA
Q,EAAE,UAAU,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,C
AAC,IAAI,CAAC,GAAG,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QAAQ,CAAC,GAAG,GAAG,SAA
S,CAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAAI,CAAC,SAAS,CAAC,GAAG,CA
AC,IAAI,CAAC,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,KAAI,CAAC,IAAI,CAAC,QAAQ,CAAC,G
AAG,GAAG,SAAS,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAA
E,CAAC,KAAK,GAAE,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,MAAM
,CAAC,UAAU,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,yBAAyB,EAAE,C
AAC,OAAO,MAAM,CAAC,MAAM,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,C
AAC,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,UAAU,CAAC,KAAK,GAAG,EAAE,CAAC,CAAC,0BAA0B,CA
AC,UAAU,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,SAAS,uBA
AuB,CAAC,aAAa,CAAC,CAAC,IAAI,OAAO,CAAC,yBAAyB,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAA
C,GAAG,aAAa,CAAC,WAAW,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,O
AAO,EAAE,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,OAAO,EAAE,CAAC,CAA
C,EAAE,CAAC,OAAO,CAAC,CAAC,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iBAAiB,CAAC,aAAa,CAAC,
SAAS,CAAC,CAAC,IAAI,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC,OAAO,CAAC,IAAI,CAA
C,GAAG,CAAC,aAAa,CAAC,iBAAiB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,yBAAy
B,CAAC,OAAO,CAAC,CAAC,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,OAAO,KAAK,CAAC,
IAAI,QAAQ,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAA
E,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,O
AAO,CAAC,MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,EAAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAA
C,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBAAiB,CAAC,MAAM,CAAC,CAAC,CAAC,CA
AC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAC,CAAC,KAAI,CAAC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAC,
CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,C
AAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CA
AC,OAAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,YAAY,CAA
C,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,O
AAO,GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,QAA
Q,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,EAAE,SAAS,SAAS,CAAC,
EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,
CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,M

,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAA M,CAAC,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG, CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,gBAAgB,CAAC,MAAM,CAAC,kB AaKB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,gBAAgB,CAAC,MAAM,CAAC,kBAaKB,CAAC,CAAC,MA AM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC, IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CA AC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC, SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,C AAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,E AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC, CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK, CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC, MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC ,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C AAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CA AC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CA AC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,C AAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,G AAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC, MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM ,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA I,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAA C,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S AAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CA AC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EA AE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,C AAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,C AAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC, MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC ,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C AAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CA AC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CA AC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,C AAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,G AAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CA AC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAA C,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,C AAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAA M,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI ,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,O AAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG, CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAA gB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,C AAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI, OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC, SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA AS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,a

AAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KA
AK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CA
AC,UAAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAA
K,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAA
C,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CA
AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC
,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM
,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK
,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAA
U,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA
C,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CA
AC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,
MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA
AC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,M
AAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,I
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAA
C,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GA
AG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iB
AAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,
CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA
I,YAAy,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAy,CAAC,MAAM,CAA
C,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,qBAAqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,UAAU,CAAC,OAAM
,CAAC,qBAAqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,C
AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,
KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS
,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAA
W,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,
CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,Q
AAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,K
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,U
AAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CA
AC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,
CAAC,YAAy,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAy,CAAC,CAAC,
MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA
AC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MA
AM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IA
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAy,CAAC,CAAC,UAAU,CAAC,
OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAy,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG
,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAA
M,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAA
C,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,WA
AW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,WAAW,CAAC,MAAM,CAAC,a
AAa,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAA
S,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,I
AAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KA
AK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,

UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC
,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM
,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC
,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAA
M,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,C
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAA
M,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,
EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAA
C,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KA
AK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CA
AC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,C
AAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,
CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,C
AAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,
CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,
IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAA
C,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,
MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,
MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,
CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,C
AAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,C
AAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,
MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA
C,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM
,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAA
C,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM
,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,
EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAA
C,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAA
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAA
C,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CA
AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C
AAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CA
AC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAA
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,C
AAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,I
AAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,
OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM
,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,
MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAA
C,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S
AAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CA
AC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,C

AAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAC,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,OAAO,CAAC,+BAA+B,CAAC,MAAM,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,OAAM,CAAC,qBAaqB,CAAC,SAAS,SAAS,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,qBAaqB,CAAC,UAAS,CAAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,KAAC,EAAE,CAAC,GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,IAAI,CAAC,GAAG,KAAC,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,EAAE,CAAC,OAAO,GAAE,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,GAAE,CAAC,CAAC,CAAC,EAAC,CAAC,KAAC,CAAC,KAAC,GAAE,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,EAAE,GAAE,CAAC,CAAC,GAAG,EAAE,CAAC;AAC334B;AACa;AACa,EAAE,OAAO,iBAAiB,CAAC,KAAC;AACChC,CAAC;AACD,EAAE;AACF,CAAC,GAAG,CAAC;AAEH,cAAc,GAAG,iBAAiB;;;ICuBHM,+BAAa;IAK5C,qBAAmB,IAAqD;QAAxE,YACE,iBAAO,SAIR;QALkB,UAAI,GAAJ,IAAI,CAAiD;;QAHhE,sBAAgB,GAAG,CAAC,CAAC;QAK3B,KAAC,IAAI,CAAC,IAAI,CAAC,oBAAoB,CAAC,YAAY,CAAC,CAAC;QACID,kBAakB,GAAG,KAAC,IAAI,CAAC,IAAI,CAAC,eAAe,EAAE,CAAC;QACtD,KAAC,IAAI,CAAC,SAAS,GAAG,IAAIC,oBAAW,CAAC,KAAC,EAAEC,eAAM,EAAE,CAAC,CAAC;;KACID;IAED,2BAAK,GAAL,UAAAM,MAAkC,EAAE,KAAe,EAAE,KAAe;QAExE,IAAM,MAAM,GAAG,EAAC,EAAE,EAAE,IAAI,CAAC,gBAAgB,EAAE,EAAC,CAAC;QAC7C,IAAI,CAAC,IAAI,CAAC,MAAM,EAAE,MAAM,EAAE,KAAC,EAAE,KAAC,EAAE,CAAC,CAAC,CAAC;QAC3C,OAAO,MAAM,CAAC;KACf;IAED,gCAAU,GAAV;QACE,OAAO,IAAI,CAAC,SAAS,CAAC,UAAU,EAAE,CAAC;KACpC;IAEK,0BAAI,GAAV,UAAW,CAAa;;;gBACbB,KAAC,GAAGrH,aAAI,CAAC,GAAG,EAAE,CAAC;gBACzB,CAAC,EAAE,CAAC;gBACE,QAAQ,GAAGA,aAAI,CAAC,GAAG,EAAE,GAAG,KAAC,CAAC;gBACpC,sBAAO,EAAC,QAAQ,UAAA,EAAC,EAAc;;;KACnB;IAED,0BAAI,GAAJ,UACI,MAAc,EAAE,MAAkC,EAAE,KAAe,EACnE,KAAe,EAAE,QAAgB;QACnC,IAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;QACnC,IAAI,KAAC,KAAC,QAAQ,EAAE;YACtB,IAAM,WAAW,GAAG,MAAsB,CAAC;YAC3C,IAAI,CAAC,SAAS,CAAC,GAAG,CACd,MAAM,EACN,EAA

C,EAAE,IAAA,EAAE,WAAW,aAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,YAA Y,EAAE,IAAI,EAAE,QAAQ,UAAA,EAAC,CAAC,CAAC;YACnE,OAAO;SACR;QAED,IAAM,IAAI,GAAGA,aAAI,CAAC,aAA a,CAAC,KAAK,CAAC,CAAC;QACvC,IAAM,QAAQ,GAAG,IAAI,GAAGA,aAAI,CAAC,eAAe,CAAC,KAAK,C AAC,CAAC;QACpD,IAAM,YAA Y,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC;QAEj D,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,IAAA,EAAE,YAA Y,cAAA,EAAE,KA AK,OAAA,EAAE,KAAK,OAAA,EAAE,QAAQ,UAAA,EAAC,CAAC,CAAC;QAEvE,IAAI,CAAC,IAAI,CAAC,I AAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAA Y,CAAC,CAAC;QAEtD,IAAI,MAAM,IAAI,IAAI,EA AE;YACiB,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,GAAG,CACHB,IAAI,UAAU,CACT,MAAkC,CAAC,MAA M,EACzC,MAAkC,CAAC,UAAU,EAAE,QAAQ,CAAC,EAC7D,YAA Y,CAAC,CAAC;SACnB;KACF;IAEK,0B AAI,GAAV,UAAW,MAAc;;;gBACvB,sBAAO,IAAI,CAAC,QAAQ,CAAC,MAAM,CAAC,EAAC;;;KAC9B;IAE D,8BAAQ,GAAR,UAA S,MAAc;QACf,IAAA,+BACwB,EADvB,8BAA Y,EAAE,gBAAK,EAAE,gBAAK,EAAE, 4BACL,CAAC;QAC/B,IAAI,KAAK,KAAK,QAAQ,EAAE;YACtB,OAAO,WAAW,CAAC;SACpB;QACD,IAAM ,KAAK,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,KAAK,CACHc,YAA Y,EACZ,YAA Y,GAAGA,aAAI,C AAC,aAAa,CAAC,KAAK,CAAC,GAAGA,aAAI,CAAC,eAAe,CAAC,KAAK,CAAC,CAAC,CAAC;QAC5E,OA AO,oBAAoB,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;KACID;;;;;IAQD,iCAAW,GAAX,UA AY,MAAc,EAAE,KAAa;QAAb,sBAAA,EAAA,aAAa;QACvC,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,M AAM,CAAC,EAAE;YAC9B,IAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAA C;YACxC,IAAI,CAAC,QAAQ,EAAE,CAAC;YACHb,IAAI,CAAC,KAAK,IAAI,IAAI,CAAC,QAAQ,GAAG,CA AC,EAAE;gBAC/B,OAAO,KAAK,CAAC;aACd;YAED,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,Y AAY,CAAC,CAAC;YACnC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,WAAW,CAAC,IAAI,CAAC,EAAE,CAAC, CAAC;YACpC,IAAI,CAAC,SAAS,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;SAC/B;QACD,OAAO,IAAI,C AAC;KACb;;IAGD,8BAAQ,GAAR,UAA S,MAAc;QACrB,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAA M,CAAC,EAAE;YAC9B,IAAM,UAAU,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC; YAC9C,OAAO,UAAU,CAAC,QAAQ,CAAC;SAC5B;QACD,OAAO,CAAC,CAAC;KACV;IAED,4BAAM,GAA N,UAAO,MAAc;QACnB,IAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;Q ACxC,IAAI,IAAI,IAAI,IAAI,EAAE;YACHb,IAAI,CAAC,QAAQ,EAAE,CAAC;SACjB;KACF;IAED,oCAAc,GA Ad;QACE,OAAO,EAAE,CAAC;KACX;;;IAID,qCAAE,GAaf,UAAgB,MAAc;QAC5B,OAAO,IAAI,CAAC,SAA S,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,YAA Y,CAAC;KACHd;IAED,6BAAO,GAAP;QACE,IAAI,CAAC ,IAAI,CAAC,IAAI,CAAC,OAAO,EAAE,CAAC;QACzB,IAAI,SAAS,IAAI,IAAI,CAAC,IAAI,EAAE;YACiB,IA AI,CAAC,IAAI,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC;SACzC;QACD,IAAI,CAAC,IAAI,GAAG,IAAI,C AAC;KACiB;IAED,4BAAM,GAA N;QACE,OAAO,EAAC,UAAU,EAAE,KAAK,EAAC,CAAC;KAC5B;;;;;IAQ D,gCAAU,GAAV,UAAW,KAAe,EAAE,KAAe,EAAE,YAAqB;QAEhE,IAAI,MAAU,CAAC;QACf,IAAI,YAA Y, IAAI,IAAI,EAAE;YACxB,MAAM,GAAG,IAAI,CAAC,KAAK,CAAC,IAAI,eAAe,KAAK,EAAE,KAAK,CAAC, CAAC;SACtD;aAAM;YACL,IAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;YACnC,MAAM,GAAG ,EAAC,EAAE,IAAA,EAAC,CAAC;YACd,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAA E,IAAA,EAAE,YAA Y,cAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,QAAQ,EAAE,CAAC,EAAC,C AAC,CAAC;YACiE,IAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;YACvC,IAAI,CAA C,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAA Y,CAAC,CAAC;SACvD;QACD,OAA O,EAAC,MAAM,QAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAC,CAAC;KAC/B;IAED,wCAAkB,GA AIB,UAAmB,EAAK;YAAjC,gBAAK,EAAE,gBAAK,EAAE,kBAAM;QAEtC,IAAM,MAAM,GAAG,IAAI,CAA C,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC;QACHc,IAAA,sDAAY,CAA+B;QACID,IAAM,IAAI,GAAGA,aA AI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QACvC,QAAQ,KAAK;YACX,KAAK,SAAS;gBACZ,OAAO,IAAI ,YAA Y,CAAC,MAAM,EAAE,YAA Y,EAAE,IAAI,CAAC,CAAC;YACtD,KAAK,OAAO;gBACV,OAAO,IAAI,U AAU,CAAC,MAAM,EAAE,YAA Y,EAAE,IAAI,CAAC,CAAC;YACpD,KAAK,MAAM;gBACT,OAAO,IAAI,U AAU,CAAC,MAAM,EAAE,YAA Y,EAAE,IAAI,CAAC,CAAC;YACpD;gBACE,MAAM,IAAI,KAAK,CAAC,m BAAiB,KAAO,CAAC,CAAC;SAC7C;KACF;IACH,kBAAC;AAAD,CA3KA,CAAIcSH,sBAAa,GA2K7C;AAED, SAAS,yBAAyB,CAAC,IAAY;;;IAI7C,OAAO,UAAO,OAAY,EAAE,QAAa;QACjCtH,aAAI,CAAC,KAAK,CAA C,IAAI,EAAE,EAAC,WAAW,EAAE,aAAa,EAAC,CAAC,CAAC,IAAI,CAAC,UAAO,QAAQ;YAC3D,IAAI,CA

AC,QAAQ,CAAC,IAAI,CAAC,EAAE;gBACnB,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,yCAAuC,IAAI,MAAG,CAAC,CAAC;aAC/D;YACD,QAAQ,CAAC,WAAW,EAAE,CAAC,IAAI,CAAC,UAAA,MAAM;gBACbC,WAAW,CAAC,WAAW,CAAC,MAAM,EAAE,OAAO,CAAC,CAAC,IAAI,CAAC,UAAA,MAAM;oBACID,QAAQ,CAAC,MAAM,CAAC,QAAQ,EAAE,MAAM,CAAC,MAAM,CAAC,CAAC;iBAC1C,CAAC,CAAC;aACJ,CAAC,CAAC;SACJ,CAAC,CAAC;QACH,OAAO,EAAE,CAAC;KACX,CAAC;AACJ,CAAC;AAED;;;;;AAMA,SAAS,mBAAmB,CACxB,aAAaB,EAAE,gBAAYB,EACjD,gBAAwB;IAC1B,IAAI,QAAQ,IAAI,IAAI,EAAE;;;QAGpB,OAAO,QAAQ,CAAC;KACjB;IAED,IAAI,IAAI,GAAMb,wBAAwB,CAAC;IACpD,IAAI,aAAa,IAAI,gBAAGB,EAAE;QACrC,IAAI,GAAG,sCAAsC,CAAC;KAC/C;SAAM,IAAI,aAAa,EAAE;QACxB,IAAI,GAAG,6BAA6B,CAAC;KACtC;IAED,IAAI,WAAW,IAAI,IAAI,EAAE;QACvB,IAAI,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,EAAE;YAC7B,OAAO,WAAW,CAAC,IAAI,CAAC,CAAC;SAC1B;KACf;IAED,OAAO,gBAAGB,GAAG,IAAI,CAAC;AACjC,CAAC;AAED;;;;;SAOsB,IAAI;;;;;wBACKB,qBAAM,OAAO,CAAC,GAAG,CAAC;wBAC1D4G,YAAG,EAAE,CAAC,QAAQ,CAAC,uBAAuB,CAAC;wBACvCA,YAAG,EAAE,CAAC,QAAQ,CAAC,8BAA8B,CAAC;qBAC/C,CAAC,EAAA;oBAHI,KAAoC,SAGxC,EAHK,aAAa,QAAA,EAAE,gBAAGB,QAAA;oBAKtC,sBAAO,IAAI,OAAO,CAAC,UAAc,OAAO,EAAE,MAAM;4BACjC,IAAM,aAAa,GAAsB,EAAE,CAAC;;;;;4BAO5C,aAAa,CAAC,UAAU,GAAG,UAAc,IAAI,EAAE,MAAM;gCACtC,IAAI,IAAI,CAAC,QAAQ,CAAC,YAAY,CAAC,EAAE;oCAC/B,IAAM,QAAQ,GAAG,kBAAkB,CAAC;oCACpC,IAAM,IAAI,GAAG,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,EAAE,EAAC,IAAI,EAAE,wBAAwB,EAAC,CAAC,CAAC;oCACpE,OAAO,GAAG,CAAC,eAAe,CAAC,IAAI,CAAC,CAAC;iCACIC;gCAED,IAAI,IAAI,CAAC,QAAQ,CAAC,OAAO,CAAC,EAAE;oCAC1B,OAAO,mBAAmB,CACtB,aAAwB,EAAE,gBAA2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,MAAM,CAAC,CAAC;iCACvD;gCACD,OAAO,MAAM,GAAG,IAAI,CAAC;6BACtB,CAAC;;;;;4BAKF,IAAI,WAAW,EAAE;gCACf,aAAa,CAAC,eAAe;oCACzB,yBAAYB,CAAC,mBAAmB,CACzC,aAAwB,EAAE,gBAA2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,EAAE,CAAC,CAAC,CAAC;6BACxD;4BAED,IAAI,WAAW,GAAG,KAAK,CAAC;4BACxB,aAAa,CAAC,OAAO,GAAG;gCACtB,IAAI,WAAW,EAAE;oCAEf,OAAO;iCACR;gCACD,IAAI,WAAW,EAAE;;;oCAGf,OAAO;iCACR;gCACD,WAAW,GAAG,IAAI,CAAC;gCACnB,IAAM,SAAS,GACX,kEAAkE;oCACIE,iIAAiI,CAAC;gCACtI,MAAM,CAAC,EAAC,OAAO,EAAE,SAAS,EAAC,CAAC,CAAC;6BAC9B,CAAC;4BAEF,IAAI,IAAgC,CAAC;;4BAErC,IAAI,gBAAGB,IAAI,aAAa,IAAI,QAAQ,IAAI,IAAI,EAAE;gCACzD,aAAa,CAAC,mBAAmB,GAAG,IAAI,IAAI,CACxC,CAAC,sCAAsC;wCACtCW,2BAAuB,CAAC,QAAQ,EAAE,CAAC,EACpC,EAAC,IAAI,EAAE,iBAAiB,EAAC,CAAC,CAAC;gCAC/B,IAAI,GAAGA,2BAAuB,CAAC,aAAa,CAAC,CAAC;6BAC/C;iCAAM;;gCAEL,IAAI,GAAGC,eAAW,CAAC,aAAa,CAAC,CAAC;6BACnC;;;4BAID,IAAI,CAAC,IAAI,CAAC,UAAc,MAAM;gCACf,WAAW,GAAG,IAAI,CAAC;gCACnB,WAAW,GAAG,KAAK,CAAC;gCAEpB,IAAM,cAAc,GAAW,IAAI,CAAC;;gCAEpC,MAAM,CAAC,IAAI,GAAG;oCACZ,IAAI,EAAC,MAAM,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,EAAE,EAAE,CAAC;oCACpC,oBAAoB,EACbB,MAAM,CAAC,KAAK,CAAC,yBAAYB,EAAE,IAAI,EAAE,CAAC,QAAQ,CAAC,CAAC;oCAC7D,eAAe,EAAE,MAAM,CAAC,KAAK,CAAC,mBAAmB,EAAE,QAAQ,EAAE,EAAE,CAAC;oCAChE,cAAc,EAAE,MAAM,CAAC,KAAK,CACxB,iBAAiB,EAAE,IAAI,EACvB;wCACE,QAAQ;wCACR,QAAQ;wCACR,QAAQ;qCACT,CAAC;oCACn,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,cAAc,EAAE,cAAc,EAAE,CAAC,QAAQ,CAAC,CAAC;oCACrE,OAAO,EAAE,MAAM,CAAC,KAAK,CAAC,SAAS,EAAE,cAAc,EAAE,EAAE,CAAC;iCACrD,CAAC;gCAEF,OAAO,CAAC,EAAC,IAAI,EAAE,MAAM,EAAC,CAAC,CAAC;6BACzB,CAAC,CAAC;yBACJ,CAAC,EAAC;;;;;CACJ;AAED,SAAS,oBAAoB,CACzB,MAAMB,EAAE,KAAe;IACtC,QAAQ,KAAK;QACX,KAAK,SAAS,YACZ,OAAO,IAAI,YAAY,CAAC,MAAM,CAAC,CAAC;QACIC,KAAK,OAAO;YACV,OAAO,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;QACbC,MAAM,CAAC,CAAC;QACHc,KAAK,MAAM;YACT,OAAO,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;QACHc;YACE,MAAM,IAAI,KAAK,CAAC,mBAAiB,KAAO,CAAC,CAAC;KAC7C;AACH,CAAC;AAED,IAAM,eAAe,GAAG;IACtB,wBAAwB,EAAE,6BAA6B;IACvD,sCAAsC;CAC9B,CAAE;AAGZ,IAAI,QAAQ,GAAW,IAAI,CAAC;AAC5B,IAAI,cAAc,GAAW,IAAI,CAAC;AACIC,IAAI,WAAW,GAAuC,EAAE,CAAC;AACzD,IAAI,WAAW,GAAG,KAAK,CAAC;AACxB,IAAI,WAAW,GAAG,KAAK,CAAC;AAExB;;;;;SAYgB,WAAW,CAAC,IAAY,EAAE,gBAAwB;IAAxB,iCAAA,EAAA,wBAAwB;IACHc,wBAAE,CACX,8DAA8D;QAC9D,uCAAuC,CAAC,CAAC;IAC7C,IAAI,WAAW,EAAE;QACf,MAAM,IAAI,KAAK,CACX,+DAA+D;YAC/D,mEAAmE,CAAC,CAAC;KAC1E;IACD,QAAQ,GAAG,IAAI,CAAC;IACHB,WAAW,GAAG,gBAAGB,CAAC;AACjC,CAA

C;AAED;,,,,,,,,,,,,,,,,,,,,,,,,,,,,,SAyBgB,YAAY,CACxB,eAA0D,EAC1D,gBAAwB;IAAxB,iCAAA,EAAA,wBAAwB;IAC1B,IAAI,WAAW,EAAE;QACf,MAAM,IAAI,KAAK,CACX,+DAA+D;YAC/D,wDAAwD;YACxD,cAAc,CAAC,CAAC;KACrB;IAED,IAAI,OAAO,eAAe,KAAK,QAAQ,EAAE;QACvC,cAAc,GAAG,eAAe,CAAC;KACIC;SAAM;QACL,WAAW,GAAG,eAAe,CAAC;QAC9B,IAAM,YAAY,GACd,eAAe,CAAC,MAAM,CAAC,UAAA,IAAI,IAAI,OAAA,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,GAAA,CAAC,CAAC;QAC9D,IAAI,YAAY,CAAC,MAAM,GAAG,CAAC,EAAE;YAC3B,MAAM,IAAI,KAAK,CACX,0DAA0D;iBACvD,YAAY,CAAC,IAAI,CAAC,GAAG,CAAC,8CAA2C,CAAA;gBACpE,oEAAoE;gBACpE,oDAAoD,CAAC,CAAC;SAC3D;KACF;IAED,WAAW,GAAG,gBAAgB,CAAC;AACjC,CAAC;AAWD,IAAI,YAAY,GAAG,CAAC,CAAC,CAAC;AAcTB,IAAI,kBAkB,GAAG,CAAC,CAAC,CAAC;AAE5B;,,,,,;SAMgB,eAAe,CAAC,UAAkB;IAChD,YAAY,GAAG,UAAU,CAAC;AAC5B,CAAC;AAED;,,,,,;SAKgB,eAAe;IAC7B,IAAI,kBAkB,KAAK,CAAC,CAAC,EAAE;QAC7B,MAAM,IAAI,KAAK,CAAC,+BAA+B,CAAC,CAAC;KACID;IACD,OAAO,kBAkB,CAAC;AAC5B;;ACxfA;AAEA;IACM,OAAO,GAAG;;ACHhB;,,,,,;,,,,,;AAiBA,wBAcA;AALA,IAAM,aAAa,GAAG,CAAC,CAAC;AACxBC,wBAAE,CAAC,MAAM,EAAE;,,,oBACP,qBAAM,IAAI,EAAE,EAAA;;gBAApB,IAAI,GAAI,CAAA,SAAY,MAAhB;gBACX,sBAAO,IAAI,WAAW,CAAC,IAAI,CAAC,EAAC;;;KAC9B,EAAE,aAAa,CAAC;,,,,,;"}
Found in path(s):
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.node.js.map
No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "tf-backend-wasm.fesm.min.js", "sources": [ "../src/kernels/types.ts", "../src/kernels/_FusedMatMul.ts", "../src/kernels/unary_kernel.ts", "../src/kernels/Abs.ts", "../src/kernels/binary_kernel.ts", "../src/kernels/Add.ts", "../src/kernels/AddN.ts", "../src/kernels/Identity.ts", "../src/kernels/Transpose.ts", "../src/kernels/kernel_utils.ts", "../src/kernels/All.ts", "../src/kernels/Any.ts", "../src/kernels/ArgMax.ts", "../src/kernels/AvgPool.ts", "../src/kernels/Reshape.ts", "../src/kernels/BatchMatMul.ts", "../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Slice.js", "../src/kernels/Slice.ts", "../src/kernels/BatchToSpaceND.ts", "../src/kernels/Cast.ts", "../src/kernels/Ceil.ts", "../src/kernels/ClipByValue.ts", "../src/kernels/Concat.ts", "../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js", "../src/kernels/Conv2D.ts", "../src/kernels/Conv2DBackpropInput.ts", "../src/kernels/Cos.ts", "../src/kernels/Cosh.ts", "../src/kernels/CropAndResize.ts", "../src/kernels/Cumsum.ts", "../src/kernels/DepthToSpace.ts", "../src/kernels/DepthwiseConv2dNative.ts", "../src/kernels/Elu.ts", "../src/kernels/Equal.ts", "../src/kernels/Exp.ts", "../src/kernels/ExpandDims.ts", "../src/kernels/Fill.ts", "../src/kernels/FlipLeftRight.ts", "../src/kernels/Floor.ts", "../src/kernels/FloorDiv.ts", "../src/kernels/FusedBatchNorm.ts", "../src/kernels/FusedConv2D.ts", "../src/kernels/FusedDepthwiseConv2D.ts", "../src/kernels/GatherNd.ts", "../src/kernels/GatherV2.ts", "../src/kernels/Greater.ts", "../src/kernels/GreaterEqual.ts", "../src/kernels/LeakyRelu.ts", "../src/kernels/Less.ts", "../src/kernels/LessEqual.ts", "../src/kernels/Log.ts", "../src/kernels/LogicalAnd.ts", "../src/kernels/Max.ts", "../src/kernels/Maximum.ts", "../src/kernels/MaxPool.ts", "../src/kernels/Mean.ts", "../src/kernels/Min.ts", "../src/kernels/Minimum.ts", "../src/kernels/MirrorPad.ts", "../src/kernels/Multiply.ts", "../src/kernels/Neg.ts", "../src/kernels/NonMaxSuppression_util.ts", "../src/kernels/NonMaxSuppressionV3.ts", "../src/kernels/NonMaxSuppressionV4.ts", "../src/kernels/NonMaxSuppressionV5.ts", "../src/kernels/NotEqual.ts", "../src/kernels/OneHot.ts", "../src/kernels/OnesLike.ts", "../src/kernels/Pack.ts", "../src/kernels/PadV2.ts", "../src/kernels/Pow.ts", "../src/kernels/Prelu.ts", "../src/kernels/Prod.ts", "../src/kernels/Range.ts", "../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js", "../src/kernels/RealDiv.ts", "../src/kernels/Relu.ts", "../src/kernels/Relu6.ts", "../src/kernels/ResizeBilinear.ts", "../src/kernels/Reverse.ts", "../src/kernels/RotateWithOffset.ts", "../src/kernels/Round.ts", "../src/kernels/Rsqrt.ts", "../src/kernels/ScatterNd.ts", "../src/kernels/Select.ts", "../src/kernels/Sigmoid.ts", "../src/kernels/Sin.ts", "../src/kernels/Softmax.ts", "../src/kernels/SpaceToBatchND.ts", "../src/kernels/SplitV.ts", "../src/kernels/Sqrt.ts", "../src/kernels/Square.ts", "../src/kernels/SquaredDifference.ts", "../src/kernels/Step.ts", "../src/kernels/StridedSlice.ts", ..
```

```

/src/kernels/Sub.ts", "../src/kernels/Sum.ts", "../src/kernels/Tan.ts", "../src/kernels/Tanh.ts", "../src/kernels/Tile.ts", "../src/
c/kernels/TopK.ts", "../src/kernels/Transform.ts", "../src/kernels/ZerosLike.ts", "../src/register_all_kernels.ts", "../src/ke
rnels/Unpack.ts", "../src/flags_wasm.ts", "../wasm-out/tfjs-backend-wasm-threaded-simd.js", "../wasm-out/tfjs-
backend-wasm.js", "../src/backend_wasm.ts", "../wasm-out/tfjs-backend-wasm-threaded-
simd.worker.js", "../src/version.ts", "../src/base.ts"], "sourcesContent": ["/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\n// This enum must align with the enum defined in cc/backend.h.\nexport enum CppDType {\n float32 = 0,\n int32 = 1,\n bool = 2,\n string = 3,\n complex64 = 4\n}\n\n// Must match enum in cc/fusable_activations.h.\nexport
enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu
= 6\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { FusableActivation } from
'./types';\n\nlet wasmFusedMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, activation: number,\n biasId: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul,\n null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n 'number', // activation\n 'number', // biasId\n 'number', // preluActivationWeightsId\n 'number', //\n leakyreluAlpha\n 'number' // out_id\n ]);\n\nfunction fusedBatchMatMul(args: {\n inputs:\n _FusedMatMulInputs,\n backend: BackendWasm,\n attrs: _FusedMatMulAttrs\n}) {\n const { inputs, backend,\n attrs } = args;\n const { a, b, bias, preluActivationWeights } = inputs;\n\n if (a.dtype !== 'float32' || b.dtype !==\n 'float32') {\n throw new Error(\n ` _FusedMatMul for non non-float32 tensors not yet supported.`);\n }\n\n const { transposeA, transposeB, activation, leakyreluAlpha } = attrs;\n const aId =\n backend.dataIdMap.get(a.dataId).id;\n const bId = backend.dataIdMap.get(b.dataId).id;\n\n let biasId = 0;\n if\n (bias !== null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n\n throw new Error(\n ` _FusedMatMul only supports rank-1 bias but got ` +\n `rank\n ${biasData.shape.length}`);\n }\n biasId = biasData.id;\n }\n\n const preluActivationWeightsId =\n preluActivationWeights === null ?\n 0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n const\n fusedActivation =\n FusableActivation[activation as {} as keyof typeof FusableActivation];\n\n if\n (fusedActivation === null) {\n throw new Error(\n ` ${activation} activation not yet supported for\n FusedConv2D ` +\n ` in the wasm backend.`);\n }\n\n const leftDim = transposeA ? a.shape[2] : a.shape[1];\n\n const rightDim = transposeB ? b.shape[1] : b.shape[2];\n\n const batchDim = a.shape[0];\n\n const out =\n backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n\n const outId =\n backend.dataIdMap.get(out.dataId).id;\n\n const aShapeBytes = new Uint8Array(new\n Int32Array(a.shape).buffer);\n\n const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n

```

```
wasmFusedMatMul(\n    aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n    transposeA, transposeB, fusedActivation, biasId, preluActivationWeightsId,\n    leakyreluAlpha || 0, outId);\n\nreturn\nout;\n}\n\nexport const fusedMatMulConfig: KernelConfig = {\n  kernelName: '_FusedMatMul',\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: fusedBatchMatMul as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {DataType, KernelConfig, TensorInfo, UnaryInputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppDType} from './types';\n\nexport function\ncreateUnaryKernelConfig(\n  kernelName: string, outType?: DataType): KernelConfig {\n  let wasmFunc: (xId:\n  number, dtype: number, outId: number) => void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n      'number', // x_id\n      'number', // dtype\n      'number', // out_id\n    ]);\n\n    function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}):\n    TensorInfo {\n      const {backend, inputs: {x}} = args;\n      const xId = backend.dataIdMap.get(x.dataId).id;\n      const\n      out = backend.makeOutput(x.shape, outType || x.dtype);\n      const outId = backend.dataIdMap.get(out.dataId).id;\n\n      // Short-circuit zero-sized tensors.\n      if (util.sizeFromShape(out.shape) === 0) {\n        return out;\n      }\n\n      wasmFunc(xId, CppDType[x.dtype], outId);\n      return out;\n    }\n\n    return {kernelName, backendName: 'wasm',\n      setupFunc, kernelFunc};\n  }\n\n  "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in\n * compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n '../unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\n\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-\n  core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppDType} from './types';\n\nexport\nfunction createBinaryKernelConfig(\n  kernelName: string, supportsFullBroadcast: boolean,\n  dtype?:\n  DataType): KernelConfig {\n  let wasmFunc:\n  (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n  number,\n  bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n  void;\n\n  function setupFunc(backend: BackendWasm): void {\n    wasmFunc = backend.wasm.cwrap(kernelName, null /*\n    void */, [\n      'number', // a_id,\n      'array', // a_shape\n      'number', // a_shape.length\n      'number', // b_id\n      'array', // b_shape\n      'number', // b_shape.length\n      'number', // dtype\n      'number', // out_id\n    ]);\n\n    function kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}):\n    TensorInfo {\n      const {backend,\n      inputs} = args;\n      const {a, b} = inputs;\n      const aId = backend.dataIdMap.get(a.dataId).id;\n      const bId =
```



```

backend.dataIdMap.get(b.dataId).id;\n\n const outputType = dtype != null ? dtype : a.dtype;\n const newShape =
backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n const out = backend.makeOutput(newShape,
outputType);\n\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(newShape) === 0) {\n return
out;\n }\n\n const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n const bShapeBytes =
new Uint8Array(new Int32Array(b.shape).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n
const kernelFunc = () => wasmFunc(\n    aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n    CppDType[a.dtype], outId);\n\n // Currently only some float operations support full broadcast.\n if
(supportsFullBroadcast && a.dtype === 'float32') {\n kernelFunc();\n return out;\n }\n\n const
aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n const bBroadcastDims =
backend_util.getBroadcastDims(b.shape, newShape);\n const loopsOverAllOfA = aBroadcastDims.every((v, i) =>
v === i);\n const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n if (loopsOverAllOfA &&
loopsOverAllOfB) {\n kernelFunc();\n return out;\n } else {\n throw new Error(\n    `Broadcasting
along outer dims is not yet `+\n    `supported for ${a.dtype} ${kernelName}.`);\n }\n\n return
{kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const addConfig: KernelConfig =\ncreateBinaryKernelConfig(Add, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmFunc:\n (inputIds:
Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\n\nfunction setupFunc(backend:
BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n
'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n ]);\n\nfunction addn(args: {inputs:
TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =
backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n\n // Short-circuit zero-sized tensors.\n if
(util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n const inputIds = inputs.map(x =>
backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n
const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,
CppType[out.dtype], outId);\n\n return out;\n}\n\nexport const addNConfig: KernelConfig = {\n kernelName:
AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as { } as KernelFunc,\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

```


OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { backend_util, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { transpose } from './Transpose';\n\n/**\n * Compute permutation axes and do a transpose if necessary.\n *\n * Used by reduction ops.\n *\n * @param x input TensorInfo\n * @param axis reduction axes\n * @param backend wasm backend instance\n */\nexport function permuteAxesAndTranspose(x: TensorInfo, axis: number|number[], backend: BackendWasm): {\n  transposed: TensorInfo|null,\n  axes: number[],\n  originalAxes: number[],\n  inputWasTransposed: boolean\n} {\n  const xShape = x.shape;\n  const xRank = x.shape.length;\n  const originalAxes = util.parseAxisParam(axis, xShape);\n  let axes = originalAxes;\n  const permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n  let xTransposed = null;\n  let inputWasTransposed = false;\n  if (permutedAxes != null) {\n    const newShape: number[] = new Array(xRank);\n    for (let i = 0; i < newShape.length; i++) {\n      newShape[i] = xShape[permutedAxes[i]];\n    }\n    axes = backend_util.getInnerMostAxes(axes.length, xRank);\n    xTransposed =\n      transpose({inputs: {x}, attrs: {permutedAxes}, backend});\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const transposedId = backend.dataIdMap.get(xTransposed.dataId).id;\n    if (transposedId !== xId) {\n      inputWasTransposed = true;\n    }\n  }\n  return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n*\n\nimport { All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\n\nlet wasmAll: (xId: number, reduceSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAll = backend.wasm.cwrap(All, null, /*void*/, ['number, number, number']);\n}\n\nfunction all(args: {backend: BackendWasm, inputs: AllInputs, attrs: AllAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n  const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input = transposed;\n    inputId = transposedId;\n  }\n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize = util.sizeFromShape(reduceShape);\n  const out = backend.makeOutput(outShape, x.dtype);\n  if (util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAll(inputId, reduceSize, outId);\n  }\n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n  if (keepDims) {\n    // reshape\n    const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n  return out;\n}\n\nexport const allConfig: KernelConfig = {\n  kernelName: All,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: all as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
```

governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmAny = backend.wasm.cwrap(Any, null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: { backend: BackendWasm, inputs: AnyInputs, attrs: AnyAttrs }):\n  TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { axis, keepDims } = attrs;\n  const { x } = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n  const { transposed, axes, originalAxes, inputWasTransposed } =\n    permuteAxesAndTranspose(x, axis, backend);\n  \n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    input = transposed;\n    inputId = transposedId;\n  }\n  \n  const inputRank = input.shape.length;\n  backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n  const [outShape, reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, axes);\n  const reduceSize =\n    util.sizeFromShape(reduceShape);\n  \n  const out = backend.makeOutput(outShape, x.dtype);\n  if (util.sizeFromShape(input.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmAny(inputId, reduceSize, outId);\n  }\n  \n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n  \n  if (keepDims) {\n    // reshape\n    const newShape =\n      backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n    out.shape = newShape;\n  }\n  \n  return out;\n}\n\nexport const anyConfig: KernelConfig = {\n  kernelName: Any,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: any as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmFunc: (\n  xId: number, dtype: number, outerSize: number, innerSize: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // outer_size\n    'number', // inner_size\n    'number' // out_id\n  ]);\n}\n\nfunction argmax(\n  args: { inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs }) {\n  const { backend, inputs, attrs } = args;\n  const { axis } = attrs as {} as ArgMaxAttrs;\n  const { x } = inputs as {} as ArgMaxInputs;\n  const xId =\n    backend.dataIdMap.get(x.dataId).id;\n  let inputId = xId;\n  let input = x;\n  const { transposed, axes, inputWasTransposed } =\n    permuteAxesAndTranspose(x, axis, backend);\n  \n  if (inputWasTransposed) {\n    const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n      // transpose was not a no-op. We will need to dispose of this\n      // once we are done.\n      input = transposed;\n      inputId = transposedId;\n    }\n  }\n  \n  const outShape = input.shape.slice(0, -1);\n  const out =\n    backend.makeOutput(outShape, 'int32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const outerSize =\n    util.sizeFromShape(out.shape);\n  const innerSize = input.shape[axes[0]];\n  wasmFunc(inputId, CppDType[input.dtype], outerSize, innerSize, outId);\n  \n  if (inputWasTransposed) {\n    // dispose of the transposed tensor.\n    backend.disposeData(transposed.dataId);\n  }\n  \n  return out;\n}\n\nexport const argMaxConfig: KernelConfig = {\n  kernelName: ArgMax,\n  backendName: 'wasm',\n  kernelFunc: argmax as {} as KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
```

except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D } from  
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmAvgPool: (\n  xId:  
number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:  
number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, strideHeight: number,\n  strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // channels\n    'number', // outId\n  ]);\n}\n\nfunction  
avgPool(\n  args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n  const {inputs, attrs,  
backend} = args;\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const  
{filterSize, strides, pad, dimRoundingMode} = attrs;\n  const convInfo = backend_util.computePool2DInfo(\n    x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n  const filterHeight =  
convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const  
padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n  const padLeft =  
convInfo.padInfo.left;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth = convInfo.strideWidth;\n  const channels = convInfo.inChannels;\n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm backend does not support dataFormat: ` +\n      `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n  }\n  if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n    throw new Error(\n      `was backend  
only supports average pooling with dilation = [1, 1], ` +\n      `got [${convInfo.dilationHeight},  
${convInfo.dilationWidth}].`);\n  }\n  const out = backend.makeOutput(convInfo.outShape, 'float32');\n  const  
outId = backend.dataIdMap.get(out.dataId).id;\n  wasmAvgPool(\n    xId, x.shape[0], x.shape[1], x.shape[2],  
filterHeight, filterWidth,\n    padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n    outId);\n  return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n  kernelName: AvgPool,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: avgPool as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the  
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the  
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or  
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util } from '@tensorflow/tfjs-  
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nexport function reshape(\n  args: {inputs:  
ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm}) {\n  const {inputs, attrs} = args;\n  const {x} =  
inputs;\n  const {shape} = attrs;\n  const xSize = util.sizeFromShape(x.shape);\n  const $shape =  
util.inferFromImplicitShape(shape, xSize);\n  util.assert(\n    xSize === util.sizeFromShape($shape),\n    () =>  
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n    `shape must have the same number of  
elements.`);\n  // Backend needs to track refCount for the dataId for reshape op\n  args.backend.incRef(x.dataId);\n  return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n  kernelName: Reshape,\n  backendName: 'wasm',\n  kernelFunc: reshape as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
```


Zyb21TdHJpbmdBcnJheVRvVWludDgob3V0QnVmLnZhbHVlcYBhcyBzdHJpbmdBXSsk7XG4gIH1cbiAgcmV0d
XJuIG91dEJ1Zi52YWx1ZXMgYXMGVHlwZWRBcnJheTtcbn1cblxuZXhwb3J0IGZ1bmN0aW9uIHNsaWNlKFxu
ICAgIGFyZ3M6IHtpbnB1dHM6IFNsaWNlSW5wdXRzLCBiYWNRZW5kOiBNYXR0cmFja2VuZENQVSwgYX
R0cnM6IFNsaWNlQXR0cnN9KTpckiAgICBUZW5zb3JlbnZvIHtcbiAgY29uc3Qge2lucHV0cywgYmFja2VuZC
wgYXR0cnN9ID0gYXJncztcbiAgY29uc3Qge3h9ID0gaW5wdXRzO1xuICBjb25zdCB7YmVnaW4sIHNpemV9ID
0gYXR0cnM7XG5cbiAgYXNzZXJ0Tm90Q29tcGxleCh4LCAnc2xpY2UnKTtcbiAgICBjb25zdCB7JGJIZ2luLCAk
c2l6ZV0gPSBzbGljZV91dGlsLnBhcniU2xpY2VQYXJhbXMoeCwgYmVnaW4sIHNpemUpO1xuICBzbGljZV9
1dGlsLmFzc2VydFBhcmFtc1ZhbGllKHgsICRiZWdpbiwgJHNpemUpO1xuXG4gIGNvbnN0IHZhbHMgPSBiYW
NRZW5kLmRhdGEuZ2V0KHguZGF0YUlKKS52YWx1ZXM7XG4gIGNvbnN0IG91dFZhbHMgPSBzbGljZUlteG
wodmFscywgJGJIZ2luLCAkc2l6ZSwgeC5zaGFwZSwgeC5kdHlwZSk7XG4gIHJldHVybiBiYWNRZW5kLm1ha2
VUZW5zb3JlbnZvKCRzaXpILCB4LmR0eXBILCBvdXRWYXZKTtcbn1cblxuZXhwb3J0IG91dFZhbHMgPSBzbGljZUlteG
IQ29uZmlnOiBlZXJuZWxDb25maWcgPSB7XG4gIGtcm5lbE5hbWU6IFNsaWNlFxuICBiYWNRZW5kTmFtZ
TogJ2NwdScsXG4gIGtcm5lbE51bmM6IHNsaWNlIGFzIHt9IGFzIEtcm5lbE51bmNcbn07XG4iXX0=", "/*\n *\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n *\n * import {backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util}  
 * from '@tensorflow/tfjs-core';\n * import {BackendWasm} from '../backend_wasm';\n * import {sliceImplCPU} from  
 * './kernel_utils/shared';\n * export function slice(\n *   args: {inputs: SliceInputs, attrs: SliceAttrs, backend:  
 * BackendWasm}) {\n *   const {inputs: {x}, attrs: {begin, size}, backend} = args;\n *   const [begin_, size_] =  
 * slice_util.parseSliceParams(x, begin, size);\n *   const isContinuous = slice_util.isSliceContinuous(x.shape, begin_,  
 * size_);\n *   const xVals = backend.readSync(x.dataId);\n *   const out = backend.makeOutput(size_, x.dtype);\n *   const  
 * xStrides = util.computeStrides(x.shape);\n *   const outData = backend.dataIdMap.get(out.dataId);\n *   if (isContinuous)  
 *   {\n *     const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);\n *     if (x.dtype === 'string') {\n *       outData.stringBytes =\n *         (xVals as Uint8Array[]).slice(flatOffset, flatOffset +  
 * util.sizeFromShape(size_));\n *     } else {\n *       const outVals = backend.typedArrayFromHeap(out);\n *       outVals.set(\n *         (xVals as TypedArray).subarray(flatOffset, flatOffset +  
 * util.sizeFromShape(size_));\n *     }\n *     return out;\n *   } else if (x.dtype === 'string') {\n *     const res =  
 * sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);\n *     outData.stringBytes = res as Uint8Array[];\n *     return  
 * out;\n *   }\n *   const outVals = backend.typedArrayFromHeap(out);\n *   const rank = x.shape.length;\n *   if (rank === 2)  
 *   {\n *     slice2d(\n *       xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],\n *       size_ as  
 * [number, number]);\n *   } else if (rank === 3) {\n *     slice3d(\n *       xVals as TypedArray, xStrides[0], xStrides[1],  
 * outVals,\n *       begin_ as [number, number, number], size_ as [number, number, number]);\n *   } else if (rank === 4)  
 *   {\n *     slice4d(\n *       xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,\n *       begin_ as [number,  
 * number, number, number],\n *       size_ as [number, number, number, number]);\n *   } else {\n *     const res =\n * sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;\n *     outVals.set(res);\n *   }\n *   return  
 * out;\n * }\n * function slice2d(\n *   xVals: backend_util.TypedArray, xStride: number,\n *   outVals:  
 * backend_util.TypedArray, begin: [number, number],\n *   size: [number, number]): void {\n *   let outOffset = 0;\n *   const beginI = begin[0];\n *   const beginJ = begin[1];\n *   const endI = beginI + size[0];\n *   for (let i = beginI; i < endI;  
 * i++) {\n *     const xOffset = i * xStride + beginJ;\n *     outVals.set(xVals.subarray(xOffset, xOffset + size[1]),  
 * outOffset);\n *     outOffset += size[1];\n *   }\n * }\n * function slice3d(\n *   xVals: backend_util.TypedArray, xStride1:  
 * number, xStride2: number,\n *   outVals: backend_util.TypedArray, begin: [number, number, number],\n *   size:  
 * [number, number, number]): void {\n *   let outOffset = 0;\n *   const beginI = begin[0];\n *   const beginJ = begin[1];\n *   const beginK = begin[2];\n *   const endI = beginI + size[0];\n *   const endJ = beginJ + size[1];\n *   for (let i = beginI; i <
```

```

endI; i++) {\n  for (let j = beginJ; j < endJ; j++) {\n    const xOffset = i * xStride1 + j * xStride2 + beginK;\n    outVals.set(xVals.subarray(xOffset, xOffset + size[2]), outOffset);\n    outOffset += size[2];\n  }\n}\n\nfunction slice4d(\n  xVals: backend_util.TypedArray, xStride1: number, xStride2: number,\n  xStride3: number, outVals: backend_util.TypedArray,\n  begin: [number, number, number, number],\n  size: [number, number, number, number]): void {\n  let outOffset = 0;\n  const beginI = begin[0];\n  const beginJ = begin[1];\n  const beginK = begin[2];\n  const endI = beginI + size[0];\n  const endJ = beginJ + size[1];\n  const endK = beginK + size[2];\n  const beginL = begin[3];\n\n  for (let i = beginI; i < endI; i++) {\n    for (let j = beginJ; j < endJ; j++) {\n      for (let k = beginK; k < endK; k++) {\n        const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +\n        beginL;\n        outVals.set(xVals.subarray(xOffset, xOffset + size[3]), outOffset);\n        outOffset += size[3];\n      }\n    }\n  }\n}\n\nexport const sliceConfig: KernelConfig = {\n  kernelName: Slice,\n  backendName: 'wasm',\n  kernelFunc: slice as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,\nKernelFunc} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from './Reshape';\nimport {slice} from './Slice';\nimport {transpose} from './Transpose';\n\nfunction\nbatchToSpaceND(args: {\n  inputs: BatchToSpaceNDInputs,\n  backend: BackendWasm,\n  attrs:\n  BatchToSpaceNDAttrs\n}) {\n  const {inputs, backend, attrs} = args;\n  const {x} = inputs;\n  const {blockShape,\ncrops} = attrs;\n\n  const prod = blockShape.reduce((a, b) => a * b);\n\n  const reshaped =\n  backend_util.getReshaped(x.shape, blockShape, prod);\n  const permuted =\n  backend_util.getPermuted(reshaped.length, blockShape.length);\n  const reshapedPermuted =\n  backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n  const sliceBeginCoords =\n  backend_util.getSliceBeginCoords(crops, blockShape.length);\n  const sliceSize =\n  backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n  const xReshaped = reshape({inputs:\n  {x}, backend, attrs: {shape: reshaped}});\n  const xTransposed =\n  transpose({inputs: {x: xReshaped}, backend,\n  attrs: {perm: permuted}});\n  const xTransposedReshaped = reshape(\n  {inputs: {x: xTransposed}, backend,\n  attrs: {shape: reshapedPermuted}});\n  const result = slice({\n  inputs: {x: xTransposedReshaped},\n  backend,\n  attrs: {begin: sliceBeginCoords, size: sliceSize}\n  });\n\n  backend.disposeData(xReshaped.dataId);\n  backend.disposeData(xTransposed.dataId);\n  backend.disposeData(xReshaped.dataId);\n\n  return\n  result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n  kernelName: BatchToSpaceND,\n  backendName: 'wasm',\n  kernelFunc: batchToSpaceND as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * 'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport\n{TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nexport function\n  cast(\n    args: {inputs: CastInputs, attrs: CastAttrs, backend: BackendWasm};\n  ): TensorInfo {\n    const {inputs:\n    {x}, attrs: {dtype}, backend} = args;\n    const out = backend.makeOutput(x.shape, dtype);\n    const inVals =\n    backend.typedArrayFromHeap(x);\n    const outVals = backend.typedArrayFromHeap(out);\n    outVals.set(inVals);\n  }\n}

```

```
return out;\n}\n\nexport const castConfig: KernelConfig = {\n  kernelName: Cast,\n  backendName: 'wasm',\n  kernelFunc: cast as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\\nimport {KernelConfig, Ceil} from '@tensorflow/tfjs-core';\\nimport {createUnaryKernelConfig} from './unary_kernel';\\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\\nimport {BackendWasm} from '../backend_wasm';\\nlet wasmClip: (xId: number, min: number, max: number, outId: number) => void;\\nfunction setup(backend: BackendWasm) {\n  wasmClip = backend.wasm.cwrap(ClipByValue, null /* void */, [\n    'number', // x_id\n    'number', // min\n    'number', // max\n    'number' // out_id\n  ]);\n  function clip(args: {\n    inputs: ClipByValueInputs,\n    backend: BackendWasm,\n    attrs: ClipByValueAttrs\n  }) {\n    const {inputs, backend, attrs} = args;\n    const {x} = inputs;\n    const {clipValueMin, clipValueMax} = attrs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const out = backend.makeOutput(x.shape, x.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmClip(xId, clipValueMin, clipValueMax, outId);\n    return out;\n  }\n  export const clipByValueConfig: KernelConfig = {\n    kernelName: ClipByValue,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: clip as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\\nimport {backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\\nimport {BackendWasm} from '../backend_wasm';\\nimport {concatImplCPU} from './kernel_utils/shared';\\nimport {identity} from './Identity';\\nimport {reshape} from './Reshape';\\nexport function concat(\n  args: {\n    inputs: ConcatInputs,\n    backend: BackendWasm,\n    attrs: ConcatAttrs\n  }) {\n  const {inputs, backend} = args;\n  const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n  let outShape = backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n  // Keep only non-empty tensors (ignore tensors with 0 in their shape).\n  const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n  if ($inputs.length === 1) {\n    return identity({inputs: {x: $inputs[0]}, backend});\n  }\n  const out = backend.makeOutput(outShape, inputs[0].dtype);\n  if (util.sizeFromShape(outShape) === 0) {\n    return out;\n  }\n  const shapes = $inputs.map(t => t.shape);\n  backend_util.assertParamsConsistent(shapes, axis);\n  if ($inputs[0].dtype === 'string') {\n    // Any concat of n-dimensional tensors across any axis can be reduced to\n    // a concatenation of two-dimensional tensors across the axis 1 by first\n    // partitioning the axes of the original tensors into those less than
```


except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmConv2d: (\n  xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, padTop: number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n  dilationHeight: number, dilationWidth: number, strideHeight: number,\n  strideWidth: number, inputChannels: number, outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmConv2d = backend.wasm.cwrap(Conv2D, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', // dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n\n  function conv2d(\n    args: { inputs: Conv2DInputs, backend: BackendWasm, attrs: Conv2DAttrs }) {\n    const { inputs, attrs, backend } = args;\n    const { x, filter } = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const filterId = backend.dataIdMap.get(filter.dataId).id;\n    const { strides, dilations, pad, dimRoundingMode, dataFormat } = attrs;\n    const $dataFormat = backend_util.convertConv2DDataFormat(dataFormat);\n    const convInfo = backend_util.computeConv2DInfo(\n      (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n      pad, dimRoundingMode, false, $dataFormat);\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const padTop = convInfo.padInfo.top;\n    const padRight = convInfo.padInfo.right;\n    const padBottom = convInfo.padInfo.bottom;\n    const padLeft = convInfo.padInfo.left;\n    const dilationHeight = convInfo.dilationHeight;\n    const dilationWidth = convInfo.dilationWidth;\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth = convInfo.strideWidth;\n    const inputChannels = convInfo.inChannels;\n    const outputChannels = convInfo.outChannels;\n    const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n    if (convInfo.dataFormat !== 'channelsLast') {\n      throw new Error(\n        `wasm backend Conv2D does not support dataFormat: ` +\n        `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n    }\n    const out = backend.makeOutput(convInfo.outShape, 'float32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmConv2d(\n      xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n      filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n      dilationHeight, dilationWidth, strideHeight, strideWidth, inputChannels,\n      outputChannels, outId);\n    return out;\n  }\n\n  export const conv2DConfig: KernelConfig = {\n    kernelName: Conv2D,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: conv2d as { } as KernelFunc\n  }; }\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

=====\n*\n\nimport { backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs, KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmConv2DBackpropInput: (\n dyId: number, filterId: number, batchSize: number, filterHeight: number,\n filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n

```

outHeight: number, outWidth: number, outChannels: number,\n strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n
xRowStride: number, xColStride: number, xChannelStride: number,\n yBatchStride: number, yRowStride:
number, yColStride: number,\n yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n 'number', //
filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n 'number', //
outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number',
// fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number',
// yChannelStride\n 'number', // outId\n ]);\n}\n\nfunction conv2DBackpropInput(args: {\n  backend:
BackendWasm,\n  inputs: Conv2DBackpropInputInputs,\n  attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const {backend, inputs, attrs} = args;\n  const {dy, filter} = inputs;\n  const {strides, pad, dataFormat,
dimRoundingMode, inputShape} = attrs;\n\n  const dilations = 1;\n\n  const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n  const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n  dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n  const {\n    batchSize,\n    filterHeight,\n    filterWidth,\n    inChannels,\n
inHeight,\n    inWidth,\n    outChannels,\n    outHeight,\n    outWidth,\n    strideHeight,\n    strideWidth\n } =
convInfo;\n\n  const topPad = filterHeight - 1 - convInfo.padInfo.top;\n  const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n  const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n  const dxStrides =
util.computeStrides(convInfo.inShape);\n  const dyStrides = util.computeStrides(dy.shape);\n  const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n  const xBatchStride = dxStrides[0];\n  const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n  const xColStride = isChannelsLast ? dxStrides[2] : 1;\n  const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n  const yBatchStride = dyStrides[0];\n  const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n  const yColStride = isChannelsLast ? dyStrides[2] : 1;\n  const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n  const out = backend.makeOutput(convInfo.inShape,
'float32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const dyId =
backend.dataIdMap.get(dy.dataId).id;\n  const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
wasmConv2DBackpropInput(\n  dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n
inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n  topPad, leftPad, fltS0, fltS1, fltS2,
xBatchStride, xRowStride,\n  xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n
yChannelStride, outId);\n  return out;\n}\n\nexport const conv2DBackpropInputConfig: KernelConfig = {\n
kernelName: Conv2DBackpropInput,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport { Cos, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from
'./unary_kernel';\n\nexport const cosConfig: KernelConfig = createUnaryKernelConfig(Cos);\n\n", "/*\n * @license\n
*\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *\n

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\nimport {Cosh, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const coshConfig: KernelConfig = createUnaryKernelConfig(Cosh);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {cast} from './Cast';\n// Must match enum in CropAndResize.cc\nenum InterpolationMethod {\n  bilinear = 0,\n  nearest = 1\n}\nlet wasmCropAndResize: (\n  imagesId: number, boxesId: number, boxIndId: number, numBoxes: number,\n  imagesShape: Uint8Array, cropHeight: number, cropWidth: number, method: number, extrapolationValue: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n  wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n    'number', // imagesId\n    'number', // boxesId\n    'number', // boxIndId\n    'number', // numBoxes\n    'array', // images shape\n    'number', // cropHeight\n    'number', // cropWidth\n    'number', // method\n    'number', // extrapolation value\n    'number', // out id\n  ]);\n  function cropAndResize(args: {\n    backend: BackendWasm,\n    inputs: CropAndResizeInputs,\n    attrs: CropAndResizeAttrs\n  }): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {method, extrapolationValue, cropSize} = attrs;\n    const {image, boxes, boxInd} = inputs;\n    const numBoxes = boxes.shape[0];\n    const [cropHeight, cropWidth] = cropSize as [number, number];\n    const outShape = [numBoxes, cropHeight, cropWidth, image.shape[3]];\n    let imagesData = backend.dataIdMap.get(image.dataId);\n    let castedData;\n    if (image.dtype !== 'float32') {\n      castedData = cast({backend, inputs: {x: image}, attrs: {dtype: 'float32'}});\n      imagesData = backend.dataIdMap.get(castedData.dataId);\n    }\n    const imagesId = imagesData.id;\n    const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n    const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n    const out = backend.makeOutput(outShape, 'float32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    const imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n    wasmCropAndResize(imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight, cropWidth, InterpolationMethod[method as {}] as keyof typeof InterpolationMethod, extrapolationValue, outId);\n    if (castedData !== null) {\n      backend.disposeData(castedData.dataId);\n    }\n    return out;\n  }\n  export const cropAndResizeConfig: KernelConfig = {\n    kernelName: CropAndResize,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: cropAndResize as {} as KernelFunc\n  };\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nimport {transpose} from './Transpose';\nlet wasmCumsum: (xId: number, exclusive: number, reverse: number, finalDim: number, outId: number, dtype: CCppType) => void;\nfunction setup(backend:
```



```

BackendWasm) {\n wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\n 'number', // x_id\n
'number', // exclusive\n 'number', // reverse\n 'number', // final_dim\n 'number', // out_id\n 'number' //
dtype\n ]);\n}\n\nexport function cumsum(\n args: {inputs: CumsumInputs, backend: BackendWasm, attrs:
CumsumAttrs});\nTensorInfo {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {axis,
exclusive, reverse} = attrs;\n const xRank = x.shape.length;\n\n util.assert(x.dtype === 'float32' || x.dtype ===
'int32',\n () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\n // permute required axis
to inner most axis\n const permutation = backend_util.getAxesPermutation([axis], xRank);\n let permutedX = x;\n
if (permutation !== null) {\n permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n }\n
const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n
backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n\n const permutedOut =
backend.makeOutput(permutedX.shape, permutedX.dtype);\n const finalDim = permutedX.shape[permutedAxis];\n
const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n const permutedOutId =
backend.dataIdMap.get(permutedOut.dataId).id;\n wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0,
finalDim,\n permutedOutId, CppDType[x.dtype]);\n\n // transpose data back if permuted\n let out =
permutedOut;\n if (permutation !== null) {\n const undoPermutation =
backend_util.getUndoAxesPermutation(permutation);\n out = transpose(\n {inputs: {x: permutedOut}, attrs:
{perm: undoPermutation}, backend});\n backend.disposeData(permutedX.dataId);\n
backend.disposeData(permutedOut.dataId);\n }\n return out;\n}\n\nexport const cumsumConfig: KernelConfig =
{\n kernelName: Cumsum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: cumsum as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace:
(\n xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n xStridesLength: number,
outputShape: Uint8Array, outputStrides: Uint8Array,\n outSize: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\n 'number', // xId\n 'number', // blockSize\n 'number', // channelsLast\n 'array', // xStrides\n
'number', // xStridesLength\n 'array', // outputShape\n 'array', // outputStrides\n 'number', // outSize\n
'number', // outId\n ]);\n}\n\nexport function depthToSpace(args: {\n backend: BackendWasm,\n inputs:
DepthToSpaceInputs,\n attrs: DepthToSpaceAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n const {blockSize, dataFormat} = attrs;\n\n const batchSize = x.shape[0];\n const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n const
outputHeight = inputHeight * blockSize;\n const outputWidth = inputWidth * blockSize;\n const outputDepth =
inputDepth / (blockSize * blockSize);\n\n const outputShape = (dataFormat === 'NHWC') ?\n [batchSize,
outputHeight, outputWidth, outputDepth] :\n [batchSize, outputDepth, outputHeight, outputWidth];\n\n const
out = backend.makeOutput(outputShape, 'float32');\n\n const xData = backend.dataIdMap.get(x.dataId);\n const
xId = xData.id;\n const xStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n const outStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n wasmDepthToSpace(\n xId, blockSize, channelsLast,

```

```
xStridesBytes, x.shape.length - 1,\n    outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n return\n out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n  kernelName: DepthToSpace,\n  backendName:\n  'wasm',\n  setupFunc: setup,\n  kernelFunc: depthToSpace as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n  License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n  agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n  the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
```

```
*\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,\n  DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport\n  {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n  xId: number, batchSize: number,\n  inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, padTop:\n  number,\n  padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n  dilationHeight:\n  number, dilationWidth: number, strideHeight: number,\n  strideWidth: number, inputChannels: number,\n  outputChannels: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmDepthwiseConv2d =\n    backend.wasm.cwrap(DepthwiseConv2dNative, null /* void */, [\n      'number', //\n      xId\n      'number', // batchSize\n      'number', // inputHeight\n      'number', // inputWidth\n      'number', //\n      filterId\n      'number', // filterHeight\n      'number', // filterWidth\n      'number', // padTop\n      'number', //\n      padRight\n      'number', // padBottom\n      'number', // padLeft\n      'number', // isSamePad\n      'number', //\n      dilationHeight\n      'number', // dilationWidth\n      'number', // strideHeight\n      'number', // strideWidth\n      'number', // inputChannels\n      'number', // outputChannels\n      'number', // outId\n    ]);\n\n  function\n  depthwiseConv2d(args: {\n    inputs: DepthwiseConv2dNativeInputs,\n    backend: BackendWasm,\n    attrs:\n    DepthwiseConv2dNativeAttrs\n  }) {\n    const {inputs, attrs, backend} = args;\n\n    const {x, filter} = inputs;\n    const\n    xId = backend.dataIdMap.get(x.dataId).id;\n    const filterId = backend.dataIdMap.get(filter.dataId).id;\n    const\n    {strides, dilations, pad, dimRoundingMode} = attrs;\n\n    const $dilations = dilations == null ? [1, 1] : dilations;\n\n    const convInfo = backend_util.computeConv2DInfo(\n      (x as Tensor4D).shape, (filter as Tensor4D).shape,\n      strides,\n      ($dilations as number | [number, number]), pad, dimRoundingMode,\n      true /* depthwise */);\n\n    const filterHeight = convInfo.filterHeight;\n    const filterWidth = convInfo.filterWidth;\n    const padTop =\n    convInfo.padInfo.top;\n    const padRight = convInfo.padInfo.right;\n    const padBottom = convInfo.padInfo.bottom;\n    const padLeft = convInfo.padInfo.left;\n    const dilationHeight = convInfo.dilationHeight;\n    const dilationWidth =\n    convInfo.dilationWidth;\n    const strideHeight = convInfo.strideHeight;\n    const strideWidth =\n    convInfo.strideWidth;\n    const inputChannels = convInfo.inChannels;\n    const outputChannels =\n    convInfo.outChannels;\n    const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n    if\n    (convInfo.dataFormat !== 'channelsLast') {\n      throw new Error(\n        `wasm backend DepthwiseConv2dNative\n        does not support dataFormat: ` +\n        `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n    }\n\n    const out =\n    backend.makeOutput(convInfo.outShape, 'float32');\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmDepthwiseConv2d(\n      xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n      filterWidth,\n      padTop, padRight, padBottom, padLeft, isSamePad,\n      dilationHeight, dilationWidth, strideHeight, strideWidth,\n      inputChannels,\n      outputChannels, outId);\n\n    return out;\n  }\n\n  export const depthwiseConv2dNativeConfig:\n  KernelConfig = {\n    kernelName: DepthwiseConv2dNative,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: depthwiseConv2d as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All\n  Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  \"License\");\n * you may not use this\n  file except in compliance with the License.\n * You may obtain a copy of the\n  License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n  agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
\n
```

```

governing permissions and\n * limitations under the License.\n *
=====
*\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const equalConfig: KernelConfig =\ncreateBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from
'/Reshape';\n\nexport function expandDims(args: {\n  inputs: ExpandDimsInputs,\n  attrs: ExpandDimsAttrs,\n  backend: BackendWasm\n}) {\n  const {inputs, attrs, backend} = args;\n  const {input} = inputs;\n  const {dim} =
attrs;\n\n  const inputRank = input.shape.length;\n  const newShape = input.shape.slice();\n  let $dim = dim;\n  if
(dim < 0) {\n    // Negative value is counted from the tail of rank.\n    util.assert(\n      -(inputRank + 1) <= dim,\n      () => `Axis must be in the interval [${-(inputRank + 1)}, ${\n        inputRank\n      }`);\n    $dim = inputRank + dim
+ 1;\n  }\n  newShape.splice($dim, 0, 1);\n\n  return reshape({inputs: {x: input}, backend, attrs: {shape:
newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n  kernelName: ExpandDims,\n  backendName: 'wasm',\n  kernelFunc: expandDims as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from

```

```
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nexport function fill(args: {attrs: FillAttrs, backend: BackendWasm}) {\n  const {attrs: {shape, value, dtype}, backend} = args;\n  const out = backend.makeOutput(shape, dtype);\n  const outVals = backendtypedArrayFromHeap(out);\n  outVals.fill(value as number);\n  return out;\n}\n\nexport const fillConfig: KernelConfig = {\n  kernelName: Fill,\n  backendName: 'wasm',\n  kernelFunc: fill as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmFlipLeftRight: (\n  xId: number, batch: number, imageHeight: number, imageWidth: number,\n  numChannels: number, outId: number) =>\n  void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight, null /* void */, [\n    'number', // xId\n    'number', // batch\n    'number', // imageHeight\n    'number', // imageWidth\n    'number', // numChannels\n    'number', // outId\n  ]);\n}\n\nexport function flipLeftRight(\n  args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n  const {inputs, backend} = args;\n  const {image} = inputs;\n  const out = backend.makeOutput(image.shape, image.dtype);\n  const imageId = backend.dataIdMap.get(image.dataId).id;\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n  wasmFlipLeftRight(\n    imageId, batch, imageHeight, imageWidth, numChannels, outId);\n  return out;\n}\n\nexport const flipLeftRightConfig: KernelConfig = {\n  kernelName: FlipLeftRight,\n  backendName: 'wasm',\n  kernelFunc: flipLeftRight as { } as KernelFunc,\n  setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\n\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\nimport {FloorDiv, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const floorDivConfig: KernelConfig =\n  createBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
```

OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nlet wasmBatchNorm: (\n  xId: number, meanId: number, varianceId: number, offsetId: number,\n  scaleId: number, varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmBatchNorm = backend.wasm.cwrap(\n    FusedBatchNorm, null /* void */,\n    ['number', 'number', 'number', 'number', 'number', 'number'];\n  );\n\n  function fusedBatchNorm(args: {\n    backend: BackendWasm,\n    inputs: FusedBatchNormInputs,\n    attrs: FusedBatchNormAttrs\n  }): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {varianceEpsilon} = attrs;\n    const {x, mean, variance, offset, scale} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const meanId = backend.dataIdMap.get(mean.dataId).id;\n    const varianceId = backend.dataIdMap.get(variance.dataId).id;\n    const offsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n    const scaleId = scale != null ? backend.dataIdMap.get(scale.dataId).id : 0;\n\n    const out = backend.makeOutput(x.shape, x.dtype);\n    // Short-circuit zero-sized tensors.\n    if (util.sizeFromShape(x.shape) === 0) {\n      return out;\n    }\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmBatchNorm(\n      xId, meanId, varianceId, offsetId, scaleId, varianceEpsilon, outId);\n    return out;\n  }\n\n  export const fusedBatchNormConfig: KernelConfig = {\n    kernelName: FusedBatchNorm,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: fusedBatchNorm as {\n      KernelFunc\n    };,\n    "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\nimport {backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {FusableActivation} from './types';\nlet wasmFusedConv2d: (\n  xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterId: number, filterHeight: number, filterWidth: number, biasId: number, padTop: number, padRight: number, padBottom: number, padLeft: number, isSamePad: number, dilationHeight: number, dilationWidth: number, strideHeight: number, strideWidth: number, inputChannels: number, outputChannels: number, activation: number, preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', // inputHeight\n    'number', // inputWidth\n    'number', // filterId\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', // biasId\n    'number', // padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', // isSamePad\n    'number', // dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', // inputChannels\n    'number', // outputChannels\n    'number', // activation\n    'number', // preluActivationWeightsId\n    'number', // leakyreluAlpha\n    'number', // outId\n  ]);\n\n  function fusedConv2d(args: {\n    inputs: FusedConv2DInputs,\n    backend: BackendWasm,\n    attrs: FusedConv2DAttrs\n  }) {\n    const {inputs, attrs, backend} = args;\n    const {x, filter, bias, preluActivationWeights} = inputs;\n    const {\n      strides,\n      pad,\n      dilations,\n      dataFormat,\n      dimRoundingMode,\n      activation,\n      leakyreluAlpha\n    } = attrs;\n\n    const convInfo = backend_util.computeConv2DInfo(\n      (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n      pad, dimRoundingMode);\n\n    const fusedActivation =\n      FusableActivation[activation as {\n        as keyof typeof FusableActivation\n      }];\n    if (fusedActivation == null) {\n      throw
```

```

new Error(\n    `${activation} activation not yet supported for FusedConv2D` + \n    `in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if
(bias != null) {\n    const biasData = backend.dataIdMap.get(bias.dataId);\n    if (biasData.shape.length !== 1) {\n
throw new Error(\n        `FusedConv2D only supports rank-1 bias but got` + \n        `rank
${biasData.shape.length}`);\n    }\n    if (biasData.shape[0] !== outputChannels) {\n    throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not` + \n        `match the number of output channels
(${outputChannels})`);\n    }\n    biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n    throw new Error(\n        `wasm backend FusedConv2D does not support
dataFormat:` + \n        `${dataFormat}`. Please use 'NHWC'.`);\n    }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ? \n    0 : \n
backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n    xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth, \n    biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight, \n    dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels, \n    fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n    kernelName: FusedConv2D, \n    backendName: 'wasm', \n    setupFunc: setup, \n    kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from './backend_wasm';\n\nimport { FusibleActivation } from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n    (xId: number, batchSize: number, inputHeight: number, inputWidth: number, \n
filterId: number, filterHeight: number, filterWidth: number, \n    biasId: number, padTop: number, padRight:
number, padBottom: number, \n    padLeft: number, isSamePad: number, dilationHeight: number, \n
dilationWidth: number, strideHeight: number, strideWidth: number, \n    inputChannels: number, outputChannels:
number, activation: number, \n    preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
void;\n\nfunction setup(backend: BackendWasm) {\n    wasmFusedDepthwiseConv2d = \n
backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n        'number', // xId\n        'number', //
batchSize\n        'number', // inputHeight\n        'number', // inputWidth\n        'number', // filterId\n        'number', //
filterHeight\n        'number', // filterWidth\n        'number', // biasId\n        'number', // padTop\n        'number', //
padRight\n        'number', // padBottom\n        'number', // padLeft\n        'number', // isSamePad\n        'number', //
dilationHeight\n        'number', // dilationWidth\n        'number', // strideHeight\n        'number', // strideWidth\n
'number', // inputChannels\n        'number', // outputChannels\n        'number', // activation\n        'number', //
preluActivationWeightsId\n        'number', // leakyreluAlpha\n        'number', // outId\n    ]);\n\n\nfunction
fusedDepthwiseConv2d(args: {\n    inputs: FusedDepthwiseConv2DInputs, \n    backend: BackendWasm, \n    attrs:

```

```

FusedDepthwiseConv2DAttrs(n) {
  const {inputs, attrs, backend} = args;
  const {x, filter, bias, preluActivationWeights} = inputs;
  const {
    strides, pad, dilations, dataFormat, dimRoundingMode,
    activation, leakyreluAlpha
  } = attrs;
  const convInfo = backend_util.computeConv2DInfo(
    (x as Tensor4D).shape, (filter as Tensor4D).shape,
    strides, dilations, pad, dimRoundingMode,
    true /* depthwise */);
  const fusedActivation = FusableActivation[activation as {
    as key of typeof FusableActivation}];
  if (fusedActivation == null) {
    throw new Error(`${activation} activation not yet supported for FusedDepthwiseConv2D` +
      `in the wasm backend.`);
  }
  const xId = backend.dataIdMap.get(x.dataId).id;
  const filterId = backend.dataIdMap.get(filter.dataId).id;
  const outputChannels = convInfo.outChannels;
  let biasId = 0;
  if (bias != null) {
    const biasData = backend.dataIdMap.get(bias.dataId);
    if (biasData.shape.length !== 1) {
      throw new Error(`FusedDepthwiseConv2D only supports rank-1 bias but got` +
        `rank ${biasData.shape.length}.`);
    }
    if (biasData.shape[0] !== outputChannels) {
      throw new Error(`FusedDepthwiseConv2D bias shape` +
        `(${biasData.shape}) does not` +
        `match the number of output channels` +
        `(${outputChannels})`);
    }
    biasId = biasData.id;
  }
  const filterHeight = convInfo.filterHeight;
  const filterWidth = convInfo.filterWidth;
  const padTop = convInfo.padInfo.top;
  const padRight = convInfo.padInfo.right;
  const padBottom = convInfo.padInfo.bottom;
  const padLeft = convInfo.padInfo.left;
  const dilationHeight = convInfo.dilationHeight;
  const dilationWidth = convInfo.dilationWidth;
  const strideHeight = convInfo.strideHeight;
  const strideWidth = convInfo.strideWidth;
  const inputChannels = convInfo.inChannels;
  const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;
  const batchSize = convInfo.batchSize;
  const inHeight = convInfo.inHeight;
  const inWidth = convInfo.inWidth;
  if (dataFormat !== 'NHWC') {
    throw new Error(`wasm backend FusedDepthwiseConv2D does not support` +
      `dataFormat:` +
      `${dataFormat}`. Please use 'NHWC'.`);
  }
  const out = backend.makeOutput(convInfo.outShape, 'float32');
  const outId = backend.dataIdMap.get(out.dataId).id;
  const preluActivationWeightsId = preluActivationWeights == null ? 0 :
    backend.dataIdMap.get(preluActivationWeights.dataId).id;
  wasmFusedDepthwiseConv2d(xId, batchSize, inHeight, inWidth, filterId,
    filterHeight, filterWidth, biasId, padTop, padRight, padBottom, padLeft,
    isSamePad, dilationHeight, dilationWidth, strideHeight, strideWidth,
    inputChannels, outputChannels, fusedActivation, preluActivationWeightsId,
    leakyreluAlpha || 0, outId);
  return out;
}
export const fusedDepthwiseConv2DConfig: KernelConfig = {
  kernelName: 'FusedDepthwiseConv2D',
  backendName: 'wasm',
  setupFunc: setup,
  kernelFunc: fusedDepthwiseConv2d as {
    as KernelFunc
  };
}
/*
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the
 * "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
=====
import {gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-core';
import {BackendWasm} from './backend_wasm';
import {CppType} from './types';
let wasmGatherNd: (xId: number, dtype: CCppType, indicesId: number, numSlices: number, sliceRank: number, sliceSize: number, strides: Uint8Array, outId: number) => void;
function setup(backend: BackendWasm): void {
  wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [
    'number', // xId
    'number', // dtype
    'number', // indicesId
    'number', // numSlices
    'number', // sliceRank
    'number', // sliceSize
    'array', // strides
    'number' // outId
  ]);
  function gatherNd(args: {backend: BackendWasm, inputs: GatherNdInputs}): TensorInfo {
    const {backend, inputs} = args;
    const {params, indices} = inputs;
    const [resultShape, numSlices, sliceSize, strides] = gather_util.prepareAndValidate(params, indices);
    const out = backend.makeOutput(resultShape, params.dtype);
    if (numSlices === 0) {
      return out;
    }
    const indicesShape = indices.shape;
    const sliceRank = indicesShape[indicesShape.length - 1];

```

```

const xData = backend.dataIdMap.get(params.dataId);\n const xId = xData.id;\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmGatherNd(\n  xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n  stridesBytes,
outId);\n\n return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n kernelName: GatherNd,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherNd);\n};\n", "/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====*\n
*\n\nimport { backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,
TensorInfo, TypedArray, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nimport { reshape } from './Reshape';\n\nimport { CppDType } from './types';\n\nlet wasmGather:
(\n  xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n  indicesId: number, batchSize:
number, outStrides: Uint8Array,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n  'number', // xId\n  'number', // dtype\n  'array',
// xStrides\n  'number', // stridesSize\n  'number', // indicesId\n  'number', // batchSize\n  'array', //
outStrides\n  'number' // outId\n ]);\n}\n\nfunction gatherV2(\n  args: { backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs }):\n  TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { x,
indices } = inputs;\n  const { axis, batchDims } = attrs;\n\n  // Throw error when any index is out of bound.\n  const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n  const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n  const axisDim = x.shape[parsedAxis];\n  for (let i = 0; i < indicesVals.length; ++i) {\n  const index
= indicesVals[i];\n  util.assert(\n    index <= axisDim - 1 && index >= 0,\n    () =>\n      `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]`);\n  }\n\n  const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n    x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n  const flattenX = reshape({\n    inputs: { x },\n    attrs: {\n      shape: [\n        shapeInfo.batchSize,
shapeInfo.outerSize, shapeInfo.dimSize,\n        shapeInfo.sliceSize\n      ]\n    },\n    backend\n  });\n  const
indicesSize = util.sizeFromShape(indices.shape);\n  const flattenIndex = reshape({\n    inputs: { x: indices },\n    attrs:
{\n      shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize],\n      backend\n    });\n  const flattenOutputShape =
[\n    shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n    shapeInfo.sliceSize\n ];\n\n  const out = backend.makeOutput(flattenOutputShape, x.dtype);\n  if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n  }\n  const stridesSize = flattenX.shape.length - 1;\n\n  const xData =
backend.dataIdMap.get(flattenX.dataId);\n  const xId = xData.id;\n\n  const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n  const indicesId = indicesData.id;\n\n  const outId =
backend.dataIdMap.get(out.dataId).id;\n\n  const xStridesBytes = new Uint8Array(\n    new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n  const outStridesBytes = new Uint8Array(\n    new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n  wasmGather(\n    xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n    shapeInfo.batchSize, outStridesBytes, outId);\n\n  backend.disposeData(flattenX.dataId);\n  backend.disposeData(flattenIndex.dataId);\n\n  // reshape\n  out.shape =
shapeInfo.outputShape;\n  return out;\n}\n\nexport const gatherV2Config: KernelConfig = {\n kernelName:
GatherV2,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherV2 as { } as KernelFunc\n};\n", "/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *

```


WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\ncreateBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport {GreaterEqual, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport {KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmFunc: (\n  xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>\nvoid;\nfunction setupFunc(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(LeakyRelu, null /* void */, [\n    'number', // x_id\n    'number', // dtype\n    'number', // leakyrelu_alpha\n    'number', // out_id\n  ]);\n}\nexport function leakyRelu(\n  args: {\n    inputs: LeakyReluInputs, attrs: LeakyReluAttrs, backend: BackendWasm\n  }):\nTensorInfo {\n  const {inputs: {x}, attrs: {alpha}, backend} = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  // According to TF API, LeakyRelu returns float32 when input is either float32\n  // or int32.\n  const out = backend.makeOutput(x.shape, 'float32');\n  if (util.sizeFromShape(x.shape) !== 0) {\n    const outId = backend.dataIdMap.get(out.dataId).id;\n    wasmFunc(xId, CCppType[x.dtype], alpha, outId);\n  }\n  return out;\n}\nexport const leakyReluConfig: KernelConfig = {\n  kernelName: LeakyRelu,\n  backendName: 'wasm',\n  setupFunc,\n  kernelFunc: leakyRelu as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\nimport {KernelConfig, Less} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
```

software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, LessEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Log } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, LogicalAnd } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\ncreateBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmMax: (xId: number, dtype: number, reduceSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n\n  function max(args: { backend: BackendWasm, inputs: MaxInputs, attrs: MaxAttrs }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n    const { reductionIndices, keepDims } = attrs;\n    const { x } = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const { transposed, axes, originalAxes, inputWasTransposed } =\n      permuteAxesAndTranspose(x, axis, backend);\n\n    if (inputWasTransposed) {\n      const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n      input = transposed;\n      inputId = transposedId;\n    }\n\n    const inputRank = input.shape.length;\n    backend_util.assertAxesAreInnerMostDims('max', axes, inputRank);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape, axes);\n    const reduceSize =\n      util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape, x.dtype);\n    if
```

```

(util.sizeFromShape(input.shape) !== 0) {\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmMax(inputId, CppDType[x.dtype], reduceSize, outId);\n} \n\n if (inputWasTransposed) {\n  // dispose of the\n  transposed tensor.\n  backend.disposeData(transposed.dataId);\n} \n\n if (keepDims) {\n  // reshape\n  const\n  newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n  out.shape = newShape;\n} \n\n\nreturn out;\n}\n\nexport const maxConfig: KernelConfig = {\n  kernelName: Max,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: max as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google\n  LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *\n  http://www.apache.org/licenses/LICENSE-2.0\n * \n *\n  Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *\n  =====\n\n  *\n  \nimport { KernelConfig, Maximum } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n  './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const maximumConfig: KernelConfig =\n  createBinaryKernelConfig(Maximum, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google\n  LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *\n  http://www.apache.org/licenses/LICENSE-2.0\n * \n *\n  Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the License.\n *\n  =====\n\n  *\n  \nimport { backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util }\n  from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\n\nlet wasmMaxPool: (\n  xId:\n  number, batchSize: number, inputHeight: number, inputWidth: number,\n  filterHeight: number, filterWidth:\n  number, padTop: number, padRight: number,\n  padBottom: number, padLeft: number, dilationHeight: number,\n  dilationWidth: number, strideHeight: number, strideWidth: number,\n  inputChannels: number, outputChannels:\n  number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmMaxPool =\n  backend.wasm.cwrap(MaxPool, null /* void */, [\n    'number', // xId\n    'number', // batchSize\n    'number', //\n  inputHeight\n    'number', // inputWidth\n    'number', // filterHeight\n    'number', // filterWidth\n    'number', //\n  padTop\n    'number', // padRight\n    'number', // padBottom\n    'number', // padLeft\n    'number', //\n  dilationHeight\n    'number', // dilationWidth\n    'number', // strideHeight\n    'number', // strideWidth\n    'number', //\n  inputChannels\n    'number', // outputChannels\n    'number', // outId\n  ]);\n}\n\nfunction maxPool(\n  args:\n  {inputs: MaxPoolInputs, backend: BackendWasm, attrs: MaxPoolAttrs}) {\n  const {inputs, attrs, backend} =\n  args;\n  const x = inputs.x as Tensor4D;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  \n  // TF API\n  supports int32 input. CPU and WebGL backend also support int32\n  // input. WASM backend doesn't support it\n  because it uses xnnpack which only\n  // supports float32.\n  // \n  // Add the following assert only for the WASM\n  backend instead of at core op\n  // level.\n  // \n  // TODO: add support for int32 input.\n  util.assert(\n    x.dtype\n  === 'float32',\n    () =>\n    `Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);\n  const\n  {filterSize, strides, pad, dimRoundingMode} = attrs;\n  const convInfo = backend_util.computePool2DInfo(\n    x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n  const filterHeight =\n  convInfo.filterHeight;\n  const filterWidth = convInfo.filterWidth;\n  const padTop = convInfo.padInfo.top;\n  const\n  padRight = convInfo.padInfo.right;\n  const padBottom = convInfo.padInfo.bottom;\n  const padLeft =\n  convInfo.padInfo.left;\n  const dilationHeight = convInfo.dilationHeight;\n  const dilationWidth =\n  convInfo.dilationWidth;\n  const strideHeight = convInfo.strideHeight;\n  const strideWidth =\n  convInfo.strideWidth;\n  const inputChannels = convInfo.inChannels;\n  const outputChannels =\n  convInfo.outChannels;\n  \n  if (convInfo.dataFormat !== 'channelsLast') {\n    throw new Error(\n      `wasm

```

```

backend does not support dataFormat: ` +\n      \`${convInfo.dataFormat}`'. Please use 'channelsLast'.`);\n }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n wasmMaxPool(\n      xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n      padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,\nstrideHeight, strideWidth, inputChannels, outputChannels, outId);\n return out;\n}\n\nexport const maxPoolConfig:
KernelConfig = {\n kernelName: MaxPool,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: maxPool
as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {cast} from './Cast';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmMean =\n
backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);\n}\n\nexport function mean(\n args:
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs};\n TensorInfo {\n const {backend, inputs,
attrs} = args;\n const {axis, keepDims} = attrs;\n const {x} = inputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes,
inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n let reductionAxes = axes;\n if
(inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId
!== xId) {\n // transpose was not a no-op. We will need to dispose of this\n // once we are done.\n input =
transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n
reductionAxes.length, input.shape.length);\n }\n }\n\n backend_util.assertAxesAreInnerMostDims(\n 'mean',
reductionAxes, input.shape.length);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput =\n
cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(outShape, 'float32');\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmMean(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed
tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n if (input.dtype
!== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n\n return out;\n}\n\nexport const meanConfig:
KernelConfig = {\n kernelName: Mean,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: mean as {}
as KernelFunc\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport

```

```

{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmMin: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n  void;\n\nfunction setup(backend:
BackendWasm): void {\n  wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n    'number', // x_id\n    'number', // dtype\n    'number', // reduce_size\n    'number', // out_id\n  ]);\n}\n\nfunction min(args: {backend:
BackendWasm, inputs: MinInputs, attrs: MinAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let
inputId = xId;\n  let input = x;\n\n  const {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n  if (inputWasTransposed) {\n    const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n    if (transposedId !== xId) {\n      // transpose was not a no-op. We
will need to dispose of this\n      // once we are done.\n      input = transposed;\n      inputId = transposedId;\n    }\n\n    const inputRank = input.shape.length;\n\n    backend_util.assertAxesAreInnerMostDims('min', axes,
inputRank);\n    const [outShape, reduceShape] =\n      backend_util.computeOutAndReduceShapes(input.shape,
axes);\n    const reduceSize = util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape,
input.dtype);\n    if (util.sizeFromShape(input.shape) !== 0) {\n      const outId =
backend.dataIdMap.get(out.dataId).id;\n      wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);\n    }\n\n    if
(inputWasTransposed) {\n      // dispose of the transposed tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n      // reshape\n      const newShape = backend_util.expandShapeToKeepDim(out.shape,
originalAxes);\n      out.shape = newShape;\n    }\n\n    return out;\n  }\n}\n\nexport const minConfig: KernelConfig = {\n
kernelName: Min,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: min as {} as
KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
\n
\n\n=====\n
\n*\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
 './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const minimumConfig: KernelConfig =\n  createBinaryKernelConfig(Minimum, supportsFullBroadcast);\n\n", "/*\n * @license\n * Copyright 2021 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n
\n\n=====\n
\n*\nimport {KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\n// Must match
enum in MirrorPad.cc\nenum MirrorPaddingMode {\n  reflect = 0,\n  symmetric = 1\n}\n\nlet wasmMirrorPad: (\n
xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes:
  Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n  outId: number) => void;\n\nfunction
  setup(backend: BackendWasm) {\n  wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n
    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'array', // pre-
paddings\n    'array', // post-paddings\n    'number', // mode\n    'number', // outId\n  ]);\n}\n\nfunction
  mirrorPad(args: {\n  inputs: MirrorPadInputs,\n  backend: BackendWasm,\n  attrs: MirrorPadAttrs\n}) {\n  const
  {inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n  const outShape = paddings.map((p, i) => p[0] /*
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out =

```

```

backend.makeOutput(outShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n    new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const
postPaddingsBytes =\n    new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmMirrorPad(\n
xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n    postPaddingsBytes,
MirrorPaddingMode[mode], outId);\n return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n
kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as { } as KernelFunc,\n setupFunc:
setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport { KernelConfig, Multiply } from '@tensorflow/tfjs-core';\n\nimport { createBinaryKernelConfig } from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\ncreateBinaryKernelConfig(Multiply, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { KernelConfig, Neg } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n\n"/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { BackendWasm } from './backend_wasm';\n\n// Analogous to `struct Result` in
`non_max_suppression_impl.h`\n\ninterface Result {\n  pSelectedIndices: number;\n  selectedSize: number;\n
pSelectedScores: number;\n  pValidOutputs: number;\n}\n\n/**\n * Parse the result of the c++ method, which has the
shape equivalent to\n * `Result`\n */\n\nexport function parseResultStruct(\n  backend: BackendWasm, resOffset:
number): Result {\n  const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n  const
pSelectedIndices = result[0];\n  const selectedSize = result[1];\n  const pSelectedScores = result[2];\n  const
pValidOutputs = result[3];\n  // Since the result was allocated on the heap, we have to delete it.\n
backend.wasm._free(resOffset);\n  return {pSelectedIndices, selectedSize, pSelectedScores,
pValidOutputs};\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

```

implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs, NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\nlet wasmFunc: (\n  boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number)\n=> number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(\n    NonMaxSuppressionV3,\n    'number', // Result*\n    [\n      'number', // boxesId\n      'number', // scoresId\n      'number', // maxOutputSize\n      'number', // iouThreshold\n      'number', // scoreThreshold\n    ]);\n}\n\nfunction kernelFunc(args: {\n  backend: BackendWasm,\n  inputs: NonMaxSuppressionV3Inputs,\n  attrs: NonMaxSuppressionV3Attrs\n}): TensorInfo {\n  const { backend, inputs, attrs } = args;\n  const { iouThreshold, maxOutputSize, scoreThreshold } = attrs;\n  const { boxes, scores } = inputs;\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const scoresId = backend.dataIdMap.get(scores.dataId).id;\n  const resOffset =\n    wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n  const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n    parseResultStruct(backend, resOffset);\n  // Since we are not using scores for V3, we have to delete it from the heap.\n  backend.wasm._free(pSelectedScores);\n  backend.wasm._free(pValidOutputs);\n  const selectedIndicesTensor =\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n  return\n    selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n  kernelName: NonMaxSuppressionV3,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: kernelFunc as { } as\n    KernelFunc,\n};\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs, NonMaxSuppressionV4Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\nlet wasmFunc: (\n  boxesId: number, scoresId: number, maxOutputSize: number,\n  iouThreshold: number, scoreThreshold: number,\n  padToMaxOutputSize: boolean)\n=> number;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc =\n    backend.wasm.cwrap(\n      NonMaxSuppressionV4,\n      'number', // Result*\n      [\n        'number', // boxesId\n        'number', // scoresId\n        'number', // maxOutputSize\n        'number', // iouThreshold\n        'number', // scoreThreshold\n        'bool', // padToMaxOutputSize\n      ]);\n}\n\nfunction nonMaxSuppressionV4(args: {\n  backend: BackendWasm,\n  inputs: NonMaxSuppressionV4Inputs,\n  attrs: NonMaxSuppressionV4Attrs\n}): TensorInfo[] {\n  const { backend, inputs, attrs } = args;\n  const { iouThreshold, maxOutputSize, scoreThreshold, padToMaxOutputSize } =\n    attrs;\n  const { boxes, scores } = inputs;\n  const boxesId =\n    backend.dataIdMap.get(boxes.dataId).id;\n  const scoresId = backend.dataIdMap.get(scores.dataId).id;\n  const resOffset = wasmFunc(\n    boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n    padToMaxOutputSize);\n  const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n    parseResultStruct(backend, resOffset);\n  // Since we are not using scores for V4, we have to delete it from the heap.\n  backend.wasm._free(pSelectedScores);\n  const selectedIndicesTensor =\n    backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n  const validOutputsTensor =\n    backend.makeOutput([], 'int32', pValidOutputs);\n  return [selectedIndicesTensor,\n    validOutputsTensor];\n}\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n  kernelName:
```

NonMaxSuppressionV4,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV4 as { }
as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====

```
\n*\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,  
NonMaxSuppressionV5Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from  
 './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\nlet wasmFunc:\n (boxesId: number, scoresId: number, maxOutputSize: number,\n   iouThreshold: number, scoreThreshold: number,  
softNmsSigma: number) =>\n   number;\nfunction setup(backend: BackendWasm): void {\n  wasmFunc =  
  backend.wasm.cwrap(\n    NonMaxSuppressionV5,\n    'number', // Result*\n    [\n      'number', // boxesId\n      'number', // scoresId\n      'number', // maxOutputSize\n      'number', // iouThreshold\n      'number', //  
scoreThreshold\n      'number', // softNmsSigma\n    ]);\n}\nfunction kernelFunc(args: {\n  backend:  
BackendWasm,\n  inputs: NonMaxSuppressionV5Inputs,\n  attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[]  
{\n  const { backend, inputs, attrs } = args;\n  const { iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma  
= attrs;\n  const { boxes, scores } = inputs;\n  const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n  const  
scoresId = backend.dataIdMap.get(scores.dataId).id;\n  const resOffset = wasmFunc(\n    boxesId, scoresId,  
maxOutputSize, iouThreshold, scoreThreshold,\n    softNmsSigma);\n  const { pSelectedIndices, selectedSize,  
pSelectedScores, pValidOutputs } =\n    parseResultStruct(backend, resOffset);\n  // Since we are not using  
validOutputs for V5, we have to delete it from the\n  // heap.\n  backend.wasm._free(pValidOutputs);\n  const  
selectedIndicesTensor =\n    backend.makeOutput([selectedSize, 'int32', pSelectedIndices);\n  const  
selectedScoresTensor =\n    backend.makeOutput([selectedSize, 'float32', pSelectedScores);\n  return  
[selectedIndicesTensor, selectedScoresTensor];\n}\nexport const nonMaxSuppressionV5Config: KernelConfig =  
{\n  kernelName: NonMaxSuppressionV5,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: kernelFunc  
as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed  
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the  
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *  
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed  
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n * See the License for the specific language governing permissions and\n * limitations under the  
License.\n *  
=====
```

```
\n*\nimport { KernelConfig, NotEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from  
 './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const notEqualConfig: KernelConfig =\n  createBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2020  
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may  
not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *  
Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *  
=====
```

```
\n*\nimport { KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs } from '@tensorflow/tfjs-  
core';\nimport { BackendWasm } from './backend_wasm';\nlet wasmOneHot: (\n  indicesId: number, depth:
```


OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {fill} from './Fill';\nimport {CppType} from './types';\n\nlet wasmPadV2: (\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n  prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n  constantValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmPadV2 = backend.wasm.cwrap(PadV2, null /* void */, [\n    'number', // xId\n    'array', // x.shape\n    'number', // x.shape.length\n    'number', // x.dtype\n    'array', // pre-paddings\n    'array', // post-paddings\n    'number', // constantValue\n    'number', // outId\n  ]);\n\n  function pad(\n    args: {inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs}) {\n    const {inputs: {x}, backend, attrs: {paddings, constantValue}} = args;\n\n    const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n    if (util.sizeFromShape(x.shape) === 0) {\n      // Short-circuit the computation, since x doesn't have value, only\n      // the shape is used to compute output shape to pad.\n      return fill({\n        backend,\n        attrs: {shape: outShape, value: constantValue, dtype: x.dtype}\n      });\n    }\n\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const out = backend.makeOutput(outShape, x.dtype);\n    const outTensorData = backend.dataIdMap.get(out.dataId);\n    const outId = outTensorData.id;\n\n    const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n    const prePaddingsFlat = paddings.map(padTuple => padTuple[0]);\n    const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n    const prePaddingsBytes =\n      new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n    const postPaddingsBytes =\n      new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n    wasmPadV2(\n      xId, xShapeBytes, x.shape.length,\n      CCppType[x.dtype], prePaddingsBytes,\n      postPaddingsBytes, constantValue, outId);\n    return out;\n  }\n\n  export const padV2Config: KernelConfig = {\n    kernelName: PadV2,\n    backendName: 'wasm',\n    kernelFunc: pad as {\n      KernelFunc,\n      setupFunc: setup\n    },\n  },\n  /**\n   * @license\n   * Copyright 2019 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * \n   * http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,\n   * software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   * \n   */\n};\n\n=====\n\n*\n\nimport {KernelConfig, Pow} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const powConfig: KernelConfig =\n  createBinaryKernelConfig(Pow, supportsFullBroadcast);\n\n/**\n   * @license\n   * Copyright 2019 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the "License");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * \n   * http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,\n   * software\n   * distributed under the License is distributed on an "AS IS" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   * \n   */\n};\n\n=====\n\n*\n\nimport {KernelConfig, KernelFunc, Prelu, PreluInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {cast} from './Cast';\n\nlet wasmPrelu: (xId: number, weightsId: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmPrelu = backend.wasm.cwrap(Prelu, null /* void */, [\n    'number', // x_id\n    'number', // weights_id\n    'number' // out_id\n  ]);\n\n  function prelu(args: {inputs: PreluInputs, backend: BackendWasm}) {\n    const {inputs, backend} = args;\n    const {x, alpha} = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const weightsId = backend.dataIdMap.get(alpha.dataId).id;\n\n    let inputId = xId;\n    const input = x;\n    let castedInput = input;\n    if
```

```
(input.dtype !== 'float32') {\n  castedInput = cast({backend, inputs: {x}, attrs: {dtype: 'float32'}});\n  inputId =\n  backend.dataIdMap.get(castedInput.dataId).id;\n  }\n\n  const out = backend.makeOutput(x.shape, 'float32');\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmPrelu(inputId, weightsId, outId);\n\n  if (input.dtype\n  !== 'float32') {\n    backend.disposeData(castedInput.dataId);\n  }\n  return out;\n}\n\nexport const preluConfig:\nKernelConfig = {\n  kernelName: Prelu,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: prelu as {} as\n  KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n  Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n  License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n  on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n  implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n  License.\n *
```

```
=====\n\n*/\n\nimport {backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util} from\n '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmProd: (\n  xId: number, reduceSize: number,\n  dtype: number, outId: number) => void;\n\nfunction setup(backend:\n  BackendWasm): void {\n  wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n    'number',\n    'number',\n    'number',\n    'number'\n  ]);\n\n  function prod(args: {\n    backend: BackendWasm,\n    inputs: ProdInputs,\n    attrs:\n    ProdAttrs\n  }): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {axis, keepDims} = attrs;\n    const {x\n    = inputs;\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    let inputId = xId;\n    let input = x;\n\n    const\n    {transposed, axes, originalAxes, inputWasTransposed} =\n    permuteAxesAndTranspose(x, axis, backend);\n\n    let reductionAxes = axes;\n    if (inputWasTransposed) {\n      const transposedId =\n      backend.dataIdMap.get(transposed.dataId).id;\n      if (transposedId !== xId) {\n        // transpose was not a no-op. We\n        will need to dispose of this\n        // once we are done.\n        input = transposed;\n        inputId = transposedId;\n      }\n      reductionAxes = backend_util.getInnerMostAxes(\n        reductionAxes.length, input.shape.length);\n    }\n\n    backend_util.assertAxesAreInnerMostDims(\n      'prod', reductionAxes, input.shape.length);\n    const [outShape,\n    reduceShape] =\n    backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n    const reduceSize\n    = util.sizeFromShape(reduceShape);\n\n    const out = backend.makeOutput(outShape, input.dtype);\n    if\n    (util.sizeFromShape(input.shape) !== 0) {\n      const outId = backend.dataIdMap.get(out.dataId).id;\n      wasmProd(inputId, reduceSize, CppType[out.dtype], outId);\n    }\n\n    if (inputWasTransposed) {\n      // dispose of\n      the transposed tensor.\n      backend.disposeData(transposed.dataId);\n    }\n\n    if (keepDims) {\n      // reshape\n      const\n      newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n      out.shape = newShape;\n    }\n\n    return out;\n  }\n\n  export const prodConfig: KernelConfig = {\n    kernelName: Prod,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: prod as {} as\n    KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google\n  LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n  software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n  OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n  governing permissions and\n * limitations under the\n  License.\n *
```

```
=====\n\n*/\n\nimport {KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo} from '@tensorflow/tfjs-core';\nimport\n {BackendWasm} from './backend_wasm';\nimport {rangeImplCPU} from './kernel_utils/shared';\n\nexport const\n  range =\n  (\n    args: {\n      backend: BackendWasm, attrs: RangeAttrs\n    }): TensorInfo => {\n    const {backend, attrs} =\n    args;\n    const {start, stop, step, dtype} = attrs;\n    const values = rangeImplCPU(start, stop, step, dtype);\n\n    const out = backend.makeOutput([values.length], dtype);\n    const outVals =\n    backend.typedArrayFromHeap(out);\n    outVals.set(values);\n    return out;\n  };\n\n  export const rangeConfig:
```


the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { cast } from './Cast';\n\nlet wasmResizeBilinear: (\n  xId: number, batch: number, oldHeight: number, oldWidth: number,\n  numChannels: number, newHeight: number, newWidth: number,\n  alignCorners: number, halfPixelCenters: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmResizeBilinear = backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n    'number', // xId\n    'number', // batch\n    'number', // oldHeight\n    'number', // oldWidth\n    'number', // numChannels\n    'number', // newHeight\n    'number', // newWidth\n    'number', // alignCorners\n    'number', // halfPixelCenters\n    'number' // outId\n  ]);\n\n  function resizeBilinear(args: {\n    backend: BackendWasm,\n    inputs: ResizeBilinearInputs,\n    attrs: ResizeBilinearAttrs\n  }): TensorInfo {\n    const { backend, inputs, attrs } = args;\n\n    const { images } = inputs;\n    const { alignCorners, halfPixelCenters, size } = attrs;\n    const [newHeight, newWidth] = size;\n    const [batch, oldHeight, oldWidth, numChannels] = images.shape;\n    const outShape = [batch, newHeight, newWidth, numChannels];\n\n    let xData = backend.dataIdMap.get(images.dataId);\n    let castedData;\n    if (xData.dtype !== 'float32') {\n      castedData =\n        cast({ backend, inputs: { x: images }, attrs: { dtype: 'float32' }});\n      xData =\n        backend.dataIdMap.get(castedData.dataId);\n    }\n\n    const xId = xData.id;\n\n    const out =\n      backend.makeOutput(outShape, 'float32');\n    if (util.sizeFromShape(images.shape) === 0) {\n      return out;\n    }\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmResizeBilinear(\n      xId, batch, oldHeight, oldWidth, numChannels, newHeight, newWidth,\n      alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n    if (castedData != null) {\n      backend.disposeData(castedData.dataId);\n    }\n\n    return out;\n  }\n\n  export const\n    resizeBilinearConfig: KernelConfig = {\n      kernelName: 'ResizeBilinear',\n      backendName: 'wasm',\n      setupFunc: setup,\n      kernelFunc: resizeBilinear as { } as KernelFunc\n    };n\n  /**\n   * @license\n   * Copyright 2020 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the \"License\");\n   * you may not use this file except in compliance with the License.\n   * You may obtain a copy of the License at\n   * \n   * http://www.apache.org/licenses/LICENSE-2.0\n   * \n   * Unless required by applicable law or agreed to in writing,\n   * software\n   * distributed under the License is distributed on an \"AS IS\" BASIS,\n   * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n   * See the License for the specific language governing permissions and\n   * limitations under the License.\n   *\n   *\n
```

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { identity } from './Identity';\n\nimport { reshape } from './Reshape';\n\nlet wasmReverse: (\n  xId: number, axes: Uint8Array, axesLength: number, outShape: Uint8Array,\n  outShapeLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmReverse = backend.wasm.cwrap(Reverse, null, [\n    'number', // x_id\n    'array', // axes\n    'number', // axes_length\n    'array', // out_shape\n    'number', // out_shape_length\n    'number' // out_id\n  ]);\n\n  export function reverse(\n    args: {\n      inputs: ReverseInputs, backend: BackendWasm, attrs: ReverseAttrs\n    }): TensorInfo {\n    const { inputs, backend, attrs } = args;\n    const { x } = inputs;\n    const { dims } = attrs;\n\n    const axes = util.parseAxisParam(dims, x.shape);\n\n    if (x.shape.length === 0) {\n      return identity({ inputs: { x }, backend });\n    }\n\n    const out = backend.makeOutput(x.shape, x.dtype);\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const axesBytes = new Uint8Array(new Int32Array(axes).buffer);\n    const outShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n    wasmReverse(\n      xId, axesBytes, axes.length, outShapeBytes, x.shape.length, outId);\n\n    const reshaped =\n      reshape({ inputs: { x: out }, attrs: { shape: x.shape }, backend);\n\n    backend.disposeData(out.dataId);\n    return reshaped;\n  }\n\n  export const reverseConfig: KernelConfig = {\n    kernelName: 'Reverse',\n    backendName: 'wasm',\n    kernelFunc: reverse as { } as KernelFunc,\n    setupFunc: setup\n  };n\n  /**\n   * @license\n   * Copyright 2019 Google LLC. All Rights Reserved.\n   * Licensed under the Apache License, Version 2.0 (the \"License\");\n   * you may not use this file except in compliance with the
```

License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport { KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { backend_util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmRotate: (\n  xId: number, batch: number, imageHeight: number, imageWidth: number,\n  numChannels: number, radians: number, centerX: number, centerY: number,\n  fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n    'number', // xId\n    'number', // batch\n    'number', // imageHeight\n    'number', // imageWidth\n    'number', // numChannels\n    'number', // radians\n    'number', // centerX\n    'number', // centerY\n    'array', // fillBytes\n    'number', // fillLength\n    'number', // outId\n  ]);\n\n  export function rotateWithOffset(args: {\n    inputs: RotateWithOffsetInputs,\n    backend: BackendWasm,\n    attrs: RotateWithOffsetAttrs\n  }): TensorInfo {\n    const { inputs, backend, attrs } = args;\n    const { image } = inputs;\n    const { radians, fillValue, center } = attrs;\n\n    const out = backend.makeOutput(image.shape, image.dtype);\n    const imageId = backend.dataIdMap.get(image.dataId).id;\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n\n    const [centerX, centerY] = backend_util.getImageCenter(center, imageHeight, imageWidth);\n\n    const fillIsBlack = fillValue === 0;\n    const fullOpacityValue = 255;\n    const fillValues =\n      typeof fillValue === 'number' ?\n        [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] :\n        [...fillValue, fullOpacityValue];\n    const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n\n    wasmRotate(\n      imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n      centerY, fillBytes, fillValues.length, outId);\n    return out;\n  }\n\n  export const rotateWithOffsetConfig: KernelConfig = {\n    kernelName: RotateWithOffset,\n    backendName: 'wasm',\n    kernelFunc: rotateWithOffset as {} as KernelFunc,\n    setupFunc: setup\n  };}\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Round } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Rsqrt } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
```

law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\n\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\n\nlet wasmScatterNd: (\n  indicesId: number, updatesId: number, dtype: CppDType, sliceRank: number,\n  numUpdates: number, sliceSize: number, strides: Uint8Array,\n  outputSize: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmScatterNd = backend.wasm.cwrap(ScatterNd, null /*void*/, [\n    'number', // indicesId\n    'number', // updatesId\n    'number', // dtype\n    'number', // sliceRank\n    'number', // numUpdates\n    'number', // sliceSize\n    'array', // strides\n    'number', // outputSize\n    'number' // outId\n  ]);\n\n  function scatterNd(\n    args: {\n      backend: BackendWasm, inputs: ScatterNdInputs, attrs: ScatterNdAttrs\n    }): TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {indices, updates} = inputs;\n    const {shape} = attrs;\n\n    const out = backend.makeOutput(shape, updates.dtype);\n    if (util.sizeFromShape(shape) === 0) {\n      return out;\n    }\n\n    const {sliceRank, numUpdates, sliceSize, strides, outputSize} =\n      scatter_util.calculateShapes(updates, indices, shape);\n\n    const indicesData = backend.dataIdMap.get(indices.dataId);\n    const indicesId = indicesData.id;\n\n    const updatesData = backend.dataIdMap.get(updates.dataId);\n    const updatesId = updatesData.id;\n\n    const stridesBytes = new Uint8Array(new Int32Array(strides).buffer);\n\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    wasmScatterNd(\n      indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n      sliceSize, stridesBytes, outputSize, outId);\n\n    return out;\n  }\n\n  export const scatterNdConfig: KernelConfig = {\n    kernelName: ScatterNd,\n    backendName: 'wasm',\n    setupFunc: setup,\n    kernelFunc: scatterNd as {} as KernelFunc\n  };}\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, Select, SelectInputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmSelect: (\n  conditionId: number, tId: number, eId: number, offset: number,\n  outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmSelect = backend.wasm.cwrap('SelectV2', null, [\n    'number', // conditionId\n    'number', // tId\n    'number', // eId\n    'number', // offset\n    'number', // outId\n  ]);\n\n  function select(args: {inputs: SelectInputs, backend: BackendWasm}) {\n    const {inputs, backend} = args;\n    const {condition, t, e} = inputs;\n\n    const conditionId = backend.dataIdMap.get(condition.dataId).id;\n    const tId = backend.dataIdMap.get(t.dataId).id;\n    const eId = backend.dataIdMap.get(e.dataId).id;\n    const out = backend.makeOutput(t.shape, t.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const cRank = condition.shape.length;\n    const tRank = t.shape.length;\n\n    const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n      1 : \n      util.sizeFromShape(t.shape.slice(1));\n\n    wasmSelect(conditionId, tId, eId, offset, outId);\n    return out;\n  }\n\n  export const selectConfig: KernelConfig = {\n    kernelName: Select,\n    backendName: 'wasm',\n    kernelFunc: select as {} as KernelFunc,\n    setupFunc: setup\n  };}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
```



```

governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from './backend_wasm';\n\nlet wasmFunc: (xId: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmFunc = backend.wasm.cwrap(Sigmoid, null /*
void */, ['number', 'number']);\n}\n\nfunction sigmoid(args: { backend: BackendWasm, inputs: SigmoidInputs }):\nTensorInfo {\n  const { backend, inputs: { x } } = args;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out
= backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n\n  // Short-
circuit zero-sized tensors.\n  if (util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n\n  wasmFunc(xId,
outId);\n  return out;\n}\n\nexport const sigmoidConfig: KernelConfig = {\n  kernelName: 'Sigmoid',\n
backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: sigmoid as { } as KernelFunc;\n};\n", "/*\n * @license\n
 * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelConfig, Sin } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n", "/*\n * @license\n
 * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util } from
 '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nlet wasmFunc: (xId: number, outId:
number, channels: number, batch: number) =>\n  void;\n\nfunction setup(backend: BackendWasm): void {\n
  wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n    'number', // xId\n    'number', // outId\n
    'number', // channels\n    'number' // batch\n  ]);\n}\n\nfunction softmax(\n  args: { backend: BackendWasm,
inputs: SoftmaxInputs, attrs: SoftmaxAttrs }):\n  TensorInfo {\n  const { backend, inputs: { logits }, attrs: { dim } } =
args;\n  const xId = backend.dataIdMap.get(logits.dataId).id;\n  const out = backend.makeOutput(logits.shape,
logits.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  const channels = logits.shape[dim];\n
const batch = util.sizeFromShape(logits.shape) / channels;\n\n  // Short-circuit zero-sized tensors.\n  if
(util.sizeFromShape(out.shape) === 0) {\n    return out;\n  }\n\n  wasmFunc(xId, outId, channels, batch);\n  return
out;\n}\n\nexport const softmaxConfig: KernelConfig = {\n  kernelName: Softmax,\n  backendName: 'wasm',\n
setupFunc: setup,\n  kernelFunc: softmax as { } as KernelFunc;\n};\n", "/*\n * @license\n
 * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,
SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util } from

```

```
'@tensorflow/tfjs-core';
import {BackendWasm} from './backend_wasm';
import {padV2Config} from './PadV2';
import {reshape} from './Reshape';
import {transpose} from './Transpose';
function
spaceToBatchND(args: {inputs: SpaceToBatchNDInputs, backend: BackendWasm, attrs:
SpaceToBatchNDAttrs}) {
  const {inputs, backend, attrs} = args;
  const {x} = inputs;
  const {blockShape,
padding} = attrs;
  const prod = util.sizeFromShape(blockShape);
  const completePaddings: Array<number,
number> = [[0, 0]];
  completePaddings.push(...(padding as Array<number, number>));
  for (let i = 1 +
blockShape.length; i < x.shape.length; ++i) {
    completePaddings.push([0, 0]);
  }
  const paddedX =
padV2Config.kernelFunc({inputs: {x}, backend, attrs: {padding: completePaddings, constantValue:
0}}) as TensorInfo;
  const reshapedPaddedShape = backend_util.getReshaped(paddedX.shape,
blockShape, prod, false);
  const permutedReshapedPaddedPermutation = backend_util.getPermuted(\
reshapedPaddedShape.length, blockShape.length, false);
  const flattenShape =
backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);
  const reshapeInputs:
ReshapeInputs = {x: paddedX};
  const reshapeAttrs: ReshapeAttrs = {shape: reshapedPaddedShape};
  const paddedXReshaped =
  reshape({inputs: reshapeInputs, backend, attrs: reshapeAttrs});
  const transposeInputs:
TransposeInputs = {x: paddedXReshaped};
  const transposeAttrs: TransposeAttrs = {perm:
permutedReshapedPaddedPermutation};
  const paddedXT =
  transpose({inputs: transposeInputs, backend,
attrs: transposeAttrs});
  const resultReshapeInputs: ReshapeInputs = {x: paddedXT};
  const
resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};
  const result = reshape(\
resultReshapeInputs, backend, attrs: resultReshapeAttrs);
  backend.disposeData(paddedX.dataId);
  backend.disposeData(paddedXReshaped.dataId);
  backend.disposeData(paddedXT.dataId);
  return
result;
}
export const spaceToBatchNDConfig: KernelConfig = {
kernelName: SpaceToBatchND,
backendName: 'wasm',
kernelFunc: spaceToBatchND as KernelFunc
};
"/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the
"License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the
License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or
agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for
the specific language governing permissions and
 * limitations under the License.
 */
=====
import {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';
import {backend_util} from '@tensorflow/tfjs-core';
import {BackendWasm} from
 './backend_wasm';
import {slice} from './Slice';
export function splitV(\
  args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {
  const {inputs, attrs, backend} = args;
  const {x} = inputs;
  const
{numOrSizeSplits, axis} = attrs;
  const $axis = util.parseAxisParam(axis, x.shape)[0];
  const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);
  const begin = new Array(x.shape.length).fill(0);
  const size = x.shape.slice();
  return splitSizes.map(s => {
    const xSliceSize = [...size];
    xSliceSize[$axis] =
s;
    const xSlice =
slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});
    begin[$axis] += s;
    return xSlice;
  });
}
export const splitVConfig: KernelConfig = {
kernelName: SplitV,
backendName:
'wasm',
kernelFunc: splitV as KernelFunc
};
"/**
 * @license
 * Copyright 2020 Google LLC. All
Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this
file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or
agreed to in writing,
software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language
governing permissions and
 * limitations under the License.
 */
=====
import {KernelConfig, Sqrt} from '@tensorflow/tfjs-core';
import {createUnaryKernelConfig} from
 './unary_kernel';
export const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);
"/**
 * @license
```

* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```
=====\n*\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from  
 './unary_kernel';\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/**\n *  
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig}  
 from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig  
 =\n  createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/**\n * @license\n * Copyright  
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *  
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,  
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language  
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo}  
 from '@tensorflow/tfjs-  
core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nlet wasmStep:  
(xId: number, alpha: number, dtype: number, outId: number) => void;\nfunction setup(backend:  
BackendWasm): void {\n  wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n    'number', // x_id\n    'number', // alpha\n    'number', // dtype\n    'number', // out_id\n  ]);\n}\nfunction step(\n  args: {backend:  
BackendWasm, inputs: StepInputs, attrs: StepAttrs}):  
TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {alpha} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const out =  
backend.makeOutput(x.shape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmStep(xId,  
alpha, CCppType[x.dtype], outId);\n  return out;\n}\nexport const stepConfig: KernelConfig = {\n  kernelName:  
Step,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: step as {} as KernelFunc\n};\n", "/**\n *  
@license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version  
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a  
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable  
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for  
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo,  
util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from  
 './Reshape';\nimport {slice} from './Slice';\nlet wasmStridedSlice: (\n  xId: number, xStridesBytes: Uint8Array,  
xRank: number,\n  beginBytes: Uint8Array, endBytes: Uint8Array, stridesBytes: Uint8Array,\n  outShapeBytes:  
Uint8Array, outStridesBytes: Uint8Array,\n  outShapeLength: number, outId: number) => void;\nfunction
```

```

setup(backend: BackendWasm): void {
  \n  wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n
  'number', // xId\n 'array', // xStrides\n 'number', // xRank\n 'array', // beginBytes\n 'array', // endBytes\n
  'array', // stridesBytes\n 'array', // outShapeBytes\n 'array', // outStridesBytes\n 'number', //
  outShapeLength\n 'number', // outId\n ]);\n\n\nexport function stridedSlice(args: {\n  backend: BackendWasm,\n
  inputs: StridedSliceInputs,\n  attrs: StridedSliceAttrs\n}): TensorInfo {\n  const {backend, inputs, attrs} = args;\n
  const {x} = inputs;\n\n  const {\n    begin,\n    end,\n    strides,\n    beginMask,\n    endMask,\n    ellipsisMask,\n
    newAxisMask,\n    shrinkAxisMask\n  } = attrs;\n\n  const {\n    finalShapeSparse,\n    finalShape,\n    isIdentity,\n
    sliceDim0,\n    isSimpleSlice,\n    begin: $begin,\n    end: $end,\n    strides: $strides\n  } =\n    slice_util.sliceInfo(\n
    x.shape, begin, end, strides, beginMask, endMask, ellipsisMask,\n    newAxisMask, shrinkAxisMask);\n\n
  let result;\n\n  if (isIdentity) {\n    // Optimization #1, slice is a no-op plus reshape\n    result = reshape({inputs: {x},
  backend, attrs: {shape: finalShape}});\n  } else if (sliceDim0 || isSimpleSlice) {\n    // Optimization #2, slice is
  memory contiguous (only occurs in dim 0)\n    util.assert(\n      x.shape.length >= 1,\n      () => `Input must have
  rank at least 1, got: ${x.shape.length}`);\n\n    const size = slice_util.computeOutShape($begin, $end, $strides);\n
  // To tolerate begin[0] > end[0] (a 0-output slice), we min(begin, end).\n    const sliced = slice({inputs: {x},
  backend, attrs: {begin: $begin, size}});\n    result =\n      reshape({inputs: {x: sliced}, backend, attrs: {shape:
  finalShape}});\n    backend.disposeData(sliced.dataId);\n  } else {\n    const out =
  backend.makeOutput(finalShapeSparse, 'float32');\n\n    const xId = backend.dataIdMap.get(x.dataId).id;\n    const
  xStridesBytes =\n      new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n    const beginBytes
  = new Uint8Array(new Int32Array($begin).buffer);\n    const endBytes = new Uint8Array(new
  Int32Array($end).buffer);\n    const stridesBytes = new Uint8Array(new Int32Array($strides).buffer);\n\n    const
  outputShapeBytes =\n      new Uint8Array(new Int32Array(finalShapeSparse).buffer);\n    const outStridesBytes =
  new Uint8Array(\n      new Int32Array(util.computeStrides(finalShapeSparse)).buffer);\n    const outId =
  backend.dataIdMap.get(out.dataId).id;\n\n    wasmStridedSlice(\n      xId, xStridesBytes, x.shape.length,
  beginBytes, endBytes, stridesBytes,\n      outputShapeBytes, outStridesBytes, finalShapeSparse.length, outId);\n\n
  result = reshape({inputs: {x: out}, backend, attrs: {shape: finalShape}});\n\n    backend.disposeData(out.dataId);\n
  }\n\n  return result;\n\n\n\nexport const stridedSliceConfig: KernelConfig = {\n  kernelName: StridedSlice,\n
  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: stridedSlice as {} as KernelFunc\n};\n\n"/**\n *
  @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
  2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
  copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
  the specific language governing permissions and\n * limitations under the License.\n *
  =====\n
  *\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
  './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const subConfig: KernelConfig =\n  createBinaryKernelConfig(Sub, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All
  Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
  file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
  law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
  the specific language governing permissions and\n * limitations under the License.\n *
  =====\n
  *\n\nimport {backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util} from
  '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport
  {permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmSum: (xId:
  number, reduceSize: number, dtype: number, outId: number) =>\n  void;\n\nfunction setup(backend:

```

```

BackendWasm): void {\n  wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n  'number', // input_id\n  'number', // reduce_size\n  'number', // dtype\n  'number', // out_id\n  ]);\n}\n\nfunction sum(args: {backend: BackendWasm, inputs: SumInputs, attrs: SumAttrs}):\n  TensorInfo {\n  const {backend, inputs, attrs} = args;\n  const {axis, keepDims} = attrs;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  let\n  inputId = xId;\n  let input = x;\n  const {transposed, axes, originalAxes, inputWasTransposed} =\n  permuteAxesAndTranspose(x, axis, backend);\n  let reductionAxes = axes;\n  if (inputWasTransposed) {\n  const\n  transposedId = backend.dataIdMap.get(transposed.dataId).id;\n  if (transposedId !== xId) {\n  // transpose was\n  not a no-op. We will need to dispose of this\n  // once we are done.\n  input = transposed;\n  inputId =\n  transposedId;\n  reductionAxes = backend_util.getInnerMostAxes(\n  reductionAxes.length,\n  input.shape.length);\n  }\n  }\n  backend_util.assertAxesAreInnerMostDims(\n  'sum', reductionAxes,\n  input.shape.length);\n  const [outShape, reduceShape] =\n  backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n  const reduceSize =\n  util.sizeFromShape(reduceShape);\n  const out = backend.makeOutput(outShape, input.dtype);\n  if\n  (util.sizeFromShape(input.shape) !== 0) {\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmSum(inputId, reduceSize, CppDType[out.dtype], outId);\n  }\n  if (inputWasTransposed) {\n  // dispose of\n  the transposed tensor.\n  backend.disposeData(transposed.dataId);\n  }\n  if (keepDims) {\n  // reshape\n  const\n  newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n  out.shape = newShape;\n  }\n  return out;\n}\n\nexport const sumConfig: KernelConfig = {\n  kernelName: Sum,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: sum as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google\n  LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  "License");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the License at\n  *\n  http://www.apache.org/licenses/LICENSE-2.0\n  *\n  * Unless required by applicable law or agreed to in writing,\n  software\n  * distributed under the License is distributed on an\n  "AS IS"\n  BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either\n  express or\n  implied.\n  * See the License for the specific language\n  governing\n  permissions and\n  * limitations under the License.\n  *\n  =====\n\n  *\n  \nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n  './unary_kernel';\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  "License");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the\n  License at\n  *\n  http://www.apache.org/licenses/LICENSE-2.0\n  *\n  * Unless required by applicable law or\n  agreed to in\n  writing, software\n  * distributed under the License is distributed on an\n  "AS IS"\n  BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either\n  express or\n  implied.\n  * See the License for\n  the specific\n  language\n  governing\n  permissions and\n  * limitations under the License.\n  *\n  =====\n\n  *\n  \nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n  './unary_kernel';\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n  "License");\n * you may not\n  use this file except in compliance with the License.\n * You may obtain a copy of the\n  License at\n  *\n  http://www.apache.org/licenses/LICENSE-2.0\n  *\n  * Unless required by applicable law or\n  agreed to in\n  writing, software\n  * distributed under the License is distributed on an\n  "AS IS"\n  BASIS,\n  * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either\n  express or\n  implied.\n  * See the License for\n  the specific\n  language\n  governing\n  permissions and\n  * limitations under the License.\n  *\n  =====\n\n  *\n  \nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\nimport\n  {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nlet wasmTile: (\n  xId:\n  number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\n  newShapeSize: number, dtype:\n  number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n  wasmTile =

```

```

backend.wasm.cwrap(Tile, null /* void */, [\n 'number', // x_id\n 'array', // x_shape\n 'number', //
x_shape.length\n 'array', // new_shape\n 'number', // new_shape.length\n 'number' // out_id\n
]);\n\nfunction tile(\n  args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n  const {inputs,
backend, attrs} = args;\n  const {x} = inputs;\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const {reps} =
attrs;\n\n  const newShape: number[] = new Array(x.shape.length);\n  for (let i = 0; i < newShape.length; i++) {\n
newShape[i] = x.shape[i] * reps[i];\n  }\n  const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n
const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n\n  const out =
backend.makeOutput(newShape, x.dtype);\n  const outId = backend.dataIdMap.get(out.dataId).id;\n  wasmTile(\n
xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n  CppDType[out.dtype], outId);\n  return
out;\n}\n\nexport const tileConfig: KernelConfig = {\n  kernelName: Tile,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: tile as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmTopK:
(\n  xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n  xDtype: CppDType, k: number, sorted:
boolean, outValuesId: number,\n  outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n 'number', // xId\n 'array', // x_shape\n 'number',
// x_shape.length\n 'number', // x.dtype\n 'number', // k\n 'bool', // sorted\n 'number', // outValuesId\n
'number', // outIndicesId\n ]);\n}\n\nexport const topk:\n  (args: {inputs: TopKInputs, backend: BackendWasm,
attrs: TopKAttrs}) =>\n  TensorInfo[] | TensorInfo = ({inputs, backend, attrs}) => {\n  const {x} = inputs;\n
const {k, sorted} = attrs;\n\n  const xId = backend.dataIdMap.get(x.dataId).id;\n  const xShapeBytes
= new Uint8Array(new Int32Array(x.shape).buffer);\n  const outputShape = x.shape.slice();\n
outputShape[outputShape.length - 1] = k;\n  const outValues = backend.makeOutput(outputShape, x.dtype);\n
const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n  const outIndices =
backend.makeOutput(outputShape, 'int32');\n  const outIndicesId =
backend.dataIdMap.get(outIndices.dataId).id;\n\n  wasmTopK(\n    xId, xShapeBytes, x.shape.length,
CppType[x.dtype], k, sorted,\n    outValuesId, outIndicesId);\n\n  return [outValues, outIndices];\n
};\n\nexport const topKConfig: KernelConfig = {\n  kernelName: TopK,\n  backendName: 'wasm',\n  setupFunc:
setup,\n  kernelFunc: topk as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmTransform: (\n  imageId:
number, transformsId: number, isBatchTransform: boolean,\n  batch: number, outHeight: number, outWidth:
number, numChannels: number,\n  imageWidth: number, imageHeight: number, strides: Uint8Array,\n
stridesLength: number, interpolationModeId: number, fillModeId: number,\n  fillValue: number, outId: number)
=> void;\n\nfunction setup(backend: BackendWasm): void {\n  wasmTransform = backend.wasm.cwrap(Transform,

```

```

null /*void*/, [\n 'number', // imageId\n 'number', // transformsId\n 'bool', // isBatchTransform\n 'number',
// batch\n 'number', // outHeight\n 'number', // outWidth\n 'number', // numChannels\n 'number', //
imageWidth\n 'number', // imageHeight\n 'array', // strides\n 'number', // stridesLength\n 'number', //
interpolationModeId\n 'number', // fillModeId\n 'number', // fillValue\n 'number' // outId\n
]);\n}\n\nfunction transform(\n  args:\n    {backend: BackendWasm, inputs: TransformInputs, attrs:
TransformAttrs}):\n  TensorInfo {\n    const {backend, inputs, attrs} = args;\n    const {image, transforms} = inputs;\n
const {interpolation, fillMode, fillValue, outputShape} = attrs;\n    const [batch, imageHeight, imageWidth,
numChannels] = image.shape;\n    const [outHeight, outWidth] =\n      outputShape != null ? outputShape :
[imageHeight, imageWidth];\n    const outShape =\n      [batch, outHeight, outWidth,\n        numChannels] as
[number, number, number, number];\n    const strides =\n      new Uint8Array(new
Int32Array(util.computeStrides(image.shape)).buffer);\n\n    const out = backend.makeOutput(outShape,
image.dtype);\n    const outId = backend.dataIdMap.get(out.dataId).id;\n\n    const imageData =
backend.dataIdMap.get(image.dataId);\n    const imageId = imageData.id;\n\n    const transformsData =
backend.dataIdMap.get(transforms.dataId);\n    const transformsId = transformsData.id;\n\n    const
interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n    let fillModeId;\n    switch (fillMode) {\n      case
'constant':\n        fillModeId = 1;\n        break;\n      case 'reflect':\n        fillModeId = 2;\n        break;\n      case 'wrap':\n
fillModeId = 3;\n        break;\n      case 'nearest':\n        fillModeId = 4;\n        break;\n      default:\n        fillModeId = 1;\n
break;\n    }\n\n    wasmTransform(\n      imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n
outWidth, numChannels, imageWidth, imageHeight, strides,\n      image.shape.length - 1, interpolationModeId,
fillModeId, fillValue,\n      outId);\n\n    return out;\n  }\n\nexport const transformConfig: KernelConfig = {\n
kernelName: Transform,\n  backendName: 'wasm',\n  setupFunc: setup,\n  kernelFunc: transform as { } as
KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
===== \n
*/\n\nimport {KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-core';\nimport
{BackendWasm} from './backend_wasm';\n\nfunction zerosLike(args: {inputs: ZerosLikeInputs, backend:
BackendWasm}) {\n  const {inputs: {x}, backend} = args;\n  const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.typedArrayFromHeap(out);\n  outVals.fill(0);\n  return out;\n}\n\nexport const
zerosLikeConfig: KernelConfig = {\n  kernelName: ZerosLike,\n  backendName: 'wasm',\n  kernelFunc: zerosLike
as { } as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
===== \n\n*/\n\n//
We explicitly import the modular kernels so they get registered in the\n// global registry when we compile the
library. A modular build would replace\n// the contents of this file and import only the kernels that are
needed.\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {fusedMatMulConfig}
from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {addConfig} from
 './kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport
{anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {avgPoolConfig}

```

```

from './kernels/AvgPool';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport
{batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {castConfig} from './kernels/Cast';\nimport
{ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport
{concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport
{conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {cosConfig} from
 './kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from
 './kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {depthToSpaceConfig}
from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from
 './kernels/DepthwiseConv2dNative';\nimport {eluConfig} from './kernels/Elu';\nimport {equalConfig} from
 './kernels/Equal';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from
 './kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from
 './kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from
 './kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport
{fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from
 './kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport
{gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport
{greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport
{leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport
{lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport
{logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport
{maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport
{meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
 './kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from
 './kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
 './kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
 './kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
 './kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
 './kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
 './kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
{rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
 './kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
 './kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
 './kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
 './kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
 './kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
 './kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
 './kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
 './kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
 './kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
 './kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
 './kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n  absConfig,\n  addConfig,\n  addNConfig,\n  allConfig,\n  anyConfig,\n  argMaxConfig,\n  avgPoolConfig,\n  batchMatMulConfig,\n  batchToSpaceNDConfig,\n  castConfig,\n

```



```

ceilConfig,\n clipByValueConfig,\n concatConfig,\n conv2DConfig,\n conv2DBackpropInputConfig,\n
cosConfig,\n coshConfig,\n cropAndResizeConfig,\n cumsumConfig,\n depthToSpaceConfig,\n
depthwiseConv2dNativeConfig,\n eluConfig,\n equalConfig,\n expConfig,\n expandDimsConfig,\n fillConfig,\n
flipLeftRightConfig,\n floorConfig,\n floorDivConfig,\n fusedMatMulConfig,\n fusedBatchNormConfig,\n
fusedConv2DConfig,\n fusedDepthwiseConv2DConfig,\n gatherNdConfig,\n gatherV2Config,\n greaterConfig,\n
greaterEqualConfig,\n identityConfig,\n leakyReluConfig,\n lessConfig,\n lessEqualConfig,\n logConfig,\n
logicalAndConfig,\n maxConfig,\n maximumConfig,\n maxPoolConfig,\n meanConfig,\n minConfig,\n
minimumConfig,\n mirrorPadConfig,\n multiplyConfig,\n negConfig,\n nonMaxSuppressionV3Config,\n
nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n
onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n
realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n
rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n
sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n
squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n
tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n
zerosLikeConfig];\n\nfor (const kernelConfig of kernelConfigs) {\n  registerKernel(kernelConfig);\n}\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {slice} from
'./Slice';\n\nfunction unpack(\n  args: {inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs}):\n
TensorInfo[] {\n  const {inputs, backend, attrs} = args;\n  const {value} = inputs;\n  let {axis} = attrs;\n  if (axis <
0) {\n    axis += value.shape.length;\n  }\n  const numOutputs = value.shape[axis];\n  const rank =
value.shape.length;\n  const outShape: number[] = new Array(rank - 1);\n  let outIndex = 0;\n  for (let i = 0; i < rank;\n  i++) {\n    if (i !== axis) {\n      outShape[outIndex++] = value.shape[i];\n    }\n  }\n  const outs: TensorInfo[] = new
Array(numOutputs);\n  const begin = new Array(rank).fill(0);\n  const size = value.shape.slice();\n  size[axis] = 1;\n  for (let i = 0; i < outs.length; i++) {\n    begin[axis] = i;\n    outs[i] = slice({inputs: {x: value}, attrs: {begin, size},
backend});\n  }\n  return outs.map(({dataId, dtype}) => ({dataId, dtype, shape: outShape}));\n}\n\nexport const
unpackConfig: KernelConfig = {\n  kernelName: Unpack,\n  backendName: 'wasm',\n  kernelFunc: unpack as {} as
KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {env} from '@tensorflow/tfjs-core';\n\nconst ENV = env();\n\n/**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n  // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n  // code. In this case it is a small program that
contains SIMD\n  // instructions.\n  'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
Uint8Array([\n    0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n    2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,\n    11\n  ])));\n\n/**\n * True if threads are supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-

```

```

feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n return false;\n }\n\n try {\n //
Test for transferability of SABs (needed for Firefox)\n //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
program containing threaded\n // instructions.\n return WebAssembly.validate(new Uint8Array([\n 0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
11\n ]));\n } catch (e) {\n return false;\n }\n});\n";\n\nvar WasmBackendModuleThreadedSimd = (function() {\n
var __scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') __scriptDir = __scriptDir || __filename;\n return
(\nfunction(WasmBackendModuleThreadedSimd) {\n WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}}return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}}return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram= "./this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module["ENVIRONMENT_IS_PTHREAD"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module["buffer"]}var scriptDirectory="";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");};readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"^")}arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw

```

```

ex } });process[\"on\"](\"unhandledRejection\",abort);quit_=function(status){process[\"exit\"](status)};Module[\"inspect\"]=function(){return\"[Emscripten Module object]\"};var
nodeWorkerThreads;try{nodeWorkerThreads=require(\"worker_threads\")}catch(e){console.error(\"The
\"worker_threads\" module is not supported in this node.js build - perhaps a newer version is needed?);throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!=\"undefined\"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer===\"function\"){return new
Uint8Array(readbuffer(f))}data=read(f,\"binary\");assert(typeof data===\"object\");return data};if(typeof
scriptArgs!=\"undefined\"){arguments_=scriptArgs}else if(typeof
arguments!=\"undefined\"){arguments_=arguments}if(typeof
quit===\"function\"){quit_=function(status){quit(status)}}if(typeof print!=\"undefined\"){if(typeof
console===\"undefined\")console={};console.log=print;console.warn=console.error=typeof
printErr!=\"undefined\"?printErr:print} else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=\"undefined\"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !=\"undefined\" &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf(\"blob:\")!=\"0"){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf(\"^\")+1)}else{scriptDirectory=\"\"}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\"fs\");if(!nodePath)nodePath=require(\"path\");filename=n
odePath[\"normalize\"](filename);return
nodeFS[\"readFileSync\"](filename,binary?null:\"utf8\");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret} else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.responseType=\"arraybuffer\";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,true);xhr.responseType=\"arraybuffer\";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} else{if(ENVIRONMENT_IS_NODE){if(typeof
performance===\"undefined\"){global.performance=require(\"perf_hooks\").performance}}var
out=Module[\"print\"]||console.log.bind(console);var err=Module[\"printErr\"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module[\"arguments\"]arguments_=Module[\"arguments\"];if(Module[\"thisProgram\"]thisProgram=
Module[\"thisProgram\"];if(Module[\"quit\"]quit_=Module[\"quit\"];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)}}var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module[\"wasmBinary\"]wasmBinary=Module[\"wasmBinary\"];var
noExitRuntime=Module[\"noExitRuntime\"]||true;if(typeof WebAssembly!=\"object\"){abort(\"no native wasm
support detected\")}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort(\"Assertion failed: \"+text)}}function getCFunc(ident){var
func=Module[\"_\"+ident];assert(func,\"Cannot call unknown function \"+ident+\", make sure it is exported\");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={\"string\":function(str){var
ret=0;if(str!=\"null\"&&str!=\"undefined\"&&str!=\"0\"){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},\"array\":function(arr){var

```

```

ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret } };function
convertReturnValue(ret){if(returnType===\"string\")return UTF8ToString(ret);if(returnType===\"boolean\")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\"number\"});var
numericRet=returnType!==\"string\";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str=\"\";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)===192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)===224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):\"\"}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++
]=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var
len=0;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10|str.charCodeAt(++i)&1023);if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module[\"HEAP8\"]=HEAP8=new
Int8Array(buf);Module[\"HEAP16\"]=HEAP16=new Int16Array(buf);Module[\"HEAP32\"]=HEAP32=new
Int32Array(buf);Module[\"HEAPU8\"]=HEAPU8=new Uint8Array(buf);Module[\"HEAPU16\"]=HEAPU16=new
Uint16Array(buf);Module[\"HEAPU32\"]=HEAPU32=new
Uint32Array(buf);Module[\"HEAPF32\"]=HEAPF32=new
Float32Array(buf);Module[\"HEAPF64\"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module[\"INITIAL_MEMORY\"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmM
emory=Module[\"wasmMemory\"];buffer=Module[\"buffer\"]}else{if(Module[\"wasmMemory\"]){wasmMemory=
Module[\"wasmMemory\"]}else{wasmMemory=new
WebAssembly.Memory({\"initial\":INITIAL_MEMORY/65536,\"maximum\":2147483648/65536,\"shared\":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err(\"requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a

```

```

flag\");if(ENVIRONMENT_IS_NODE){console.log(\(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)\")}throw Error(\("bad
memory\"))}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlob
alBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctors
()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]="function")Module["preRun"]=Module["preRun"];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof
Module["postRun"]="function")Module["postRun"]=Module["postRun"];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,\("addRunDependency cannot be used in a
pthread
worker\");runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](ru
nDependencies)}}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=nul
l}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}if(ENVIRONMENT_IS_PTHREAD)console.err
or(\("Pthread aborting at \"+(new
Error).stack);what+="\";err(what);ABORT=true;EXITSTATUS=1;what="\abort(\"+what+\"). Build with -s
ASSERTIONS=1 for more info.\";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw
e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,\";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://\";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-wasm-threaded-
simd.wasm\";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file==wasmBinaryFile&&wasmBinaryFile){return new
Uint8Array(wasmBinaryFile)}if(readBinary){return readBinary(file)}else{throw\("both async and sync fetching of the
wasm failed\")}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch==="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\("same-
origin\").then(function(response){if(!response["ok"]){throw\("failed to load wasm binary file at
\"+wasmBinaryFile+"\")}return response["arrayBuffer"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\("a":asmLibraryArg);function

```

```

receiveInstance(instance,module){ var
exports=instance.exports;Module["asm"]=exports;wasmTable=Module["asm"]["I"];wasmModule=module;if(!E
NVIROMENT_IS_PTHREAD){ var
numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.load
WasmModuleToWorker(w,function(){if(!--numWorkersToLoad)removeRunDependency("\wasm-
instantiate\");}})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency("\wasm-instantiate\");function
receiveInstantiatedSource(output){receiveInstance(output["instance"],output["module"]);function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)).then(receiver,function(reason){err("\failed to asynchronously prepare
wasm: "+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\function\&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\function\"){return fetch(wasmBinaryFile,{credentials:\same-
origin\}).then(function(response){ var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err("\wasm streaming compile failed: "+reason);err("\falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)})})}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module["instantiateWasm\"){try{var
exports=Module["instantiateWasm\"](info,receiveInstance);return exports}catch(e){err("\Module.instantiateWasm
callback failed with error: "+e);return false}}instantiateAsync().catch(PromiseReject);return{}}var
ASM_CONSTS={10520:function(){throw\Canceled!},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0});function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\function\){callback(Module);continue}var func=callback.func;if(typeof
func===\number\){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg
)}}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,E
BADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOSIG:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADE:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14
8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5};function
__emscripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return

```

```

1 } } var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw`"Atomics.notify returned an unexpected value
`"+ret}Module["_emscripten_futex_wake"]="_emscripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw`"Internal Error! killThread() can only ever be
called from main application thread!";if(!pthread_ptr)throw`"Internal Error! Null pthread_ptr in
killThread!";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.threads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker pthread=undefined }functio
n cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw`"Internal Error! cancelThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw`"Internal Error! Null pthread_ptr in
cancelThread!";var
pthread=PThread.threads[pthread_ptr];pthread.worker.postMessage({`cmd`:"cancel"})}function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw`"Internal Error! cleanupThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw`"Internal Error! Null pthread_ptr in
cleanupThread!";var
pthread=PThread.threads[pthread_ptr];if(pthread){GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)} }var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}},initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,1,ENVIRON
MENT_IS_WORKER,1);_emscripten_register_main_browser_thread_id(tb),initWorker:function(){},threads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&pthread_self())__pthread
_tsd_run_dtors(),runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=_pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({`cmd`:"exit"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({`cmd`:"cancelDone"})},terminateAllThreads:function(){for(var t in
PThread.threads){var
pthread=PThread.threads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)} }PThre
ad.threads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[]},freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread.threads[worker pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker pthread);worker pthread=un

```

```

defined)),runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e[\"data\"];var
cmd=d[\"cmd\"];if(worker.pthread)PThread.currentProxiedOperationCallerThread=worker.pthread.threadInfoStruct;
if(d[\"targetThread\"]&&d[\"targetThread\"]!=$_pthread_self()){var
thread=PThread.pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d[\"transferList\"])}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\" to target pthread '+d[\"targetThread\"]+'\", but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\"processQueuedMainThread
Work\"){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\"spawnThread\"){spawnThread(e.data)}else
if(cmd===\"cleanupThread\"){cleanupThread(d[\"thread\"])}else
if(cmd===\"killThread\"){killThread(d[\"thread\"])}else
if(cmd===\"cancelThread\"){cancelThread(d[\"thread\"])}else
if(cmd===\"loaded\"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\"print\"){out(\"Thread \"+d[\"threadId\"]+\":
\"+d[\"text\"])}else if(cmd===\"printErr\"){err(\"Thread \"+d[\"threadId\"]+\": \"+d[\"text\"])}else
if(cmd===\"alert\"){alert(\"Thread \"+d[\"threadId\"]+\": \"+d[\"text\"])}else if(cmd===\"exit\"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}else
if(cmd===\"exitProcess\"){try{exit(d[\"returnCode\"])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\"cancelDone\"){PThread.returnWorkerToPool(worker)}else
if(cmd===\"objectTransfer\"){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\"setImmediate\"){worker.postMessage(e.data)}else{err(\"worker sent an unknown command
\"+cmd)}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\"pthread sent
an error! \"+e.filename+\": \"+e.lineno+\":
\"+e.message)};if(ENVIRONMENT_IS_NODE){worker.on(\"message\",function(data){worker.onmessage({data:d
ata})});worker.on(\"error\",function(data){worker.onerror(data)});worker.on(\"exit\",function(data){})}worker.post
Message({\"cmd\":\"load\", \"urlOrBlob\":Module[\"mainScriptUrlOrBlob\"]|_scriptDir,\"wasmMemory\":wasmMe
memory,\"wasmModule\":wasmModule}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile(\"tfjs-
backend-wasm-threaded-simd.worker.js\");PThread.unusedWorkers.push(new
Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}}};function
establishStackSpace(stackTop,stackMax){__emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module[\"establishStackSpace\"]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module[\"getNoExitRuntime\"]=getNoExitRuntime;function invokeEntryPoint(ptr,arg){return
wasmTable.get(ptr)(arg)}Module[\"invokeEntryPoint\"]=invokeEntryPoint;function
__assert_fail(condition,filename,line,func){abort(\"Assertion failed: \"+UTF8ToString(condition)+\", at:
\"+[filename?UTF8ToString(filename):\"unknown filename\",line,func?UTF8ToString(func):\"unknown
function\"])}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
__emscripten_get_now;if(ENVIRONMENT_IS_NODE){__emscripten_get_now=function(){var
t=process[\"hrtime\"]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){__emscripten_get_now=function(){return performance.now()-
Module[\"__performance_now_clock_drift\"]}}else if(typeof
dateNow!=\"undefined\"){__emscripten_get_now=dateNow}else __emscripten_get_now=function(){return

```



```

performance.now());function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return
value}function _atexit(func,arg){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(1,1,func,arg)}function
_emsripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessag
e({"cmd\":"processQueuedMainThreadWork"})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({"targetThread\":"targetThreadId,\\"cmd\":"processThreadQueu
e\"})}else{var pthread=PThread.pthreads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({"cmd\":"processThreadQueue\"})}ret
urn 1}function _abort(){abort()}function _emsripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emsripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emsripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\\"timed-out\\")return-
73;if(ret===\\"not-equal\\")return-6;if(ret===\\"ok\\")return 0;throw\\"Atomics.wait returned an unexpected value
\\"+ret}else{if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emsripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emsripten_mai
n_thread_futex>>2,0);return-
73}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emsripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emsripten_main_thread_process_queued_calls();if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emsripten_main_thread_futex>>2,addr)}return
0}}function
_emsripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emsripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require\\"os\\".cpus().length;return
navigator\\"hardwareConcurrency\\"}function _emsripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emsripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retur
n ret}var _emsripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emsripten_receive_on_main_thread_js(index,numCallArgs,args){_emsripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emsripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emsripten_receive_on_main_thread_js_callArgs)}function
_emsripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emsripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmmemory.buffer);return
1}catch(e){}}function _emsripten_resize_heap(requestedSize){var
oldSize=_emsripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var

```

```

cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true }return false }var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[];registerRemoveEventListene
rs:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true }},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))){return }JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList
});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence})},removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i }},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return }for(var i=0;i<JSEvents.deferredCalls.length;++i){var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return\"\";if(target==window)return\"#window\";
if(target==screen)return\"#screen\";return
target&&target.nodeName?target.nodeName:\"\"},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function

```

```

_emsripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){ var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas)}GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emsripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emsripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):\"";_emsripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=="undefined"?document:0,typeof window!=="undefined"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=="undefined"?document.querySelector(target):undefined);return domElement}function
findCanvasEventTarget(target){return findEventTarget(target)}function
_emsripten_set_canvas_element_size_calling_thread(target,width,height){ var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){ var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){ canvas.GLctxObject.GLctx.viewport(0,0,width,height) } }else
if(canvas.canvasSharedPtr){ var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emsripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1 }else{ return-4}return 0}function
_emsripten_set_canvas_element_size_main_thread(target,width,height){if(ENVIRONMENT_IS_PTHREAD)retur
n _emsripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emsripten_set_canvas_element_size(target,width,height){ var
canvas=findCanvasEventTarget(target);if(canvas){ return
_emsripten_set_canvas_element_size_calling_thread(target,width,height) }else{ return
_emsripten_set_canvas_element_size_main_thread(target,width,height) } }function
_emsripten_set_current_thread_status(newStatus){ }function
_emsripten_set_thread_name(threadId,name){ }function __webgl_enable_ANGLE_instanced_arrays(ctx){ var
ext=ctx.getExtension(\"ANGLE_instanced_arrays\");if(ext){ ctx[\"vertexAttribDivisor\"]=function(index,divisor){ ex
t[\"vertexAttribDivisorANGLE\"](index,divisor) }; ctx[\"drawArraysInstanced\"]=function(mode,first,count,primcou
nt){ ext[\"drawArraysInstancedANGLE\"](mode,first,count,primcount) }; ctx[\"drawElementsInstanced\"]=function(
mode,count,type,indices,primcount){ ext[\"drawElementsInstancedANGLE\"](mode,count,type,indices,primcount) };
return 1 } }function __webgl_enable_OES_vertex_array_object(ctx){ var
ext=ctx.getExtension(\"OES_vertex_array_object\");if(ext){ ctx[\"createVertexArray\"]=function(){ return
ext[\"createVertexArrayOES\"](); ctx[\"deleteVertexArray\"]=function(vao){ ext[\"deleteVertexArrayOES\"](vao) };
ctx[\"bindVertexArray\"]=function(vao){ ext[\"bindVertexArrayOES\"](vao) }; ctx[\"isVertexArray\"]=function(vao)
{ return ext[\"isVertexArrayOES\"](vao); return 1 } }function __webgl_enable_WEBGL_draw_buffers(ctx){ var
ext=ctx.getExtension(\"WEBGL_draw_buffers\");if(ext){ ctx[\"drawBuffers\"]=function(n,bufs){ ext[\"drawBuffers
WEBGL\"](n,bufs) }; return 1 } }function
__webgl_enable_WEBGL_multi_draw(ctx){ return!(ctx.multiDrawWebgl=ctx.getExtension(\"WEBGL_multi_dra

```

```

w\"))}var
GL={counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{},offscreenCanvases:{},timerQueriesEXT:[],programInfos:{},stringCache:{},unpackAlignment:4,recordError:
function recordError(errorCode){if(!GL.lastError){GL.lastError=errorCode}},getNewId:function(table){var
ret=GL.counter++;for(var i=table.length;i<ret;i++){table[i]=null}return
ret},getSource:function(shader,count,string,length){var source="\\";for(var i=0;i<count;++i){var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return
source},createContext:function(canvas,webGLContextAttributes){var
ctx=canvas.getContext("\webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle},registerContext:function(ctx,webGLContextAttributes){var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:
ctx};if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault===undefined||webGLContextAttributes.enableExtensions
ByDefault){GL.initExtensions(context)}return
handle},makeContextCurrent:function(contextHandle){GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){return
GL.contexts[contextHandle]},deleteContext:function(contextHandle){if(GL.currentContext===GL.contexts[context
Handle])GL.currentContext=null;if(typeof
JSEvents===undefined)JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null},initExtensions:f
unction(context){if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("\
EXT_disjoint_timer_query");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){if(ext.indexOf("\lose_context")<0&&ext.inde
xOf("\debug")<0){GLctx.getExtension(ext)}}),populateUniformTable:function(program){var
p=GL.programs[program];var
ptable=GL.programInfos[program]={uniforms:{},maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1};var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)==="\"){name=name.slice(0,name.lastIndexOf("\["))}var loc=GLctx.getUniformLocation(p,name);if(loc){var
id=GL.getNewId(GL.uniforms);utable[name]=[u.size,id];GL.uniforms[id]=loc;for(var j=1;j<u.size;++j){var
n=name+"\["+j+"\]";loc=GLctx.getUniformLocation(p,n);id=GL.getNewId(GL.uniforms);GL.uniforms[id]=loc}}
};var __emscripten_webgl_power_preferences=["default","low-power","high-performance"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],failIfMajorPerf

```

```

ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
_HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)];var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GL.createContext(canvas,contextAttributes);return contextHandle}function
_emsripten_webgl_create_context(a0,a1){return _emsripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
_fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return _emsripten_proxy_to_main_thread_js(3,1,fd);return
0}function _fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
_fd_write(fd,iiov,iiovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(5,1,fd,iiov,iiovcnt,pnum);var num=0;for(var i=0;i<iiovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iiov+i*8>>2];var len=GROWABLE_HEAP_I32()[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j])}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function _pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
_pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasnTable.get(routine)(arg)})}f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! spawnThread()
can only ever be called from main application thread!";var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw"Internal
error!";if(!threadParams.pthread_ptr)throw"Internal error, no pthread
ptr!";PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;++i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emsripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr
ead=pthread;var
msg={"cmd\":"run\","start_routine\":threadParams.startRoutine,"arg\":threadParams.arg,"threadInfoStruct\":thre
adParams.pthread_ptr,"stackBase\":threadParams.stackBase,"stackSize\":threadParams.stackSize};worker.runPthr
ead=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded
){worker.runPthread();delete worker.runPthread}}function
_pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===\undefined){err("Current
environment does not support SharedArrayBuffer, pthreads are not available!");return
6}if(!pthread_ptr){err("pthread_create called with a null thread pointer!");return 28}var transferList=[];var

```

```

error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return
_emsripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var
stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-
1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+
8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==0}else{stackSize=2097152}var
allocatedOwnStack=stackBase===0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=
stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var
i=0;i<228>>2;++)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_p
tr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var
headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var
threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached
,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_P
THREAD){threadParams.cmd=\"spawnThread\";postMessage(threadParams,transferList)}else{spawnThread(thread
Params)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var
tb=__pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled===2)throw\"Canceled!\"}function
_emsripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce(\"Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread\")}function
__emsripten_do_pthread_join(thread,status,block){if(!thread){err(\"pthread_join attempted on a null thread
pointer!\");return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&__pthread_self()===thread){err(\"PThread
\"+thread+\" is attempting to join to itself!\");return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emsripten_main_browser_thread_id()===thread){err(\"Main thread
\"+thread+\" is attempting to join to itself!\");return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!==thread){err(\"pthread_join attempted on thread
\"+thread+\", which does not point to a valid thread, or does not exist anymore!\");return
ERRNO_CODES.ESRCH}var
detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err(\"Attempted to join thread
\"+thread+\", which was already detached!\");return
ERRNO_CODES.EINVAL}if(block){_emsripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus===1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage({\"cmd\": \"cleanupThread\", \"thread\": thread});return
0}if(!block){return
ERRNO_CODES.EBUSY}}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emsripten_main_thre
ad_process_queued_calls();_emsripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}}function _pthread_join(thread,status){return __emsripten_do_pthread_join(thread,status,true)}function
_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case

```

```

80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emscripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wr
ite,_sysconf];var
asmLibraryArg={\"e\":__assert_fail,\"r\":__call_main,\"x\":_emscripten_notify_thread_queue,\"b\":_abort,\"y\":
_emscripten_asm_const_int,\"j\":_emscripten_conditional_set_current_thread_status,\"d\":_emscripten_futex_wait,\"
c\":_emscripten_futex_wake,\"f\":_emscripten_get_now,\"p\":_emscripten_memcpy_big,\"A\":_emscripten_num_l
ogical_cores,\"u\":_emscripten_receive_on_main_thread_js,\"q\":_emscripten_resize_heap,\"v\":_emscripten_set_ca
nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory||Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"C\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"E\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"F\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"G\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"H\"]).apply(
null,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"J\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"K\"]).apply(null,argumen
ts)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"L\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"M\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"N\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"O\"]).ap
ply(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"P\"]).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"][\"Q\"]).apply(null,arguments)};var

```

```

_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"][_"R"]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][_"S"]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][_"T"]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["asm"][_"U"]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][_"V"]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][_"W"]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["asm"][_"X"]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["asm"][_"Y"]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["asm"][_"Z"]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["asm"][_"_"]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["asm"][_"$"]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["asm"][_"aa"]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["asm"][_"ba"]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["asm"][_"ca"]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["asm"][_"da"]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["asm"][_"ea"]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["asm"][_"fa"]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["asm"][_"ga"]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["asm"][_"ha"]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["asm"][_"ia"]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["asm"][_"ja"]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["asm"][_"ka"]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["asm"][_"la"]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["asm"][_"ma"]).apply(null,arguments)};var

```



```

_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][\na]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][\oa]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][\pa]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][\qa]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][\ra]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][\sa]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][\ta]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][\ua]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][\va]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][\wa]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][\xa]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][\ya]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][\za]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][\Aa]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][\Ba]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][\Ca]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][\Da]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][\Ea]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][\Fa]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][\Ga]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][\Ha]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][\Ia]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][\Ja]).apply(null,arguments)};var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][\Ka]).apply(null,arguments)};var

```

```

_Reluv6=Module["_Reluv6"]=function(){return(_Reluv6=Module["_Reluv6"]=Module["asm"][_"La"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][_"Ma"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][_"Na"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][_"Oa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][_"Pa"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][_"Qa"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][_"Ra"]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][_"Sa"]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][_"Ta"]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][_"Ua"]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][_"Va"]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][_"Wa"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][_"Xa"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"][_"Ya"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][_"Za"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"][_"a"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][_"$a"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][_"ab"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][_"bb"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][_"cb"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][_"db"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][_"eb"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][_"fb"]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][_"gb"]).apply(null,arguments)};var

```

```

__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"])[\["hb\"]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"])[\["ib\"]).apply(nul
l,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"])[\["jb\"]).apply(null,arguments
)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"])[\["kb\"]).apply(null,arguments)};var
_emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=function(){return(_emscripten_get_global
_libc=Module["_emscripten_get_global_libc"]=Module["asm"])[\["lb\"]).apply(null,arguments)};var
_pthread_self=Module["_pthread_self"]=function(){return(_pthread_self=Module["_pthread_self"]=Module["as
m"])[\["mb\"]).apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=M
odule["__pthread_tsd_run_dtors"]=Module["asm"])[\["nb\"]).apply(null,arguments)};var
_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=fu
nction(){return(_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_que
ued_calls"]=Module["asm"])[\["ob\"]).apply(null,arguments)};var
_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]
=function(){return(_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_proc
ess_queued_calls"]=Module["asm"])[\["pb\"]).apply(null,arguments)};var
_emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=functi
on(){return(_emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread
_id"]=Module["asm"])[\["qb\"]).apply(null,arguments)};var
_emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=function(){return(_ems
cripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=Module["asm"])[\["rb\"]).app
ly(null,arguments)};var
__emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=function(){return(__ems
cripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=Module["asm"])[\["sb\"]).apply(n
ull,arguments)};var
_emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=function(){retur
n(_emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=Module["asm"]
)[\["tb\"]).apply(null,arguments)};var
_emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=function(
){return(_emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=
Module["asm"])[\["ub\"]).apply(null,arguments)};var
__emscripten_call_on_thread=Module["__emscripten_call_on_thread"]=function(){return(__emscripten_call_on_t
hread=Module["__emscripten_call_on_thread"]=Module["asm"])[\["vb\"]).apply(null,arguments)};var
_emscripten_tls_init=Module["_emscripten_tls_init"]=function(){return(_emscripten_tls_init=Module["_emscrip
ten_tls_init"]=Module["asm"])[\["wb\"]).apply(null,arguments)};var
__emscripten_thread_init=Module["__emscripten_thread_init"]=function(){return(__emscripten_thread_init=Mod
ule["__emscripten_thread_init"]=Module["asm"])[\["xb\"]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"])[\["yb\"]).a
pply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"]
)[\["zb\"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"])[\["Ab\
"]].apply(null,arguments)};var
_emscripten_stack_set_limits=Module["_emscripten_stack_set_limits"]=function(){return(_emscripten_stack_set_

```

```

limits=Module["_emscripten_stack_set_limits"]=Module["asm\"][["Bb\").apply(null,arguments)];var
_memalign=Module["_memalign"]=function(){return(_memalign=Module["_memalign"]=Module["asm\"][["Cb
\").apply(null,arguments)];var
__emscripten_allow_main_runtime_queued_calls=Module["_emscripten_allow_main_runtime_queued_calls"]=1
0512;var
__emscripten_main_thread_futex=Module["_emscripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap
;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasmMemory"]=wasmMemory;Module
["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromis
eResolve(Module);initRuntime();postMessage({"cmd":"loaded"});return}preRun();if(runDependencies>0){retur
n}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("Running..");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"]("\n"),1});doRun(),1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":"exitProcess","returnCode":status});throw new
ExitStatus(status)}else{}}if(noExitRuntime){}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunti
me();if(Module["onExit"])Module["onExit"](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=[Module["preInit"]];while(Module["preInit"].length>0){
Module["preInit"].pop()}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n);)\nif (typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports["WasmBackendModuleThreadedSimd"] =
WasmBackendModuleThreadedSimd;\n", "\nvar WasmBackendModule = (function() {\n var _scriptDir = typeof
document !== 'undefined' && document.currentScript ? document.currentScript.src : undefined;\n if (typeof
__filename !== 'undefined') _scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n
WasmBackendModule = WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!="undefined"?WasmBackendModule: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram="/.this.program";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory="";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var

```

```

nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=n
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"^")}arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"]("unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["insp
ect"]=function(){return"[Emscripten Module object]"}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
arguments!="undefined"){arguments_=arguments}if(typeof
quit==="function"){quit_=function(status){quit(status)}}if(typeof print!="undefined"){if(typeof
console==="undefined")console={};console.log=print;console.warn=console.error=typeof
printErr!="undefined"?printErr:print}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(!_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf("^")+1)}else{scriptDirectory=""}}read_=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
===200||xhr.status===0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)
}setWindowTitle=function(title){document.title=title}else{var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module["arguments"])arguments_=Module["arguments"];if(Module["thisProgram"])thisProgram=
Module["thisProgram"];if(Module["quit"])quit_=Module["quit"];var
wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!="object"){abort("no native wasm
support detected")}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+" , make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str===null&&str===undefined&&str===0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i]

```

```

]=args[i] } } var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==(0))stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)} } var UTF8Decoder=typeof
TextDecoder!="undefined"?new TextDecoder("utf8"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){ var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{ var
str="";while(idx<endPtr){ var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{ var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)} } }return str}function
UTF8ToString(ptr,maxBytesToRead){ return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){ var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){ var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]|=192|u>>6;heap[outIdx++]|=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]|=224|u>>12;heap[outIdx++]|=128|u>>6&63;heap[outIdx
++]|=128|u&63}else {if(outIdx+3>=endIdx)break;heap[outIdx++]|=240|u>>18;heap[outIdx++]|=128|u>>12&63;heap[
outIdx++]|=128|u>>6&63;heap[outIdx++]|=128|u&63} }heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){ return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]=="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){ addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep

```

```

dependencies\")(runDependencies)}function removeRunDependency(id){runDependencies--
;if(Module[\"monitorRunDependencies\"]){Module[\"monitorRunDependencies\"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=nul
l}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module[\"preloadedImages\"]={};Module
[\"preloadedAudios\"]={};function
abort(what){if(Module[\"onAbort\"]){Module[\"onAbort\"](what)}what+=\"\\\";err(what);ABORT=true;EXITSTAT
US=1;what=\\\"abort(\\\"+what+\\\"). Build with -s ASSERTIONS=1 for more info.\\\";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix=\\\"data:application/octet-stream;base64,\\\";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix=\\\"file://\\\";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile=\\\"tfjs-backend-
wasm.wasm\\\";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw\\\"both async and sync fetching of the
wasm failed\\\"}}catch(err){abort(err)}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\\\"function\\\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\\\"same-
origin\\\"}).then(function(response){if(!response[\\\"ok\\\"])throw\\\"failed to load wasm binary file at
\\\"+wasmBinaryFile+\\\"\\\"}return response[\\\"arrayBuffer\\\"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))}}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\\\"a\\\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\\\"asm\\\"]=exports;wasmMemory=Module[\\\"asm\\\"][\\\"j\\\"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module[\\\"asm\\\"][\\\"r\\\"];removeRunDependency(\\\"wasm-
instantiate\\\");addRunDependency(\\\"wasm-instantiate\\\");function
receiveInstantiatedSource(output){receiveInstance(output[\\\"instance\\\"]);function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\\\"failed to asynchronously prepare
wasm: \\\"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\\\"function\\\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\\\"function\\\"){return fetch(wasmBinaryFile,{credentials:\\\"same-
origin\\\"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\\\"wasm streaming compile failed: \\\"+reason);err(\\\"falling
back to ArrayBuffer instantiation\\\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\\\"instantiateWasm\\\"]){try{var
exports=Module[\\\"instantiateWasm\\\"](info,receiveInstance);return exports}catch(e){err(\\\"Module.instantiateWasm
callback failed with error: \\\"+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\\\"function\\\"){callback(Module);continue}var func=callback.func;if(typeof
func===\\\"number\\\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}function _abort(){abort()}function
_emscripten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscripten_get_heap_size(){return HEAPU8.length}function
emscripten_realloc_buffer(size){try{wasmMemory.grow(size-

```

```

buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var oldSize=_emscripten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requeste
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iiov,iovcnt,pnum){var num=0;for(var
i=0;i<iovcnt;i++){var ptr=HEAP32[iov+i*8>>2];var len=HEAP32[iov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _pthread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-1}var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
___wasm_call_ctors=Module[\"___wasm_call_ctors\"]=function(){return(___wasm_call_ctors=Module[\"___wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var

```



```

_Abs=Module["_Abs"]=function(){return(_Abs=Module["_Abs"]=Module["asm"][["s"]]).apply(null,arguments
);}var
_Add=Module["_Add"]=function(){return(_Add=Module["_Add"]=Module["asm"][["t"]]).apply(null,argument
s);}var
_AddN=Module["_AddN"]=function(){return(_AddN=Module["_AddN"]=Module["asm"][["u"]]).apply(null,ar
guments);}var
_All=Module["_All"]=function(){return(_All=Module["_All"]=Module["asm"][["v"]]).apply(null,arguments);}
var
_Any=Module["_Any"]=function(){return(_Any=Module["_Any"]=Module["asm"][["w"]]).apply(null,argumen
ts);}var
_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm"][["x"]]).app
ly(null,arguments);}var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm"][["y"]]).a
pply(null,arguments);}var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Modu
le["asm"][["z"]]).apply(null,arguments);}var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"][["A"]]).apply(null,argument
s);}var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module[
"asm"][["B"]]).apply(null,arguments);}var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][["C"]]).ap
ply(null,arguments);}var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Modul
e["_Conv2DBackpropInput"]=Module["asm"][["D"]]).apply(null,arguments);}var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][["E"]]).apply(null,arguments
);}var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][["F"]]).apply(null,argu
ments);}var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]
=Module["asm"][["G"]]).apply(null,arguments);}var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][["H"]]).a
pply(null,arguments);}var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=M
odule["asm"][["I"]]).apply(null,arguments);}var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=M
odule["_DepthwiseConv2dNative"]=Module["asm"][["J"]]).apply(null,arguments);}var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][["K"]]).apply(null,arguments)
};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][["L"]]).apply(null,argu
ments);}var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][["M"]]).apply(null,argument
s);}var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Modu
le["asm"][["N"]]).apply(null,arguments);}var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][["O"]]).apply(null,argu
ments);}var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][["P"]]).
apply(null,arguments);}var

```

```

_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["_asm"][_"Q"]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["_asm"][_"R"]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["_asm"][_"S"]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["_asm"][_"T"]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["_asm"][_"U"]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["_asm"][_"V"]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["_asm"][_"W"]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["_asm"][_"X"]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["_asm"][_"Y"]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["_asm"][_"Z"]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["_asm"][_" _"]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["_asm"][_"$_"]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["_asm"][_"aa"]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["_asm"][_"ba"]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["_asm"][_"ca"]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["_asm"][_"da"]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["_asm"][_"ea"]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["_asm"][_"fa"]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["_asm"][_"ga"]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["_asm"][_"ha"]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["_asm"][_"ia"]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["_asm"][_"ja"]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["_asm"][_"ka"]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["_asm"][_"la"]).apply(null,arguments)};var

```

```

_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][["ma"]
]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][["na"]]).app
ly(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][["oa"]]).apply(nul
l,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][["pa"]]).apply(null,argume
nts)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][["qa"]]).apply(null,argu
ments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][["ra"]]).apply(null,argum
ents)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][["sa"]]).app
ly(null,arguments)};var
_Reluv=Module["_Reluv"]=function(){return(_Reluv=Module["_Reluv"]=Module["asm"][["ta"]]).apply(null,argume
nts)};var
_Reluv6=Module["_Reluv6"]=function(){return(_Reluv6=Module["_Reluv6"]=Module["asm"][["ua"]]).apply(null,ar
guments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Mo
dule["asm"][["va"]]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][["wa"]]).app
ly(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWith
Offset"]=Module["asm"][["xa"]]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][["ya"]]).apply(nul
l,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][["za"]]).apply(null,arg
uments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][["Aa
"]]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][["Ba"]])
.apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][["Ca"]]).ap
ply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][["Da"]]).apply(null,arguments)
};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][["Ea"]]).ap
ply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][["Fa"]]).apply(null,argumen
ts)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][["Ga"]]).apply(n
ull,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_Squared
Difference"]=Module["asm"][["Ha"]]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][["Ia"]]).apply(null,argume
nts)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["as
m"][["Ja"]]).apply(null,arguments)};var

```


governing permissions and\n * limitations under the License.\n *

```
=====\n\n*\nimport './flags_wasm';\nimport { backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,\nengine, env, KernelBackend, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasmModule,\nWasmFactoryConfig } from '../wasm-out/tfjs-backend-wasm';\nimport { BackendWasmThreadedSimdModule } from\n '../wasm-out/tfjs-backend-wasm-threaded-simd';\nimport wasmFactoryThreadedSimd from '../wasm-out/tfjs-\nbackend-wasm-threaded-simd.js';\n// @ts-ignore\nimport { wasmWorkerContents } from '../wasm-out/tfjs-backend-\nwasm-threaded-simd.worker.js';\nimport wasmFactory from '../wasm-out/tfjs-backend-wasm.js';\n\ninterface\nTensorData {\n  id: number;\n  memoryOffset: number;\n  shape: number[];\n  dtype: DataType;\n  refCount:\nnumber;\n  /** Only used for string tensors, storing encoded bytes. */\n  stringBytes?: Uint8Array[];\n}\n\nexport\ntype DataId = object; // object instead of { } to force non-primitive.\n\nexport class BackendWasm extends\nKernelBackend {\n  // 0 is reserved for null data ids.\n  private dataIdNextNumber = 1;\n  dataIdMap:\nDataStorage<TensorData>;\n\n  constructor(public wasm:\nBackendWasmModule|BackendWasmThreadedSimdModule) {\n    super();\n\n    this.wasm.tfjs.initWithThreadsCount(threadsCount);\n    actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n    this.dataIdMap = new DataStorage(this, engine());\n  }\n\n  write(values: backend_util.BackendValues, shape:\nnumber[], dtype: DataType):\nDataId {\n    const dataId = {id: this.dataIdNextNumber++};\n    this.move(dataId, values, shape, dtype, 1);\n    return dataId;\n  }\n\n  numDataIds(): number {\n    return\nthis.dataIdMap.numDataIds();\n  }\n\n  async time(f: () => void): Promise<BackendTimingInfo> {\n    const start =\nutil.now();\n    f();\n    const kernelMs = util.now() - start;\n    return {kernelMs};\n  }\n\n  move(\n    dataId:\nDataId, values: backend_util.BackendValues, shape: number[],\n    dtype: DataType, refCount: number): void {\n    const id = this.dataIdNextNumber++;\n    if (dtype === 'string') {\n      const stringBytes = values as Uint8Array[];\n      this.dataIdMap.set(\n        dataId,\n        {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n    }\n    return;\n  }\n\n  const size = util.sizeFromShape(shape);\n  const numBytes = size *\nutil.bytesPerElement(dtype);\n  const memoryOffset = this.wasm._malloc(numBytes);\n  this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n  this.wasm.tfjs.registerTensor(id, size,\nmemoryOffset);\n  if (values != null) {\n    this.wasm.HEAPU8.set(\n      new Uint8Array(\n        (values\nas backend_util.TypedArray).buffer,\n        (values as backend_util.TypedArray).byteOffset, numBytes),\n      memoryOffset);\n  }\n\n  async read(dataId: DataId): Promise<backend_util.BackendValues> {\n    return\nthis.readSync(dataId);\n  }\n\n  readSync(dataId: DataId): backend_util.BackendValues {\n    const {memoryOffset,\ndtype, shape, stringBytes} =\nthis.dataIdMap.get(dataId);\n    if (dtype === 'string') {\n      return stringBytes;\n    }\n    const bytes = this.wasm.HEAPU8.slice(\n      memoryOffset,\n      memoryOffset +\nutil.sizeFromShape(shape) * util.bytesPerElement(dtype));\n    return typedArrayFromBuffer(bytes.buffer, dtype);\n  }\n\n  /**\n   * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n   * is released, false\n   * otherwise.\n   * @param dataId\n   * @oaram force Optional, remove the data regardless of refCount\n   */\n  disposeData(dataId: DataId, force = false): boolean {\n    if (this.dataIdMap.has(dataId)) {\n      const data =\nthis.dataIdMap.get(dataId);\n      data.refCount--;\n      if (!force && data.refCount > 0) {\n        return false;\n      }\n      this.wasm._free(data.memoryOffset);\n      this.wasm.tfjs.disposeData(data.id);\n    }\n    this.dataIdMap.delete(dataId);\n    return true;\n  }\n\n  /** Return refCount of a `TensorData` */\n  refCount(dataId: DataId): number {\n    if (this.dataIdMap.has(dataId)) {\n      const tensorData =\nthis.dataIdMap.get(dataId);\n      return tensorData.refCount;\n    }\n    return 0;\n  }\n\n  incRef(dataId: DataId) {\n    const data = this.dataIdMap.get(dataId);\n    if (data != null) {\n      data.refCount++;\n    }\n  }\n\n  floatPrecision():\n32 {\n    return 32;\n  }\n\n  // Returns the memory offset of a tensor. Useful for debugging and unit\n  // testing.\n  getMemoryOffset(dataId: DataId): number {\n    return this.dataIdMap.get(dataId).memoryOffset;\n  }\n\n  dispose() {\n    this.wasm.tfjs.dispose();\n    if ('PThread' in this.wasm) {\n      this.wasm.PThread.terminateAllThreads();\n    }\n    this.wasm = null;\n  }\n\n  memory() {\n    return {unreliable:\nfalse};\n  }\n\n  /**\n   * Make a tensor info for the output of an op. If `memoryOffset` is not\n   * present, this\n   * method allocates memory on the WASM heap. If `memoryOffset`\n   * is present, the memory was allocated
```

```

elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n makeOutput(shape:
number[], dtype: DataType, memoryOffset?: number):\n  TensorInfo {\n    let dataId: {};\n    if (memoryOffset
== null) {\n      dataId = this.write(null /* values */, shape, dtype);\n    } else {\n      const id =
this.dataIdNextNumber++;\n      dataId = {id};\n      this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,
refCount: 1});\n      const size = util.sizeFromShape(shape);\n      this.wasm.tfjs.registerTensor(id, size,
memoryOffset);\n    }\n    return {dataId, shape, dtype};\n  }\n\n  typedArrayFromHeap({shape, dtype, dataId}:
TensorInfo):\n    backend_util.TypedArray {\n      const buffer = this.wasm.HEAPU8.buffer;\n      const
{memoryOffset} = this.dataIdMap.get(dataId);\n      const size = util.sizeFromShape(shape);\n      switch (dtype) {\n
case 'float32':\n        return new Float32Array(buffer, memoryOffset, size);\n      case 'int32':\n        return new
Int32Array(buffer, memoryOffset, size);\n      case 'bool':\n        return new Uint8Array(buffer, memoryOffset,
size);\n      default:\n        throw new Error(`Unknown dtype ${dtype}`);\n      }\n    }\n\nfunction
createInstantiateWasmFunc(path: string) {\n  // this will be replace by rollup plugin patchWechatWebAssembly in\n
// miniprogram's output.\n  // tslint:disable-next-line:no-any\n  return (imports: any, callback: any) => {\n
util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n    if (!response['ok']) {\n
imports.env.a(`failed to load wasm binary file at '${path}'`);\n    }\n    response.arrayBuffer().then(binary => {\n
      WebAssembly.instantiate(binary, imports).then(output => {\n        callback(output.instance, output.module);\n
      });\n    });\n  });\n  return {};\n};\n\n/**\n * Returns the path of the WASM binary.\n * @param
simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n *
@param wasmModuleFolder the directory containing the WASM binaries.\n */\nfunction getPathToWasmBinary(\n
  simdSupported: boolean, threadsSupported: boolean,\n  wasmModuleFolder: string) {\n  if (wasmPath != null) {\n
// If wasmPath is defined, the user has supplied a full path to\n  // the vanilla .wasm binary.\n  return
wasmPath;\n  }\n  let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n  if (simdSupported &&
threadsSupported) {\n    path = 'tfjs-backend-wasm-threaded-simd.wasm';\n  } else if (simdSupported) {\n    path =
'tfjs-backend-wasm-simd.wasm';\n  }\n  if (wasmFileMap != null) {\n    if (wasmFileMap[path] != null) {\n
return wasmFileMap[path];\n    }\n  }\n  return wasmModuleFolder + path;\n}\n\n/**\n * Initializes the wasm
module and creates the js <--> wasm bridge.\n * NOTE: We wrap the wasm module in a object with property
'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in
Chrome 76).\n */\nexport async function init(): Promise<{wasm: BackendWasmModule}> {\n  const
[simdSupported, threadsSupported] = await Promise.all([\n    env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n
env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n  ]);\n  return new Promise((resolve, reject) =>
{\n    const factoryConfig: WasmFactoryConfig = {};\n    /**\n     * This function overrides the Emscripten
module locateFile utility.\n     * @param path The relative path to the file that needs to be loaded.\n     *
@param prefix The path to the main JavaScript file's directory.\n     */\n    factoryConfig.locateFile = (path, prefix) => {\n
if (path.endsWith('.worker.js')) {\n      const response = wasmWorkerContents;\n      const blob = new
Blob([response], {type: 'application/javascript'});\n      return URL.createObjectURL(blob);\n    }\n    if
(path.endsWith('.wasm')) {\n      return getPathToWasmBinary(\n        simdSupported as boolean,\n
threadsSupported as boolean,\n        wasmPathPrefix != null ? wasmPathPrefix : prefix);\n    }\n    return prefix
+ path;\n  });\n  // Use the instantiateWasm override when system fetch is not available.\n  // Reference:\n  //
https://github.com/emscripten-core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7feecfa907/tests/manual_wasm_instantiate.html#L170\n
if (customFetch) {\n    factoryConfig.instantiateWasm =\n
createInstantiateWasmFunc(getPathToWasmBinary(\n      simdSupported as boolean, threadsSupported as
boolean,\n      wasmPathPrefix != null ? wasmPathPrefix : ''));\n  }\n  let initialized = false;\n
factoryConfig.onAbort = () => {\n    if (initialized) {\n      // Emscripten already called console.warn so no need to
double log.\n      return;\n    }\n    if (initAborted) {\n      // Emscripten calls `onAbort` twice, resulting in double
error\n      // messages.\n      return;\n    }\n    initAborted = true;\n    const rejectMsg =\n      'Make sure the
server can serve the `.wasm` file relative to the '+\n      'bundled js file. For more details see
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers';\n

```

```

reject({message: rejectMsg});\n  });\n\n  let wasm: Promise<BackendWasmModule>;\n  // If `wasmPath` has
been defined we must initialize the vanilla module.\n  if (threadsSupported && simdSupported && wasmPath ==
null) {\n    factoryConfig.mainScriptUrlOrBlob = new Blob([\n      [var WasmBackendModuleThreadedSimd = `
+\n      wasmFactoryThreadedSimd.toString()],\n      {type: 'text/javascript'}]);\n    wasm =
wasmFactoryThreadedSimd(factoryConfig);\n  } else {\n    // The wasmFactory works for both vanilla and SIMD
binaries.\n    wasm = wasmFactory(factoryConfig);\n  }\n\n  // The WASM module has been successfully
created by the factory.\n  // Any error will be caught by the onAbort callback defined above.\n\n  wasm.then((module) => {\n    initialized = true;\n    initAborted = false;\n\n    const voidReturnType: string =
null;\n    // Using the tfjs namespace to avoid conflict with emscripten's API.\n    module.tfjs = {\n      init:
module.cwrap('init', null, []),\n      initWithThreadsCount:\n        module.cwrap('init_with_threads_count', null,
['number']),\n      getThreadsCount: module.cwrap('get_threads_count', 'number', []),\n      registerTensor:
module.cwrap([\n        'register_tensor', null, [\n          'number', // id\n          'number', // size\n
'number', // memoryOffset\n        ]),\n      disposeData: module.cwrap('dispose_data', voidReturnType,
['number']),\n      dispose: module.cwrap('dispose', voidReturnType, []),\n    }; \n\n    resolve({wasm: module});\n  });\n  });\n\nfunction typedArrayFromBuffer(\n  buffer: ArrayBuffer, dtype: DataType):
backend_util.TypedArray {\n  switch (dtype) {\n    case 'float32':\n      return new Float32Array(buffer);\n    case
'int32':\n      return new Int32Array(buffer);\n    case 'bool':\n      return new Uint8Array(buffer);\n    default:\n      throw new Error(`Unknown dtype ${dtype}`);\n  }\n}\n\nconst wasmBinaryNames = [\n  'tfjs-backend-
wasm.wasm', 'tfjs-backend-wasm-simd.wasm',\n  'tfjs-backend-wasm-threaded-simd.wasm'\n] as const;\n\ninterface
WasmBinaryName = typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix:
string = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet
customFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `wasm` file
which will be fetched when the wasm\n * backend is initialized. See\n *
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more
details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch
to download\n * the wasm file, default to false.\n * @doc {heading: 'Environment', namespace: 'wasm'}\n
*/\n\nexport function setWasmPath(path: string, usePlatformFetch = false): void {\n  deprecationWarn(\n
'setWasmPath has been deprecated in favor of setWasmPaths and ' +\n    ' will be removed in a future release.);\n  if
(initAborted) {\n    throw new Error(\n      'The WASM backend was already initialized. Make sure you call ' +\n
      '\n      `setWasmPath()` before you call `tf.setBackend()` or `tf.ready()`);\n  }\n  wasmPath = path;\n  customFetch =
usePlatformFetch;\n}\n\n/**\n * Configures the locations of the WASM binaries.\n * @param js\n * setWasmPaths({\n
* 'tfjs-backend-wasm.wasm': 'renamed.wasm',\n * 'tfjs-backend-wasm-simd.wasm': 'renamed-simd.wasm',\n *
'tfjs-backend-wasm-threaded-simd.wasm': 'renamed-threaded-simd.wasm'\n * });\n * tf.setBackend('wasm');\n *
```\n * @param prefixOrFileMap This can be either a string or object:\n * - (string) The path to the directory
where the WASM binaries are located.\n * Note that this prefix will be used to load each binary (vanilla,\n *
SIMD-enabled, threading-enabled, etc.).\n * - (object) Mapping from names of WASM binaries to custom\n *
full paths specifying the locations of those binaries. This is useful if\n * your WASM binaries are not all located
in the same directory, or if your\n * WASM binaries have been renamed.\n * @param usePlatformFetch optional
boolean to use platform fetch to download\n * the wasm file, default to false.\n * @doc {heading:
'Environment', namespace: 'wasm'}\n */\n\nexport function setWasmPaths(\n prefixOrFileMap: string|{[key in
WasmBinaryName]?: string},\n usePlatformFetch = false): void {\n if (initAborted) {\n throw new Error(\n
'The WASM backend was already initialized. Make sure you call ' +\n '\n `setWasmPaths()` before you call
`tf.setBackend()` or ' +\n '\n `tf.ready()`);\n }\n\n if (typeof prefixOrFileMap === 'string') {\n wasmPathPrefix
= prefixOrFileMap;\n } else {\n wasmFileMap = prefixOrFileMap;\n const missingPaths =\n wasmBinaryNames.filter(name => wasmFileMap[name] == null);\n if (missingPaths.length > 0) {\n throw new
Error(\n `There were no entries found for the following binaries: ` +\n `${missingPaths.join(',')}. Please
either call setWasmPaths with a ` +\n `map providing a path for each binary, or with a string indicating ` +\n
 `the directory where all the binaries can be found.`);\n }\n }\n\n customFetch = usePlatformFetch;\n}\n\n/**

```

```

Used in unit tests. */
export function resetWasmPath(): void {
 wasmPath = null;
 wasmPathPrefix = null;
 wasmFileMap = {};
 customFetch = false;
 initAborted = false;
 let threadsCount = -1;
 let actualThreadsCount = -1;
 /** Sets the number of threads that will be used by XNNPACK to create
 * threadpool (default to the number of logical CPU cores).
 * This must be called before calling
 * tf.setBackend('wasm').
 */
 export function setThreadsCount(numThreads: number) {
 threadsCount = numThreads;
 }
 /** Gets the actual threads count that is used by XNNPACK.
 * It is set after the backend is initialized.
 */
 export function getThreadsCount(): number {
 if (actualThreadsCount === -1) {
 throw new Error("WASM backend not initialized.");
 }
 return actualThreadsCount;
 }
 export const
 wasmWorkerContents = `
var Module={};function threadPrintErr(){var
text=Array.prototype.slice.call(arguments).join(" ");console.error(text)}function threadAlert(){var
text=Array.prototype.slice.call(arguments).join("
");postMessage({cmd:"alert",text:text,threadId:Module["_pthread_self"]()})}var
err=threadPrintErr;this.alert=threadAlert;Module["instantiateWasm"]=function(info,receiveInstance){var
instance=new
WebAssembly.Instance(Module["wasmModule"],info);Module["wasmModule"]=null;receiveInstance(instance);r
eturn instance.exports};function
moduleLoaded(){this.onmessage=function(e){try{if(e.data.cmd==="load"){Module["wasmModule"]=e.data.wa
smModule;Module["wasmMemory"]=e.data.wasmMemory;Module["buffer"]=Module["wasmMemory"].buffer;
Module["ENVIRONMENT_IS_PTHREAD"]=true;if(typeof
e.data.urlOrBlob==="string"){importScripts(e.data.urlOrBlob)}else{var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)
}WasmBackendModuleThreadedSimd(Module).then(function(instance){Module=instance;moduleLoaded()})}else
if(e.data.cmd==="objectTransfer"){Module["PThread"].receiveObjectTransfer(e.data)}else
if(e.data.cmd==="run"){Module["__performance_now_clock_drift"]=performance.now()-
e.data.time;Module["__emscripten_thread_init"](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module["establishStackSpace"](top,max);Module["__emscripten_tls_init"]
);Module["PThread"].receiveObjectTransfer(e.data);Module["PThread"].setThreadStatus(Module["_pthread_self
"],1);try{var
result=Module["invokeEntryPoint"](e.data.start_routine,e.data.arg);if(!Module["getNoExitRuntime"]())Module[
"PThread"].threadExit(result)}catch(ex){if(ex==="Canceled!"){Module["PThread"].threadCancel()}else
if(ex!="unwind"){if(ex instanceof
Module["ExitStatus"]){if(Module["getNoExitRuntime"]()){}else{Module["PThread"].threadExit(ex.status)}}el
se{Module["PThread"].threadExit(-2);throw ex}}}}else
if(e.data.cmd==="cancel"){if(Module["_pthread_self"]()){Module["PThread"].threadCancel()}}else
if(e.data.target==="setimmediate"){}}else
if(e.data.cmd==="processThreadQueue"){if(Module["_pthread_self"]()){Module["__emscripten_current_thread_
process_queued_calls"]()}else{err("worker.js received unknown command
"+e.data.cmd);err(e.data)}}catch(ex){err("worker.js onmessage() captured an uncaught exception:
"+ex);if(ex&&ex.stack)err(ex.stack);throw ex}};if(typeof process==="object"&&typeof
process.versions==="object"&&typeof process.versions.node==="string"){self={location:{href:__filename}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require("worker_threads");global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on("message",function(data){onmessage({data:data})});var
nodeFS=require("fs");var nodeRead=function(filename){return nodeFS.readFileSync(filename,"utf8")};function
globalEval(x){global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));postMessage=function(msg){parentPort.postMessage(msg)};if(typeof
performance==="undefined"){performance={now:function(){return Date.now()}}}};"/** @license See the
LICENSE file.
*/
This code is auto-generated, do not modify this file!
const version = '3.11.0';
export

```



{version};\n","/\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport './flags_wasm';\nimport {registerBackend} from '@tensorflow/tfjs-core';\nimport {BackendWasm, init} from './backend_wasm';\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath, setWasmPaths} from './backend_wasm';\nexport {version as version_wasm} from './version';\nconst WASM_PRIORITY = 2;\nregisterBackend('wasm', async () => {\n const {wasm} = await init();\n return new BackendWasm(wasm);\n}, WASM_PRIORITY);\n], "names": ["CppType", "FusableActivation", "wasmFusedMatMul", "fusedMatMulConfig", "kernelName", "_FusedMatMul", "backendName", "setupFunc", "backend", "wasm", "cwrap", "kernelFunc", "args", "inputs", "attrs", "a", "b", "bias", "preluActivationWeights", "dtype", "Error", "transposeA", "transposeB", "activation", "leakyreluAlpha", "aId", "dataIdMap", "get", "dataId", "id", "bId", "biasId", "biasData", "shape", "length", "preluActivationWeight", "sId", "fusedActivation", "leftDim", "rightDim", "batchDim", "out", "makeOutput", "outId", "aShapeBytes", "Uint8Array", "Int32Array", "buffer", "bShapeBytes", "createUnaryKernelConfig", "outType", "wasmFunc", "x", "xId", "util", "sizeFromShape", "absConfig", "Abs", "createBinaryKernelConfig", "supportsFullBroadcast", "outputType", "newShape", "backend_util", "assertAndGetBroadcastShape", "aBroadcastDims", "getBroadcastDims", "bBroadcastDims", "loopsOverAllOfA", "every", "v", "i", "loopsOverAllOfB", "addConfig", "Add", "addNConfig", "AddN", "inputIds", "map", "inputIdsBytes", "identity", "inVals", "typedArrayFromHeap", "set", "identityConfig", "Identity", "wasmTranspose", "transpose", "reducedShape", "perm", "newPerm", "push", "minValIdx", "j", "removeOneSizeDims", "permIsNoOp", "outShape", "inShape", "Array", "computeOutShape", "cloned", "permBytes", "xShapeBytes", "transposeConfig", "Transpose", "permuteAxesAndTranspose", "axis", "xShape", "xRank", "originalAxes", "parseAxisParam", "axes", "permutedAxes", "getAxesPermutation", "xTransposed", "inputWasTransposed", "getInnerMostAxes", "transposed", "wasmAll", "allConfig", "All", "keepDims", "inputId", "input", "inputRank", "assertAxesAreInnerMostDims", "reduceShape", "computeOutAndReduceShapes", "reduceSize", "disposeData", "expandShapeToKeepDim", "wasmAny", "anyConfig", "Any", "argMaxConfig", "ArgMax", "transposedId", "slice", "outerSize", "innerSize", "wasmAvgPool", "avgPoolConfig", "AvgPool", "filterSize", "strides", "pad", "dimRoundingMode", "convInfo", "computePool2DInfo", "filterHeight", "filterWidth", "padTop", "padInfo", "top", "padRight", "right", "padBottom", "bottom", "padLeft", "left", "strideHeight", "strideWidth", "channels", "inChannels", "dataFormat", "dilationWidth", "dilationHeight", "reshape", "xSize", "$shape", "inferFromImplicitShape", "assert", "incRef", "reshapeConfig", "Reshape", "wasmBatchMatMul", "batchMatMulConfig", "BatchMatMul", "aRank", "bRank", "innerShapeA", "innerShapeB", "outerShapeA", "outerShapeB", "outerDimsA", "outerDimsB", "batchDimA", "batchDimB", "batchDimsCompatible", "concat", "b3dShape", "a3d", "b3d", "a3dId", "b3dId", "Math", "max", "sliceImpl", "vals", "begin", "size", "isContinuous", "slice_util", "isSliceContinuous", "xStrides", "computeStrides", "flatOffset", "computeFlatOffset", "subarray", "decodedData", "fromUint8ToStringArray", "inBuf", "outBuf", "outLoc", "indexToLoc", "inLoc", "idx", "fromStringArrayToUint8", "values", "begin_", "size_", "parseSliceParams", "xVals", "readSync", "outData", "stringBytes", "res", "sliceImplCPU", "outVals", "rank", "xStride", "outOffset", "beginI", "beginJ", "endI", "xOffset", "slice2d", "xStride1", "xStride2", "beginK", "endJ", "slice3d", "xStride3", "endK", "beginL", "k", "slice4d", "sliceConfig", "Slice", "batchToSpaceNDConfig", "BatchToSpaceND", "blockShape", "crops", "prod", "reduce", "reshaped", "getReshaped", "permuted", "getPermuted", "reshapedPermuted", "getReshapedPermuted", "sliceBeginCoords", "getSliceBeginCoords", "sliceSize", "getSliceSize", "xReshaped", "result", "cast", "castConfig", "Cast", "ceilConfig", "Ceil", "wasmClip", "clipByValueConfig", "ClipByValue", "clipValueMin", "clipValueMax", "t", "$inputs", "filter", "shapes", "assertParamsConsistent", "inputs2D", "inputsValShapes", "simplyConcat", "getArrayFromDType", "offset", "forEach", "colOffset", "tIdx", "row", "resIdx", "col", "concatImplCPU", "finalOutShape", "sumInnerDims", "innerDims", "innerDim", "inOffset", "concatConfig", "Concat", "wasmConv2d", "conv2DConfig", "Conv2D", "filterId", "dilations", "$dataFormat", "convertConv2DDataFor
```

mat", "computeConv2DInfo", "inputChannels", "outputChannels", "outChannels", "isSamePad", "type", "wasmConv2D  
BackpropInput", "conv2DBackpropInputConfig", "Conv2DBackpropInput", "dy", "inputShape", "batchSize", "inHeight  
", "inWidth", "outHeight", "outWidth", "topPad", "leftPad", "isChannelsLast", "dxStrides", "dyStrides", "fltS0", "fltS1", "fl  
tS2", "xBatchStride", "xRowStride", "xColStride", "xChannelStride", "yBatchStride", "yRowStride", "yColStride", "yCh  
annelStride", "dyId", "cosConfig", "Cos", "coshConfig", "Cosh", "InterpolationMethod", "wasmCropAndResize", "cropA  
ndResizeConfig", "CropAndResize", "method", "extrapolationValue", "cropSize", "image", "boxes", "boxInd", "numBox  
es", "cropHeight", "cropWidth", "castedData", "imagesData", "imagesId", "boxesId", "boxIndId", "imagesShapeBytes", "  
wasmCumsum", "cumsumConfig", "Cumsum", "exclusive", "reverse", "permutation", "permutedX", "permutedAxis", "p  
ermutedOut", "finalDim", "permutedXId", "permutedOutId", "getUndoAxesPermutation", "wasmDepthToSpace", "dept  
hToSpaceConfig", "DepthToSpace", "blockSize", "outputHeight", "outputWidth", "outputDepth", "outputShape", "xStri  
desBytes", "outputShapeBytes", "outStridesBytes", "wasmDepthwiseConv2d", "depthwiseConv2dNativeConfig", "Dep  
thwiseConv2dNative", "\$dilations", "eluConfig", "Elu", "equalConfig", "Equal", "expConfig", "Exp", "expandDims", "di  
m", "\$dim", "splice", "expandDimsConfig", "ExpandDims", "fill", "value", "fillConfig", "Fill", "wasmFlipLeftRight", "flip  
LeftRightConfig", "FlipLeftRight", "imageId", "batch", "imageHeight", "imageWidth", "numChannels", "floorConfig", "  
Floor", "floorDivConfig", "FloorDiv", "wasmBatchNorm", "fusedBatchNormConfig", "FusedBatchNorm", "varianceEp  
silon", "mean", "variance", "scale", "meanId", "varianceId", "offsetId", "scaleId", "wasmFusedConv2d", "fusedConv2DC  
onfig", "FusedConv2D", "wasmFusedDepthwiseConv2d", "fusedDepthwiseConv2DConfig", "FusedDepthwiseConv2  
D", "wasmGatherNd", "gatherNdConfig", "GatherNd", "params", "indices", "resultShape", "numSlices", "gather\_util", "pr  
epareAndValidate", "indicesShape", "sliceRank", "indicesId", "stridesBytes", "wasmGather", "gatherV2Config", "Gather  
V2", "batchDims", "parsedAxis", "indicesVals", "axisDim", "index", "shapeInfo", "segment\_util", "collectGatherOpShap  
eInfo", "flattenX", "dimSize", "indicesSize", "flattenIndex", "flattenOutputShape", "stridesSize", "greaterConfig", "Great  
er", "greaterEqualConfig", "GreaterEqual", "leakyReluConfig", "LeakyRelu", "alpha", "lessConfig", "Less", "lessEqualC  
onfig", "LessEqual", "logConfig", "Log", "logicalAndConfig", "LogicalAnd", "wasmMax", "maxConfig", "Max", "reduct  
ionIndices", "maximumConfig", "Maximum", "wasmMaxPool", "maxPoolConfig", "MaxPool", "wasmMean", "meanCo  
nfig", "Mean", "reductionAxes", "castedInput", "wasmMin", "minConfig", "Min", "minimumConfig", "Minimum", "Mirr  
orPaddingMode", "wasmMirrorPad", "mirrorPadConfig", "MirrorPad", "paddings", "mode", "p", "prePaddingsFlat", "pad  
Tuple", "postPaddingsFlat", "prePaddingsBytes", "postPaddingsBytes", "multiplyConfig", "Multiply", "negConfig", "Ne  
g", "parseResultStruct", "resOffset", "HEAPU8", "pSelectedIndices", "selectedSize", "pSelectedScores", "pValidOutputs  
", "\_free", "nonMaxSuppressionV3Config", "NonMaxSuppressionV3", "iouThreshold", "maxOutputSize", "scoreThresh  
old", "scores", "scoresId", "nonMaxSuppressionV4Config", "NonMaxSuppressionV4", "padToMaxOutputSize", "nonM  
axSuppressionV5Config", "NonMaxSuppressionV5", "softNmsSigma", "notEqualConfig", "NotEqual", "wasmOneHot  
", "oneHotConfig", "OneHot", "depth", "onValue", "offValue", "onesLikeConfig", "OnesLike", "packConfig", "Pack", "as  
sertShapesMatch", "intermediateTensorInfos", "expandedT", "wasmPadV2", "padV2Config", "PadV2", "constantValue  
", "powConfig", "Pow", "wasmPrelu", "preluConfig", "Prelu", "weightsId", "wasmProd", "prodConfig", "Prod", "rangeCo  
nfig", "Range", "start", "stop", "step", "makeZerosTypedArray", "numElements", "abs", "ceil", "rangeImplCPU", "realDiv  
Config", "RealDiv", "reluConfig", "Relu", "relu6Config", "Relu6", "wasmResizeBilinear", "resizeBilinearConfig", "Resi  
zeBilinear", "images", "alignCorners", "halfPixelCenters", "newHeight", "newWidth", "oldHeight", "oldWidth", "xData",  
"wasmReverse", "reverseConfig", "Reverse", "dims", "axesBytes", "outShapeBytes", "wasmRotate", "rotateWithOffsetC  
onfig", "RotateWithOffset", "radians", "fillValue", "center", "centerX", "centerY", "getImageCenter", "fillValues", "fillBy  
tes", "roundConfig", "Round", "rsqrtConfig", "Rsqrt", "wasmScatterNd", "scatterNdConfig", "ScatterNd", "updates", "nu  
mUpdates", "outputSize", "scatter\_util", "calculateShapes", "updatesId", "wasmSelect", "selectConfig", "Select", "conditi  
on", "e", "conditionId", "tId", "eId", "cRank", "tRank", "sigmoidConfig", "Sigmoid", "sinConfig", "Sin", "softmaxConfig",  
"Softmax", "logits", "spaceToBatchNDConfig", "SpaceToBatchND", "completePaddings", "paddedX", "reshapedPadd  
edShape", "permutedReshapedPaddedPermutation", "flattenShape", "paddedXReshaped", "paddedXT", "splitVConfig", "  
SplitV", "numOrSizeSplits", "\$axis", "splitSizes", "prepareSplitSize", "s", "xSliceSize", "xSlice", "sqrtConfig", "Sqrt", "sq  
uareConfig", "Square", "squaredDifferenceConfig", "SquaredDifference", "wasmStep", "stepConfig", "Step", "wasmStri  
dedSlice", "stridedSliceConfig", "StridedSlice", "end", "beginMask", "endMask", "ellipsisMask", "newAxisMask", "shrin  
kAxisMask", "finalShapeSparse", "finalShape", "isIdentity", "sliceDim0", "isSimpleSlice", "\$begin", "\$end", "\$strides", "

sliceInfo", "sliced", "beginBytes", "endBytes", "subConfig", "Sub", "wasmSum", "sumConfig", "Sum", "tanConfig", "Tan", "tanhConfig", "Tanh", "wasmTile", "wasmTopK", "wasmTransform", "kernelConfigs", "Tile", "reps", "newShapeBytes", "TopK", "sorted", "outValues", "outValuesId", "outIndices", "outIndicesId", "Transform", "transforms", "interpolation", "fillMode", "transformsId", "interpolationModeId", "fillModeId", "Unpack", "numOutputs", "outIndex", "outs", "ZerosLike", "kernelConfig", "registerKernel", "ENV", "env", "registerFlag", "async", "WebAssembly", "validate", "MessageChannel", "port1", "postMessage", "SharedArrayBuffer", "\_\_scriptDir", "WasmBackendModuleThreadedSimd", "document", "currentScript", "src", "undefined", "\_\_filename", "GROWABLE\_HEAP\_I8", "wasmMemory", "updateGlobalBufferAndViews", "HEAP8", "GROWABLE\_HEAP\_U8", "GROWABLE\_HEAP\_I32", "HEAP32", "GROWABLE\_HEAP\_U32", "HEAPU32", "GROWABLE\_HEAP\_F64", "HEAPF64", "readyPromiseResolve", "readyPromiseReject", "Module", "Promise", "resolve", "reject", "key", "moduleOverrides", "hasOwnProperty", "quit\_", "status", "toThrow", "ENVIRONMENT\_IS\_WEB", "ENVIRONMENT\_IS\_WORKER", "ENVIRONMENT\_IS\_NODE", "ENVIRONMENT\_IS\_SHELL", "window", "importScripts", "process", "versions", "node", "ENVIRONMENT\_IS\_PTHREAD", "read\_", "readAsync", "readBinary", "nodeFS", "nodePath", "scriptDirectory", "locateFile", "path", "nodeWorkerThreads", "require\$\$0", "dirname", "\_\_dirname", "filename", "binary", "require\$\$1", "ret", "replace", "ex", "ExitStatus", "abort", "require\$\$2", "console", "error", "global", "Worker", "read", "f", "data", "readbuffer", "scriptArgs", "quit", "print", "log", "warn", "printErr", "self", "location", "href", "indexOf", "substr", "lastIndexOf", "url", "xhr", "XMLHttpRequest", "open", "send", "responseText", "responseType", "response", "onload", "onerror", "performance", "require\$\$3", "wasmBinary", "bind", "err", "warnOnce", "text", "shown", "wasmModule", "noExitRuntime", "ABORT", "getCFunc", "ident", "func", "ccall", "returnType", "argTypes", "opts", "toC", "string", "str", "len", "stringToUTF8", "stackAlloc", "array", "arr", "writeArrayToMemory", "cArgs", "stack", "converter", "stackSave", "apply", "UTF8ToString", "Boolean", "convertReturnValue", "stackRestore", "numericArgs", "arguments", "UTF8ArrayToString", "heap", "maxBytesToRead", "endIdx", "u0", "u1", "u2", "String", "fromCharCode", "ch", "ptr", "stringToUTF8Array", "outIdx", "maxBytesToWrite", "startIdx", "u", "charCodeAt", "outPtr", "lengthBytesUTF8", "alignUp", "multiple", "buf", "Int8Array", "Int16Array", "Uint16Array", "Uint32Array", "Float32Array", "Float64Array", "wasmTable", "INITIAL\_MEMORY", "Memory", "initial", "maximum", "shared", "byteLength", "\_\_ATPRERUN\_\_", "\_\_ATINIT\_\_", "\_\_ATMAIN\_\_", "\_\_ATPOSTRUN\_\_", "preRun", "addOnPreRun", "shift", "callRuntimeCallbacks", "initRuntime", "preMain", "postRun", "addOnPostRun", "cb", "unshift", "\_\_wasm\_call\_ctors", "runDependencies", "dependenciesFulfilled", "addRunDependency", "removeRunDependency", "callback", "what", "RuntimeError", "hasPrefix", "prefix", "prototype", "startsWith", "dataURIPrefix", "isDataURI", "fileURIPrefix", "isFileURI", "wasmBinaryFile", "getBinary", "file", "getBinaryPromise", "fetch", "credentials", "then", "catch", "createWasm", "info", "asmLibraryArg", "receiveInstance", "instance", "module", "exports", "numWorkersToLoad", "PThread", "unusedWorkers", "w", "loadWasmModuleToWorker", "receiveInstantiatedSource", "output", "instantiateArrayBuffer", "receiver", "instantiate", "reason", "instantiateStreaming", "ASM\_CONSTS", "10520", "10538", "\$0", "\$1", "setTimeout", "\_\_emscripten\_do\_dispatch\_to\_thread", "initPthreadsJS", "callbacks", "arg", "ERRNO\_CODES", "EPERM", "ENOENT", "ESRCH", "EINTR", "EIO", "ENXIO", "E2BIG", "ENOEXEC", "EBADF", "ECHILD", "EAGAIN", "EWOULDBLOCK", "ENOMEM", "EACCESS", "EFAULT", "ENOTBLK", "EBUSY", "EEXIST", "EXDEV", "ENODEV", "ENOTDIR", "EISDIR", "EINVAL", "ENFILE", "EMFILE", "ENOTTY", "ETXTBSY", "EFBIG", "ENOSPC", "ESPIPE", "EROFS", "EMLINK", "EPIPE", "EDOM", "ERANGE", "ENOMSG", "EIDRM", "ECHRNG", "EL2NSYNC", "EL3HLT", "EL3RST", "ELNRNG", "EUNATCH", "ENOCSI", "EL2HLT", "EDEADLK", "ENOLCK", "EBADE", "EBADR", "EXFULL", "ENOANO", "EBADRQC", "EBADSLT", "EDEADLOCK", "EBFONT", "ENOSTR", "ENODATA", "ETIME", "ENOSR", "ENONET", "ENOPKG", "EREMOTE", "ENOLINK", "EADV", "ESRMNT", "ECOMM", "EPROTO", "EMULTIHOP", "EDOTDOT", "EBADMSG", "ENOTUNIQ", "EBADFD", "EREMCHG", "ELIBACC", "ELIBBAD", "ELIBSCN", "ELIBMAX", "ELIBEXEC", "ENOSYS", "ENOTEMPTY", "ENAMETOOLONG", "ELOOP", "EOPNOTSUPP", "EPFNOSUPPORT", "ECONNRESET", "ENOBUFS", "EAFNOSUPPORT", "EPROTOTYPE", "ENOTSOCK", "ENOPROTOOPT", "ESHUTDOWN", "ECONNREFUSED", "EADDRINUSE", "ECONNABORTED", "ENETUNREACH", "ENETDOWN", "ETIMEOUT", "EHOSTDOWN", "EHOSTUNREACH", "EINPROGRESS", "EALREADY", "EDESTADDRREQ", "EMSGSIZE", "EPROTONOSUPPORT", "ESOCKTNOSUPPORT", "EADDRNOTAVAIL", "ENETRESET", "EISCONN", "ENOTCONN", "ETOOMANYREFS", "EUSERS", "EDQUOT", "ESTALE", "ENOTSUP", "ENOMEDIUM", "EILSEQ", "EOVERFLOW", "ECANCELED", "ENOTRECOVERABLE", "EOWNERDEAD", "ESTRPIPE", "\_emscripten\_fut

ex\_wake", "addr", "count", "Infinity", "mainThreadWaitAddress", "Atomics", "load", "\_\_emscripten\_main\_thread\_futex", "mainThreadWoken", "compareExchange", "notify", "killThread", "pthread\_ptr", "pthread", "pthreads", "worker", "terminate", "freeThreadData", "runningWorkers", "cancelThread", "cmd", "cleanupThread", "returnWorkerToPool", "\_emscripten\_get\_now", "initMainThreadBlock", "allocateUnusedWorker", "tb", "\_malloc", "headPtr", "tlsMemory", "store", "\_emscripten\_thread\_init", "\_emscripten\_register\_main\_browser\_thread\_id", "initWorker", "threadExitHandlers", "setThreadStatus", "runExitHandlers", "pop", "\_pthread\_self", "\_\_\_pthread\_tsd\_run\_dtors", "runExitHandlersAndDeinitThread", "exitCode", "threadExit", "threadCancel", "terminateAllThreads", "threadInfoStruct", "allocatedOwnStack", "stackBase", "runWithoutMainThreadQueuedCalls", "\_emscripten\_allow\_main\_runtime\_queued\_calls", "receiveObjectTransfer", "onFinishedLoading", "onmessage", "d", "currentProxiedOperationCallerThread", "thread", "targetThread", "\_emscripten\_main\_thread\_process\_queued\_calls", "spawnThread", "loaded", "runPthread", "alert", "exit", "target", "lineno", "message", "on", "urlOrBlob", "pthreadMainJs", "getNewWorker", "busySpinWait", "msecs", "now", "establishStackSpace", "stackTop", "stackMax", "\_emscripten\_stack\_set\_limits", "getNoExitRuntime", "invokeEntryPoint", "\_\_\_assert\_fail", "line", "\_\_\_call\_main", "argc", "argv", "\_main", "setErrNo", "\_\_\_errno\_location", "\_atexit", "\_emscripten\_proxy\_to\_main\_thread\_js", "\_emscripten\_notify\_thread\_queue", "targetThreadId", "mainThreadId", "\_abort", "\_emscripten\_asm\_const\_int", "code", "sigPtr", "argbuf", "readAsmConstArgs", "\_emscripten\_conditional\_set\_current\_thread\_status", "expectedStatus", "newStatus", "\_emscripten\_futex\_wait", "val", "timeout", "tNow", "tEnd", "exchange", "wait", "\_emscripten\_memcpy\_big", "dest", "num", "copyWithin", "\_emscripten\_num\_logical\_cores", "require\$\$4", "cpus", "navigator", "sync", "numCallArgs", "serializedNumCallArgs", "\_emscripten\_run\_in\_main\_runtime\_thread\_js", "dateNow", "\_emscripten\_receive\_on\_main\_thread\_js\_callArgs", "readAsmConstArgsArray", "double", "\_emscripten\_receive\_on\_main\_thread\_js", "proxiedFunctionTable", "\_emscripten\_get\_heap\_size", "emscripten\_realloc\_buffer", "grow", "\_emscripten\_resize\_heap", "requestedSize", "oldSize", "maxHeapSize", "cutDown", "overGrownHeapSize", "min", "JSEvents", "inEventHandler", "removeAllEventListeners", "eventHandlers", "\_removeHandler", "deferredCalls", "registerRemoveEventListeners", "removeEventListenersRegistered", "deferCall", "targetFunction", "precedence", "argsList", "arraysHaveEqualContent", "arrA", "arrB", "call", "sort", "y", "removeDeferredCalls", "canPerformEventHandlerRequests", "currentEventHandler", "allowsDeferredCalls", "runDeferredCalls", "removeAllHandlersOnTarget", "eventTypeString", "h", "removeEventListener", "eventListenerFunc", "useCapture", "registerOrRemoveHandler", "eventHandler", "jsEventHandler", "event", "handlerFunc", "callbackfunc", "addEventListener", "queueEventHandlerOnThread\_iiii", "eventHandlerFunc", "eventTypeid", "eventData", "userData", "varargs", "\_\_\_emscripten\_call\_on\_thread", "getTargetThreadForEventCallback", "getNodeNameForTarget", "screen", "nodeName", "fullscreenEnabled", "webkitFullscreenEnabled", "stringToNewUTF8", "jsString", "cString", "\_emscripten\_set\_offscreencanvas\_size\_on\_target\_thread\_js", "targetCanvas", "width", "height", "targetCanvasPtr", "\_emscripten\_set\_offscreencanvas\_size\_on\_target\_thread", "maybeCStringToJsString", "specialHTMLTargets", "findEventTarget", "querySelector", "findCanvasEventTarget", "\_emscripten\_set\_canvas\_element\_size\_calling\_thread", "canvas", "canvasSharedPtr", "offscreenCanvas", "controlTransferredOffscreen", "autoResizeViewport", "GLctxObject", "GLctx", "prevViewport", "getParameter", "viewport", "\_emscripten\_set\_canvas\_element\_size\_main\_thread", "\_emscripten\_set\_canvas\_element\_size", "\_emscripten\_set\_current\_thread\_status", "\_emscripten\_set\_thread\_name", "threadId", "name", "\_\_webgl\_enable\_ANGLE\_instanced\_arrays", "ctx", "ext", "getExtension", "divisor", "first", "primcount", "\_\_webgl\_enable\_OES\_vertex\_array\_object", "vao", "\_\_webgl\_enable\_WEBGL\_draw\_buffers", "n", "bufs", "\_\_webgl\_enable\_WEBGL\_multi\_draw", "multiDrawWebgl", "GL", "counter", "buffers", "programs", "framebuffers", "renderbuffers", "textures", "uniforms", "shaders", "vaos", "contexts", "offscreenCanvases", "timerQueriesEXT", "programInfos", "stringCache", "unpackAlignment", "recordError", "errorCode", "lastError", "getNewId", "table", "getSource", "shader", "source", "createContext", "webGLContextAttributes", "getContext", "registerContext", "handle", "context", "attributes", "version", "majorVersion", "enableExtensionsByDefault", "initExtensions", "makeContextCurrent", "contextHandle", "currentContext", "deleteContext", "initExtensionsDone", "disjointTimerQueryExt", "getSupportedExtensions", "populateUniformTable", "program", "ptable", "maxUniformLength", "maxAttributeLength", "maxUniformBlockNameLength", "utable", "numUniforms", "getProgramParameter", "getActiveUniform", "loc", "getUniformLocation", "\_\_\_emscripten\_webgl\_power\_preferences", "\_emscripten\_webgl\_do\_create\_context", "powerPreference", "contextAttributes", "stencil", "antialias", "premultipliedAlpha", "preserveDrawingBuffer", "failIfMajorPerformanceCaveat", "minorVersion", "explicitSwapControl", "proxyContextToMainThread", "renderViaOffscreenBackBuffer", "\_emscri

pten\_webgl\_create\_context","a0","a1","SYSCALLS","mappings","printChar","stream","curr","getStr","get64","low","high","fd\_close","fd","fd\_seek","offset\_low","offset\_high","whence","newOffset","fd\_write","iov","iovcnt","pnum","\_pthread\_cleanup\_pop","execute","routine","\_pthread\_cleanup\_push","threadParams","stackHigh","stackSize","tis","detached","global\_locale","\_emscripten\_get\_global\_libc","msg","start\_routine","startRoutine","time","transferList","\_pthread\_create","attr","\_emscripten\_sync\_run\_in\_main\_thread\_4","\_memalign","\_pthread\_testcancel\_js","\_emscripten\_check\_blocking\_allowed","\_emscripten\_do\_pthread\_join","block","\_emscripten\_main\_browser\_thread\_id","threadStatus","threadExitCode","\_pthread\_join","\_sysconf","calledRun","r","c","A","q","l","g","o","z","m","this","run","doRun","implicit","returnCode","runCaller","ready","WasmBackendModule","UTF8Decoder","TextDecoder","endPtr","decode","BackendWasm","KernelBackend","[object Object]","super","tfjs","initWithThreadsCount","threadsCount","actualThreadsCount","getThreadsCount","DataStorage","engine","dataIdNextNumber","move","numDataIds","kernelMs","refCount","memoryOffset","numBytes","bytesPerElement","registerTensor","byteOffset","typedArrayFromBuffer","force","has","delete","dispose","unreliable","write","getPathToWasmBinary","simdSupported","threadsSupported","wasmModuleFolder","wasmPath","wasmFileMap","init","all","getAsync","factoryConfig","endsWith","blob","Blob","URL","createUrlURL","wasmPathPrefix","customFetch","instantiateWasm","imports","arrayBuffer","createInstantiateWasmFunc","initialized","onAbort","initAborted","mainScriptUrlOrBlob","wasmFactoryThreadedSimd","toString","wasmFactory","wasmBinaryNames","setWasmPath","usePlatformFetch","deprecationWarn","setWasmPaths","prefixOrFileMap","missingPaths","join","setThreadsCount","numThreads","registerBackend"],"mappings":";;;;;;;;;;0rDakBA,IAAYA,GASAC,G CJZ,IAAIC,IDLJ,SAAYF,GACVA,yBACAA,qBACAA,mBACAA,uBACAA,6BALF,CAAYA,KAAAA,QASZ,SAAYC,GACVA,uBACAA,mBACAA,qBACAA,qBACAA,6BACAA,yBACAA,iBAPF,CAAYA,KAAAA,QC6EL,MAAME,GAakC,CAC7CC,WAAYC,EACZC,YAAa,OACbC,UA7EF,SAAeC,GACbN,GAakBM,EAAQC,KAA KC,MAAML,EAAc,KAAiB,CACIE,SACA,QACA,SACA,SACA,QACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAgEFM,WA5DF,SAA0BC,GAKxB,MAAMC,OACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BG,EAACA,EAACC,EAAEA,EAACC,KAAEA,EAAIC,uBAAEA,GAA0BL,EAE7C,GAAgB,YAAZE,EA AEI,OAAMc,YAAZH,EAAEG,MAC7B,MAAM,IAAIC,MACN,+DAGN,MAAMC,WAACA,EAAUC,WAAEA,E AAUC,WAAEA,EAAUC,eAAEA,GAakBV,EACvDW,EAAMjB,EAAQkB,UAAUC,IAAIZ,EAAEa,QAAQC,GA CtCC,EAAMtB,EAAQkB,UAAUC,IAAIX,EAAEY,QAAQC,GAE5C,IAAIE,EAAS,EACb,GAAY,MAARd,EAAc ,CACHB,MAAMe,EAAWxB,EAAQkB,UAAUC,IAAIV,EAALKW,QAC5C,GAA8B,IAA1BI,EAASC,MAAMC,O ACjB,MAAM,IAAId,MAEN,uDAAQY,EAASC,MAAMC,WAE7BH,EAASC,EAASH,GAEPb,MAAMM,EAAQd ,MAA1BjB,EAC7B,EACAV,EAAQkB,UAAUC,IAAIT,EAAsBU,QAAQC,GACnDO,EACFnC,GAakBsB,GACt B,GAAuB,MAAnBa,EACF,MAAM,IAAIhB,MACN,GAAGG,uEAIT,MAAMc,EAAUhB,EAAnA,EAAEkB,MAA M,GAAKIB,EAAEkB,MAAM,GAC5CK,EAAWhB,EAAnA,EAAEiB,MAAM,GAakjB,EAAEiB,MAAM,GAC7 CM,EAAWxB,EAAEkB,MAAM,GAEnBO,EAAMhC,EAAQiC,WAAW,CAACF,EAUF,EAASC,GAAWvB,EA AEI,OAC1DuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAE1Cc,EAAc,IAAIC,WAAW,IAAIC,WA AW9B,EAAEkB,OAAOa,QACrDC,EAAc,IAAIH,WAAW,IAAIC,WAAW7B,EAAEiB,OAAOa,QA03D,OALA5 C,GACIuB,EAAKkB,EAAa5B,EAAEkB,MAAMC,OAAQJ,EAAKiB,EAAa/B,EAAEiB,MAAMC,OAC5Db,EAA YC,EAAyc,EAAiBL,EAAQI,EACjDX,GAakB,EAAGkB,GAEIBF,aC9EOQ,GACZ5C,EAAoB6C,GACtB,IAAIC ,EA0BJ,MAAO,CAAC9C,WAAAA,EAAYE,YAAa,OAAQC,UAXBzC,SAAMBC,GACjB0C,EAAW1C,EAAQC, KAAKC,MAAMN,EAAY,KAAiB,CACzD,SACA,SACA,YAoBgDO,WAhBpD,SAAoBC,GAEIB,MAAMJ,QAA CA,EAAASK,QAAQsC,EAACA,IAAMvC,EACzBwC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,G ACtCW,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAOgB,GAawe,EAAEhC,OAC/CuB,EAAQIC,EAAQkB,UA AUC,IAAIa,EAAIZ,QAAQC,GAGhD,OAAc,IAAICwB,EAAKC,cAAcd,EAAIP,QAI3BiB,EAASe,EAAKpD,G AASmD,EAAEhC,OAAQuB,GAHxBF,ICxBN,MAAMe,GAA0BP,GAAwBQ,YCG/CC,GACZrD,EAAoBsD,EAC pBvC,GACF,IAAI+B,EA6DJ,MAAO,CAAC9C,WAAAA,EAAYE,YAAa,OAAQC,UAXDzC,SAAMBC,GACjB0C ,EAAW1C,EAAQC,KAAKC,MAAMN,EAAY,KAAiB,CACzD,SACA,QACA,SACA,SACA,QACA,SACA,SACA ,YA+CgDO,WA3CpD,SAAoBC,GAEIB,MAAMJ,QAACA,EAAOK,OAAEA,GAAUD,GACpBG,EAACA,EAAC C,EAAEA,GAAKH,EACTY,EAAMjB,EAAQkB,UAAUC,IAAIZ,EAAEa,QAAQC,GACtCC,EAAMtB,EAAQkB, UAAUC,IAAIX,EAAEY,QAAQC,GAEtC8B,EAASb,MAATxC,EAAgBA,EAAQJ,EAAEI,MACvCyC,EAAWC,E

AAaC,2BAA2B/C,EAAEkB,MAAOjB,EAAEiB,OAC9DO,EAAMhC,EAAQiC,WAAWmB,EAAUD,GAGzC,GA  
AqC,IAAjCN,EAAKC,cAAcM,GACrB,OOAOpB,EAGT,MAAMG,EAAc,IAAIC,WAAW,IAAIC,WAAW9B,EA  
AEkB,OOAOa,QACrDC,EAAc,IAAIH,WAAW,IAAIC,WAAW7B,EAAEiB,OOAOa,QACrDJ,EAAQIC,EAAQkB  
,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CIB,EAAa,IAAMuC,EACrBzB,EAAKkB,EAAa5B,EAAEkB,MAAMC,O  
AAQJ,EAAKiB,EAAa/B,EAAEiB,MAAMC,OAC5DIC,GAASe,EAAEI,OAAQuB,GAGvB,GAAIgb,GAAqC,YA  
AZ3C,EAAEI,MAE7B,OADAR,IACO6B,EAGT,MAAMuB,EAAiBF,EAAaG,iBAAiBjD,EAAEkB,MAAO2B,GA  
CxDK,EAAiBJ,EAAaG,iBAAiBhD,EAAEiB,MAAO2B,GACxDM,EAAkBH,EAAeI,OAAM,CAACC,EAAGC,IA  
AMD,IAAMC,IACvDC,EAAkBL,EAAeE,OAAM,CAACC,EAAGC,IAAMD,IAAMC,IAC7D,GAAIH,GAAMBI,  
EAERB,OADA3D,IACO6B,EAEP,MAAM,IAAIpB,MAEN,0DAAiBL,EAAEI,SAASf,QC9DtC,MAEamE,GACTd  
,GAAyBe,GAHC,GCE9B,IAAIb,GA8BG,MAAMuB,GAA2B,CACtCrE,WAAySE,EACZpE,YAAa,OACbC,UA7  
BF,SAAMBC,GACjB0C,GAAW1C,EAAQC,KAAKC,MAAMgE,EAAM,KAAiB,CACnD,QACA,SACA,SACA,Y  
AyBF/D,WArBF,SAACc,GACZ,MAAMC,OAACA,EAAML,QAAEA,GAAWI,EACpB4B,EAAMhC,EAAQiC,W  
AAW5B,EAAO,GAAGoB,MAAOpB,EAAO,GAAGM,OAG1D,GAAsC,IAAICkC,EAAKC,cAAcd,EAAIP,OACz  
B,OOAoo,EAGT,MAAMmC,EAAW9D,EAAO+D,KAAIzB,GAAK3C,EAAQkB,UAAUC,IAAIwB,EAAEvB,Q  
AAQC,KAC3DgD,EAAGb,IAAIjC,WAAW,IAAIC,WAAW8B,GAAU7B,QACxDJ,EAAQIC,EAAQkB,UAAUC,I  
AAIa,EAAIZ,QAAQC,GAGhD,OAFaQb,GAAS2B,EAAeF,EAASzC,OAAQIC,GAASwC,EAAIrB,OAAQuB,GA  
EvDF,aC5BOsC,GAASIE,GAEvB,MAAOC,QAAQsC,EAACA,GAAE3C,QAAEA,GAAWI,EACzB4B,EAAMhC,  
EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAEhC,OACpC4D,EAASvE,EAAQwE,mBAAMb7B,GAG1C,OAFgB3  
C,EAAQwE,mBAAMbxC,GACnCyC,IAAIF,GACLvC,EAGF,MAAM0C,GAA+B,CAC1C9E,WAAy+E,EACZ7E  
,YAAa,OACbK,WAAyME,ICXd,IAAIM,YAgBYC,GACZzE,GAGF,MAAMC,OAACA,EAAML,QAAEA,EAAO  
M,MAAEA,GAASF,GAG1B0E,EAAcC,GAYcVb,SACItD,EAAiBsD,GACnB,MAAM3B,EAAqB,GACrB4B,EA  
AoB,GAC1B,IAAK,IAAIbB,EAAI,EAAGA,EAAIpC,EAAMC,SAAUmC,EACjB,IAAbpC,EAAMoC,IACRT,EA  
AS6B,KAAKxD,EAAMoC,IAEC,IAAnBpC,EAAMsD,EAAKIB,KACbmB,EAAQC,KAAKF,EAAKIB,IAGtB,IA  
AK,IAAIA,EAAI,EAAGA,EAAImB,EAAQtD,SAAUmC,EAAG,CACvC,IAAIqB,GAAa,EACjB,IAAK,IAAIC,E  
AAI,EAAGA,EAAIH,EAAQtD,SAAUyD,EACHCH,EAAQG,IAAMtB,KACE,IAAfqB,GAAoBF,EAAQE,GAAaF,  
EAAQG,MACpDD,EAAyC,GAGhBH,EAAQE,GAAarB,EAEvB,MAAO,CAACT,EAU4B,GA/DWI,CAAKB/E,  
EAAOsC,EAAEIB,MAAOnB,EAAMyE,MAERe,IAAIM,GAAa,EACjB,IAAK,IAAIxB,EAAI,EAAGA,EAAIkB,E  
AAKrD,OAAQmC,IAC3BkB,EAAKIB,KAAOA,IACdwB,GAAa,GAGjB,MAAMC,EAYBR,SAAyBC,EAAMBR,  
GAC1C,MAAMO,EAAW,IAAIE,MAAMD,EAAQ7D,QACnC,IAAK,IAAIc,EAAI,EAAGA,EAAIyB,EAAS5D,  
OAAQmC,IACnCyB,EAASzB,GAAK0B,EAAQR,EAAKIB,IAE7B,OOAOyB,EA9BUG,CAAGpF,EAAOsC,EA  
AEIB,MAAOnB,EAAMyE,MACjDpC,EAAI,CACrVb,OAAQf,EAAOsC,EAAEvB,OACjBK,MAAOqD,EACpNE  
,MAAON,EAAOsC,EAAEhC,OAGIB,GAAI0E,EAAY,CACd,MAAMK,EAASpB,GAAS,CAACjE,OAAAA,EAA  
QL,QAAAA,IAEjC,OADA0F,EAAOjE,MAAQ6D,EACRI,EAGT,MAAM1D,EAAMhC,EAAQiC,WAAWqD,EA  
AU3C,EAAEhC,OACrCiC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCa,EAAQIC,EAAQk  
B,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CsE,EAAY,IAAIvD,WAAW,IAAIC,WAAW0C,GAAMzC,QACHDsD,E  
AAc,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OOAOa,QAK3D,OAHAc,GACIhC,EAAKgD,EAAajD,EAAE  
IB,MAAMC,OAAQIC,GAASmD,EAAEhC,OAAQuB,EAAOyD,EAC5DZ,EAAKrD,QACFM,EAoCF,MAAM6D,  
GAAgC,CAC3CjG,WAAyKg,EACZhG,YAAa,OACbK,WAAy0E,GACZ9E,UzFF,SAAeC,GACb4E,GAAgB5E  
,EAAQC,KAAKC,MAAM4F,EAAW,KAAiB,CAC7D,SACA,QACA,SACA,SACA,SACA,QACA,sBCPYC,GAC  
ZpD,EAAeqD,EAAuBhG,GAMxC,MAAMiG,EAAStD,EAAEIB,MACXyE,EAAQvD,EAAEIB,MAAMC,OAEB  
yE,EAAetD,EAAKuD,eAAeJ,EAAMC,GAC/C,IAAIL,EAAOF,EACX,MAAMG,EAAejD,EAAkD,mBAAMBF,E  
AAMH,GAC3D,IAAIM,EAAc,KACdC,GAAqB,EACzB,GAAoB,MAAhBH,EAASB,CACxB,MAAMID,EAAqB,I  
AAIoC,MAAMU,GACrC,IAAK,IAAIrC,EAAI,EAAGA,EAAIT,EAAS1B,OAAQmC,IACnCT,EAASS,GAAKoC,  
EAAOK,EAAazC,IAGpCwC,EAAOhD,EAAqD,iBAAiBL,EAAK3E,OAAQwE,GACIDM,EACI3B,GAAU,CAA  
CxE,OAAQ,CAACsC,EAAAA,GAAIrC,MAAO,CAACyE,KAAMuB,GAAetG,QAAAA,IAEzD,MAAM4C,EAA  
M5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACvBrB,EAAQkB,UAAUC,IAAIqF,EAAYpF,QAAQC,K  
AC1CuB,IACnB6D,GAAqB,GAIZB,MAAO,CAACE,WAAyH,EAAaL,aAAAA,EAACe,KAAAA,EAAMI,mBAA  
AA,GCTcVd,IAAIG,GAKDG,MAAMC,GAA0B,CACrCjH,WAAyKH,EACZhH,YAAa,OACbC,UAnDF,SAAeC,

GACb4G,GAAU5G,EAAQC,KAAKC,MAAM4G,EAAK,KAAe,CAAC,4BAmDID3G,WAhDF,SAAaC,GAEX,M  
AAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,EAAIe,SAAEA,GAAYzG,GA  
CnBqC,EAACA,GAAKtC,EAEZ,IAAI2G,EADQhH,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAExC4F,E  
AAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAIF,aAAEA,EAAYM,mBAAEA,GACnCV,GAAwBpD,  
EAAGqD,EAAMhG,GAErC,GAAIyG,EAAoB,CAEtBQ,EAAQN,EACRK,EAfQbHh,EAAQkB,UAAUC,IAAIwF  
,EAAWvF,QAAQC,GAKhE,MAAM6F,EAAYD,EAAMxF,MAAMC,OAC9B2B,EAAa8D,2BAA2B,MAAOd,EA  
AMa,GACrD,MAAO5B,EAAU8B,GACb/D,EAAagE,0BAA0BJ,EAAMxF,MAAO4E,GACIDiB,EAAazE,EAAKC  
,cAAcsE,GAehCpF,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,OAC3C,GAAwC,IAApCkC,EAAKC,cA  
AcmE,EAAMxF,OAAc,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHduF,GAAQ  
I,EAASM,EAAYpF,GAQ/B,GALuE,GAEFzG,EAAQuH,YAAYZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3  
D,EAAWC,EAAamE,qBAAqBxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OAAOpB,IC/CT,IAAIy  
F,GAKdG,MAAMC,GAA0B,CACrC9H,WAAy+H,EACZ7H,YAAa,OACbC,UAnDF,SAAeC,GACbyH,GAAUzH  
,EAAQC,KAAKC,MAAMyH,EAAK,KAAe,CAAC,4BAmDIDxH,WAhDF,SAAaC,GAEX,MAAMJ,QAACA,EA  
AOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,EAAIe,SAAEA,GAAYzG,GACnBqC,EAACA,GA  
AKtC,EAEZ,IAAI2G,EADQhH,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAExC4F,EAAQtE,EAEZ,MAA  
MgE,WAACA,EAAUN,KAAEA,EAAIF,aAAEA,EAAYM,mBAAEA,GACnCV,GAAwBpD,EAAGqD,EAAMhG,  
GAErC,GAAIyG,EAAoB,CAEtBQ,EAAQN,EACRK,EAfQbHh,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,  
GAKhE,MAAM6F,EAAYD,EAAMxF,MAAMC,OAC9B2B,EAAa8D,2BAA2B,MAAOd,EAAMa,GACrD,MAA  
O5B,EAAU8B,GACb/D,EAAagE,0BAA0BJ,EAAMxF,MAAO4E,GACIDiB,EAAazE,EAAKC,cAAcsE,GAehCp  
F,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,OAC3C,GAAwC,IAApCkC,EAAKC,cAAcmE,EAAMxF,O  
AAc,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GACHDoG,GAAQT,EAASM,EAAY  
pF,GAQ/B,GALuE,GAEFzG,EAAQuH,YAAYZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,EAAa  
mE,qBAAqBxF,EAAIP,MAAO0E,GAC9DnE,EAAIP,MAAQ2B,EAGd,OAAOpB,IC9CT,IAAIU,GAmDG,MAA  
MkF,GAA6B,CACxChI,WAAyI,EACZ/H,YAAa,OACbK,WAXCF,SACIC,GACF,MAAMJ,QAACA,EAAOK,O  
AAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,GAAQ1F,GACTqC,EAACA,GAAKtC,EACNuC,EAAM5  
C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2F,EAAUpE,EACVqE,EAAQtE,EAEZ,MAAMgE  
,WAACA,EAAUN,KAAEA,EAAI,mBAAEA,GACrBV,GAAwBpD,EAAGqD,EAAMhG,GAErC,GAAIyG,EAA  
oB,CACtB,MAAMqB,EAAe9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAiBIF,IAgnBqE,E  
AAQN,EACRK,EAAUc,GAId,MAAMxC,EAAW2B,EAAMxF,MAAMsG,MAAM,GAAL,GACjC/F,EAAMhC,EA  
AQiC,WAAWqD,EAAU,SACnCPD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1C2G,EAAYnF,E  
AAKC,cAAcd,EAAIP,OACnCWG,EAAYhB,EAAMxF,MAAM4E,EAAK,IAQnC,OAPA3D,GAASsE,EAASxH,G  
AASyH,EAAMtG,OAAQqH,EAAWC,EAAW/F,GAE3DuE,GAEFzG,EAAQuH,YAAYZ,EAAWvF,QAG1BY,GA  
OPjC,UAnDF,SAAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MAAM2H,EAAQ,KAAiB,CACrD,SACA,SACA,S  
ACA,SACA,aCbJ,IAAIK,GAoEG,MAAMC,GAA8B,CACzCvI,WAAywI,EACZtI,YAAa,OACbC,UajEF,SAAeC  
,GACbkI,GAAClI,EAAQC,KAAKC,MAAMkI,EAAS,KAAiB,CACzD,SACA,SACA,SACA,SACA,SACA,SACA,  
SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAmDFjI,Wa/CF,SACIC,GACF,MAAMC,OAACA,EAAMC,  
MAAEA,EAAKN,QAAEA,GAAWI,EA3BuC,EAAItC,EAAOsC,EACXC,EAAM5C,EAAQkB,UAAUC,IAAIwB  
,EAAEvB,QAAQC,IAEtCgH,WAACA,EAAUC,QAAEA,EAAOC,IAAEA,EAAGC,gBAAEA,GAAMbII,EAC9C  
mI,EAAWpF,EAAqF,kBAC1B/F,EAIEB,MAAO4G,EAAYC,EAAS,EAAMBC,EAAKC,GAEPDG,EAAeF,EA  
ASE,aACxBC,EAAcH,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EAAWP,EAASK,QAAQG,MAC5B  
C,EAAYT,EAASK,QAAQK,OAC7BC,EAAUX,EAASK,QAAQO,KAC3BC,EAAeb,EAASa,aACxBC,EAACd,EA  
ASc,YACvBC,EAAWf,EAASgB,WAE1B,GAA4B,iBAAxBhB,EAASiB,WACX,MAAM,IAAI9I,MAEN,6CAAG  
6H,EAASiB,2CAGIB,GAA+B,IAA3BjB,EAASkB,eAAMd,IAA5BIB,EAASmB,eAC3C,MAAM,IAAIhJ,MAEN,0  
EAAQ6H,EAASmB,mBAAMbNB,EAASkB,mBAGnD,MAAM3H,EAAMhC,EAAQiC,WAAWwG,EAASnD,SA  
AU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OAJA6G,GACItF,EAAKD,EAAEI  
B,MAAM,GAAIkB,EAAEIB,MAAM,GAAIkB,EAAEIB,MAAM,GAAIkB,EAAcC,EACvDC,EAAQG,EAAUE,E  
AAWE,EAASE,EAAcC,EAAaC,EACjEtH,GACGF,aCjEO6H,GACZzJ,GACF,MAAMC,OAACA,EAAMC,MAA  
EA,GAASF,GACIBuC,EAACA,GAAKtC,GACNoB,MAACA,GAASnB,EAEvwJ,EAAQjH,EAAKC,cAAcH,EA

AEIB,OAC7BsI,EAASIH,EAAKMH,uBAAuBvI,EAAOqI,GASID,OAPAJH,EAAKoH,OACDH,IAAUjH,EAAKC,cAAciH,IAC7B,IAAM,cAAcA,iBAAsBpH,EAAEIB,0EAIhDrB,EAAKJ,QAAQkK,OOAOvH,EAAEvB,QACf,CAACA,OAAQuB,EAAEvB,OAAQK,MAAOsI,EAAQpJ,MAAOgC,EAAEhC,OAG7C,MAAMwJ,GAA8B,CACzCvK,WAAyWk,EACZtK,YAAa,OACbK,WAAy0J,ICpBd,IAAIQ,GAqGG,MAAMC,GAACk,CAC7C1K,WAAy2K,EACZzK,YAAa,OACbC,UAnGF,SAAeC,GACbqK,GAakBrK,EAAQC,KAAKC,MAAMqK,EAAa,KAAiB,CACjE,SACA,QACA,SACA,SACA,QACA,SACA,SACA,SACA,YA0FFpK,WAtFF,SAAqBC,GAKnB,MAAMC,OACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BG,EAACA,EAACC,EAAEA,GAACKH,GACTQ,WAACA,EAAUC,WAAEA,GAACr,EAEjC,GAAGb,YAAZC,EAAEI,OAAMc,YAAZH,EAAEG,MAC7B,MAAM,IAAIC,MACN,8DAGN,MAAM4J,EAAQjK,EAAEkB,MAAMC,OACb+I,EAAQjK,EAAEiB,MAAMC,OAEBgJ,EAAC7J,EAAaN,EAAEkB,MAAM+I,EAAQ,GAACKjK,EAAEkB,MAAM+I,EAAQ,GACHEG,EAAC7J,EAAaN,EAAEiB,MAAMgJ,EAAQ,GAACKjK,EAAEiB,MAAMgJ,EAAQ,GAHEG,EAAC/J,EAAaN,EAAEkB,MAAM+I,EAAQ,GAACKjK,EAAEkB,MAAM+I,EAAQ,GACHEK,EAAC/J,EAAaN,EAAEiB,MAAMgJ,EAAQ,GAACKjK,EAAEiB,MAAMgJ,EAAQ,GAHEK,EAAAvK,EAAEkB,MAAMsG,MAAM,GAAI,GAC/BgD,EAAvK,EAAEiB,MAAMsG,MAAM,GAAI,GAE/BiD,EAAyNI,EAAKC,cAAcGI,GAC/BG,EAAyPI,EAAKC,cAAciI,GAE/BG,EACFF,IAACC,GAA2B,IAADd,GAACi,IAADc,EAElDpI,EAAKoH,OACDO,GAAS,GAACK,GAAS,GAACKS,GAC5B,IAEI,uJAAWBJ,WAAoBC,QAEPd,MAEMzF,GADF0F,EAAyC,EAAyIK,EAAEkB,MAAMsG,MAAM,GAAI,GAACKvH,EAAEiB,MAAMsG,MAAM,GAAI,IACiCoD,OOAO,CAACP,EAAaC,IAExDhI,EAAKoH,OACDS,IAAgBC,GACHB,IAAM,kCAAKCD,WACjCC,6BAAuCPk,EAAEkB,aACzCjB,EAAEiB,wBAAWbZ,oBACVC,kBAE3B,MAEMsK,EAAWtK,EAAa,CAACmK,EAAWJ,EAAAF,GACzB,CAACM,EAAWN,EAAAE,GAGjDQ,EAAMxB,GAAGQ,CAACxJ,OAAQ,CAACsC,EAAGpC,GAaip,QAAAA,EAASM,MAAO,CAACmB,MANrCZ,EAAa,CAACmK,EAAWN,EAAAE,GACzB,CAACI,EAAWJ,EAAAF,MAMjDY,EAAMzB,GAAGQ,CAACxJ,OAAQ,CAACsC,EAAGnC,GAAIR,QAAAA,EAASM,MAAO,CAACmB,MAAO2J,KAEvDG,EAAQvL,EAAQkB,UAAUC,IAAIkK,EAAljK,QAAQC,GAC1CmK,EAAQxL,EAAQkB,UAAUC,IAAIImK,EAAlIK,QAAQC,GAElCQ,EAAUhB,EAAAwK,EAAl5J,MAAM,GAACK4J,EAAl5J,MAAM,GACHDK,EAAWhB,EAAAwK,EAAl7J,MAAM,GAACK6J,EAAl7J,MAAM,GACjDM,EAAW0J,KAAKC,IAAIv,EAAWC,GAE/BjJ,EAAMhC,EAAQiC,WAAW,CAACF,EAAUF,EAASC,GAAWuJ,EAAlIK,OAC5DuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAElCc,EAAC,IAAIC,WAAW,IAAIC,WAAWgJ,EAAl5J,OOAOa,QACvDC,EAAC,IAAIH,WAAW,IAAIC,WAAWiJ,EAAl7J,OOAOa,QAu7D,OARA+H,GACIkB,EAAOpJ,EAAAKJ,EAAl5J,MAAMC,OOAQ8J,EAAljJ,EAC7C+I,EAAl7J,MAAMC,OOAQb,EAAyC,EAAyOB,GAE9CIC,EAAQuH,YAAy8D,EAAljK,QACxBpB,EAAQuH,YAAy+D,EAAlIK,QAExBY,EAAlP,MAAQ6D,EAcltD,ICvGF,SAAS2J,GAAUC,EAAMC,EAAC,EAAMrK,EAAOd,GACHD,MAAMoL,EAACc,EAAWC,iBAAiBxK,EAAOK,EAAOC,GACxDpK,EAASmB,EAAKC,cAAcGI,GAC5BI,EAAWrJ,EAAKsJ,eAAeIK,GACrC,GAAlS,K,EAAa,CACb,MAAMK,EAAAJ,EAAWK,kBAAKBR,EAAOK,GACvD,MAAc,WAAVvL,EACOIL,EAACK7D,MAAMqE,EAAYA,EAAa1K,GAExCkK,EAaku,SAASF,EAAYA,EAAa1K,GAElD,MAAM6K,EAAwB,WAAV5L,EACHB0C,EAAAmJ,uBAAuBZ,GACpCA,EACEa,EAAQnK,EAAOb,EAAOd,EAAO4L,GAC7BG,EAASpK,EAAOwJ,EAAMnL,GAC5B,IAAK,IAAIkD,EAAl,EAAGA,EAAl6I,EAAOZ,OOAAQjI,EAAG,CACIC,MAAM8I,EAASD,EAAOE,WAAW/L,GAC3BgJ,EAAQF,EAAOvI,KAAI,CAAC0I,EAACK3H,IAAM2H,EAAMjB,EAAM1G,KACjDuH,EAAOjI,IAAIgI,EAAMtL,OOAO0L,MAAWF,GAEvC,MAAc,WAAVhM,EACO0C,EAAa0J,uBAAuBL,EAAOM,QAECN,EAAOM,gBCpBFjF,GACZ3H,GACF,MAAOC,QAAQsC,EAACA,GAAlrC,OOAOuL,MAACA,EAAKC,KAAEA,GAACK9L,QAAEA,GAAWI,GAE9C6M,EAAQC,GAASIB,EAAWmB,iBAAiBxK,EAAGkJ,EAAOC,GAExDC,EAACc,EAAWC,iBAAiBtJ,EAAEIB,MAAOwL,EAAQC,GAC3DE,EAAQpN,EAAQqN,SAAS1K,EAAEvB,QAC3BY,EAAMhC,EAAQiC,WAAWiL,EAAOvK,EAAEhC,OOACICuL,EAAWrJ,EAAKsJ,eAAexJ,EAAEIB,OACjC6L,EAAUtN,EAAQkB,UAAUC,IAAIa,EAAlZ,QAElC,GAAl2K,EAAa,CACf,MAAMK,EAAAJ,EAAWK,kBAAKBY,EAAQf,GAExD,GAAGb,WAAZvJ,EAAEhC,MACJ2M,EAAQC,YACHH,EACIrF,MAAMqE,EAAYA,EAAAvJ,EAAKC,cAAcOK,QACtD,CACWIN,EAAQwE,mBAAMbxC,GACnCyC,IACH2I,EACId,SAASF,EAAYA,EAAAvJ,EAAKC,cAAcOK,KAGhE,OOAOIL,EAGT,GAAGb,WAAZw,EAAEhC,MAAOB,CACxB,MAAM6M,EAAMC,GAaAL,EAAOH,EAAQC,EAAOvK,EAAEIB,MAAOkB,EAAEhC,OAElD,OADa2M,EAAQC,YAAcC,EACfxL,EAGT,MAAM0L,EAAU1N,EAAQwE,mBAAMbxC,GACrC2L,EAAOhL,EAAEIB,MAAMC,OACrB,GAaA,IAATiM,GASBN,SACIP,EAAGCQ,EACHCF,EAACK7B,EAC



ICC,GACF,IAAI+B,EAAY,EACHb,MAAMC,EAASjC,EAAM,GACfkC,EAASIC,EAAM,GACfmC,EAAOF,EAA  
ShC,EAAC,GAC3B,IAAK,IAAIjI,EAALiK,EAQjK,EAImK,EAAMnK,IAAK,CACIC,MAAMoK,EAUpK,EA  
AI+J,EAAUG,EAC9BL,EAQjI,IAAI2I,EAAMd,SAAS2B,EAASA,EAUnC,EAAC,IAAK+B,GACxDA,GAAa/  
B,EAAC,IAhCIBoC,CACId,EAQjBIB,EAAS,GAAIwB,EAASST,EAC3CC,QACC,GAAa,IAATS,GAiCb,SACIP,E  
AAgCe,EAakBC,EACIDV,EAakC7B,EACICC,GACF,IAAI+B,EAAY,EACHb,MAAMC,EAASjC,EAAM,GACf  
kC,EAASIC,EAAM,GACfwC,EAASxC,EAAM,GACfmC,EAAOF,EAAShC,EAAC,GACrBwC,EAAOP,EAASjC,  
EAAC,GAC3B,IAAK,IAAIjI,EAALiK,EAQjK,EAImK,EAAMnK,IAC7B,IAAK,IAAIbB,EAAI4I,EAQ5I,EA  
AIjI,EAAMnJ,IAAC,CACIC,MAAM8I,EAUpK,EAIsK,EAWhJ,EAAljI,EAAWC,EAC9CX,EAQjI,IAAI2  
I,EAAMd,SAAS2B,EAASA,EAUnC,EAAC,IAAK+B,GACxDA,GAAa/B,EAAC,IA9CpByC,CACInB,EAQjB  
B,EAAS,GAAIA,EAAS,GAAIwB,EAC/CT,EAAoCC,QACnC,GAAa,IAATS,GAgDb,SACIP,EAAGCe,EAakBC,  
EACIDI,EAakBd,EACIB7B,EACAC,GACF,IAAI+B,EAAY,EACHb,MAAMC,EAASjC,EAAM,GACfkC,EAASI  
C,EAAM,GACfwC,EAASxC,EAAM,GACfmC,EAAOF,EAAShC,EAAC,GACrBwC,EAAOP,EAASjC,EAAC,G  
ACrB2C,EAAOJ,EAASvC,EAAC,GACrB4C,EAAS7C,EAAM,GAERb,IAAC,IAAIhI,EAALiK,EAQjK,EAIm  
K,EAAMnK,IAC7B,IAAC,IAAIbB,EAAI4I,EAQ5I,EAImJ,EAAMnJ,IAC7B,IAAC,IAAIwJ,EAAlnI,EAQM,  
EAAlfI,EAAME,IAAC,CACIC,MAAMV,EAUpK,EAIsK,EAWhJ,EAAljI,EAAWO,EAAlhI,EAWE,EAC7  
DhB,EAQjI,IAAI2I,EAAMd,SAAS2B,EAASA,EAUnC,EAAC,IAAK+B,GACxDA,GAAa/B,EAAC,IAIEtB8C  
,CACIxB,EAQjBIB,EAAS,GAAIA,EAAS,GAAIA,EAAS,GAAIwB,EAC5DT,EACAC,OACC,CACL,MAAMM,E  
ACFC,GAAaL,EAAOH,EAQC,EAAOVk,EAAlEB,MAAOkB,EAAlEhC,OACID+M,EAQjI,IAAI+I,GAGd,OA  
AOxL,EA8DF,MAAM6M,GAA4B,CACvCjP,WAAYkP,EACZHP,YAAa,OACbK,WAAY4H,IChFP,MAAMgH,G  
AAqC,CACDnP,WAAYoP,EACZIP,YAAa,OACbK,WAZCF,SAAwBC,GAKtB,MAAMC,OAACA,EAAML,QA  
AEA,EAAMM,MAAEA,GAASF,GAC3BuC,EAACA,GAAKtC,GACN4O,WAACA,EAAMC,MAAEA,GAAS5O,  
EAAlEtB6O,EAAOF,EAAWG,QAAO,CAAC7O,EAAGC,IAAMD,EAAlC,IAEvC6O,EAWhM,EAAlM,YAAAY3  
M,EAAlEB,MAAOwN,EAAYE,GACzDI,EAAWIM,EAAMM,YAAAYH,EAAS3N,OAAQuN,EAAWvN,QACHE+  
N,EACFPm,EAAMqM,oBAAoB/M,EAAlEB,MAAOwN,EAAYE,GACpDQ,EACfM,EAAMuM,oBAAoBV,EAAM  
D,EAAWvN,QACjDmO,EACfM,EAAMyM,aAAaL,EAakBP,EAAMOD,EAAWvN,QA5DqO,EAAYIG,GAAQ,C  
AACxJ,OAAQ,CAACsC,EAAAA,GAAI3C,QAAAA,EAASM,MAAO,CAACmB,MAAO4N,KACID7I,EACF3B,  
GAAU,CAACxE,OAAQ,CAACsC,EAAGoN,GAAY/P,QAAAA,EAASM,MAAO,CAACyE,KAAMwK,KAGxDS,  
EAASjI,GAAM,CACnB1H,OAAQ,CAACsC,EAHIbK,GACxB,CAACxJ,OAAQ,CAACsC,EAAG6D,GAAcxG,  
QAAAA,EAASM,MAAO,CAACmB,MAAOgO,MAGrDzP,QAAAA,EACAM,MAAO,CAACuL,MAAO8D,EA  
k7D,KAAM+D,KAOzC,OAJA7P,EAQhU,YAAyW,EAAMU3O,QAC9BpB,EAQhU,YAAyF,EAAYpF,QAC  
CpB,EAQhU,YAAyW,EAAMU3O,QAEB4O,aCtCOC,GACZ7P,GAEF,MAAOC,QAAQsC,EAACA,GAAlrC,O  
AAOK,MAACA,GAAMX,QAAEA,GAAWI,EACzC4B,EAAMhC,EAQjC,WAAMU,EAAlEB,MAAOd,GACIC  
4D,EAASvE,EAQwE,mBAAMb7B,GAG1C,OAFgB3C,EAQwE,mBAAMbxC,GACnCyC,IAAlfI,GAClvC,E  
AGF,MAAMko,GAA2B,CACtCtQ,WAAYuQ,EACZrQ,YAAa,OACbK,WAAY8P,IChBDG,GAA2B5N,GAAwB  
6N,GCCHE,IAAlC,GA0BG,MAAMC,GAakC,CAC7C3Q,WAAY4Q,EACZ1Q,YAAa,OACbC,UA3BF,SAAeC,G  
ACbsQ,GAAWtQ,EAQC,KAAKC,MAAMsQ,EAaA,KAAiB,CAC1D,SACA,SACA,SACA,YAuBFrQ,WAnBF,S  
AAcC,GAKZ,MAAMC,OAACA,EAAML,QAAEA,EAAMM,MAAEA,GAASF,GAC3BuC,EAACA,GAAKtC,GA  
CNoQ,aAAACA,EAAYC,aAAEA,GAAGbPQ,EAC/BsC,EAAM5C,EAQkB,UAAUC,IAAIwB,EAAlEvB,QAAQC,  
GACtCW,EAAMhC,EAQjC,WAAMU,EAAlEB,MAAOkB,EAAlEhC,OACpCuB,EAAlQC,EAQkB,UAAUC,I  
AAIa,EAAlZ,QAAQC,GAAlD,OADAIp,GAAS1N,EAAC6N,EAACc,EAACxO,GACnCF,aCpBOMJ,GACZ/K,GA  
CF,MAAMC,OAACA,EAAML,QAAEA,GAAWI,EAAlB4F,EAAMnD,EAAlKuD,eAAehG,EAAlKE,MAAM0F,K  
AAM3F,EAAM,GAAGoB,OAAO,GAAlE,IAAI6D,EAAljC,EAAMoC,gBAAGbPF,EAAM+D,KAAIuM,GAACA,  
EAAlEP,QAAQuE,GAGtE,MAAM4K,EAAMuQ,EAAMoQ,QAAOF,GAAC9N,EAACK,cAAc6N,EAAlEP,OAAS  
,IACjE,GAAMuB,IAAMnBMP,EAAlQP,OACV,OAAO4C,GAAS,CAACjE,OAAQ,CAACsC,EAAGiO,EAQ,IAAK5  
Q,QAAAA,IAG5C,MAAMgC,EAAMhC,EAQjC,WAAMqD,EAAMjF,EAAM,GAAGM,OAAlD,GAAqC,IAAlC  
kC,EAACK,cAAAcwC,GACrB,OAAMtD,EAGT,MAAM8O,EAASF,EAAMxM,KAAIuM,GAACA,EAAlEP,QAGI  
C,GAFA4B,EAAMoN,uBAAMuBD,EAAM9K,GAAlB,WAAMrB4K,EAAM,GAAGjQ,MAAMoB,CAQjC,MAAMqQ,EA  
AWJ,EAAMxM,KAAIuM,IAC3B,MAAM1I,EAAYpF,EAACK,cAAc6N,EAAlEP,MAAMsG,MAAM/B,IAAlD,O

AAO6D,GAAQ,CAACxJ,OAAQ,CAACsC,EAAGgO,GAAI3Q,QAAAA,EAASM,MAAO,CAACmB,MADnC,EA  
AE,EAAGwG,SAlfgJ,EAakBD,EAAS5M,KAAIuM,IAC5B,CAAC/E,KAAM5L,EAQqN,SAASsD,EAEEvP,QA  
ASK,MAAOkP,EAEEIP,UAIrD6D,EACIjC,EAAaoC,gBAAGBuL,EAAS5M,KAAIuM,GAACA,EAEEIP,QAAQ,  
GAC7D,MAAMyP,EAawC,IAAzBF,EAAS,GAAGvP,MAAM,GACjCiM,ECpDH,SAaBrN,EAQqF,EAU3E,  
EAOUQ,GACHd,MAAMxD,EAU7K,EAAsO,kBAakBxQ,EAOkC,EAAC,cAAcwC,IACjE,GAAI4L,GA  
A0B,WAAVvQ,EAaOB,CAEpC,IAAIyQ,EAAS,EACb/Q,EAaOgR,SAAQpK,IACX,MAAM6E,EAaOjJ,EAAC  
,cAAcmE,EAAMxF,OACtCiM,EAQjJ,IAAIwC,EAAM2E,KAAMwF,GACxBA,GAAUf,SAGb,CACD,IAAIwF  
,EAAY,EACbBjR,EAaOgR,SAAQpK,IACX,MAAMsF,EAawB,WAAV5L,EACb0C,EAaamJ,uBAaBvF,EA  
AM2E,MAC1C3E,EAAM2E,KACV,IAAI2F,EAao,EACX,IAAK,IAAIC,EAAM,EAAGA,EAAMvK,EAAMxF,  
MAAM,KAAM+P,EAAC,CAC3C,MAAMC,EAASD,EAAMIM,EAAS,GAAGmM,EACnC,IAAK,IAAI,EAAM,E  
AAGA,EAAMzK,EAAMxF,MAAM,KAAMIQ,EACtChE,EAQ+D,EAASC,GAAOnF,EAAYgF,KAG5CD,GAA  
arK,EAAMxF,MAAM,MAGjC,OAaOiM,EDyBsIE,CACIV,EAaIB3L,EAUjF,EAao,GAAGM,MACrCuQ,GA  
EdU,EACFvO,EAaaoC,gBAAGBmL,EAQxM,KAAIuM,GAACA,EAEEIP,QAAQuE,GAE5DhE,EAaip,MAAQ  
mQ,EAMZ,OALgB5R,EAQkB,UAAUC,IAAIa,EAaIZ,QACICmM,YAAcK,EAaOJ,uBAaBW,GAe1DsD,E  
AASK,SAAQV,GAAK3Q,EAQhY,YAAyOJ,EAEEvP,UAErCY,EAGT,MAAMD,EAawC,EAAC,cAAc8N,E  
AAQ,GAAGnP,MAAMsG,MAAM,EAAG/B,IAC9D,IAAI6L,EAaE,EACnB,MAAMC,EAAYIB,EAQxM,KAAI  
6C,IAC5B,MAAM8K,EAawIP,EAAC,cAAcmE,EAAMxF,MAAMsG,MAAM/B,IAEtD,OADa6L,GAAGBE,E  
ACTA,KAeHxN,EAASqM,EAQxM,KAAI6C,GAASjH,EAQwE,mBAaMByC,KACzDyG,EAU1N,EAQw  
E,mBAaMbxC,GAC3C,IAAK,IAAIxB,EAAL,EAAGA,EAaIB,EAaUvB,IAAK,CACjC,IAAIqN,EAAYrN,EA  
IqR,EACpB,IAAK,IAAIhO,EAAL,EAAGA,EAaIU,EAaO7C,OAQmC,IAAK,CACtC,MAAMkO,EAawD,EA  
UjO,GACrBmO,EAawXR,EAaIUr,EACfnG,EAaOrH,EAaOV,GAAGyI,SAAS0F,EAaUA,EAawD,GACrDrE,  
EAQjJ,IAAIhM,EAAMiC,GACIBA,GAaakE,GAGjB,OAaOP,EAGF,MAAMIQ,GAA6B,CACxCrS,WAAySs,  
EACzPs,YAAa,OACbK,WAAyGL,IEzFd,IAAIgH,GA4EG,MAAMC,GAA6B,CACxCS,WAAyS,EACzVs,YA  
Aa,OACbC,UAvEF,SAaE,CACbMS,GAaAN,EAQC,KAAK,MAAMs,EAQ,KAAIB,CACvD,SACA,SA  
CA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SA  
CA,YaDFIS,WAhDF,SACIC,GACF,MAAMC,OAACA,EAAMC,MAAEA,EAaKN,QAAEA,GAaWI,GAe3Bu  
C,EAACA,EAaCO,OAAEA,GAaUxQ,EACduC,EAAM5C,EAQkB,UAAUC,IAAIwB,EAEEvB,QAAQC,GA  
CtCiR,EAawTs,EAQkB,UAAUC,IAAI0P,EAaOzP,QAAQC,IAEhDiH,QaACA,EAaOiK,UAAEA,EAaShK,I  
AAEA,EAAGC,gBAAEA,EAaekB,WAAEA,GAaCpJ,EACzDkS,EAaCnP,EAaOP,wBAawB/I,GACnDjB,EA  
WpF,EAaQp,kBACzB/P,EAaeIB,MAAQOP,EAaOBpP,MAAO6G,EAASiK,EAC5DhK,EAAC,GAaIB,EAaO  
gK,GAe3B7J,EAaEf,EAASE,aAcxBC,EAaCh,EAASG,YAcvBC,EAASJ,EAASK,QAAQC,IAC1BC,EAaWP,E  
AASK,QAAQG,MAC5BC,EAAYT,EAASK,QAAQK,OAC7BC,EAaUX,EAASK,QAAQO,KAC3BO,EAaIBnB,  
EAASmB,eAC1BD,EAaGBIB,EAASkB,cACzBL,EAaEb,EAASa,aAcxBC,EAaCd,EAASc,YAcvBoJ,EAaGBIK,  
EAASgB,WACzBmJ,EAaIBnK,EAASoK,YAC1BC,EAASc,SAa1BrK,EAASK,QAAQIK,KAAkB,EAAL,EAezD,  
GAa4B,iBAaxBtK,EAASiB,WACX,MAAM,IAAI9I,MAEN,oDAAG6H,EAASiB,2CAGIB,MAAM1H,EAAMhC  
,EAQIC,WAAWwG,EAASnD,SAaU,WAC5CpD,EAQIC,EAQkB,UAAUC,IAAIa,EAaIZ,QAAQC,GAMhD  
,OALA8Q,GACIvP,EAaKD,EAaEIB,MAAM,GAaIkB,EAaEIB,MAAM,GAaIkB,EAaEIB,MAAM,GAaI6Q,E  
AAU3J,EACnDC,EAaAC,EAaQG,EAaUE,EAaWE,EAAS0J,EACnDIJ,EAaGBD,EAaEL,EAaCC,EAaAJ,EAC  
1DC,EAaGB1Q,GACbF,ICzET,IAAIgR,GAqGG,MAAMC,GAA0C,CACrDrT,WAAyST,EACzPT,YAAa,OACb  
C,Ua9FF,SAaEC,GACbgT,GAa0BhT,EAQC,KAAK,MAAMgT,EAaQB,KAAM,CACtE,SACA,SACA,SAC  
A,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SAC  
A,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YAmEF/S,WaDF,SAa6BC,GAK3B,MAAMJ,QAAEA,EA  
OK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B+S,GAACA,EAaEtC,OAAEA,GAaUxQ,GACfI,QAAEA,EA  
OC,IAAEA,EAAGmB,WAAEA,EAaUIB,gBAAEA,EAaE4K,WAAEA,GAaC9S,EAII1DkS,EAaCnP,EAaOP,wB  
AAwB/I,GACnDjB,EAaWpF,EAaQp,kBAC1BU,EAAYvC,EAaOP,MAA2C6G,EAJhD,EAKHC,EAAC,GA  
AiB,EAaBgK,IACtDa,UACJA,EAAS1K,aACTA,EAAYC,YACZA,EAaWa,WACXA,EAaU6J,SACVA,EAQ  
C,QACRA,EAaOV,YACPA,EAaWW,UACXA,EAASC,SACTA,EAaQnK,aACRA,EAAYC,YACZA,GACEd,E  
AEiL,EAAS/K,EAaE,EAaIF,EAASK,QAAQC,IAC7C4K,EAaU/K,EAaC,EAaIH,EAASK,QAAQO,KAE7CuK

,EAAyC,iBAAXBnL,EAASiB,WAC1BmK,EAAyHr,EAAKsJ,eAAe1D,EAASID,SACzCuO,EAAyJr,EAAKsJ,eAAegH,EAAG1R,QAClCsS,EAACO,EAACO,GAASpR,EAAKsJ,eAAe0E,EAOpP,OACnDyS,EAAeL,EAAU,GACzBM,EAAaP,EAAiBC,EAAU,GAACA,EAAU,GACvDO,EAAaR,EAAiBC,EAAU,GAACK,EAC7CQ,EAAiBT,EAAiB,EAAIC,EAAU,GACChDS,EAAeR,EAAU,GACzBS,EAAaX,EAAiBE,EAAU,GAACA,EAAU,GACvDU,EAAaZ,EAAiBE,EAAU,GAACK,EAC7CW,EAAiBb,EAAiB,EAAIE,EAAU,GAehD9R,EAAMhC,EAAQiC,WAAWwG,EAASID,QAAS,WAC3CrD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CqT,EAAO1U,EAAQkB,UAAUC,IAAIgS,EAAG/R,QAAQC,GACxCiR,EAAWtS,EAAQkB,UAAUC,IAAI0P,EAAOzP,QAAQC,GACtD,OANA2R,GACI0B,EAAMpC,EAAUe,EAAW1K,EAACc,EAAa0K,EAAUC,EACHe9J,EAAy+J,EAAWC,EAAUZ,EAAavJ,EAACc,EAC5DmK,EAAQC,EAASI,EAACO,EAACO,EAACO,EAACc,EACpDC,EAAYC,EAAgBC,EAACc,EAAYC,EACtDC,EAAGBvS,GACbF,ICIGI2S,GAA0BnS,GAAwBoS,GCDIDC,GAA2BrS,GAAwBsS,GCIhE,IAAKC,GAKL,IAAIC,IALJ,SAAKD,GACHA,2BACAA,yBAFF,CAAKA,KAAAA,QAoEE,MAAME,GAAoC,CAC/CrV,WAAySv,EACZpV,YAAa,OACbC,UA7DF,SAAeC,GACbGv,GAAoBhV,EAAQC,KAAKC,MAAMgV,EAAe,KAAe,CACnE,SACA,SACA,SACA,SACA,QACA,SACA,SACA,SACA,SACA,YAmDF/U,WA/Cf,SAAuBC,GAKrB,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B+U,OAAcA,EAAMC,mBAAEA,EAakBC,SAAEA,GAAY/U,GACzCgV,MAACA,EAakC,MAAEA,EAakC,OAAEA,GAAUnV,EAEzBoV,EAAWF,EAAM9T,MAAM,IAEtBiU,EAAyC,GAAaN,EAC1B/P,EAAW,CAACmQ,EAAUC,EAAyC,EAAWL,EAAM7T,MAAM,IAE/D,IACImU,EADAC,EAAa7V,EAAQkB,UAAUC,IAAIu,EAAmIU,QAeZB,YAAhBkU,EAAM3U,QACrIV,EAAa3F,GAACK,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC,EAAG2S,GAAQhV,MAAO,CAACK,MAAO,aAC/DkV,EAAa7V,EAAQkB,UAAUC,IAAIyU,EAAWxU,SAGhD,MAAM0U,EAAWD,EAAWxU,GACtB0U,EAAU/V,EAAQkB,UAAUC,IAAIoU,EAAMnU,QAAQC,GAC9C2U,EAAWWhW,EAAQkB,UAAUC,IAAIqU,EAAOpU,QAAQC,GAehDW,EAAMhC,EAAQiC,WAAWqD,EAAU,WACnCPD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAe1C4U,EAAMb,IAAI7T,WAAW,IAAIC,WAAWiT,EAAM7T,OAAOa,QAYpE,OAVA0S,GACIc,EAAUC,EAASC,EAAPU,EAAPU,QAAQC,EAAkBP,EACzDC,EACAZ,GAAoBI,GACpBC,EAAoBIT,GAEN,MAAd0T,GACF5V,EAAQuH,YAAyqO,EAAWxU,QAG1BY,ICHET,IAAIkU,GAoDG,MAAMC,GAA6B,CACxCvW,WAAyWw,EACZtW,YAAa,OACbC,UApDF,SAAeC,GACbkW,GAAaW,EAAQC,KAAKC,MAAMkV,EAAQ,KAAiB,CACvD,SACA,SACA,SACA,SACA,SACA,YA8CFjW,oBAzCAC,GAEA,MAAMC,OAAcA,EAAML,QAAEA,EAAMC,MAAEA,GAASF,GAC3BuC,EAACA,GAACKtC,GACN2F,KAACA,EAAIqQ,UAAEA,EAASC,QAAEA,GAAWhW,EAC7B4F,EAAQvD,EAAEIB,MAAMC,OAETBmB,EAakoH,OAAmB,YAAZtH,EAAehC,OAAmC,UAAZgC,EAAehC,OACrC,IAAM,2BAA2BgC,EAAehC,sCAErC,MAAM4V,EAAClT,EAAakD,mBAAMb,CAACP,GAAOE,GAC5D,IAAIqQ,EAAy7T,EACI,OAAhB4T,IACFC,EAAy3R,GAAU,C AACxE,OAAQ,CAACsC,EAAAA,GAAIrC,MAAO,CAACyE,KAAMwR,GAAcvW,QAAAA,KAEIE,MAAMyW,EAAepT,EAAaQ,iBAAiB,EAAGR,GAAO,GAC7D7C,EAAa8D,2BAA2B,SAAU,CAACsP,GAAevQ,GAIEE,MAAMwQ,EAAC1W,EAAQiC,WAAWuU,EAAU/U,MAAO+U,EAAU7V,OAC5DgW,EAAWH,EAAU/U,MAAMgV,GAC3BG,EAAc5W,EAAQkB,UAAUC,IAAIqV,EAAUpV,QAAQC,GACtDwV,EAAgB7W,EAAQkB,UAAUC,IAAIuV,EAAyT,V,QAAQC,GACHe6U,GAAWU,EAAaP,EAAy,EAAL,EAAGC,EAAU,EAAL,EAAGK,EACjDE,EAAerX,GAASmD,EAAehC,QAGrC,IAAIqB,EAAM0U,EACV,GAAoB,OAAhBH,EAASB,CAExBvU,EAAM6C,GACJ,CAACxE,OAAQ,CAACsC,EAAG+T,GAAcpW,MAAO,CAACyE,KAFb1B,EAAyT,uBAAuBP,IAECvW,QAAAA,IAC7DA,EAAQuH,YAAyIP,EAAUpV,QAC9BpB,EAAQuH,YAAyMP,EAAyT,V,QAIEC,OAAOY,ICrDT,IAAI+U,GA6DG,MAAMC,GAAmC,CAC9CpX,WAAyqX,EACZnX,YAAa,OACbC,UA3DF,SAAeC,GACb+W,GAAmB/W,EAAQC,KAAKC,MAAM+W,EAAC,KAAe,CACjE,SACA,SACA,SACA,QACA,SACA,QACA,QACA,SACA,YakDF9W,oBA9C2BC,GAK3B,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BuC,EAACA,GAACKtC,GACN6W,UAAcA,EAASxN,WAAEA,GAAcpJ,EAE1B+S,EAAy1Q,EAAEIB,MAAM,GAKpB0V,GAJ8B,SAafzN,EAAyB/G,EAAEIB,MAAM,GAACKb,EAAEIB,MAAM,IAIhCyV,EAC7BE,GAJ6B,SAaf1N,EAAyB/G,EAAEIB,MAAM,GAACKb,EAAEIB,MAAM,IAIjCyV,EAC3BG,GAJ6B,SAaf3N,EAAyB/G,EAAEIB,MAAM,GAACKb,EAAEIB,MAAM,KAIhCyV,EAAyA,GAExCI,EAA8B,SAaf5N,EACjB,CAAC2J,EAAW8D,EAACc,EAAaC,GACvC,CAACHe,EAAWgE,EAAaF,EAACc,GAERcPv,EAAMhC,EAAQiC,WAAWqV,EAAa,WAGtC1U,EADQ5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QACpBC,GACZkW,EACF,IAAIwV,WAAW,IAAIC,WAAWQ,EAAKsJ,eAAexJ,EAAEIB,QAAQa,QAe1DkV,EAAMb,IAAIpV,WAAW,IAAIC,WAAWi

V,GAAahV,QAC9DmV,EACF,IAAIrV,WAAW,IAAIC,WAAWQ,EAAKsJ,eAAemL,IAAchV,QAE9DJ,EAAQIC,  
EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OAJA0V,GACInU,EAAKsU,EAF2B,SAAfxN,EAAwB,EAA  
I,EAef6N,EAae5U,EAaeIB,MAAMC,OAAS,EAC9D8V,EAakBC,EAaiBH,EAAY5V,OOAQQ,GAepDF,IC1D  
T,IAAI0V,GAmFG,MAAMC,GAA4C,CACvD/X,WAAyY,EACZ9X,YAAa,OACbC,UA9EF,SAAeC,GACb0X,  
GAC1X,EAAQC,KAAKC,MAAM0X,EAauB,KAAiB,CACzD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,  
,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YA0DNzX,WAtDF,SAAYBC,GA  
KvB,MAAMC,OAACA,EAAMC,MAAEA,EAACKN,QAAEA,GAAWI,GAe3BuC,EAACA,EAACKO,OAAEA,GA  
AUxQ,EACduC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCiR,EAAWtS,EAAQkB,UAAU  
C,IAAI0P,EAaoZP,QAAQC,IAEHdIH,QAACA,EAAOiK,UAAEA,EAASHK,IAAEA,EAAGC,gBAAEA,GAAM  
BII,EAe7CuX,EAA0B,MAAAbF,EAAoB,CAAC,EAAG,GAACA,EAe1C9J,EAAWpF,EAaaqP,kBACzB/P,EAaeI  
B,MAAQoP,EAAoBpP,MAAO6G,EACIDuP,EAACtP,EAACKC,GAChD,GAEEG,EAaeF,EAASE,aACxBC,EA  
cH,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EAAWP,EAASK,QAAQG,MAC5BC,EAAYT,EAASK,  
QAAQK,OAC7BC,EAUX,EAASK,QAAQO,KAC3BO,EAaiBnB,EAASmB,eAC1BD,EAAGBIB,EAASKb,cAC  
zBL,EAaeb,EAASa,aACxBC,EAacd,EAASc,YACvBoJ,EAAGBIK,EAASgB,WACzBmJ,EAaiBnK,EAASoK,YA  
C1BC,EAAsC,SAA1BrK,EAASK,QAAQiK,KAAkB,EAAl,EAeZD,GAA4B,iBAAxBtK,EAASiB,WACX,MAAM  
,IAAI9I,MAEN,mEAAG6H,EAASiB,2CAGIB,MAAM1H,EAAMhC,EAaQIC,WAAWwG,EAASnD,SAAU,WAC  
5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OLAqW,GACI9U,EAACKD,EAaeIB,MAA  
M,GAAIKB,EAaeIB,MAAM,GAAIKB,EAaeIB,MAAM,GAAI6Q,EAAU3J,EACnDC,EAaaC,EAAQG,EAUE,  
EAWE,EAAS0J,EACnDIJ,EAAGBD,EAaeL,EAACc,EAaaoJ,EAC1DC,EAAGB1Q,GACbF,ICjFI8V,GAA0BtV  
,GAAwBuV,GCCIDC,GACT/U,GAAYBgV,GAFC,EAe6B,QCF9CC,GAA0B1V,GAAwB2V,EAAK,oBCEpDC,G  
AAWhY,GAKzB,MAAMC,OAACA,EAAMC,MAAEA,EAACKN,QAAEA,GAAWI,GAC3B6G,MAACA,GAAS5  
G,GACVgY,IAACA,GAAO/X,EAER4G,EAAYD,EAAMxF,MAAMC,OACxB0B,EAAW6D,EAAMxF,MAAMs  
G,QAC7B,IAAIuQ,EAOD,EAWX,OAVIA,EAAM,IAERxV,EAAKoH,SACC/C,EAAY,IAAMmR,GACpB,IAA  
M,mCAAoCnR,EAAY,OACIDA,OACRoR,EAOpR,EAAYmR,EAAM,GAe3BjV,EAASmV,OAOD,EAAM,E  
AAG,GAeIBzO,GAAQ,CAACxJ,OAAQ,CAACsC,EAAGsE,GAAQjH,QAAAA,EAASM,MAAO,CAACmB,MA  
AO2B,KAGvD,MAAMoV,GAAiC,CAC5C5Y,WAAy6Y,EACZ3Y,YAAa,OACbK,WAAyY,aC5BEM,GAAKtY  
,GACnB,MAAOE,OAOMB,MAACA,EAACKX,MAAEA,EAACKhY,MAAEA,GAAMX,QAAEA,GAAWLEAC1  
C4B,EAAMhC,EAAQIC,WAAWR,EAaOd,GAGtC,OAFgBX,EAaQwE,mBAAMbxC,GACnC0W,KAAKC,GAC  
N3W,EAGF,MAAM4W,GAA2B,CACtChZ,WAAyIZ,EACZ/Y,YAAa,OACbK,WAAyY,ICzd,IAAI,GA+BG,  
MAAMC,GAAoC,CAC/CnZ,WAAyoZ,EACZIZ,YAAa,OACbK,oBAIBEC,GACF,MAAMC,OAACA,EAAML,Q  
AAEA,GAAWI,GACpBkV,MAACA,GAASjV,EAeV2B,EAAMhC,EAAQIC,WAAWqT,EAAM7T,MAAO6T,EA  
AM3U,OAC5CsY,EAUjZ,EAAQkB,UAAUC,IAAIuU,EAAMIU,QAAQC,GAC9Ca,EAAQIC,EAAQkB,UAAU  
C,IAAIa,EAAIZ,QAAQC,IAEzC6X,EAAOC,EAaaC,EAAYC,GAAe/D,EAAM7T,MAI5D,OAFaqX,GACIG,EA  
ASC,EAAOC,EAaaC,EAAYC,EAaanX,GACnDF,GAOPjC,UA/BF,SAAeC,GACb8Y,GAAoB9Y,EAAQC,KAA  
KC,MAAM8Y,EAae,KAAiB,CACrE,SACA,SACA,SACA,SACA,SACA,aCbSM,GAA4B9W,GAAwB+W,GCGp  
DC,GACTvW,GAAYBwW,GAFC,GCA9B,IAAIC,GAqCG,MAAMC,GAAqC,CAChD/Z,WAAyga,EACZ9Z,YA  
Aa,OACbC,UApCF,SAAeC,GACb0Z,GAAgB1Z,EAAQC,KAAKC,MACzB0Z,EAAGB,KACbB,CAAC,SAAU,S  
AAU,SAAU,SAAU,SAAU,SAAU,YAkCjEzZ,WA/BF,SAAwBC,GAKtB,MAAMJ,QAACA,EAAOK,OAAEA,EA  
AMC,MAAEA,GAASF,GAC3ByZ,gBAACA,GAAmBvZ,GACpBqC,EAACA,EAACmX,KAAEA,EAAIC,SAE  
A,EAAQ3I,OAAEA,EAAM4I,MAAEA,GAAS3Z,EACrCuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QA  
AQC,GACtC4Y,EAASja,EAAQkB,UAAUC,IAAI2Y,EAACK1Y,QAAQC,GAC5C6Y,EAaala,EAAQkB,UAAUC,I  
AAI4Y,EAAS3Y,QAAQC,GACpD8Y,EAaQB,MAAV/I,EAaiBpR,EAAQkB,UAAUC,IAAIqQ,EAaOhQ,QAAQ  
C,GAACK,EACtE+Y,EAAMb,MAATJ,EAAGbha,EAAQkB,UAAUC,IAAI6Y,EAAM5Y,QAAQC,GAACK,EAEnE  
W,EAAMhC,EAAQIC,WAAWU,EAaeIB,MAAOkB,EAaEhC,OAE1C,GAAoC,IAAhCkC,EAACK,cAACh,EA  
EIB,OACvB,OAaOO,EAGT,MAAME,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAIhD,OAFaqY,G  
ACI9W,EAACKqX,EAAQC,EAAYC,EAaUC,EAASP,EAaiB3X,GAC1DF,IChCT,IAAIqY,GA6HG,MAAMC,GA  
AkC,CAC7C1a,WAAy2a,EACZza,YAAa,OACbC,UAtHF,SAAeC,GACbqa,GAakBra,EAAQC,KAAKC,MAAM  
qa,EAaa,KAAiB,CACjE,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SA

CA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,YA+FFpa,WA3FF,SAAqBC,GAKnB,MAAM  
C,OAACA,EAAMC,MAAEA,EAANK,QAAEA,GAAWI,GAC3BuC,EAACA,EAACKO,OAAEA,EAAMPQ,KAA  
EA,EAAIC,uBAAEA,GAA0BL,GAC5CiI,QACJA,EAAOC,IACPA,EAAGgK,UACHA,EAAS7I,WACTA,EAAUI  
B,gBACVA,EAaeZ,H,WACfA,EAAUC,eACVA,GACEV,EAEEml,EAAWpF,EAAaqP,kBACzB/P,EAAelB,MAA  
QoP,EAAoBpP,MAAO6G,EAASiK,EAC5DhK,EAACK,GAEH5G,EACFnC,GAakBsB,GACtB,GAAuB,MAAnB  
a,EACF,MAAM,IAAIhB,MACN,GAAGG,uEAIT,MAAM6B,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,Q  
AAQC,GACtCiR,EAAWtS,EAAQkB,UAAUC,IAAI0P,EAAOzP,QAAQC,GAehDuR,EAAiBnK,EAASoK,YAEh  
C,IAAIrR,EAAS,EACb,GAAY,MAARd,EAAC,CACHB,MAAMe,EAAWxB,EAAQkB,UAAUC,IAAIV,EAARKW,  
QAC5C,GAA8B,IAA1BI,EAASC,MAAMC,OACjB,MAAM,IAAIId,MAEN,sDAAQY,EAASC,MAAMC,WAE7B,  
GAAIF,EAASC,MAAM,KAAOmR,EACxB,MAAM,IAAIhS,MACN,2BAA2BY,EAASC,wDACImR,MAE9CrR,  
EAASC,EAASH,GAGpB,MAAMsH,EAaeF,EAASE,aACxBC,EAACH,EAASG,YACvBC,EAASJ,EAASK,QAA  
QC,IAC1BC,EAAWP,EAASK,QAAQG,MAC5BC,EAAyT,EAASK,QAAQK,OAC7BC,EAAUX,EAASK,QAAQ  
O,KAC3BO,EAAiBnB,EAASmB,eAC1BD,EAAGbIB,EAASKb,cACzBL,EAaeB,EAASa,aACxBC,EAacd,EAAS  
c,YACvBoJ,EAAGbIK,EAASgB,WACzBqJ,EAASc,SAA1BrK,EAASK,QAAQiK,KAAkB,EAAL,EACnDM,EAA  
Y5K,EAAS4K,UACrBC,EAAW7K,EAAS6K,SACpBC,EAAU9K,EAAS8K,QAeZB,GAAMb,SAAf7J,EACF,MA  
AM,IAAI9I,MAEN,yDAAG8I,0BAGT,MAAM1H,EAAMhC,EAAQiC,WAAWwG,EAASnD,SAAU,WAC5CpD,  
EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CM,EAAqD,MAA1BjB,EAC7B,EACAV,EAAQkB,U  
AAUC,IAAIT,EAAuBU,QAAQC,GAQzD,OANAgZ,GACIzX,EAAKyQ,EAAWC,EAAUC,EAASjB,EAAU3J,EA  
AcC,EAC3DrH,EAAQsH,EAAQG,EAAUE,EAWE,EAAS0J,EAAWIJ,EACzDD,EAaeL,EAACc,EAaoJ,EAae  
C,EACzDhR,EAAiBD,EAA0BX,GAakB,EAAGkB,GAe7DF,IC1HT,IAAIwY,GA8HG,MAAMC,GAA2C,CACt  
D7a,WAAy8a,EACZ5a,YAAa,OACbC,UAvHF,SAaeC,GACbwa,GACIxa,EAAQC,KAAKC,MAAMwa,EAASb,  
KAAiB,CACxD,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SAC  
A,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SACA,SAC  
CA,EAAMC,MAAEA,EAANK,QAAEA,GAAWI,GAC3BuC,EAACA,EAACKO,OAAEA,EAAMPQ,KAAEA,EA  
AIC,uBAAEA,GAA0BL,GAC5CiI,QACJA,EAAOC,IACPA,EAAGgK,UACHA,EAAS7I,WACTA,EAAUIB,gBA  
CVA,EAaeZ,H,WACfA,EAAUC,eACVA,GACEV,EAEEml,EAAWpF,EAAaqP,kBACzB/P,EAAelB,MAAQoP,E  
AAoBpP,MAAO6G,EAASiK,EAC5DhK,EAACK,GAaiB,GAEP5G,EACFnC,GAakBsB,GACtB,GAAuB,MAA  
nBa,EACF,MAAM,IAAIhB,MACN,GAAGG,gFAIT,MAAM6B,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,  
QAAQC,GACtCiR,EAAWtS,EAAQkB,UAAUC,IAAI0P,EAAOzP,QAAQC,GAehDuR,EAAiBnK,EAASoK,YAE  
hC,IAAIrR,EAAS,EACb,GAAY,MAARd,EAAC,CACHB,MAAMe,EAAWxB,EAAQkB,UAAUC,IAAIV,EAARKW  
,QAC5C,GAA8B,IAA1BI,EAASC,MAAMC,OACjB,MAAM,IAAIId,MAEN,+DAAQY,EAASC,MAAMC,WAE7  
B,GAAIF,EAASC,MAAM,KAAOmR,EACxB,MAAM,IAAIhS,MACN,oCAAoCY,EAASC,wDAclmR,MAE9Cr  
R,EAASC,EAASH,GAGpB,MAAMsH,EAaeF,EAASE,aACxBC,EAACH,EAASG,YACvBC,EAASJ,EAASK,QA  
AQC,IAC1BC,EAAWP,EAASK,QAAQG,MAC5BC,EAAyT,EAASK,QAAQK,OAC7BC,EAAUX,EAASK,QAA  
QO,KAC3BO,EAAiBnB,EAASmB,eAC1BD,EAAGbIB,EAASKb,cACzBL,EAaeB,EAASa,aACxBC,EAacd,EA  
Sc,YACvBoJ,EAAGbIK,EAASgB,WACzBqJ,EAASc,SAA1BrK,EAASK,QAAQiK,KAAkB,EAAL,EACnDM,EA  
AY5K,EAAS4K,UACrBC,EAAW7K,EAAS6K,SACpBC,EAAU9K,EAAS8K,QAeZB,GAAMb,SAAf7J,EACF,M  
AAM,IAAI9I,MAEN,kEAG8I,0BAGT,MAAM1H,EAAMhC,EAAQiC,WAAWwG,EAASnD,SAAU,WAC5CpD  
,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAC1CM,EAAqD,MAA1BjB,EAC7B,EACAV,EAAQkB,U  
AAUC,IAAIT,EAAuBU,QAAQC,GAQzD,OANAmZ,GACI5X,EAAKyQ,EAAWC,EAAUC,EAASjB,EAAU3J,E  
AAcC,EAC3DrH,EAAQsH,EAAQG,EAAUE,EAWE,EAAS0J,EAAWIJ,EACzDD,EAaeL,EAACc,EAaoJ,EA  
AeC,EACzDhR,EAAiBD,EAA0BX,GAakB,EAAGkB,GAe7DF,IC3HT,IAAI2Y,GAiDG,MAAMC,GAA+B,CAC  
1Chb,WAAyib,EACZ/a,YAAa,OACbC,UA/CF,SAaeC,GACb2a,GAae3a,EAAQC,KAAKC,MAAM2a,EAAU,K  
AAe,CACzD,SACA,SACA,SACA,SACA,SACA,SACA,QACA,YAuCF1a,WAnCF,SAakBC,GAehB,MAAMJ,Q  
AACA,EAAOK,OAAEA,GAAUD,GACpB0a,OAACA,EAAMC,QAAEA,GAAW1a,GAEnB2a,EAaAc,EAAWpL  
,EAAWvH,GACtC4S,EAAyC,mBAAMBL,EAAQC,GAERc/Y,EAAMhC,EAAQiC,WAAW+Y,EAaAf,EAaOna,  
OACnD,GAakB,IAAdsA,EACF,OAAOjZ,EAGT,MAAMoZ,EAaeL,EAAQtZ,MACvB4Z,EAAYD,EAaAa,EAaA  
1Z,OAAS,GAG/CkB,EADQ5C,EAAQkB,UAAUC,IAAI2Z,EAAO1Z,QACzBC,GAEZia,EADctb,EAAQkB,UAA



,WAEpE,MAAM0H,WAACA,EAAUC,QAAEA,EAAOC,IAAEA,EAAGC,gBAAEA,GAAMbII,EAC9CmI,EAA WpF,EAAaqF,kBAC1B/F,EAAEIB,MAAO4G,EAAYC,EAAS,EAAMBC,EAARKC,GAEPDG,EAAeF,EAASE,aAC xBC,EAACh,EAASG,YACvBC,EAASJ,EAASK,QAAQC,IAC1BC,EAAMP,EAASK,QAAQG,MAC5BC,EAAYT ,EAASK,QAAQK,OAC7BC,EAAUX,EAASK,QAAQO,KAC3BO,EAAiBnB,EAASmB,eAC1BD,EAAgBIB,EAA SkB,cACzBL,EAAeb,EAASa,aACxBC,EAACd,EAASc,YACvBoJ,EAAgBIK,EAASgB,WACzBmJ,EAAiBnK,EA ASoK,YAEhC,GAA4B,iBAAXBpK,EAASiB,WACX,MAAM,IAAI9I,MAEN,6CAAG6H,EAASiB,2CAGIB,MAA M1H,EAAMhC,EAAQiC,WAAWwG,EAASnD,SAAU,WAC5CpD,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,Q AAQC,GAMhD,OAJAyc,GACIib,EAAKD,EAAEIB,MAAM,GAAIkB,EAAEIB,MAAM,GAAIkB,EAAEIB,MAA M,GAAIkH,EAACc,EACvDC,EAAQG,EAAUE,EAWE,EAASQ,EAAGBD,EACtDL,EAACc,EAAaoJ,EAACc,E AAgB1Q,GACvDF,IC5ET,IAAIc,GAqEG,MAAMC,GAA2B,CACtCte,WAAyue,GACZre,YAAa,OACbC,UAtE F,SAAeC,GACbie,GACIje,EAAQC,KAARKC,MAAMie,GAAM,KAAe,CAAC,4BAqE7Che,oBAjEEC,GAEF,MA AMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,EAAIe,SAAEA,GAAYzG,GAC nBqC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2F,EA AUpe,EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAlF,aAAEA,EAAYM,mBAAEA,GA CnCV,GAAwBpD,EAAGqD,EAAMhG,GAERc,IAAIoe,EAAGB/X,EACpB,GAAII,EAaoB,CACtB,MAAMqB,EA Ae9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAIbIF,IAGnBqE,EAAQN,EACRK,EAAUc,E ACVsW,EAAGB/a,EAAaqD,iBACzB0X,EAAClc,OAAQuF,EAAMxF,MAAMC,SAI1C2B,EAAa8D,2BACT,OA AQiX,EAAenX,EAAMxF,MAAMC,QACvC,MAAO4D,EAAU8B,GACb/D,EAAagE,0BAA0BJ,EAAMxF,MAAO 2c,GACID9W,EAAazE,EAARKC,cAAcsE,GACtC,IAAIiX,EAACPX,EACE,YAAhBA,EAAMtG,QACR0d,EACIpO ,GAAC,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC,EAAGsE,GAAQ3G,MAAO,CAACK,MAAO,aACtDqG,EA AUhH,EAAQkB,UAAUC,IAAIkd,EAAYjd,QAAQC,IAGtD,MAAMW,EAAMhC,EAAQiC,WAAWqD,EAU,W ACzC,GAAwC,IAApCzC,EAARKC,cAAcmE,EAAMxF,OAAc,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IA AIa,EAAlZ,QAAQC,GACChD4c,GAASjX,EAASM,EAAYpF,GAQhC,GALiUE,GAEFzG,EAAQuH,YAAYZ,EAA WvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,EAAamE,qBAAqBxF,EAAlP,MAAO0E,GAC9DnE,EAAlP, MAAQ2B,EAOD,MAJoB,YAAhB6D,EAAMtG,OACRX,EAAQuH,YAAy8W,EAAYjd,QAG3BY,IC1ET,IAAIsc, GA6DG,MAAMC,GAA0B,CACrC3e,WAAy4e,GACZ1e,YAAa,OACbC,UA7DF,SAAeC,GACbse,GAAUte,EAA QC,KAARKC,MAAMse,GAAC,KAAe,CAC/C,SACA,SACA,SACA,YAyDFre,WArDF,SAAaC,GAEX,MAAMJ,Q AACa,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAACA,EAAIe,SAAEA,GAAYzG,GACnBqC,E AACa,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2F,EAUpE, EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAlF,aAAEA,EAAYM,mBAAEA,GACnCV, GAAwBpD,EAAGqD,EAAMhG,GAERc,GAAIyG,EAaoB,CACtB,MAAMqB,EAAe9H,EAAQkB,UAAUC,IAAI wF,EAAWvF,QAAQC,GAC1DyG,IAAIbIF,IAGnBqE,EAAQN,EACRK,EAAUc,GAId,MAAMZ,EAAYD,EAAM xF,MAAMC,OAE9B2B,EAAa8D,2BAA2B,MAAOd,EAAMa,GACrD,MAAO5B,EAAU8B,GACb/D,EAAagE,0B AA0BJ,EAAMxF,MAAO4E,GACIDiB,EAAazE,EAARKC,cAAcsE,GAehCpF,EAAMhC,EAAQiC,WAAWqD,EA AU2B,EAAMtG,OAC/C,GAAwC,IAApCkC,EAARKC,cAAcmE,EAAMxF,OAAc,CACzC,MAAMS,EAAQIC,EAA QkB,UAAUC,IAAIa,EAAlZ,QAAQC,GACChDid,GAAQtX,EAASxH,GAASmD,EAAehC,OAAQ2G,EAAYpF,G AQID,GALiUE,GAEFzG,EAAQuH,YAAYZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,EAAamE,q BAAqBxF,EAAlP,MAAO0E,GAC9DnE,EAAlP,MAAQ2B,EAGd,OAAOpB,IC9DIyc,GACTxb,GAAYByb,IAFC, GCK9B,IAAKC,GAKL,IAAIC,IAlJ,SAAKD,GACHA,yBACAA,6BAFF,CAAKA,KAAAA,QAKDE,MAAME,G AAAGc,CAC3Cjf,WAAyKf,GACZhf,YAAa,OACbK,WA9BF,SAAmBC,GAKjB,MAAOC,QAAQsC,EAACA,GAA E3C,QAAEA,EAASM,OAAOye,SAACA,EAAQC,KAAEA,IAAS5e,EAElDKf,EAAWyZ,EAAS3a,KACtB,CAAC 6a,EAAGpb,IAAMob,EAAlE,GAAqBtc,EAAEIB,MAAMoC,GAAKob,EAAlE,KAC9Crc,EAAM5C,EAAQkB,UA AUC,IAAIwB,EAAEvB,QAAQC,GACtCW,EAAMhC,EAAQiC,WAAWqD,EAAU3C,EAAehC,OACrCuB,EA AQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAC1CuE,EAAC,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,O AAOa,QAERd4c,EAakBH,EAAS3a,KAAI+a,GAAYA,EAAS,KACpDC,EAAMBL,EAAS3a,KAAI+a,GAAYA,E AAS,KACrDE,EACF,IAAIjd,WAAW,IAAIC,WAAW6c,GAAiB5c,QAC7Cgd,EACF,IAAIld,WAAW,IAAIC,WA AW+c,GAakB9c,QAKpD,OAHAsc,GACIhc,EAakgD,EAAajD,EAAEIB,MAAMC,OAAQIC,GAASmD,EAAeh C,OAAQ0e,EACrDC,EAAMBX,GAakBK,GAAO9c,GACzCF,GAOPjC,UA5CF,SAAeC,GACb4e,GAAGB5e,EA

AQC,KAAKC,MAAM4e,GAAW,KAAiB,CAC7D,SACA,QACA,SACA,SACA,QACA,QACA,SACA,aCrBSS,GA  
CTtc,GAAYBuc,IAFC,GCFjBC,GAA0Bjd,GAAwBkd,aCW/CC,GACZ3f,EAAsB4f,GACxB,MAAM5P,EAAS,IA  
AI3N,WAAWrc,EAAQC,KAAK4f,OAAOvd,OAAQsd,EAAW,GAC/DE,EAAMb9P,EAAO,GAC1B+P,EAAe/P,  
EAAO,GACtBgQ,EAakBhQ,EAAO,GACzBiQ,EAAGbjQ,EAAO,GAG7B,OADAhQ,EAAQC,KAAKigB,MAAM  
N,GACZ,CAACE,iBAAAA,EAakBC,aAAAA,EAacC,gBAAAA,EAaiBC,cAAAA,GChB3D,IAAIvd,GA6CG,M  
AAMyd,GAA0C,CACrDvgB,WAAywgB,GACZtgB,YAAa,OACbC,UA5CF,SAAeC,GACb0C,GAAW1C,EAAQ  
C,KAAKC,MACpBkgB,GACA,SACA,CACE,SACA,SACA,SACA,SACA,YAoCNjgB,WAhCF,SAAoBC,GAKIB,  
MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BigB,aAACA,EAAYC,cAAEA,EAAaC,eA  
AEA,GAakBjgB,GAChDiV,MAACA,EAakIL,OAAEA,GAAUngB,EAElB0V,EAAU/V,EAAQkB,UAAUC,IAA  
IoU,EAAMnU,QAAQC,GAC9Cof,EAAWzgB,EAAQkB,UAAUC,IAAIqf,EAAOpf,QAAQC,GAehDue,EACFlD,  
GAASqT,EAAS0K,EAUAH,EAAdE,EAacE,IAEvDT,iBAACA,EAAGBC,aAAEA,EAAYC,gBAAEA,EAAeC,cA  
AEA,GACpDN,GAakB3f,EAAS4f,GAS/B,OANA5f,EAAQC,KAAKigB,MAAMF,GACnBhgB,EAAQC,KAAKig  
B,MAAMD,GAGfjgB,EAAQiC,WAAW,CAAC8d,GAAe,QAASD,KCxCID,IAAIpd,GakDG,MAAMge,GAA0C,  
CACrD9gB,WAAy+gB,GACZ7gB,YAAa,OACbC,UAhDF,SAAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MAC  
pBygB,GACA,SACA,CACE,SACA,SACA,SACA,SACA,SACA,UAUCNxBgB,WAnCF,SAA6BC,GAK3B,MAAMJ  
,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BigB,aAACA,EAAYC,cAAEA,EAAaC,eAAEA,EA  
AcK,mBAAEA,GAChtgB,GACEiV,MAACA,EAakIL,OAAEA,GAAUngB,EAElB0V,EAAU/V,EAAQkB,UAA  
UC,IAAIoU,EAAMnU,QAAQC,GAC9Cof,EAAWzgB,EAAQkB,UAAUC,IAAIqf,EAAOpf,QAAQC,GAehDue,E  
AAyld,GACdqT,EAAS0K,EAUAH,EAAdE,EAacE,EACChDK,IAEEEd,iBAACA,EAAGBC,aAAEA,EAAYC,gB  
AAEA,EAAeC,cAAEA,GACpDN,GAakB3f,EAAS4f,GAU/B,OAPA5f,EAAQC,KAAKigB,MAAMF,GAOZ,CAJH  
hgB,EAAQiC,WAAW,CAAC8d,GAAe,QAASD,GAERb9f,EAAQiC,WAAW,GAAL,QAASge,MC7C7D,IAAIvd,G  
AkDG,MAAMme,GAA0C,CACrDjhB,WAAykhB,GACZhhB,YAAa,OACbC,UAhDF,SAAeC,GACb0C,GAAW1  
C,EAAQC,KAAKC,MACpB4gB,GACA,SACA,CACE,SACA,SACA,SACA,SACA,SACA,SACA,YAuCN3gB,WAnCF,S  
AAoBC,GAKIB,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3BigB,aAACA,EAAYC,cA  
AEA,EAAaC,eAAEA,EAacQ,aAAEA,GAAGBzgB,GAC9DiV,MAACA,EAakIL,OAAEA,GAAUngB,EAElB0V,  
EAAU/V,EAAQkB,UAAUC,IAAIoU,EAAMnU,QAAQC,GAC9Cof,EAAWzgB,EAAQkB,UAAUC,IAAIqf,EAA  
Opf,QAAQC,GAehDue,EAAyld,GACdqT,EAAS0K,EAUAH,EAAdE,EAacE,EACChDQ,IAEEjB,iBAACA,EAAG  
BC,aAAEA,EAAYC,gBAAEA,EAAeC,cAAEA,GACpDN,GAakB3f,EAAS4f,GAW/B,OAPA5f,EAAQC,KAAKi  
gB,MAAMD,GAOZ,CAJHjgB,EAAQiC,WAAW,CAAC8d,GAAe,QAASD,GAE5C9f,EAAQiC,WAAW,CAAC8d  
,GAAe,UAAWC,MChDvCgB,GACT/d,GAAYbge,IAFC,EAEGC,QCA9D,IAAIC,GA+BG,MAAMC,GAA6B,CAC  
xCvhB,WAAywhB,GACZthB,YAAa,OACbC,UA9BF,SAAeC,GACbkhB,GAAalhB,EAAQC,KAAKC,MAAMkh  
B,GAAQ,KAAiB,CACvD,SACA,SACA,SACA,SACA,YAyBFjhB,WArBF,SACIC,GACF,MAAMC,OAACA,EA  
AML,QAAEA,EAAOM,MAAEA,GAASF,GAC3B2a,QAACA,GAAW1a,GACZghB,MAACA,EAakC,QAAEA,  
EAAOC,SAAEA,GAAYjhB,EAElB0B,EAAMhC,EAAQiC,WAAW,IAAI8Y,EAAQtZ,MAAO4f,GAAQ,SACpDn  
f,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAlZ,QAAQC,GAG1Cia,EADctb,EAAQkB,UAAUC,IAAI4Z,EAAQ3Z,Q  
ACpBC,GAI9B,OFA6f,GAAW5F,EAAW+F,EAAOC,EAASC,EAUrf,GAeZCF,ICpBF,MAAMwf,GAA+B,CA  
C1C5hB,WAAy6hB,GACZ3hB,YAAa,OACbK,WAXF,SAakBC,GAChB,MAAOC,QAAsC,EAACA,GAEE3C,  
QAAEA,GAAWI,EACzB4B,EAAMhC,EAAQiC,WAAWU,EAElB,MAAokB,EAElhC,OAG1C,OAFgBX,EA  
AQwE,mBAAMbxC,GACnC0W,KAAK,GACN1W,ICmCF,MAAM0f,GAA2B,CACtC9hB,WAAy+hB,GACZ7h  
B,YAAa,OACbK,oBAxCEC,GAEF,MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3B4F,  
KAACA,GAAQ1F,EAef,GAAsB,IAAIbD,EAAOqB,OACT,OAAO0W,GACH,CAAC/X,OAAQ,CAAC4G,MAA  
O5G,EAAO,IAAKL,QAAAA,EAASM,MAAO,CAAC+X,IAAKrS,KAGzD,MAAMvE,EAAQpB,EAAO,GAAGo  
B,MACIBd,EAAQN,EAAO,GAAGM,MAExBN,EAAOgR,SAAQV,IACb9N,EAak+e,kBACDngB,EAAOkP,EA  
AEIP,MACT,yDACJoB,EAakOH,OACDtJ,IAAUgQ,EAElhQ,OACZ,IAAM,6DAGZ,MAAMkhB,EAAwC,GAQ  
xC7R,EAAS7E,GAAO,CAAC9K,OAPCA,EAAO+D,KAAIuM,IACjC,MAAMmR,EACF1J,GAAW,CAAC/X,OA  
AQ,CAAC4G,MAAO0J,GAAI3Q,QAAAA,EAASM,MAAO,CAAC+X,IAAKrS,KAE1D,OADA6b,EAAwB5c,KA  
AK6c,GACtBA,KAGuC9hB,QAAAA,EAASM,MAAO,CAAC0F,KAAAA,KAIjE,OFA6b,EAAwBxQ,SAAQV,  
GAAK3Q,EAAQuH,YAAyOJ,EAEEvP,UAEPd4O,ICjCT,IAAI+R,GASDG,MAAMC,GAA4B,CACvCpiB,WAA



YqiB,GACZniB,YAAa,OACbK,WAvCF,SACIC,GACF,MAAOC,QAAQsC,EAACA,GAAE3C,QAAEA,EAASM,  
OAAOye,SAACA,EAAQmD,cAAEA,IAAkB9hB,EAE3DkF,EAAWyz,EAAS3a,KACtB,CAAC6a,EAAGpb,IAA  
Mob,EAAE,GAAqBtc,EAAEIB,MAAMoC,GAAKob,EAAE,KAEPd,GAAoC,IAAhCpc,EAAKC,cAAcH,EAAEIB  
,OAGvB,OAAOix,GAACK,CACV1Y,QAAAA,EACAM,MAAO,CAACmB,MAAO6D,EAAUqT,MAAOuJ,EAAev  
hB,MAAOgC,EAAEhC,SAI5D,MAAMiC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCW,E  
AAMhC,EAAQiC,WAAWqD,EAAU3C,EAAEhC,OAErCuB,EADgBIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QACp  
BC,GAETbuE,EAAC,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QAERd4c,EAakBH,EAAS3a,KAAI+a  
,GAAYA,EAAS,KACpDC,EAAmBL,EAAS3a,KAAI+a,GAAYA,EAAS,KACrDE,EACF,IAAIjd,WAAW,IAAIC,  
WAAW6c,GAAiB5c,QAC7Cgd,EACF,IAAIld,WAAW,IAAIC,WAAW+c,GAakB9c,QAKpD,OAHAyf,GACInf,E  
AAKgd,EAAajD,EAAEIB,MAAMC,OAAQIC,GAASmD,EAAEhC,OAAQ0e,EACrDC,EAAmB4C,EAAehgB,G  
AC/BF,GAOPjC,UArDF,SAAeC,GACb+hB,GAAY/hB,EAAQC,KAAKC,MAAM+hB,GAAO,KAAiB,CACrD,SA  
CA,QACA,SACA,SACA,QACA,QACA,SACA,aCnBSE,GACTIf,GAAYBmf,IAFC,GCI9B,IAAIC,GAKCG,MAA  
MC,GAA4B,CACvC1iB,WAAy2iB,GACZziB,YAAa,OACbC,UAnCF,SAAeC,GACbqiB,GAAYriB,EAAQC,KA  
AKC,MAAMqiB,GAAO,KAAiB,CACrD,SACA,SACA,YAgCFpiB,WA5BF,SAAeC,GACb,MAAMC,OAACA,E  
AAML,QAAEA,GAAWI,GACpBuC,EAACA,EAACoa,MAAEA,GAAS1c,EACbuC,EAAM5C,EAAQkB,UAAU  
C,IAAIwB,EAAEvB,QAAQC,GACtCmhB,EAAYxiB,EAAQkB,UAAUC,IAAI4b,EAAM3b,QAAQC,GAETd,IAA  
I2F,EAAUpE,EACd,MAAMqE,EAAQtE,EACd,IAAI0b,EAACPX,EACE,YAAhBA,EAAMtG,QACR0d,EAACP  
O,GAACK,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC,EAAAA,GAAIrC,MAAO,CAACK,MAAO,aACzDqG,EAA  
UhH,EAAQkB,UAAUC,IAAIkd,EAAYjd,QAAQC,IAGtD,MAAMW,EAAMhC,EAAQiC,WAAWU,EAAEIB,MA  
AO,WACICS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAMhD,OALAgHb,GAAUrb,EAASwb,EAA  
WtgB,GAEV,YAAhB+E,EAAMtG,OACRX,EAAQuH,YAAy8W,EAAYjd,QAE3BY,IC7BT,IAAIyGB,GAmEG,  
MAAMC,GAA2B,CACtC9iB,WAAy+iB,GACZ7iB,YAAa,OACbC,UAIEF,SAAeC,GACbyiB,GAAWziB,EAAQ  
C,KAAKC,MAAMyiB,GAAM,KAAe,CACjD,SACA,SACA,SACA,YA8DFxiB,WA1DF,SAAcC,GAKZ,MAAMJ,  
QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF,GAC3B4F,KAAEA,EAAlE,SAAEA,GAAYzG,GACnBqC,  
EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2F,EAAUpE  
,EACVqE,EAAQtE,EAEZ,MAAMgE,WAACA,EAAUN,KAAEA,EAAlF,aAAEA,EAAYM,mBAAEA,GACnCV,  
GAAwBpD,EAAgqD,EAAMhG,GAERc,IAAIoe,EAAGb/X,EACPb,GAAlI,EAAoB,CACtB,MAAMqB,EAAe9H,  
EAAQkB,UAAUC,IAAIwF,EAAWvF,QAAQC,GAC1DyG,IAAIbIF,IAGnBqE,EAAQN,EACRK,EAAUc,EACVs  
W,EAAgB/a,EAAaqD,iBACzB0X,EAAC1c,OAAQuF,EAAMxF,MAAMC,SAI1C2B,EAAa8D,2BACT,OAAQiX,  
EAAenX,EAAMxF,MAAMC,QACvC,MAAO4D,EAAU8B,GACb/D,EAAagE,0BAA0BJ,EAAMxF,MAAO2c,GA  
CID9W,EAAazE,EAACK,cAAcE,GAehCpF,EAAMhC,EAAQiC,WAAWqD,EAAU2B,EAAMtG,OAC/C,GAAw  
C,IAApCkC,EAACK,cAAcmE,EAAMxF,OAAC,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,Q  
AAQC,GACHdohB,GAASzb,EAASM,EAAY9H,GAASwC,EAAlrB,OAAQuB,GAQRd,GALluE,GAEFzG,EAAQ  
uH,YAAYZ,EAAWvF,QAG7B2F,EAAU,CAEZ,MAAM3D,EAAWC,EAAamE,qBAAqBxF,EAAlP,MAAO0E,G  
AC9DnE,EAAlP,MAAQ2B,EAGd,OAAOpB,ICvDI4gB,GAA4B,CACvChjB,WAAyijB,GACZ/iB,YAAa,OACbK  
,WAdGC,IACC,MAAMJ,QAACA,EAAOM,MAAEA,GAASF,GACnB0iB,MAACA,EAACK,KAAEA,EAAlC,K  
AAEA,EAAlrB,MAAEA,GAASL,EAC7B0M,ECTL,SAAmB8V,EAAOC,EAAMC,EAAMriB,GAIZC,GAHsBmi  
B,IAAUC,GACID,EAAQC,GAAQC,EAAO,GACvBD,EAAOD,GAASE,EAAO,EAGvD,OAAOngB,EAAlKogB,o  
BAAoB,EAAGtiB,GAEvC,MAAMuiB,EAaczX,KAAK0X,IAAI1X,KAAK2X,MAAML,EAAOD,GAASE,IACID  
hW,EAASnK,EAAlKogB,oBAAoBC,EAAaviB,GACjDoiB,EAAOD,GAakB,IAATE,IAGhBA,GAAQ,GAEZhw,E  
AAO,GAAK8V,EACZ,IAAK,IAAIjf,EAAl,EAAGA,EAAlmJ,EAAOtL,OAAQmC,IAC/BmJ,EAAOnJ,GAAlmJ,  
EAAOnJ,EAAl,GAAlmf,EAehC,OAAOhW,EDVUqW,CAAAp,EAAOC,EAAMC,EAAMriB,GAezCqB,EAAMh  
C,EAAQiC,WAAW,CAAC+K,EAAOtL,QAASf,GAGhD,OAFgBX,EAAQwE,mBAAmBxC,GACnCyC,IAAIuI,G  
ACLhL,IETAshB,GACTrgB,GAAYBsgB,IAFC,GCFjBC,GAA2BhhB,GAAwBihB,ICAnDC,GAA4BlhB,GAAwB  
mhB,IClJE,IAAIC,GA4DG,MAAMC,GAAqC,CACHDjkB,WAAykkB,GACZhkB,YAAa,OACbC,UA1DF,SAAeC  
,GACb4jB,GAAqB5jB,EAAQC,KAAKC,MAAM4jB,GAAGb,KAAe,CACrE,SACA,SACA,SACA,SACA,SACA,  
SACA,SACA,SACA,SACA,YAgDF3jB,WA5CF,SAAwBC,GAKtB,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC  
,MAAEA,GAASF,GAe3B2jB,OAACA,GAAU1jB,GACX2jB,aAAACA,EAAYC,iBAAEA,EAAGbnY,KAAEA,GA

AQxL,GACxC4jB,EAAWC,GAAyRy,GAEvBoN,EAAOkL,EAAWC,EAAUhL,GA Ae0K,EAAOtIb,MACnD6D,E  
AAW,CAAC4T,EAAOgL,EAAWC,EAAU9K,GA E9C,IACIzD,EADA0O,EAAQtKb,EAAQkB,UAAUC,IAAI4iB,  
EAAO3iB,QAERb,YAAhBkjB,EAAM3jB,QACRiV,EACI3F,GA AK,CAACjQ,QAAAA,EAASK,OAAQ,CAACsC  
,EAAgohB,GAASzjB,MAAO,CAACK,MAAO,aACvD2jB,EAAQtKb,EAAQkB,UAAUC,IAAIyU,EA AWxU,SA  
E3C,MAAMwB,EAAM0hB,EAAMjjB,GA EZW,EAAMhC,EAAQiC,WAAWqD,EAAU,WACzC,GAAyC,IAArCz  
C,EAAKC,cAAcihB,EAAOtIb,OAC5B,OAAOO,EAET,MAAME,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QA  
AQC,GAUhD,OARauIb,GACIhhB,EA AKsW,EAAOkL,EAAWC,EAAUhL,EAAa6K,EAAWC,EACzDH,EAAe,  
EAAI,EAAGC,EAAMb,EAAI,EAAG/hB,GAEIC,MAAd0T,GACF5V,EAAQuH,YAAyqO,EA AWxU,QAG1BY,I  
CxDT,IAAIuiB,GA6CG,MAAMC,GAA8B,CACzC5kB,WAAy6kB,GACZ3kB,YAAa,OACbK,oBAhCEC,GA EF,  
MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BuC,EAACA,GA AKtC,GACNqkB,KAA  
CA,GAAQpkB,EAET+F,EAAOxD,EA AKuD,eAAese,EAAM/hB,EAAEIB,OAEzC,GAAuB,IAAnBkB,EAAEIB,  
MAAMC,OACV,OAAO4C,GAAS,CAACjE,OAAQ,CAACsC,EAAAA,GA AI3C,QAAAA,IAGhC,MAAMgC,EA  
AMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EA AEhC,OACpCiC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EA  
EvB,QAAQC,GACtCa,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GA E1CsjB,EAAY,IAAIvIb,WAAW,  
IAAIC,WAAWgE,GAAM/D,QAChDsiB,EA AgB,IAAIxiB,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QA E7Dii  
B,GACI3hB,EA AK+hB,EA AWte,EA AK3E,OAAQkjB,EA AEjiB,EAAEIB,MAAMC,OAAQQ,GA EhE,MAAMmN  
,EACFxF,GAAQ,CAACxJ,OAAQ,CAACsC,EAAGX,GAAM1B,MAAO,CAACmB,MAAOkB,EAAEIB,OAAQzB  
,QAAAA,IAGxD,OADAA,EAAQuH,YAAyVf,EAAIZ,QACjBiO,GAOPtP,UA7CF,SAAeC,GACbukB,GAacvkB  
,EAAQC,KAAKC,MAAMukB,GAAS,KAAM,CAC9C,SACA,QACA,SACA,QACA,SACA,aCbJ,IAAII,GAqDG,  
MAAMC,GAAuC,CACIDIb,WAAymlB,GACZjIb,YAAa,OACbK,oBAnC+BC,GAK/B,MAAMC,OAACA,EA  
AML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BkV,MAACA,GAASjV,GACV2kB,QAACA,EAAOC,UAAEA,E  
AASC,OAAEA,GAAU5kB,EAE/B0B,EAAMhC,EAAQiC,WAAWqT,EAAM7T,MAAO6T,EAAM3U,OAC5CsY,  
EAAUjZ,EAAQkB,UAAUC,IAAIuU,EAAMIU,QAAQC,GAC9Ca,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,Q  
AAQC,IAEzC6X,EAAOC,EAAaC,EAAYC,GA Ae/D,EAAM7T,OA ErD0jB,EAASC,GACZ/hB,EAAagiB,eAAeH,  
EAAQ/L,EAAaC,GAK/CkM,EA AKC,iBAAdL,EACtB,CAACA,EA AWA,EA AWA,EAJO,IAAdA,EA IgC,EAH3B,  
KA IrB,IAAIA,EA JiB,KAKnBM,EAAY,IAAIjB,WAAW,IAAIC,WAAWijB,GAAyhjB,QAK5D,OAHauIb,GAC  
I5L,EAASC,EAAOC,EAAaC,EAAYC,EAAa2L,EAASG,EAC/DC,EAASG,EA AWD,EA AW5jB,OAAQQ,GACpC  
F,GAOPjC,UApDF,SAAeC,GACb6kB,GAAa7kB,EAAQC,KAAKC,MAAM6kB,GA AkB,KAAiB,CACjE,SACA,  
SACA,SACA,SACA,SACA,SACA,SACA,QACA,SACA,aCnBSS,GAA4BhjB,GA AwBijB,ICDpDC,GAA4  
BljB,GA AwBmjB,ICIjE,IAAIC,GAmDG,MAAMC,GAAgC,CAC3CjmB,WAAykmB,GACZhmB,YAAa,OACbC,  
UAjDF,SAAeC,GACb4Ib,GA AgB5Ib,EAAQC,KAAKC,MAAM4Ib,GA AW,KAAe,CAC3D,SACA,SACA,SACA  
,SACA,SACA,SACA,QACA,SACA,YAwCF3Ib,WApCF,SACIC,GAGF,MAAMJ,QAACA,EAAOK,OAAEA,EA  
AMC,MAAEA,GAASF,GAC3B2a,QAACA,EAAOgL,QAAEA,GA AW1Ib,GACrBoB,MAACA,GAASnB,EAEV0  
B,EAAMhC,EAAQiC,WAAWR,EAAOskB,EAAQplB,OAC9C,GA AKC,IAA9BkC,EAAKC,cAAcrB,GACrB,OA  
AOO,EAGT,MAAMqZ,UACA,EAAS2K,WAAEA,EAAUnW,UAAEA,EAASvH,QAAEA,EAAO2d,WAAEA,G  
AC9CC,GAAaC,gBAAGBJ,EAAShL,EAAStZ,GAG7C6Z,EADctb,EAAQkB,UAAUC,IAAI4Z,EAAQ3Z,QACpB  
C,GAGxB+kB,EADcpmB,EAAQkB,UAAUC,IAAI4kB,EAAQ3kB,QACpBC,GA ExBka,EAAe,IAAI nZ,WAAW,I  
AAIC,WAAWiG,GAAShG,QA EtDJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAKhD,OAJaukB,GA  
CItK,EA AW8K,EA AW5mB,GAASumB,EAAQplB,OAAQ0a,EA AW2K,EAC1DnW,EA AW0L,EAAc0K,EAAY/j  
B,GAEICF,ICIDT,IAAIqkB,GAmCG,MAAMC,GAA6B,CACxC1mB,WAAy2mB,GACZzmB,YAAa,OACbK,W  
AxBF,SAAGBC,GACd,MAAMC,OAACA,EAAML,QAAEA,GA AWI,GACpBomB,UACA,EAAS7V,EAAEA,E  
AAC8V,EAAEA,GA AKpmB,EA EpBqmB,EA Ac1mB,EAAQkB,UAAUC,IAAIqlB,EA AUplB,QAAQC,GACtDsl  
B,EAAM3mB,EAAQkB,UAAUC,IAAIwP,EA AEvP,QAAQC,GACtCulB,EAAM5mB,EAAQkB,UAAUC,IAAIsl  
B,EA AErlB,QAAQC,GACiCW,EAAMhC,EAAQiC,WAAW0O,EAAEIP,MAAOkP,EA AEhQ,OACpCuB,EAAQI  
C,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GA E1CwIb,EAAQL,EA AU/kB,MAAMC,OACxBoIb,EAAQnW,E  
AAEIP,MAAMC,OA EhB0P,EA AMb,IAAVyV,GA AeA,EAAQ,GA Ae,IAAVC,EACvC,EACajkB,EAAKC,cAAc6  
N,EA AEIP,MAAMsG,MAAM,IAGrC,OADase,GA AWK,EAAaC,EAAKC,EAAKxV,EAAQIP,GACnCF,GAOPj  
C,UAnCF,SAAeC,GACbqmB,GAAarmB,EAAQC,KAAKC,MAAM,WAAy,KAAAM,CACHD,SACA,SACA,SAC

A,SACA,aCVJ,IAAIwC,GAsBG,MAAMqkB,GAA8B,CACzCnnB,WAAY,UACZE,YAAa,OACbC,UAvBF,SAAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MAAM8mB,GAAS,KAAiB,CAAC,SAAU,YAuBnE7mB,WApBF,SAAiBC,GAef,MAAMJ,QAACA,EAASK,QAAQsC,EAACA,IAAMvC,EACzBwC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCW,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAEhC,OACpCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAGhD,OAAcS,IAAICwB,EAAKC,cAAcd,EAAIP,QAI3BiB,GAASE,EAAKV,GAHLF,ICjBEiB,GAA0BzkB,GAAwB0kB,ICE/D,IAAIxkB,GAgCG,MAAMyB,GAA8B,CACzCv nB,WAAywnB,GACZtnB,YAAa,OACbC,UAhCF,SAAeC,GACb0C,GAAW1C,EAAQC,KAAKC,MAAMknB,GAAS,KAAiB,CACtD,SACA,SACA,SACA,YA4BFjnB,WaxBF,SACIC,GAEF,MAAMJ,QAACA,EAASK,QAAQgnB,OAACA,GAAS/mB,OAAO+X,IAACA,IAAQjY,EAC5CwC,EAAM5C,EAAQkB,UAAUC,IAAIkmB,EAAOj mB,QAAQC,GAC3CW,EAAMhC,EAAQiC,WAAWolB,EAAO5IB,MAAO4IB,EAAO1mB,OAC9CuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAAIZ,QAAQC,GAE1CmI,EAAW6d,EAAO5IB,MAAM4W,GACxBa,EAAQrW,EAA KC,cAAcukB,EAAO5IB,OAAS+H,EAGjD,OAAcS,IAAIC3G,EAAKC,cAAcd,EAAIP,QAI3BiB,GAASE,EAAKV ,EAAOsH,EAAU0P,GAHtBIX,ICmCJ,MAAMslB,GAAqC,CAChD1nB,WAAy2nB,GACZznB,YAAa,OACbK,W A3DF,SAAwBC,GAKtB,MAAMC,OAACA,EAAML,QAAEA,EAAOM,MAAEA,GAASF,GAC3BuC,EAACA,GA AAKtC,GACN4O,WAACA,EAAU8P,SAAEA,GAAyze,EAEzB6O,EAAOtM,EAAKC,cAAcmM,GAE1BuY,EAA 4C,CAAC,CAAC,EAAG,IACvDA,EAAiBviB,QAAS8Z,GAE1B,IAAK,IAAIlb,EAAI,EAAIoL,EAAWvN,OA AQmC,EAAIIB,EAAEIB,MAAMC,SAAUmC,EACxD2jB,EAAiBviB,KAAK,CAAC,EAAG,IAG5B,MAAMwiB,EA AUzF,GAAy7hB,WAAW,CACrCE,OAAQ,CAACsC,EAAAA,GACT3C,QAAAA,EACAM,MAAO,CAACye,SA AUyI,EAAkBTf,cAAe,KAG/CwF,EACFrkB,EAAaiM,YAAyM,Y,EAAQhmB,MAAOwN,EAAyE,GAAM,GAEx DwY,EAAoCtkB,EAAamM,YACnDkY,EAAoBhmB,OAAQuN,EAAWvN,QAAQ,GAE7CkmB,EACFvkB,EAAa qM,oBAAoB+X,EAAQhmB,MAAOwN,EAAyE,GAAM,GAIE0Y,EACFhe,GAAQ,CAACxJ,OAHWB,CAACsC, EAAG8kB,GAGLznB,QAAAA,EAASM,MAFV,CAACmB,MAAOimB,KAOrCI,EACFjjB,GAAU,CAACxJ,OA J0B,CAACsC,EAAGklB,GAIL7nB,QAAAA,EAASM,MAF5B,CAACyE,KAAM4iB,KAMtB3X,EAASnG,GACX, CAACxJ,OAHS,CAACsC,EAAGmlB,GAGb9nB,QAAAA,EAASM,MAFF,CAACmB,MAAOmmB,KAQjD,OA J A5nB,EAAQuH,YAAykgB,EAAQrmB,QAC5BpB,EAAQuH,YAAySgB,EAAGBzmB,QACpCpB,EAAQuH,YAA YugB,EAAS1mB,QAETb4O,ICjCF,MAAM+X,GAA6B,CACxCnoB,WAAyooB,GACZloB,YAAa,OACbK,oBAv BEC,GACF,MAAMC,OAACA,EAAMC,MAAEA,EAANK,QAAEA,GAAWI,GAC3BuC,EAACA,GAAKtC,GAC N4nB,gBAACA,EAAejB,KAAEA,GAAQ1F,EAE1B4nB,EAAQrlB,EAAKuD,eAAeJ,EAAmRd,EAAEIB,OA AO,GAE3C0mB,EAAa9kB,EAAa+kB,iBAAiBzlB,EAAGslB,EAAiBC,GAC/Drc,EAAQ,IAAIrG,MAAM7C,EAAEIB, MAAMC,QAAQgX,KAAK,GACvC5M,EAAOnJ,EAAEIB,MAAMsG,QACrB,OA AOogB,EAAW/jB,KAAlikB,I ACpB,MAAMC,EAAa,IAAIxc,GACvBwc,EAAWJ,GAASG,EACpB,MAAME,EACFxBG,GAAM,CAAC1H,OA AQ,CAACsC,EAAAA,GAAIrC,MAAO,CAACuL,MAAAA,EAAOC,KAAMwc,GAAatoB,QAAAA,IAE1D,OAD A6L,EAAMqc,IAAUG,EACTE,OCrBEC,GAA2BhmB,GAAwBimB,ICDnDC,GAA6BlmB,GAAwBmmB,ICArDC, GACT3IB,GAAyB4IB,IAFC,GCK9B,IAAIC,GA0BG,MAAMC,GAA2B,CACtCnpB,WAAyopB,GACZlpB,YAA a,OACbC,UAI1BF,SAAeC,GACb8oB,GAAW9oB,EAAQC,KAAKC,MAAM8oB,GAAM,KAAe,CACjD,SACA,S ACA,SACA,YAsBF7oB,WAlBF,SACIC,GAEF,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAAEA,GAASF, GAC3B2c,MAACA,GAASzc,GACVqC,EAACA,GAAKtC,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAA EvB,QAAQC,GAEtCW,EAAMhC,EAAQiC,WAAWU,EAAEIB,MAAOkB,EAAEhC,OACpCuB,EAAQIC,EAAQ kB,UAAUC,IAAIa,EAAIZ,QAAQC,GAEHd,OADAYnB,GAASlmB,EAAKma,EAAOvd,GAASmD,EAAEhC,OA AQuB,GACjCF,ICvBT,IAAIinB,GAmGG,MAAMC,GAAMC,CAC9CtpB,WAAyupB,GACZrpB,YAAa,OACbC, UAhGF,SAAeC,GACbipB,GAAMbjpB,EAAQC,KAAKC,MAAMipB,GAAC,KAAe,CACjE,SACA,QACA,SACA, QACA,QACA,QACA,QACA,QACA,SACA,YAsFFhpB,oBAIF2BC,GAK3B,MAAMJ,QAACA,EAAOK,OAAEA, EAAMC,MAAEA,GAASF,GAC3BuC,EAACA,GAAKtC,GAENwL,MACJA,EAAKud,IACLA,EAAG9gB,QACH A,EAAO+gB,UACPA,EAASC,QAQTA,EAAOC,aACPA,EAAyC,YACZA,EAAWC,eACXA,GACEnpB,GAEEop B,iBACJA,EAAGBC,WACHBA,EAAUC,WACVA,EAAUC,UACVA,EAASC,cACTA,EACAje,MAAOke,EACPX ,IAAKY,EACL1hB,QAAS2hB,GAEPje,EAAWke,UACPvB,EAAEIB,MAAOoK,EAAOud,EAAK9gB,EAAS+gB ,EAAWC,EAASC,EACIDC,EAAaC,GAERb,IAAIzZ,EAEJ,GAAI4Z,EAEF5Z,EAASnG,GAAQ,CAACxJ,OA AQ,CAACsC,EAAAA,GAAI3C,QAAAA,EAASM,MAAO,CAACmB,MAAOkoB,UACID,GAAIE,GAAaC,EAAe,CA

ErCjnB,EAAKoH,OACDtH,EAAEIB,MAAMC,QAAU,GACIB,IAAM,yCAAyCiB,EAAEIB,MAAMC,WAE3D,M  
AAMoK,EAAOE,EAAWvG,gBAAgBskB,EAAQC,EAAMC,GAehDE,EAASpiB,GAAM,CAAC1H,OAAQ,CAA  
CsC,EAAAA,GAAI3C,QAAAA,EAASM,MAAO,CAACuL,MAAOke,EAAQje,KAAAA,KACnEkE,EACInG,GA  
AQ,CAACxJ,OAAQ,CAACsC,EAAGwnB,GAASnqB,QAAAA,EAASM,MAAO,CAACmB,MAAOkoB,KAC1D3  
pB,EAAQuH,YAAy4iB,EAAO/oB,YACtB,CACL,MAAMY,EAAMhC,EAAQiC,WAAWynB,EAakB,WAE3C9  
mB,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCkW,EACF,IAAIInV,WAAW,IAAIC,WAAW  
Q,EAAKsJ,eAAexJ,EAAEIB,QAAQa,QAC1D8nB,EAAa,IAAIhoB,WAAW,IAAIC,WAAW0nB,GAAQznB,QAC  
nD+nB,EAAW,IAAIjoB,WAAW,IAAIC,WAAW2nB,GAAM1nB,QAC/CiZ,EAAe,IAAIInZ,WAAW,IAAIC,WAA  
W4nB,GAAU3nB,QAEdkV,EACF,IAAIpV,WAAW,IAAIC,WAAWqnB,GAakBpnB,QAC9CmV,EAakB,IAAI  
rV,WACxB,IAAIC,WAAWQ,EAAKsJ,eAAeud,IAAmBpnB,QACpDJ,EAAQIC,EAAQkB,UAAUC,IAAIa,EAIZ  
,QAAQC,GAehD4nB,GACIrmB,EAAK2U,EAAe5U,EAAEIB,MAAMC,OAAQ0oB,EAAYC,EAAU9O,EAC1D/  
D,EAakBC,EAAiBiS,EAAiBhoB,OAAQQ,GAehE8N,EAASnG,GAAQ,CAACxJ,OAAQ,CAACsC,EAAGX,GA  
AMhC,QAAAA,EAASM,MAAO,CAACmB,MAAOkoB,KAe5D3pB,EAAQuH,YAAyVf,EAIZ,QAG1B,OAAO  
4O,ICpGIsa,GACTrnB,GAAYBsnB,IAFC,GCM9B,IAAIC,GA+DG,MAAMC,GAA0B,CACrC7qB,WAAy8qB,G  
ACZ5qB,YAAa,OACbC,UA/DF,SAAcC,GACbwqB,GAAUxqB,EAAQC,KAAKC,MAAMwqB,GAak,KAAe,CA  
C/C,SACA,SACA,SACA,YA2DFvqB,WAvDF,SAAC,GAEX,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MA  
AEA,GAASF,GAC3B4F,KAACA,EAAIe,SAAEA,GAAYzG,GACnBqC,EAACA,GAakTc,EACNuC,EAAM5C,E  
AAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GAC5C,IAAI2F,EAAUpE,EACVqE,EAAQtE,EAEZ,MAAMgE,W  
AACa,EAUN,KAAEA,EAIF,aAAEA,EAAYM,mBAAEA,GACnCV,GAAwBpD,EAAGqD,EAAMhG,GAERc  
,IAAIoe,EAAGB/X,EACpB,GAAIL,EAAoB,CACtB,MAAMqB,EAae9H,EAAQkB,UAAUC,IAAIwF,EAAWvF,Q  
AAQC,GAC1DyG,IAAiBIF,IAGnBqE,EAAQN,EACRK,EAAUc,EACVsW,EAAGB/a,EAaqD,iBACzB0X,EAAC  
Ic,OAAQuF,EAAMxF,MAAMC,SAI1C2B,EAAa8D,2BACT,MAAOiX,EAaenX,EAAMxF,MAAMC,QACtC,M  
AAO4D,EAAU8B,GACb/D,EAAagE,0BAA0BJ,EAAMxF,MAAO2c,GACID9W,EAAazE,EAakC,cAAcsE,GA  
hCpF,EAAMhC,EAAQiC,WAAWqD,EAAU2B,EAAMtG,OAC/C,GAawC,IAApCkC,EAakC,cAAcmE,EAAMx  
F,OAAc,CACzC,MAAMS,EAAQIC,EAAQkB,UAAUC,IAAIa,EAIZ,QAAQC,GACChDmpB,GAAQxjB,EAASM  
,EAAY9H,GAASwC,EAAlrB,OAAQuB,GAQpD,GALiUE,GAEFzG,EAAQuH,YAAyZ,EAAWvF,QAG7B2F,EA  
AU,CAEZ,MAAM3D,EAAWC,EAAamE,qBAAqBxF,EAaip,MAAO0E,GAC9DnE,EAaip,MAAQ2B,EAGd,OA  
AOpB,ICjEI2oB,GAA0BnoB,GAAwBooB,ICAIcD,GAA2BroB,GAAwBsoB,ICiHe,IAAIC,GCDJ,IAAIC,GCDJ,I  
AAIC,GCQG,MC0FDC,GAAgC,CACpCnoB,GACAgB,GACAE,GACA4C,GACAa,GACAE,GACAO,GACAmC,  
GACAYe,GACAmB,GACAE,GACAG,GACA0B,GACAG,GACAa,GACA0B,GACAE,GACAI,GACakB,GACAa  
,GACAW,GACAG,GACAE,GACAE,GACAM,GACAI,GACAG,GACAO,GACAE,GACA7Z,GACAgA,GACAW,  
GACAG,GACAG,GACAa,GACAgB,GACAE,GACAJY,GACAmY,GACAG,GACAE,GACAE,GACAE,GACAG,  
GACAG,GACAG,GACAG,GACAK,GACAE,GACAI,GACAU,GACAE,GACAU,GACAO,GACAG,GACAG,GA  
CAG,GACAK,GACAE,GACAM,GACAG,GACAG,GACAI,GACAE,GACAU,GACAE,GACAE,GACAvZ,GACA  
0Z,GACAW,GACAM,GACAY,GACAF,GACAK,GACAS,GACAS,GACAE,GACApY,GACAsY,GACAG,GACA  
S,GACAS,GACAE,GACAE,GACAG,GACAG,GACAoB,GACAG,GACAE,GACAE,GJrJsC,CACtCjrB,WAAyur  
B,GACZrrB,YAAa,OACbC,UApCF,SAAcC,GACb+qB,GAaw/qB,EAAQC,KAAKC,MAAMirB,GAAM,KAAiB,  
CACnD,SACA,QACA,SACA,QACA,SACA,YA8BFhrB,WA1BF,SACIC,GACF,MAAMC,OAACA,EAAML,QA  
AEA,EAOM,MAAEA,GAASF,GAC3BuC,EAACA,GAakTc,EACNuC,EAAM5C,EAAQkB,UAAUC,IAAIwB,  
EAAEvB,QAAQC,IACtC+pB,KAACA,GAAQ9qB,EAET8C,EAAqB,IAAIoC,MAAM7C,EAAEIB,MAAMC,QA  
C7C,IAAK,IAAIImC,EAAL,EAAGA,EAALIT,EAAS1B,OAAQmC,IACnCT,EAASS,GAakIB,EAAEIB,MAAMoC,  
GAakunB,EAakvnB,GAEIC,MAAM+B,EAAC,IAAIxD,WAAW,IAAIC,WAAWM,EAAEIB,OAAOa,QACrD+o  
B,EAAGb,IAAIjpB,WAAW,IAAIC,WAAWe,GAAUd,QAExDN,EAAMhC,EAAQiC,WAAWmB,EAAUT,EA  
hC,OACrCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EAIZ,QAAQC,GAIhD,OAHA0pB,GACInoB,EAakgD,EA  
ajD,EAAEIB,MAAMC,OAAQ2pB,EAaejoB,EAAS1B,OAC1DIC,GAASwC,EAAlrB,OAAQuB,GACIBF,ICK+B,  
CACtCpC,WAAy0rB,GACZxrB,YAAa,OACbC,UAtCF,SAAcC,GACbgrB,GAawhrB,EAAQC,KAAKC,MAAM  
orB,GAAM,KAAiB,CACnD,SACA,QACA,SACA,SACA,SACA,OACA,SACA,YA8BFnrB,WAxBkC,EAEE,O  
AAAA,EAQL,QAAAA,EAASM,MAAAA,MAC7C,MAAMqC,EAACA,GAakTc,GACNsO,EAACA,EAAC4c,

OAAEA,GAAUjrB,EAEdsC,EAAM5C,EAAQkB,UAAUC,IAAIwB,EAAEvB,QAAQC,GACtCuE,EAAc,IAAIxD, WAAW,IAAIC,WAAWM,EA AEIB,OAAOa,QACrDgV,EAAc3U,EA AEIB,MAAMsG,QAC5BuP,EAAYA,EAAY 5V,OAAS,GA AKiN,EACtC,MAAM6c,EAAYxrB,EAAQIC,WAAWqV,EA Aa3U,EA AEhC,OAC9C8qB,EA AczrB ,EAAQkB,UAAUC,IAAIqqB,EA AUqpB,QAAQC,GACtDqqB,EA Aa1rB,EAAQIC,WAAWqV,EA Aa,SAC7CqU,E AAe3rB,EAAQkB,UAAUC,IAAIuqB,EA AWtqB,QAAQC,GAM9D,OAJA2pB,GACIpoB,EAAKgd,EAAajD,EA AEIB,MAAMC,OAAQIC,GAASmD,EA AEhC,OAAQgO,EAAG4c,EACxDE,EA AaE,GAEV,CAACH,EA AWE,K C4CgB,CAC3C9rB,WAA YgsB,GACZ9rB,YAAa,OACbC,UA9EF,SAAeC,GACbirB,GA AgBjrB,EAAQC,KAAK C,MAAM0rB,GA AW,KAAe,CAC3D,SACA,SACA,OACA,SACA,SACA,SACA,SACA,SACA,SACA,QACA,SA CA,SACA,SACA,SACA,YA+DFzrB,WA3DF,SACIC,GAGF,MAAMJ,QAACA,EAAOK,OAAEA,EAAMC,MAA EA,GAASF,GAC3BkV,MAACA,EAAKuW,WAAEA,GA AcxrB,GACtByrB,cAACa,EA AaC,SAAEA,EAAQ9G, UAAEA,EAAS3N,YAAEA,GA AehX,GA EnD4Y,EAAOC,EA AaC,EAAYC,GA Ae/D,EAAM7T,OACrD+R,EA A WC,GACC,MAAf6D,EAAsBA,EAAc,CAAC6B,EA AaC,GACHD9T,EACF,CAAC4T,EA AO1F,EA AWC,EACIB4 F,GACC/Q,EACF,IAAIIIG,WAAW,IAAIC,WAAWQ,EA AKsJ,eAAemJ,EAAM7T,QAAQa,QA E9DN,EAAMhC,E AAQIC,WAAWqD,EA AUgQ,EAAM3U,OACzCuB,EAAQIC,EAAQkB,UAAUC,IAAIa,EA AIZ,QAAQC,GAG1C 4X,EADYjZ,EAAQkB,UAAUC,IAAI mU,EAAMIU,QACpBC,GAGpB2qB,EADiBhsB,EAAQkB,UAAUC,IAAI0 qB,EA AWzqB,QACpBC,GA E9B4qB,EA AwC,YA AIBH,EA A8B,EA AI,EAC9D,IAAII,EACJ,OAAQH,GACN,IA AK,WACHG,EA Aa,EACb,MACF,IAAK,UACHA,EA Aa,EACb,MACF,IAAK,OACHA,EA Aa,EACb,MACF,IAA K,UACHA,EA Aa,EACb,MACF,QACEA,EA Aa,EA UjB,OANAjB,GACIhs,EAAS+S,EA AeH,EA AWpqb,MAAM, GA AK,EA AIyX,EA AO1F,EACzDC,EA AU4F,EA AaD,EA AYD,EA Aa7Q,EACHDgN,EAAM7T,MAAMC,OAAS, EAAGuqB,EA AQBC,EA AYjH,EACzD/iB,GAEGF,IEiHP6D,GC/JwC,CACxCjG,WAA YusB,GACZrsB,YAAa,O ACbK,WAICF,SACIC,GA EF,MAAMC,OAACA,EAAML,QA AEA,EA AOM,MAAEA,GAASF,GAC3BuY,MAA CA,GAAStY,EACHb,IAAI2F,KAACA,GA AQ1F,EAET0F,EA AO,IACTA,GA AQ2S,EAAMIX,MAAMC,QAGtB, MAAM0qB,EA AzT,EAAMIX,MAAMuE,GACzB2H,EA AOgL,EAAMIX,MAAMC,OACnB4D,EA AQB,IAAIE, MAAMmI,EA AO,GAC5C,IAAI0e,EA AW,EACf,IAAK,IAAIxoB,EA AI,EA AGA,EA AI8J,EAAM9J,IACpBA,IAA MmC,IACRV,EAAS+mB,KAAc1T,EAAMIX,MAAMoC,IAGvC,MAAMyoB,EA AQB,IAAI9mB,MAAM4mB,GA C/BvgB,EA AQ,IAAIrG,MAAMmI,GAAM+K,KAAK,GAC7B5M,EA AO6M,EAAMIX,MAAMsG,QACzB+D,EA AK9F,GAAQ,EACb,IAAK,IAAI nC,EA AI,EA AGA,EA AIyoB,EA AK5qB,OA AQmC,IAC/BgI,EAAM7F,GAAQn C,EACdyoB,EA AKzoB,GA AKkE,GAAM,CAAC1H,OA AQ,CAACsC,EA AGgW,GAAQrY,MAAO,CAACuL,MA AAA,EA AOC,KAAAA,GA AO9L,QAAAA,IAE7D,OA AOssB,EA AKIoB,KAAI,EA AEhD,OAAAA,EA AQT,MA AAA,OA AaS,OAAAA,EA AQT,MAAAA,EA AOc,MAAO6D,QFtBIB,CAC3C1F,WAA Y2sB,GACZzsB,YAAa,O ACbK,WAXF,SA AmBC,GACjB,MAAOC,QA AQsC,EA ACA,GA AE3C,QA AEA,GA AWI,EACzB4B,EAAMhC,E AAQIC,WAAWU,EA AEIB,MAAOkB,EA AEhC,OAG1C,OAFgBX,EAAQwE,mBA AmBxC,GACnC0W,KAAK,G ACN1W,KCgMT,IAAK,MAAMwqB,KA AgBtB,GACzBuB,GAAeD,GExMjB,MAAME,GAAMC,KAMZD,GA AI E,aAIA,yBAAYBC,SAAYC,YAA YC,SAAS,IAAI3qB,WAAW,CACvE,EA AG,GA AI,IAAK,IAAK,EA AG,EA AG, EA AG,EA AG,EA AI,EA AG,EA AK,GA AI,EA AI,EA AG,EACpD,EA AG,EA AI,EA AK,GA AK,EA AG,EA AG,EA A G,EA AG,GA AI,EA AG,IAAK,GA AI,GA AI,QA OvDsqB,GAAIE,aA Aa,gCAAgCC,UAG/C,GA AIH,GA AIvrB,IAA I,WACV,OA AO,EAGT,IAME,OA HA,IAAI6rB,gBA AiBC,MAAMC,YA AY,IAAIC,kBA AkB,IAGtDL,YA AY C,S AAS,IAAI3qB,WAAW,CACzC,EA AG,GA AI,IAAK,IAAK,EA AG,EA AI,EA AI,EA AG,EA AG,EA AG,EA AI,GA A I,EA AK,EA AI,EA AG,EA AG,EA AI,EA AG,EACnE,EA AG,EA AI,EA AK,EA AK,EA AG,GA AI,GA AI,EA AG,EA A G,EA AG,GA AI,EA AI,IAAK,GA AI,EA AG,EA AG,GA AI,MAEIE,MAAOqkB,GACP,OA AO,mPCvDX,IACM2G, EADFC,GACED,EA AiC,oBA AbE,UAA4BA,SAASC,cAAgBD,SAASC,cAAcC,SAAMC,EACHf,oBA AfC,aAA4 BN,EA AaA,GA AcM,qBAE3DL,GAGT,SAASM,IAA+F,OA AzEC,EA AWtrB,QAAQA,GAAQrB,EA A2BD,EA A WtrB,QAAewrB,EAAM,SAASC,IAA+F,OA AzEH,EA AWtrB,QAAQA,GAAQrB,EA A2BD,EA AWtrB,QAAeud, EA AO,SAASmO,IAAgG,OA AzEJ,EA AWtrB,QAAQA,GAAQrB,EA A2BD,EA AWtrB,QAAe2rB,EA AO,SAASC ,IAAgG,OA AzEN,EA AWtrB,QAAQA,GAAQrB,EA A2BD,EA AWtrB,QAAe6rB,EA AQ,SAASC,IAAgG,OA AzE R,EA AWtrB,QAAQA,GAAQrB,EA A2BD,EA AWtrB,QAAe+rB,EA AQ,IAAmGC,EA AoBC,EA AnHC,EA A8C,o BAFloBnB,EA AgCA,GA AiC,IAE6kBA,EA A8B,GAA8CmB,EA Ac,MAAE,IAAIC,SAAQ,SAASC,EA AQC,GAA QL,EA AoBI,EA AQH,EA AmBI,KAA S,IAA2BC,EA AvBC,EA AgB,GA AW,IAAID,KAAOJ,EA AWA,EA AOM,eA

AeF,KAAMC,EAAgBD,GAACKJ,EAAOI,IAAM,IAAuDG,EAAM,SAASC,EAAOC,GAAS,MAAMA,GAAaC,GA  
AmB,EAAUC,GAAsB,EAAUC,GAAoB,EAAUC,GAAqB,EAAMH,EAAMc,iBAATI,OAAkBH,EAA6C,mBAAh  
BI,cAA2BH,EAAqC,iBAAVI,SAA8C,iBAAnBA,QAAQC,UAAoD,iBAAxBD,QAAQC,SAASC,KAAgBL,GAAs  
BH,IAAqBE,IAAsBD,EAAsB,IAAIQ,EAAuBnB,EAA+B,yBAAG,EAASmB,IAAwBrtB,EAAOksB,EA Ae,QAAE  
,IAA4JoB,EAAMC,EAAUC,EAA8BC,EAAWC,EAAjNC,EAAGB,GAAG,SAASC,EAAWC,GAAM,OAAG3B,E  
AAmB,WAAUA,EAAMb,WAAE2B,EAAKF,GAawBA,EAAGBE,EAA2E,GAAGf,EAAoB,CAAu0B,IAAIgB,E  
AAhzBH,EAAvBd,EAAuCb,GAAGBC,QAAQL,GAAiB,IAAyBM,UAAU,IAAIX,EAAM,SAAoBY,EAASC,GA  
AuH,OAA3GV,IAAOA,EAAOW,IAAkBV,IAASA,EAASK,IAAgBG,EAASR,EAAoB,UAAEQ,GAAiBT,EAQb  
,aAAES,EAASC,EAAO,KAAK,SAASX,EAAW,SAAoBU,GAAU,IAAIG,EAAIf,EAAMY,GAAS,GAAiE,OAAv  
DG,EAAIruB,SAAQquB,EAAI,IAAIvuB,WAAWuuB,IAAK1mB,EAAO0mB,EAAIruB,QA AequB,GAAQnB,QA  
Ac,KAAE9tB,OAAO,GAAe8tB,QAAc,KAAE,GAAGoB,QAAQ,MAAM,KAAgBpB,QAAc,KAAEznB,MAAM,G  
AAGynB,QAAY,GAAE,qBAAoB,SAASqB,GAAI,KAAKA,aAAcC,IAAa,MAAMD,KAAMrB,QAAY,GAAE,qB  
AAqBuB,IAAOhC,EAAM,SAASC,GAAQQ,QAAc,KAAER,IAASR,EAAGB,QAAE,WAAW,MAAM,8BAAoD,I  
AAI4B,EAakBY,GAA0B,MAAMvK,GAA4H,MAAzHwK,QAAQC,MAAM,2GAAiHzK,EAAE0K,GAAOC,OA  
AOhB,EAakBgB,YAAe/B,GAAsC,oBAANgC,OAAMbZB,EAAM,SAAoB0B,GAAG,OAAOD,KAAKC,KAAIx  
,EAAW,SAAoBwB,GAAG,IAAIC,EAAK,MAAuB,mBAAbC,WAAgC,IAAIpvB,WAAWovB,WAAWF,KAA0Br  
nB,EAAqB,iBAA3CsnB,EAAKF,KAAKC,EAAE,YAAgDC,IAA4B,oBAAZE,YAAoCA,WAAwF,mBAAPC,OA  
AmB3C,EAAM,SAASC,GAAQ0C,KAAK1C,KAA2B,oBAAR2C,QAAYC,oBAAVV,UAAsBA,QAAQ,IAAGA,Q  
AAQW,IAAID,MAAMV,QAAQY,KAAKZ,QAAQC,MAAwB,oBAAXY,SAAuBA,SAASH,SAAezC,GAAoBC,K  
AA0BA,EAAuBc,EAAGB8B,KAAKC,SAASC,KAA+B,oBAAX3E,UAAwBA,SAASC,gBA Ae0C,EAAGB3C,SA  
ASC,cAAcC,KAA6B,oBAAfJ,GAA8BA,IAAY6C,EAAGB7C,GAAoD6C,EA AH,IAAnCA,EAAGBiC,QAAQ,SAA  
8BjC,EAAGBkC,OAAO,EAAEIC,EAAGBmC,YAAY,KAAK,GAAwB,GAAMhD,GAAqBQ,EAAM,SAAoBY,EA  
ASC,GAAuH,OAA3GV,IAAOA,EAAOW,IAAkBV,IAASA,EAASK,IAAgBG,EAASR,EAAoB,UAAEQ,GAAiB  
T,EAAqB,aAAES,EAASC,EAAO,KAAK,SAASX,EAAW,SAAoBU,GAAU,IAAIG,EAAIf,EAAMY,GAAS,GAAi  
E,OA AvDG,EAAIruB,SAAQquB,EAAI,IAAIvuB,WAAWuuB,IAAK1mB,EAAO0mB,EAAIruB,QA AequB,KAA  
Uf,EAAM,SAASyC,GA AK,IAAIC,EAAI,IAAIC,eAAwD,OAAzCD,EAAIE,KAAK,MAAMH,GA AI,GAAOC,EA  
AIG,KAAK,MAAaH,EAAII,cAAiBvD,IAAuBW,EA AW,SAASuC,GA AK,IAAIC,EAAI,IAAIC,eAAuF,OAAxED  
,EAAIE,KAAK,MAAMH,GA AI,GAAOC,EAAIK,aAAa,cAAcL,EAAIG,KAAK,MAAa,IAAIrwB,WAAWkwB,E  
AAIM,YAAW/C,EAAU,SAASwC,EAAIQ,EAAOC,GAAS,IAAIR,EAAI,IAAIC,eAAeD,EAAIE,KAAK,MAAMH  
,GA AI,GAAMC,EAAIK,aAAa,cAAcL,EAAIO,OAAO,WAA0B,KAAZP,EAAItD,QAAYB,GA AZsD,EAAItD,QA  
AWsD,EAAIM,SAAUC,EAAOP,EAAIM,UAAiBe,KAAWR,EAAIQ,QAAQA,EAAQR,EAAIG,KAAK,SAAqEr  
D,GAA6C,oBAAd2D,cAA2B5B,GAAO4B,YAAYC,GAAsBD,aAAa,IAA4mBE,EAAxmBjxB,EAAIwsB,EAAc,O  
AAGyC,QAAQW,IAAIsB,KAAKjC,SAAakC,EAAI3E,EAAiB,UAGyC,QAAQY,KAAKqB,KAAKjC,SAAS,IA  
AIrC,KAAOC,EAAoBA,EAAGBC,eAAeF,KAAMJ,EAAOI,GAACK,EAAgBD,IAAmL,SAASwE,EAASC,GAAU  
D,EAASE,QAAMF,EAASE,MAAM,IAAOF,EAASE,MAAMD,KAAOD,EAASE,MAAMD,GAAM,EAAEF,EAA  
IE,IAA/RxE,EAAGB,KAAQL,EAakB,WAAaA,EAakB,UAAKA,EAAoB,aAAcA,EAAoB,YAAKA,EAAa,OAAE  
O,EAAMP,EAAa,MAA+PA,EAAMb,aAAEyE,EA AWzE,EAAMb,YAAE,IAA+HZ,EAAe2F,EAA1IC,EA AchF,E  
AAsB,gBAAG,EAA6B,iBAAd1B,aAAwBiE,GAAM,mCAAiE,IAAsqGzuB,EAAOwrB,EAAMjO,EAAsBoO,EAA  
OE,EAAGBE,EAA5tGoF,GAAM,EAAqB,SAASxpB,EAAOuc,EAAU6M,GAAU7M,GAAWuK,GAAM,qBAAqBs  
C,GAAO,SAASK,EAASC,GAAO,IAAIC,EAAKpF,EAAO,IAAI mF,GAAuF,OA AhF1pB,EAAO2pB,EAAK,gCA  
AgCD,EAAM,8BAAqCC,EAAK,SAASC,EAAMF,EAAMG,EAAWC,EAAS3zB,EAAK4zB,GAAM,IAAIC,EAAI  
,CAACC,OAAS,SAASC,GA AK,IAAIxD,EAAI,EAAE,GAAGwD,MAAAA,GAAMc,IAANA,EAAQ,CAAC,IAAI  
C,EAAoB,GA AfD,EAAIzyB,QAAQ,GAAyB2yB,EAAaF,EAAjCxD,EAAI2D,GA AWF,GAA0BA,GA AK,OA AO  
zD,GA AK4D,MAAQ,SAASC,GA AK,IAAI7D,EAAI2D,GA AWE,EAAI9yB,QAAoC,OAA5B+yB,EAAMBD,EA  
AI7D,GAAYA,IAAsJiD,EAAKF,EAASC,GA AWe,EAAM,GAAOC,EAAM,EAAE,GAAGv0B,EAAM,IAAI,IAAI  
yD,EAAE,EAAEA,EAAEzD,EAAKsB,OAAOmC,IAAI,CAAC,IAAI+wB,EAAUX,EAAIF,EAASlwB,IAAO+wB,  
GAAsB,IAARD,IAAU,A,EAAME,MAAYH,EAAM7wB,GAAG+wB,EAAUx0B,EAAKyD,KAAS6wB,EAAM7w  
B,GAAGzD,EAAKyD,GA AK,IAAI8sB,EAAIiD,EAAKkB,MAAM,KAAKJ,GAAoE,OAA7D/D,EAArY,SAA4BA

,GAAK,MAAgB,WAAbmD,EAA6BiB,EAAapE,GAAqB,YAAbmD,EAA8BkB,QAAQrE,GAAYA,EAAiQsE,CA  
AmBtE,GAAgB,IAARgE,GAAUO,GAAaP,GAAchE,EAAI,SAASzWB,EAAMyzB,EAAMG,EAAWC,EAASC,G  
AA4B,IAAIbB,GAA1BpB,EAASA,GAAU,IAA4BpwB,OAAM,SAASoP,GAAM,MAAc,WAAPA,KAAuD,MAA  
T,WAAb+gB,GAAqCqB,IAAcnB,EAAaN,EAASC,GAAC,WAAW,OAAOE,EAAMF,EAAMG,EAAWC,EAASqB  
,YAAiB,SAASC,EAakBC,EAakXoB,EAAIyoB,GAAYD,IAAzC,IAAIC,EAAO1oB,EAAIyoB,EAAMBpB,EAAI,  
KAAWmB,GAAK0oB,IAAQ,CAAC,IAAIC,EAAGH,EAakXoB,KAAO,IAAI2oB,EAAG,OAAOtB,EAAI,GAAQ  
,IAAhSb,EAAL,CAAoD,IAAIC,EAAe,GAZJ,EAakXoB,KAAU,GAAa,MAAN,IAAH2oB,GAAJ,CAAmE,IAA  
IE,EAAe,GAZL,EAakXoB,KAAmG,IAAvE2oB,EAAL,MAAN,IAAHA,IAAQb,GAAHA,IAAQ,GAAGC,GAAI  
,EAAEC,GAAe,EAHF,IAAO,GAAGC,GAAI,GAAGC,GAAI,EAAC,GAZL,EAakXoB,MAAgB,MAAOqnB,G  
AAKyB,OAAOC,aAAaJ,OAAQ,CAAC,IAAIK,EAAGL,EAAG,MAAMtB,GAAKyB,OAAOC,aAAa,MAAMC,G  
AAI,GAAG,MAAS,KAAHA,SAA3Q3B,GAAKyB,OAAOC,cAAiB,GAAHJ,IAAQ,EAAEC,QAAIHvB,GAAKyB,  
OAAOC,aAAaJ,GAA0U,OAAOtB,EAAI,SAASY,EAAgB,EAAIR,GAAGB,OAAOQ,EAAIV,EAakBtH,IAAmB  
gI,EAAIR,GAAGB,GAAG,SAASS,EAakB7B,EAAImB,EAakW,EAAOC,GAAiB,KAAKA,EAAGB,GAAG,OA  
AO,EAAOD,IAAxD,IAAIC,EAASF,EAAWT,EAAOS,EAAOC,EAAGB,EAAUryB,EAAE,EAAEA,EAAEswB,EA  
AIzyB,SAASmC,EAAE,CAAC,IAAIuyB,EAAEjC,EAAIkC,WAAWxyB,GAAoF,GAA9EuyB,GAAG,OAAOA,G  
AAG,QAakCA,EAAE,QAAU,KAAFA,IAAS,IAAO,KAA9CjC,EAAIkC,aAAaxyB,IAAQcuyB,GAAG,IAAI,CA  
AC,GAAGH,GAAQT,EAAO,MAAMF,EAakW,KAAUG,OAAO,GAAGA,GAAG,KAAK,CAAC,GAAGH,EAA  
O,GAAGT,EAAO,MAAMF,EAakW,KAAU,IAAIG,GAAG,EAAEd,EAakW,KAAU,IAAM,GAAFG,OAAU,G  
AAGA,GAAG,MAAM,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF,EAakW,KAAU,IAAIG,GAAG,GAAG  
d,EAakW,KAAU,IAAIG,GAAG,EAAE,GAAGd,EAakW,KAAU,IAAM,GAAFG,MAAS,CAAC,GAAGH,EAA  
O,GAAGT,EAAO,MAAMF,EAakW,KAAU,IAAIG,GAAG,GAAGd,EAakW,KAAU,IAAIG,GAAG,GAAG,GA  
AGd,EAakW,KAAU,IAAIG,GAAG,EAAE,GAAGd,EAakW,KAAU,IAAM,GAAFG,GAAqB,OAAfd,EAakW,  
GAAQ,EAASA,EAAOE,EAAS,SAAS9B,EAAaF,EAAImC,EAAOJ,GAAiB,OAAOF,EAakB7B,EAAIpG,IAAmB  
uI,EAAOJ,GAAiB,SAASK,EAAGBpC,GAAe,IAAV,IAAIC,EAAI,EAAUvwB,EAAE,EAAEA,EAAEswB,EAAIzy  
B,SAASmC,EAAE,CAAC,IAAIuyB,EAAEjC,EAAIkC,WAAWxyB,GAAMuyB,GAAG,OAAOA,GAAG,QAAM  
A,EAAE,QAAU,KAAFA,IAAS,IAAwB,KAApBjC,EAAIkC,aAAaxyB,IAAWuyB,GAAG,MAAMhC,EAAoBA,G  
AARgC,GAAG,KAAU,EAAUA,GAAG,MAAW,EAAY,EAAE,OAAOhC,EAAI,SAASK,EAAMBF,EAAMjyB,G  
AAQqrB,IAAmBlpB,IAAI8vB,EAAMjyB,GAAQ,SAASK0B,EAAQ7zB,EAAE8zB,GAAkD,OAArC9zB,EAAE8z  
B,EAAS,IAAG9zB,GAAG8zB,EAAS9zB,EAAE8zB,GAAGB9zB,EAAwE,SAASkrB,EAA2B6I,GAAKp0B,EAA  
Oo0B,EAAIII,EAAc,MAAEV,EAAM,IAAI6I,UAAUD,GAAKII,EAAe,OAAS,IAAIoI,WAAWF,GAAKII,EAAe,  
OAAEP,EAAO,IAAI5rB,WAAWq0B,GAAKII,EAAe,OAEE3O,EAAO,IAAIzd,WAAWs0B,GAAKII,EAAGB,QA  
AU,IAAIqI,YAAYH,GAAKII,EAAGB,QAAEL,EAAQ,IAAI2I,YAAYJ,GAAKII,EAAGB,QAAU,IAAIuI,aAAaL,  
GAAKII,EAAGB,QAAEH,EAAQ,IAAI2I,aAAaN,GAAK,IAAu3BO,EAAAn3BC,EAAeII,EAauB,gBAAG,SAAS,  
GAAGmB,EAAwB/B,EAAWY,EAAMb,WAAEIsB,EAAOKsB,EAAe,YAAO,GAAGA,EAAMb,WAAGZ,EAAW  
Y,EAAMb,gBAAoH,MAA7GZ,EAAW,IAAIId,YAAYqK,OAAO,CAACC,QAAUF,EAAe,MAAMG,QAAU,MAA  
iBC,QAAS,KAAuBh1B,kBAakB6qB,mBAAGz,MAA5XgG,EAAI,+NAAkO/D,GAAqB6B,QAAQW,IAAI,qHAA  
2HhxB,MAAM,cAAmBgtB,IAAYtrB,EAAOsR,EAAWtrB,QAAO40B,EAAe50B,EAAOi1B,WAAW1J,EAA2Bv  
rB,GAASb,IAAIk1B,GAAa,GAAOC,GAAW,GAAOC,GAAW,GAAyBC,GAAc,GAA4I,SAASC,KAAS,IAAGjI,E  
AAH,CAAiC,GAAGnB,EAAe,OAA8E,IAA/C,mBAAlBA,EAAe,SAACa,EAAe,OAEE,CAACA,EAAe,SAASA,E  
AAe,OAEE9sB,QAAQm2B,GAAYrJ,EAAe,OAEEsJ,SAAUC,GAAqBP,KAAc,SAASQ,KAAyCrI,GAA8BoI,GA  
AqBN,IAAY,SAASQ,KAAatI,GAA8BoI,GAAqBL,IAAuF,SAASQ,KAAU,IAAGvI,EAAH,CAAiC,GAAGnB,EA  
AgB,QAAiF,IAAJD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UAAASA,EAAGB,QAAE9sB,Q  
AAQy2B,GAAa3J,EAAGB,QAAEsJ,SAAUC,GAAqBJ,KAAe,SAASE,GAAYO,GAAIz,GAAaa,QAAQD,GAAI,S  
AASD,GAAaC,GAAIT,GAAcU,QAAQD,GAAP8BzI,GAAuB8H,GAAWxyB,KAAK,CAAC2uB,KAAK,WAAW0  
E,QAAg5B,IAAIC,GAAGB,EAAoCC,GAASb,KAAK,SAASC,GAAiBp3B,GAAI4I,GAAQ0IB,EAauB,uDAAuD  
4I,KAAqB/J,EAA+B,wBAAGA,EAA+B,uBAAE+J,IAAkB,SAASG,GAAoBr3B,GAA6G,GAAzGk3B,KAAqB/J,  
EAA+B,wBAAGA,EAA+B,uBAAE+J,IAAQc,GAAjBA,IAAQHC,GAASb,CAAC,IAAIG,EAASH,GAASbA,GAAS  
sB,KAAKG,KAAuE,SAAS5H,GAAM6H,GAASpK,EAAGB,SAAGA,EAAGB,QAAEoK,GAASjJ,GAuBsB,QAA

QC,MAAM,wBAAuB,IAAKtwB,OAAO+zB,OAAgBxB,EAATyF,GAAM,IAAanF,GAAM,EAAkBmF,EAAK,SA  
ASA,EAAK,+CAA+C,IAAIInS,EAAE,IAAIqG,YAAAY+L,aAAaD,GAA4B,MAAtBrK,EAAmB9H,GAASA,EAAE,  
SAASqS,GAAU3E,EAAI4E,GAAQ,OAAOnD,OAAOoD,UAAUC,WAAW9E,EAAI8E,WAAWF,GAA8B,IAAtB  
5E,EAAIjC,QAAQ6G,GAAxevK,EAAwB,gBAAE,GAAGA,EAAwB,gBAAE,GAA6b,IAAI0K,GAAc,wCAAwC,  
SAASC,GAAU3I,GAAU,OAAOsI,GAAUti,EAAS0I,IAAe,IAAIE,GAAc,UAAU,SAASC,GAAU7I,GAAU,OAAO  
sI,GAAUti,EAAS4I,IAAe,IAAIE,GAAe,uCAAgH,SAASC,GAAUC,GAAM,IAAI,GAAGA,GAAMF,IAAgBrG,E  
AAY,OAAO,IAAI7wB,WAAW6wB,GAAY,GAAGnD,EAAU,OAAOA,EAAW0J,GAAW,KAAK,kDAAmD,MA  
AMrG,GAAKpC,GAAMoC,IAAM,SAASgG,KAAmB,IAAIxG,IAAa/D,GAAoBC,GAAuB,CAAC,GAAKB,mBAA  
RuK,QAAqBL,GAAUC,IAAiB,OAAOI,MAAMJ,GAAe,CAACK,YAAU,gBAAgBC,MAAK,SAAShH,GAAU,IA  
AIA,EAAa,GAAG,KAAK,uCAAuC0G,GAAe,IAAI,OAAO1G,EAASb,iBAAMiH,OAAM,WAAW,OAAON,GAA  
UD,OAAuB,GAAGzJ,EAAW,OAAO,IAAIpB,SAAQ,SAASC,EAAQC,GAAQkB,EAAUyJ,IAAe,SAAS1G,GAA  
UIE,EAAQ,IAAItsB,WAAWwwB,MAAYjE,MAAY,OAAOF,QAAQC,UAAUkL,MAAK,WAAW,OAAOL,GAA  
UD,OAAkB,SAASQ,KAAa,IAAIC,EAAK,CAACx5B,EAAIy5B,IAAe,SAASC,EAAgBC,EAASC,GAAQ,IAAIC,  
EAAQF,EAASE,QAA6E,GAArE5L,EAAU,IAAE4L,EAAQnD,EAAUzI,EAAU,IAAK,EAAE+E,EAAW4G,GAA  
WxK,EAAuB,CAAC,IAAI0K,EAAiBC,GAAQC,cAAc74B,OAAO44B,GAAQC,cAAc1pB,SAAQ,SAASmpB,GA  
AGF,GAAQG,uBAAuBD,GAAE,aAAiBH,GAAiB3B,YAA8G,SAASgC,EAA0BC,GAAQV,EAAgBU,EAAiB,SA  
AEA,EAAe,QAAG,SAASC,EAAuBC,GAAU,OAAOpB,KAAmBG,MAAK,SAASnJ,GAAQ,OAAO3D,YAAUgO,  
YAAUrk,EAAOsJ,MAAQH,KAAKiB,GAAS,SAASE,GAAQ5H,EAAI,0CAA0C4H,GAAQhK,GAAMgK,MAAo  
mB,GAAP+BpL,GAAwB8I,KAA+8BjK,EAAwB,gBAAg,IAAgE,OAAhDA,EAAwB,gBAAEuL,EAAKE,GAAGC  
,MAAMxT,GAAGe,OAA7D0M,EAAI,sDAAsD1M,IAAU,EAAoD,OAAxyBwM,GAASd,mBAAnCnG,YAAUkO,  
sBAAoC7B,GAAUG,KAAkBD,GAAUC,KAAgC,mBAARI,MAAsYkB,EAAuBF,GAAYhB,MAAMJ,GAAe,CA  
ACK,YAAU,gBAAgBC,MAAK,SAAShH,GAAQe,OAAd9F,YAAUkO,qBAAqBpI,EAASmH,GAAoBH,KAAK  
c,GAA0B,SAASK,GAAuG,OAA/F5H,EAAI,kCAAkC4H,GAAQ5H,EAAI,6CAAoDyH,EAAuBF,UAAkTb,MAA  
MtL,GAA0B,GAA3hF4K,GAAUG,MAAiBA,GAAepJ,EAAW0J,KAAy+E,IAAI2B,GAAW,CAACC,MAAM,WA  
AW,KAAK,aAAaC,MAAM,SAASC,EAAGC,GAAIC,YAAW,WAAWC,GAAMCH,EAAGC,KAAK,KAAK,SA  
SG,KAAiBIB,GAAQtC,cAAc,SAASD,GAAqB0D,GAAW,KAAMA,EAAU/5B,OAAO,GAAE,CAAC,IAAii3B,E  
AAS8C,EAAU3D,QAAQ,GAAoB,mBAAVa,EAAV,CAA0D,IAAI/E,EAAK+E,EAAS/E,KAAASB,iBAAPA,OAA  
mCnG,IAAfkL,EAAS+C,IAAiBzE,EAAU91B,IAAIyyB,EAAdqD,GAA2BA,EAAU91B,IAAIyyB,EAAdqD,CAA  
oB0B,EAAS+C,KAAW9H,OAAoBnG,IAAfkL,EAAS+C,IAAgB,KAAK/C,EAAS+C,UAAxN/C,EAASnK,IAASn,  
IAAIImN,GAAY,CAACC,MAAM,GAAGC,OAAO,GAAGC,MAAM,GAAGC,MAAM,GAAGC,MAAM,GAAGC,IAAI,GAAGC,M  
AAM,GAAGC,MAAM,EAAEC,QAAQ,GAAGC,MAAM,EAAEC,OAAO,GAAGC,OAAO,EAAEC,YAAU,EAA  
EC,OAAO,GAAGC,OAAO,EAAEC,OAAO,GAAGC,QAAQ,IAAIC,MAAM,GAAGC,OAAO,GAAGC,MAAM,G  
AAGC,OAAO,GAAGC,QAAQ,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OAAO,GAAGC,OA  
AO,GAAGC,QAAQ,GAAGC,MAAM,GAAGC,OAAO,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,GAA  
GC,MAAM,GAAGC,KAAK,GAAGC,OAAO,GAAGC,OAAO,GAAGC,MAAM,GAAGC,OAAO,IAAIC,SAAS,I  
AAIC,OAAO,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,GAAGC,  
OAAO,GAAGC,MAAM,IAAIC,MAAM,IAAIC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,UAA  
U,GAAGC,OAAO,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,MAAM,IAAIC,MAAM,IAAIC,OAAO,IAAIC,OAAO,IA  
AIC,QAAQ,IAAIC,QAAQ,GAAGC,KAAK,IAAIC,OAAO,IAAIC,MAAM,IAAIC,OAAO,GAAGC,UAAU,GAA  
GC,QAAQ,IAAIC,QAAQ,EAAEC,SAAS,IAAIC,OAAO,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QAAQ,IAAIC,QA  
AQ,IAAIC,QAAQ,IAAIC,SAAS,IAAIC,OAAO,GAAGC,UAAU,GAAGC,aAAa,GAAGC,MAAM,GAAGC,WAA  
W,IAAIC,aAAa,IAAIC,WAAW,GAAGC,QAAQ,GAAGC,aAAa,EAAEC,WAAW,GAAGC,SAAS,GAAGC,YAA  
Y,GAAGC,UAAU,IAAIC,aAAa,GAAGC,WAAW,EAAEC,aAAa,GAAGC,YAAU,GAAGC,SAAS,GAAGC,UAA  
U,GAAGC,UAAU,IAAIC,aAAa,GAAGC,YAAU,GAAGC,SAAS,EAAEC,aAAa,GAAGC,SAAS,GAAGC,gBAAg  
B,GAAGC,gBAAgB,IAAIC,cAAc,EAAEC,UAAU,GAAGC,QAAQ,GAAGC,SAAS,GAAGC,aAAa,IAAIC,OAA  
O,IAAIC,OAAO,GAAGC,OAAO,GAAGC,QAAQ,IAAIC,UAAU,IAAIC,OAAO,GAAGC,UAAU,GAAGC,UAA  
U,GAAGC,gBAAgB,GAAGC,WAAW,GAAGC,SAAS,KAAK,SAASC,GAAuBC,EAAKC,GAAO,GAAGD,GAA  
M,GAAGA,EAAK3V,IAAmBjsB,SAAa,EAAL4hC,GAAWC,EAAM,EAAE,OAAO,GAAG,GAAU,GAAPA,EAA



S,OAAO,EAKA,GAAO,aAAWA,EAAMC,EAAAA,GAAS,IAAIC,EAA5BC,QAAQC,KAAK3V,IAAoB4V,IAA  
gC,GAAOC,EAAgB,EAAE,GAAGJ,GAAuBH,GAAqBI,QAAQI,gBAAgB9V,IAAoB4V,IAAgC,EAAEH,EAA5B,  
IAAkBA,IAA+BI,EAAgB,IAAtBN,GAakC,GAAE,OAAO,EAAG,IAAI5S,EAAI+S,QAAQK,OAAO/V,IAAoBsV  
,GAAM,EAAEC,GAAO,GAAG5S,GAak,EAAE,OAAOA,EAAIkT,EAAgB,KAAK,+CAA+CIT,EAA4D,SAASq  
T,GAAWC,GAAa,GAAGtU,EAAuB,KAAK,qFAAQF,IAAIsU,EAAY,KAAK,kDAAkDjW,IAAoBiW,EAAY,IAA  
I,GAAG,EAAE,IAAIC,EAAQ5J,GAAQ6J,SAASF,GAAaC,EAAQE,OAAOC,YAAY/J,GAAQgK,eAAeJ,GAAS5J  
,GAAQiK,eAAehsB,OAAO+hB,GAAQiK,eAAerS,QAAQgS,EAAQE,QAAQ,GAAGF,EAAQE,OAAOF,aAAQz  
W,EAAU,SAAS+W,GAAaP,GAAa,GAAGtU,EAAuB,KAAK,uFAAuF,IAAIsU,EAAY,KAAK,oDAAgE3J,GAA  
Q6J,SAASF,GAAqBG,OAAOIX,YAAY,CAACuX,IAAM,WAAW,SAASC,GAACt,GAAa,GAAGtU,EAAuB,KA  
AK,wFAAwF,IAAIsU,EAAY,KAAK,qDAAqD,IAAIC,EAAQ5J,GAAQ6J,SAASF,GAAa,GAAGC,EAAQ,CAACI  
W,IAAoBiW,EAAY,IAAI,GAAG,EAAE,IAAIG,EAAOF,EAAQE,OAAO9J,GAAQqK,mBAAmBP,IAArsC5V,E  
AA+B,uBAAE6U,GAA6qC,IAA0xMuB,GAAtxMtK,GAAQ,CAACC,cAAc,GAAGgK,eAAe,GAAGM,oBAAoB,  
WAAiC,IAAtB,IAA8BhhC,EAAE,EAAEA,EAAd,IAAkCA,EAAGy2B,GAAQwK,wBAAyB9M,YAAY,WAA+B,  
IAApB,IAAI+M,EAAGC,GAAQ,KAAanhC,EAAE,EAAEA,EAAE,KAAQA,EAAEqqB,IAAoB6W,EAAG,EAAE  
lhC,GAAG,EAAEmqB,IAAoB+W,EAAG,IAAI,GAAGA,EAAG,IAAIE,EAAQF,EAAG,IAAI/W,IAAoBiX,GAAS  
,GAAGA,EAAQ,IAAIC,EAAUF,GAAQ,KAAK,IAAQnhC,EAAE,EAAEA,EAAE,MAAMA,EAAEqqB,IAAoBg  
X,EAAU,EAAErhC,GAAG,EAAE6/B,QAAQyB,MAAMjX,IAAoB6W,EAAG,KAAK,EAAEG,GAAWxB,QAAQ  
yB,MAAMjX,IAAoB6W,EAAG,IAAI,EAAEA,GAAIK,GAAyBL,GAAI5V,EAA5B,GAAGkW,GAA4CN,IAAKO  
,WAAW,aAAanB,SAAS,GAAGoB,mBAAmB,GAAGC,gBAAgB,aAAaC,gBAAgB,WAAW,KAAmNl,GAAQiL,  
mBAAmB7jC,OAAO,GAAG44B,GAAQiL,mBAAmBG,KAA3BpL,GAAsC3K,GAAWBgW,MAAgBC,MAA4BC,  
+BAA+B,SAASd,EAAGe,GAAUpC,QAAQyB,MAAMjX,IAAoB6W,EAAG,IAAI,EAAE,GAAGrB,QAAQyB,M  
AAMjX,IAAoB6W,EAAG,IAAI,EAAE,GAAGzK,GAAQmL,kBAakB/B,QAAQyB,MAAMjX,IAAoB6W,EAAG,  
GAAG,EAAEe,GAAUpC,QAAQyB,MAAMjX,IAAoB6W,EAAG,GAAG,EAAE,GAAG1B,GAAuB0B,EAAG,EA  
AE,YAAYK,GAAyB,EAAE,EAAE,IAAIW,WAAW,SAASD,GAAU,IAAIIf,EAAGY,KAAmBZ,IAAIzK,GAAQu  
L,+BAA+Bd,EAAGe,GAAanW,GAAwBzC,YAAY,CAACuX,IAAM,WAAyUB,aAAa,WAAW1L,GAAQuL,+BA  
A+BF,MAAiB,GAAGzY,YAAY,CAACuX,IAAM,gBAAgBwB,oBAAoB,WAAW,IAAI,IAAI1B,KAAK2pB,GA  
AQ6J,UAAcD,EAAQ5J,GAAQ6J,SAASxzB,KAAeuzB,EAAQE,QAAQ9J,GAAQqK,mBAAmBT,EAAQE,QAAS  
9J,GAAQ6J,SAAS,GAAG,IAAI,IAAItgC,EAAE,EAAEA,EAAEy2B,GAAQC,cAAc74B,SAASmC,GAAOugC,E  
AAO9J,GAAQC,cAAc12B,IAAUwgC,YAAqC,IAAZB/J,GAAQC,cAAc,GAAW12B,EAAE,EAAEA,EAAEy2B,G  
AAQiK,eAAe7iC,SAASmC,EAAE,CAAC,IAAIugC,EAAqCF,GAARCE,EAAO9J,GAAQiK,eAAe1gC,IAAsBqgC,  
QAAQ5J,GAAQgK,eAAeJ,GAASE,EAAOC,YAAY/J,GAAQiK,eAAe,IAAID,eAAe,SAASJ,GAAS,GAAIA,EAA  
J,CAAmB,GAAGA,EAAQgC,iBAAiB,CAAC,IAAIhB,EAAUIX,IAAoBkW,EAAQgC,iBAAiB,KAAK,GAAGIY,I  
AAoBkW,EAAQgC,iBAAiB,KAAK,GAAG,EAAEhmB,GAAMglB,GAAWhlB,GAAMgkB,EAAQgC,kBAakBh  
C,EAAQgC,iBAAiB,EAAKhC,EAAQiC,mBAAmBjC,EAAQkC,WAAUlmB,GAAMgkB,EAAQkC,WAAWIC,EA  
AQkC,UAAU,EAAKIC,EAAQE,SAAOF,EAAQE,OAAOF,QAAQ,QAAMS,mBAAmB,SAASP,GAAQ9J,GAAQ  
+L,iCAAgC,kBAakB/L,GAAQ6J,SAASC,EAAOF,QAAQgC,kBAakB5L,GAAQC,cAAc1B,KAAKm/B,GAAQ9  
J,GAAQiK,eAAehsB,OAAO+hB,GAAQiK,eAAerS,QAAQkS,GAAQ,GAAG9J,GAAQgK,eAAeF,EAAOF,SAAS  
E,EAAOF,aAAQzW,MAAa4Y,gCAAgC,SAASzS,GAAM5F,IAAoBsY,IAA8C,GAAG,EAAE,IAAI1S,IAAO,QA  
AQ5F,IAAoBsY,IAA8C,GAAG,IAAIC,sBAAsB,SAAShV,KAAQkJ,uBAAuB,SAAS2J,EAAOoC,GAAmBpC,EA  
AOqC,UAAU,SAAShgB,GAAG,IAAIigB,EAAEjgB,EAAQ,KAAmge,EAAIiC,EAAO,IAAGG,GAA3FtC,EAAOF  
,UAAQ5J,GAAQqM,oCAAoCvC,EAAOF,QAAQgC,kBAAoBQ,EAAgB,cAAGA,EAAgB,cAAGf,KAAgB,CAAC  
,IAAIiB,EAAOtM,GAAQ6J,SAASuC,EAAEG,cAAoR,OAAAnQD,EAAQA,EAAOxC,OAAOIX,YAAYzG,EAAE8  
K,KAAKmV,EAAgB,cAAQzV,QAAQC,MAAM,0CAA0CuT,EAAI,uBAAuBiC,EAAgB,aAAE,4CAAuCpM,GA  
AQqM,yCAAoCIZ,GAAiB,GAAS,gCAANgX,EAAqCqC,UAAoD,GAAS,gBAANrC,EAAqBsC,GAAYtgB,EAAE  
8K,WAAW,GAAS,kBAANKt,EAAuBC,GAAGcC,EAAU,aAAQ,GAAS,eAANjC,EAAoBT,GAAW0C,EAAU,aA  
AQ,GAAS,iBAANjC,EAA5BD,GAAakC,EAAU,aAAQ,GAAS,WAANjC,EAAgBL,EAAO4C,QAAO,EAAQR,GA  
AkBA,EAAkBpC,GAAWA,EAAO6C,aAAY7C,EAAO6C,oBAAoB7C,EAAO6C,iBAAiB,GAAS,UAAANxC,EAAe  
ziC,EAAI,UAAU0kC,EAAY,SAAE,KAAKA,EAAQ,WAAQ,GAAS,aAANjC,EAAkBT,R,EAAI,UAAUuT,EAAY,

SAAE,KAAKA,EAAQ,WAAQ,GAAS,UAAjC,EAAeyC,MAAM,UAAUR,EAAY,SAAE,KAAKA,EAAQ,WAAQ,GAAS,SAANjC,EAA2BL,EAAOF,SAASR,QAAQC,KAAKzV,IAAoBkW,EAAOF,QAAQgC,iBAaIB,IAAI,IAAgB5L,GAAQqK,mBAAmBP,QAAc,GAAS,gBAANK,EAAqB,IAAI0C,GAAKT,EAAC,YAAG,MAAMjgB,GAA G,GAAGA,aAAaqK,GAAW,OAAO,MAAMrK,MAAiB,eAANge,EAAoBnK,GAAQqK,mBAAmBP,GAAsB,mB AANK,EAAwBnK,GAAQiM,sBAAsB9f,EAAE8K,MAA8B,iBAAhB9K,EAAE8K,KAAK6V,OAAyBhD,EAAOI X,YAAYzG,EAAE8K,MAAW4B,EAAl,kCAACsR,GAAKnK,GAAQqM,yCAAoClZ,GAAW2W,EAAOtR,QAA Q,SAASrM,GAAG0M,EAAl,0BAA0B1M,EAAE+J,SAAS,IAAI/J,EAAE4gB,OAAO,KAAK5gB,EAAE6gB,UAA alY,IAAqBgV,EAAOmD,GAAG,WAAU,SAAShW,GAAM6S,EAAOqC,UAAU,CAACIV,KAAKA,OAAS6S,EA AOmD,GAAG,SAAQ,SAAShW,GAAM6S,EAAOtR,QAAQvB,MAAQ6S,EAAOmD,GAAG,QAAO,SAAShW,Q AAS6S,EAAOIX,YAAY,CAACuX,IAAM,OAAO+C,UAYhZ,EAA4B,qBAAGpB,EAAWQ,WAAaA,EAAW2F, WAAaA,KAAcuR,qBAaQb,WAAW,IAAI2C,EAACvX,EAAW,6CAA6CoK,GAAQC,cAAc1B,KAAK,IAAImsB, OAAOqW,KAAiBC,aAAa,WAAuI,OAA3F,GAA9BpN,GAAQC,cAAc74B,SAAW44B,GAAQwK,uBAAuBxK,G AAQG,uBAAuBH,GAAQC,cAAc,KAAOD,GAAQC,cAAc74B,OAAO,EAAS44B,GAAQC,cAAcmL,MAAkB,M AAMiC,aAAa,SAASC,GAAqC,IAA9B,IAAIj3B,EAAEoiB,YAAY8U,MAAMD,EAAY7U,YAAY8U,MAAMI3B, OAAO,SAASm3B,GAAoBC,EAASC,GAAUC,GAA6BF,EAASC,GAAU9S,GAAa6S,GAA4D,SAASG,KAAmB, OAAO1U,EAA0D,SAAS2U,GAAiBpS,EAAl2F,GAAK,OAAOzE,EAAU91B,IAAI40B,EAAdkB,CAAmByE,GA AiD,SAAS0M,GAAe5hB,EAAUgK,EAAS6X,EAAKzU,GAAM7C,GAAM,qBAaQbG,EAAavO,GAAW,SAAS, CAACgK,EAASuE,EAAavE,GAAU,mBAAmB6X,EAAKzU,EAAKmB,EAAanB,GAAM,qBAaQb,SAAS0U,GA AaC,EAAKC,GAAqBC,MAAMF,EAAKC,GAA0Y,SAASE,GAAS/vB,GAAYD,OAAIDqV,IAAoB2a,MAAQb,G AAGhwB,EAAaA,EAAM,SAASiwB,GAAQhV,EAAK8H,GAAK,GAAG/L,EAABuB,OAAOKZ,GAAoC,EAAE,EA AEjV,EAAK8H,GAAK,SAASoN,GAAiCC,EAAeC,GAAC,GAAGD,GAAGBC,EAAC9b,YAAY,CAACuX,IAAM, qCAAqC,GAAG9U,EAAWBzC,YAAY,CAAC2Z,aAAekC,EAAetE,IAAM,2BAA2B,CAAC,IAAIIP,EAAQ5J,GA AQ6J,SAAS4E,GAAoB3E,EAAOF,GAASA,EAAQE,OAAO,IAAIa,EAAQ,OAAOA,EAAOIX,YAAY,CAACuX, IAAM,uBAAuB,OAAO,EAAE,SAASwE,KAASIY,KAAQ,SAASmY,GAA0BC,EAAKC,EAAOC,GAAQ,IAAIjp C,EAAKkpC,GAAiBF,EAAOC,GAAQ,OAAOpO,GAAWkO,GAAMrU,MAAM,KAAK10B,GAAM,SAASmpC,G AAKDC,EAAeC,IAAY,SAASC,GAAuBpG,EAAKqG,EAAlC,GAAS,GAAGtG,GAAM,GAAGA,EAAK3V,IAAm BjsB,SAAa,EAAL4hC,EAAU,OAAO,GAAG,GAAIpU,EAAGo,CAAC,GAAGwU,QAAQC,KAAK3V,IAAoBsV, GAAM,IAAIqG,EAAC,OAAO,EAAE,IAAIe,EAAK9W,YAAY8U,MAAUiC,EAAKD,EAAKD,EAAG,IAA7El G,QAAQqG,SAAS/b,IAAoB4V,IAAGC,EAAEN,KAAc,CAAwB,IAAvBuG,EAAK9W,YAAY8U,OAAciC,EAAY F,OAA1EpG,QAAQqG,SAAS/b,IAAoB4V,IAAGC,EAAE,IAAU,GAASf,GAAa,GAAvFF,QAAQqG,SAAS/b,IAA oB4V,IAAGC,EAAE,GAAMb,MAAQd,GAA/CkD,KAAkDpD,QAAQC,KAAK3V,IAAoBsV,GAAM,IAAIqG,EA AK,OAAO,EAAWjG,QAAQqG,SAAS/b,IAAoB4V,IAAGC,EAAEN,GAAM,OAAO,EAAh1B,IAAI3S,EAAl+S,Q AAQsG,KAAKhc,IAAoBsV,GAAM,EAAEqG,EAAlC,GAAS,GAAS,cAANjZ,EAakB,OAAO,GAAG,GAAS,cA ANA,EAakB,OAAO,EAAE,GAAS,OAANA,EAAW,OAAO,EAAE,KAAK,6CAA6CA,EAA+oB,SAASzZ,GAAu BC,EAAK1c,EAAl2c,GAAKpc,IAAmBqc,WAAWF,EAAK1c,EAAla,EAAl2c,GAAK,SAASE,KAAgC,OAAGjb, EAA2Bkb,GAAcC,OAAO7oC,OAAC8oC,UAA+B,oBAAE,SAAS3B,GAAoC9sB,EAAM0uB,GAAgK,IAA1J,IAA IC,EAAYtV,UAAU1zB,OAAO,EAAMizB,EAAME,KAAgB8V,EAASBD,EAAGbtqC,EAAKk0B,GAAiC,EAAtB qW,GAA6BnqC,EAAEJ,GAAM,EAAUyD,EAAE,EAAEA,EAAE6mC,EAAY7mC,IAAI,CAAC,IAAI63B,EAAlt G,UAAU,EAAEvxB,GAAGuqB,IAAoB5tB,EAAEqD,GAAG63B,EAAl,IAAI/K,EAAlia,GAA0C7uB,EAAM4uB, EAASBvqC,EAAKqqC,GAA0B,OAAPvV,GAAaP,GAACH,EAA91GnC,EAA4B,oBAAEsZ,GAAqEtZ,EAAYB, iBAAE0Z,GAAMf1Z,EAAYB,iBAAE2Z,GAA0VvD,GAARbxV,EAAYC,WAAW,IAAIze,EAAE6e,QAAgB,SAAI ,OAAy,IAAL7e,EAAE,GAAOA,EAAE,GAAG,KAAagf,EAA4C,WAAW,OAAOoD,YAAY8U,MAAMrZ,EAASc ,+BAA4B,oBAAVqc,QAA2CA,QAAiC,WAAW,OAAO9X,YAAY8U,OAA+8E,IAAlid,GAA+C,GAAGOC,GAAS B,GAAG,SAASzB,GAAiBF,EAAO1S,GAAoC,IAAIz,EAAW,IAA9CiV,GAASBrpC,OAAO,EAASg1B,IAAM,E AAQZ,EAAG/H,IAAmBqb,MAAU,CAAC,IAAI4B,EAAOIV,EAAG,IAAOkV,GAAY,EAAltU,GAAMA,IAAMq U,GAASB9IC,KAAK+IC,EAAO5c,IAAoBsI,KAAO,GAAG1I,IAAoB0I,MAAQA,EAAl,OAAOqU,GAASB,SAAS E,GAASClvB,EAAM2uB,EAAYtqC,GAAM0qC,GAA+CpPC,OAAOgpC,EAA0B,IAAd,IAAIllqC,EAAEJ,GAAM, EAAUyD,EAAE,EAAEA,EAAE6mC,EAAY7mC,IAAKinC,GAA+CjnC,GAAGuqB,IAAoB5tB,EAAEqD,GAAo

G,OAAhFkY,EAAM,EAAqDkf,IAAYlf,EAAM,GAA9CmvB,GAAqBnvB,IAAwC+Y,MAAM,KAAKgW,IAAgD,SAASK,KAA4B,OAAOpd,IAAmBrSb,OAAO,SAAS0pC,GAA0Bt/B,GAAM,IAAQg,OAAjG8hB,EAAWyd,KAAKv/B,EAAKxJ,EAAOi1B,WAAW,QAAQ,IAAI1J,EAA2BD,EAAWtrB,QAAe,EAAE,MAAMmkB,KAAK,SAAS6kB,GAAwBC,GAAe,IAAIC,EAAQL,KAA4B,GAAGI,GAAeC,EAAS,OAAO,EAAM,IAAIC,EAAY,WAAW,GAAGF,EAAe,EAAa,OAAO,EAAM,IAAI,IAAIC,EAAQ,EAAEA,GAAS,EAAEA,GAAS,EAAE,CAAC,IAAIC,EAkBH,GAAS,EAAE,GAAGE,GAA6N,GAAPNC,EAakBlgC,KAAKmgC,IAAID,EAakBJ,EAAc,WAAshH,GAA/F3/B,KAAKmgC,IAAIH,EAAYjV,EAAQ/qB,KAAKC,IAAI6/B,EAacI,GAAMb,SAA2E,OAAO,EAAM,OAAO,EAAM,IAAIE,GAAS,CAACC,eAAe,EAAEC,wBAAwB,WAAW,IAAI,IAAIloC,EAAEgoC,GAASG,cAActqC,OAAO,EAAEmC,GAAG,IAAIA,EAAGgoC,GAASI,eAAepoC,GAAGgoC,GAASG,cAAc,GAAGH,GAASK,cAAc,IAAIC,6BAA6B,WAAeN,GAASO,iCAAKFP,GAASO,gCAA+B,IAAOF,cAAc,GAAGG,UAAU,SAASC,EAAeC,EAAWC,GAAU,SAASC,EAAuBC,EAAKC,GAAM,GAAGD,EAAKhrC,QAAQirC,EAAKjrC,OAAO,OAAO,EAAM,IAAI,IAAIImC,KAAK6oC,EAAM,GAAGA,EAAK7oC,IAAI8oC,EAAK9oC,GAAG,OAAO,EAAM,OAAO,EA AK,IAAI,IAAIA,KAAKgoC,GAASK,cAAc,CAAC,IAAIU,EAAKf,GAASK,cAAcroC,GAAG,GAAG+oC,EAAK N,gBAAGbA,GAAgBG,EAAuBG,EAAKJ,SAASA,GAAW,OAAQX,GAASK,cAAcJnC,KAAK,CAACqnC,eAAe A,EAAeC,WAAWA,EAAWC,SAASA,IAAWX,GAASK,cAAcW,MAAK,SAASlqC,EAAEmqC,GAAG,OAAOnq C,EAAE4pC,WAAWO,EAAEP,eAAcQ,oBAAoB,SAAST,GAAgB,IAAI,IAAIzoC,EAAE,EAAEA,EAAEgoC,GA ASK,cAAcxqC,SAASmC,EAAMgoC,GAASK,cAAcroC,GAAGyoC,gBAAGbA,IAAgBT,GAASK,cAAc3zB,OA AO1U,EAAE,KAAKA,IAAKmpC,+BAA+B,WAAW,OAAOnB,GAASC,gBAAGbD,GAASoB,oBAAoBC,qBAAG BC,iBAAiB,WAAW,GAAItB,GAASmB,iCAAYC,IAAI,IAAIInC,EAAE,EAAEA,EAAEgoC,GAASK,cAAcxqC,S AASmC,EAAE,CAAC,IAAI+oC,EAAKf,GAASK,cAAcroC,GAAGgoC,GAASK,cAAc3zB,OAAO1U,EAAE,KA AKA,EAAE+oC,EAAKN,eAAexX,MAAM,KAAK8X,EAAKJ,YAAYR,cAAc,GAAGoB,OBAA0B,SAAShG,EAA OiG,GAAiB,IAAI,IAAIxpC,EAAE,EAAEA,EAAEgoC,GAASG,cAActqC,SAASmC,EAAMgoC,GAASG,cAAcno C,GAAGujC,QAAQA,GAAUIG,GAAiBA,GAAiBxB,GAASG,cAAcnoC,GAAGwpC,iBAAKbxB,GAASI,eAAepo C,MAAQooC,eAAe,SAASpC,GAAG,IAAIypC,EAAEzB,GAASG,cAAcnoC,GAAGypC,EAAEIG,OAAOmG,oB AAoBD,EAAED,gBAAGbC,EAAEE,kBAAKbF,EAAEG,YAAY5B,GAASG,cAAczzB,OAAO1U,EAAE,IAAI6p C,wBAAwB,SAASC,GAAC,IAAIC,EAAe,SAAwBC,KAAShC,GAASC,eAAeD,GAASoB,oBAAoBU,EAAa9B,G AASsB,mBAAMbQ,EAAaG,YAAYD,GAAOhC,GAASsB,qBAAGbT,GAASC,gBAAGb,GAAG6B,EAAaI,aAAc J,EAAaH,kBAAKbI,EAAeD,EAAavG,OAAO4G,iBAAiBL,EAAaN,gBAAGbO,EAAeD,EAAaF,YAAY5B,GAAS G,cAAc/mC,KAAK0oC,GAAC9B,GAASM,oCAAoC,IAAI,IAAItoC,EAAE,EAAEA,EAAEgoC,GAASG,cAActq C,SAASmC,EAAMgoC,GAASG,cAAcnoC,GAAGujC,QAAQuG,EAAavG,QAAQyE,GAASG,cAAcnoC,GAAGwp C,iBAAiBM,EAAaN,iBAAiBxB,GAASI,eAAepoC,MAASoqC,+BAA+B,SAASpH,EAAaqH,EAAiBC,EAAYC,E AAUC,GAAU,IAAIItG,EAASIT,KAAgByZ,EAAQha,GAAW,IAAIItG,IAAoBsgB,GAAS,GAAGH,EAAyngB,IAA oBsgB,EAAQ,GAAG,GAAGF,EAAUpGB,IAAoBsgB,EAAQ,GAAG,GAAGD,EAASE,GAA4B,EAAE1H,EAAa, UAAUqH,EAAiBE,EAAUE,GAASpZ,GAAa6S,IAAWyG,gCAAGC,SAAS3H,GAAC,OAAOA,GAAC,KAAK,EA AE,OAAO,EAAE,KAAK,EAAE,OAAOvM,GAAQqM,oCAAoC,QAAQ,OAAOE,IAAe4H,qBAAGb,SAASrH,GA AQ,OAAIA,EAAMBA,GAAQ9X,OAAa,UAAa8X,GAAQsH,OAAa,UAAiBtH,GAAQA,EAAOuH,SAASvH,EAA OuH,SAAS,GAAtH,IAA0HC,kBAAKb,WAAW,OAAOthB,SAASshB,mBAAMbthB,SAASuhB,OBAA0B,SAASC ,GAAGBC,GAAU,IAAIrtC,EAAO60B,EAAGBwY,GAAU,EAAMC,EAAQhK,GAAQtjC,GAA8C,OAAtC2yB,EA Aa0a,EAASC,EAAQtC,GAAestC,EAAQ,SAASC,GAAYDpI,EAAaqI,EAAaC,EAAMC,GAAQ,IAAIrH,EAASIT, KAAgByZ,EAAQha,GAAW,IAAQ+a,EAAGB,EAAKH,IAAcG,EAAGBP,GAAGBI,IAAcIhB,IAAoBsgB,GAAS,G AAGe,EAAGBrhB,IAAoBsgB,EAAQ,GAAG,GAAGa,EAAMnhB,IAAoBsgB,EAAQ,GAAG,GAAGc,EAAOb,GA A4B,EAAE1H,EAAa,UAAU,EAAEWI,EAAGBf,GAASpZ,GAAa6S,GAAU,SAASuH,GAASdzI,EAAaqI,EAAaC, EAAMC,GAAGEH,GAAYDpI,EAAjHqI,EAAaA,EAAana,EAAama,GAAC,GAASfC,EAAMC,GAAQ,SAASG,GA AuBP,GAAS,OAAOA,EAAQ,EAAEja,EAAaia,GAASA,EAAQ,IAAIQ,GAAMb,CAAC,EAAoB,oBAAXliB,SAA uBA,SAAS,EAakB,oBAATgC,OAAqBA,OAAO,GAAG,SAASmgB,GAAGBrI,GAakK,OAA1JA,EAAOmI,GAA uBnI,GAAuBoI,GAAMbPI,KAA4B,oBAAX9Z,SAAuBA,SAASoiB,cAActI,QAAQ3Z,GAA6B,SAASkiB,GAASb vI,GAAQ,OAAOqI,GAAGBrI,GAAQ,SAASwI,GAAMDxi,EAAO+H,EAAMC,GAAQ,IAAIS,EAAOF,GAASbvI, GAAQ,IAAIyI,EAAO,OAAO,EAAOI,GAARIA,EAAOC,kBAAiB9hB,IAAoB6hB,EAAOC,iBAAiB,GAAGX,EAA

MnhB,IAAoB6hB,EAAOC,gBAAGB,GAAG,GAAGV,IAAUS,EAAOE,iBAakBF,EAAOG,4BAAsd,OAAGH,EA  
AOC,iBAAmFR,GAajDthB,IAAoB6hB,EAAOC,gBAAGB,GAAG,GAAsE1I,EAAO+H,EAAMC,GAAe,IAAc,EA  
AhoBS,EAAOE,kBAAGBF,EAAOA,EAAOE,iBAAGB,IAAIE,GAAMb,EAAM,GAAGJ,EAAOK,aAAaL,EAAOK  
,YAAyC,MAAM,CAAC,IAAIC,EAAaP,EAAOK,YAAyC,MAAME,aAAa,MAAMJ,EAAqC,IAAIBG,EAAa,IAA  
0B,IAAIBA,EAAa,IAAQA,EAAa,KAAKP,EAAOV,OAAOiB,EAAa,KAAKP,EAAOT,OAA4U,OAArUS,EAAO  
V,MAAMA,EAAMU,EAAOT,OAAOA,EAAUa,GAAoBJ,EAAOK,YAAyC,MAAMG,SAAS,EAAE,EAAEnB,E  
AAMC,GAAiO,EAAE,SAASmB,GAAgDnJ,EAAO+H,EAAMC,GAAQ,OAAgzf,EAA8BkZ,GAAoC,EAAE,EAA  
EzB,EAAO+H,EAAMC,GAAeQ,GAAmDxI,EAAO+H,EAAMC,GAAQ,SAASoB,GAAoCpJ,EAAO+H,EAAMC,  
GAAiD,OAA9BO,GAASbvI,GAA0BwI,GAAmDxI,EAAO+H,EAAMC,GAAoBmB,GAAgDnJ,EAAO+H,EAAM  
C,GAAS,SAASqB,GAASChH,IAAY,SAASiH,GAA4BC,EAASC,IAAO,SAASC,GAASCC,GAAK,IAAIC,EAAID,  
EAAIE,aAAa,0BAA0B,GAAGD,EAAoX,OAA/WD,EAAyB,oBAAE,SAAS/0B,EAAMk1B,GAASF,EAA8B,yBA  
AEh1B,EAAMk1B,IAAUH,EAAyB,oBAAE,SAAS9xB,EAAKkyB,EAAM3N,EAAM4N,GAAWJ,EAA8B,yBAA  
E/xB,EAAKkyB,EAAM3N,EAAM4N,IAAYL,EAA2B,sBAAE,SAAS9xB,EAAKukB,EAAMxwB,EAAKgI,EAA  
Qo2B,GAAWJ,EAAgC,2BAAE/xB,EAAKukB,EAAMxwB,EAAKgI,EAAQo2B,IAAmB,EAAG,SAASC,GAAuC  
N,GAAK,IAAIC,EAAID,EAAIE,aAAa,2BAA2B,GAAGD,EAAqS,OAAhSD,EAAuB,kBAAE,WAAW,OAAOC,E  
AA0B,wBAAKD,EAAuB,kBAAE,SAASO,GAACKN,EAA0B,qBAAEM,IAAMP,EAAqB,gBAAE,SAASO,GAAK  
N,EAAwB,mBAAEM,IAAMP,EAAMb,cAAE,SAASO,GAAK,OAAON,EAAaB,iBAAEM,IAAa,EAAG,SAASC,  
GAAKCR,GAAK,IAAIC,EAAID,EAAIE,aAAa,sBAASB,GAAGD,EAAOE,OAArED,EAAiB,YAAE,SAASS,EAA  
EC,GAAMT,EAAaB,iBAAEQ,EAAEC,IAAc,EAAG,SAASC,GAAgCX,GAAK,SAASA,EAAIY,eAAeZ,EAAIE,a  
AAa,qBAAqB,IAAIW,GAAG,CAACC,QAAQ,EAAEC,QAAQ,GAAGC,SAAS,GAAGC,aAAa,GAAGC,cAAc,G  
AAGC,SAAS,GAAGC,SAAS,GAAGC,QAAQ,GAAGC,KAAK,GAAGC,SAAS,GAAGC,kBAakB,GAAGC,gBA  
AgB,GAAGC,aAAa,GAAGC,YAAy,GAAGC,gBAAGB,EAAEC,YAAy,SAAqBC,GAAejB,GAAGkB,YAAWIB,  
GAAGkB,UAAUD,IAAYE,SAAS,SAASC,GAA4B,IAArB,IAAIpiB,EAAIghB,GAAGC,UAAkB/tC,EAAEkvC,E  
AAMrxC,OAAOmC,EAAE8sB,EAAI9sB,IAAKkvC,EAAMlvC,GAAG,KAAK,OAAO8sB,GAAKqiB,UAAU,SA  
ASC,EAAO1P,EAAMrP,EAAOxyB,GAASB,IAAd,IAAIwxC,EAAO,GAAWrvC,EAAE,EAAEA,EAAE0/B,IAAQ  
1/B,EAAE,CAAC,IAAIuwB,EAAI1yB,EAAOssB,IAAoBtsB,EAAS,EAAFmC,GAAK,IAAI,EAAEqvC,GAAQne,  
EAAa/G,IAAoBkG,EAAS,EAAFrwB,GAAK,GAAGuwB,EAAI,OAAE3G,EAAU2G,GAAK,OAAO8e,GAAQC,c  
AAc,SAAStD,EAAOuD,GAAwB,IAAIItC,EAAIjB,EAAOwD,WAAW,QAAQD,GAAwB,OAAItC,EAAwBa,GAA  
G2B,gBAAGBxC,EAAIsC,GAAPc,GAA2EE,gBAAGB,SAASxC,EAAIsC,GAAwB,IAAIG,EAAOvO,GAAQ,GA  
AGhX,IAAoBulB,EAAO,GAAG,GAAG5N,KAAgB,IAAI6N,EAAQ,CAACD,OAAOA,EAAOE,WAAWL,EAAu  
BM,QAAQN,EAAuBO,aAAaxD,MAAMW,GAAqO,OAA7NA,EAAIjB,SAAOiB,EAAIjB,OAAOK,YAAySD,GA  
AQ7B,GAAGU,SAASkB,GAAQC,GAAqE,oBAAnDJ,EAAuBQ,2BAAyCR,EAAuBQ,4BAA2BjC,GAAGkC,eAA  
eL,GAAGBD,GAAQO,mBAAMb,SAASC,GAAwH,OAAzGpC,GAAGqC,eAAeR,GAAGU,SAAS0B,GAAevlB,E  
AAOSiB,IAAIX,GAAMwB,GAAgqC,gBAAGBrC,GAAGqC,eAAe7D,QAAc4D,IAAgB5D,KAAQkD,WAAW,SA  
ASU,GAAe,OAAOpC,GAAGU,SAAS0B,IAAgBE,cAAc,SAASF,GAAKBpC,GAAGqC,iBAAiBrC,GAAGU,SA  
S0B,KAAepC,GAAGqC,eAAe,MAA0B,iBAAXnI,IAAoBA,GAASuB,0BAA0BuE,GAAGU,SAAS0B,GAAe5D,  
MAAMN,QAAW8B,GAAGU,SAAS0B,IAAgBpC,GAAGU,SAAS0B,GAAe5D,MAAMN,SAAO8B,GAAGU,SA  
AS0B,GAAe5D,MAAMN,OAAOK,iBAAyziB,GAAUvN,GAAMyxB,GAAGU,SAAS0B,GAAeR,QAAQ5B,GAA  
GU,SAAS0B,GAAe,MAAMF,eAAe,SAASL,GAA+C,GAICA,IAAQA,EAAQ7B,GAAGqC,iBAakBR,EAAQU,  
mBAAX,CAAqCV,EAAQU,oBAAMb,EAAK,IAAI/D,EAAMqD,EAAQRD,MAAMU,GAASCV,GAAOiB,GAAu  
CjB,GAAOmB,GAAKCnB,GAAOA,EAAMgE,sBAASbHE,EAAMa,aAAa,4BAA4BS,GAAGCtB,IAAgBA,EAAMi  
E,0BAA0B,IAAQ/iC,SAAQ,SAAS0/B,GAAQA,EAAI7e,QAAQ,gBAAGB,GAAG6e,EAAI7e,QAAQ,SAAS,GAA  
Gie,EAAMa,aAAaD,QAASsD,qBAAqB,SAASC,GAA0O,IAAjO,IAAIr1B,EAAE0yB,GAAGG,SAASwC,GAAaC  
,EAAO5C,GAAGa,aAAa8B,GAAS,CAACpC,SAAS,GAAGsC,iBAAiB,EAAEC,oBAAoB,EAAEC,2BAA2B,GA  
AOC,EAAOJ,EAAOrC,SAAa0C,EAAYzE,GAAM0E,oBAAoB51B,EAAE,OAAepb,EAAE,EAAEA,EAAE+wC,I  
AAc/wC,EAAE,CAAC,IAAIuyB,EAAE+Z,GAAM2E,iBAAiB71B,EAAEpb,GAAO+sC,EAAXa,EAAEwa,KAA  
K2D,EAAOC,iBAAiB/oC,KAAKC,IAAI6oC,EAAOC,iBAAiB5D,EAAKlvC,OAAO,GAASB,KAAhBkvC,EAAK  
7oC,OAAO,KAAAS6oC,EAACA,EAAK7oC,MAAM,EAAE6oC,EAAXe,YAAy,OAAAM,IAAI2iB,EAAI5E,GAA

M6E,mBAAmB/1B,EAAE2xB,GAAM,GAAGmE,EAAI,CAAC,IAAI1zC,EAAGswC,GAAGmB,SAASnB,GAAG  
O,UAAUyC,EAAO/D,GAAM,CAACxa,EAAEtqB,KAAKzK,GAAIswC,GAAGO,SAAS7wC,GAAI0zC,EAAI,IA  
AI,IAAI5vC,EAAE,EAAEA,EAAEixB,EAAEtqB,OAAO3G,EAAE,CAAC,IAAIosC,EAAEX,EAAK,IAAIzrC,EA  
AE,IAAI4vC,EAAI5E,GAAM6E,mBAAmB/1B,EAAEsyB,GAAGlwC,EAAGswC,GAAGmB,SAASnB,GAAGO,  
UAAUP,GAAGO,SAAS7wC,GAAI0zC,OAAaE,GAAqC,CAAC,UAAU,YAAY,oBAAoB,SAASC,GAAoC9N,EA  
AOqM,GAAY,IAAIlzC,EAAEkzC,GAAY,EAAM0B,EAAGBnnB,IAAoBztB,KAAe60C,EAAkB,CAACr4B,QAA  
UiR,IAAoBztB,KAAU8gB,QAAU2M,IAAoBztB,KAAU80C,UAAymB,IAAoBztB,KAAU+0C,YAAActnB,IAAoB  
ztB,KAAWg1C,qBAAuBvnB,IAAoBztB,KAAWi1C,wBAA0BxnB,IAAoBztB,KAAW40C,gBAAkBF,GAAqCE,G  
AAiBM,+BAAiCznB,IAAoBztB,KAAWozC,aAAa3lB,IAAoBztB,KAAWm1C,aAAa1nB,IAAoBztB,KAAWqzC,0  
BAA0B5lB,IAAoBztB,MAAWo1C,oBAAoB3nB,IAAoBztB,MAAWq1C,yBAAYb5nB,IAAoBztB,MAAWs1C,6B  
AA6B7nB,IAAoBztB,OAAgBsvC,EAAOF,GAAsBvI,GAAQ,OAAIyI,EAAoBuF,EAAkBO,oBAA4B,EAAoBhE,  
GAAGwB,cAAActD,EAAOUf,GAA/F,EAAuI,SAASU,GAAiCC,EAAGC,GAAI,OAAOd,GAAoCa,EAAGC,GAAI,  
IAA4sQ7F,GAAxsQ8F,GAAS,CAACC,SAAS,GAAGrE,QAAQ,CAAC,KAAK,GAAG,IAAIse,UAAU,SAASC,E  
AAOC,GAAM,IAAI/zC,EAAO2zC,GAASpE,QAAQuE,GAakB,IAAPC,GAAiB,KAAPA,IAAQb,IAATD,EAAW  
p0C,EAAImxB,GAAKkC,EAAkbyB,EAAO,IAAIA,EAAOZ,OAAO,GAAOY,EAAO2C,KAAKoxC,IAAQ/H,aA  
AQ7gB,EAAUtsB,IAAI,WAakF,OAAvE80C,GAAS3H,SAAS,EAAUtgB,IAAoBioB,GAAS3H,QAAQ,GAAG,IA  
AegI,OAAO,SAASvgB,GAA+B,OAAIbhB,EAAagB,IAAiBwgB,MAAM,SAASC,EAAIC,GAAM,OAAOD,IAA  
M,SAASE,GAAUC,GAAI,OAAghnB,EAA8BkZ,GAAoC,EAAE,EAAE8N,GAAW,EAAE,SAASC,GAASD,EAA  
GE,EAAWC,EAAYC,EAAOC,GAAW,GAAGmB,EAauB,OAAOkZ,GAAoC,EAAE,EAAE8N,EAAGE,EAAWC,  
EAAYC,EAAOC,GAAW,SAASC,GAAUN,EAAGO,EAAIC,EAAOC,GAAM,GAAGznB,EAauB,OAAOkZ,GAA  
oC,EAAE,EAAE8N,EAAGO,EAAIC,EAAOC,GAAGb,IAAV,IAAIjN,EAAI,EAAUtmC,EAAE,EAAEA,EAAEsz  
C,EAAOtzC,IAAI,CAAqF,IAApF,IAAIkyB,EAAI/H,IAAoBkpB,EAAM,EAAFrzC,GAAK,GAAOUwB,EAAIpG,I  
AAoBkpB,GAAO,EAAFrzC,EAAI,IAAI,GAAWsB,EAAE,EAAEA,EAAEivB,EAAIjvB,IAAK8wC,GAASE,UAA  
UQ,EAAG5oB,IAAmBgI,EAAI5wB,IAAIglC,GAAK/V,EAAqC,OAAjCpG,IAAoBopB,GAAM,GAAGjN,EAAW,  
EAAE,SAASKn,GAAqBC,GAAS,IAAIC,EAAQjd,GAAQiL,mBAAmBG,MAAS4R,GAAQC,IAAU,SAASC,GA  
AsBD,EAAQ7b,GAAKpB,GAAQiL,mBAAmBtgC,MAAK,WAAWgyB,EAAU91B,IAAIo2C,EAAdtgB,CAAuBy  
E,MAAO,SAASqL,GAAy0Q,GAAC,GAAG9nB,EAauB,KAAK,sFAAsF,IAAIyU,EAAO9J,GAAQoN,eAAe,QA  
AoBja,IAAjB2W,EAAOF,QAAoB,KAAK,kBAakB,IAAIuT,EAAaxT,YAAY,KAAK,kCAakC3J,GAAQiK,eAAe  
t/B,KAAKm/B,GAAqC,IAA7B,IAAIc,EAAUF,GAAQ,KAAenhC,EAAE,EAAEA,EAAE,MAAMA,EAAGmqB,I  
AAoBkX,EAAy,EAAFrhC,GAAK,GAAG,EAAE,IAAI6zC,EAAUD,EAAarR,UAAUqR,EAAaE,UAAcZT,EAAQ  
5J,GAAQ6J,SAASsT,EAAaxT,aAAa,CAACG,OAAOA,EAAOGC,UAAUqR,EAAarR,UAAUuR,UAAUF,EAAaE,  
UAAUxR,kBAakBsR,EAAatR,kBAakBD,iBAAiBuR,EAAaxT,aAAiB2T,EAAIT,EAAQgC,kBAakB,EAAExC,  
QAAQyB,MAAMjX,IAAoB0pB,KAAyH,EAAaI,UAAUnU,QAAQyB,MAAMjX,IAAoB0pB,KAAa1S,GAAWxB  
,QAAQyB,MAAMjX,IAAoB0pB,KAAy1T,EAAQgC,kBAakBxC,QAAQyB,MAAMjX,IAAoB0pB,KAAyH,EA  
AaE,WAAWjU,QAAQyB,MAAMjX,IAAoB0pB,KAAyF,GAAWhU,QAAQyB,MAAMjX,IAAoB0pB,KAAaH,E  
AAaE,WAAWjU,QAAQyB,MAAMjX,IAAoB0pB,KAAeF,GAAWhU,QAAQyB,MAAMjX,IAAoB0pB,KAAgBH  
,EAAaI,UAAU,IAAkDC,EAAICC,KAA4D,GAAGrU,QAAQyB,MAAMjX,IAAoB0pB,KAAaE,GAAe1T,EAAOF,  
QAAQA,EAAQ,IAAI8T,EAAI,CAACvT,IAAM,MAAMwT,cAAgBR,EAAaS,aAAaxc,IAAM+b,EAAa/b,IAAIwK  
,iBAAmBuR,EAAaxT,YAAymC,UAAyqR,EAAarR,UAAUuR,UAAyF,EAAaE,WAAWvT,EAAO6C,WAAW,W  
AAW+Q,EAAIG,KAAKplB,YAAY8U,MAAMzD,EAAOIX,YAAY8qB,EAAIP,EAAaW,eAAkBhU,EAAO4C,SA  
AQ5C,EAAO6C,oBAAoB7C,EAAO6C,YAAY,SAASoR,GAAGbP,UAAyqU,EAACL,EAACvc,GAAK,GAA8B,  
oBAApBvO,kBAA4H,OAA3FgG,EAAI,uFAA8F,EAAE,IAAI8Q,EAASe,OAAzD9Q,EAAI,qDAA4D,GAAG,IAA  
IilB,EAAa,GAAe,GAAGzoB,GAA+C,IAAtByoB,EAAa12C,OAAoB,OAAO62C,GAAsC,UAAUtU,EAAyqU,EA  
AKL,EAAcvc,GAA2B,IAAIic,EAAU,EAAMvR,EAAU,EAAMyR,EAAS,EAAS,IAAa,GAAPA,GAAUX,EAAU  
3pB,IAAoBsqB,GAAM,GAAGX,GAAW,MAAMvR,EAAUpY,IAAoBsqB,EAAK,GAAG,GAAGT,EAA2C,IAAI  
C7pB,IAAoBsqB,EAAK,IAAI,IAAYX,EAAU,QAAQ,IAAIxR,EAA6B,GAAXC,EAAgBD,EAAMBC,EAAUoS,G  
AAU,GAAGb,GAAqC1tC,GAARbm8B,GAAWuR,GAA2B,GAAqC,IAAIC,IAAIzR,EAAiBIB,GAAQ,KAAanhC,  
EAAE,EAAEA,EAAE,KAAAS,EAAEqqB,KAAqBgY,GAakB,GAAGriC,GAAG,EAAEmqB,IAAoBiW,GAAa,G

AAGiC,EAAiBiY,IAAoBkY,EAAiB,IAAI,GAAGA,EAAiB,IAAIjB,EAAQiB,EAAiB,IAAIY,IAAoBiX,GAAS,G  
AAGA,EAAQ,IAAIwS,EAAa,CAACrR,UAAUA,EAAUuR,UAAUA,EAAUxR,kBAaKBA,EAAkB0R,SAASA,E  
AASK,aAAaD,EAACHU,YAAYiC,EAAiBxK,IAAIA,EAAI0c,aAAaA,GAA8I,OAA7HzoB,GAAwB8nB,EAAahT,  
IAAI,cAAcvX,YAAyUqB,EAAaW,IAAmBrR,GAAy0Q,GAAqB,EAAE,SAASgB,KAA0B,GAAI9oB,EAAJ,CAA  
kC,IAAIoV,EAAGY,KAAgB,GAAIZ,IAA6BrB,QAAQC,KAAKzV,IAAoB6W,EAAG,IAAI,IAAgG,GAAvDrB,Q  
AAQC,KAAKzV,IAAoB6W,EAAG,GAAG,GAaKB,KAAK,aAAY,SAAS2T,KAAwCtpB,GAA8BD,GAA6BiE,E  
AAS,4IAA4I,SAASulB,GAA6B/R,EAAO5X,EAAO4pB,GAAO,IAAIhS,EAAGe,OAAxDzT,EAAI,oDAA2DwI,G  
AAYG,MAAM,GAAgnM,GAAwBgW,MAAiBiB,EAAmE,OAA3DzT,EAAI,WAAWyT,EAAO,qCAA4CjL,GAA  
Y8C,QAAa,IAAI9O,GAAwBkpB,MAAsCjS,EAAuE,OAA/DzT,EAAI,eAAeyT,EAAO,qCAA4CjL,GAAy8C,QA  
AmD,GAAICzQ,IAAoB4Y,EAAO,IAAI,KAAaA,EAA+H,OAAvHzT,EAAI,oCAAoCyT,EAAO,wEAA+EjL,GAA  
YG,MAAKe,GAA/C4H,QAAQC,KAAKzV,IAAoB0Y,EAAO,IAAI,GAAwF,OAAxEzT,EAAI,4BAA4ByT,EAAO  
,iCAAwCjL,GAAyUB,OAAsD,IAA5C0b,GAAOF,OAA4C,CAAC,IAAII,EAApV,QAAQC,KAAKzV,IAAoB0Y,  
EAAO,GAAG,GAAG,GAAiB,GAAdkS,EAAGB,CAAC,IAAIC,EAAerV,QAAQC,KAAKzV,IAAoB0Y,EAAO,G  
AAG,GAAwN,OAAIN5X,IAAOHb,IAAoBgB,GAAQ,GAAG+pB,GAAerV,QAAQyB,MAAMjX,IAAoB0Y,EAA  
O,IAAI,EAAE,GAAOjX,EAAdZc,YAAY,CAACuX,IAAM,gBAAGBmC,OAASA,IAAvElC,GAACKC,GAAyE,E  
AAE,IAAIgS,EAAO,OAAOjd,GAAyIB,MAAM6b,KAA8B9oB,GAAuBmX,KAA+C4C,GAAuB9C,EAAO,EAA  
EkS,EAAanpB,EAAuB,IAAI,IAAI,SAASqpB,GAACP,S,EAAO5X,GAAQ,OAAO2pB,GAA6B/R,EAAO5X,GAAO  
,GAAM,SAASiqB,GAASrI,GAAM,GAAGjhB,EAAuB,OAAOKz,GAAoC,EAAE,EAAE+H,GAAM,OAAOA,GA  
AM,KAAK,GAAG,OAAO,MAAM,KAAK,GAA8B,OAAOnF,OAAkB,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,  
KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GA  
AG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KAAK,  
GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KA  
AK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GA  
AG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KA  
AK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KA  
K,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KA  
AK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,  
KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,  
GAAG,OAAO,EAAE,KAAK,IAAI,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,EAAE,KAAK,IAAI,KAAK,I  
AAI,KAAK,IAAI,KAAK,GAAG,KAAK,GAAG,KAAK,IAAI,KAAK,IAAI,KAAK,IAAI,KAAK,GAAG,KAAK,G  
AAG,OAAO,EAAE,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,EAAE,OAAO,KAAK,K  
AAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAAG,KAAK,GAAG,KAAK,GAAG,OAAO,  
WAAW,KAAK,GAAG,KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,GAA  
G,KAAK,GAAG,OAAO,KAAK,KAAK,EAAE,OAAO,QAAQ,KAAK,EAAE,OAAO,MAAM,KAAK,GAAG,OA  
AO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,MAAM,KAAK,GAAG,OAAO,IAAI,KAAK,G  
AAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,GAAG,OAAO,IAAI,KAAK,EAAE,OAAO,IAAI,KAAK,I  
AAI,OAAO,GAAG,KAAK,GAAG,OAAO,GAAG,KAAK,EAAE,OAAO,GAAG,KAAK,EAAE,OAAO,EAAE,KA  
AK,GAAG,OAAO,EAAE,KAAK,GAAI,MAAsB,iBAAZjB,WAA4BA,UAA+B,qBAAY,EAAGB,OAAb9B,GAAS  
,KAAW,EAAM/Y,GAAuB2K,GAAQuK,sBAAGc,IAA44fqU,GAAx4fhO,GAAqB,CAAC,KAAKtC,GAAQ2H,G  
AAgDmG,GAAUE,GAASK,GAAUgC,IAAcjf,GAAC,CAACvT,EAAI2hB,GAAe+Q,EAAI7Q,GAAa3lC,EAAIm  
mC,GAAiCtoC,EAAIyoC,GAAO6D,EAAI5D,GAA0B/jC,EAAIokC,GAAd7C,EAAIgD,GAAuB0P,EAAI/V,GA  
AuB/R,EAAIsT,GAAoB3lB,EAAIgrB,GAAuBoP,EAAIhP,GAA8BjU,EAAI6U,GAAsCqO,EAAIhO,GAAwBlnC,  
EAAI4sC,GAAoC3sC,EAAI4sC,GAAsCpoB,EAAIqoB,GAA4BIW,EAAIsb,GAAiCyD,EAAI7C,GAAUnF,EAAIq  
F,GAAS4C,EAAIvC,GAAUwC,EAAIje,GAAEj7B,EAAIqtB,GAAYY,EAAmB,WAAEkrB,EAAIrc,GAAqB1oC,  
EAAI6oC,GAAsBIK,EAAI+K,GAAGbSb,EAAIX,GAACroC,EAAIsoC,IAAmC3gB,IAAjBwB,KAAoCtL,EAA2B,  
mBAAE,WAAW,OAAO8J,GAAmB9J,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,aAA6sV4P,I  
AAvrVxW,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyC5G,  
EAAiC,yBAAE,WAAW,OAAgCA,EAAiC,yBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAmC5G,EAA

2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAiC5G,EAAYB,  
iBAAE,WAAW,OAAwBA,EAAYB,iBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAA  
E,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAA  
W,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA  
YA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,  
KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAc,MAAEA,E  
AAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAA  
K,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAK,GAAGs  
G,MAAM,KAAKM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAA  
M,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAA  
KM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAGB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YA  
AsB5G,EAAc,MAAE,WAAW,OAAaA,EAAc,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA6B5G,EA  
AqB,aAAE,WAAW,OAAoBA,EAAGB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,Q  
AAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,  
WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAA  
W,OAA YA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA  
,EAAc,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAAW,OAAsBA,EA AuB,  
eAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EAAGB,QAAEA  
,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,I  
AAK,GAAGsG,MAAM,KAAKM,YAAuC5G,EAA+B,uBAAE,WAAW,OAA8BA,EAA+B,uBAAEA,EAAY,IAA  
K,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAK,GAAGs  
G,MAAM,KAAKM,YAAuB5G,EA Ae,OAAE,WAAW,OAAcA,EA Ae,OAAEA,EAAY,IAAM,IAAGsG,MAAM,K  
AAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YA  
A+B5G,EAAuB,eAAE,WAAW,OAAsBA,EA AuB,eAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,  
EA Ae,OAAE,WAAW,OAAcA,EA Ae,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EA AkB,UA  
AE,WAAW,OAAiBA,EA AkB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAAwB,gBAAE,W  
AAW,OAAuBA,EA AwB,gBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA6B5G,EAAqB,aAAE,WAAW,  
OAAoBA,EAAGB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsC5G,EAA8B,sBAAE,WAAW,OAA6  
BA,EAA8B,sBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB,QAAE,WAAW,OAAeA,EA  
AGB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EA AkB,UAAE,WAAW,OAAiBA,EA AkB,U  
AAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,E  
AAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IA  
AM,IAAGsG,MAAM,KAAKM,YAA2B5G,EA AmB,WAAE,WAAW,OAAkBA,EA AmB,WAAEA,EAAY,IAAM,  
IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAc,MAAEA,EAAY,IAAM,IAAGsG,M  
AAM,KAAKM,YAA2B5G,EA AmB,WAAE,WAAW,OAAkBA,EA AmB,WAAEA,EAAY,IAAM,IAAGsG,MAA  
M,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM  
,YAA4B5G,EAAoB,YAAE,WAAW,OAAmBA,EA AoB,YAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA  
qB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAi  
B,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,  
WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAc,MAAE,WAAW,  
OAAaA,EAAc,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,E  
AAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SA  
AEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EA AmB,WAAE,WAAW,OAAkBA,EA AmB,WAAEA  
,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EA AkB,UAAE,WAAW,OAAiBA,EA AkB,UAAEA,EAAY,  
IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAA YA,EAAa,KAAEA,EAAY,IAAM,IAA  
GsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,  
MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MA  
AM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,

KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAK  
M,YAAwB5G,EAagB,QAAE,WAAW,OAAeA,EAagB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA  
uB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa  
,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,W  
AW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAa  
A,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB  
,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,E  
AAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM  
,IAAGsG,MAAM,KAAKM,YAAgC5G,EAawB,gBAAE,WAAW,OAAuBA,EAawB,gBAAEA,EAAY,IAAM,IA  
AGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,M  
AAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,OAAyBA,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAA  
M,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,  
YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,  
EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EA  
kB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SA  
E,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW  
,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,  
EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MA  
AEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAagB,QAAE,WAAW,OAAeA,EAagB,QAAEA,E  
AAY,IAAM,IAAGsG,MAAM,KAAKM,YAAmC5G,EA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EA  
AY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,I  
AAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,  
MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KA  
AKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA  
qB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EA  
c,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,W  
AAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAA  
aA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EA  
AmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAm  
B,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAA  
EA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAagB,QAAE,WAAW,OAAOwW,GAAQxW,EAagB  
,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAagBIV,GAAMsO,EAac,MAAE,WAAW,OAAOtO,GAAM  
sO,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBuT,GAakBna,EAA0B,kBAAE,WAAW,OA  
AOma,GAakBna,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB2iB,GAA4BvpB,EAAoC,4  
BAAE,WAAW,OAAOupB,GAA4BvpB,EAAoC,4BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBuQ,  
GAAcnX,EAAsB,cAAE,WAAW,OAAOmX,GAAcnX,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,  
YAAgBwQ,GAAyBpX,EAaiC,yBAAE,WAAW,OAAOoX,GAAyBpX,EAaiC,yBAAEA,EAAY,IAAM,IAAGsG,  
MAAM,KAAKM,YAAgB0R,GAA6CtY,EAaqD,6CAAE,WAAW,OAAOsY,GAA6CtY,EAaqD,6CAAEA,EAAY  
,IAAM,IAAGsG,MAAM,KAAKM,YAAsSiQ,IAAtO7W,EAawD,gDAAE,WAAW,OAAuDA,EAawD,gDAAEA,  
EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA4D5G,EAaoD,4CAAE,WAAW,OAAO6W,GAA4C7W,EAaoD,4  
CAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAagByjB,GAAMCrqB,EAA2C,mCAAE,WAAW,OAAOqqB,  
GAAMCrqB,EAA2C,mCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmG,GAAMC/M,EAA2C,mCA  
AE,WAAW,OAAO+M,GAAMC/M,EAA2C,mCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBmjB,GA  
AsC/pB,EAA8C,sCAAE,WAAW,OAAO+pB,GAAsC/pB,EAA8C,sCAAEA,EAAY,IAAM,IAAGsG,MAAM,KAA  
KM,YAAgBwV,GAA0Cpc,EAakD,0CAAE,WAAW,OAAOoc,GAA0Cpc,EAakD,0CAAEA,EAAY,IAAM,IAAG  
sG,MAAM,KAAKM,YAAgBmZ,GAA4B/f,EAaoC,4BAAE,WAAW,OAAO+f,GAA4B/f,EAAoC,4BAAEA,EA  
Y,IAAM,IAAGsG,MAAM,KAAKM,YAA0LgQ,IAArJ5W,EAa6B,qBAAE,WAAW,OAA4BA,EAa6B,qBAAEA,  
EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyC5G,EAaiC,yBAAE,WAAW,OAAO4W,GAAyB5W,EAaiC,yB



AAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAAgBP,GAAUrG,EAakB,UAAE,WAAW,OAAOqG,GAAUrG,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBF,GAAa1G,EAaqB,aAAE,WAAW,OAAO0G,GAAa1G,EAaqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBd,GAAW9F,EAAMb,WAAE,WA AW,OAAO8F,GAAW9F,EAAMb,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB6S,GAA6BzZ,EA AqC,6BAAE,WAAW,OAAOyZ,GAA6BzZ,EAaqC,6BAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgB ojb,GAAUhqB,EAakB,UAAE,WAAW,OAAOgqB,GAAUhqB,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM, KAAKM,YAAgBkR,GAA6C9X,EAaqD,6CAAE,MAAUoV,GAA+BpV,EAACu,+BAAE,MAA8J,SAASsC,GAA W9B,GAAQ4qB,KAAKhJ,KAAK,aAAagJ,KAAKtS,QAAQ,gCAAgCtY,EAAO,IAAI4qB,KAAK5qB,OAAOA,E AAqH,SAAS6qB,GAAIz5C,GAA4B,KAAgM4B,GAAGb,GAAnB,CAA6B,GAAG5I,EAAGg,OAAxErB,EAAoB E,GAAQwJ,UAAc9K,YAAY,CAACuX,IAAM,WAakB7M,KAAyW,GAAGb,IAA2O/J,EAakB,WAAGA,EAak B,UAAE,cAAc8M,YAAW,WAAWA,YAAW,WAAW9M,EAakB,UAAE,MAAK,GAAGsrB,MAAS,IAAQA,KA AjX,SAASA,IAAWZ,KAAiBA,IAAU,EAak1qB,EAakB,WAAE,EAQIF,IAAUe,KAAcC,KAAU3J,EAAoBE, GAAWA,EAAB6,sBAAEA,EAAB6,uBAAI0J,QAawL,SAASiP,GAACKnY,EAAO+qB,GAAU,IAAGA,IAAUvmB ,GAawB,IAATxE,EAAB5,CAA+C,IAAI+qB,GAAapqB,EA+A,E,MAAvDzC,YAAY,CAACuX,IAAM,cAAcV, WAAahrB,IAAE,IAAI8B,GAAW9B,GAakBwE,IAAQb8G,GAAQ2L,sBAAyDzX,EAae,QAAEA,EAae,OAAEQ ,GAAQyE,GAAM,GAAK1E,EAAMC,EAAO,IAAI8B,GAAW9B,KAAS,GAA32CR,EAAC,MAAEtuB,EAAMsuB ,EAAGb,QAAE8L,GAAQ9L,EAAGb,QAAE8L,GAAQ9L,EAAMb,WAAEZ,EAAWY,EAAMb,WAAEsC,GAAUJ 0H,GAAsB,SAASyhB,IAAGbf,IAAUW,KAAUX,KAAU1gB,GAAsByhB,IAA2lBzrB,EAAY,IAAEqrB,GAA4Yrr B,EAAGb,QAAiF,IAAjD,mBAAnBA,EAAGb,UAAcA,EAAGb,QAAE,CAACA,EAAGb,UAASA,EAAGb,QAAE 9sB,OAAO,GAAG8sB,EAAGb,QAAEKX,KAAIBIX,GAG5ymE,OAHO0mEmB,IAAwB6D,GAAC,EAAM8G,GA AQgL,cAAauU,KAGp4mExsB,EAAB6sB,QAKrC/f,UAAiB9M,8BCfnB,IACMD,EADF+sB,GACE/sB,EAaiC,o BAAbE,UAA4BA,SAASC,cAAgBD,SAASC,cAAcC,SAAMC,EACHf,oBAAfC,aAA4BN,EAAaA,GAACm,qBAE 3DysB,GAGT,IAA2E7rB,EAAoBC,EAAB3FC,EAakC,oBAFpC2rB,EAAoBA,GAaqB,IAEOA,EAakB,GAA8C3r B,EAAC,MAAE,IAAIC,SAAQ,SAASC,EAQC,GAAQL,EAAoBI,EAQh,EAAMBI,KAAS,IAA2BC,EAavBC, EAAGb,GAAW,IAAID,KAAOJ,EAWA,EAAMC,eAAeF,KAAMC,EAAGBD,GAAKJ,EAAOI,IAAM,IAAyGM, GAAMb,EAAUC,GAAsB,EAAUC,GAAoB,EAAUC,GAaqB,EAAMH,EAAMC,iBAATI,OAakBH,EAAB6C,mBA AhBI,cAA2BH,EAaqC,iBAAVI,SAA8C,iBAAnBA,QAAQC,UAAoD,iBAAxBD,QAAQC,SAASC,KAAgBL,GA AsBH,IAAQBE,IAAsBD,EAAsB,IAA4JS,EAAMC,EAAUC,EAAB8BC,EAAWC,EAajNC,EAAGb,GAAG,SAASC ,EAAWC,GAAM,OAAG3B,EAAMb,WAAUA,EAAMb,WAAE2B,EAAKF,GAawBA,EAAGBE,EAAB8Ef,GAA+ Ca,EAavBd,EAACkB,GAAGBC,QAAQL,GAAiB,IAAyBM,UAAU,IAAIX,EAAM,SAAoBY,EAASC,GAAUH, OAA3GV,IAAOA,EAAOw,IAAkBV,IAASA,EAASK,IAAGbG,EAASR,EAAoB,UAAEQ,GAAiBT,EAaqB,aAA ES,EAASC,EAAO,KAAK,SAASX,EAAW,SAAoBU,GAAU,IAAIG,EAIf,EAAMY,GAAS,GAAiE,OAAvDG,E AAIruB,SAAQquB,EAAL,IAAIvuB,WAAWuuB,IAAK1mB,EAAO0mB,EAIruB,QAAequB,GAAQnB,QAAc,K AAe9tB,OAAO,GAAe8tB,QAAc,KAAE,GAAGoB,QAAQ,MAAM,KAAgBpB,QAAc,KAAEznB,MAAM,GAAG ynB,QAAY,GAAE,qBAAoB,SAASqB,GAAL,KAAKA,aAAcC,IAAa,MAAMD,KAAmrB,QAAY,GAAE,qBAAq BuB,IAAUdVc,EAAGb,QAAE,WAAW,MAAM,+BAAsCa,GAAsC,oBAANgC,OAAMbZB,EAAM,SAAoB0B,G AAG,OAAOD,KAAKC,KAAIxB,EAAW,SAAoBwB,GAAG,IAAIC,EAAK,MAAuB,mBAAbC,WAAgC,IAAIpv B,WAAWovB,WAAWF,KAA0BrnB,EAaqB,iBAA3CsnB,EAAKF,KAAKC,EAAE,YAAgDC,IAA4B,oBAAZE, YAAoCA,WAA2J,oBAARE,QAAYc,oBAAVV,UAsBA,QAAQ,IAAGA,QAAQW,IAAID,MAAMV,QAAQY,K AAKZ,QAAQC,MAAwB,oBAAXY,SAAuBA,SAASH,SAAEzC,GAAoBC,KAA0BA,EAuBc,EAAGB8B,KAAK C,SAASC,KAA+B,oBAAX3E,UAAwBA,SAASC,gBAAE0C,EAAGB3C,SAASC,cAAcC,KAAOJ,IAAY6C,EAAG B7C,GAAoD6C,EAAL,IAAnCA,EAAGBiC,QAAQ,SAA8BjC,EAAGBkC,OAAO,EAAEIC,EAAGBmC,YAAY,K AAK,GAawB,GAAIxC,EAAM,SAASyC,GAAK,IAAIC,EAAL,IAAIC,eAAwD,OAAzCD,EAAIE,KAAK,MAAM H,GAAI,GAAOC,EAAIG,KAAK,MAAaH,EAAII,cAAiBvD,IAAUbw,EAAW,SAASuC,GAAK,IAAIC,EAAL,IA AIC,eAAuF,OAAxED,EAAIE,KAAK,MAAMH,GAAI,GAAOC,EAAIK,aAAa,cAAcL,EAAIG,KAAK,MAAa,IA AIrW,WAAWkwB,EAAIM,YAAW/C,EAU,SAASwC,EAAIQ,EAAOC,GAAS,IAAIR,EAAL,IAAIC,eAAeD,E AAIE,KAAK,MAAMH,GAAI,GAAMC,EAAIK,aAAa,cAAcL,EAAIO,OAAO,WAA0B,KAAZP,EAALtD,QAAYb ,GAAZsD,EAALtD,QAAWsD,EAAIM,SAAUC,EAAOP,EAAIM,UAAiBE,KAAWR,EAAIQ,QAAQA,EAQR,E

AAIG,KAAK,QAAkE,IAAiYQ,EAAkMrF,EAA/jB5rB,EAAIwsB,EAAc,OAAgYc,QAAQW,IAAIsB,KAAKjC,S  
AAakC,EAAI3E,EAAiB,UAAgYc,QAAQY,KAAKqB,KAAKjC,SAAS,IAAIrC,KAAOC,EAAoBA,EAAGBC,eA  
AeF,KAAMJ,EAAOI,GAACK,EAAgBD,IAAMC,EAAgB,KAAQL,EAAkB,WAAaA,EAAkB,UAAKA,EAAoB,a  
AAcA,EAAoB,YAAKA,EAAa,MAAQA,EAAa,KAAoBA,EAAMb,aAAEY,EAAWzE,EAAMb,YAAoBA,EAAS  
B,cAAgC,iBAAd1B,aAAwBiE,GAAM,mCAAKD,IAAI0C,GAAM,EAAqB,SAASxpB,EAAOuc,EAAU6M,GAAU  
7M,GAAWuK,GAAM,qBAaQBsC,GAAO,SAASK,EAASC,GAAO,IAAIC,EAAKpF,EAAO,IAAIImF,GAAuF,OA  
AhF1pB,EAAO2pB,EAAK,gCAAqCD,EAAM,8BAAqCC,EAAK,SAASC,EAAMF,EAAMG,EAAWC,EAAS3zB,  
EAAK4zB,GAAM,IAAIC,EAAI,CAACC,OAAAS,SAASC,GAAK,IAAIxD,EAAI,EAAE,GAAGwD,MAAAA,GAA  
mC,IAANA,EAAQ,CAAC,IAAIC,EAAoB,GAAfD,EAAIzyB,QAAQ,GAAyB2yB,EAAaF,EAAjCxD,EAAI2D,G  
AAWF,GAA0BA,GAAK,OAAOzD,GAAK4D,MAAQ,SAASC,GAAK,IAAI7D,EAAI2D,GAAWE,EAAI9yB,QA  
AoC,OAA5B+yB,EAAMBD,EAAI7D,GAAYA,IAAsJiD,EAAKF,EAASC,GAAWe,EAAM,GAAOC,EAAM,EAA  
E,GAAGv0B,EAAM,IAAI,IAAIyD,EAAE,EAAEA,EAAEzD,EAAKsB,OAAOmC,IAAI,CAAC,IAAI+wB,EAAU  
X,EAAIF,EAASlwB,IAAO+wB,GAAsB,IAARD,IAAUA,EAAME,MAAYH,EAAM7wB,GAAG+wB,EAAUx0B,  
EAAKyD,KAAS6wB,EAAM7wB,GAAGzD,EAAKyD,GAAK,IAAI8sB,EAAIiD,EAAKkB,MAAM,KAAKJ,GAA  
oE,OAA7D/D,EAArY,SAA4BA,GAAK,MAAgB,WAAbmD,EAA6BiB,EAAapE,GAAqB,YAAbmD,EAA8BkB,Q  
AAQR,E,GAAYA,EAAiQsE,CAAmBtE,GAAGb,IAARgE,GAAUO,GAAaP,GAACH,EAAI,SAASzwB,EAAMyzB  
,EAAMG,EAAWC,EAASC,GAA4B,IAAIImB,GAA1BpB,EAASA,GAAU,IAA4BpwB,OAAM,SAASoP,GAAM,  
MAAc,WAAPA,KAAuD,MAAT,WAAb+gB,GAAqCqB,IAAcnB,EAAaN,EAASC,GAAc,WAAW,OAAOE,EAA  
MF,EAAMG,EAAWC,EAASqB,YAAiB,IAAgzD9yB,EAAOwrB,EAAMjO,EAABoO,EAA/0DmsB,EAAiC,oBA  
AdC,YAA0B,IAAIA,YAAY,aAAQ5sB,EAAU,SAAS4H,EAAkBC,EAAKxoB,EAAIyoB,GAA6D,IAA7C,IAAIC,  
EAAO1oB,EAAIyoB,EAAMb+kB,EAAOxtC,EAAUwoB,EAAKgiB,MAAWA,GAAQ9kB,MAAU8kB,EAAO,G  
AAGA,EAAOxtC,EAAI,IAAIwoB,EAAKhpB,UAAU8tC,EAAa,OAAOA,EAAYG,OAAOjB,EAAKhpB,SAASQ,  
EAAIwtC,IAAyB,IAAX,IAAIImB,EAAI,GAASnB,EAAIwtC,GAAO,CAAC,IAAI7kB,EAAGH,EAAKxoB,KAA  
O,GAAQ,IAAH2oB,EAAL,CAAoD,IAAIC,EAAe,GAAZJ,EAAKxoB,KAAU,GAAa,MAAN,IAAH2oB,GAAJ,C  
AAmE,IAAIE,EAAe,GAAZL,EAAKxoB,KAAmG,IAAvE2oB,EAAL,MAAN,IAAHA,IAAqB,GAAHA,IAAQ,GA  
AGC,GAAI,EAAEC,GAAe,EAHF,IAAO,GAAGC,GAAL,GAAGC,GAAL,EAAc,GAAZL,EAAKxoB,MAAgB,M  
AAOqnB,GAAKyB,OAAOC,aAAaJ,OAAQ,CAAC,IAAIK,EAAGL,EAAG,MAAMtB,GAAKyB,OAAOC,aAAa,  
MAAMC,GAAL,GAAG,MAAS,KAAHA,SAA3Q3B,GAAKyB,OAAOC,cAAiB,GAHJ,IAAQ,EAAEC,QAAIHv  
B,GAAKyB,OAAOC,aAAaJ,GAA2U,OAAOtB,EAAI,SAASY,EAAagB,EAIR,GAAgB,OAAOQ,EAAIV,EAAK  
BxV,EAAOkW,EAIR,GAAgB,GAAG,SAASS,EAAkB7B,EAAImB,EAAKW,EAAOC,GAAiB,KAAKA,EAAG  
B,GAAG,OAAO,EAA0D,IAAxD,IAAIC,EAASF,EAAWT,EAAOS,EAAOC,EAAGb,EAAUryB,EAAE,EAAEA,E  
AAEswB,EAAIzyB,SAASmC,EAAE,CAAC,IAAIuyB,EAAEjC,EAAIkC,WAAWxyB,GAAoF,GAA9EuyB,GAA  
G,OAAOA,GAAG,QAAkCA,EAAE,QAAU,KAAFA,IAAS,IAAO,KAA9CjC,EAAIkC,aAAaxyB,IAAqCuyB,GA  
AG,IAAI,CAAC,GAAGH,GAAQT,EAAO,MAAMF,EAAKW,KAAUG,OAAO,GAAGA,GAAG,KAAK,CAAC,G  
AAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,GAAG,EAAEd,EAAKW,KAAU,IAAM,GAAF  
G,OAAU,GAAGA,GAAG,MAAM,CAAC,GAAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,G  
AAG,GAAGd,EAAKW,KAAU,IAAIG,GAAG,EAAE,GAAGd,EAAKW,KAAU,IAAM,GAAFG,MAAS,CAAC,G  
AAGH,EAAO,GAAGT,EAAO,MAAMF,EAAKW,KAAU,IAAIG,GAAG,GAAGd,EAAKW,KAAU,IAAIG,GAA  
G,GAAG,GAAGd,EAAKW,KAAU,IAAIG,GAAG,EAAE,GAAGd,EAAKW,KAAU,IAAM,GAAFG,GAAqB,OA  
Afd,EAAKW,GAAQ,EAASA,EAAOE,EAAS,SAAS9B,EAAaF,EAAImC,EAAOJ,GAAiB,OAAOF,EAAkB7B,E  
AAItU,EAAOyW,EAAOJ,GAAiB,SAASzB,EAAMBF,EAAMjyB,GAAQwrB,EAAMrpB,IAAI8vB,EAAMjyB,G  
AAQ,SAASk0B,EAAQ7zB,EAAE8zB,GAakD,OAARc9zB,EAAE8zB,EAAS,IAAG9zB,GAAG8zB,EAAS9zB,E  
AAE8zB,GAAGb9zB,EAAwE,SAASkrB,EAA2B6I,GAAKp0B,EAAOo0B,EAAIII,EAAc,MAAEV,EAAM,IAAI6  
I,UAAUD,GAAKII,EAAe,OAAS,IAAIoI,WAAWF,GAAKII,EAAe,OAAP,EAAO,IAAI5rB,WAAWq0B,GAAKI  
I,EAAe,OAAE3O,EAAO,IAAIzd,WAAWs0B,GAAKII,EAAGB,QAAU,IAAIqI,YAAYH,GAAKII,EAAGB,QAAU  
,IAAI5I,YAAYJ,GAAKII,EAAGB,QAAU,IAAIuI,aAAaL,GAAKII,EAAGB,QAAU,IAAIwI,aAAaN,GAAwBII,EA  
AuB,eAA1C,IAA0DyI,EAAcO,EAAa,GAAOC,EAAW,GAAOC,EAAW,GAAOC,EAAc,GAAYF,SAASC,IAAS,G  
AAGpJ,EAAe,OAA8E,IAA/C,mBAAlBA,EAAe,SAACa,EAAe,OAAE,CAACA,EAAe,SAASA,EAAe,OAAE9sB,

QAAQm2B,EAAYrJ,EAAe,OAAEsJ,SAAUC,GAAqBP,GAAC,SAASQ,IAAsCD,GAAqBN,GAAY,SAASQ,IAAUF,GAAqBL,GAAY,SAASQ,IAAU,GAAG1J,EAAGB,QAAiF,IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UASA,EAAGB,QAAE9sB,QAAQy2B,EAAa3J,EAAGB,QAAEsJ,SAAUC,GAAqBJ,GAAe,SAASE,EAAYO,GAAlZ,EAAaa,QAAQD,GAAl,SAASD,EAAaC,GAAlT,EAACU,QAAQD,GAA9tBX,EAAWxyB,KAAK,CAAC2uB,KAAK,WAAW0E,QAAisB,IAAIC,EAAGB,EAAoCC,EAAsB,KAAK,SAASC,EAAiBp3B,GAlk3B,IAAqB/J,EAA+B,wBAAGA,EAA+B,uBAAE+J,GAAkB,SAASG,EAAoBr3B,GAA6G,GAAzGk3B,IAAqB/J,EAA+B,wBAAGA,EAA+B,uBAAE+J,GAAqC,GAAjBA,GAAqHC,EAAsB,CAAC,IAAIG,EAASH,EAAsBA,EAAsB,KAAKG,KAAuE,SAAS5H,GAAM6H,GAASpK,EAAGB,SAAGA,EAAGB,QAAEoK,GAAezF,EAATyF,GAAM,IAAanF,GAAM,EAakBmF,EAAK,SAASA,EAAK,+CAA+C,IAAIInS,EAAE,IAAIqG,YAAY+L,aAAaD,GA4B,MAAtBrK,EAAMb9H,GAASA,EAAE,SAASqS,GAAU3E,EAAl4E,GAAQ,OAAOnD,OAAOoD,UAAUC,WAAW9E,EAAl8E,WAAWF,GAA8B,IAAtB5E,EAAljC,QAAQ6G,GAATzV,KAAwB,gBAAE,GAAGA,EAAwB,gBAAE,GAA2W,IAAI0K,GAAC,wCAAwC,SAASC,GAAU3I,GAAU,OAAOsI,GAAUti,EAAS0I,IAAe,IAAIE,GAAC,UAAU,SAASC,GAAU7I,GAAU,OAAOsI,GAAUti,EAAS4I,IAAe,IAAIE,GAAe,yBAaK,G,SAASC,GAAUC,GAAM,IAAI,GAAGA,GAAMF,IAAGBrG,EAAY,OAAO,IAAI7wB,WAAW6wB,GAAY,GAAgnD,EAAY,OA AOA,EAAW0J,GAAW,KAAK,kDAAMd,MAAMrG,GAAKpC,GAAMoC,IAAM,SAASsG,KAAmB,IAAIxG,IA Aa/D,GAAoBC,GAAuB,CAAC,GAAkB,mBAARuK,QAAqBL,GAAUC,IAAiB,OAAOI,MAAMJ,GAAe,CAACK ,YAAY,gBAAgBC,MAAK,SAAShH,GAAU,IAAIA,EAAa,GAAG,KAAK,uCAAUc0G,GAAe,IAAI,OAAO1G,E AAsB,iBAAMiH,OAAM,WAAW,OAAON,GAAUD,OAAuB,GAAGzJ,EAAW,OAAO,IAAIpB,SAAQ,SAASC,E AAQC,GAAQkB,EAAYyJ,IAAe,SAAS1G,GAAUIE,EAAQ,IAAIItsB,WAAWwwB,MAAYjE,MAAY,OAAOF,Q AAQC,UAAUkL,MAAK,WAAW,OAAOL,GAAUD,OAAkB,SAASQ,KAAa,IAAIC,EAAK,CAACx5B,EAAlY5B ,IAAe,SAASC,EAAGBC,EAASC,GAAQ,IAAIC,EAAQF,EAASE,QAAQ5L,EAAY,IAAE4L,EAAsCvM,GAA9B D,EAAWY,EAAY,IAAK,GAAwClS,B,QAAQ20B,EAAUzI,EAAY,IAAK,EAAEK,IAA6E,SAASgC,EAAl0BC,G AAQV,EAAGBU,EAAlB,UAAG,SAASC,EAAlBC,GAAU,OAAOpB,KAAmBG,MAAK,SAASnJ,GAAQ,OAAO 3D,YAAYgO,YAAYrK,EAAsJ,MAAQH,KAAKiB,GAAS,SAASE,GAAQ5H,EAAl,0CAA0C4H,GAAQhK,GA AMgK,MAAomB,GAA37BtC,IAA87BjK,EAAwB,gBAAG,IAAGe,OAAhDA,EAAwB,gBAAEuL,EAAKE,GAAG C,MAAMxT,GAAGe,OAA7D0M,EAAl,sDAAsD1M,IAAU,EAAdO,OAAxyBwM,GAASD,mBAAnCnG,YAAYk O,sBAAoC7B,GAAUG,KAAkBD,GAAUC,KAAgC,mBAARI,MAAsYkB,EAAlBF,GAAlYhB,MAAMJ,GAAe,C AACK,YAAY,gBAAgBC,MAAK,SAAShH,GAAqE,OAAhD9F,YAAYkO,qBAAqBpI,EAASmH,GAAoBH,KAA Kc,GAA0B,SAASK,GAAGuG,OAAlF5H,EAAl,kCAAKc4H,GAAQ5H,EAAl,6CAAoDyH,EAAlBF,UAAkTb,MA AMtL,GAA0B,GAAG,SAASwJ,GAAqB0D,GAAW,KAAMA,EAAl/5B,OAAO,GAAE,CAAC,IAAlI3B,EAAS8 C,EAAl3D,QAAQ,GAAoB,mBAAVa,EAAlV,CAA0D,IAAI/E,EAAK+E,EAAS/E,KAAsB,iBAAPA,OAAMCnG, IAAlfL,EAAS+C,IAAlBzE,EAAl91B,IAAlYyB,EAAdqD,GAA2BA,EAAl91B,IAAlYyB,EAAdqD,CAAoB0B,E AAS+C,KAAW9H,OAAlBnG,IAAlfL,EAAS+C,IAAGB,KAAK/C,EAAS+C,UAAxN/C,EAASnK,IAAsN,SAASy a,KAAISY,KAAQ,SAASKZ,GAAuBC,EAAK1c,EAAl2c,GAAKtqB,EAAlOuqB,WAAWF,EAAK1c,EAAlIA,EAAl 2c,GAAK,SAASgB,KAA4B,OAAOtrB,EAAlOne,OAAO,SAAS0pC,GAA0Bt/B,GAAM,IAAqG,OAAlj8hB,EA WYd,KAAKv/B,EAAKxJ,EAAlOi1B,WAAW,QAAQ,IAAlI1J,EAAl2BD,EAAlWtrB,QAAe,EAAlE,MAAMmkB,KAA K,SAAS6kB,GAAwBC,GAAe,IAAIC,EAAL,KAAGCM,EAAY,WAAW,GAAGF,EAAlE,EAAlA,OAAO,EAAl M,IAAl,IAAIC,EAAlQ,EAAlEA,GAAS,EAAlEA,GAAS,EAAlE,CAAC,IAAIC,EAAlkBH,GAAS,EAAlE,GAAGE,G AA6N,GAAlpNC,EAAlkBlG,KAAKmgC,IAAlID,EAAlkBj,EAAlC,WAAshH,GAA/F3/B,KAAKmgC,IAAlIH,EA AlYjV,EAAlQ/qB,KAAKC,IAAlI6/B,EAAlC,GAAmB,SAA2E,OAAO,EAAM,OAAO,EAAlhgHxS,GAAUG,MAAlBA ,GAAlpJ,EAAlWoj,KAAi9G,IAAl2c,GAAS,CAACC,SAAS,GAAlGrE,QAAQ,CAAC,KAAK,GAAG,IAAlIsE,UA AU,SAASC,EAAlOC,GAAM,IAAl/zC,EAAlO2zC,GAASpE,QAAQuE,GAAkB,IAAlPC,GAAlB,KAAAPA,IAAlqB,I AAlTD,EAAlWp0C,EAAlImxB,GAAKkC,EAAlkB/yB,EAAlO,IAAlIA,EAAlOZ,OAAO,GAAOY,EAAlO2C,KAAKox C,IAAlQ/H,aAAQ7gB,EAAlUtsB,IAAl,WAAqE,OAAlD80C,GAAS3H,SAAS,EAAlUrgB,EAAlOgoB,GAAS3H,Q AAQ,GAAG,IAAlEgI,OAAO,SAASvgB,GAA+B,OAAlBhB,EAAlagB,IAAlBwgB,MAAM,SAASC,EAAlC,GAAM ,OAAlOD,IAAM,SAASE,GAAUC,GAAl,OAAO,EAAlE,SAASC,GAASD,EAAGE,EAAlWC,EAAlYC,EAAlOC,IA AlAY,SAASC,GAAUN,EAAGO,EAAlC,EAAlOC,GAAGB,IAAlV,IAAlIjN,EAAlE,EAAlUtmC,EAAlE,EAAlEA,EAAlEs zC,EAAlOtzC,IAAl,CAA2D,IAAl1D,IAAlIkyB,EAAlI9H,EAAlOipB,EAAM,EAAlFrzC,GAAK,GAAOuwB,EAAlnG

,EAAOipB,GAAO,EAAFrzC,EAAI,IAAI,GAAWsB,EAAE,EAAEA,EAAEivB,EAAIjvB,IAAK8wC,GAASE,UA  
AUQ,EAAG92B,EAAOkW,EAAI5wB,IAAIgIc,GAAK/V,EAawB,OAApBnG,EAAOmpB,GAAM,GAAGjN,EA  
AW,EAAE,SAASKo,KAakB,OAAO,EAAE,SAASW,KAagB,OAAO,GAAG,SAAStQ,GAAS/vB,GAA4C,OAAr  
CsV,EAAO0a,MAAqB,GAAGhwB,EAAaA,EAAM,SAASsgC,GAASrI,GAAM,OAAOA,GAAM,KAak,GAAG,  
OAAO,MAAM,KAak,GAA8B,OAAOnF,OAakB,KAak,IAAI,KAak,IAAI,KAak,GAAG,KAak,IAAI,KAak,  
,IAAI,KAak,GAAG,KAak,IAAI,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,K  
AAK,IAAI,KAak,GAAG,KAak,GAAG,KAak,IAAI,KAak,IAAI,KAak,EAAE,KAak,GAAG,KAak,GAAG  
,KAak,IAAI,KAak,IAAI,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,IAAI,KAak,GAAG,KAak,GA  
AG,KAak,GAAG,KAak,IAAI,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,KA  
AK,GAAG,KAak,GAAG,KAak,GAAG,OAAO,OAAO,KAak,GAAG,KAak,IAAI,KAak,IAAI,KAak,IAAI,  
KAak,GAAG,KAak,GAAG,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,K  
AAK,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,K  
AAK,GAAG,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,GAAG,KAA  
K,GAAG,KAak,GAAG,KAak,IAAI,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,OAAO,EAAE,K  
AAK,IAAI,KAak,IAAI,KAak,EAAE,KAak,IAAI,KAak,EAAE,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAA  
K,GAAG,KAak,GAAG,KAak,IAAI,KAak,IAAI,KAak,IAAI,KAak,GAAG,KAak,GAAG,OAAO,EAAE,K  
AAK,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,KAak,EAAE,OAAO,KAak,KAak,GAAG,KAak,  
GAAG,KAak,GAAG,OAAO,GAAG,KAak,GAAG,KAak,GAAG,KAak,GAAG,OAAO,WAAW,KAak,GAA  
G,KAak,EAAE,OAAO,MAAM,KAak,GAAG,KAak,GAAG,OAAO,GAAG,KAak,GAAG,KAak,GAAG,OA  
AO,KAak,KAak,EAAE,OAAO,QAAQ,KAak,EAAE,OAAO,MAAM,KAak,GAAG,OAAO,MAAM,KAak,G  
AAG,OAAO,MAAM,KAak,GAAG,OAAO,MAAM,KAak,GAAG,OAAO,IAAI,KAak,GAAG,OAAO,IAAI,K  
AAK,GAAG,OAAO,IAAI,KAak,GAAG,OAAO,IAAI,KAak,EAAE,OAAO,IAAI,KAak,IAAI,OAAO,GAAG,  
KAak,GAAG,OAAO,GAAG,KAak,EAAE,OAAO,GAAG,KAak,EAAE,OAAO,EAAE,KAak,GAAG,OAAO,  
EAAE,KAak,GAAL,MAAsB,iBAAZjB,WAA4BA,UAA+B,qBAAY,EAAgB,OAAb9B,GAAS,KAaw,EAAE,IA  
A0zXwQ,GAAtzXIf,GAAC,CAACz5B,EAAI0oC,GAAOvC,EAAIuD,GAABxjB,EAAI6kB,GAAwBha,EAAIolB,  
GAAU0C,EAAIxC,GAASp2C,EAAIy2C,GAAU3J,EAAI+K,GAAGBmB,EAAIR,GAACn1C,EAAIo1C,IAAmC3g  
B,IAAjBwB,KAAoCtL,EAA2B,mBAAE,WAAW,OAAO8J,GAAMb9J,EAA2B,mBAAEA,EAAY,IAAK,GAAGs  
G,MAAM,KAakM,aAAg6VuT,IAA14Vna,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAG  
sG,MAAM,KAakM,YAAyC5G,EAAiC,yBAAE,WAAW,OAAgCA,EAAiC,yBAAEA,EAAY,IAAK,GAAGsG,M  
AAM,KAakM,YAAmC5G,EAA2B,mBAAE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IAAK,GAAGsG,MA  
AM,KAakM,YAAiC5G,EAAyB,iBAAE,WAAW,OAAwBA,EAAyB,iBAAEA,EAAY,IAAK,GAAGsG,MAAM,  
KAakM,YAA8B5G,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAak  
M,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAA  
qB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAqB5G,EAA  
a,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAsB5G,EAAc,MAAE,W  
AAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAqB5G,EAAa,KAAE,WAAW,OAA  
yA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,  
KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAE  
A,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAyB5G,EAAiB,SAAE,WAAW,OAAgBA,EAAiB,SAAEA,EAA  
Y,IAAK,GAAGsG,MAAM,KAakM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAA  
K,GAAGsG,MAAM,KAakM,YAAsB5G,EAAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGs  
G,MAAM,KAakM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAA  
M,KAakM,YAAwB5G,EAAgB,QAAE,WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAA  
KM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA6B,qBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,  
YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAsB5G,  
EAAc,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAA+B5G,EAAuB,e  
AAE,WAAW,OAAsBA,EAuB,eAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAAwB5G,EAAgB,QAAE,  
WAAW,OAAeA,EAAGB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAakM,YAA8B5G,EAAsB,cAAE,WAAW,

OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuC5G,EAA+B,uBAAE,WAAW,OAA8  
BA,EAA+B,uBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EA  
Aa,KAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA  
,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IA  
AK,GAAGsG,MAAM,KAAKM,YAA+B5G,EAAuB,eAAE,WAAW,OAAsBA,EAAuB,eAAEA,EAAY,IAAK,GA  
AGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAK,GAAGsG,MA  
AM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAK,GAAGsG,MAAM,K  
AAKM,YAAgC5G,EAAwB,gBAAE,WAAW,OAAuBA,EAAwB,gBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAA  
KM,YAA6B5G,EAAqB,aAAE,WAAW,OAAoBA,EAAqB,aAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YA  
AsC5G,EAA8B,sBAAE,WAAW,OAA6BA,EAA8B,sBAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAwB  
5G,EAagB,QAAE,WAAW,OAAeA,EAagB,QAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA0B5G,EA  
kB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SA  
AE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WA  
AW,OAAqBA,EAAsB,cAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,O  
AAkBA,EAAmB,WAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,  
EAac,MAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAm  
B,WAAEA,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA  
,EAAY,IAAK,GAAGsG,MAAM,KAAKM,YAA4B5G,EAAoB,YAAE,WAAW,OAAmBA,EAAoB,YAAEA,EA  
Y,IAAK,GAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,I  
AAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,  
MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,  
KAAKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,Y  
AAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,E  
AAiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,  
WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAA  
E,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAA  
W,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA  
4BA,EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,  
EAA6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqC5G,EAA6B,qBAAE,WAAW,OAA4BA,EAA  
6B,qBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UA  
AEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAagB,QAAE,WAAW,OAAeA,EAagB,QAAEA,E  
AAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM  
,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,  
MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KA  
AKM,YAAsB5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA  
yB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EA  
Ac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,  
WAAW,OAAcA,EAAe,OAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgC5G,EAAwB,gBAAE,WAAW,  
OAAuBA,EAAwB,gBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAg  
BA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,OAAyBA,EA  
A0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAA  
EA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAuB5G,EAAe,OAAE,WAAW,OAAcA,EAAe,OAAEA,EAAY,I  
AAM,IAAGsG,MAAM,KAAKM,YAA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAA  
M,IAAGsG,MAAM,KAAKM,YAA0B5G,EAakB,UAAE,WAAW,OAAiBA,EAakB,UAAEA,EAAY,IAAM,IAA  
GsG,MAAM,KAAKM,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MA  
AM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAK  
M,YAAyB5G,EAaiB,SAAE,WAAW,OAAgBA,EAaiB,SAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAs  
B5G,EAac,MAAE,WAAW,OAAaA,EAac,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAag

B,QAAE,WAAW,OAAeA,EAAgB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAmC5G,EAA2B,mBA  
AE,WAAW,OAA0BA,EAA2B,mBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,W  
AAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G,EAAsB,cAAE,WAAW,OA  
AqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EA  
Aa,KAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA  
,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAqB5G,EAAa,KAAE,WAAW,OAAyA,EAAa,KAAEA,EAAY,IA  
AM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGs  
G,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,  
KAAKM,YAAsB5G,EAAC,MAAE,WAAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,Y  
AA2B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA2  
B5G,EAAmB,WAAE,WAAW,OAAkBA,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAA8B5G  
,EAAsB,cAAE,WAAW,OAAqBA,EAAsB,cAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAwB5G,EAAGB  
,QAAE,WAAW,OAAeA,EAAgB,QAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAsB5G,EAAC,MAAE,W  
AAW,OAAaA,EAAC,MAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAkC5G,EAA0B,kBAAE,WAAW,O  
AAOma,GAakBna,EAA0B,kBAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,aAagBP,GAAUrG,EAakB,UA  
AE,WAAW,OAAOqG,GAAUrG,EAakB,UAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBF,GAAa1G,  
EAAqB,aAAE,WAAW,OAAO0G,GAAa1G,EAAqB,aAAEA,EAAY,IAAM,IAAGsG,MAAM,KAAKM,YAAgBd,  
GAAW9F,EAAmB,WAAE,WAAW,OAA08F,GAAW9F,EAAmB,WAAEA,EAAY,IAAM,IAAGsG,MAAM,KAA  
KM,YAAgD,SAAStE,GAAW9B,GAAQ4qB,KAAKhJ,KAAK,aAAaJ,KAAKtS,QAAQ,gCAAgCtY,EAAO,IAAI  
4qB,KAAK5qB,OAAOA,EAAqH,SAAS6qB,GAAIz5C,GAA+F,SAAS05C,IAAWZ,KAAiBA,IAAU,EAAK1qB,E  
AAkB,WAAE,EAAQIF,IAAauE,IAAcC,IAAU3J,EAAoBE,GAAWA,EAA6B,sBAAEA,EAA6B,uBAAIOJ,MAAp  
RK,EAAGB,IAAUX,IAAYW,EAAGB,IAA2O/J,EAakB,WAAGA,EAakB,UAAE,cAAc8M,YAAW,WAAWA,YA  
AW,WAAW9M,EAakB,UAAE,MAAK,GAAGsrB,MAAS,IAAQA,MAA2B,GAAxwBtrB,EAAC,MAAEtuB,EA  
kJs4B,EAAsB,SAASyhB,IAAgBf,IAAUW,KAAUX,KAAU1gB,EAAsByhB,IAAifzrB,EAAY,IAAEqrB,GAAOr  
B,EAAGB,QAAiF,IAAjD,mBAAnBA,EAAGB,UAAcA,EAAGB,QAAE,CAACA,EAAGB,UASA,EAAGB,QAAE  
9sB,OAAO,GAAG8sB,EAAGB,QAAEkX,KAAIBIX,GAGx14B,OAHM34BqrB,KAG524BM,EAakBD,QAKzB/f,  
UAAiBggB,WCuBNK,WAAoBC,GAK/BC,YAAmBz6C,GACjB06C,QADiBf,UAAA35C,EAHX25C,sBAAmB,E  
AKzBA,KAAK35C,KAAK26C,KAAKC,qBAAqBC,IACpCC,GAAqBnB,KAAK35C,KAAK26C,KAAKI,kBACp  
CpB,KAAK14C,UAAy,IAAI+5C,GAAyRb,KAAmsB,MAGzCR,MAAM1tC,EAAoCvL,EAAiBd,GAEdD,MAA  
MS,EAAS,CAACC,GAAIu4C,KAAKuB,oBAEzB,OADAvB,KAAkwB,KAAKh6C,EAAQ4L,EAAQvL,EAAOd,  
EAAO,GACjCS,EAGTs5C,aACE,OAAOd,KAAK14C,UAAUm6C,aAGxBX,WAAWppB,GACT,MAAMxO,EAA  
QjgB,EAAGlC,MACnBvW,IAEA,MAAO,CAACgqB,SADSz4C,EAAGlC,MAAQ/kB,GAIhC43B,KACIt5C,EA  
AgB4L,EAAoCvL,EACpDd,EAAiB46C,GACnB,MAAMl6C,EAaku4C,KAAKuB,mBACHB,GAAC,WAAVx6C,  
EAAoB,CACtB,MAAM4M,EAACp,EAIPB,YAHA4sC,KAAK14C,UAAUuD,IACXrD,EACA,CAACC,GAAAA,E  
AAIkM,YAAAA,EAAa9L,MAAAA,EAAOd,MAAAA,EAAO66C,aAAc,KAAMD,SAAAA,IAIID,MAAMzvC,E  
AAOjJ,EAAKC,cAAcrB,GAC1B6C,EAAW3vC,EAAOjJ,EAAG64C,gBAAGB/6C,GACvC66C,EAAe5B,KAAK  
35C,KAAK+kC,QAAQyW,GAEvC7B,KAAK14C,UAAUuD,IAAIrD,EAAQ,CAACC,GAAAA,EAAIm6C,aAAA  
A,EAAC/5C,MAAAA,EAAOd,MAAAA,EAAO46C,SAAAA,IAE5D3B,KAAK35C,KAAK26C,KAAKe,eAAet6C,  
EAAIyK,EAAM0vC,GAElB,MAAVxuC,GACF4sC,KAAK35C,KAAK4f,OAAOpb,IACb,IAAIrC,WACC4K,EA  
AmC1K,OACnC0K,EAAMc4uC,WAAyH,GACpDD,GAIRd,WAAWt5C,GACT,OAAOw4C,KAAKvsC,SAASj  
M,GAGvBs5C,SAASt5C,GACP,MAAMo6C,aACA,EAAY76C,MAAEA,EAakC,MAAEA,EAak8L,YAAEA,G  
AC/BqsC,KAAK14C,UAAUC,IAAIC,GACvB,GAAC,WAAVT,EACF,OAAO4M,EAKT,OAIqJ,SACIjL,EAAGB3  
B,GACvB,OAAQA,GACN,IAAK,UACH,OAAO,IAAIo2B,aAAaz0B,GAC1B,IAAK,QACH,OAAO,IAAID,WAA  
WC,GACxB,IAAK,OACH,OAAO,IAAIF,WAAWE,GACxB,QACE,MAAM,IAAI1B,MAAM,iBAAiBD,MA3Q5B  
k7C,CAHOjC,KAAK35C,KAAK4f,OAAO9X,MAC3ByzC,EACAA,EAae34C,EAAGC,cAAcrB,GAASoB,EAAG  
64C,gBAAGB/6C,IACIC2B,OAAQ3B,GAS5C+5C,YAAyt5C,EAAGB06C,GAAQ,GACIC,GAAIIC,KAAK14C,U  
AAU66C,IAAI36C,GAAS,CAC9B,MAAMmwB,EAAOqoB,KAAK14C,UAAUC,IAAIC,GAehC,GADAmwB,EA  
AKgqB,YACAO,GAASvqB,EAAGqB,SAAW,EAC5B,OAAO,EAGT3B,KAAK35C,KAAKigB,MAAMqR,EAA

KiqB,cACrB5B,KAAK35C,KAAK26C,KAAKrzC,YAAYgqB,EAAlwB,IACu4C,KAAK14C,UAAU86C,OA  
AO56C,GAExB,OAAO,EAITs5C,SAAS5C,GACP,GAAIw4C,KAAK14C,UAAU66C,IAAI36C,GAAS,CAE9B,O  
ADmBw4C,KAAK14C,UAAUC,IAAIC,GACpBm6C,SAEpB,OAAO,EAGTb,OAAOt5C,GACL,MAAMmwB,EA  
AOqoB,KAAK14C,UAAUC,IAAIC,GACpB,MAARmwB,GACFA,EAAGqB,WAITb,iBACE,OAAO,GAKTA,g  
BAAgBt5C,GACd,OAAOw4C,KAAK14C,UAAUC,IAAIC,GAAQo6C,aAGpCd,UACEd,KAAK35C,KAAK26C,  
KAAKqB,UACX,YAAArC,KAAK35C,MACpB25C,KAAK35C,KAAKq6B,QAAQ2L,sBAEpB2T,KAAK35C,KA  
AO,KAGdy6C,SACE,MAAO,CAACwB,YAAY,GAStBxB,WAAWj5C,EAAiBd,EAAiB66C,GAE3C,IAAIp6C,E  
ACJ,GAAoB,MAAhBo6C,EACFp6C,EAASw4C,KAAKuC,MAAM,KAAMb16C,EAAOd,OACzC,CACL,MAAM  
U,EAaku4C,KAAKuB,mBACHb/5C,EAAS,CAACC,GAAAA,GACVu4C,KAAK14C,UAAUuD,IAAIrD,EAAQ,  
CAACC,GAAAA,EAAIm6C,aAAAA,EAAC/5C,MAAAA,EAAOd,MAAAA,EAAO46C,SAAU,IACtE,MAAMzv  
C,EAAOjJ,EAAC,cAAcrB,GACChm4C,KAAK35C,KAAK26C,KAAKe,eAAet6C,EAAIyK,EAAM0vC,GAE1C,  
MAAO,CAACp6C,OAAAA,EAAQK,MAAAA,EAAOd,MAAAA,GAGzB+5C,oBAAMbj5C,MAACA,EAAKd,M  
AAEA,EAAS,OAEEA,IAEhC,MAAMkB,EAASs3C,KAAK35C,KAAK4f,OAAOvd,QAC1Bk5C,aACA,GAA  
gB5B,KAAK14C,UAAUC,IAAIC,GACpC0K,EAAOjJ,EAAC,cAAcrB,GACChC,OAAQd,GACN,IAAK,UACH,O  
AAO,IAAIo2B,aAAaz0B,EAAQk5C,EAAC1vC,GACHd,IAAK,QACH,OAAO,IAAIzJ,WAAWC,EAAQk5C,EAA  
c1vC,GAC9C,IAAK,OACH,OAAO,IAAI1J,WAAWE,EAAQk5C,EAAC1vC,GAC9C,QACE,MAAM,IAAIIL,MA  
AM,iBAAiBD,OA8BzC,SAASy7C,GACLC,EAawBC,EACxBC,GACF,GAAgB,MAAZC,GAGF,OAAOA,GAGT  
,IAAIrsB,EAAuB,yBAO3B,OANIKsB,GAAiBC,EACnBnsB,EAAO,uCACEksB,IACtIsB,EAAO,+BAGU,MAAfs  
sB,IACuB,MAArBA,GAAytsB,GACpssB,GAAytsB,GAihBosB,EAAMbpsB,EAUrBtD,eAAe6vB,KACpB,MAA  
OL,EAAeC,SAA0B7tB,QAAQkuB,IAAI,CAC1DhwB,KAAMiwB,SAAS,yBACfjwB,KAAMiwB,SAAS,kCAGjB,  
OAAO,IAAIInuB,SAAQ,CAACC,EAASC,KAC3B,MAAMkuB,EAAMC,CAOzC3sB,WAA2B,CAACC,EAAM4I,  
KACHc,GAAI5I,EAAK2sB,SAAS,cAAe,CAC/B,MACMC,EAAO,IAAIC,KAAK,CC9RI,mkGD8RQ,CAACjqC,K  
AAM,2BACzC,OAAOkqC,IAAIC,gBAAGBH,GAG7B,OAAI5sB,EAAK2sB,SAAS,SACTV,GACHC,EAA0BC,E  
ACR,MAAIba,GAAyBA,GAAiBpkB,GAezCA,EAAS5I,IAMditB,KACFP,EAACQ,gBA1FpB,SAAMClT,GAIJc,  
MAAO,CAACmtB,EAAC3kB,KACpB91B,EAAK62B,MAAMvJ,EAAM,CAACwJ,YAAa,gBAAGBC,MAAMhH,I  
AC9CA,EAAa,IAChB0qB,EAAQ3wB,IAAIpsB,EAAE,uCAAuC4vB,MAEvDyC,EAAS2qB,cAAc3jB,MAAKnJ,I  
AC1B3D,YAAYgO,YAAYrK,EAAQ6sB,GAAS1jB,MAAKe,IAC5ChC,EAASgC,EAAOT,SAAUS,EAAOR,iBAI  
hC,IA4EDqjB,CAA0BpB,GACtBC,EAA0BC,EACR,MAAIba,GAAyBA,GAAiB,MAGpD,IAkBII9C,EAIBaw9C,  
GAAc,EACIBZ,EAACA,QAAU,KACtB,GAAID,EAEF,OAEF,GAAIE,GAGF,OAEEFA,IAAc,EAIdhvB,EAAO,CA  
AC2Y,QAFJ,qMAOFgV,GAAoBD,GAA6B,MAAZG,IACvCK,EAAce,oBAAsB,IAAIZ,KACpC,CAAC,uCACAA,  
GAAwBC,YACzB,CAAC/qC,KAAM,oBACX9S,EAAO49C,GAAwBhB,IAG/B58C,EAAO89C,GAAYIB,GAkrB  
58C,EAAK25B,MAAMO,IACtSjB,GAAc,EACdE,IAAc,EAIdxjB,EAAOygB,KAAO,CACZ8B,KAAMviB,EAAO  
j6B,MAAM,OAAQ,KAAM,IACjC26C,qBACI1gB,EAAOj6B,MAAM,0BAA2B,KAAM,CAAC,WACnD86C,gBA  
AiB7gB,EAAOj6B,MAAM,oBAAqB,SAAU,IAC7Dy7C,eAAgBxB,EAAOj6B,MACnB,kBAAMb,KACnB,CAC  
E,SACA,SACA,WAENqH,YAAa4yB,EAAOj6B,MAAM,eAdG,KAc6B,CAAC,WAC3D+7C,QAAS9hB,EAAOj6  
B,MAAM,UAFo,KAEoB,KAGnDwuB,EAAQ,CAACzuB,KAAMk6B,UAMBrB,MAAM6jB,GAakB,CACtB,yBA  
A0B,8BAC1B,wCAIF,IAAIxB,GAAmB,KACnBW,GAAyB,KACzBV,GAakD,GACIDkB,IAAc,EACdP,IAAc,W  
AcFa,GAAy9tB,EAAc+tB,GAAmB,GAi3D,GAHAC,GACI,qGAEAR,GACF,MAAM,IAAI/8C,MACN,kiAGN47  
C,GAAWrsB,EACXitB,GAAcc,WA4BAE,GACZC,EACAH,GAAmB,GACrB,GAAIP,GACF,MAAM,IAAI/8C,M  
ACN,mIAKN,GAA+B,iBAApBy9C,EACTIB,GAAiBkB,MACZ,CACL5B,GAAc4B,EACd,MAAMC,EACFN,GA  
AgBntC,QAAO+/B,GAA6B,MAArB6L,GAAy7L,KAC/C,GAAI0N,EAAa58C,OAAS,EACxB,MAAM,IAAIId,MA  
EN,2DAAG09C,EAAaC,KAAK,qKAM7BnB,GAAcc,EAYhB,IAAIpD,IAAgB,EACHBC,IAAsB,WAQVyD,GAA  
gBC,GAC9B3D,GAAe2D,WAQDzD,KACd,IAA4B,IAAxBD,GACF,MAAM,IAAIIn6C,MAAM,iCAEIB,OAAOm  
6C,SEpfHrH,GAAU,SCwBhBgL,GAAgB,QAAQ7xB,UACtB,MAAM5sB,KAACA,SAACy8C,KACrB,OAAO,IA  
AIIC,GAAyV6C,KAHH" }

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-

wasm.fesm.min.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Max.js","sourceRoot":"","sources":["../../src/kernels/Max.ts"],"names":[],"mappings":"AAAA;;
;GAG;AAEH,OAAO,EAAC,YAAY,EAA4B,GAAG,EAAmC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI
zH,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AACvD,OAAO,EAAC,QAAQ,EAAC,MAAM,SAA
S,CAAC;AAEjC,IAAI,OACI,CAAC;AAET,SAAS,KAAC,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,I
AAI,CAAC,KAAC,CAAC,GAAG,EAAE,IAAI,CAAC,QAAQ,EAAE;QAC/C,QAAQ;QACR,QAAQ;QACR,QAA
Q;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC
,OAAO,EAAE,MAAM,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,gBAAgB,EAAE,IAAI,E
AAE,QAAQ,EAAC,GAAG,KAAC,CAAC;IACjD,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,
MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,
CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAC,GAAG,CAAC,CAAC;IAEd,MAAM,EAA
C,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAaKB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE
,OAAO,CAAC,CAAC;IAE9C,IAAI,kBAaKB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC
,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAC,GAAG,UAAU,CAAC;QACn
B,OAAO,GAAG,YAAY,CAAC;KACxB;IAED,MAAM,SAAS,GAAG,KAAC,CAAC,KAAC,CAAC,MAAM,CA
AC;IACrC,YAAY,CAAC,0BAA0B,CAAC,KAAC,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACHe,MAAM,CAA
C,QAAQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,yBAAyB,CAAC,KAAC,CAAC,KAAC,EAAE,IAAI,CA
AC,CAAC;IAC9D,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GA
AG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACID,IAAI,IAAI,
CAAC,aAAa,CAAC,KAAC,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACzC,MAAM,KAAC,GAAG,OAAO,
CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,
OAAO,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE,UAAU,EAAE,KAAC,CAAC,CAAC;KACxD;I
AED,IAAI,kBAaKB,EAAE;QACtB,oCAAoC;QACpC,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CA
AC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;QACZ,UAAU;QACV,MAAM,QAAQ,GAAG,YAAY,CAAC,oBA
AoB,CAAC,GAAG,CAAC,KAAC,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAC,GAAG,QAAQ,C
AAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,SAAS,GAAiB;IACrC,U
AAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IACb,UAAU,EAAE,GAAuB;C
ACpC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n *\nimport {backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmMax: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n 'number', // x_id\n 'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n\n function max(args: {backend:
BackendWasm, inputs: MaxInputs, attrs: MaxAttrs}):
TensorInfo {\n const {backend, inputs, attrs} = args;\n const {reductionIndices, keepDims} = attrs;\n const {x} = inputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes,
inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input = transposed;\n inputId =
```



```

transposedId;\n }\n\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('max',
axes, inputRank);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmMax(inputId, CppDType[x.dtype], reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the
transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n
return out;\n}\n\nexport const maxConfig: KernelConfig = {\n kernelName: Max,\n backendName: 'wasm',\n
setupFunc: setup,\n kernelFunc: max as {} as KernelFunc\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Max.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"AvgPool.js","sourceRoot":"","sources":["../../src/kernels/AvgPool.ts"],"names":[],"mappings":
"AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,OAAO,EAA+B,YAAY,EAAqC,MAAM,uBAAuB,CAAC;AAI7H,I
AAI,WAI6D,CAAC;AAEIE,SAAS,KAAC,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,K
AAK,CAAC,OAAO,EAAE,IAAI,CAAC,UAAU,EAAE;QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QA
AQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QA
CR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAw
E;IACIE,MAAM,EAAC,MAAM,EAAE,KAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEtC,MAAM,CAAC
,GAAG,MAAM,CAAC,CAAA,CAAC;IAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,
CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE/C,MAAM,EAAC,UAAU,EAAE,OAAO,EAAE,GAAG,E
AAE,eAAe,EAAC,GAAG,KAAC,CAAC;IAC1D,MAAM,QAAQ,GAAG,YAAY,CAAC,iBAAiB,CAC3C,CAAC,
CAAC,KAAC,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,CAAC,eAAe,EAAE,GAAG,EAAE,eAAe,CAAC,CAA
C;IAE3E,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,W
AAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,QAA
Q,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAC,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAA
C,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,YAA
Y,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,M
AAM,QAAQ,GAAG,QAAQ,CAAC,UAAU,CAAC;IAEtC,IAAI,QAAQ,CAAC,UAAU,KAAC,cAAc,EAAE;QAC
1C,MAAM,IAAI,KAAC,CACX,4CAA4C;YAC5C,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC;KAC5
D;IAED,IAAI,QAAQ,CAAC,aAAa,KAAC,CAAC,IAAI,QAAQ,CAAC,cAAc,KAAC,CAAC,EAAE;QACjE,MAA
M,IAAI,KAAC,CACX,oEAAoE;YACpE,QAAQ,QAAQ,CAAC,cAAc,KAAC,QAAQ,CAAC,aAAa,IAAI,CAAC,
CAAC;KACrE;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,
CAAC,CAAC;IAC7D,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM
,CAAC,CAAC,EAAE,CAAC;IAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,
EAAE,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,EAAE,YA
AY,EAAE,WAAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAAE,WAAW,EA
AE,QAAQ,EACzE,KAAC,CAAC,CAAC;IACX,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MA
AM,aAAa,GAAiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IA
ChB,UAAU,EAAE,OAA2B;CACxC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES

```

OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport {AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmAvgPool: (\n xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth: number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, strideHeight: number,\n strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // channels\n 'number', // outId\n]);\n}\n\nfunction avgPool(\n args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n const {inputs, attrs, backend} = args;\n\n const x = inputs.x as Tensor4D;\n const xId = backend.dataIdMap.get(x.dataId).id;\n\n const {filterSize, strides, pad, dimRoundingMode} = attrs;\n const convInfo = backend_util.computePool2DInfo(\n x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const channels = convInfo.inChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend does not support dataFormat: ` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n }\n\n if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n throw new Error(\n `was backend only supports average pooling with dilation = [1, 1], ` +\n `got [${convInfo.dilationHeight}, ${convInfo.dilationWidth}].`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmAvgPool(\n xId, x.shape[0], x.shape[1], x.shape[2],\n filterHeight, filterWidth,\n padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n outId);\n return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n kernelName: AvgPool,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: avgPool as {} as KernelFunc\n};\n\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/AvgPool.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"GatherV2.js","sourceRoot":"","sources":["../src/kernels/GatherV2.ts"],"names":[],"mappings":\n\"AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAy,EAAE,QAAQ,EAA2F,IAAI,EAAC,MAAM,uBAAuB,CA\nAC;AAI5J,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AACIC,OAAO,EAAC,QAAQ,EAAC,MAAM,S\nAAS,CAAC;AAEjC,IAAI,UAGsB,CAAC;AAE3B,SAAS,KAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,C\nAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,CAAC,QAAQ,EAAE;QACvD,QAAQ;QACR,QAAQ;QAC\nR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACP,QAAQ,CAAG,QAAQ;KACpB,CAA\nC,CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CACb,IAA0E;IAE5E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE\n,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAE,OAAO,EAAC,GAAG,MAAM,CAAC;I\nAC5B,MAAM,EAAC,IAAI,EAAE,SAAS,EAAC,GAAG,KAAK,CAAC;IAEhC,8CAA8C;IAC9C,MAAM,UAAU,\nGAAG,IAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACzD\n,MAAM,WAAW,GAAG,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAE,CAAC;IACnE,MAAM,OA\nAO,GAAG,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,CAAC;IACpC,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE\n,CAAC,GAAG,WAAW,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QAC3C,MAAM,KAAK,GAAG,WAAW,CA\nAC,CAAC,CAAC,CAAC;QAC7B,IAAI,CAAC,MAAM,CACP,KAAK,IAAI,OAAO,GAAG,CAAC,IAAI,KAAK,I
```

```

AAI,CAAC,EACIC,GAAG,EAAE,CACD,6BAA6B,KAAK,kBAakB,OAAO,GAAG,CAAC,GAAG,CAAC,CAAC
;KAC7E;IAED,MAAM,SAAS,GAAG,YAAY,CAAC,YAAY,CAAC,wBAAwB,CAChE,CAAW,EAAE,OAAiB,E
AAE,UAAU,EAAE,SAAS,CAAC,CAAC;IAE3D,MAAM,QAAQ,GAAG,OAAO,CAAC;QACvB,MAAM,EAAE,
EAAC,CAAC,EAAC;QACX,KAAK,EAAE;YACL,KAAK,EAAE;gBACL,SAAS,CAAC,SAAS,EAAE,SAAS,CA
AC,SAAS,EAAE,SAAS,CAAC,OAAO;gBAC3D,SAAS,CAAC,SAAS;aACpB;SACF;QACD,OAAO;KACR,CAA
C,CAAC;IACH,MAAM,WAAW,GAAG,IAAI,CAAC,aAAa,CAAC,OAAO,CAAC,KAAK,CAAC,CAAC;IACtD,
MAAM,YAAY,GAAG,OAAO,CAAC;QAC3B,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,EAAC;QACpB,KAA
K,EAAE,EAAC,KAAK,EAAE,CAAC,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS,CAAC,E
AAC;QACxE,OAAO;KACR,CAAC,CAAC;IACH,MAAM,kBAakB,GAAG;QACzB,SAAS,CAAC,SAAS,EAAE,
SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS;QAC3E,SAAS,CAAC,SAAS;KACpB,CAAC;IA
EF,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,kBAakB,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IA
C5D,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,OAAO,GAAG,
CAAC;KACZ;IACD,MAAM,WAAW,GAAG,QAAQ,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,CAAC;IAE9
C,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IACr
D,MAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IAErB,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CA
AC,GAAG,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC;IAC/D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,C
AAC;IAEjC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,C
AAC,EAAE,CAAC;IAEnD,MAAM,aAAa,GAAG,IAAI,UAAU,CAChC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,C
AAC,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAChE,MAAM,eAAe,GAAG,IAAI,UA
AU,CACIC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,kBAakB,CAAC,CAAC,CAAC,MAAM,CAAC,CAA
C;IAEpE,UAAU,CACN,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,aAAa,EAAE,WAAW,
EAAE,SAAS,EAC7D,SAAS,CAAC,SAAS,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC;IAEjD,OAAO,CAAC,WA
AW,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IACrC,OAAO,CAAC,WAAW,CAAC,YAAY,CAAC,MAAM,C
AAC,CAAC;IAEzC,UAAU;IACV,GAAG,CAAC,KAAK,GAAG,SAAS,CAAC,WAAW,CAAC;IACIC,OAAO,GA
AG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,cAAc,GAAiB;IAC1C,UAAU,EAAE,QAAQ;IACpB,W
AAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,QAA4B;CACzC,CAAC", "sourcesConte
nt":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,
TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {reshape} from './Reshape';\n\nimport {CppType} from './types';\n\nlet wasmGather:
(\n xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n indicesId: number, batchSize:
number, outStrides: Uint8Array,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n 'number', // xId\n 'number', // dtype\n 'array',
// xStrides\n 'number', // stridesSize\n 'number', // indicesId\n 'number', // batchSize\n 'array', //
outStrides\n 'number' // outId\n]);\n\nfunction gatherV2(\n args: {backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs}): \n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {x,
indices} = inputs;\n const {axis, batchDims} = attrs;\n\n // Throw error when any index is out of bound.\n const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n const axisDim = x.shape[parsedAxis];\n for (let i = 0; i < indicesVals.length; ++i) {\n const index
= indicesVals[i];\n util.assert(\n index <= axisDim - 1 && index >= 0,\n () =>\n `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]);\n }\n\n const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n x as Tensor, indices as Tensor, parsedAxis,

```

```

batchDims);\n\n const flattenX = reshape({\n inputs: {x},\n attrs: {\n shape: [\n shapeInfo.batchSize,\n shapeInfo.outerSize, shapeInfo.dimSize,\n shapeInfo.sliceSize\n]\n },\n backend\n });\n const
indicesSize = util.sizeFromShape(indices.shape);\n const flattenIndex = reshape({\n inputs: {x: indices},\n attrs:
{shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n backend\n });\n const flattenOutputShape =
[\n shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n shapeInfo.sliceSize\n];\n\n const out = backend.makeOutput(flattenOutputShape, x.dtype);\n if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n }\n const stridesSize = flattenX.shape.length - 1;\n const xData =
backend.dataIdMap.get(flattenX.dataId);\n const xId = xData.id;\n\n const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n const indicesId = indicesData.id;\n\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const xStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n const outStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n wasmGather(\n xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n shapeInfo.batchSize, outStridesBytes, outId);\n\n
backend.disposeData(flattenX.dataId);\n backend.disposeData(flattenIndex.dataId);\n\n // reshape\n out.shape =
shapeInfo.outputShape;\n return out;\n }\n\n\nexport const gatherV2Config: KernelConfig = {\n kernelName:
GatherV2,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherV2 as { } as KernelFunc\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/GatherV2.js.map

```

No license file was found, but licenses were detected in source scan.

```

/**

```

```

* @license

```

```

* Copyright 2021 Google LLC. All Rights Reserved.

```

```

* Licensed under the Apache License, Version 2.0 (the "License");

```

```

* you may not use this file except in compliance with the License.

```

```

* You may obtain a copy of the License at

```

```

*

```

```

* http://www.apache.org/licenses/LICENSE-2.0

```

```

*

```

```

* Unless required by applicable law or agreed to in writing, software

```

```

* distributed under the License is distributed on an "AS IS" BASIS,

```

```

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

```

```

* See the License for the specific language governing permissions and

```

```

* limitations under the License.

```

```

* =====

```

```

*/

```

```

/**

```

```

* @license

```

```

* Copyright 2019 Google LLC. All Rights Reserved.

```

```

* Licensed under the Apache License, Version 2.0 (the "License");

```

```

* you may not use this file except in compliance with the License.

```

```

* You may obtain a copy of the License at

```

```

*

```

```

* http://www.apache.org/licenses/LICENSE-2.0

```

```

*

```

```

* Unless required by applicable law or agreed to in writing, software

```

```

* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
* =====
*/
/**
* @license
* Copyright 2020 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
* =====
*/
/**
* @license
* Copyright 2020 Google Inc. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
* =====
*/
/**
* @deprecated Use `setWasmPaths` instead.
* Sets the path to the `.wasm` file which will be fetched when the wasm
* backend is initialized. See
* https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers
* for more details.
* @param path wasm file path or url
* @param usePlatformFetch optional boolean to use platform fetch to download
* the wasm file, default to false.
*

```

\* @doc {heading: 'Environment', namespace: 'wasm'}

\*/

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.fesm.js

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"AddN.js","sourceRoot":"","sources":["../src/kernels/AddN.ts"],"names":[],"mappings":"AAA
A;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,IAAI,EAawC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIvF,OAAO,EA
AC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,QAEQ,CAAC;AAEb,SAAS,SAAS,CAAC,OAAoB;IACrC
,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,CAAC,UAAU,EAAE;QACnD,OAA
O;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,I
AAkD;IAC9D,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,GAAG,GAAG,
OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,
CAAC,KAAK,CAAC,CAAC;IAEjE,oCAAoC;IACpC,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CA
AC,KAAK,CAAC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,QAAQ,GAAG,MAAM,CAAC,G
AAG,CAAC,CAAC,CAAC,EAAE,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CA
AC,CAAC,EAAE,CAAC,CAAC;IACrE,MAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,C
AAC,CAAC,MAAM,CAAC,CAAC;IACtE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G
AAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,aAAa,EAAE,QAAQ,CAAC,MAAM,EA
AE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IAErE,OAAO,GAAG,CAAC;AAC
b,CAAC;AAED,MAAM,CAAC,MAAM,UAAU,GAaiB;IACtC,UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAA
M;IACnB,SAAS;IACt,UAAU,EAAE,IAAwB;CACrC,CAAC","sourcesContent":["/**\n * @license\n * Copyright
2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\\n
*/\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmFunc:\n (inputIds:
Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\n\nfunction setupFunc(backend:
BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n
'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n]);\n}\n\nfunction addn(args: {inputs:
TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =
backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n\n // Short-circuit zero-sized tensors.\n if
(util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n const inputIds = inputs.map(x =>
backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n
const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,
CppType[out.dtype], outId);\n\n return out;\n}\n\nexport const addNConfig: KernelConfig = {\n kernelName:
AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as { } as KernelFunc,\n};\n"}]
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/AddN.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"Maximum.js","sourceRoot":"","sources":["../../src/kernels/Maximum.ts"],"names":[],"mappings":
":AAAA;;;;;;;;;;;GAeG;AACH,OAAO,EAAe,OAAO,EAAC,MAAM,uBAAuB,CAAC;AAE5D,OAAO,EAAC,
wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CA
AC,MAAM,aAAa,GACtB,wBAAwB,CAAC,OAAO,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\\n
*/\nimport {KernelConfig, Maximum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const maximumConfig: KernelConfig =\ncreateBinaryKernelConfig(Maximum, supportsFullBroadcast);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Maximum.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version":3,"file":"TopK.js","sourceRoot":"","sources":["../../src/kernels/TopK.ts"],"names":[],"mappings":
":AAA
A;;;;;;;;;;;GAeG;AAEH,OAAO,EAAuC,IAAI,EAawB,MAAM,uBAAuB,CAAC;AAGxG,OAAO,EAAC,QAAQ
,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,QAG6B,CAAC;AAEIC,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,
GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,CAAC,UAAU,EAAE;QACnD,QAAQ;QAC
R,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;QACN,QAAQ;QACR,QAAQ;KACT,CAA
C,CAAC;AACL,CAAC;AAED,MAAM,CAAC,MAAM,IAAI,GAEmB,CAAC,EAAC,MAAM,EAAE,OAAO,EAA
E,KAAK,EAAC,EAAE,EAAE;IACvD,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EA
AC,CAAC,EAAE,MAAM,EAAC,GAAG,KAAK,CAAC;IAEiB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CA
AC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,WAAW,GAAG,IAAI,UA
AU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,MAAM,WA
AW,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IACpC,WAAW,CAAC,WAAW,CAAC,MAAM,
GAAG,CAAC,CAAC,GAAG,CAAC,CAAC;IACxC,MAAM,SAAS,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW
,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAC3D,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG
,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/D,MAAM,UAAU,GAAG,OAAO,CAAC,UAAU,
CAAC,WAAW,EAAE,OAAO,CAAC,CAAC;IAC5D,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG
,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEjE,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,
CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,EAAE,M
AAM,EAC9D,WAAW,EAAE,YAAY,CAAC,CAAC;IAE/B,OAAO,CAAC,SAAS,EAAE,UAAU,CAAC,CAAC;A
ACjC,CAAC,CAAC;AAEV,MAAM,CAAC,MAAM,UAAU,GAaiB;IACtC,UAAU,EAAE,IAAI;IAChB,WAAW,
EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,IAAwB;CACrC,CAAC","sourcesContent":["/*
*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License,
Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may
obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by
applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nlet wasmTopK:
(\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n xDtype: CppDType, k: number, sorted:
boolean, outValuesId: number,\n outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number',
// x.shape.length\n 'number', // x.dtype\n 'number', // k\n 'bool', // sorted\n 'number', // outValuesId\n
'number', // outIndicesId\n]);\n\nexport const topk:\n (args: {inputs: TopKInputs, backend: BackendWasm,
attrs: TopKAttrs}) =>\n TensorInfo[] | TensorInfo = ({inputs, backend, attrs}) => {\n const {x} = inputs;\n
const {k, sorted} = attrs;\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const xShapeBytes
= new Uint8Array(new Int32Array(x.shape).buffer);\n const outputShape = x.shape.slice();\n
outputShape[outputShape.length - 1] = k;\n const outValues = backend.makeOutput(outputShape, x.dtype);\n
const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n const outIndices =
backend.makeOutput(outputShape, 'int32');\n const outIndicesId =
backend.dataIdMap.get(outIndices.dataId).id;\n\n wasmTopK(\n xId, xShapeBytes, x.shape.length,
CppType[x.dtype], k, sorted,\n outValuesId, outIndicesId);\n\n return [outValues, outIndices];\n
};\n\nexport const topKConfig: KernelConfig = {\n kernelName: TopK,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: topk as { } as KernelFunc,\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/TopK.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"OneHot.js","sourceRoot":"","sources":["../../src/kernels/OneHot.ts"],"names":[],"mappings":"A
AAA;:::;GAeG;AAEH,OAAO,EAA2B,MAAM,EAA4B,MAAM,uBAAuB,CAAC;AAIIG,IAAI,UAESB,CA
AC;AAE3B,SAAS,KAAC,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,MA
AM,EAAE,IAAI,CAAC,UAAU,EAAE;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAA
Q,CAAG,SAAS;KACrB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,MAAM,CACX,IAAsE;IACxE,MAAM,EAA
C,MAAM,EAAE,OAAO,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,OAAO,EAAC,GAAG,
MAAM,CAAC;IACzB,MAAM,EAAC,KAAC,EAAE,OAAO,EAAE,QAAQ,EAAC,GAAG,KAAC,CAAC;IAEzC,
MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,GAAG,OAAO,CAAC,KAAC,EAAE,KAAC,CAAC,
EAAE,OAAO,CAAC,CAAC;IACnE,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG
,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEj
C,UAAU,CAAC,SAAS,EAAE,KAAC,EAAE,OAAO,EAAE,QAAQ,EAAE,KAAC,CAAC,CAAC;IAEvD,OAAO,
GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,YAAAY,GAAiB;IACxC,UAAU,EAAE,MAAM;IAC1
B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IACbB,UAAU,EAAE,MAA0B;CACvC,CAAC","sources
Content":["/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmOneHot: (\n indicesId: number, depth:
number, onValue: number, offValue: number,\n outId: number) => void;\n\nfunction setup(backend:

```



```
BackendWasm) {\n wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n 'number', // indices_id\n 'number', // depth,\n 'number', // onValue\n 'number', // offValue\n 'number' // out_id\n]);\n}\n\nfunction oneHot(\n args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n const {inputs, backend, attrs} = args;\n const {indices} = inputs;\n const {depth, onValue, offValue} = attrs;\n const out = backend.makeOutput([...indices.shape, depth], 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const indicesData = backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n wasmOneHot(indicesId, depth, onValue, offValue, outId);\n}\n\nreturn out;\n}\n\nexport const oneHotConfig: KernelConfig = {\n kernelName: OneHot,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: oneHot as {} as KernelFunc,\n};\n}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/OneHot.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"SpaceToBatchND.js","sourceRoot":"","sources":["../../src/kernels/SpaceToBatchND.ts"],"names":["mappings":"AAAA;:::GAeG;AAEH,OAAO,EAAC,YAA Y,EAAyD,cAAc,EAA0F,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIxN,OAAO,EAAC,WAAW,EAAC,MAAM,SAAS,CAAC;AACpC,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AACiC,OAAO,EAAC,SAAS,EAAC,MAAM,aAAa,CAAC;AAEtC,SAAS,cAAc,CAAC,IAIvB;IACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,UAAU,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAErC,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;IAE5C,MAAM,gBAAgB,GAA4B,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IAC3D,gBAAgB,CAAC,IAAI,CAAC,GAAI,QAAoC,CAAC,CAAC;IAEhE,KAAK,IAAI,CAAC,GAAG,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QAC3D,gBAAgB,CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;KAC/B;IAED,MAAM,OAAO,GAAG,WAAW,CAAC,UAAU,CAAC;QACrC,MAAM,EAAE,EAAC,CAAC,EAAC;QACX,OAAO;QACP,KAAK,EAAE,EAAC,QAAQ,EAAE,gBAAgB,EAAE,aAAa,EAAE,CAAC,EAAC;KACtD,CAAe,CAAC;IAEjB,MAAM,mBAAmB,GACrB,YAA Y,CAAC,WAAW,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAErE,MAAM,iCAAiC,GAAG,YAA Y,CAAC,WAAW,CAC9D,mBAAmB,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IAEiD,MAAM,YAA Y,GACd,YAA Y,CAAC,mBAAmB,CAAC,OAAO,CAAC,KAAK,EA AE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAE7E,MAAM,aAAa,GAakB,EAAC,CAAC,EAAE,OAAO,EAAC,CAAC;IACiD,MAAM,YAA Y,GAaiB,EAAC,KAAK,EAAE,mBAAmB,EAAC,CAAC;IACjE,MAAM,eAA Ae,GACjB,OAAO,CAAC,EAAC,MAAM,EAAE,aAAa,EAAE,OAAO,EAAE,KAAK,EAAE,YAA Y,EAAC,CAAC,CAAC;IAEnE,MAAM,eAAe,GAAoB,EAAC,CAAC,EAAE,eAAe,EAAC,CAAC;IAC9D,MAAM,cAAc,GACC,EAAc,IAAI,EAAE,iCAAiC,EAAC,CAAC;IAC/D,MAAM,QAAQ,GACV,SAAS,CAAC,EAAC,MAAM,EAAE,eAA Ae,EAAE,OAAO,EAAE,KAAK,EAAE,cAAc,EAAC,CAAC,CAAC;IAEzE,MAAM,mBAAmB,GAakB,EAAC,C AAC,EAAE,QAAQ,EAAC,CAAC;IACzD,MAAM,kBAakB,GAaiB,EAAC,KAAK,EAAE,YAA Y,EAAC,CAAC;IAC/D,MAAM,MAAM,GAAG,OAAO,CACiB,EAAC,MAAM,EAAE,mBAAmB,EAAE,OAAO,EAAE,KAAK,EAAE,kBAakB,EAAC,CAAC,CAAC;IAEvE,OAAO,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IACpC,OAAO,CAAC,WAAW,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC;IAC5C,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IAErC,OAAO,MAAM,CAAC;AACHB,CAAC;AAED,MAAM,CAAC,MAAM,oBAAoB,GAaiB;IACjD,UAAU,EAAE,cAAc;IACiB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAc;CAC/C,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
```

OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND, SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { padV2Config } from './PadV2';\nimport { reshape } from './Reshape';\nimport { transpose } from './Transpose';\n\nfunction spaceToBatchND(args: {\n inputs: SpaceToBatchNDInputs,\n backend: BackendWasm,\n attrs: SpaceToBatchNDAttrs\n}) {\n const { inputs, backend, attrs } = args;\n const { x } = inputs;\n const { blockShape, paddings } = attrs;\n const prod = util.sizeFromShape(blockShape);\n const completePaddings: Array<[number, number]> = [[0, 0]];\n completePaddings.push(...(paddings as Array<[number, number]>));\n for (let i = 1 + blockShape.length; i < x.shape.length; ++i) {\n completePaddings.push([0, 0]);\n }\n const paddedX = padV2Config.kernelFunc({\n inputs: { x },\n backend,\n attrs: { paddings: completePaddings, constantValue: 0 }\n }) as TensorInfo;\n const reshapedPaddedShape =\n backend_util.getReshaped(paddedX.shape, blockShape, prod, false);\n const permutedReshapedPaddedPermutation = backend_util.getPermuted(\n reshapedPaddedShape.length, blockShape.length, false);\n const flattenShape =\n backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n const reshapeInputs: ReshapeInputs = { x: paddedX };\n const reshapeAttrs: ReshapeAttrs = { shape: reshapedPaddedShape };\n const paddedXReshaped =\n reshape({ inputs: reshapeInputs, backend, attrs: reshapeAttrs });\n const transposeInputs: TransposeInputs = { x: paddedXReshaped };\n const transposeAttrs: TransposeAttrs = { perm: permutedReshapedPaddedPermutation };\n const paddedXT =\n transpose({ inputs: transposeInputs, backend, attrs: transposeAttrs });\n const resultReshapeInputs: ReshapeInputs = { x: paddedXT };\n const resultReshapeAttrs: ReshapeAttrs = { shape: flattenShape };\n const result = reshape(\n { inputs: resultReshapeInputs, backend, attrs: resultReshapeAttrs });\n backend.disposeData(paddedX.dataId);\n backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n return result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n backendName: 'wasm',\n kernelFunc: spaceToBatchND as KernelFunc\n};\n\n}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SpaceToBatchND.js.map

No license file was found, but licenses were detected in source scan.

```
{\n "version": 3,\n "file": "NotEqual.js",\n "sourceRoot": "",\n "sources": ["../../src/kernels/NotEqual.ts"],\n "names": [],\n "mappings": "AAAA;:::;;GAeG;AACH,OAAO,EAAe,QAAQ,EAAC,MAAM,uBAAuB,CAAC;AAE7D,OAAO,EAAC,wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAAM,cAAc,GACvB,wBAAwB,CAAC,QAAQ,EAAE,qBAAqB,EAAE,MAAM,CAAC,CAAC",\n "sourcesContent": ["**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *"]\n}
```

```
=====\n*\n\nimport { KernelConfig, NotEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const notEqualConfig: KernelConfig =\n createBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n\n}
```



```

numChannels] = images.shape;\n const outShape = [batch, newHeight, newWidth, numChannels];\n\n let xData =
backend.dataIdMap.get(images.dataId);\n let castedData;\n if (xData.dtype !== 'float32') {\n castedData =\n cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n xData =
backend.dataIdMap.get(castedData.dataId);\n }\n const xId = xData.id;\n\n const out =
backend.makeOutput(outShape, 'float32');\n if (util.sizeFromShape(images.shape) === 0) {\n return out;\n }\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmResizeBilinear(\n xId, batch, oldHeight,
oldWidth, numChannels, newHeight, newWidth,\n alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n if
(castedData !== null) {\n backend.disposeData(castedData.dataId);\n }\n\n return out;\n}\n\nexport const
resizeBilinearConfig: KernelConfig = {\n kernelName: ResizeBilinear,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: resizeBilinear as {} as KernelFunc\n};\n"}

```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/ResizeBilinear.js.map
```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"MaxPool.js","sourceRoot":"","sources":["../../src/kernels/MaxPool.ts"],"names":[],"mappings":"
AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAY,EAA4B,OAAO,EAAYC,IAAI,EAAC,MAAM,uBAAB,CA
AC;AAInI,IAAI,WAKqE,CAAC;AAEIE,SAAS,KAAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IA
AI,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,CAAC,UAAU,EAAE;QACzD,QAAQ;QACR,QAAQ;QACR,QAA
Q;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QAC
R,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAA
C,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IACIE,MAAM,EAAC,MAAM,EAAE,KAAK,EAA
E,OAAO,EAAC,GAAG,IAAI,CAAC;IAEtC,MAAM,CAAC,GAAG,MAAM,CAAC,CAAa,CAAC;IAC/B,MAAM,
GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I
AE/C,wEAAwE;IACxE,4EAA4E;IAC5E,oBAAoB;IACpB,EAAE;IACF,2EAA2E;IAC3E,SAAS;IACT,EAAE;IA
CF,qCAAqC;IACrC,IAAI,CAAC,MAAM,CACP,CAAC,CAAC,KAAK,KAAK,SAAS,EACrB,GAAG,EAAE,CAC
D,0DAA0D,CAAC,CAAC,KAAK,GAAG,CAAC,CAAC;IAE9E,MAAM,EAAC,UAAU,EAAE,OAAO,EAAE,GA
AG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;IACID,MAAM,QAAQ,GAAG,YAAY,CAAC,iBAAB,CAC3C,C
AAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,CAAC,eAAe,EAAE,GAAG,EAAE,eAAe,CAAC,
CAAC;IAE3E,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAA
C,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,Q
AAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,C
AAC,MAAM,CAAC;IACIC,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,c
AAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,MAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,MAA
M,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;I
ACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IACIC,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,
CAAC;IAE5C,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QACIC,MAAM,IAAI,KAAK,CACX,4CAA4C;Y
AC5C,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC;KAC5D;IAED,MAAM,GAAG,GAAG,OAAO,CAA
C,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,MAAM,KAAK,GAAG,OAAO,CAA
C,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,WAAW,CACP,GAA
G,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,
CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,YAAY,EAAE,WAAW,EACIE,MAAM,EAAE,QAAQ,EAAE,
SAAS,EAAE,OAAO,EAAE,cAAc,EAAE,aAAa,EACnE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EAAE,
KAAK,CAAC,CAAC;IACrE,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,aAAa,GAAiB;I
ACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IAChB,UAAU,EAAE,
OAA2B;CACxC,CAAC"},"sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file

```

except in compliance with the License.\n \* You may obtain a copy of the License at\n \*\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing,  
software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language  
governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util }
from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmMaxPool: (\n xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmMaxPool =
backend.wasm.cwrap(MaxPool, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n 'number', //
inputHeight\n 'number', // inputWidth\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', //
padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', //
inputChannels\n 'number', // outputChannels\n 'number', // outId\n]);\n\n function maxPool(\n args:
{ inputs: MaxPoolInputs, backend: BackendWasm, attrs: MaxPoolAttrs }) {\n const { inputs, attrs, backend } =
args;\n\n const x = inputs.x as Tensor4D;\n const xId = backend.dataIdMap.get(x.dataId).id;\n\n // TF API
supports int32 input. CPU and WebGL backend also support int32\n // input. WASM backend doesn't support it
because it uses xnpack which only\n // supports float32.\n // Add the following assert only for the WASM
backend instead of at core op\n // level.\n // TODO: add support for int32 input.\n util.assert(\n x.dtype
=== 'float32',\n () =>\n `Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);\n\n const
{ filterSize, strides, pad, dimRoundingMode } = attrs;\n const convInfo = backend_util.computePool2DInfo(\n x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight =
convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const
padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft =
convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm
backend does not support dataFormat: ` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n wasmMaxPool(\n xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,\n strideHeight, strideWidth, inputChannels, outputChannels, outId);\n return out;\n }\n\n export const maxPoolConfig:
KernelConfig = {\n kernelName: MaxPool,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: maxPool
as { } as KernelFunc\n};\n}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/MaxPool.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Reshape.js","sourceRoot":"","sources":["../../src/kernels/Reshape.ts"],"names":[],"mappings":"A
AAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,OAAO,EAA+B,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI3G,MA
AM,UAAU,OAAO,CACnB,IAAwE;IACIE,MAAM,EAAC,MAAM,EAEE,KAAK,EAAC,GAAG,IAAI,CAAC;IA
C7B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,KAAK,EAAC,GAAG,KAAK,
```



UAAU,CAAC,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,UAAU,CACN,OAAO,E  
AAE,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,EAAE,OAAO,EAAE,OAAO,EACtE,OAAO,EAAE,S  
AAS,EAAE,UAAU,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IACID,OAAO,GAAG,CAAC;AACb,CAAC;AA  
ED,MAAM,CAAC,MAAM,sBAAsB,GAaiB;IACID,UAAU,EAAE,gBAAGb;IAC5B,WAAW,EAAE,MAAM;IAC  
nB,UAAU,EAAE,gBAAoC;IAChD,SAAS,EAAE,KAAK;CACjB,CAAC", "sourcesContent":["/\*\n \*  
Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the  
"License");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the  
License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or  
agreed to in writing, software\n \* distributed under the License is distributed on an "AS IS" BASIS,\n \*  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for  
the specific language governing permissions and\n \* limitations under the License.\n \*/

```
=====\n*\n\nimport { KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,
TensorInfo } from '@tensorflow/tfjs-core';\nimport { backend_util } from '@tensorflow/tfjs-core';\nimport
{ BackendWasm } from './backend_wasm';\nlet wasmRotate: (\n xId: number, batch: number, imageHeight:
number, imageWidth: number,\n numChannels: number, radians: number, centerX: number, centerY: number,\n fillBytes: Uint8Array, fillLength: number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n 'number', // xId\n 'number', //
batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', //
radians\n 'number', // centerX\n 'number', // centerY\n 'array', // fillBytes\n 'number', // fillLength\n 'number', // outId\n]);\n export function rotateWithOffset(args: {\n inputs: RotateWithOffsetInputs,\n backend: BackendWasm,\n attrs: RotateWithOffsetAttrs\n }): TensorInfo {\n const { inputs, backend, attrs } =
args;\n const { image } = inputs;\n const { radians, fillValue, center } = attrs;\n const out =
backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n const [batch, imageHeight, imageWidth, numChannels] =
image.shape;\n const [centerX, centerY] =\n backend_util.getImageCenter(center, imageHeight,
imageWidth);\n const fillIsBlack = fillValue === 0;\n const fullOpacityValue = 255;\n const fillValues =
typeof fillValue === 'number' ?\n [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] :\n [...fillValue, fullOpacityValue];\n const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n wasmRotate(\n imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n centerY,
fillBytes, fillValues.length, outId);\n return out;\n }\n export const rotateWithOffsetConfig: KernelConfig = {\n kernelName: RotateWithOffset,\n backendName: 'wasm',\n kernelFunc: rotateWithOffset as {} as KernelFunc,\n setupFunc: setup\n };\n}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/RotateWithOffset.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Mean.js","sourceRoot":"","sources":["../../src/kernels/Mean.ts"],"names":[],"mappings":"AAAA
;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAy,EAA4B,IAAI,EAAqC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAG
5H,OAAO,EAAC,IAAI,EAAC,MAAM,QAAQ,CAAC;AAE5B,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,
CAAC;AAEvD,IAAI,QAAkE,CAAC;AAEvE,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ;QACJ,OAAO,CAAC,
IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,CAAC,QAAQ,EAAE,CAAC,wBAAwB,CAAC,CAAC,CAAC;AA
CIE,CAAC;AAED,MAAM,UAAU,IAAI,CACb,IAAkE;IAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,K
AAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B
,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAA
C,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;I
```

ACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAAY,EAAE,kBAaB  
B,EAAC,GACtD,uBAaB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,aAAa,GAAG,I  
AAI,CAAC;IACzB,IAAI,kBAaB,EAAE;QACtB,MAAM,YAAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C  
AAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAAY,KAAK,GAAG,EAAE;YACxB,6D  
AA6D;YAC7D,oBAAoB;YACpB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAAY,CAAC;YACvB,a  
AAa,GAAG,YAAAY,CAAC,gBAaB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,  
CAAC,CAAC;SAC/C;KACF;IAED,YAAAY,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,  
KAAK,CAAC,MAAM,CAAC,CAAC;IAC/C,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzB,YAAAY,CAA  
C,yBAaB,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAAC;IACvE,MAAM,UAAU,GAAG,IAAI,CAA  
C,aAAa,CAAC,WAAW,CAAC,CAAC;IACnD,IAAI,WAAW,GAAG,KAAK,CAAC;IACxB,IAAI,KAAK,CAAC,  
KAAK,KAAK,SAAS,EAAE;QAC7B,WAAW;YACP,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,C  
AAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QAC  
nE,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CA  
AC;KACxD;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC  
pD,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,  
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,  
QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACtC;IAED,IAAI,kBAaB,EAAE;QACtB,o  
CAAoC;QACpC,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAA  
Q,EAAE;QACZ,UAAU;QACV,MAAM,QAAQ,GAAG,YAAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EA  
AE,YAAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,IAAI,KAAK,CAA  
C,KAAK,KAAK,SAAS,EAAE;QAC7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;K  
ACzC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,UAAU,GAaIB;IACtC,UAAU,  
EAAE,IAAI;IACb,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,IAAwB;CACrC,  
CAAC", "sourcesContent": ["/\*\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed  
under the Apache License, Version 2.0 (the "License");\n \* you may not use this file except in compliance with the  
License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed  
on an "AS IS" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the  
License.\n \*  
=====

```
*\n\nimport {backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {cast} from './Cast';\nimport {permuteAxesAndTranspose} from './kernel_utils';\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmMean =\n backend.wasm.cwrap(Mean, null /*void*/, [number, number, number]);\n}\n\nexport function mean(\n args:
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs};\n TensorInfo {\n const {backend, inputs,
 attrs} = args;\n const {axis, keepDims} = attrs;\n const {x} = inputs;\n const xId =
 backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes,
 inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n let reductionAxes = axes;\n if
(inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId
 !== xId) {\n // transpose was not a no-op. We will need to dispose of this\n // once we are done.\n input =
 transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length, input.shape.length);\n }\n }\n backend_util.assertAxesAreInnerMostDims(\n 'mean',
 reductionAxes, input.shape.length);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =
 util.sizeFromShape(reduceShape);\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput =\n cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n inputId =
```



```
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(outShape, 'float32');\n if\n (util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmMean(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed\n tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =\n backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n if (input.dtype\n !== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n\n return out;\n}\n\nexport const meanConfig:\n KernelConfig = {\n kernelName: Mean,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: mean as {\n as KernelFunc\n};\n};\n}}\n
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Mean.js.map
```

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "tf-backend-wasm.es2017.js", "sources": ["../src/kernels/types.ts", "../src/kernels/_FusedMatMul.ts", "../src/kernels/unary_kernel.ts", "../src/kernels/Abs.ts", "../src/kernels/binary_kernel.ts", "../src/kernels/Add.ts", "../src/kernels/AddN.ts", "../src/kernels/Identity.ts", "../src/kernels/Transpose.ts", "../src/kernels/kernel_utils.ts", "../src/kernels/All.ts", "../src/kernels/Any.ts", "../src/kernels/ArgMax.ts", "../src/kernels/AvgPool.ts", "../src/kernels/Reshape.ts", "../src/kernels/BatchMatMul.ts", "../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js", "../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js", "../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Slice.js", "../src/kernels/Slice.ts", "../src/kernels/BatchToSpaceND.ts", "../src/kernels/Cast.ts", "../src/kernels/Ceil.ts", "../src/kernels/ClipByValue.ts", "../src/kernels/Concat.ts", "../src/kernels/Conv2D.ts", "../src/kernels/Conv2DBackpropInput.ts", "../src/kernels/Cos.ts", "../src/kernels/Cosh.ts", "../src/kernels/CropAndResize.ts", "../src/kernels/Cumsum.ts", "../src/kernels/DepthToSpace.ts", "../src/kernels/DepthwiseConv2dNative.ts", "../src/kernels/Elu.ts", "../src/kernels/Equal.ts", "../src/kernels/Exp.ts", "../src/kernels/ExpandDims.ts", "../src/kernels/Fill.ts", "../src/kernels/FlipLeftRight.ts", "../src/kernels/Floor.ts", "../src/kernels/FloorDiv.ts", "../src/kernels/FusedBatchNorm.ts", "../src/kernels/FusedConv2D.ts", "../src/kernels/FusedDepthwiseConv2D.ts", "../src/kernels/GatherNd.ts", "../src/kernels/GatherV2.ts", "../src/kernels/Greater.ts", "../src/kernels/GreaterEqual.ts", "../src/kernels/LeakyRelu.ts", "../src/kernels/Less.ts", "../src/kernels/LessEqual.ts", "../src/kernels/Log.ts", "../src/kernels/LogicalAnd.ts", "../src/kernels/Max.ts", "../src/kernels/Maximum.ts", "../src/kernels/MaxPool.ts", "../src/kernels/Mean.ts", "../src/kernels/Min.ts", "../src/kernels/Minimum.ts", "../src/kernels/MirrorPad.ts", "../src/kernels/Multiply.ts", "../src/kernels/Neg.ts", "../src/kernels/NonMaxSuppression_util.ts", "../src/kernels/NonMaxSuppressionV3.ts", "../src/kernels/NonMaxSuppressionV4.ts", "../src/kernels/NonMaxSuppressionV5.ts", "../src/kernels/NotEqual.ts", "../src/kernels/OneHot.ts", "../src/kernels/OnesLike.ts", "../src/kernels/Pack.ts", "../src/kernels/PadV2.ts", "../src/kernels/Pow.ts", "../src/kernels/PreLU.ts", "../src/kernels/Prod.ts", "../src/kernels/Range.ts", "../src/kernels/RealDiv.ts", "../src/kernels/Relu.ts", "../src/kernels/Relu6.ts", "../src/kernels/ResizeBilinear.ts", "../src/kernels/Reverse.ts", "../src/kernels/RotateWithOffset.ts", "../src/kernels/Round.ts", "../src/kernels/Rsqrt.ts", "../src/kernels/ScatterNd.ts", "../src/kernels/Select.ts", "../src/kernels/Sigmoid.ts", "../src/kernels/Sin.ts", "../src/kernels/Softmax.ts", "../src/kernels/SpaceToBatchND.ts", "../src/kernels/SplitV.ts", "../src/kernels/Sqrt.ts", "../src/kernels/Square.ts", "../src/kernels/SquaredDifference.ts", "../src/kernels/Step.ts", "../src/kernels/StridedSlice.ts", "../src/kernels/Sub.ts", "../src/kernels/Sum.ts", "../src/kernels/Tan.ts", "../src/kernels/Tanh.ts", "../src/kernels/Tile.ts", "../src/kernels/TopK.ts", "../src/kernels/Transform.ts", "../src/kernels/Unpack.ts", "../src/kernels/ZerosLike.ts", "../src/register_all_kernels.ts", "../src/flags_wasm.ts", "../wasm-out/tfjs-backend-wasm-threaded-simd.js", "../wasm-out/tfjs-backend-wasm-threaded-simd.worker.js", "../wasm-out/tfjs-backend-wasm.js", "../src/backend_wasm.ts", "../src/version.ts", "../src/base.ts"], "sourcesContent": ["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
```

agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\n// This enum must align with the enum defined in cc/backend.h.\nexport enum CppDType {\n float32 = 0,\n int32 = 1,\n bool = 2,\n string = 3,\n complex64 = 4\n}\n\n// Must match enum in cc/fusable_activations.h.\nexport enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu = 6\n}\n\n", /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { FusableActivation } from\n './types';\n\nlet wasmFusedMatMul:\n (aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, activation: number,\n biasId: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul,\n null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n 'number', // activation\n 'number', // biasId\n 'number', // preluActivationWeightsId\n 'number', //\n leakyreluAlpha\n 'number' // out_id\n]);\n\nfunction fusedBatchMatMul(args: {\n inputs:\n _FusedMatMulInputs,\n backend: BackendWasm,\n attrs: _FusedMatMulAttrs\n}) {\n const {inputs, backend,\n attrs} = args;\n const {a, b, bias, preluActivationWeights} = inputs;\n\n if (a.dtype !== 'float32' || b.dtype !==\n 'float32') {\n throw new Error(\n ` _FusedMatMul for non non-float32 tensors not yet supported.`);\n }\n\n const {transposeA, transposeB, activation, leakyreluAlpha} = attrs;\n const aId =\n backend.dataIdMap.get(a.dataId).id;\n const bId = backend.dataIdMap.get(b.dataId).id;\n\n let biasId = 0;\n if (bias !== null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n throw new Error(\n ` _FusedMatMul only supports rank-1 bias but got ` +\n `rank\n ${biasData.shape.length}.`);\n }\n biasId = biasData.id;\n }\n\n const preluActivationWeightsId =\n preluActivationWeights === null ?\n 0 : backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n const fusedActivation =\n FusableActivation[activation as {} as keyof typeof FusableActivation];\n\n if (fusedActivation === null) {\n throw new Error(\n `${activation} activation not yet supported for\n FusedConv2D ` +\n `in the wasm backend.`);\n }\n\n const leftDim = transposeA ? a.shape[2] : a.shape[1];\n const rightDim = transposeB ? b.shape[1] : b.shape[2];\n const batchDim = a.shape[0];\n\n const out =\n backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n\n const outId =\n backend.dataIdMap.get(out.dataId).id;\n\n const aShapeBytes = new Uint8Array(new\n Int32Array(a.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n wasmFusedMatMul(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n transposeA,\n transposeB, fusedActivation, biasId, preluActivationWeightsId,\n leakyreluAlpha || 0, outId);\n\n return\n out;\n}\n\nexport const fusedMatMulConfig: KernelConfig = {\n kernelName: _FusedMatMul,\n backendName:\n 'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchMatMul as {} as KernelFunc\n};\n\n", /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*\n\nimport {DataType, KernelConfig, TensorInfo, UnaryInputs, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport function\n\ncreateUnaryKernelConfig(\n kernelName: string, outType?: DataType): KernelConfig {\n let wasmFunc: (xId:\n number, dtype: number, outId: number) => void;\n\n function setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // out_id\n]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}):\n TensorInfo {\n const {backend, inputs: {x}} = args;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const\n out = backend.makeOutput(x.shape, outType || x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId, CppDType[x.dtype], outId);\n return out;\n }\n\n return {kernelName, backendName: 'wasm',\n setupFunc, kernelFunc};\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in\n compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n */\n\n=====\n\n*\n\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from\n './unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\n*\n\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-\n core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport\n function\n createBinaryKernelConfig(\n kernelName: string, supportsFullBroadcast: boolean, dtype?:\n DataType): KernelConfig {\n let wasmFunc:\n (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n number,\n bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n void;\n\n function setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(kernelName, null /*\n void */, [\n 'number', // a_id,\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // dtype\n 'number' // out_id\n]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}):\n TensorInfo {\n const {backend,\n inputs} = args;\n const {a, b} = inputs;\n const aId = backend.dataIdMap.get(a.dataId).id;\n const bId =\n backend.dataIdMap.get(b.dataId).id;\n\n const outputType = dtype != null ? dtype : a.dtype;\n const newShape =\n backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n const out = backend.makeOutput(newShape,\n outputType);\n\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(newShape) === 0) {\n return\n out;\n }\n\n const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n const bShapeBytes =\n new Uint8Array(new Int32Array(b.shape).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const kernelFunc = () => wasmFunc(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n CppDType[a.dtype], outId);\n\n // Currently only some float operations support full broadcast.\n if\n (supportsFullBroadcast && a.dtype === 'float32') {\n kernelFunc();\n }\n\n return out;\n }\n\n const\n
```

```

aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n const bBroadcastDims =
backend_util.getBroadcastDims(b.shape, newShape);\n const loopsOverAllOfA = aBroadcastDims.every((v, i) =>
v === i);\n const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n if (loopsOverAllOfA &&
loopsOverAllOfB) {\n kernelFunc();\n return out;\n } else {\n throw new Error(\n `Broadcasting
along outer dims is not yet ` +\n `supported for ${a.dtype} ${kernelName}.`);\n }\n}\n\n return
{kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n}\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `AS IS` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
\n
*/\n\nimport {Add, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const addConfig: KernelConfig =\ncreateBinaryKernelConfig(Add, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `AS IS` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
\n
*/\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmFunc:\n (inputIds:
Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\n\nfunction setupFunc(backend:
BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n
'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n]);\n}\n\nfunction addn(args: {inputs:
TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =
backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n\n // Short-circuit zero-sized tensors.\n if
(util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n const inputIds = inputs.map(x =>
backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n
const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,
CppType[out.dtype], outId);\n\n return out;\n}\n\nexport const addNConfig: KernelConfig = {\n kernelName:
AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as { } as KernelFunc,\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
*/\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\n\nimport
{TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function
identity(args: {inputs: IdentityInputs, backend: BackendWasm}):\n TensorInfo {\n const {inputs: {x}, backend} =
args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const inVals = backend.typedArrayFromHeap(x);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\n\nexport const
identityConfig: KernelConfig = {\n kernelName: Identity,\n backendName: 'wasm',\n kernelFunc: identity as { } as

```

KernelFunc,\n};\n"/\*\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { identity } from\n './Identity';\nimport { CppDType } from './types';\nlet wasmTranspose: (\n xId: number, xShape: Uint8Array,\n xShapeLength: number, dtype: CppDType,\n outId: number, perm: Uint8Array, permLength: number) =>\n void;\nfunction setup(backend: BackendWasm) {\n wasmTranspose = backend.wasm.cwrap(Transpose, null /*\n void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // dtype\n 'number', // outId\n 'array', // perm\n 'number', // perm.length\n]);\n}\nexport function transpose(\n args: {\n inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs\n }):\n TensorInfo {\n const { inputs,\n backend, attrs } = args;\n // Reduce any dimensions with size one. Lower-rank transpose kernel performs\n // better due to simpler memory access pattern.\n const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,\n attrs.perm);\n let permIsNoOp = true;\n for (let i = 0; i < perm.length; i++) {\n if (perm[i] !== i) {\n permIsNoOp = false;\n }\n }\n const outShape = computeOutShape(inputs.x.shape, attrs.perm);\n const x = {\n dataId: inputs.x.dataId,\n shape: reducedShape,\n dtype: inputs.x.dtype\n };\n if (permIsNoOp) {\n const cloned = identity({ inputs, backend });\n cloned.shape = outShape;\n return cloned;\n }\n const out =\n backend.makeOutput(outShape, x.dtype);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const outId =\n backend.dataIdMap.get(out.dataId).id;\n const permBytes = new Uint8Array(new Int32Array(perm).buffer);\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n wasmTranspose(\n xId,\n xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\n perm.length);\n return\n out;\n}\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\n const outShape = new\n Array(inShape.length);\n for (let i = 0; i < outShape.length; i++) {\n outShape[i] = inShape[perm[i]];\n }\n return outShape;\n}\nfunction removeOneSizeDims(\n shape: number[], perm: number[]): [number[], number[]]\n {\n const newShape: number[] = [];\n const newPerm: number[] = [];\n for (let i = 0; i < shape.length; ++i) {\n if\n (shape[i] !== 1) {\n newShape.push(shape[i]);\n }\n if (shape[perm[i]] !== 1) {\n newPerm.push(perm[i]);\n }\n }\n for (let i = 0; i < newPerm.length; ++i) {\n let minValIdx = -1;\n for (let j =\n 0; j < newPerm.length; ++j) {\n if (newPerm[j] >= i &&\n (minValIdx === -1 || newPerm[minValIdx] >\n newPerm[j])) {\n minValIdx = j;\n }\n }\n newPerm[minValIdx] = i;\n }\n return [newShape,\n newPerm];\n}\nexport const transposeConfig: KernelConfig = {\n kernelName: Transpose,\n backendName:\n 'wasm',\n kernelFunc: transpose as {\n } as KernelFunc,\n setupFunc: setup,\n};\n"/**\n * @license\n * Copyright\n 2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { backend_util, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from\n '../backend_wasm';\nimport { transpose } from './Transpose';\n/**\n * Compute permutation axes and do a transpose\n if necessary.\n * Used by reduction ops.\n * @param x input TensorInfo\n * @param axis reduction axes\n * @param backend wasm backend instance\n */\nexport function permuteAxesAndTranspose(\n x: TensorInfo,\n axis: number|number[], backend: BackendWasm): {\n transposed: TensorInfo|null,\n axes: number[],\n
```

```

originalAxes: number[],\n inputWasTransposed: boolean\n} {\n const xShape = x.shape;\n const xRank =\n x.shape.length;\n const originalAxes = util.parseAxisParam(axis, xShape);\n let axes = originalAxes;\n const\n permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n let xTransposed = null;\n let\n inputWasTransposed = false;\n if (permutedAxes !== null) {\n const newShape: number[] = new Array(xRank);\n for (let i = 0; i < newShape.length; i++) {\n newShape[i] = xShape[permutedAxes[i]];\n }\n axes =\n backend_util.getInnerMostAxes(axes.length, xRank);\n xTransposed =\n transpose({inputs: {x}, attrs: {perm:\n permutedAxes}, backend});\n const xId = backend.dataIdMap.get(x.dataId).id;\n const transposedId =\n backend.dataIdMap.get(xTransposed.dataId).id;\n if (transposedId !== xId) {\n inputWasTransposed = true;\n }\n }\n return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from\n '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAll: (xId: number, reduceSize: number, outId:\n number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmAll = backend.wasm.cwrap(All, null\n /*void*/, ['number, number, number']);\n}\n\nfunction all(args: {backend: BackendWasm, inputs: AllInputs, attrs:\n AllAttrs}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x\n = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n const\n {transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n if\n (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input =\n transposed;\n inputId = transposedId;\n }\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =\n util.sizeFromShape(reduceShape);\n const out = backend.makeOutput(outShape, x.dtype);\n if\n (util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmAll(inputId, reduceSize, outId);\n }\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n if (keepDims) {\n // reshape\n const newShape =\n backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n return\n out;\n}\n\nexport const allConfig: KernelConfig = {\n kernelName: All,\n backendName: 'wasm',\n setupFunc:\n setup,\n kernelFunc: all as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from\n '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId:\n number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmAny = backend.wasm.cwrap(Any,\n null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: {backend: BackendWasm, inputs: AnyInputs,\n attrs: AnyAttrs}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n

```

```

const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\nconst {transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis,\n backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input = transposed;\n inputId = transposedId;\n }\n\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =\n util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if\n (util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmAny(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =\n backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return\n out;\n\n\nexport const anyConfig: KernelConfig = {\n kernelName: Any,\n backendName: 'wasm',\n setupFunc:\n setup,\n kernelFunc: any as {} as KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *

http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n =====\n *\n\nimport {ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-\n core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {permuteAxesAndTranspose} from\n './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmFunc: (\n xId: number, dtype: number, outerSize:\n number, innerSize: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // outer_size\n 'number', // inner_size\n 'number' // out_id\n]);\n\n function argmax(\n args:\n {inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs}) {\n const {backend, inputs, attrs} = args;\n const {axis} = attrs as {} as ArgMaxAttrs;\n const {x} = inputs as {} as ArgMaxInputs;\n const xId =\n backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes,\n inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose\n was not a no-op. We will need to dispose of this\n // once we are done.\n input = transposed;\n inputId =\n transposedId;\n }\n\n const outShape = input.shape.slice(0, -1);\n const out =\n backend.makeOutput(outShape, 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const outerSize =\n util.sizeFromShape(out.shape);\n const innerSize = input.shape[axes[0]];\n wasmFunc(inputId,\n CppDType[input.dtype], outerSize, innerSize, outId);\n\n if (inputWasTransposed) {\n // dispose of the\n transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n return out;\n }\n\n\n export const\n argMaxConfig: KernelConfig = {\n kernelName: ArgMax,\n backendName: 'wasm',\n kernelFunc: argmax as {}

as KernelFunc,\n setupFunc: setup\n };\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *

http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n =====\n *\n\nimport {AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D} from\n '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmAvgPool: (\n xId:

```

```

number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, strideHeight: number,\n
strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n
'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterHeight\n 'number', // filterWidth\n
'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', //
strideHeight\n 'number', // strideWidth\n 'number', // channels\n 'number', // outId\n]);\n}\n\nfunction
avgPool(\n args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n const {inputs, attrs,
backend} = args;\n\n const x = inputs.x as Tensor4D;\n const xId = backend.dataIdMap.get(x.dataId).id;\n\n const
{filterSize, strides, pad, dimRoundingMode} = attrs;\n const convInfo = backend_util.computePool2DInfo(\n
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight =
convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const
padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft =
convInfo.padInfo.left;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n
const channels = convInfo.inChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n
`wasm backend does not support dataFormat:` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.);\n
 }\n\n if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n throw new Error(\n
`was backend
only supports average pooling with dilation = [1, 1],`\n `got [${convInfo.dilationHeight},
${convInfo.dilationWidth}].`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const
outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmAvgPool(\n xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n
outId);\n return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n kernelName: AvgPool,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: avgPool as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright
2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n\n*/\n\nimport {KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function reshape(\n args: {inputs:
ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm}) {\n const {inputs, attrs} = args;\n const {x} =
inputs;\n const {shape} = attrs;\n\n const xSize = util.sizeFromShape(x.shape);\n const $shape =
util.inferFromImplicitShape(shape, xSize);\n\n util.assert(\n xSize === util.sizeFromShape($shape),\n () =>
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n `shape must have the same number of
elements.`);\n\n // Backend needs to track refCount for the dataId for reshape op\n args.backend.incRef(x.dataId);\n
return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n
kernelName: Reshape,\n backendName: 'wasm',\n kernelFunc: reshape as { } as KernelFunc\n};\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the `License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n\n*/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {reshape} from

```



```

./Reshape';\n\nlet wasmBatchMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,\n null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n 'number' // out_id\n]);\n\n function batchMatMul(args: {\n inputs: BatchMatMulInputs,\n backend: BackendWasm,\n attrs: BatchMatMulAttrs\n }) {\n const {inputs, backend, attrs} = args;\n const {a, b} = inputs;\n const {transposeA, transposeB} = attrs;\n if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n throw new Error(\n `BatchMatMul for non non-float32 tensors not yet supported.`);\n }\n const aRank = a.shape.length;\n const bRank = b.shape.length;\n const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n const innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n const outerShapeA = transposeA ?\n a.shape[aRank - 1] : a.shape[aRank - 2];\n const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank - 1];\n const outerDimsA = a.shape.slice(0, -2);\n const outerDimsB = b.shape.slice(0, -2);\n const batchDimA =\n util.sizeFromShape(outerDimsA);\n const batchDimB = util.sizeFromShape(outerDimsB);\n const batchDimsCompatible =\n batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n util.assert(\n aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n () => `Error in matMul: the input batch dimensions must either be the\n `same or at least one input batch dimension must be 1. Got input\n `batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n const outShapeOuterDims =\n batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\n const outShape =\n outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n util.assert(\n innerShapeA === innerShapeB,\n () => `Error in matMul: inner shapes (${innerShapeA}) and\n ` (${innerShapeB}) of Tensors with shapes\n `${a.shape} and\n `${b.shape} and transposeA=${transposeA}\n ` and transposeB=${transposeB}\n must match.`);\n const a3dShape = transposeA ? [batchDimA, innerShapeA, outerShapeA] :\n [batchDimA, outerShapeA, innerShapeA];\n const b3dShape = transposeB ? [batchDimB, outerShapeB,\n innerShapeB] :\n [batchDimB, innerShapeB, outerShapeB];\n // The rest of the implementation is designed to operate on rank-3 tensors\n const a3d = reshape({inputs: {x: a}, backend, attrs: {shape: a3dShape}});\n const b3d = reshape({inputs: {x: b}, backend, attrs: {shape: b3dShape}});\n const a3dId = backend.dataIdMap.get(a3d.dataId).id;\n const b3dId = backend.dataIdMap.get(b3d.dataId).id;\n const leftDim = transposeA ? a3d.shape[2] : a3d.shape[1];\n const rightDim = transposeB ? b3d.shape[1] : b3d.shape[2];\n const batchDim = Math.max(batchDimA, batchDimB);\n const out = backend.makeOutput([batchDim, leftDim, rightDim], a3d.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const aShapeBytes = new Uint8Array(new Int32Array(a3d.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b3d.shape).buffer);\n wasmBatchMatMul(\n a3dId, aShapeBytes, a3d.shape.length, b3dId, bShapeBytes,\n b3d.shape.length, transposeA, transposeB, outId);\n backend.disposeData(a3d.dataId);\n backend.disposeData(b3d.dataId);\n out.shape = outShape;\n return out;\n }\n\n export const batchMatMulConfig: KernelConfig = {\n kernelName: BatchMatMul,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: batchMatMul as {\n } as KernelFunc\n };\n /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n *====*\n *\n *import { backend_util, util } from '@tensorflow/tfjs-core';\n *export function concatImpl(inputs, outShape, dtype, simplyConcat) {\n * const outVals = util.getArrayFromDType(dtype, util.sizeFromShape(outShape));\n * if (simplyConcat && dtype !== 'string') {\n * // Use built-in TypedArray.set() method for speed.\n * let offset = 0;\n * inputs.forEach(input => {\n * const size = util.sizeFromShape(input.shape);\n *

```





xDQUFDLEdBQUcsSUFBSSxDQUFDOOtBQ2xDO0IBQ0QsT0FBTyxNQUFNLENBQUM7QUFDaEIsQ0FBQyI  
sInNvdXJjZXRNd250ZW50Ijpbli8qKlxuICogQGxpY2Vuc2VcbiAqIENvcHlyaWdodCAyMDIwIEVvb2dsZSBMT  
EMuIEFsbCBSaWdodHMgUmVzZXJ2ZWQuXG4gKiBMaWNlbnNIZCB1bmRlciB0aGUgQXBhY2hlIEpY2Vuc  
2UsIFZlcnNpb24gMi4wICh0aGUgXCJMaWNlbnNIXClpO1xuICogeW91IG1heSBub3QgdXNlIHRoaXMgZmlsZ  
SBleGNlcHQgaW4gY29tcGxpYW5jZSB3aXR0IHRoZSBMaWNlbnNlIcuICogWW91IG1heSBvYnRhaW4gYSB  
jb3B5IG9mIHRoZSBMaWNlbnNlIGF0XG4gKlxuICogaHR0cDovL3d3dy5hcGFjaGUub3JnL2xpY2Vuc2VzL0xJ  
Q0VOU0UtMi4wXG4gKlxuICogVW5sZXNzIHJlcXVpcmVkIGJ5IGFwcGxpY2FibGUgbGF3IG9yIGFncmVIZC  
B0byBpb3B3cm10aW5nLCBzb2Z0d2FyZVxuICogZGlzdHJpYnV0ZWQgdW5kZXIgdGhlIEpY2Vuc2UgaXMgZ  
GlzdHJpYnV0ZWQgb24gYW4gXCJBUyBJU1wiIEJBU0lTLFxuICogV0lUSE9VVCBXQVJSQU5USUVTIE9SIE  
NPTkRjVElPTmT0YgQU5ZIEtJTkQsIGVpdGhlciBleHBvYXNzIG9yIGltcGxpZWQuXG4gKiBTZWUgdGhlIE  
xpY2Vuc2UgZm9yIHRoZSBzcGVjaWZpYyBsYW5ndWFnZSBnb3Zlcm5pbmcgcGVybWlzc2lvbnMgYW5kXG4  
gKiBsaW1pdGF0aW9ucyB1bmRlciB0aGUgTGljZW5zZS5cbiAqID09PT09PT09PT09PT09PT09PT09PT09PT  
T09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT09PT  
0IHtEYXRhVHlwZU1hcCwgZXRpbH0gZnJvbSAnQHRLbnNvcnZsb3cvdGZqcY1jb3JlZtcblxwZXhwb3J0IGZ1bm  
N0aW9uIHJhbmdlSW1wbChcbiAgICBzdGFydDogbnVtYmVyLCBzdG9wOiBudW1iZXIsIHN0ZXAgIG51bWJlci  
xcbiAgICBkdHlwZTogJ2Zsb2F0MzInfCdpbnQzMicpOiBEYXRhVHlwZU1hcFsnZmxvYXQzMicgcGVybWlzc2lvbnMgYW50Mz  
InXSb7XG4gIGNvbnN0IHhnbWVtdGFydFN0b3AgPSBzdGFydCA9PT0gc3RvcDtcbiAgY29uc3QgaW5jcmVhc  
2luZ1JhbmdlTmVnYXRpdmVtdGVwID0gc3RhcncGqPCBzdG9wICYmIHN0ZXAgPCAwO1xuICBjb25zdCBkZ  
WNyZWZfaW5nUmFuZ2VQb3NpdG12ZVN0ZXAgPSBzdG9wIDwgc3RhcncGqJiYgc3RlcCA+IDE7XG5cbiAga  
WYgKHNhbWVtdGFydFN0b3AgfHwgaW5jcmVhc2luZ1JhbmdlTmVnYXRpdmVtdGVwIHx8XG4gICAgICBk  
ZWNyZWZfaW5nUmFuZ2VQb3NpdG12ZVN0ZXApIHtcbiAgICBvYXNzZXIcm4gdXRpbC5tYWtlWmVyb3NUeXB  
lZEFycmF5KDA5IGR0eXBkKTtcbiAgfVxuXG4gIGNvbnN0IG51bUVsZW1lbnRzID0gTWF0aC5hYnMoTWF0aC  
5jZWLsKChzdG9wIC0gc3RhcncqPC8gc3RlcCkqO1xuICBjb25zdCB2YWx1ZXMGPSB1dGlsLm1ha2VaZXJvc1R  
5cGVkQXJyYXkobjVtRWxlbWVudHM5IGR0eXBkKTtcbiAgfVxuICBvYXNzZXIcm4gdG9wICBvYXNzZXIcm4gdmFsdWVzO1xufVxuIl19"  
,"/\*\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License,  
Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may  
obtain a copy of the License at\n \*\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by  
applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\"  
BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the  
License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*\nimport { backend_util, buffer, Slice, slice_util, util } from '@tensorflow/tfjs-core';\nimport { assertNotComplex } from '../cpu_util';\nexport function sliceImpl(vals, begin, size, shape, dtype) {\n const isContinuous = slice_util.isSliceContinuous(shape, begin, size);\n const length = util.sizeFromShape(size);\n const xStrides = util.computeStrides(shape);\n if (isContinuous) {\n const flatOffset = slice_util.computeFlatOffset(begin, xStrides);\n if (dtype === 'string') {\n return vals.slice(flatOffset, flatOffset + length);\n }\n return vals.subarray(flatOffset, flatOffset + length);\n }\n const decodedData = dtype === 'string' ?\n backend_util.fromUint8ToStringArray(vals) :\n vals;\n const inBuf = buffer(shape, dtype, decodedData);\n const outBuf = buffer(size, dtype);\n for (let i = 0; i < outBuf.size; ++i) {\n const outLoc = outBuf.indexToLoc(i);\n const inLoc = outLoc.map((idx, j) => idx + begin[j]);\n outBuf.set(inBuf.get(...inLoc), ...outLoc);\n }\n if (dtype === 'string') {\n return backend_util.fromStringArrayToUint8(outBuf.values);\n }\n return outBuf.values;\n}\nexport function slice(args) {\n const { inputs, backend, attrs } = args;\n const { x } = inputs;\n const { begin, size } = attrs;\n assertNotComplex(x, 'slice');\n const [$begin, $size] = slice_util.parseSliceParams(x, begin, size);\n}
```





WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. \* See the License for the specific language governing permissions and \* limitations under the License.

```
=====
*/
import { backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util }
from '@tensorflow/tfjs-core';
import { BackendWasm } from './backend_wasm';
import { sliceImplCPU } from './kernel_utils/shared';
export function slice({ inputs: SliceInputs, attrs: SliceAttrs, backend: BackendWasm }) {
 const { inputs: { x }, attrs: { begin, size }, backend } = args;
 const [begin_, size_] = slice_util.parseSliceParams(x, begin, size);
 const isContinuous = slice_util.isSliceContinuous(x.shape, begin_, size_);
 const xVals = backend.readSync(x.dataId);
 const out = backend.makeOutput(size_, x.dtype);
 const xStrides = util.computeStrides(x.shape);
 const outData = backend.dataIdMap.get(out.dataId);
 if (isContinuous) {
 const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);
 if (x.dtype === 'string') {
 outData.stringBytes = (xVals as Uint8Array[]).slice(flatOffset, flatOffset + util.sizeFromShape(size_));
 } else {
 const outVals = backend.typedArrayFromHeap(out);
 outVals.set((xVals as TypedArray).subarray(flatOffset, flatOffset + util.sizeFromShape(size_)));
 }
 } else {
 const outVals = backend.typedArrayFromHeap(out);
 if (x.dtype === 'string') {
 const res = sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);
 outData.stringBytes = res as Uint8Array[];
 return out;
 }
 const outVals = backend.typedArrayFromHeap(out);
 const rank = x.shape.length;
 if (rank === 2) {
 slice2d(xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number], size_ as [number, number]);
 } else if (rank === 3) {
 slice3d(xVals as TypedArray, xStrides[0], xStrides[1], outVals, begin_ as [number, number, number], size_ as [number, number, number]);
 } else if (rank === 4) {
 slice4d(xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals, begin_ as [number, number, number, number], size_ as [number, number, number, number]);
 } else {
 const res = sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;
 outVals.set(res);
 }
 }
 return out;
}
function slice2d(xVals: backend_util.TypedArray, xStride: number, outVals: backend_util.TypedArray, begin: [number, number], size: [number, number]): void {
 let outOffset = 0;
 const beginI = begin[0];
 const beginJ = begin[1];
 const endI = beginI + size[0];
 for (let i = beginI; i < endI; i++) {
 const xOffset = i * xStride + beginJ;
 outVals.set(xVals.subarray(xOffset, xOffset + size[1]), outOffset);
 outOffset += size[1];
 }
}
function slice3d(xVals: backend_util.TypedArray, xStride1: number, xStride2: number, outVals: backend_util.TypedArray, begin: [number, number, number], size: [number, number, number]): void {
 let outOffset = 0;
 const beginI = begin[0];
 const beginJ = begin[1];
 const beginK = begin[2];
 const endI = beginI + size[0];
 const endJ = beginJ + size[1];
 for (let i = beginI; i < endI; i++) {
 for (let j = beginJ; j < endJ; j++) {
 const xOffset = i * xStride1 + j * xStride2 + beginK;
 outVals.set(xVals.subarray(xOffset, xOffset + size[2]), outOffset);
 outOffset += size[2];
 }
 }
}
function slice4d(xVals: backend_util.TypedArray, xStride1: number, xStride2: number, xStride3: number, outVals: backend_util.TypedArray, begin: [number, number, number, number], size: [number, number, number, number]): void {
 let outOffset = 0;
 const beginI = begin[0];
 const beginJ = begin[1];
 const beginK = begin[2];
 const endI = beginI + size[0];
 const endJ = beginJ + size[1];
 const endK = beginK + size[2];
 const beginL = begin[3];
 for (let i = beginI; i < endI; i++) {
 for (let j = beginJ; j < endJ; j++) {
 for (let k = beginK; k < endK; k++) {
 const xOffset = i * xStride1 + j * xStride2 + k * xStride3 + beginL;
 outVals.set(xVals.subarray(xOffset, xOffset + size[3]), outOffset);
 outOffset += size[3];
 }
 }
 }
}
export const sliceConfig: KernelConfig = { kernelName: Slice, backendName: 'wasm', kernelFunc: slice as { } as KernelFunc };
/*
 * @license
 * Copyright 2021 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND,
 * either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

```

=====
*\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,
KernelFunc } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport
{ reshape } from './Reshape';\n\nimport { slice } from './Slice';\n\nimport { transpose } from './Transpose';\n\nfunction
batchToSpaceND(args: {\n inputs: BatchToSpaceNDInputs,\n backend: BackendWasm,\n attrs:
BatchToSpaceNDAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {blockShape,
crops} = attrs;\n\n const prod = blockShape.reduce((a, b) => a * b);\n\n const reshaped =
backend_util.getReshaped(x.shape, blockShape, prod);\n\n const permuted =
backend_util.getPermuted(reshaped.length, blockShape.length);\n\n const reshapedPermuted =\n
backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n\n const sliceBeginCoords =\n
backend_util.getSliceBeginCoords(crops, blockShape.length);\n\n const sliceSize =\n
backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n const xReshaped = reshape({inputs:
{x}, backend, attrs: {shape: reshaped}});\n\n const xTransposed =\n transpose({inputs: {x: xReshaped}, backend,
attrs: {perm: permuted}});\n\n const xTransposedReshaped = reshape(\n inputs: {x: xTransposed}, backend,
attrs: {shape: reshapedPermuted});\n\n const result = slice({\n inputs: {x: xTransposedReshaped},\n backend,\n
attrs: {begin: sliceBeginCoords, size: sliceSize}\n });\n\n backend.disposeData(xReshaped.dataId);\n
backend.disposeData(xTransposed.dataId);\n\n backend.disposeData(xReshaped.dataId);\n\n return
result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n kernelName: BatchToSpaceND,\n
backendName: 'wasm',\n kernelFunc: batchToSpaceND as {} as KernelFunc\n};\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====

```

```

=====
*\n\nimport { Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\n\nimport
{ TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nexport function
cast(\n args: {inputs: CastInputs, attrs: CastAttrs, backend: BackendWasm});\n\n TensorInfo {\n const {inputs:
{x}, attrs: {dtype}, backend} = args;\n\n const out = backend.makeOutput(x.shape, dtype);\n\n const inVals =
backend.typedArrayFromHeap(x);\n\n const outVals = backend.typedArrayFromHeap(out);\n\n outVals.set(inVals);\n
return out;\n}\n\nexport const castConfig: KernelConfig = {\n kernelName: Cast,\n backendName: 'wasm',\n
kernelFunc: cast as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====

```

```

=====
*\n\nimport { KernelConfig, Ceil } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n\n"/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====

```



```

=====
*\n\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmClip: (xId: number, min:
number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmClip =
backend.wasm.cwrap(ClipByValue, null /* void */, [\n 'number', // x_id\n 'number', // min\n 'number', //
max\n 'number' // out_id\n]);\n\n function clip(args: {\n inputs: ClipByValueInputs,\n backend:
BackendWasm,\n attrs: ClipByValueAttrs\n }) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {clipValueMin, clipValueMax} = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =
backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmClip(xId,
clipValueMin, clipValueMax, outId);\n return out;\n }\n\n export const clipByValueConfig: KernelConfig = {\n
kernelName: ClipByValue,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: clip as {} as
KernelFunc\n };\n "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */
=====
*\n\nimport {backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {concatImplCPU} from
'./kernel_utils/shared';\n\nimport {identity} from './Identity';\n\nimport {reshape} from './Reshape';\n\nexport function
concat(\n args: {\n inputs: ConcatInputs, backend: BackendWasm, attrs: ConcatAttrs\n }) {\n const {inputs, backend}
= args;\n\n const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n\n let outShape =
backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n\n // Keep only non-empty tensors (ignore tensors
with 0 in their shape).\n const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n\n if ($inputs.length ===
1) {\n return identity({inputs: {x: $inputs[0]}, backend});\n }\n\n const out = backend.makeOutput(outShape,
inputs[0].dtype);\n\n if (util.sizeFromShape(outShape) === 0) {\n return out;\n }\n\n const shapes =
$inputs.map(t => t.shape);\n backend_util.assertParamsConsistent(shapes, axis);\n\n if ($inputs[0].dtype ===
'string') {\n // Any concat of n-dimensional tensors across any axis can be reduced to\n // a concatenation of two-
dimensional tensors across the axis 1 by first\n // partitioning the axes of the original tensors into those less than
the\n // axis to be concatenated and the rest. Then reshape the tensors\n // into a two-dimensional tensor by
collapsing these two sets of axes and\n // concatenate the resulting matrices across the axis 1, finally reshaping\n
// the result to have the proper shape.\n const inputs2D = $inputs.map(t => {\n const innerSize =
util.sizeFromShape(t.shape.slice(axis));\n const shape = [-1, innerSize];\n return reshape({inputs: {x: t},
backend, attrs: {shape}});\n });\n\n const inputsValShapes = inputs2D.map(t => {\n return {vals:
backend.readSync(t.dataId), shape: t.shape};\n });\n\n // Concat 2d tensors along axis=1.\n outShape =\n backend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);\n const simplyConcat =
inputs2D[0].shape[0] === 1;\n const outVals = concatImplCPU(\n inputsValShapes, outShape,\n inputs[0].dtype,\n simplyConcat) as string[];\n\n const finalOutShape =\n backend_util.computeOutShape($inputs.map(t => t.shape), axis);\n\n out.shape = finalOutShape;\n const
outData = backend.dataIdMap.get(out.dataId);\n outData.stringBytes =
backend_util.fromStringArrayToUint8(outVals);\n\n inputs2D.forEach(t => backend.disposeData(t.dataId));\n\n return out;\n }\n\n const batchDim = util.sizeFromShape($inputs[0].shape.slice(0, axis));\n let sumInnerDims =
0;\n const innerDims = $inputs.map(input => {\n const innerDim = util.sizeFromShape(input.shape.slice(axis));\n sumInnerDims += innerDim;\n return innerDim;\n });\n const inVals = $inputs.map(input =>
backend.toArrayFromHeap(input));\n const outVals = backend.toArrayFromHeap(out);\n for (let b = 0; b <
batchDim; b++) {\n let outOffset = b * sumInnerDims;\n for (let i = 0; i < inVals.length; i++) {\n const

```

```

innerDim = innerDims[i];\n const inOffset = b * innerDim;\n const vals = inVals[i].subarray(inOffset,
inOffset + innerDim);\n outVals.set(vals, outOffset);\n outOffset += innerDim;\n }\n }\n return
out;\n}\n\nexport const concatConfig: KernelConfig = {\n kernelName: Concat,\n backendName: 'wasm',\n kernelFunc: concat as { } as KernelFunc;\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, KernelConfig, KernelFunc, Tensor4D } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nlet wasmConv2d: (\n xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number,
filterWidth: number, padTop: number,\n padRight: number, padBottom: number, padLeft: number, isSamePad:
number,\n dilationHeight: number, dilationWidth: number, strideHeight: number,\n strideWidth: number,
inputChannels: number, outputChannels: number,\n outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n wasmConv2d = backend.wasm.cwrap(Conv2D, null /* void */, [\n 'number', // xId\n
'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n
'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n
'number', // outputChannels\n 'number', // outId\n]);\n}\n\nfunction conv2d(\n args: { inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs }) {\n const { inputs, attrs, backend } = args;\n const { x, filter } = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n
const { strides, dilations, pad, dimRoundingMode, dataFormat } = attrs;\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode, false,
$dataFormat);\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const
padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom =
convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const outputChannels = convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend
Conv2D does not support dataFormat:` +\n ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n }\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n wasmConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n outputChannels, outId);\n return out;\n}\n\nexport
const conv2DConfig: KernelConfig = {\n kernelName: Conv2D,\n backendName: 'wasm',\n setupFunc: setup,\n
kernelFunc: conv2d as { } as KernelFunc;\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport { backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n
outHeight: number, outWidth: number, outChannels: number,\n strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n
xRowStride: number, xColStride: number, xChannelStride: number,\n yBatchStride: number, yRowStride:
number, yColStride: number,\n yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n
'number', // filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n
'number', // outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n
'number', // strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n
'number', // fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n
'number', // xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n
'number', // yChannelStride\n 'number', // outId\n]);\n}\n\nfunction conv2DBackpropInput(args: {\n backend:
BackendWasm,\n inputs: Conv2DBackpropInputInputs,\n attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const { backend, inputs, attrs } = args;\n const { dy, filter } = inputs;\n const { strides, pad, dataFormat,
dimRoundingMode, inputShape } = attrs;\n\n const dilations = 1;\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n const {\n batchSize,\n filterHeight,\n filterWidth,\n inChannels,\n
inHeight,\n inWidth,\n outChannels,\n outHeight,\n outWidth,\n strideHeight,\n strideWidth\n } =
convInfo;\n\n const topPad = filterHeight - 1 - convInfo.padInfo.top;\n const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n const dxStrides =
util.computeStrides(convInfo.inShape);\n const dyStrides = util.computeStrides(dy.shape);\n const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n const xBatchStride = dxStrides[0];\n const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n const xColStride = isChannelsLast ? dxStrides[2] : 1;\n const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n const yBatchStride = dyStrides[0];\n const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n const yColStride = isChannelsLast ? dyStrides[2] : 1;\n const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n const out = backend.makeOutput(convInfo.inShape,
'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const dyId =
backend.dataIdMap.get(dy.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
wasmConv2DBackpropInput(\n dyId, filterId, batchSize, filterHeight, filterWidth, inHeight, inWidth,\n
inChannels, outHeight, outWidth, outChannels, strideHeight, strideWidth,\n topPad, leftPad, fltS0, fltS1, fltS2,
xBatchStride, xRowStride,\n xColStride, xChannelStride, yBatchStride, yRowStride, yColStride,\n
yChannelStride, outId);\n return out;\n}\n\nexport const conv2DBackpropInputConfig: KernelConfig = {\n
kernelName: Conv2DBackpropInput,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
conv2DBackpropInput as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */
=====
*\n\nimport { Cos, KernelConfig } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from

```

```
./unary_kernel';\n\nexport const cosConfig: KernelConfig = createUnaryKernelConfig(Cos);\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { Cosh, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\n\nexport const coshConfig: KernelConfig = createUnaryKernelConfig(Cosh);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { CropAndResize, CropAndResizeAttrs, CropAndResizeInputs, KernelConfig, KernelFunc,\n TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { cast }\n from './Cast';\n\n// Must match enum in CropAndResize.cc\nenum InterpolationMethod {\n bilinear = 0,\n nearest\n = 1\n}\n\nlet wasmCropAndResize: (\n imagesId: number, boxesId: number, boxIndId: number, numBoxes:\n number,\n imagesShape: Uint8Array, cropHeight: number, cropWidth: number,\n method: number,\n extrapolationValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n 'number', // imagesId\n 'number', // boxesId\n 'number', // boxIndId\n 'number', // numBoxes\n 'array', // images shape\n 'number', // cropHeight\n 'number', // cropWidth\n 'number', // method\n 'number', // extrapolation value\n 'number'\n // out id\n]);\n}\n\nfunction cropAndResize(args: {\n backend: BackendWasm,\n inputs: CropAndResizeInputs,\n attrs: CropAndResizeAttrs\n}): TensorInfo {\n const { backend, inputs, attrs } = args;\n const { method,\n extrapolationValue, cropSize } = attrs;\n const { image, boxes, boxInd } = inputs;\n const numBoxes =\n boxes.shape[0];\n const [cropHeight, cropWidth] = cropSize as [number, number];\n const outShape =\n [numBoxes, cropHeight, cropWidth, image.shape[3]];\n let imagesData =\n backend.dataIdMap.get(image.dataId);\n let castedData;\n if (image.dtype !== 'float32') {\n castedData =\n cast({ backend, inputs: { x: image }, attrs: { dtype: 'float32' }});\n imagesData =\n backend.dataIdMap.get(castedData.dataId);\n }\n const imagesId = imagesData.id;\n const boxesId =\n backend.dataIdMap.get(boxes.dataId).id;\n const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n const\n out = backend.makeOutput(outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const\n imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n wasmCropAndResize(\n imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,\n cropWidth,\n InterpolationMethod[method as { } as keyof typeof InterpolationMethod],\n extrapolationValue, outId);\n if\n (castedData !== null) {\n backend.disposeData(castedData.dataId);\n }\n return out;\n}\n\nexport const\n cropAndResizeConfig: KernelConfig = {\n kernelName: CropAndResize,\n backendName: 'wasm',\n setupFunc:\n setup,\n kernelFunc: cropAndResize as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
```

```

=====\\n
*\\n\\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';\\n\\nimport {BackendWasm} from '../backend_wasm';\\n\\nimport {CppType} from
 './types';\\n\\nimport {transpose} from './Transpose';\\n\\nlet wasmCumsum: (xId: number, exclusive: number, reverse:
number,\\n finalDim: number, outId: number, dtype: CppDType) => void;\\n\\nfunction setup(backend:
BackendWasm) {\\n wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\\n 'number', // x_id\\n
'number', // exclusive\\n 'number', // reverse\\n 'number', // final_dim\\n 'number', // out_id\\n 'number' //
dtype\\n]);\\n}\\n\\nexport function cumsum(\\n args: {inputs: CumsumInputs, backend: BackendWasm, attrs:
CumsumAttrs}):\\nTensorInfo {\\n const {inputs, backend, attrs} = args;\\n const {x} = inputs;\\n const {axis,
exclusive, reverse} = attrs;\\n const xRank = x.shape.length;\\n\\n util.assert(x.dtype === 'float32' || x.dtype ===
'int32',\\n () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\\n // permute required axis
to inner most axis\\n const permutation = backend_util.getAxesPermutation([axis], xRank);\\n let permutedX = x;\\n
if (permutation !== null) {\\n permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\\n }\\n
 const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\\n
 backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\\n const permutedOut =
 backend.makeOutput(permutedX.shape, permutedX.dtype);\\n const finalDim = permutedX.shape[permutedAxis];\\n
 const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\\n const permutedOutId =
 backend.dataIdMap.get(permutedOut.dataId).id;\\n wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0,
 finalDim,\\n permutedOutId, CppDType[x.dtype]);\\n\\n // transpose data back if permuted\\n let out =
 permutedOut;\\n if (permutation !== null) {\\n const undoPermutation =
 backend_util.getUndoAxesPermutation(permutation);\\n out = transpose(\\n {inputs: {x: permutedOut}, attrs:
{perm: undoPermutation}, backend});\\n backend.disposeData(permutedX.dataId);\\n
 backend.disposeData(permutedOut.dataId);\\n }\\n return out;\\n}\\n}\\n\\nexport const cumsumConfig: KernelConfig =
{\\n kernelName: Cumsum,\\n backendName: 'wasm',\\n setupFunc: setup,\\n kernelFunc: cumsum as {} as
KernelFunc\\n};\\n", "/*\\n * @license\\n * Copyright 2019 Google LLC. All Rights Reserved.\\n * Licensed under the
Apache License, Version 2.0 (the "License");\\n * you may not use this file except in compliance with the
License.\\n * You may obtain a copy of the License at\\n * http://www.apache.org/licenses/LICENSE-2.0\\n *\\n *
Unless required by applicable law or agreed to in writing, software\\n * distributed under the License is distributed
on an "AS IS" BASIS,\\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\\n * See the License for the specific language governing permissions and\\n * limitations under the
License.\\n *
=====\\n
*\\n\\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\\n\\nimport {BackendWasm} from '../backend_wasm';\\n\\nlet wasmDepthToSpace:
(\\n xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\\n xStridesLength: number,
outputShape: Uint8Array, outputStrides: Uint8Array,\\n outSize: number, outId: number) => void;\\n\\nfunction
setup(backend: BackendWasm): void {\\n wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\\n 'number', // xId\\n 'number', // blockSize\\n 'number', // channelsLast\\n 'array', // xStrides\\n
'number', // xStridesLength\\n 'array', // outputShape\\n 'array', // outputStrides\\n 'number', // outSize\\n
'number', // outId\\n]);\\n}\\n\\nexport function depthToSpace(args: {\\n backend: BackendWasm,\\n inputs:
DepthToSpaceInputs,\\n attrs: DepthToSpaceAttrs\\n}): TensorInfo {\\n const {backend, inputs, attrs} = args;\\n
 const {x} = inputs;\\n const {blockSize, dataFormat} = attrs;\\n\\n const batchSize = x.shape[0];\\n const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\\n const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\\n const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\\n\\n const
outputHeight = inputHeight * blockSize;\\n const outputWidth = inputWidth * blockSize;\\n const outputDepth =
inputDepth / (blockSize * blockSize);\\n\\n const outputShape = (dataFormat === 'NHWC') ?\\n [batchSize,
outputHeight, outputWidth, outputDepth] :\\n [batchSize, outputDepth, outputHeight, outputWidth];\\n\\n const
out = backend.makeOutput(outputShape, 'float32');\\n\\n const xData = backend.dataIdMap.get(x.dataId);\\n const

```

```

xId = xData.id;\n const xStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n const outStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n wasmDepthToSpace(\n xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n return
out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n kernelName: DepthToSpace,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: depthToSpace as { } as KernelFunc\n};\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number, padTop:
number,\n padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n dilationHeight:
number, dilationWidth: number, strideHeight: number,\n strideWidth: number, inputChannels: number,
outputChannels: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
 wasmDepthwiseConv2d =\n backend.wasm.cwrap(DepthwiseConv2dNative, null /* void */, [\n 'number', //
xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', //
filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
 'number', // inputChannels\n 'number', // outputChannels\n 'number', // outId\n]);\n\nfunction
depthwiseConv2d(args: {\n inputs: DepthwiseConv2dNativeInputs,\n backend: BackendWasm,\n attrs:
DepthwiseConv2dNativeAttrs\n}) {\n const { inputs, attrs, backend } = args;\n\n const { x, filter } = inputs;\n const
xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n const
{ strides, dilations, pad, dimRoundingMode } = attrs;\n\n const $dilations = dilations === null ? [1, 1] : dilations;\n\n
const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n ($dilations as number | [number, number]), pad, dimRoundingMode,\n true /* depthwise */);\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop =
convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n\n
const padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n if
(convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend DepthwiseConv2dNative
does not support dataFormat:` +\n ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
 wasmDepthwiseConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n filterWidth,
padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n outputChannels, outId);\n return out;\n}\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n kernelName: DepthwiseConv2dNative,\n backendName: 'wasm',\n setupFunc: setup,\n
 kernelFunc: depthwiseConv2d as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2021 Google LLC. All

```

Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* \n \* http://www.apache.org/licenses/LICENSE-2.0\n \* \n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from './unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n\n\"\", \"**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const equalConfig: KernelConfig =\n createBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n\n\"\", \"**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from './unary_kernel';\n\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n\n\"\", \"**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\n\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {reshape} from './Reshape';\n\nexport function expandDims(args: {\n inputs: ExpandDimsInputs,\n attrs: ExpandDimsAttrs,\n backend: BackendWasm\n}) {\n const {inputs, attrs, backend} = args;\n const {input} = inputs;\n const {dim} = attrs;\n\n const inputRank = input.shape.length;\n const newShape = input.shape.slice();\n let $dim = dim;\n if (dim < 0) {\n // Negative value is counted from the tail of rank.\n util.assert(\n -(inputRank + 1) <= dim,\n () => `Axis must be in the interval [${-(inputRank + 1)}, ${inputRank}]`);\n $dim = inputRank + dim + 1;\n }\n newShape.splice($dim, 0, 1);\n\n return reshape({inputs: {x: input}, backend, attrs: {shape: newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n kernelName: ExpandDims,\n backendName: 'wasm',\n kernelFunc: expandDims as {} as KernelFunc,\n};\n\n\"\", \"**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
```

software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { Fill, FillAttrs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nexport function fill(args: { attrs: FillAttrs, backend: BackendWasm }) {\n const { attrs: { shape, value, dtype }, backend } = args;\n const out = backend.makeOutput(shape, dtype);\n const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(value as number);\n return out;\n}\n\nexport const fillConfig: KernelConfig = {\n kernelName: Fill,\n backendName: 'wasm',\n kernelFunc: fill as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmFlipLeftRight: (\n xId: number, batch: number, imageHeight: number, imageWidth: number,\n numChannels: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight, null /* void */, [\n 'number', // xId\n 'number', // batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', // outId\n]);\n}\n\nexport function flipLeftRight(\n args: { inputs: FlipLeftRightInputs, backend: BackendWasm }): TensorInfo {\n const { inputs, backend } = args;\n const { image } = inputs;\n const out = backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n wasmFlipLeftRight(\n imageId, batch, imageHeight, imageWidth, numChannels, outId);\n return out;\n}\n\nexport const flipLeftRightConfig: KernelConfig = {\n kernelName: FlipLeftRight,\n backendName: 'wasm',\n kernelFunc: flipLeftRight as { } as KernelFunc,\n setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { Floor, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\n\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { FloorDiv, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const floorDivConfig: KernelConfig =
```



createBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n", "/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmBatchNorm: (\n xId: number, meanId: number, varianceId: number, offsetId: number,\n scaleId: number, varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmBatchNorm = backend.wasm.cwrap(\n FusedBatchNorm, null /* void */,\n ['number', 'number', 'number', 'number', 'number', 'number']);\n}\n\nfunction fusedBatchNorm(args: {\n backend: BackendWasm,\n inputs: FusedBatchNormInputs,\n attrs: FusedBatchNormAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {varianceEpsilon} = attrs;\n const {x, mean, variance, offset, scale} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const meanId = backend.dataIdMap.get(mean.dataId).id;\n const varianceId = backend.dataIdMap.get(variance.dataId).id;\n const offsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n const scaleId = scale != null ? backend.dataIdMap.get(scale.dataId).id : 0;\n const out = backend.makeOutput(x.shape, x.dtype);\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(x.shape) === 0) {\n return out;\n }\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmBatchNorm(xId, meanId, varianceId, offsetId, scaleId, varianceEpsilon, outId);\n return out;\n}\n\nexport const fusedBatchNormConfig: KernelConfig = {\n kernelName: FusedBatchNorm,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchNorm as {\n KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {FusableActivation} from './types';\n\nlet wasmFusedConv2d: (\n xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number,\n biasId: number, padTop: number, padRight: number, padBottom: number,\n padLeft: number, isSamePad: number, dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels: number, activation: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', // preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n]);\n}\n\nfunction fusedConv2d(args: {\n inputs: FusedConv2DInputs,\n backend: BackendWasm,\n attrs: FusedConv2DAttrs\n})
```

```

{\n const {inputs, attrs, backend} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const {\n
strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } =
attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as
Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode);\n\n const fusedActivation =\n
FusableActivation[activation as {} as keyof typeof FusableActivation];\n if (fusedActivation == null) {\n throw
new Error(\n ` ${activation} activation not yet supported for FusedConv2D ` +\n `in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if
(bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `FusedConv2D only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}.`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not ` +\n `match the number of output channels
(${outputChannels}).`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedConv2D does not support
dataFormat:` +\n ` ${dataFormat}'. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n
backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:\n
KernelConfig = {\n kernelName: FusedConv2D,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:\n
fusedConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====*\n\nimport {backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,\n
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\nimport
{BackendWasm} from './backend_wasm';\nimport {FusableActivation} from './types';\n\nlet\n
wasmfusedDepthwiseConv2d:\n (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n
filterId: number, filterHeight: number, filterWidth: number,\n biasId: number, padTop: number, padRight:\n
number, padBottom: number,\n padLeft: number, isSamePad: number, dilationHeight: number,\n
dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels:\n
number, activation: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
void;\n\nfunction setup(backend: BackendWasm) {\n wasmfusedDepthwiseConv2d =\n
backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', //

```



```

sliceSize\n 'array', // strides\n 'number' // outId\n]);\n}\n\nfunction gatherNd(args: {backend: BackendWasm,
inputs: GatherNdInputs}):\n TensorInfo {\n const {backend, inputs} = args;\n const {params, indices} =
inputs;\n\n const [resultShape, numSlices, sliceSize, strides] =\n gather_util.prepareAndValidate(params,
indices);\n\n const out = backend.makeOutput(resultShape, params.dtype);\n if (numSlices === 0) {\n return
out;\n }\n\n const indicesShape = indices.shape;\n const sliceRank = indicesShape[indicesShape.length - 1];\n\n const xData = backend.dataIdMap.get(params.dataId);\n const xId = xData.id;\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmGatherNd(\n xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n stridesBytes,
outId);\n\n return out;\n }\n\n\nexport const gatherNdConfig: KernelConfig = {\n kernelName: GatherNd,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherNd\n};\n", /**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,
TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {reshape} from './Reshape';\n\nimport {CppType} from './types';\n\nlet wasmGather:
(\n xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n indicesId: number, batchSize:
number, outStrides: Uint8Array,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
 wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n 'number', // xId\n 'number', // dtype\n 'array',
// xStrides\n 'number', // stridesSize\n 'number', // indicesId\n 'number', // batchSize\n 'array', //
outStrides\n 'number' // outId\n]);\n\n\nfunction gatherV2(\n args: {backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs}):\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {x,
indices} = inputs;\n const {axis, batchDims} = attrs;\n\n // Throw error when any index is out of bound.\n const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n const axisDim = x.shape[parsedAxis];\n for (let i = 0; i < indicesVals.length; ++i) {\n const index
= indicesVals[i];\n util.assert(\n index <= axisDim - 1 && index >= 0,\n () =>\n `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]);\n }\n\n const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n const flattenX = reshape({\n inputs: [x],\n attrs: {\n shape: [\n shapeInfo.batchSize,
shapeInfo.outerSize, shapeInfo.dimSize,\n shapeInfo.sliceSize\n]\n },\n backend\n });\n const
indicesSize = util.sizeFromShape(indices.shape);\n const flattenIndex = reshape({\n inputs: {x: indices},\n attrs:
{shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n backend\n });\n const flattenOutputShape =
[\n shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n shapeInfo.sliceSize\n];\n\n const out = backend.makeOutput(flattenOutputShape, x.dtype);\n if (util.sizeFromShape(x.shape) === 0) {\n
 return out;\n }\n\n const stridesSize = flattenX.shape.length - 1;\n\n const xData =
backend.dataIdMap.get(flattenX.dataId);\n const xId = xData.id;\n\n const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n const indicesId = indicesData.id;\n\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const xStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n\n const outStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n wasmGather(\n xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n shapeInfo.batchSize, outStridesBytes, outId);\n\n backend.disposeData(flattenX.dataId);\n backend.disposeData(flattenIndex.dataId);\n\n // reshape\n out.shape =
shapeInfo.outputShape;\n return out;\n }\n\n\nexport const gatherV2Config: KernelConfig = {\n kernelName:

```

GatherV2,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherV2 as { } as KernelFunc\n};\n"/\*\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\ncreateBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {GreaterEqual, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\n\nlet wasmFunc: (\n xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>\nvoid;\n\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(LeakyRelu, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // leakyrelu_alpha\n 'number', // out_id\n]);\n\n export function leakyRelu(\n args: {\n inputs: LeakyReluInputs, attrs: LeakyReluAttrs, backend: BackendWasm\n }): TensorInfo {\n const {inputs: {x}, attrs: {alpha}, backend} = args;\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n // According to TF API, LeakyRelu returns float32 when input is either float32\n // or int32.\n const out = backend.makeOutput(x.shape, 'float32');\n\n if (util.sizeFromShape(x.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(xId, CCppType[x.dtype], alpha, outId);\n }\n\n return out;\n }\n\n export const leakyReluConfig: KernelConfig = {\n kernelName: LeakyRelu,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: leakyRelu as { } as KernelFunc,\n };\n}\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, Less} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
```

```

./binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n=====\n\n*\n\nimport { KernelConfig, LessEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019\n Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you\n may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n=====\n\n*\n\nimport { KernelConfig, Log } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n", "/*\n * @license\n *

Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n=====\n\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport\n { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\nlet wasmMax: (xId:\n number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:\n BackendWasm): void {\n wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n 'number', // x_id\n 'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n\n function max(args: {\n backend:\n BackendWasm, inputs: MaxInputs, attrs: MaxAttrs\n }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { reductionIndices: axis, keepDims } = attrs;\n const { x } = inputs;\n const xId =\n backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const { transposed, axes, originalAxes,\n inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n if (inputWasTransposed) {\n
```



```

padRight = convInfo.padInfo.right;\n const paddingBottom = convInfo.padInfo.bottom;\n const padLeft =
convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm
backend does not support dataFormat:~` +\n ` ${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n };\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n wasmMaxPool(\n xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n padTop, padRight, paddingBottom, padLeft, dilationHeight, dilationWidth,\n strideHeight, strideWidth, inputChannels, outputChannels, outId);\n return out;\n}\n\nexport const maxPoolConfig:
KernelConfig = {\n kernelName: MaxPool,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: maxPool
as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */
=====
*\n\nimport { backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { cast } from './Cast';\nimport
{ permuteAxesAndTranspose } from './kernel_utils';\n\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmMean =\n backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);\n}\n\nexport function mean(\n args:
{ backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs }):\n TensorInfo {\n const { backend, inputs,
attrs } = args;\n const { axis, keepDims } = attrs;\n const { x } = inputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const { transposed, axes, originalAxes,
inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n\n let reductionAxes = axes;\n if
(inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId
!== xId) {\n // transpose was not a no-op. We will need to dispose of this\n // once we are done.\n input =
transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n
reductionAxes.length, input.shape.length);\n }\n }\n backend_util.assertAxesAreInnerMostDims(\n 'mean',
reductionAxes, input.shape.length);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput =\n cast({ backend, inputs: { x: input }, attrs: { dtype: 'float32' }});\n inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(outShape, 'float32');\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmMean(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed
tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n if (input.dtype
!== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n\n return out;\n}\n\nexport const meanConfig:
KernelConfig = {\n kernelName: Mean,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: mean as { }
as KernelFunc\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

```



implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*/\n\nimport { backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport\n {permuteAxesAndTranspose} from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmMin: (xId:\n number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:\n BackendWasm): void {\n wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n 'number', // x_id\n 'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n\n function min(args: { backend:\n BackendWasm, inputs: MinInputs, attrs: MinAttrs }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { axis, keepDims } = attrs;\n const { x } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let\n inputId = xId;\n let input = x;\n\n const { transposed, axes, originalAxes, inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n const transposedId =\n backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We\n will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n }\n\n const inputRank = input.shape.length;\n\n backend_util.assertAxesAreInnerMostDims('min', axes,\n inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape,\n axes);\n const reduceSize = util.sizeFromShape(reduceShape);\n const out = backend.makeOutput(outShape,\n input.dtype);\n if (util.sizeFromShape(input.shape) !== 0) {\n const outId =\n backend.dataIdMap.get(out.dataId).id;\n wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);\n }\n\n if\n (inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape = backend_util.expandShapeToKeepDim(out.shape,\n originalAxes);\n out.shape = newShape;\n }\n\n return out;\n }\n\n export const minConfig: KernelConfig = {\n kernelName: Min,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: min as {} as\n KernelFunc\n }; \n }\n\n /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */\n}
```

```
=====\n\n*/\n\nimport { KernelConfig, Minimum } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const minimumConfig: KernelConfig =\n createBinaryKernelConfig(Minimum, supportsFullBroadcast);\n\n/**\n * @license\n * Copyright 2021 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */\n
```

```
=====\n\n*/\n\nimport { KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs } from '@tensorflow/tfjs-\n core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from './types';\n\n// Must match\n enum in MirrorPad.cc\nenum MirrorPaddingMode {\n reflect = 0,\n symmetric = 1\n}\n\nlet wasmMirrorPad: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes:\n Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n outId: number) => void;\n\nfunction\n setup(backend: BackendWasm) {\n wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n
```

```

'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-
paddings\n 'array', // post-paddings\n 'number', // mode\n 'number', // outId\n);\n)\n\nfunction
mirrorPad(args: {\n inputs: MirrorPadInputs,\n backend: BackendWasm,\n attrs: MirrorPadAttrs\n}) {\n const
{inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n const outShape = paddings.map(\n (p, i) => p[0] /*
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =
backend.makeOutput(outShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const
postPaddingsBytes =\n new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmMirrorPad(\n
xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes,
MirrorPaddingMode[mode], outId);\n return out;\n)\n\nexport const mirrorPadConfig: KernelConfig = {\n
kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as { } as KernelFunc,\n setupFunc:
setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*\n\nimport {KernelConfig, Multiply} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'./binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\ncreateBinaryKernelConfig(Multiply, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, Neg} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {BackendWasm} from './backend_wasm';\n\n// Analogous to `struct Result` in
`non_max_suppression_impl.h`\n\ninterface Result {\n pSelectedIndices: number;\n selectedSize: number;\n
pSelectedScores: number;\n pValidOutputs: number;\n}\n\n/*\n * Parse the result of the c++ method, which has the
shape equivalent to\n * `Result`\n */\n\nexport function parseResultStruct(\n backend: BackendWasm, resOffset:
number): Result {\n const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n const
pSelectedIndices = result[0];\n const selectedSize = result[1];\n const pSelectedScores = result[2];\n const
pValidOutputs = result[3];\n // Since the result was allocated on the heap, we have to delete it.\n
backend.wasm._free(resOffset);\n return {pSelectedIndices, selectedSize, pSelectedScores,

```

pValidOutputs};\n}\n", "/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs, NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number)\n=> number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n NonMaxSuppressionV3,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n]);\n\n function kernelFunc(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV3Inputs,\n attrs: NonMaxSuppressionV3Attrs\n }): TensorInfo {\n const { backend, inputs, attrs } = args;\n const { iouThreshold, maxOutputSize, scoreThreshold } = attrs;\n const { boxes, scores } = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset =\n wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n\n const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n parseResultStruct(backend, resOffset);\n\n // Since we are not using scores for V3, we have to delete it from the heap.\n\n backend.wasm._free(pSelectedScores);\n backend.wasm._free(pValidOutputs);\n\n const selectedIndicesTensor =\n backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n return selectedIndicesTensor;\n }\n\n export const nonMaxSuppressionV3Config: KernelConfig = {\n kernelName: NonMaxSuppressionV3,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc as {\n kernelFunc: KernelFunc\n }\n }; }\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs, NonMaxSuppressionV4Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n NonMaxSuppressionV4,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n 'bool', // padToMaxOutputSize\n]);\n\n function nonMaxSuppressionV4(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV4Inputs,\n attrs: NonMaxSuppressionV4Attrs\n }): TensorInfo[] {\n const { backend, inputs, attrs } = args;\n const { iouThreshold, maxOutputSize, scoreThreshold, padToMaxOutputSize } =\n attrs;\n const { boxes, scores } = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n padToMaxOutputSize);\n\n const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n
```

```

parseResultStruct(backend, resOffset);\n\n // Since we are not using scores for V4, we have to delete it from the
heap.\n backend.wasm._free(pSelectedScores);\n\n const selectedIndicesTensor =\n
backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n const validOutputsTensor =
backend.makeOutput([], 'int32', pValidOutputs);\n\n return [selectedIndicesTensor,
validOutputsTensor];\n\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n kernelName:
NonMaxSuppressionV4,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV4 as { }
as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,
NonMaxSuppressionV5Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc:\n
(boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,
softNmsSigma: number) =>\n number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =
backend.wasm.cwrap(\n NonMaxSuppressionV5,\n 'number', // Result*\n [\n 'number', // boxesId\n
'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', //
scoreThreshold\n 'number', // softNmsSigma\n]);\n\n\nfunction kernelFunc(args: {\n backend:
BackendWasm,\n inputs: NonMaxSuppressionV5Inputs,\n attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[]
{\n const { backend, inputs, attrs } = args;\n const { iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma }
= attrs;\n const { boxes, scores } = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const
scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n boxesId, scoresId,
maxOutputSize, iouThreshold, scoreThreshold,\n softNmsSigma);\n\n const { pSelectedIndices, selectedSize,
pSelectedScores, pValidOutputs } =\n parseResultStruct(backend, resOffset);\n\n // Since we are not using
validOutputs for V5, we have to delete it from the\n // heap.\n backend.wasm._free(pValidOutputs);\n\n const
selectedIndicesTensor =\n backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n const
selectedScoresTensor =\n backend.makeOutput([selectedSize], 'float32', pSelectedScores);\n\n return
[selectedIndicesTensor, selectedScoresTensor];\n\n\nexport const nonMaxSuppressionV5Config: KernelConfig =
{\n kernelName: NonMaxSuppressionV5,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc
as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { KernelConfig, NotEqual } from '@tensorflow/tfjs-core';\n\nimport { createBinaryKernelConfig } from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const notEqualConfig: KernelConfig =\n createBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES

```

OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmOneHot: (\n indicesId: number, depth: number, onValue: number, offValue: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n 'number', // indices_id\n 'number', // depth,\n 'number', // onValue\n 'number', // offValue\n 'number' // out_id\n]);\n\n function oneHot(\n args: { inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm }) {\n const { inputs, backend, attrs } = args;\n const { indices } = inputs;\n const { depth, onValue, offValue } = attrs;\n\n const out = backend.makeOutput([...indices.shape, depth], 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const indicesData = backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n wasmOneHot(indicesId, depth, onValue, offValue, outId);\n\n return out;\n }\n\n export const oneHotConfig: KernelConfig = {\n kernelName: OneHot,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: oneHot as {\n } as KernelFunc,\n }; \n /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n}
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, OnesLike, OnesLikeInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nfunction onesLike(args: { inputs: OnesLikeInputs, backend: BackendWasm }) {\n const { inputs: { x }, backend } = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const outVals = backend.tensorArrayFromHeap(out);\n outVals.fill(1);\n return out;\n}\n\nexport const onesLikeConfig: KernelConfig = {\n kernelName: OnesLike,\n backendName: 'wasm',\n kernelFunc: onesLike as {\n } as KernelFunc,\n}; \n /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n}
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { concat } from './Concat';\nimport { expandDims } from './ExpandDims';\n\nexport function pack(\n args: { inputs: PackInputs, backend: BackendWasm, attrs: PackAttrs }):\n TensorInfo {\n const { inputs, backend, attrs } = args;\n const { axis } = attrs;\n\n if (inputs.length === 1) {\n return expandDims(\n { inputs: { input: inputs[0] }, backend, attrs: { dim: axis } });\n }\n\n const shape = inputs[0].shape;\n const dtype = inputs[0].dtype;\n inputs.forEach(t => {\n util.assertShapesMatch(\n shape, t.shape, \n 'All tensors passed to stack must have matching shapes');\n util.assert(\n dtype === t.dtype, \n () => 'All tensors passed to stack must have matching dtypes');\n });\n\n const intermediateTensorInfos: TensorInfo[] = [];\n const expandedTensors = inputs.map(t => {\n const expandedT =\n expandDims({ inputs: { input: t }, backend, attrs: { dim: axis } });\n intermediateTensorInfos.push(expandedT);\n return expandedT;\n });\n\n const result = concat({ inputs: expandedTensors, backend, attrs: { axis } });\n intermediateTensorInfos.forEach(t => backend.disposeData(t.dataId));\n\n return result;\n}\n\nexport const packConfig: KernelConfig = {\n kernelName:
```

Pack,\n backendName: 'wasm',\n kernelFunc: pack as { } as KernelFunc\n};\n", "/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \*<http://www.apache.org/licenses/LICENSE-2.0>\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { fill } from './Fill';\nimport { CppDType } from './types';\n\nlet wasmPadV2: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n constantValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPadV2 = backend.wasm.cwrap(PadV2, null /* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'array', // pre-paddings\n 'array', // post-paddings\n 'number', // constantValue\n 'number', // outId\n]);\n\n function pad(\n args: { inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs }) {\n const { inputs: { x }, backend, attrs: { paddings, constantValue } } = args;\n\n const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n if (util.sizeFromShape(x.shape) === 0) {\n // Short-circuit the computation, since x doesn't have value, only\n // the shape is used to compute output shape to pad.\n return fill({\n backend,\n attrs: { shape: outShape, value: constantValue, dtype: x.dtype }\n });\n }\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n const outTensorData = backend.dataIdMap.get(out.dataId);\n const outId = outTensorData.id;\n\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const postPaddingsBytes =\n new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmPadV2(\n xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes, constantValue, outId);\n return out;\n }\n\n export const padV2Config: KernelConfig = {\n kernelName: PadV2,\n backendName: 'wasm',\n kernelFunc: pad as { } as KernelFunc,\n setupFunc: setup\n }; \n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Pow } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from '../binary_kernel';\nconst supportsFullBroadcast = false;\nexport const powConfig: KernelConfig =\n createBinaryKernelConfig(Pow, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Prelu, PreluInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { cast } from './Cast';\n\nlet wasmPrelu: (xId: number,
```

```

weightsId: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPrelu =
backend.wasm.cwrap(Prelu, null /* void */, [\n 'number', // x_id\n 'number', // weights_id\n 'number' //
out_id\n]);\n}\n\nfunction prelu(args: {inputs: PreluInputs, backend: BackendWasm}) {\n const {inputs, backend}
= args;\n const {x, alpha} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const weightsId =
backend.dataIdMap.get(alpha.dataId).id;\n\n let inputId = xId;\n const input = x;\n let castedInput = input;\n if
(input.dtype !== 'float32') {\n castedInput = cast({backend, inputs: {x}, attrs: {dtype: 'float32'}});\n inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(x.shape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmPrelu(inputId, weightsId, outId);\n\n if (input.dtype
!== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n return out;\n}\n\nexport const preluConfig:
KernelConfig = {\n kernelName: Prelu,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: prelu as { } as
KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmProd: (\n
xId: number, reduceSize: number,\n dtype: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n 'number',\n 'number',\n 'number',\n 'number'\n]);\n}\n\nfunction prod(args: {\n backend: BackendWasm,\n inputs: ProdInputs,\n attrs:
ProdAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x}
= inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const
{transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n let reductionAxes = axes;\n if (inputWasTransposed) {\n const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We
will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length, input.shape.length);\n }\n }\n\n backend_util.assertAxesAreInnerMostDims(\n 'prod', reductionAxes, input.shape.length);\n const [outShape,
reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize
= util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, input.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n\n if (inputWasTransposed) {\n // dispose of
the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return out;\n}\n\nexport const prodConfig: KernelConfig = {\n kernelName: Prod,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: prod as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport

```

```
{BackendWasm} from './backend_wasm';\nimport {rangeImplCPU} from './kernel_utils/shared';\n\nexport const
range =\n (args: {backend: BackendWasm, attrs: RangeAttrs}): TensorInfo => {\n const {backend, attrs} =
args;\n const {start, stop, step, dtype} = attrs;\n const values = rangeImplCPU(start, stop, step, dtype);\n\n const out = backend.makeOutput([values.length], dtype);\n const outVals =
backend.typeArrayFromHeap(out);\n outVals.set(values);\n return out;\n };\n\nexport const rangeConfig:
KernelConfig = {\n kernelName: Range,\n backendName: 'wasm',\n kernelFunc: range as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, RealDiv} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const realDivConfig: KernelConfig =\n createBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, Relu} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, Relu6} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the
specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport {KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,
util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {cast} from
'./Cast';\n\nlet wasmResizeBilinear: (\n xId: number, batch: number, oldHeight: number, oldWidth: number,\n numChannels: number, newHeight: number, newWidth: number,\n alignCorners: number, halfPixelCenters:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmResizeBilinear =
backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n 'number', // xId\n 'number', // batch\n 'number', //
```



```

oldHeight\n 'number', // oldWidth\n 'number', // numChannels\n 'number', // newHeight\n 'number', //
newWidth\n 'number', // alignCorners\n 'number', // halfPixelCenters\n 'number' // outId\n]);\n}\n\nfunction
resizeBilinear(args: {\n backend: BackendWasm,\n inputs: ResizeBilinearInputs,\n attrs: ResizeBilinearAttrs\n}):
TensorInfo {\n const {backend, inputs, attrs} = args;\n\n const {images} = inputs;\n const {alignCorners,
halfPixelCenters, size} = attrs;\n const [newHeight, newWidth] = size;\n\n const [batch, oldHeight, oldWidth,
numChannels] = images.shape;\n const outShape = [batch, newHeight, newWidth, numChannels];\n\n let xData =
backend.dataIdMap.get(images.dataId);\n let castedData;\n if (xData.dtype !== 'float32') {\n castedData =\n
cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n xData =
backend.dataIdMap.get(castedData.dataId);\n }\n const xId = xData.id;\n\n const out =
backend.makeOutput(outShape, 'float32');\n if (util.sizeFromShape(images.shape) === 0) {\n return out;\n }\n
const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmResizeBilinear(\n xId, batch, oldHeight,
oldWidth, numChannels, newHeight, newWidth,\n alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n\n if
(castedData !== null) {\n backend.disposeData(castedData.dataId);\n }\n\n return out;\n}\n\nexport const
resizeBilinearConfig: KernelConfig = {\n kernelName: ResizeBilinear,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: resizeBilinear as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {identity} from
'./Identity';\n\nimport {reshape} from './Reshape';\n\nlet wasmReverse: (\n xId: number, axes: Uint8Array,
axesLength: number, outShape: Uint8Array,\n outShapeLength: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n wasmReverse = backend.wasm.cwrap(Reverse, null, [\n 'number', // x_id\n
'array', // axes\n 'number', // axes_length\n 'array', // out_shape\n 'number', // out_shape_length\n
'number' // out_id\n]);\n}\n\nexport function reverse(\n args: {inputs: ReverseInputs, backend: BackendWasm, attrs:
ReverseAttrs});\n TensorInfo {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {dims} =
attrs;\n\n const axes = util.parseAxisParam(dims, x.shape);\n\n if (x.shape.length === 0) {\n return
identity({inputs: {x}, backend});\n }\n\n const out = backend.makeOutput(x.shape, x.dtype);\n const xId =
backend.dataIdMap.get(x.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const axesBytes =
new Uint8Array(new Int32Array(axes).buffer);\n const outShapeBytes = new Uint8Array(new
Int32Array(x.shape).buffer);\n\n wasmReverse(\n xId, axesBytes, axes.length, outShapeBytes, x.shape.length,
outId);\n\n const reshaped =\n reshape({inputs: {x: out}, attrs: {shape: x.shape}, backend});\n\n
backend.disposeData(out.dataId);\n return reshaped;\n}\n\nexport const reverseConfig: KernelConfig = {\n
kernelName: Reverse,\n backendName: 'wasm',\n kernelFunc: reverse as {} as KernelFunc,\n setupFunc:
setup\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n
* Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*\n\nimport {KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,
TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport

```

```
{BackendWasm} from './backend_wasm';\n\nlet wasmRotate: (\n xId: number, batch: number, imageHeight:\n number, imageWidth: number,\n numChannels: number, radians: number, centerX: number, centerY: number,\n fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n 'number', // xId\n 'number', // batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', // radians\n 'number', // centerX\n 'number', // centerY\n 'array', // fillBytes\n 'number', // fillLength\n 'number', // outId\n]);\n\n export function rotateWithOffset(args: {\n inputs: RotateWithOffsetInputs,\n backend: BackendWasm,\n attrs: RotateWithOffsetAttrs\n }): TensorInfo {\n const {inputs, backend, attrs} = args;\n const {image} = inputs;\n const {radians, fillValue, center} = attrs;\n\n const out = backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n\n const [centerX, centerY] = backend_util.getImageCenter(center, imageHeight, imageWidth);\n\n const fillIsBlack = fillValue === 0;\n const fullOpacityValue = 255;\n const fillValues =\n typeof fillValue === 'number' ?\n [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] : \n [...fillValue, fullOpacityValue];\n const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n\n wasmRotate(\n imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n centerY, fillBytes, fillValues.length, outId);\n return out;\n }\n\n export const rotateWithOffsetConfig: KernelConfig = {\n kernelName: RotateWithOffset,\n backendName: 'wasm',\n kernelFunc: rotateWithOffset as {} as KernelFunc,\n setupFunc: setup\n }; \n /**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n}
```

```
=====\n\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nlet wasmScatterNd: (\n indicesId: number, updatesId: number, dtype: CppDType, sliceRank:\n number,\n numUpdates: number, sliceSize: number, strides: Uint8Array,\n outputSize: number, outId: number)
```

```

=> void;\n\nfunction setup(backend: BackendWasm): void {\n wasmScatterNd = backend.wasm.cwrap(ScatterNd,
null /*void*/, [\n 'number', // indicesId\n 'number', // updatesId\n 'number', // dtype\n 'number', //
sliceRank\n 'number', // numUpdates\n 'number', // sliceSize\n 'array', // strides\n 'number', // outputSize\n
'number' // outId\n]);\n}\n\nfunction scatterNd(\n args:\n {backend: BackendWasm, inputs:
ScatterNdInputs, attrs: ScatterNdAttrs});\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {indices,
updates} = inputs;\n const {shape} = attrs;\n\n const out = backend.makeOutput(shape, updates.dtype);\n if
(util.sizeFromShape(shape) === 0) {\n return out;\n }\n\n const {sliceRank, numUpdates, sliceSize, strides,
outputSize} =\n scatter_util.calculateShapes(updates, indices, shape);\n\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const updatesData =
backend.dataIdMap.get(updates.dataId);\n const updatesId = updatesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmScatterNd(\n indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n sliceSize,
stridesBytes, outputSize, outId);\n\n return out;\n }\n}\n\nexport const scatterNdConfig: KernelConfig = {\n
kernelName: ScatterNd,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: scatterNd as {} as
KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, Select, SelectInputs, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmSelect: (\n conditionId: number, tId: number, eId: number,
offset: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmSelect =
backend.wasm.cwrap('SelectV2', null, [\n 'number', // conditionId\n 'number', // tId\n 'number', // eId\n
'number', // offset\n 'number', // outId\n]);\n}\n\nfunction select(args: {inputs: SelectInputs, backend:
BackendWasm}) {\n const {inputs, backend} = args;\n const {condition, t, e} = inputs;\n\n const conditionId =
backend.dataIdMap.get(condition.dataId).id;\n const tId = backend.dataIdMap.get(t.dataId).id;\n const eId =
backend.dataIdMap.get(e.dataId).id;\n const out = backend.makeOutput(t.shape, t.dtype);\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const cRank = condition.shape.length;\n const tRank =
t.shape.length;\n\n const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n 1 : \n
util.sizeFromShape(t.shape.slice(1));\n\n wasmSelect(conditionId, tId, eId, offset, outId);\n return out;\n}\n\nexport
const selectConfig: KernelConfig = {\n kernelName: Select,\n backendName: 'wasm',\n kernelFunc: select as {}
as KernelFunc,\n setupFunc: setup\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport {KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(Sigmoid, null /*
void */, ['number', 'number']);\n}\n\nfunction sigmoid(args: {backend: BackendWasm, inputs: SigmoidInputs});\n
TensorInfo {\n const {backend, inputs: {x}} = args;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out
= backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n // Short-

```

```
circuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId, outId);\n return out;\n}\n\nexport const sigmoidConfig: KernelConfig = {\n kernelName: 'Sigmoid',\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: sigmoid as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { KernelConfig, Sin } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nlet wasmFunc: (xId: number, outId:\n number, channels: number, batch: number) =>\n void;\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n 'number', // xId\n 'number', // outId\n 'number', // channels\n 'number' // batch\n]);\n}\nfunction softmax(\n args: { backend: BackendWasm,\n inputs: SoftmaxInputs, attrs: SoftmaxAttrs }):\n TensorInfo {\n const { backend, inputs: { logits }, attrs: { dim } } =\n args;\n const xId = backend.dataIdMap.get(logits.dataId).id;\n const out = backend.makeOutput(logits.shape,\n logits.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const channels = logits.shape[dim];\n const batch = util.sizeFromShape(logits.shape) / channels;\n\n // Short-circuit zero-sized tensors.\n if\n (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId, outId, channels, batch);\n return\n out;\n}\n\nexport const softmaxConfig: KernelConfig = {\n kernelName: Softmax,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: softmax as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2021 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,\n SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { padV2Config } from\n './PadV2';\nimport { reshape } from './Reshape';\nimport { transpose } from './Transpose';\nfunction\n spaceToBatchND(args: {\n inputs: SpaceToBatchNDInputs,\n backend: BackendWasm,\n attrs:\n SpaceToBatchNDAttrs\n}) {\n const { inputs, backend, attrs } = args;\n const { x } = inputs;\n const { blockSize,\n paddings } = attrs;\n const prod = util.sizeFromShape(blockShape);\n const completePaddings: Array<[number,\n number]> = [[0, 0]];\n completePaddings.push(...(paddings as Array<[number, number]>));\n for (let i = 1 +\n blockSize.length; i < x.shape.length; ++i) {\n completePaddings.push([0, 0]);\n }\n const paddedX =\n padV2Config.kernelFunc({\n inputs: { x },\n backend,\n attrs: { paddings: completePaddings, constantValue:
```

```

0})\n }) as TensorInfo;\n\n const reshapedPaddedShape =\n backend_util.getReshaped(paddedX.shape,
blockShape, prod, false);\n\n const permutedReshapedPaddedPermutation = backend_util.getPermuted(\n
reshapedPaddedShape.length, blockShape.length, false);\n\n const flattenShape =\n backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n\n const reshapeInputs:
ReshapeInputs = {x: paddedX};\n const reshapeAttrs: ReshapeAttrs = {shape: reshapedPaddedShape};\n const
paddedXReshaped =\n reshape({inputs: reshapeInputs, backend, attrs: reshapeAttrs});\n\n const transposeInputs:
TransposeInputs = {x: paddedXReshaped};\n const transposeAttrs:\n TransposeAttrs = {perm:
permutedReshapedPaddedPermutation};\n const paddedXT =\n transpose({inputs: transposeInputs, backend,
attrs: transposeAttrs});\n\n const resultReshapeInputs: ReshapeInputs = {x: paddedXT};\n const
resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};\n const result = reshape(\n {inputs:
resultReshapeInputs, backend, attrs: resultReshapeAttrs});\n\n backend.disposeData(paddedX.dataId);\n
backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n\n return
result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n backendName: 'wasm',\n kernelFunc: spaceToBatchND as { } as KernelFunc\n};\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {slice} from './Slice';\n\nexport function splitV(\n args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {\n const {inputs, attrs, backend} = args;\n const {x} = inputs;\n const
{numOrSizeSplits, axis} = attrs;\n\n const $axis = util.parseAxisParam(axis, x.shape)[0];\n const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n const begin = new Array(x.shape.length).fill(0);\n
const size = x.shape.slice();\n return splitSizes.map(s => {\n const xSliceSize = [...size];\n xSliceSize[$axis] =
s;\n const xSlice =\n slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});\n begin[$axis] += s;\n
return xSlice;\n });\n}\n\nexport const splitVConfig: KernelConfig = {\n kernelName: SplitV,\n backendName:
'wasm',\n kernelFunc: splitV as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, Sqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from

```

```
./unary_kernel';\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig =\n createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\nlet wasmStep: (xId: number, alpha: number, dtype: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n 'number', // x_id\n 'number', // alpha\n 'number', // dtype\n 'number', // out_id\n]);\n}\nfunction step(\n args: {\n backend: BackendWasm,\n inputs: StepInputs,\n attrs: StepAttrs\n }): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {alpha} = attrs;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmStep(xId, alpha, CCppType[x.dtype], outId);\n return out;\n}\n\nexport const stepConfig: KernelConfig = {\n kernelName: Step,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: step as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from './Reshape';\nimport {slice} from './Slice';\nlet wasmStridedSlice: (\n xId: number, xStridesBytes: Uint8Array, xRank: number,\n beginBytes: Uint8Array, endBytes: Uint8Array, stridesBytes: Uint8Array,\n outShapeBytes: Uint8Array, outStridesBytes: Uint8Array,\n outShapeLength: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n 'number', // xId\n 'array', // xStrides\n 'number', // xRank\n 'array', // beginBytes\n 'array', // endBytes\n 'array', // stridesBytes\n 'array', // outShapeBytes\n 'array', // outStridesBytes\n 'number', // outShapeLength\n 'number', // outId\n]);\n}\n\nexport function stridedSlice(\n args: {\n backend: BackendWasm,\n inputs: StridedSliceInputs,\n attrs: StridedSliceAttrs\n }): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {x} = inputs;\n const {\n begin,\n end,\n strides,\n beginMask,\n endMask,\n ellipsisMask,\n newAxisMask,\n shrinkAxisMask\n } = attrs;\n const {\n finalShapeSparse,\n finalShape,\n isIdentity,\n sliceDim0,\n isSimpleSlice,\n begin: $begin,\n end: $end,\n strides: $strides\n } =\n slice_util.sliceInfo(\n
```



```

transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length,
input.shape.length);\n }\n }\n\n backend_util.assertAxesAreInnerMostDims(\n 'sum', reductionAxes,
input.shape.length);\n const [outShape, reduceShape] =\nbackend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, input.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmSum(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n\n if (inputWasTransposed) {\n // dispose of
the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return out;\n}\n\nexport const sumConfig: KernelConfig = {\n kernelName: Sum,\n backendName: 'wasm',\n
setupFunc: setup,\n kernelFunc: sum as {} as KernelFunc\n};\n\n", /*\n * @license\n * Copyright 2021 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\n\n", /*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n\n", /*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *\n
=====\n
*/\n\nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\nimport
{BackendWasm} from '../backend_wasm';\nimport {CppType} from './types';\n\nlet wasmTile: (\n xId:
number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\n newShapeSize: number, dtype:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmTile =
backend.wasm.cwrap(Tile, null /* void */, [\n 'number', // x_id\n 'array', // x_shape\n 'number', //
x_shape.length\n 'array', // new_shape\n 'number', // new_shape.length\n 'number' // out_id\n
]);\n}\n\nfunction tile(\n args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n const {inputs,
backend, attrs} = args;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const {reps} =
attrs;\n\n const newShape: number[] = new Array(x.shape.length);\n for (let i = 0; i < newShape.length; i++) {\n
newShape[i] = x.shape[i] * reps[i];\n }\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n
const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n\n const out =
backend.makeOutput(newShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmTile(\n

```



```

xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n CppDType[out.dtype], outId);\n return
out;\n}\n\nexport const tileConfig: KernelConfig = {\n kernelName: Tile,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: tile as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { CppDType } from './types';\n\nlet wasmTopK:
(\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n xDtype: CppDType, k: number, sorted:
boolean, outValuesId: number,\n outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
 wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number',
// x.shape.length\n 'number', // x.dtype\n 'number', // k\n 'bool', // sorted\n 'number', // outValuesId\n
 'number', // outIndicesId\n]);\n}\n\nexport const topk:\n (args: { inputs: TopKInputs, backend: BackendWasm,
 attrs: TopKAttrs }) =>\n TensorInfo[] | TensorInfo = ({ inputs, backend, attrs }) => {\n const { x } = inputs;\n
 const { k, sorted } = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const xShapeBytes
= new Uint8Array(new Int32Array(x.shape).buffer);\n const outputShape = x.shape.slice();\n
 outputShape[outputShape.length - 1] = k;\n const outValues = backend.makeOutput(outputShape, x.dtype);\n
 const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n const outIndices =
 backend.makeOutput(outputShape, 'int32');\n const outIndicesId =
 backend.dataIdMap.get(outIndices.dataId).id;\n wasmTopK(\n xId, xShapeBytes, x.shape.length,\n
 CppDType[x.dtype], k, sorted,\n outValuesId, outIndicesId);\n return [outValues, outIndices];\n
 };\n}\n\nexport const topKConfig: KernelConfig = {\n kernelName: TopK,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: topk as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmTransform: (\n imageId:
number, transformsId: number, isBatchTransform: boolean,\n batch: number, outHeight: number, outWidth:
number, numChannels: number,\n imageWidth: number, imageHeight: number, strides: Uint8Array,\n stridesLength: number, interpolationModeId: number, fillModeId: number,\n fillValue: number, outId: number)
=> void;\n\nfunction setup(backend: BackendWasm): void {\n wasmTransform = backend.wasm.cwrap(Transform,
null /* void */, [\n 'number', // imageId\n 'number', // transformsId\n 'bool', // isBatchTransform\n
 'number', // batch\n 'number', // outHeight\n 'number', // outWidth\n 'number', // numChannels\n
 'number', // imageWidth\n 'number', // imageHeight\n 'array', // strides\n 'number', // stridesLength\n
 'number', // interpolationModeId\n 'number', // fillModeId\n 'number', // fillValue\n 'number' // outId\n
]);\n}\n\nfunction transform(\n args:\n { backend: BackendWasm, inputs: TransformInputs, attrs:
 TransformAttrs }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { image, transforms } = inputs;\n
 const { interpolation, fillMode, fillValue, outputShape } = attrs;\n const [batch, imageHeight, imageWidth,
 numChannels] = image.shape;\n const [outHeight, outWidth] =\n outputShape != null ? outputShape :

```

```

[imageHeight, imageWidth];\n const outShape =\n [batch, outHeight, outWidth,\n numChannels] as
[number, number, number, number];\n const strides =\n new Uint8Array(new
Int32Array(util.computeStrides(image.shape)).buffer);\n\n const out = backend.makeOutput(outShape,
image.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const imageData =
backend.dataIdMap.get(image.dataId);\n const imageId = imageData.id;\n\n const transformsData =
backend.dataIdMap.get(transforms.dataId);\n const transformsId = transformsData.id;\n\n const
interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n let fillModeId;\n switch (fillMode) {\n case
'constant':\n fillModeId = 1;\n break;\n case 'reflect':\n fillModeId = 2;\n break;\n case 'wrap':\n
fillModeId = 3;\n break;\n case 'nearest':\n fillModeId = 4;\n break;\n default:\n fillModeId = 1;\n
break;\n }\n\n wasmTransform(\n imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n
outWidth, numChannels, imageWidth, imageHeight, strides,\n image.shape.length - 1, interpolationModeId,
fillModeId, fillValue,\n outId);\n\n return out;\n}\n\nexport const transformConfig: KernelConfig = {\n
kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as { } as
KernelFunc\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {slice} from
'./Slice';\n\nfunction unpack(\n args: {inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs}):\n
TensorInfo[] {\n const {inputs, backend, attrs} = args;\n const {value} = inputs;\n let {axis} = attrs;\n if (axis <
0) {\n axis += value.shape.length;\n }\n\n const numOutputs = value.shape[axis];\n const rank =
value.shape.length;\n const outShape: number[] = new Array(rank - 1);\n let outIndex = 0;\n for (let i = 0; i < rank;\n
i++) {\n if (i !== axis) {\n outShape[outIndex++] = value.shape[i];\n }\n }\n\n const outs: TensorInfo[] = new
Array(numOutputs);\n const begin = new Array(rank).fill(0);\n const size = value.shape.slice();\n size[axis] = 1;\n
for (let i = 0; i < outs.length; i++) {\n begin[axis] = i;\n outs[i] = slice({inputs: {x: value}, attrs: {begin, size},
backend});\n }\n\n return outs.map(({dataId, dtype}) => ({dataId, dtype, shape: outShape}));\n}\n\nexport const
unpackConfig: KernelConfig = {\n kernelName: Unpack,\n backendName: 'wasm',\n kernelFunc: unpack as { } as
KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nfunction zerosLike(args: {inputs: ZerosLikeInputs, backend:
BackendWasm}) {\n const {inputs: {x}, backend} = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(0);\n return out;\n}\n\nexport const
zerosLikeConfig: KernelConfig = {\n kernelName: ZerosLike,\n backendName: 'wasm',\n kernelFunc: zerosLike
as { } as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *

```

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

```
We explicitly import the modular kernels so they get registered in the global registry when we compile the library. A modular build would replace the contents of this file and import only the kernels that are needed.
import {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';
import {fusedMatMulConfig} from './kernels/_FusedMatMul';
import {absConfig} from './kernels/Abs';
import {addConfig} from './kernels/Add';
import {addNConfig} from './kernels/AddN';
import {allConfig} from './kernels/All';
import {anyConfig} from './kernels/Any';
import {argMaxConfig} from './kernels/ArgMax';
import {avgPoolConfig} from './kernels/AvgPool';
import {batchMatMulConfig} from './kernels/BatchMatMul';
import {batchToSpaceNDConfig} from './kernels/BatchToSpaceND';
import {castConfig} from './kernels/Cast';
import {ceilConfig} from './kernels/Ceil';
import {clipByValueConfig} from './kernels/ClipByValue';
import {concatConfig} from './kernels/Concat';
import {conv2DConfig} from './kernels/Conv2D';
import {conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';
import {cosConfig} from './kernels/Cos';
import {coshConfig} from './kernels/Cosh';
import {cropAndResizeConfig} from './kernels/CropAndResize';
import {cumsumConfig} from './kernels/Cumsum';
import {depthToSpaceConfig} from './kernels/DepthToSpace';
import {depthwiseConv2dNativeConfig} from './kernels/DepthwiseConv2dNative';
import {eluConfig} from './kernels/Elu';
import {equalConfig} from './kernels/Equal';
import {expConfig} from './kernels/Exp';
import {expandDimsConfig} from './kernels/ExpandDims';
import {fillConfig} from './kernels/Fill';
import {flipLeftRightConfig} from './kernels/FlipLeftRight';
import {floorConfig} from './kernels/Floor';
import {floorDivConfig} from './kernels/FloorDiv';
import {fusedBatchNormConfig} from './kernels/FusedBatchNorm';
import {fusedConv2DConfig} from './kernels/FusedConv2D';
import {fusedDepthwiseConv2DConfig} from './kernels/FusedDepthwiseConv2D';
import {gatherNdConfig} from './kernels/GatherNd';
import {gatherV2Config} from './kernels/GatherV2';
import {greaterConfig} from './kernels/Greater';
import {greaterEqualConfig} from './kernels/GreaterEqual';
import {identityConfig} from './kernels/Identity';
import {leakyReluConfig} from './kernels/LeakyRelu';
import {lessConfig} from './kernels/Less';
import {lessEqualConfig} from './kernels/LessEqual';
import {logConfig} from './kernels/Log';
import {logicalAndConfig} from './kernels/LogicalAnd';
import {maxConfig} from './kernels/Max';
import {maximumConfig} from './kernels/Maximum';
import {maxPoolConfig} from './kernels/MaxPool';
import {meanConfig} from './kernels/Mean';
import {minConfig} from './kernels/Min';
import {minimumConfig} from './kernels/Minimum';
import {mirrorPadConfig} from './kernels/MirrorPad';
import {multiplyConfig} from './kernels/Multiply';
import {negConfig} from './kernels/Neg';
import {nonMaxSuppressionV3Config} from './kernels/NonMaxSuppressionV3';
import {nonMaxSuppressionV4Config} from './kernels/NonMaxSuppressionV4';
import {nonMaxSuppressionV5Config} from './kernels/NonMaxSuppressionV5';
import {notEqualConfig} from './kernels/NotEqual';
import {oneHotConfig} from './kernels/OneHot';
import {onesLikeConfig} from './kernels/OnesLike';
import {packConfig} from './kernels/Pack';
import {padV2Config} from './kernels/PadV2';
import {powConfig} from './kernels/Pow';
import {preluConfig} from './kernels/Prelu';
import {prodConfig} from './kernels/Prod';
import {rangeConfig} from './kernels/Range';
import {realDivConfig} from './kernels/RealDiv';
import {reluConfig} from './kernels/Relu';
import {relu6Config} from './kernels/Relu6';
import {reshapeConfig} from './kernels/Reshape';
import {resizeBilinearConfig} from './kernels/ResizeBilinear';
import {reverseConfig} from './kernels/Reverse';
import {rotateWithOffsetConfig} from './kernels/RotateWithOffset';
import {roundConfig} from './kernels/Round';
import {rsqrtConfig} from './kernels/Rsqrt';
import {scatterNdConfig} from './kernels/ScatterNd';
import {selectConfig} from './kernels/Select';
import {sigmoidConfig} from './kernels/Sigmoid';
import {sinConfig} from './kernels/Sin';
import {sliceConfig} from './kernels/Slice';
import
```

```

{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
 './kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
 './kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
 './kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
 './kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
 './kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
 {tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
 './kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
 './kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
 kernelConfigs: KernelConfig[] = [\n absConfig,\n addConfig,\n addNConfig,\n allConfig,\n anyConfig,\n
 argMaxConfig,\n avgPoolConfig,\n batchMatMulConfig,\n batchToSpaceNDConfig,\n castConfig,\n
 ceilConfig,\n clipByValueConfig,\n concatConfig,\n conv2DConfig,\n conv2DBackpropInputConfig,\n
 cosConfig,\n coshConfig,\n cropAndResizeConfig,\n cumsumConfig,\n depthToSpaceConfig,\n
 depthwiseConv2dNativeConfig,\n eluConfig,\n equalConfig,\n expConfig,\n expandDimsConfig,\n fillConfig,\n
 flipLeftRightConfig,\n floorConfig,\n floorDivConfig,\n fusedMatMulConfig,\n fusedBatchNormConfig,\n
 fusedConv2DConfig,\n fusedDepthwiseConv2DConfig,\n gatherNdConfig,\n gatherV2Config,\n greaterConfig,\n
 greaterEqualConfig,\n identityConfig,\n leakyReluConfig,\n lessConfig,\n lessEqualConfig,\n logConfig,\n
 logicalAndConfig,\n maxConfig,\n maximumConfig,\n maxPoolConfig,\n meanConfig,\n minConfig,\n
 minimumConfig,\n mirrorPadConfig,\n multiplyConfig,\n negConfig,\n nonMaxSuppressionV3Config,\n
 nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n
 onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n
 realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n
 rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n
 sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n
 squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n
 tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n
 zerosLikeConfig];\n\nfor (const kernelConfig of kernelConfigs) {\n registerKernel(kernelConfig);\n}\n", "/*\n *
 @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {env} from 'tensorflow/tfjs-core';\n\nconst ENV = env();\n\n**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
 Uint8Array([\n 0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n 2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
 11\n]));\n\n**\n * True if threads are supported.\n\n*\n// From: https://github.com/GoogleChromeLabs/wasm-
feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n return false;\n }\n\n try {\n //
Test for transferability of SABs (needed for Firefox)\n //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
program containing threaded\n // instructions.\n return WebAssembly.validate(new Uint8Array([\n 0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,

```

```

11\n });\n } catch (e) {\n return false;\n }\n});\n",\n\nvar WasmBackendModuleThreadedSimd = (function() {\n
var __scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') __scriptDir = __scriptDir || __filename;\n return
(\nfunction(WasmBackendModuleThreadedSimd) {\n WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)
}return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer
)}return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer
)}return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={ };var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key] }}var arguments_=[];var
thisProgram=("./this.program");var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module["ENVIRONMENT_IS_PTHREAD"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module["buffer"];}var scriptDirectory="";function
locateFile(path){if(Module["locateFile"]){return Module["locateFile"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require("path").
dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=non
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"^")}arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"]("unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["insep
ect"]=function(){return"[Emscripten Module object]"};var
nodeWorkerThreads;try{nodeWorkerThreads=require("worker_threads")}catch(e){console.error("The
\"worker_threads\" module is not supported in this node.js build - perhaps a newer version is needed?");throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)} }readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))}data=read(f,"binary");assert(typeof data==="object");return data};if(typeof

```

```

scriptArgs!=="undefined"){arguments_=scriptArgs}else if(typeof
arguments!=="undefined"){arguments_=arguments}if(typeof
quit===\function\){quit_=function(status){quit(status)}}if(typeof print!=="undefined"){if(typeof
console===\undefined\){console={};console.log=print;console.warn=console.error=typeof
printErr!=="undefined"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !== \undefined\ &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf(\blob:\")!=0){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf(\^")+1)}else{scriptDirectory=""}}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\fs\");if(!nodePath)nodePath=require(\path\");filename=n
odePath[\normalize\](filename);return
nodeFS[\readFileSync\](filename,binary?null:\utf8\");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret}}else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open(\GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title}}else{}if(ENVIRONMENT_IS_NODE){if(typeof
performance===\undefined\){global.performance=require(\perf_hooks\).performance}}var
out=Module[\print\]||console.log.bind(console);var err=Module[\printErr\]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module[\arguments\])arguments_=Module[\arguments\];if(Module[\thisProgram\])thisProgram=
Module[\thisProgram\];if(Module[\quit\])quit_=Module[\quit\];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)}}var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module[\wasmBinary\])wasmBinary=Module[\wasmBinary\];var
noExitRuntime=Module[\noExitRuntime\]||true;if(typeof WebAssembly!=="object"){abort(\no native wasm
support detected\)}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort(\Assertion failed: "+text)}}function getCFunc(ident){var
func=Module[_"+ident];assert(func,\Cannot call unknown function "+ident+", make sure it is exported\);return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={\string\:function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},\array\:function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType===\string")return UTF8ToString(ret);if(returnType===\boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\number"});var

```

```

numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str="";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10)|u1&1023;if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]=u}
else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}
else if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}
else {if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var
len=0;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10)|str.charCodeAt(++i)&1023;if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmmemory=Module["wasmMemory"];buffer=Module["buffer"]}else{if(Module["wasmMemory"]){wasmMemory=Module["wasmMemory"]}else{wasmMemory=new
WebAssembly.Memory({"initial":INITIAL_MEMORY/65536,"maximum":2147483648/65536,"shared":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err("requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag");if(ENVIRONMENT_IS_NODE){console.log("(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)")}throw Error("bad
memory")}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlobalBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctors()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a

```

```

ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof
Module["postRun"]!="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].length)
){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,"addRunDependency cannot be used in a
pthread
worker");runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](run
Dependencies)}}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}
if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}if(ENVIRONMENT_IS_PTHREAD)console.err
or("Pthread aborting at "+(new
Error).stack);what+="\n";err(what);ABORT=true;EXITSTATUS=1;what="abort("+what+)". Build with -s
ASSERTIONS=1 for more info.";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw
e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-wasm-threaded-
simd.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file==wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch=="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:"same-
origin"}).then(function(response){if(!response["ok"]){throw"failed to load wasm binary file at
"+wasmBinaryFile+""}return response["arrayBuffer"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={"a":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module["asm"]=exports;wasmTable=Module["asm"]["I"];wasmModule=module;if(!E
NVIRONMENT_IS_PTHREAD){var
numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.load
WasmModuleToWorker(w,function(){if(--numWorkersToLoad)removeRunDependency("wasm-
instantiate")})})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency("wasm-instantiate")}}function
receiveInstantiatedSource(output){receiveInstance(output["instance"],output["module"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return

```



```

WebAssembly.instantiate(binary,info)).then(receiver,function(reason){err("\failed to asynchronously prepare
wasm: \" +reason);abort(reason)}}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\"function\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\"function\"){return fetch(wasmBinaryFile,{credentials:\"same-
origin\"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\"wasm streaming compile failed: \" +reason);err(\"falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \" +e);return false}}instantiateAsync().catch(Promise.reject);return{}}var
ASM_CONSTS={10520:function(){throw\"Canceled!\"},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0});function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg
)}}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,E
BADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENODIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOSIG:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADDE:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14
8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5};function
__emscripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return
1}}var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw\"Atomics.notify returned an unexpected value
\"+ret}Module[\"__emscripten_futex_wake\"]=__emscripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\"Internal Error! killThread() can only ever be
called from main application thread!\";if(!pthread_ptr)throw\"Internal Error! Null pthread_ptr in
killThread!\";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.pthreads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker.pthread=undefined}functio

```

```

n cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\`Internal Error! cancelThread() can only
ever be called from main application thread!\`;if(!pthread_ptr)throw\`Internal Error! Null pthread_ptr in
cancelThread!\`;var
pthread=PThread.threads[pthread_ptr];pthread.worker.postMessage({"cmd\`:\`cancel\`"})function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw\`Internal Error! cleanupThread() can only
ever be called from main application thread!\`;if(!pthread_ptr)throw\`Internal Error! Null pthread_ptr in
cleanupThread!\`;var
pthread=PThread.threads[pthread_ptr];if(pthread){GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)}var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}},initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,1,ENVIRON
MENT_IS_WORKER,1);__emscripten_register_main_browser_thread_id(tb)},initWorker:function(){},threads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&pthread_self())__pthread
_tsd_run_dtors(),runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({"cmd\`:\`exit\`"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({"cmd\`:\`cancelDone\`"})},terminateAllThreads:function(){for(var t in
PThread.threads){var
pthread=PThread.threads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)}PThre
ad.threads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[]},freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread.threads[worker pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker pthread);worker pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e["data"];var
cmd=d["cmd"];if(worker pthread)PThread.currentProxiedOperationCallerThread=worker pthread.threadInfoStruct;
if(d["targetThread"]&&d["targetThread"]!=_pthread_self()){var
thread=PThread.threads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d["transferList"])}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\' to target pthread '+d["targetThread"]+'\', but that

```

```

thread no longer
exists!)})PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\processQueuedMainThread
Work\"){_emscripten_main_thread_process_queued_calls()}else
if(cmd===\spawnThread\"){spawnThread(e.data)}else
if(cmd===\cleanupThread\"){cleanupThread(d[\thread\])}else
if(cmd===\killThread\"){killThread(d[\thread\])}else
if(cmd===\cancelThread\"){cancelThread(d[\thread\])}else
if(cmd===\loaded\"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\print\"){out(\Thread \"+d[\threadId\"]+\":
\"+d[\text\])}else if(cmd===\printErr\"){err(\Thread \"+d[\threadId\"]+\": \"+d[\text\])}else
if(cmd===\alert\"){alert(\Thread \"+d[\threadId\"]+\": \"+d[\text\])}else if(cmd===\exit\"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}else
if(cmd===\exitProcess\"){try{exit(d[\returnCode\])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\cancelDone\"){PThread.returnWorkerToPool(worker)}else
if(cmd===\objectTransfer\"){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\setImmediate\"){worker.postMessage(e.data)}else{err(\worker sent an unknown command
\"+cmd)}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\pthread sent
an error! \"+e.filename+\":\"+e.lineno+\":
\"+e.message)};if(ENVIRONMENT_IS_NODE){worker.on(\message\",function(data){worker.onmessage({data:d
ata})});worker.on(\error\",function(data){worker.onerror(data)});worker.on(\exit\",function(data){})}worker.post
Message({\cmd\":\load\",urlOrBlob\":Module[\mainScriptUrlOrBlob\]||_scriptDir,\"wasmMemory\":wasmMe
memory,\"wasmModule\":wasmModule}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile(\tfjs-
backend-wasm-threaded-simd.worker.js\");PThread.unusedWorkers.push(new
Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}};function
establishStackSpace(stackTop,stackMax){_emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module[\establishStackSpace\"]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module[\getNoExitRuntime\"]=getNoExitRuntime;function invokeEntryPoint(ptr,arg){return
wasmTable.get(ptr)(arg)}Module[\invokeEntryPoint\"]=invokeEntryPoint;function
__assert_fail(condition,filename,line,func){abort(\Assertion failed: \"+UTF8ToString(condition)+\", at:
\"+[filename?UTF8ToString(filename):\unknown filename],line,func?UTF8ToString(func):\unknown
function\")}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
_emscripten_get_now;if(ENVIRONMENT_IS_NODE){_emscripten_get_now=function(){var
t=process[\hrtime\]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){_emscripten_get_now=function(){return performance.now()-
Module[__performance_now_clock_drift\]}}else if(typeof
dateNow!=\"undefined\"){_emscripten_get_now=dateNow}else _emscripten_get_now=function(){return
performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return
value}function _atexit(func,arg){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(1,1,func,arg)}function
_emscripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessag
e({\cmd\":\processQueuedMainThreadWork\})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({\targetThread\":targetThreadId,\cmd\":\processThreadQueu
e\})}else{var pthread=PThread.pthreads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({\cmd\":\processThreadQueue\})}ret

```

```

urn 1}function _abort(){abort()}function _emscripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emscripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emscripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\"timed-out\")return-
73;if(ret===\"not-equal\")return-6;if(ret===\"ok\")return 0;throw\"Atomics.wait returned an unexpected value
\"+ret}else{if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emscripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emscripten_mai
n_thread_futex>>2,0);return-
73}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emscripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emscripten_main_thread_process_queued_calls();if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),_emscripten_main_thread_futex>>2,addr)}return
0}}function
_emscripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emscripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require(\"os\").cpus().length;return
navigator[\"hardwareConcurrency\"]}function _emscripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emscripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retur
n ret}var _emscripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emscripten_receive_on_main_thread_js(index,numCallArgs,args){_emscripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emscripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emscripten_receive_on_main_thread_js_callArgs)}function
_emscripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emscripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var
oldSize=_emscripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListen

```

```

ers:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))){return}}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList
});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence}),removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return\"\";if(target==window)return\"#window\";
if(target==screen)return\"#screen\";return
target&&target.nodeName?target.nodeName:\"\"},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas);GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emscripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emscripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):\"\";_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThr

```

```

ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=="undefined"?document:0,typeof window!=="undefined"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=="undefined"?document.querySelector(target):undefined);return domElement}function
findCanvasEventTarget(target){return findEventTarget(target)}function
_emsripten_set_canvas_element_size_calling_thread(target,width,height){var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){canvas.GLctxObject.GLctx.viewport(0,0,width,height)}}else
if(canvas.canvasSharedPtr){var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emsripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1}else{return-4}return 0}function
_emsripten_set_canvas_element_size_main_thread(target,width,height){if(ENVIRONMENT_IS_PTHREAD)retur
n_emsripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emsripten_set_canvas_element_size(target,width,height){var
canvas=findCanvasEventTarget(target);if(canvas){return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}else{return
_emsripten_set_canvas_element_size_main_thread(target,width,height)}}function
_emsripten_set_current_thread_status(newStatus){}function
_emsripten_set_thread_name(threadId,name){}function __webgl_enable_ANGLE_instanced_arrays(ctx){var
ext=ctx.getExtension("ANGLE_instanced_arrays");if(ext){ctx["vertexAttribDivisor"]=function(index,divisor){ex
t["vertexAttribDivisorANGLE"](index,divisor)};ctx["drawArraysInstanced"]=function(mode,first,count,primcou
nt){ext["drawArraysInstancedANGLE"](mode,first,count,primcount)};ctx["drawElementsInstanced"]=function(
mode,count,type,indices,primcount){ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount)};
return 1}}function __webgl_enable_OES_vertex_array_object(ctx){var
ext=ctx.getExtension("OES_vertex_array_object");if(ext){ctx["createVertexArray"]=function(){return
ext["createVertexArrayOES"]();ctx["deleteVertexArray"]=function(vao){ext["deleteVertexArrayOES"](vao)};
ctx["bindVertexArray"]=function(vao){ext["bindVertexArrayOES"](vao)};ctx["isVertexArray"]=function(vao)
{return ext["isVertexArrayOES"](vao)};return 1}}function __webgl_enable_WEBGL_draw_buffers(ctx){var
ext=ctx.getExtension("WEBGL_draw_buffers");if(ext){ctx["drawBuffers"]=function(n,bufs){ext["drawBuffers
WEBGL"](n,bufs)};return 1}}function
__webgl_enable_WEBGL_multi_draw(ctx){return!(ctx.multiDrawWebgl=ctx.getExtension("WEBGL_multi_dra
w"))}var
GL={counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{},offscreenCanvases:{},timerQueriesEXT:[],programInfos:{},stringCache:{},unpackAlignment:4,recordError:
function recordError(errorCode){if(!GL.lastError){GL.lastError=errorCode}},getNewId:function(table){var
ret=GL.counter++;for(var i=table.length;i<ret;i++){table[i]=null}return
ret},getSource:function(shader,count,string,length){var source="";for(var i=0;i<count;++i){var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return

```

```

source},createContext:function(canvas,webGLContextAttributes){var
ctx=canvas.getContext("\webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle},registerContext:function(ctx,webGLContextAttributes){var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:
ctx};if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault==="\undefined"||webGLContextAttributes.enableExtensions
ByDefault){GL.initExtensions(context)}return
handle},makeContextCurrent:function(contextHandle){GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){return
GL.contexts[contextHandle]},deleteContext:function(contextHandle){if(GL.currentContext===GL.contexts[context
Handle])GL.currentContext=null;if(typeof
JSEvents==="\object")JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null},initExtensions:f
unction(context){if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("\
EXT_disjoint_timer_query");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){if(ext.indexOf("\lose_context")<0&&ext.inde
xOf("\debug")<0){GLctx.getExtension(ext)}}),populateUniformTable:function(program){var
p=GL.programs[program];var
ptable=GL.programInfos[program]={uniforms:{},maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1};var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)==="\"){name=name.slice(0,name.lastIndexOf("\["))}var loc=GLctx.getUniformLocation(p,name);if(loc){var
id=GL.getNewId(GL.uniforms);utable[name]=[u.size,id];GL.uniforms[id]=loc;for(var j=1;j<u.size;++j){var
n=name+"\["+j+"\]";loc=GLctx.getUniformLocation(p,n);id=GL.getNewId(GL.uniforms);GL.uniforms[id]=loc}}
}};var __emscripten_webgl_power_preferences=["default","\low-power","\high-performance"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],"\failIfMajorPerf
ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)]};var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GL.createContext(canvas,contextAttributes);return contextHandle}function
__emscripten_webgl_create_context(a0,a1){return __emscripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var

```

```

buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
_fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return _emscripten_proxy_to_main_thread_js(3,1,fd);return
0}function _fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
_fd_write(fd,iov,iovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(5,1,fd,iov,iovcnt,pnum);var num=0;for(var i=0;i<iovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iovcnt+i*8>>2];var len=GROWABLE_HEAP_I32()[iovcnt+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j])}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function _pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
_pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasnTable.get(routine)(arg)})}f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw`Internal Error! spawnThread()
can only ever be called from main application thread!`;var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw`Internal
error!`;if(!threadParams.pthread_ptr)throw`Internal error, no pthread
ptr!`;PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;+i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emscripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr
ead=pthread;var
msg={`cmd\`:`run`,`start_routine\`:threadParams.startRoutine,`arg\`:threadParams.arg,`threadInfoStruct\`:thre
adParams.pthread_ptr,`stackBase\`:threadParams.stackBase,`stackSize\`:threadParams.stackSize};worker.runPthr
ead=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded
){worker.runPthread();delete worker.runPthread}}function
_pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===`undefined`){err(`Current
environment does not support SharedArrayBuffer, pthreads are not available!`);return
6}if(!pthread_ptr){err(`pthread_create called with a null thread pointer!`);return 28}var transferList=[];var
error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return
_emscripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var
stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-
1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+
8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==0}else{stackSize=2097152}var
allocatedOwnStack=stackBase===0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=
stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var
i=0;i<228>>2;+i)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_ptr

```



```

tr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var
headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var
threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached
,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_P
THREAD){threadParams.cmd="\spawnThread";postMessage(threadParams,transferList)}else{spawnThread(thread
Params)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var
tb=__pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled==2)throw\Canceled!\}function
_emscripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce(\Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread)}function
__emscripten_do_pthread_join(thread,status,block){if(!thread){err(\pthread_join attempted on a null thread
pointer!\);return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&__pthread_self()==thread){err(\PThread
\'+thread+\ is attempting to join to itself!\);return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emscripten_main_browser_thread_id()==thread){err(\Main thread
\'+thread+\ is attempting to join to itself!\);return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!==thread){err(\pthread_join attempted on thread
\'+thread+\, which does not point to a valid thread, or does not exist anymore!\);return
ERRNO_CODES.ESRCH}var
detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err(\Attempted to join thread
\'+thread+\, which was already detached!\);return
ERRNO_CODES.EINVAL}if(block){_emscripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus==1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage({\cmd\":\cleanupThread\", \"thread\":thread});return
0}if(!block){return
ERRNO_CODES.EBUSY}}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emscripten_main_thre
ad_process_queued_calls();_emscripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}}function _pthread_join(thread,status){return __emscripten_do_pthread_join(thread,status,true)}function
_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\object\")return navigator[\hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var

```

```

proxiedFunctionTable=[null,_atexit,_emscripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wri
te,_sysconf];var
asmLibraryArg={\"e\":__assert_fail,\"r\":__call_main,\"x\":_emscripten_notify_thread_queue,\"b\":_abort,\"y\":
_emscripten_asm_const_int,\"j\":_emscripten_conditional_set_current_thread_status,\"d\":_emscripten_futex_wait,\"
c\":_emscripten_futex_wake,\"f\":_emscripten_get_now,\"p\":_emscripten_memcpy_big,\"A\":_emscripten_num_l
ogical_cores,\"u\":_emscripten_receive_on_main_thread_js,\"q\":_emscripten_resize_heap,\"v\":_emscripten_set_ca
nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory||Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"]['B']).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"]['C']).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"]['D']).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"]['E']).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"]['F']).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"]['G']).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"]['H']).apply(
null,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"]['J']).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"]['K']).apply(null,argumen
ts)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"]['L']).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"]['M']).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"]['N']).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"]['O']).ap
ply(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"]['P']).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"]['Q']).apply(null,arguments)};var
_Ceil=Module[\"_Ceil\"]=function(){return(_Ceil=Module[\"_Ceil\"]=Module[\"asm\"]['R']).apply(null,argument
s)};var
_ClipByValue=Module[\"_ClipByValue\"]=function(){return(_ClipByValue=Module[\"_ClipByValue\"]=Module[\"
asm\"]['S']).apply(null,arguments)};var
_Conv2D=Module[\"_Conv2D\"]=function(){return(_Conv2D=Module[\"_Conv2D\"]=Module[\"asm\"]['T']).app
ly(null,arguments)};var
_Conv2DBackpropInput=Module[\"_Conv2DBackpropInput\"]=function(){return(_Conv2DBackpropInput=Modul
e[\"_Conv2DBackpropInput\"]=Module[\"asm\"]['U']).apply(null,arguments)};var

```

```

_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][_"V"]).apply(null,arguments
)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][_"W"]).apply(null,arguments);var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][_"X"]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][_"Y"]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][_"Z"]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][_" _"]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][_"$"]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][_"aa"]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][_"ba"]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][_"ca"]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][_"da"]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][_"ea"]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][_"fa"]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][_"ga"]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][_"ha"]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][_"ia"]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][_"ja"]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][_"ka"]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][_"la"]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][_"ma"]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][_"na"]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][_"oa"]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][_"pa"]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][_"qa"]).apply(null,arguments)};var

```

```

_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"]["ra"]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"]["sa"]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"]["ta"]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"]["ua"]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"]["va"]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"]["wa"]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"]["xa"]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"]["ya"]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"]["za"]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"]["Aa"]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"]["Ba"]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"]["Ca"]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"]["Da"]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"]["Ea"]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"]["Fa"]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"]["Ga"]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"]["Ha"]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"]["Ia"]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"]["Ja"]).apply(null,arguments)};var
_Relu=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"]["Ka"]).apply(null,arguments)};var
_Relu6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"]["La"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"]["Ma"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"]["Na"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"]["Oa"]).apply(null,arguments)};var

```

```

_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][["Pa"]]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][["Qa"]]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][["Ra"]]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][["Sa"]]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][["Ta"]]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][["Ua"]]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][["Va"]]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][["Wa"]]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][["Xa"]]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"][["Ya"]]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][["Za"]]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"][["a"]]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][["$a"]]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][["ab"]]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][["bb"]]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][["cb"]]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][["db"]]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][["eb"]]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][["fb"]]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][["gb"]]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=Module["asm"][["hb"]]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"][["ib"]]).apply(null,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"][["jb"]]).apply(null,arguments)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_location"]=Module["asm"][["kb"]]).apply(null,arguments)};var

```

```

_emsripten_get_global_libc=Module["_emsripten_get_global_libc"]=function(){return(_emsripten_get_global
_libc=Module["_emsripten_get_global_libc"]=Module["asm"]["lb"]).apply(null,arguments)};var
_thread_self=Module["_thread_self"]=function(){return(_thread_self=Module["_thread_self"]=Module["as
m"]["mb"]).apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=M
odule["__pthread_tsd_run_dtors"]=Module["asm"]["nb"]).apply(null,arguments)};var
_emsripten_main_thread_process_queued_calls=Module["_emsripten_main_thread_process_queued_calls"]=fu
nction(){return(_emsripten_main_thread_process_queued_calls=Module["_emsripten_main_thread_process_que
ued_calls"]=Module["asm"]["ob"]).apply(null,arguments)};var
_emsripten_current_thread_process_queued_calls=Module["_emsripten_current_thread_process_queued_calls"]
=function(){return(_emsripten_current_thread_process_queued_calls=Module["_emsripten_current_thread_proc
ess_queued_calls"]=Module["asm"]["pb"]).apply(null,arguments)};var
_emsripten_register_main_browser_thread_id=Module["_emsripten_register_main_browser_thread_id"]=functi
on(){return(_emsripten_register_main_browser_thread_id=Module["_emsripten_register_main_browser_thread
_id"]=Module["asm"]["qb"]).apply(null,arguments)};var
_emsripten_main_browser_thread_id=Module["_emsripten_main_browser_thread_id"]=function(){return(_ems
ripten_main_browser_thread_id=Module["_emsripten_main_browser_thread_id"]=Module["asm"]["rb"]).app
ly(null,arguments)};var
__emsripten_do_dispatch_to_thread=Module["__emsripten_do_dispatch_to_thread"]=function(){return(__ems
ripten_do_dispatch_to_thread=Module["__emsripten_do_dispatch_to_thread"]=Module["asm"]["sb"]).apply(n
ull,arguments)};var
_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=function(){retur
n(_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=Module["asm\
"]["tb"]).apply(null,arguments)};var
_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=function(
){return(_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=
Module["asm"]["ub"]).apply(null,arguments)};var
__emsripten_call_on_thread=Module["__emsripten_call_on_thread"]=function(){return(__emsripten_call_on_t
hread=Module["__emsripten_call_on_thread"]=Module["asm"]["vb"]).apply(null,arguments)};var
_emsripten_tls_init=Module["_emsripten_tls_init"]=function(){return(_emsripten_tls_init=Module["_emsript
en_tls_init"]=Module["asm"]["wb"]).apply(null,arguments)};var
__emsripten_thread_init=Module["__emsripten_thread_init"]=function(){return(__emsripten_thread_init=Mod
ule["_emsripten_thread_init"]=Module["asm"]["xb"]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"]["yb"]).a
pply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm\
"]["zb"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"]["Ab\
"]).apply(null,arguments)};var
_emsripten_stack_set_limits=Module["_emsripten_stack_set_limits"]=function(){return(_emsripten_stack_set_
limits=Module["_emsripten_stack_set_limits"]=Module["asm"]["Bb"]).apply(null,arguments)};var
_memalign=Module["_memalign"]=function(){return(_memalign=Module["_memalign"]=Module["asm"]["Cb\
"]).apply(null,arguments)};var
__emsripten_allow_main_runtime_queued_calls=Module["__emsripten_allow_main_runtime_queued_calls"]=1
0512;var
__emsripten_main_thread_futex=Module["__emsripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap
;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasmMemory"]=wasmMemory;Module
["ExitStatus"]=ExitStatus;var calledRun;function

```

```
ExitStatus(status){this.name="\ExitStatus\";this.message="\Program terminated with
exit(\"+status+\")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromis
eResolve(Module);initRuntime();postMessage({"cmd":"\loaded\"});return}preRun();if(runDependencies>0){retur
n}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("\Running...");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"]("\n"),1);doRun()},1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":"\exitProcess\","\returnCode":status});throw new
ExitStatus(status)}else{}if(noExitRuntime){}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunti
me();if(Module["onExit"])Module["onExit"](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop()()}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n);(typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports["WasmBackendModuleThreadedSimd"] =
WasmBackendModuleThreadedSimd;\n","export const wasmWorkerContents = 'var Module={};function
threadPrintErr(){var text=Array.prototype.slice.call(arguments).join("\ ");console.error(text)}function
threadAlert(){var text=Array.prototype.slice.call(arguments).join("\
");postMessage({cmd:"\alert",text:text,threadId:Module["_pthread_self"]()})}var
err=threadPrintErr;this.alert=threadAlert;Module["instantiateWasm"]=function(info,receiveInstance){var
instance=new
WebAssembly.Instance(Module["wasmModule"],info);Module["wasmModule"]=null;receiveInstance(instance);r
eturn instance.exports};function
moduleLoaded(){this.onmessage=function(e){try{if(e.data.cmd==="\load"){Module["wasmModule"]=e.data.wa
smModule;Module["wasmMemory"]=e.data.wasmMemory;Module["buffer"]=Module["wasmMemory"].buffer;
Module["ENVIRONMENT_IS_PTHREAD"]=true;if(typeof
e.data.urlOrBlob==="\string"){importScripts(e.data.urlOrBlob)}else{var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)}
WasmBackendModuleThreadedSimd(Module).then(function(instance){Module=instance;moduleLoaded()})}else
if(e.data.cmd==="\objectTransfer"){Module["PThread"].receiveObjectTransfer(e.data)}else
if(e.data.cmd==="\run"){Module["__performance_now_clock_drift"]=performance.now()-
e.data.time;Module["__emscripten_thread_init"](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module["establishStackSpace"](top,max);Module["__emscripten_tls_init"](
);Module["PThread"].receiveObjectTransfer(e.data);Module["PThread"].setThreadStatus(Module["_pthread_self
"],1);try{var
result=Module["invokeEntryPoint"](e.data.start_routine,e.data.arg);if(!Module["getNoExitRuntime"]())Module["
PThread"].threadExit(result)}catch(ex){if(ex==="\Canceled!"){Module["PThread"].threadCancel()}else
if(ex!="unwind"){if(ex instanceof
Module["ExitStatus"]){if(Module["getNoExitRuntime"]()){}else{Module["PThread"].threadExit(ex.status)}}el
se{Module["PThread"].threadExit(-2);throw ex}}}}else
if(e.data.cmd==="\cancel"){if(Module["_pthread_self"]()){Module["PThread"].threadCancel()}else
if(e.data.target==="\setimmediate"){}}
```

```

if(e.data.cmd===\"processThreadQueue\"){if(Module[\"_pthread_self\"]()){Module[\"_emscripten_current_thread_
process_queued_calls\"]()}else{err(\"worker.js received unknown command
\'+e.data.cmd);err(e.data)}}catch(ex){err(\"worker.js onmessage() captured an uncaught exception:
\'+ex);if(ex&&ex.stack)err(ex.stack);throw ex}};if(typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof process.versions.node===\"string\"){self={location:{href:___filename}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require(\"worker_threads\");global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on(\"message\",function(data){onmessage({data:data})});var
nodeFS=require(\"fs\");var nodeRead=function(filename){return nodeFS.readFileSync(filename,\"utf8\")};function
globalEval(x){global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));postMessage=function(msg){parentPort.postMessage(msg)};if(typeof
performance===\"undefined\"){performance={now:function(){return Date.now()}}};\", \"\nvar
WasmBackendModule = (function() {\n var _scriptId = typeof document !== 'undefined' &&
document.currentScript ? document.currentScript.src : undefined;\n if (typeof __filename !== 'undefined')
_scriptId = _scriptId || __filename;\n return (\nfunction(WasmBackendModule) {\n WasmBackendModule =
WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!==\"undefined\"?WasmBackendModule:{};var
readyPromiseResolve,readyPromiseReject;Module[\"ready\"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\.\/this.program\";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window===\"object\";ENVIRONMENT_IS_WORKER=typeof
importScripts===\"function\";ENVIRONMENT_IS_NODE=typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof
process.versions.node===\"string\";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory=\.\";function
locateFile(path){if(Module[\"locateFile\"]){return Module[\"locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\"path\").
dirname(scriptDirectory)+\"^\"}else{scriptDirectory=__dirname+\"^\"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\"fs\");if(!nodePath)nodePath=require(\"path\");filename=n
odePath[\"normalize\"](filename);return
nodeFS[\"readFileSync\"](filename,binary?null:\"utf8\");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process[\"argv\"].length>1){thisProgram=process[\"argv\"][1].replace(/\\\\\\\\g,\"^\"))arguments_=process[\"arg
v\"].slice(2);process[\"on\"](\"uncaughtException\",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process[\"on\"](\"unhandledRejection\",abort);quit_=function(status){process[\"exit\"](status)};Module[\"insp
ect\"]=function(){return\"[Emscripten Module object]\"}}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!=\"undefined\")read_=function shell_read(f){return read(f)}readBinary=function readBinary(f){var
data;if(typeof readbuffer===\"function\")return new
Uint8Array(readbuffer(f))data=read(f,\"binary\");assert(typeof data===\"object\");return data};if(typeof
scriptArgs!=\"undefined\")arguments_=scriptArgs}else if(typeof
arguments!=\"undefined\")arguments_=arguments;if(typeof
quit===\"function\")quit_=function(status){quit(status)}if(typeof print!=\"undefined\")if(typeof
console===\"undefined\")console={};console.log=print;console.warn=console.error=typeof

```



```

printErr!=="undefined"?printErr:print } else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src}if(!_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf("/")+1)}else{scriptDirectory=""}{read_=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} }else{ } var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} } moduleOverr
ides=null;if(Module["arguments"])arguments_=Module["arguments"];if(Module["thisProgram"])thisProgram=
Module["thisProgram"];if(Module["quit"])quit_=Module["quit"];var
wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!=="object"){abort("no native wasm
support detected")}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}} }var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)} }var UTF8Decoder=typeof
TextDecoder!=="undefined"?new TextDecoder("utf8"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{var
str="";while(idx<endPtr){var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}} }return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var

```

```

endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){ var
u=str.charCodeAtAt(i);if(u>=55296&&u<=57343){ var
u1=str.charCodeAtAt(++i);u=65536+((u&1023)<<10)|u1&1023}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63} else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63} else {if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63} }heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]="function")Module["preRun"]=Module["preRun"];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]="function")Module["postRun"]=Module["postRun"];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"]((runDependencies))}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"]((runDependencies))}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}
}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()} }Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what+="abort("+what+"\n). Build with -s ASSERTIONS=1 for more info.";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://^";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-
wasm.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinaryFile){return new
Uint8Array(wasmBinaryFile)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function

```

```

getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\"function\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\"same-
origin\").then(function(response){if(!response[\"ok\"]){throw\"failed to load wasm binary file at
\"+wasmBinaryFile+\"\"}return response[\"arrayBuffer\"]()).catch(function(){return
getBinary(wasmBinaryFile)}})else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)}})function createWasm(){var info={\"a\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\"asm\"]=exports;wasmMemory=Module[\"asm\"][\"j\"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module[\"asm\"][\"r\"];removeRunDependency(\"wasm-
instantiate\")}addRunDependency(\"wasm-instantiate\");function
receiveInstantiatedSource(output){receiveInstance(output[\"instance\"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\"failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\"function\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\"function\"){return fetch(wasmBinaryFile,{credentials:\"same-
origin\").then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\"wasm streaming compile failed: \"+reason);err(\"falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(readyPromiseReject);return {}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)()}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}function _abort(){abort()}function
_emscripten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscripten_get_heap_size(){return HEAPU8.length}function
emscripten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var oldSize=_emscripten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iov,iocnt,pnum){var num=0;for(var
i=0;i<iocnt;i++){var ptr=HEAP32[iov+i*8>>2];var len=HEAP32[iov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _pthread_join(){return 28}function

```

```

setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-1}var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"s\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"t\"]).apply(null,argument
s)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"u\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"v\"]).apply(null,arguments)};
var
_Any=Module[\"_Any\"]=function(){return(_Any=Module[\"_Any\"]=Module[\"asm\"][\"w\"]).apply(null,argumen
ts)};var
_ArgMax=Module[\"_ArgMax\"]=function(){return(_ArgMax=Module[\"_ArgMax\"]=Module[\"asm\"][\"x\"]).app
ly(null,arguments)};var
_AvgPool=Module[\"_AvgPool\"]=function(){return(_AvgPool=Module[\"_AvgPool\"]=Module[\"asm\"][\"y\"]).a
pply(null,arguments)};var
_BatchMatMul=Module[\"_BatchMatMul\"]=function(){return(_BatchMatMul=Module[\"_BatchMatMul\"]=Modu
le[\"asm\"][\"z\"]).apply(null,arguments)};var
_Ceil=Module[\"_Ceil\"]=function(){return(_Ceil=Module[\"_Ceil\"]=Module[\"asm\"][\"A\"]).apply(null,argument

```

```

s));var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][["B"]]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][["C"]]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=Module["asm"][["D"]]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][["E"]]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][["F"]]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][["G"]]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][["H"]]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][["I"]]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][["J"]]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][["K"]]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][["L"]]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][["M"]]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][["N"]]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][["O"]]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][["P"]]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][["Q"]]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][["R"]]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][["S"]]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][["T"]]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][["U"]]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][["V"]]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][["W"]]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][["X"]]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][["Y"]]).apply(null,arguments)};var

```

```

nts));var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][["Z"]]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][["_"]]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][["$"]]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][["aa"]]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][["ba"]]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][["ca"]]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][["da"]]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][["ea"]]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][["fa"]]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][["ga"]]).apply(null,arguments)};var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][["ha"]]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][["ia"]]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][["ja"]]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][["ka"]]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][["la"]]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][["ma"]]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][["na"]]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][["oa"]]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][["pa"]]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][["qa"]]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][["ra"]]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][["sa"]]).apply(null,arguments)};var
_Relu=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][["ta"]]).apply(null,arguments)};var
_Relu6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][["ua"]]).apply(null,ar

```

```

guments));var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][["va"]]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][["wa"]]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][["xa"]]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][["ya"]]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][["za"]]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][["Aa"]]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][["Ba"]]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][["Ca"]]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][["Da"]]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][["Ea"]]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][["Fa"]]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][["Ga"]]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"][["Ha"]]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][["Ia"]]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"][["Ja"]]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][["Ka"]]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][["La"]]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][["Ma"]]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][["Na"]]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][["Oa"]]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][["Pa"]]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][["Qa"]]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][["Ra"]]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"])=

```

```

Module["asm"]["Sa"].apply(null,arguments);var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"]["Ta"]).apply(null,arguments);var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"]["Ua"]).apply(null,arguments);var
___errno_location=Module["__errno_location"]=function(){return(___errno_location=Module["__errno_location"]=Module["asm"]["Va"]).apply(null,arguments);var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"]["Wa"]).apply(null,arguments);var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"]["Xa"]).apply(null,arguments);var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"]["Ya"]).apply(null,arguments);Module["cwrap"]=cwrap;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("Running...");setTimeout(function(){setTimeout(function(){Module["setStatus"](""),1);doRun()},1)}else{doRun()}}Module["run"]=run;if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop()}run();\n\n\n return WasmBackendModule.ready\n\n\n);nif (typeof exports ===
'object' && typeof module === 'object')\n module.exports = WasmBackendModule;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModule; });\nelse if (typeof exports ===
'object')\n exports["WasmBackendModule"] = WasmBackendModule;\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*/\nimport './flags_wasm';\nimport {backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,
engine, env, KernelBackend, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasmModule,
WasmFactoryConfig} from './wasm-out/tfjs-backend-wasm';\nimport {BackendWasmThreadedSimdModule} from
'./wasm-out/tfjs-backend-wasm-threaded-simd';\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-
backend-wasm-threaded-simd.js';\n// @ts-ignore\nimport {wasmWorkerContents} from './wasm-out/tfjs-backend-
wasm-threaded-simd.worker.js';\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\ninterface
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:
number;\n /** Only used for string tensors, storing encoded bytes. */\n stringBytes?: Uint8Array[];\n}\n\nexport
type DataId = object; // object instead of {} to force non-primitive.\n\nexport class BackendWasm extends
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:
DataStorage<TensorData>;\n\n constructor(public wasm:
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n
this.wasm.tfjs.initWithThreadsCount(threadsCount);\n actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n
this.dataIdMap = new DataStorage(this, engine());\n }\n\n write(values: backend_util.BackendValues, shape:
number[], dtype: DataType):\n DataId {\n const dataId = {id: this.dataIdNextNumber++};\n

```



```

this.move(dataId, values, shape, dtype, 1);\n return dataId;\n }\n\n numDataIds(): number {\n return\n this.dataIdMap.numDataIds();\n }\n\n async time(f: () => void): Promise<BackendTimingInfo> {\n const start =\n util.now();\n f();\n const kernelMs = util.now() - start;\n return {kernelMs};\n }\n\n move(\n dataId:\n DataId, values: backend_util.BackendValues, shape: number[],\n dtype: DataType, refCount: number): void {\n const id = this.dataIdNextNumber++;\n if (dtype === 'string') {\n const stringBytes = values as Uint8Array[];\n this.dataIdMap.set(\n dataId,\n {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n }\n return;\n }\n\n const size = util.sizeFromShape(shape);\n const numBytes = size *\n util.bytesPerElement(dtype);\n const memoryOffset = this.wasm._malloc(numBytes);\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n this.wasm.tfjs.registerTensor(id, size,\n memoryOffset);\n if (values != null) {\n this.wasm.HEAPU8.set(\n new Uint8Array(\n (values\n as backend_util.TypedArray).buffer,\n (values as backend_util.TypedArray).byteOffset, numBytes),\n memoryOffset);\n }\n }\n\n read(dataId: DataId): Promise<backend_util.BackendValues> {\n return\n this.readSync(dataId);\n }\n\n readSync(dataId: DataId): backend_util.BackendValues {\n const {memoryOffset,\n dtype, shape, stringBytes} =\n this.dataIdMap.get(dataId);\n if (dtype === 'string') {\n return stringBytes;\n }\n const bytes = this.wasm.HEAPU8.slice(\n memoryOffset,\n memoryOffset +\n util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n return typedArrayFromBuffer(bytes.buffer, dtype);\n }\n\n /**\n * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n * is released, false\n * otherwise.\n * @param dataId\n * @oaram force Optional, remove the data regardless of refCount\n */\n disposeData(dataId: DataId, force = false): boolean {\n if (this.dataIdMap.has(dataId)) {\n const data =\n this.dataIdMap.get(dataId);\n data.refCount--;\n if (!force && data.refCount > 0) {\n return false;\n }\n this.wasm._free(data.memoryOffset);\n this.wasm.tfjs.disposeData(data.id);\n }\n this.dataIdMap.delete(dataId);\n }\n return true;\n }\n\n /** Return refCount of a `TensorData` */\n refCount(dataId: DataId): number {\n if (this.dataIdMap.has(dataId)) {\n const tensorData =\n this.dataIdMap.get(dataId);\n return tensorData.refCount;\n }\n return 0;\n }\n\n incRef(dataId: DataId) {\n const data = this.dataIdMap.get(dataId);\n if (data != null) {\n data.refCount++;\n }\n }\n\n floatPrecision():\n 32 {\n return 32;\n }\n\n // Returns the memory offset of a tensor. Useful for debugging and unit\n // testing.\n getMemoryOffset(dataId: DataId): number {\n return this.dataIdMap.get(dataId).memoryOffset;\n }\n\n dispose() {\n this.wasm.tfjs.dispose();\n if ('PThread' in this.wasm) {\n this.wasm.PThread.terminateAllThreads();\n }\n this.wasm = null;\n }\n\n memory() {\n return {unreliable:\n false};\n }\n\n /**\n * Make a tensor info for the output of an op. If `memoryOffset` is not\n * present, this\n * method allocates memory on the WASM heap. If `memoryOffset`\n * is present, the memory was allocated\n * elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n makeOutput(shape:\n number[], dtype: DataType, memoryOffset?: number):\n TensorInfo {\n let dataId: {};\n if (memoryOffset\n == null) {\n dataId = this.write(null /* values */, shape, dtype);\n } else {\n const id =\n this.dataIdNextNumber++;\n dataId = {id};\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,\n refCount: 1});\n const size = util.sizeFromShape(shape);\n this.wasm.tfjs.registerTensor(id, size,\n memoryOffset);\n }\n return {dataId, shape, dtype};\n }\n\n typedArrayFromHeap({shape, dtype, dataId}:\n TensorInfo):\n backend_util.TypedArray {\n const buffer = this.wasm.HEAPU8.buffer;\n const\n {memoryOffset} = this.dataIdMap.get(dataId);\n const size = util.sizeFromShape(shape);\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer, memoryOffset, size);\n case 'int32':\n return new\n Int32Array(buffer, memoryOffset, size);\n case 'bool':\n return new\n Uint8Array(buffer, memoryOffset,\n size);\n default:\n throw new Error(`Unknown dtype ${dtype}`);\n }\n }\n\n\nfunction\n createInstantiateWasmFunc(path: string) {\n // this will be replace by rollup plugin patchWechatWebAssembly in\n // minprogram's output.\n // tslint:disable-next-line:no-any\n return (imports: any, callback: any) => {\n util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n if (!response['ok']) {\n imports.env.a(`failed to load wasm binary file at '${path}'`);\n }\n response.arrayBuffer().then(binary => {\n WebAssembly.instantiate(binary, imports).then(output => {\n callback(output.instance, output.module);\n });\n });\n });\n return {};\n }\n\n\n /**\n * Returns the path of the WASM binary.\n * @param

```

```

simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n *
@param wasmModuleFolder the directory containing the WASM binaries.\n */\nfunction getPathToWasmBinary(\n simdSupported: boolean, threadsSupported: boolean,\n wasmModuleFolder: string) {\n if (wasmPath != null) {\n // If wasmPath is defined, the user has supplied a full path to\n // the vanilla .wasm binary.\n return\n wasmPath;\n }\n let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n if (simdSupported &&\n threadsSupported) {\n path = 'tfjs-backend-wasm-threaded-simd.wasm';\n } else if (simdSupported) {\n path =\n 'tfjs-backend-wasm-simd.wasm';\n }\n if (wasmFileMap != null) {\n if (wasmFileMap[path] != null) {\n return wasmFileMap[path];\n }\n }\n return wasmModuleFolder + path;\n}\n\n/**\n * Initializes the wasm\n module and creates the js <--> wasm bridge.\n *\n * NOTE: We wrap the wasm module in a object with property\n 'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in\n Chrome 76).\n */\nexport async function init(): Promise<{ wasm: BackendWasmModule}> {\n const\n [simdSupported, threadsSupported] = await Promise.all([\n env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n]);\n return new Promise((resolve, reject) =>\n {\n const factoryConfig: WasmFactoryConfig = {};\n /**\n * This function overrides the Emscripten\n module locateFile utility.\n * @param path The relative path to the file that needs to be loaded.\n * @param\n prefix The path to the main JavaScript file's directory.\n */\n factoryConfig.locateFile = (path, prefix) => {\n if (path.endsWith('.worker.js')) {\n const response = wasmWorkerContents;\n const blob = new\n Blob([response], {type: 'application/javascript'});\n return URL.createObjectURL(blob);\n }\n if\n (path.endsWith('.wasm')) {\n return getPathToWasmBinary(\n simdSupported as boolean,\n threadsSupported as boolean,\n wasmPathPrefix != null ? wasmPathPrefix : prefix);\n }\n return prefix\n + path;\n };\n // Use the instantiateWasm override when system fetch is not available.\n // Reference:\n //\n https://github.com/emscripten-\n core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7fecfa907/tests/manual_wasm_instantiate.html#L170\n if (customFetch) {\n factoryConfig.instantiateWasm =\n createInstantiateWasmFunc(getPathToWasmBinary(\n simdSupported as boolean, threadsSupported as\n boolean,\n wasmPathPrefix != null ? wasmPathPrefix : ''));\n }\n let initialized = false;\n factoryConfig.onAbort = () => {\n if (initialized) {\n // Emscripten already called console.warn so no need to\n double log.\n return;\n }\n if (initAborted) {\n // Emscripten calls `onAbort` twice, resulting in double\n error\n // messages.\n return;\n }\n initAborted = true;\n const rejectMsg =\n 'Make sure the\n server can serve the `.wasm` file relative to the ' +\n 'bundled js file. For more details see\n https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers';\n reject({message: rejectMsg});\n };\n let wasm: Promise<BackendWasmModule>;\n // If `wasmPath` has\n been defined we must initialize the vanilla module.\n if (threadsSupported && simdSupported && wasmPath ==\n null) {\n factoryConfig.mainScriptUrlOrBlob = new Blob(\n [\n var WasmBackendModuleThreadedSimd =\n +\n wasmFactoryThreadedSimd.toString(),\n {type: 'text/javascript'}\n];\n wasm =\n wasmFactoryThreadedSimd(factoryConfig);\n } else {\n // The wasmFactory works for both vanilla and SIMD\n binaries.\n wasm = wasmFactory(factoryConfig);\n }\n // The WASM module has been successfully\n created by the factory.\n // Any error will be caught by the onAbort callback defined above.\n wasm.then((module) => {\n initialized = true;\n initAborted = false;\n const voidReturnType: string =\n null;\n // Using the tfjs namespace to avoid conflict with emscripten's API.\n module.tfjs = {\n init:\n module.cwrap('init', null, []),\n initWithThreadsCount:\n module.cwrap('init_with_threads_count', null,\n [number]),\n getThreadsCount: module.cwrap('get_threads_count', 'number', []),\n registerTensor:\n module.cwrap(\n 'register_tensor', null,\n [\n 'number', // id\n 'number', // size\n 'number', // memoryOffset\n]\n),\n disposeData: module.cwrap('dispose_data', voidReturnType,\n [number]),\n dispose: module.cwrap('dispose', voidReturnType, []),\n };\n resolve({ wasm: module });\n });\n }\n }\n)\n}\n\nfunction typedArrayFromBuffer(\n buffer: ArrayBuffer, dtype: DataType):\n backend_util.TypedArray {\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer);\n case\n 'int32':\n return new Int32Array(buffer);\n case 'bool':\n return new Uint8Array(buffer);\n default:\n
```

```

throw new Error(`Unknown dtype ${dtype}`);
}
}
const wasmBinaryNames = ['tfjs-backend-wasm.wasm', 'tfjs-backend-wasm-simd.wasm', 'tfjs-backend-wasm-threaded-simd.wasm'] as const;
type WasmBinaryName = typeof wasmBinaryNames[number];
let wasmPath: string = null;
let wasmPathPrefix: string = null;
let wasmFileMap: {[key in WasmBinaryName]?: string} = {};
let initAborted = false;
let customFetch = false;
/**
 * @deprecated Use `setWasmPaths` instead.
 * Sets the path to the `.wasm` file which will be fetched when the wasm backend is initialized. See https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers for more details.
 * @param path wasm file path or url
 * @param usePlatformFetch optional boolean to use platform fetch to download the wasm file, default to false.
 */
@doc {heading: 'Environment', namespace: 'wasm'}
export function setWasmPath(path: string, usePlatformFetch = false): void {
 deprecationWarn('setWasmPath has been deprecated in favor of setWasmPaths and ' + path + ' will be removed in a future release.');
```

```

 if (initAborted) {
 throw new Error('The WASM backend was already initialized. Make sure you call ' + path + 'setWasmPath()' before you call `tf.setBackend()` or `tf.ready()`);
 }
 wasmPath = path;
 customFetch = usePlatformFetch;
}
/**
 * Configures the locations of the WASM binaries.
 */
export function setWasmPaths({
 'tfjs-backend-wasm.wasm': 'renamed.wasm',
 'tfjs-backend-wasm-simd.wasm': 'renamed-simd.wasm',
 'tfjs-backend-wasm-threaded-simd.wasm': 'renamed-threaded-simd.wasm'
}): void {
 tf.setBackend('wasm');
}
/**
 * @param prefixOrFileMap This can be either a string or object.
 * - (string) The path to the directory where the WASM binaries are located. Note that this prefix will be used to load each binary (vanilla, SIMD-enabled, threading-enabled, etc.).
 * - (object) Mapping from names of WASM binaries to custom full paths specifying the locations of those binaries. This is useful if your WASM binaries are not all located in the same directory, or if your WASM binaries have been renamed.
 * @param usePlatformFetch optional boolean to use platform fetch to download the wasm file, default to false.
 */
@doc {heading: 'Environment', namespace: 'wasm'}
export function setWasmPaths(prefixOrFileMap: string | {[key in WasmBinaryName]?: string}, usePlatformFetch = false): void {
 if (initAborted) {
 throw new Error('The WASM backend was already initialized. Make sure you call ' + prefixOrFileMap + 'setWasmPaths()' before you call `tf.setBackend()` or ' + prefixOrFileMap + 'tf.ready()`);
 }
 if (typeof prefixOrFileMap === 'string') {
 wasmPathPrefix = prefixOrFileMap;
 } else {
 wasmFileMap = prefixOrFileMap;
 const missingPaths = wasmBinaryNames.filter(name => wasmFileMap[name] == null);
 if (missingPaths.length > 0) {
 throw new Error(`There were no entries found for the following binaries: ` + missingPaths.join(',') + `. Please either call setWasmPaths with a ` + prefixOrFileMap + `map providing a path for each binary, or with a string indicating ` + prefixOrFileMap + `the directory where all the binaries can be found.`);
 }
 }
 customFetch = usePlatformFetch;
}
/**
 * Used in unit tests.
 */
export function resetWasmPath(): void {
 wasmPath = null;
 wasmPathPrefix = null;
 wasmFileMap = {};
 customFetch = false;
 initAborted = false;
}
let threadsCount = -1;
let actualThreadsCount = -1;
/**
 * Sets the number of threads that will be used by XNNPACK to create threadpool (default to the number of logical CPU cores).
 * This must be called before calling `tf.setBackend('wasm')`.
 */
export function setThreadsCount(numThreads: number) {
 threadsCount = numThreads;
}
/**
 * Gets the actual threads count that is used by XNNPACK.
 * It is set after the backend is initialized.
 */
export function getThreadsCount(): number {
 if (actualThreadsCount === -1) {
 throw new Error('WASM backend not initialized.');
```

```

 }
 return actualThreadsCount;
}
/** @license See the LICENSE file.
 * This code is auto-generated, do not modify this file!
const version = '3.11.0';
export {version};
/** @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
=====

```

```
*\n\nimport './flags_wasm';\nimport {registerBackend} from '@tensorflow/tfjs-core';\nimport {BackendWasm, init} from './backend_wasm';\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath, setWasmPaths} from './backend_wasm';\nexport {version as version_wasm} from './version';\nconst WASM_PRIORITY = 2;\nregisterBackend('wasm', async () => {\n const {wasm} = await init();\n return new BackendWasm(wasm);\n},\nWASM_PRIORITY);\n"], "names":["_FusedMatMul", "util", "Abs", "backend_util", "Add", "AddN", "Identity", "setup", "Transpose", "All", "Any", "wasmFunc", "ArgMax", "AvgPool", "Reshape", "BatchMatMul", "slice_util", "buffer", "sliceImplCPU", "Slice", "BatchToSpaceND", "Cast", "Ceil", "ClipByValue", "concatImplCPU", "Concat", "Conv2D", "Conv2DBackpropInput", "Cos", "Cosh", "CropAndResize", "Cumsum", "DepthToSpace", "DepthwiseConv2dNative", "Elu", "supportsFullBroadcast", "Equal", "Exp", "ExpandDims", "Fill", "FlipLeftRight", "Floor", "FloorDiv", "FusedBatchNorm", "FusedConv2D", "FusedDepthwiseConv2D", "GatherNd", "gather_util", "GatherV2", "Greater", "GreaterEqual", "setupFunc", "LeakyRelu", "Less", "LessEqual", "Log", "LogicalAnd", "Max", "Maximum", "MaxPool", "Mean", "Min", "Minimum", "MirrorPad", "Multiply", "Neg", "NonMaxSuppressionV3", "NonMaxSuppressionV4", "NonMaxSuppressionV5", "kernelFunc", "NotEqual", "OneHot", "OnesLike", "Pack", "PadV2", "Pow", "Prelu", "Prod", "rangeImplCPU", "Range", "RealDiv", "Relu", "Relu6", "ResizeBilinear", "Reverse", "RotateWithOffset", "Round", "Rsqrt", "ScatterNd", "scatter_util", "Select", "Sigmoid", "Sin", "Softmax", "SpaceToBatchND", "SplitV", "Sqrt", "Square", "SquaredDifference", "Step", "StridedSlice", "Sub", "Sum", "Tan", "Tanh", "Tile", "TopK", "Transform", "Unpack", "ZerosLike", "registerKernel", "env", "require$$0", "require$$1", "require$$2", "global", "require$$3", "require$$4", "KernelBackend", "DataStorage", "engine", "wasmFactoryThreadedSimd", "wasmFactory", "deprecationWarn", "registerBackend"], "mappings":";;;;;;;;;;;;;;";;;;;;;;;EAAA;";;;;;;;;;;EAI;BA;EACA;IAAY;QAMX;EAND;WAAY;QAAQ;MACIB;6CAAW;CAAA;MACX;yCAA;S;CAAA;MACT;uCAAQ;CAAA;MACR;2CAAU;CAAA;MACV;idAAa;CAAA;EACf;CAAC;EANW;QAAQ;KAAR;QAAQ;QAMnB;EAED;EACA;IAAY;iBAQX;EARD;WAAY;ibAAiB;MAC3B;6DAAU;CAAA;MACV;yDAAQ;CAAA;MACR;2DAAS;CAAA;MACT;2DAAS;CAAA;MACT;mEAAa;CAAA;MACb;+DAAW;CAAA;MACX;uDAAO;CAAA;EACT;CAAC;EARW;ibAAiB;KAAjB;ibAAiB;EC3B7B;";;;;;;;;;;";EauBA;IAAI;eAKQ;CAAC;EAEb;SAAS;KAAK;CAAC;OAAoB;MACjC;eAAe;GAAG;OAAO;CAAC;IAAI;CAAC;KAAK;CAACA;qBAA;Y;EAAE;IAAI;aAAa;UACIE;QAAQ;UACR;OAAO;UACP;QAAQ;UACR;QAAQ;UACR;QAAQ;UACR;QAAQ;UACR;QAAQ;UACR;QAAQ;OACT;CAAC;CAAC;EACL;CAAC;EAED;SAAS;gBAAgB;CAAC;IAIzB;MACC;MAAM;EAAC;MAAM;EAAE;OAAO;EAAE;KAAK;EAAC;GAAG;IAAI;CAAC;MACtC;MAAM;EAAC;CAAC;EAAE;CAAC;EAAE;IAAI;EAAE;SBAA;S;EAAC;GAAG;MAAM;CAAC;MAEPd;IAAI;CAAC;CAAC;KAAK;KAAK;SAAS;IAAI;CAAC;CAAC;KAAK;KAAK;SAAS;EAAE;UACID;MAAM;IAAI;KAAK;CACX;6DAA6D;CAAC;CAAC;OACpE;MAED;MAAM;EAAC;UAAU;EAAE;UAAU;EAAE;UAAU;EAAE;CAAc;EAAC;GAAG;KAAK;CAAC;MACnE;MAAM;GAAG;GAAG;OAAO;CAAC;SAAS;CAAC;GAAG;CAAC;CAAC;CAAC;CAAC;MAAM;CAAC;CAAC;EAAE;CAAC;MAC/C;MAAM;GAAG;GAAG;OAAO;CAAC;SAAS;CAAC;GAAG;CAAC;CAAC;CAAC;MAAM;CAAC;CAAC;EAAE;CAAC;MAE/C;IAAI;MAAM;GAAG;CAAC;CAAC;MACf;IAAI;IAAI;IAAI;IAAI;EAAE;UACHb;MAAM;QAAQ;GAAG;OAAO;CAAC;SAAS;CAAC;GAAG;CAAC;IAAI;CAAC;MAAM;CAAC;CAAC;UACpD;IAAI;QAAQ;CAAC;KAAK;CAAC;MAAM;KAAK;CAAC;EAAE;C;AC/B;MAAM;IAAI;KAAK;CACX;idAAiD;kBACjD;QAAQ;QAAQ;CAAC;KAAK;CAAC;MAAM;GAAG;CAAC;CAAC;WACvC;UACD;MAAM;GAAG;QAAQ;CAAC;EAAE;CAAC;OACTb;MACD;MAAM;wBAAwB;GAAG;SBAA;S;IAAI;IAAI;UAC3D;CAAC;UACD;OAAO;CAAC;SAAS;CAAC;GAAG;CAAC;SBAA;S;CAAC;MAAM;CAAC;CAAC;EAAE;CAAC;MAC5D;MAAM;EAAe;GACjB;ibAAiB;CAAC;UAAkD;CAAC;CAAC;MACIE;IAAI;EAAe;IAAI;IAAI;EAAE;UAC3B;MAAM;IAAI;KAAK;CACX;GAAG;UAAU;gDAAgD;cAC7D;SBAA;S;CAAC;CAAC;OAC7B;MAED;MAAM;OAAO;GAAG;UAAU;GAAG;CAAC;CAAC;KAAK;CAAC;CAAC;GAAG;CAAC;CAAC;KAAK;CAAC;CAAC;CAAC;MACrD;MAAM;QAAQ;GAAG;UAAU;GAAG;CAAC;CAAC;KAAK;CAAC;CAAC;GAAG;CAAC;CAAC;KAAK;CAAC;CAAC;CAAC;MACtD;MAAM;QAAQ;GAAG;CAAC;CAAC;KAAK;CAAC;CAAC;CAAC;CAAC;MAE5B;MAAM;GAAG;GAAG;OAAO;CAAC;UAAU;CAAC;CAAC;QAAQ;EAAE;OAAO;EAAE;QAAQ;CAAC;EAAE;CAAC;CAAC;KAAK;CAAC;CAAC;MACvE;MAAM;KAAK;GAAG;OAAO;CAAC;SAAS;CAAC;GAAG;CAAC;GAAG;CAAC;MAAM;CAAC;CAAC;EAAE;CAAC;MAEnD;MAAM;WAAW;GAAG;IAAI;UAA
```

U,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MACnE,MAAM,WA  
AW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC  
;MAEnE,eAAe,CACX,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,GAAG,EAAE,  
WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,UAAU,EAAE,UAAU,EAAE,eAAe,EAAE,MAAM,  
EAAE,wBAAwB,EACzE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;MAEhC,OAAO,GAAG,CAAC;EACb,  
CAAC;EAEM,MAAM,iBAAiB,GAAiB;MAC7C,UAAU,EAAEA,qBAAY;MACxB,WAAW,EAAE,MAAM;MAC  
nB,SAAS,EAAE,KAAK;MACHB,UAAU,EAAE,gBAAoC;GACjD;;EC7GD;;;;;;;WauBgB,uBAAuB,CACn  
C,UAAkB,EAAE,OAAkB;MACxC,IAAI,QAA6D,CAAC;MAEIE,SAAS,SAAS,CAAC,OAAoB;UACrC,QAAQ,G  
AAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;cACzD,QAAQ;cACR,QAAQ;cACR,  
QAAQ;WACT,CAAC,CAAC;OACJ;MAED,SAAS,UAAU,CAAC,IAAiD;UAEEnE,MAAM,EAAC,OAAO,EAAE,  
MAAM,EAAE,EAAC,CAAC,EAAC,EAAC,GAAG,IAAI,CAAC;UACpC,MAAM,GAAG,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UAC/C,MAAM,GAAG,GAAG,  
OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,OAAO,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC;UA  
C5D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,E  
AAE,CAAC;;UAGnD,IAAIC,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;cAC  
vC,OAAO,GAAG,CAAC;WACZ;UAED,QAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAA  
C,EAAE,KAAK,CAAC,CAAC;UACxC,OAAO,GAAG,CAAC;OACZ;MAED,OAAO,EAAC,UAAU,EAAE,WAA  
W,EAAE,MAAM,EAAE,SAAS,EAAE,UAAU,EAAC,CAAC;EACIE;;ECpDA;;;;;;;EAoBO,MAAM,SAAS,  
GAAiB,uBAAuB,CAACC,YAAG,CAAC;;ECpBnE;;;;;;;WauBgB,wBAAwB,CACpC,UAAkB,EAAE,qBA  
A8B,EACID,KAAgB;MACiB,IAAI,QAGQ,CAAC;MAEb,SAAS,SAAS,CAAC,OAAoB;UACrC,QAAQ,GAAG,O  
AAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;cACzD,QAAQ;cACR,OAAO;cACP,QAAQ;c  
ACR,QAAQ;cACR,OAAO;cACP,QAAQ;cACR,QAAQ;cACR,QAAQ;WACT,CAAC,CAAC;OACJ;MAED,SAA  
S,UAAU,CAAC,IAAkD;UAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAC,GAAG,IAAI,CAAC;UAC/B,MA  
AM,EAAC,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;UACtB,MAAM,GAAG,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UAC/C,MAAM,GAAG,GAAG,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UAE/C,MAAM,U  
AAU,GAAG,KAAK,IAAI,IAAI,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC;UACnD,MAAM,QAAQ,GA  
AGC,qBAAY,CAAC,0BAA0B,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;UAC3E  
,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,UAAU,CAAC,CAAC;;UAGrD,IAAIF,aAAI,  
CAAC,aAAa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;cACtC,OAAO,GAAG,CAAC;WACZ;UAED,MAAM,  
WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,C  
AAC;UACnE,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CA  
AC,MAAM,CAAC,CAAC;UACnE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,C  
AAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,MAAM,UAAU,GAAG,MAAM,QAAQ,CAC7B,GAAG,EAA  
E,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAA  
K,CAAC,MAAM,EACIE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;;UAG9B,IAA  
I,qBAaqB,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,EAAE;cACID,UAAU,EAAE,CAAC;cACb,OAAO,GAAG,C  
AAC;WACZ;UAED,MAAM,cAAc,GAAGE,qBAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,QAA  
Q,CAAC,CAAC;UACxE,MAAM,cAAc,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,  
QAAQ,CAAC,CAAC;UACxE,MAAM,eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,K  
AAK,CAAC,KAAK,CAAC,CAAC,CAAC;UACHE,MAAM,eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,CAAC,CA  
AC,EAAE,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC;UACHE,IAAI,eAAe,IAAI,eAAe,EAAE;cACtC,UA  
AU,EAAE,CAAC;cACb,OAAO,GAAG,CAAC;WACZ;eAAM;cACL,MAAM,IAAI,KAAK,CACX,2CAA2C;kBA  
C3C,iBAAiB,CAAC,CAAC,KAAK,IAAI,UAAU,GAAG,CAAC,CAAC;WACHD;OACF;MAED,OAAO,EAAC,U  
AAU,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,EAAE,UAAU,EAAC,CAAC;EACIE;;ECxFA;;;;;;;EAqB  
A,MAAM,qBAaqB,GAAG,IAAI,CAAC;EAE5B,MAAM,SAAS,GACiB,wBAAwB,CAACC,YAAG,EAAE,qBA  
AqB,CAAC;;ECxBxD;;;;;;;EAuBA,IAAI,QAeq,CAAC;EAEb,SAAS,SAAS,CAAC,OAAoB;MACrC,QAA  
Q,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,aAAI,EAAE,IAAI,aAAa;UACnD,OAAO;UACP,QAAQ;U

ACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,IAAI,CAAC,IAAkD;MAC9D,MA  
AM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,UA  
AU,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CA  
AC,CAAC;;MAGjE,IAAIJ,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACv  
C,OAAO,GAAG,CAAC;OACZ;MAED,MAAM,QAAQ,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,OAA  
O,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC;MACrE,MAA  
M,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;MACtE,  
MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,  
CAAC;MACnD,QAAQ,CAAC,aAAa,EAAE,QAAQ,CAAC,MAAM,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,  
CAAC,EAAE,KAAK,CAAC,CAAC;MAErE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,UAAU,GAaiB  
;MACtC,UAAU,EAAEi,aAAI;MACHb,WAAW,EAAE,MAAM;MACnB,SAAS;MACT,UAAU,EAAE,IAAwB;G  
ACrC;;EC1DD;,,,,,,,,,,,,,;WAsBgB,QAAQ,CAAC,IAAoD;MAE3E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,  
EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACpC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,  
CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,MAAM,MAAM,GAAG,OAAO,CAA  
C,kBAaKB,CAAC,CAAC,CAAC,CAAC;MAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG  
,CAAC,CAAC;MACHd,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACpB,OAAO,GAAG,CAAC;EA  
Cb,CAAC;EAEM,MAAM,cAAc,GAaiB;MAC1C,UAAU,EAAEC,iBAAQ;MACpB,WAAW,EAAE,MAAM;MAC  
nB,UAAU,EAAE,QAA4B;GACzC;;ECpCD;,,,,,,,,,,,,,;EAwBA,IAAI,aAE4D,CAAC;EAEjE,SAASC,OAAK,CAA  
C,OAAoB;MACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,kBAAS,EAAE,IAAI,aAAa;UAC7D  
,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;OACT,CAAC,  
CAAC;EAEL,CAAC;WAEe,SAAS,CACrB,IAC0E;MAE5E,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,  
EAAC,GAAG,IAAI,CAAC;;MAGtC,MAAM,CAAC,YAAY,EAAE,IAAI,CAAC,GAAG,iBAaiB,CAAC,MAAM,  
CAAC,CAAC,CAAC,KAAK,EAAE,KAAK,CAAC,IAAI,CAAC,CAAC;MAE3E,IAAI,UAAU,GAAG,IAAI,CAA  
C;MACtB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAAC,EAAE,E  
AAE;UACpC,IAAI,IAAI,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;cACjB,UAAU,GAAG,KAAK,CAAC;WAC  
pB;OACF;MACD,MAAM,QAAQ,GAAG,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,EAAE,KAAK,CA  
AC,IAAI,CAAC,CAAC;MAC7D,MAAM,CAAC,GAAG;UACR,MAAM,EAAE,MAAM,CAAC,CAAC,CAAC,MA  
AM;UACvB,KAAK,EAAE,YAAY;UACnB,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,KAAK;OACtB,CAAC  
;MAEF,IAAI,UAAU,EAAE;UACd,MAAM,MAAM,GAAG,QAAQ,CAAC,EAAC,MAAM,EAAE,OAAO,EAAC,  
CAAC,CAAC;UAC3C,MAAM,CAAC,KAAK,GAAG,QAAQ,CAAC;UACxB,OAAO,MAAM,CAAC;OACf;MAE  
D,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MAC  
ID,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EA  
AE,CAAC;MAC/C,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;MACnD,MAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC  
,CAAC,MAAM,CAAC,CAAC;MAC9D,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC  
,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAEnE,aAAa,CACT,GAAG,EAAE,WAAW,EAAE,CAAC,  
CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,EAAE,SAAS,E  
ACrE,IAAI,CAAC,MAAM,CAAC,CAAC;MACjB,OAAO,GAAG,CAAC;EACb,CAAC;EAED,SAAS,eAAe,CAA  
C,OAAiB,EAAE,IAAc;MACxD,MAAM,QAAQ,GAAG,IAAI,KAAK,CAAC,OAAO,CAAC,MAAM,CAAC,CAA  
C;MAC3C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE  
,EAAE;UACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;O  
AChC;MACD,OAAO,QAAQ,CAAC;EACiB,CAAC;EAED,SAAS,iBAaiB,CACtB,KAAe,EAAE,IAAc;MACjC,  
MAAM,QAAQ,GAAa,EAAE,CAAC;MAC9B,MAAM,OAAO,GAAa,EAAE,CAAC;MAC7B,KAAK,IAAI,CAAC  
,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;UACrC,IAAI,KAAK,C  
AAC,CAAC,CAAC,KAAK,CAAC,EAAE;cACiB,QAAQ,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAA  
C,CAAC;WACzB;UACD,IAAI,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;cACxB,  
OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;WACvB;OACF;MACD,KAAK,IAAI,CAA  
C,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;UACvC,IAAI,SAAS,

GAAG,CAAC,CAAC,CAAC;UACnB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,M  
AAM,EAAE,EAAE,CAAC,EAAE;cACvC,IAAI,OAAO,CAAC,CAAC,CAAC,IAAI,CAAC;mBACd,SAAS,KAA  
K,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,CAAC,GAAG,OAAO,CAAC,CAAC,CAAC,CAAC,EAAE;kBACzD,  
SAAS,GAAG,CAAC,CAAC;eACf;WACF;UACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC;OACxB;M  
ACD,OAAO,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;EAC7B,CAAC;EAEM,MAAM,eAAe,GAAiB;MAC3C,  
UAAU,EAAEA,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,SAA6B;MACzC,SAAS,EAAED  
,OAAK;GACjB;;ECtHD;,,,,,,,,,,,,;EAqBA;,,,,;WAQgB,uBAAuB,CACnC,CAAa,EAAE,IAAqB,EAAE,OAAoB;  
MAM5D,MAAM,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC;MACvB,MAAM,KAAK,GAAG,CAAC,CAAC,K  
AAK,CAAC,MAAM,CAAC;MAE7B,MAAM,YAAY,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,MAAM,C  
AAC,CAAC;MACvD,IAAI,IAAI,GAAG,YAAY,CAAC;MACxB,MAAM,YAAY,GAAGE,qBAAY,CAAC,kBAA  
kB,CAAC,IAAI,EAAE,KAAK,CAAC,CAAC;MACIE,IAAI,WAAW,GAAG,IAAI,CAAC;MACvB,IAAI,kBAaKB  
,GAAG,KAAK,CAAC;MAC/B,IAAI,YAAY,IAAI,IAAI,EAAE;UACxB,MAAM,QAAQ,GAAa,IAAI,KAAK,CA  
AC,KAAK,CAAC,CAAC;UAC5C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAA  
M,EAAE,CAAC,EAAE,EAAE;cACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAA  
C,CAAC,CAAC,CAAC;WACvC;UAED,IAAI,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,IAAI,CAAC,MAAM,E  
AAE,KAAK,CAAC,CAAC;UACzD,WAAW;cACP,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,E  
AAE,KAAK,EAAE,EAAC,IAAI,EAAE,YAAY,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;UAEEnE,MAAM,GA  
AG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UAC  
/C,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EA  
AE,CAAC;UACIE,IAAI,YAAY,KAAK,GAAG,EAAE;cACxB,kBAaKB,GAAG,IAAI,CAAC;WAC3B;OACF;MA  
ED,OAAO,EAAC,UAAU,EAAE,WAAW,EAAE,YAAY,EAAE,IAAI,EAAE,kBAaKB,EAAC,CAAC;EAC3E;;EC  
9DA;,,,,,,,,,,,,;EAuBA,IAAI,OAAiE,CAAC;EAETe,SAASI,OAAK,CAAC,OAAoB;MACjC,OAAO,GAAG,OAA  
O,CAAC,IAAI,CAAC,KAAK,CAACE,YAAG,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAAC,CAAC,CAAC;EAC  
/E,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EA  
AC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MAC/B,MAA  
M,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GA  
AG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MA  
CIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAaK  
B,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,kBAaKB,EA  
AE;UACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,C  
AAC,EAAE,CAAC;UACjE,KAAK,GAAG,UAAU,CAAC;UACnB,OAAO,GAAG,YAAY,CAAC;OACxB;MAED  
,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;MACrCN,qBAAY,CAAC,0BAA0B,CAAC,  
KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;MACHe,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzB  
A,qBAAY,CAAC,yBAAYB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;MAC9D,MAAM,UAAU,G  
AAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,  
CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACID,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CA  
AC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CA  
AC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,KA  
AK,CAAC,CAAC;OACrC;MAED,IAAI,kBAaKB,EAAE;;UAETB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,  
MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBAAY,CAAC,oB  
AAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,  
CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,SAAS,GAAiB;MACrC,UAAU,EAA  
EM,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEF,OAAK;MACHB,UAAU,EAAE,GAAuB;GAC  
pC;;EC9ED;,,,,,,,,,,,,;EAuBA,IAAI,OAAiE,CAAC;EAETe,SAASA,OAAK,CAAC,OAAoB;MACjC,OAAO,GAA  
G,OAAO,CAAC,IAAI,CAAC,KAAK,CAACG,YAAG,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAAC,CAAC,CA  
AC;EAC/E,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,K  
AAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MA  
C/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,

CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,C  
AAC;MACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAA  
E,kBAaKB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,kBA  
AkB,EAAE;UACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;UACjE,KAAK,GAAG,UAAU,CAAC;UACnB,OAAO,GAAG,YAAY,CAAC;OACxB;  
MAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;MACrCP,qBAAY,CAAC,0BAA0B,  
CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;MACHe,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,G  
ACzBA,qBAAY,CAAC,yBAAYB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;MAC9D,MAAM,UA  
AU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,U  
AAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACID,IAAI,aAAI,CAAC,aAAa,CAAC,KAA  
K,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA  
G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAA  
E,KAAK,CAAC,CAAC;OACrC;MAED,IAAI,kBAaKB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,C  
AAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBAAY,CAA  
C,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QA  
AQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,SAAS,GAAiB;MACrC,UAAU,E  
AAEO,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEH,OAAK;MACHB,UAAU,EAAE,GAAuB;G  
ACpC;;EC9ED;;;;;;;EAWBA,IAAI,UAESB,CAAC;EAE3B,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,  
GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,eAAM,EAAE,IAAI,aAAa;UACrD,QAAQ;UACR,QAAQ;UA  
CR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,MAAM,CACX,IAAs  
E;MACxE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EA  
AC,IAAI,EAAC,GAAG,KAA0B,CAAC;MAC1C,MAAM,EAAC,CAAC,EAAC,GAAG,MAA4B,CAAC;MACzC,  
MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,  
CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAEd,MAAM,E  
AAC,UAAU,EAAE,IAAI,EAAE,kBAaKB,EAAC,GACxC,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,C  
AAC,CAAC;MAE9C,IAAI,kBAaKB,EAAE;UACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;cAGxB,  
KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,GAAG,YAAY,CAAC;WACxB;OACF;MAED,MAAM,QAAQ,GA  
AG,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MAC1C,MAAM,G  
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;MACID,MAAM,KAAK,GAAG,  
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,MAA  
M,SAAS,GAAGX,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC;MACHD,MAAM,SAAS,GAA  
G,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;MACvCU,UAAQ,CAAC,OAAO,EAA  
E,QAAQ,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,KAAK,CAAC,CAAC;MAEtE,I  
AAI,kBAaKB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MA  
ED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,YAAY,GAAiB;MACxC,UAAU,EAAEC,eAAM;MACIB,  
WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,MAA0B;MACtC,SAAS,EAAEL,OAAK;GACjB;;EChFD;;;;;;;  
;;EAqBA,IAAI,WAI6D,CAAC;EAEIE,SAASA,OAAK,CAAC,OAAoB;MACjC,WAAW,GAAG,OAAO,CAAC,I  
AAI,CAAC,KAAK,CAACM,gBAAO,EAAE,IAAI,aAAa;UACzD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,Q  
AAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;U  
ACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,OAAO,CACZ,IAA  
wE;MAC1E,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAEtC,MAAM,C  
AAC,GAAG,MAAM,CAAC,CAAa,CAAC;MAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAE/C,MAAM,EAAC,UAAU,EAAE,OAAO,EAAE,  
GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;MAC1D,MAAM,QAAQ,GAAGV,qBAAY,CAAC,iBAAiB,CA  
C3C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,kBAaKB,GAAG,EAAE,eAAe,CAAC,CA  
AC;MAE3E,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,MAAM,WAAW,GAAG,QAAQ,CAA  
C,WAAW,CAAC;MACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;MACpC,MAAM



,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAA  
O,CAAC,MAAM,CAAC;MAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;MACtC,M  
AAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CA  
AC;MACzC,MAAM,QAAQ,GAAG,QAAQ,CAAC,UAAU,CAAC;MAErC,IAAI,QAAQ,CAAC,UAAU,KAAK,c  
AAc,EAAE;UAC1C,MAAM,IAAI,KAAK,CACX,4CAA4C;cAC5C,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAA  
C,CAAC;OAC5D;MAED,IAAI,QAAQ,CAAC,aAAa,KAAK,CAAC,IAAI,QAAQ,CAAC,cAAc,KAAK,CAAC,EA  
AE;UACjE,MAAM,IAAI,KAAK,CACX,oEAAoE;cACpE,QAAQ,QAAQ,CAAC,cAAc,KAAK,QAAQ,CAAC,aA  
Aa,IAAI,CAAC,CAAC;OACrE;MAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAA  
Q,EAAE,SAAS,CAAC,CAAC;MAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA  
G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CA  
AC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAA  
C,CAAC,EAAE,YAAY,EAAE,WAAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY  
,EAAE,WAAW,EAAE,QAAQ,EACzE,KAAK,CAAC,CAAC;MACX,OAAO,GAAG,CAAC;EACb,CAAC;EAEM  
,MAAM,aAAa,GAAiB;MACzC,UAAU,EAAEU,gBAAO;MACnB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE  
N,OAAK;MACHb,UAAU,EAAE,OAA2B;GACxC;;EC9FD;;;;;;;;;;;;;;;WAqBgB,OAAO,CACnB,IAAwE;MAC1E,  
MAAM,EAAC,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MAC7B,MAAM,EAAC,CAAC,EAAC,GAAG,  
MAAM,CAAC;MACnB,MAAM,EAAC,KAAK,EAAC,GAAG,KAAK,CAAC;MAEtB,MAAM,KAAK,GAAGN,a  
AAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;MAC1C,MAAM,MAAM,GAAGA,aAAI,CAAC,s  
BAA sB,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;MAEzDA,aAAI,CAAC,MAAM,CACP,KAAK,KAAKA,aA  
AI,CAAC,aAAa,CAAC,MAAM,CAAC,EACpC,MAAM,cAAc,MAAM,gBAAgB,CAAC,CAAC,KAAK,sBAA sB;  
UACnE,8CAA8C,CAAC,CAAC;;MAGxD,IAAI,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CA  
AC,CAAC;MAC9B,OAAO,EAAC,MAAM,EAAE,CAAC,CAAC,MAAM,EAAE,KAAK,EAAE,MAAM,EAAE,K  
AAK,EAAE,CAAC,CAAC,KAAK,EAAC,CAAC;EAC3D,CAAC;EAEM,MAAM,aAAa,GAAiB;MACzC,UAAU,  
EAAEa,gBAAO;MACnB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,OAA2B;GACxC;;EC5CD;;;;;;;;;;;;;;;E  
AuBA,IAAI,eAG2C,CAAC;EA EhD,SAASP,OAAK,CAAC,OAAoB;MACjC,eAAe,GAAG,OAAO,CAAC,IAAI,C  
AAC,KAAK,CAACQ,oBAAW,EAAE,IAAI,aAAa;UACjE,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;U  
ACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EA CL,CAAC;EA  
ED,SAAS,WAAW,CAAC,IAIpB;MACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IA  
AI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;MACtB,MAAM,EAAC,U  
AAU,EAAE,UAAU,EAAC,GAAG,KAAK,CAAC;MAEvC,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAA  
C,CAAC,KAAK,KAAK,SAAS,EAAE;UACID,MAAM,IAAI,KAAK,CACX,4DAA4D,CAAC,CAAC;OACnE;MA  
ED,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAC7B,MAAM,KAAK,GAAG,CAAC,  
CAAC,KAAK,CAAC,MAAM,CAAC;MAE7B,MAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CA  
AC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;MA  
CzE,MAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,C  
AAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;MAEzE,MAAM,WAAW,GAAG,UAAU,GAAG  
,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,  
CAAC,CAAC,CAAC;MACzE,MAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAA  
G,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;MAEzE,MAAM,UA  
AU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MACxC,MA  
AM,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MA  
ExC,MAAM,SAAS,GAAGd,aAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;MACjD,MAAM,SAAS,GAAGA,a  
AAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;MAEjD,MAAM,mBAAmB,GACrB,SAAS,KAAK,SAAS,IAAI,S  
AAS,KAAK,CAAC,IAAI,SAAS,KAAK,CAAC,CAAC;MAEIEA,aAAI,CAAC,MAAM,CACP,KAAK,IAAI,CAA  
C,IAAI,KAAK,IAAI,CAAC,IAAI,mBAAmB,EAC/C,MAAM,iEAAiE;UACnE,kEAAkE;UACIE,wBAAwB,UAA  
U,UAAU,UAAU,IAAI,CAAC,CAAC;MAEpE,MAAM,iBAAiB,GACnB,SAAS,GAAG,SAAS,GAAG,CAAC,CA  
AC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAA  
K,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MACxE,MAAM,QAAQ,GAAG,iBAAiB,CAAC,MAAM,C

AAC,CAAC,WAAW,EAAE,WAAW,CAAC,CAAC,CAAC;MAEtEA,aAAI,CAAC,MAAM,CACP,WAAW,KAA  
K,WAAW,EAC3B,MAAM,kCAAkC,WAAW,SAAS;UACxD,GAAG,WAAW,4BAA4B,CAAC,CAAC,KAAK,O  
AAO;UACxD,GAAG,CAAC,CAAC,KAAK,mBAAmB,UAAU,EAAE;UACzC,mBAAmB,UAAU,cAAc,CAAC,C  
AAC;MAErD,MAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;UACr  
C,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;MACpE,MAAM,QAAQ,GAAG,UAAU,GAAG,C  
AAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;UACrC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,  
CAAC;;MAGpE,MAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAA  
C,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;MACzE,MAA  
M,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE  
,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;MAEzE,MAAM,KAAK,GAAG,OAAO  
,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,MAAM,KAA  
K,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEn  
D,MAAM,OAAO,GAAG,UAAU,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,GAAG,CAAC,KA  
AK,CAAC,CAAC,CAAC,CAAC;MACzD,MAAM,QAAQ,GAAG,UAAU,GAAG,GAAG,CAAC,KAAK,CAAC,C  
AAC,CAAC,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACID,MAAM,QAAQ,GAAG,IAAI,C  
AAC,GAAG,CAAC,SAAS,EAAE,SAAS,CAAC,CAAC;MAEhD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C  
AAC,CAAC,QAAQ,EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,GAAG,CAAC,KAAK,CAAC,CAAC;MACzE,M  
AAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,C  
AAC;MAEnD,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,C  
AAC,MAAM,CAAC,CAAC;MACrE,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,C  
AAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAErE,eAAe,CACX,KAAK,EAAE,WAAW,EAAE,GAAG,C  
AAC,KAAK,CAAC,MAAM,EAAE,KAAK,EAAE,WAAW,EACxD,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,  
UAAU,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;MAErD,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAA  
M,CAAC,CAAC;MACHC,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MAEhC,GAAG,  
CAAC,KAAK,GAAG,QAAQ,CAAC;MACrB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,iBAAiB,GAAi  
B;MAC7C,UAAU,EAAEc,oBAAW;MACvB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAER,OAAK;MACHB,U  
AAU,EAAE,WAA+B;GAC5C;;ECjID;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;E  
ACA;EACA;EACA;EACA;EACA;EAEO,SAAS,UAAU,CAAC,MAAM,EAAE,QAAQ,EAAE,KAAK,EAAE,YA  
AY,EAAE;EACIE,IAAI,MAAM,OAAO,GAAGN,aAAI,CAAC,iBAAiB,CAAC,KAAK,EAAEA,aAAI,CAAC,aA  
Aa,CAAC,QAAQ,CAAC,CAAC,CAAC;EACHf,IAAI,IAAI,YAAY,IAAI,KAAK,KAAK,QAAQ,EAAE;EAC5C;E  
ACA,QAAQ,IAAI,MAAM,GAAG,CAAC,CAAC;EACvB,QAAQ,MAAM,CAAC,OAAO,CAAC,KAAK,IAAI;EA  
ChC,YAAY,MAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC;EACzD,YA  
AY,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;EAC5C,YAAY,MAAM,IA  
AI,IAAI,CAAC;EAC3B,SAAS,CAAC,CAAC;EACX,KAAK;EACL,SAAS;EACT,QAAQ,IAAI,SAAS,GAAG,CA  
AC,CAAC;EAC1B,QAAQ,MAAM,CAAC,OAAO,CAAC,KAAK,IAAI;EACHc,YAAY,MAAM,WAAW,GAAG,  
KAAK,KAAK,QAAQ;EACID,gBAAgBE,qBAAY,CAAC,sBAAsB,CAAC,KAAK,CAAC,IAAI,CAAC;EAC/D,gB  
AAgB,KAAK,CAAC,IAAI,CAAC;EAC3B,YAAY,IAAI,IAAI,GAAG,CAAC,CAAC;EACzB,YAAY,KAAK,IAAI  
,GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,E  
AAE;EAC3D,gBAAgB,MAAM,MAAM,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,CAAC,GAAG,SAAS,CAA  
C;EAC7D,gBAAgB,KAAK,IAAI,GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KAAK,CAAC,KAAK,CAAC,CA  
AC,CAAC,EAAE,EAAE,GAAG,EAAE;EAC/D,oBAAoB,OAAO,CAAC,MAAM,GAAG,GAAG,CAAC,GAAG,  
WAAW,CAAC,IAAI,EAAE,CAAC,CAAC;EACHe,iBAAiB;EACjB,aAAa;EACb,YAAY,SAAS,IAAI,KAAK,CA  
AC,KAAK,CAAC,CAAC,CAAC,CAAC;EACxC,SAAS,CAAC,CAAC;EACX,KAAK;EACL,IAAI,OAAO,OAAO  
,CAAC;EACnB;;EC7CA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;  
EACA;EACA;EACA;EAEO,SAAS,SAAS,CAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KAAK,EAAE;EACpD,  
IAAI,MAAM,aAAa,GAAG,KAAK,KAAK,IAAI,CAAC;EACzC,IAAI,MAAM,2BAA2B,GAAG,KAAK,GAAG,I  
AAI,IAAI,IAAI,GAAG,CAAC,CAAC;EACjE,IAAI,MAAM,2BAA2B,GAAG,IAAI,GAAG,KAAK,IAAI,IAAI,G  
AAG,CAAC,CAAC;EACjE,IAAI,IAAI,aAAa,IAAI,2BAA2B;EACpD,QAAQ,2BAA2B,EAAE;EACrC,QAAQ,OA

AOF,aAAI,CAAC,mBAAmB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC;EACID,KAAK;EACL,IAAI,MAAM,W  
 AAW,GAAG,IAAI,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,KAAK,IAAI,IAAI,CAA  
 C,CAAC,CAAC;EACnE,IAAI,MAAM,MAAM,GAAGA,aAAI,CAAC,mBAAmB,CAAC,WAAW,EAAE,KAAK,  
 CAAC,CAAC;EACnE,IAAI,IAAI,IAAI,GAAG,KAAK,IAAI,IAAI,KAAK,CAAC,EAAE;EACpC;EACA;EACA,Q  
 AAQ,IAAI,GAAG,CAAC,CAAC,CAAC;EACIB,KAAK;EACL,IAAI,MAAM,CAAC,CAAC,CAAC,GAAG,KAA  
 K,CAAC;EACtB,IAAI,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,MAAM,EAAE,  
 CAAC,EAAE,EAAE;EAC5C,QAAQ,MAAM,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,GAAG,CAAC  
 ,CAAC,GAAG,IAAI,CAAC;EACzC,KAAK;EACL,IAAI,OAAO,MAAM,CAAC;EACIB;;ECrCA;EACA;EACA;E  
 ACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EACA;EAGO,SAAS,SAAS  
 ,CAAC,IAAI,EAAE,KAAK,EAAE,IAAI,EAAE,KAAK,EAAE,KAAK,EAAE;EAC3D,IAAI,MAAM,WAAW,GA  
 AGe,mBAAU,CAAC,gBAAgB,CAAC,KAAK,EAAE,KAAK,EAAE,IAAI,CAAC,CAAC;EACxE,IAAI,MAAM,M  
 AAM,GAAGf,aAAI,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC;EAC5C,IAAI,MAAM,QAAQ,GAAGA,aAAI,CAA  
 C,cAAc,CAAC,KAAK,CAAC,CAAC;EACnD,IAAI,IAAI,WAAW,EAAE;EACrB,QAAQ,MAAM,UAAU,GAAGe  
 ,mBAAU,CAAC,iBAaIB,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;EACzE,QAAQ,IAAI,KAAK,KAAK,QAA  
 Q,EAAE;EACnD,YAAAY,OAAO,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC  
 ;EAC/D,SAAS;EACT,QAAQ,OAAO,IAAI,CAAC,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,C  
 AAC;EAC9D,KAAK;EACL,IAAI,MAAM,WAAW,GAAG,KAAK,KAAK,QAAQ;EAC1C,QAAQb,qBAAY,CAA  
 C,sBAAsB,CAAC,IAAI,CAAC;EACjD,QAAQ,IAAI,CAAC;EACb,IAAI,MAAM,KAAK,GAAGc,eAAM,CAAC,  
 KAAK,EAAE,KAAK,EAAE,WAAW,CAAC,CAAC;EACpD,IAAI,MAAM,MAAM,GAAGA,eAAM,CAAC,IAAI  
 ,EAAE,KAAK,CAAC,CAAC;EACvC,IAAI,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,C  
 AAC,IAAI,EAAE,EAAE,CAAC,EAAE;EAC1C,QAAQ,MAAM,MAAM,GAAG,MAAM,CAAC,UAAU,CAAC,C  
 AAC,CAAC,CAAC;EAC5C,QAAQ,MAAM,KAAK,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,GAAG,EAAE,  
 CAAC,KAAK,GAAG,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;EAC7D,QAAQ,MAAM,CAAC,GAAG  
 ,CAAC,KAAK,CAAC,GAAG,CAAC,GAAG,KAAK,CAAC,EAAE,GAAG,MAAM,CAAC,CAAC;EACnD,KAA  
 K;EACL,IAAI,IAAI,KAAK,KAAK,QAAQ,EAAE;EAC5B,QAAQ,OAAOd,qBAAY,CAAC,sBAAsB,CAAC,MA  
 AM,CAAC,MAAM,CAAC,CAAC;EACIE,KAAK;EACL,IAAI,OAAO,MAAM,CAAC,MAAM,CAAC;EACzB;;E  
 C3CA;;;;;;;;;;;WAsBgB,KAAK,CACjB,IAAoE;MACtE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,E  
 AAE,KAAK,EAAE,EAAC,KAAK,EAAE,IAAI,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAE1D,MAA  
 M,CAAC,MAAM,EAAE,KAAK,CAAC,GAAGa,mBAAU,CAAC,gBAAgB,CAAC,CAAC,EAAE,KAAK,EAAE,I  
 AAI,CAAC,CAAC;MAEpE,MAAM,WAAW,GAAGA,mBAAU,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,E  
 AAE,MAAM,EAAE,KAAK,CAAC,CAAC;MACxE,MAAM,KAAK,GAAG,OAAO,CAAC,QAAQ,CAAC,CAAC,  
 CAAC,MAAM,CAAC,CAAC;MACzC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,CAA  
 C,CAAC,KAAK,CAAC,CAAC;MAC/C,MAAM,QAAQ,GAAGf,aAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK  
 ,CAAC,CAAC;MAC9C,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAA  
 M,CAAC,CAAC;MAEID,IAAI,WAAW,EAAE;UAcf,MAAM,UAAU,GAAGe,mBAAU,CAAC,iBAaIB,CAAC,  
 MAAM,EAAE,QAAQ,CAAC,CAAC;UAEIE,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;cACxB,OAAO,C  
 AAC,WAAW;kBACd,KAAkB;uBACIB,KAAK,CAAC,UAAU,EAAE,UAAU,GAAGf,aAAI,CAAC,aAAa,CAAC,  
 KAAK,CAAC,CAAC,CAAC;WACpE:eAAM;cACL,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GA  
 AG,CAAC,CAAC;cACnD,OAAO,CAAC,GAAG,CACN,KAAoB;mBACbB,QAAQ,CAAC,UAAU,EAAE,UAAU,  
 GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;WACxE;UAED,OAAO,GAAG,CAAC;  
 OACZ;MAED,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;UACxB,MAAM,GAAG,GAAGiB,SAAY,CAA  
 C,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC  
 ;UACjE,OAAO,CAAC,WAAW,GAAG,GAAmB,CAAC;UAC1C,OAAO,GAAG,CAAC;OACZ;MAED,MAAM,O  
 AAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;MACHd,MAAM,IAAI,GAAG,CAAC,CAAC,  
 KAAK,CAAC,MAAM,CAAC;MAC5B,IAAI,IAAI,KAAK,CAAC,EAAE;UACd,OAAO,CACH,KAAmB,EAAE,Q  
 AAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EAAE,MAA0B,EACrE,KAAyB,CAAC,CAAC;OACnD;WAAM,IAAI,  
 IAAI,KAAK,CAAC,EAAE;UACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,C  
 AAC,CAAC,CAAC,EAAE,OAAO,EACtD,MAAkC,EAAE,KAAiC,CAAC,CAAC;OAC5E;WAAM,IAAI,IAAI,K

AAK,CAAC,EAAE;UACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,C  
AAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACnE,MAA0C,EAC1C,KAAyC,CAAC,CAAC;  
OACbD;WAAM;UACL,MAAM,GAAG,GACLA,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CA  
AC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAE,CAAC;UACvE,OAAO,CAAC,GAAG,CAAC,GAAG,CA  
AC,CAAC;OACIB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAED,SAAS,OAAO,CACZ,KAA8B,EAAE,OA  
Ae,EAC/C,OAAgC,EAAE,KAAuB,EACzD,IAAsB;MACxB,IAAI,SAAS,GAAG,CAAC,CAAC;MACIB,MAAM,  
MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CA  
AC,CAAC;MACxB,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,KAAK,IA  
AI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;UACIC,MAAM,OAAO,GAA  
G,CAAC,GAAG,OAAO,GAAG,MAAM,CAAC;UACrC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CA  
AC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;UACnE,SAAS,  
IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;OACtB;EACH,CAAC;EAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAA  
gB,EAAE,QAAgB,EACIE,OAAgC,EAAE,KAA+B,EACjE,IAA8B;MACHC,IAAI,SAAS,GAAG,CAAC,CAAC;M  
ACIB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,MAAM,MAAM,GAAG,KAAK,CA  
AC,CAAC,CAAC,CAAC;MACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,MAAM  
,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,I  
AAI,CAAC,CAAC,CAAC,CAAC;MAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAA  
E,CAAC,EAAE,EAAE;UACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,E  
AAE,EAAE;cACIC,MAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,  
CAAC;cACrD,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,C  
AAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;cACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;  
WACtB;OACF;EACH,CAAC;EAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,QAAg  
B,EAAE,OAAgC,EACID,KAAuB,EACvC,IAAsC;MACxC,IAAI,SAAS,GAAG,CAAC,CAAC;MACIB,MAAM,M  
AAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC  
,CAAC;MACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MACxB,MAAM,IAAI,GAAG,MA  
AM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAA  
C,CAAC,CAAC;MAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;MAC9B,MA  
AM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;MAExB,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,C  
AAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;UACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAA  
G,IAAI,EAAE,CAAC,EAAE,EAAE;cACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAA  
E,CAAC,EAAE,EAAE;kBACIC,MAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GA  
AG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;kBACpE,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,  
CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;kBACnE,S  
AAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;eACtB;WACF;OACF;EACH,CAAC;EAEM,MAAM,WAAW,GAA  
iB;MACvC,UAAU,EAAEC,cAAK;MACjB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,KAAyB;GACtC;;Ech  
JD;::::::::::;EAYBA,SAAS,cAAc,CAAC,IAIvB;MACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,E  
AAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,EAAC,  
UAAU,EAAE,KAAK,EAAC,GAAG,KAAK,CAAC;MAEIC,MAAM,IAAI,GAAG,UAAU,CAAC,MAAM,CAAC,  
CAAC,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC,CAAC;MAEhD,MAAM,QAAQ,GAAGhB,qB  
AAY,CAAC,WAAW,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;MACrE,MAAM,Q  
AAQ,GAAGA,qBAAY,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,CAAC,CA  
AC;MAC9E,MAAM,gBAAgB,GACIBA,qBAAY,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,  
EAAE,IAAI,CAAC,CAAC;MACHe,MAAM,gBAAgB,GACIBA,qBAAY,CAAC,mBAAmB,CAAC,KAAK,EAAE  
,UAAU,CAAC,MAAM,CAAC,CAAC;MAC/D,MAAM,SAAS,GACXA,qBAAY,CAAC,YAAY,CAAC,gBAAgB,  
EAAE,KAAK,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;MAEIE,MAAM,SAAS,GAAG,OAAO,CAAC,EAAC  
,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,E  
AAC,CAAC,CAAC;MAC5E,MAAM,WAAW,GACb,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,S  
AAS,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;MACI

E,MAAM,mBAAmB,GAAG,OAAO,CAC/B,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,  
OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAGB,EAAC,EAAC,CAAC,CAAC;MAC3E,MAAM,MAA  
M,GAAG,KAAK,CAAC;UACnB,MAAM,EAAE,EAAC,CAAC,EAAE,mBAAmB,EAAC;UACHC,OAAO;UACP,  
KAAK,EAAE,EAAC,KAAK,EAAE,gBAAGB,EAAE,IAAI,EAAE,SAAS,EAAC;OACID,CAAC,CAAC;MAEH,O  
AAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;MACtC,OAAO,CAAC,WAAW,CAAC,WAA  
W,CAAC,MAAM,CAAC,CAAC;MACxC,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;M  
AEtC,OAAO,MAAM,CAAC;EACHB,CAAC;EAEM,MAAM,oBAAoB,GAAiB;MACHD,UAAU,EAAEiB,uBAAc;  
MACiB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,cAAkC;GAC/C;;ECnED;;;;;;;WAsBgB,IAAI,CAC  
hB,IAAkE;MAEpE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EA  
AC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CA  
AC,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;MAC/C,MAAM,MAAM,GAAG,OAAO,CAAC,kBAAkB,CAAC,  
CAAC,CAAC,CAAC;MAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;MA  
ChD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACpB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,  
MAAM,UAAU,GAAiB;MACtC,UAAU,EAAEC,aAAI;MACHB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,I  
AAwB;GACrC;;ECrCD;;;;;;;EAoBO,MAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;ECpBrE;;;;;  
;;;;;;;EAqBA,IAAI,QAAwE,CAAC;EAE7E,SAASf,OAAK,CAAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAA  
C,IAAI,CAAC,KAAK,CAACgB,oBAAW,EAAE,IAAI,aAAa;UACiD,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC  
R,QAAQ;OACT,CAAC,CAAC;EACL,CAAC;EAED,SAAS,IAAI,CAAC,IAIb;MACC,MAAM,EAAC,MAAM,EA  
AE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CA  
AC;MACnB,MAAM,EAAC,YAAY,EAAE,YAAY,EAAC,GAAG,KAAK,CAAC;MAC3C,MAAM,GAAG,GAAG,  
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,  
GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;  
MACjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA  
C,EAAE,CAAC;MACnD,QAAQ,CAAC,GAAG,EAAE,YAAY,EAAE,YAAY,EAAE,KAAK,CAAC,CAAC;MACj  
D,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,iBAAiB,GAAiB;MAC7C,UAAU,EAAEA,oBAAW;MACv  
B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEhB,OAAK;MACHB,UAAU,EAAE,IAAwB;GACrC;;ECpDD;;;;;  
;;;;;;;WAwBgB,MAAM,CACiB,IAAsE;MACxE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CA  
AC;MAE/B,MAAM,IAAI,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,MAAM,  
CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;MAEtE,IAAI,QAAQ,GAAGE,qBAAY,  
CAAC,eAAe,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,EAAE,IAAI,CAA  
C,CAAC;;MAG5E,MAAM,OAAO,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,IAAI,aAAI,CAAC,aAAa,CA  
AC,CAAC,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC,CAAC;MACpE,IAAI,OAAO,CAAC,MAAM,KAAK,CA  
AC,EAAE;UACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,CAAC,CAAC,CA  
AC,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;OACrD;MAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C  
AAC,QAAQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;MAEiD,IAAI,aAAI,CAAC,aA  
Aa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;UACtC,OAAO,GAAG,CAAC;OACZ;MAED,MAAM,MAAM,G  
AAG,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC;MACzCE,qBAAY,CAAC,s  
BAAsB,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC;MAEiD,IAAI,OAAO,CAAC,CAAC,CAAC,CAAC,KAAK,K  
AAK,QAAQ,EAAE;;;;;;;UAQjC,MAAM,QAAQ,GAAG,OAAO,CAAC,GAAG,CAAC,CAAC;cAC5B,MAAM,S  
AAS,GAAGF,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC  
;cACiD,MAAM,KAAK,GAAG,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;cAC9B,OAAO,OAAO,CAAC,  
EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EA  
AC,EAAC,CAAC,CAAC;WAC3D,CAAC,CAAC;UAEH,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,CA  
AC;cACpC,OAAO,EAAC,IAAI,EAAE,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,KAA  
K,EAAE,CAAC,CAAC,KAAK,EAAC,CAAC;WAC3D,CAAC,CAAC;;UAGH,QAAQ;cACJE,qBAAY,CAAC,eA  
Ae,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,YAAY,CAAC;  
UAC3E,MAAM,YAAY,GAAG,QAAQ,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC  
,CAAC;UACHD,MAAM,OAAO,GAAGqB,UAAa,CACT,eAAe,EAAE,QAAQ,EAAE,MAAM,CAAC,CAAC,CAA

C,CAAC,KAAK,EAC1C,YAAAY,CAAa,CAAC;UAE9C,MAAM,aAAa,GACfrB,qBAAY,CAAC,eAAe,CAAC,OA  
AO,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,EAAE,IAAI,CAAC,CAAC;UAEIE,GAAG,  
CAAC,KAAK,GAAG,aAAa,CAAC;UAC1B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,  
GAAG,CAAC,MAAM,CAAC,CAAC;UACID,OAAO,CAAC,WAAW,GAAGA,qBAAY,CAAC,sBAAsB,CAAC,  
OAAO,CAAC,CAAC;UAEne,QAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,WAAW,CAAC,CAAC,  
CAAC,MAAM,CAAC,CAAC,CAAC;UAErD,OAAO,GAAG,CAAC;OACZ;MAED,MAAM,QAAQ,GAAGF,aAA  
I,CAAC,aAAa,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,IAAI,CA  
AC,CAAC,CAAC;MACrE,IAAI,YAAAY,GAAG,CAAC,CAAC;MACrB,MAAM,SAAS,GAAG,OAAO,CAAC,GA  
AG,CAAC,KAAK;UACjC,MAAM,QAAQ,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KA  
AK,CAAC,IAAI,CAAC,CAAC,CAAC;UAC7D,YAAAY,IAAI,QAAQ,CAAC;UACzB,OAAO,QAAQ,CAAC;OACj  
B,CAAC,CAAC;MACH,MAAM,MAAM,GAAG,OAAO,CAAC,GAAG,CAAC,KAAK,IAAI,OAAO,CAAC,kBA  
AkB,CAAC,KAAK,CAAC,CAAC,CAAC;MACvE,MAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAA  
G,CAAC,CAAC;MACHd,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,EAAE,CAAC,EAAE,  
EAAE;UACjC,IAAI,SAAS,GAAG,CAAC,GAAG,YAAAY,CAAC;UACjC,KAAK,IAAI,CAAC,GAAG,CAAC,EA  
AE,CAAC,GAAG,MAAM,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;cACtC,MAAM,QAAQ,GAAG,SAAS,CA  
AC,CAAC,CAAC,CAAC;cAC9B,MAAM,QAAQ,GAAG,CAAC,GAAG,QAAQ,CAAC;cAC9B,MAAM,IAAI,GA  
AG,MAAM,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,QAAQ,GAAG,QAAQ,CAAC,CAAC;cA  
C/D,OAAO,CAAC,GAAG,CAAC,IAAI,EAAE,SAAS,CAAC,CAAC;cAC7B,SAAS,IAAI,QAAQ,CAAC;WACvB  
;OACF;MACD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,YAAAY,GAAiB;MACxC,UAAU,EAAEwB,e  
AAM;MACIB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,MAA0B;GACvC;;EC/GD;;;;;;;;;;;;;;;;EAAqBA,IAAI,  
UAMsB,CAAC;EAE3B,SAASIB,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KA  
AK,CAACmB,eAAM,EAAE,IAAI,aAAa;UACvD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,Q  
AAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;U  
ACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,C  
AAC,CAAC;EAEL,CAAC;EAED,SAAS,MAAM,CACX,IAAsE;MACxE,MAAM,EAAC,MAAM,EAAE,KAAK,  
EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAEtC,MAAM,EAAC,CAAC,EAAE,MAAM,EAAC,GAAG,MAAM,  
CAAC;MAC3B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAA  
C,CAAC,EAAE,CAAC;MAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CA  
AC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,MAAM,EAAC,OAAO,EAAE,SAAS,EAAE,GAAG,EAAE,eA  
Ae,EAAE,UAAU,EAAC,GAAG,KAAK,CAAC;MACrE,MAAM,WAAW,GAAGvB,qBAAY,CAAC,uBAAuB,CA  
AC,UAAU,CAAC,CAAC;MACrE,MAAM,QAAQ,GAAGA,qBAAY,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAA  
K,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EAAE,KAAK,EAAE,  
WAAW,CAAC,CAAC;MAE9C,MAAM,YAAAY,GAAG,QAAQ,CAAC,YAAAY,CAAC;MAC3C,MAAM,WAAW,  
GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CA  
AC;MACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACxC,MAAM,SAAS,GAAG,  
QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI  
,CAAC;MACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,MAAM,aAAa,GAAG,QAAQ,CAAC,  
aAAa,CAAC;MAC7C,MAAM,YAAAY,GAAG,QAAQ,CAAC,YAAAY,CAAC;MAC3C,MAAM,WAAW,GAAG,QA  
AQ,CAAC,WAAW,CAAC;MACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;MAC1C,MAAM,cAAc,  
GAAG,QAAQ,CAAC,WAAW,CAAC;MAC5C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK  
,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;MAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;UAC1C,  
MAAM,IAAI,KAAK,CACX,mDAAmD;cACnD,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC;OAC5D;  
MAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;  
MAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA  
C,EAAE,CAAC;MACnD,UAAU,CACN,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAA  
C,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,  
YAAAY,EAC/D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,E  
AAE,aAAa,EAAE,YAAAY,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;MAC3B,OA

AO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,YAAY,GAAiB;MACxC,UAAU,EAAEuB,eAAM;MACiB,WAA  
W,EAAE,MAAM;MACnB,SAAS,EAAEnB,OAAK;MACHB,UAAU,EAAE,MAA0B;GACvC;;ECtGD;;;;;;;;;;E  
AqBA,IAAI,uBAQ8C,CAAC;EAEnD,SAASA,OAAK,CAAC,OAAoB;MACjC,uBAAuB,GAAG,OAAO,CAAC,I  
AAI,CAAC,KAAK,CAACoB,4BAAmB,EAAE,IAAI,EAAE;UACtE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,  
QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;  
UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,  
QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;  
UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,mBAAmB,CAAC,IAI5B;MACC,MAAM,EAAC  
,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,EAAE,EAAE,MAAM,  
EAAC,GAAG,MAAM,CAAC;MAC5B,MAAM,EAAC,OAAO,EAAE,GAAG,EAAE,UAAU,EAAE,eAAe,EAAE,  
UAAU,EAAC,GAAG,KAAK,CAAC;MAEtE,MAAM,SAAS,GAAG,CAAC,CAAC;MAEpB,MAAM,WAAW,GA  
AGxB,qBAAY,CAAC,uBAAuB,CAAC,UAAU,CAAC,CAAC;MACrE,MAAM,QAAQ,GAAGA,qBAAY,CAAC,i  
BAAiB,CAC3C,UAAU,EAAE,MAAM,CAAC,KAAyC,EAAE,OAAO,EACrE,SAAS,EAAE,GAAG,EAAE,eAAe,  
EAAE,KAAK,kBAaKB,WAAW,CAAC,CAAC;MACzE,MAAM,EACJ,SAAS,EACT,YAAY,EACZ,WAAW,EAC  
X,UAAU,EACV,QAAQ,EACR,OAAO,EACP,WAAW,EACX,SAAS,EACT,QAAQ,EACR,YAAY,EACZ,WAAW  
,EACZ,GAAG,QAAQ,CAAC;MAEb,MAAM,MAAM,GAAG,YAAY,GAAG,CAAC,GAAG,QAAQ,CAAC,OAA  
O,CAAC,GAAG,CAAC;MACvD,MAAM,OAAO,GAAG,WAAW,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,C  
AAC,IAAI,CAAC;MAExD,MAAM,cAAc,GAAG,QAAQ,CAAC,UAAU,KAAK,cAAc,CAAC;MAC9D,MAAM,S  
AAS,GAAGF,aAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC;MACxD,MAAM,SAAS,GAAGA,a  
AAI,CAAC,cAAc,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC;MACHD,MAAM,CAAC,KAAK,EAAE,KAAK,EA  
AE,KAAK,CAAC,GAAGA,aAAI,CAAC,cAAc,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC;MACHe,MAAM,Y  
AAY,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACiC,MAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CA  
AC,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACHe,MAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAA  
C,CAAC,CAAC,GAAG,CAAC,CAAC;MACrD,MAAM,cAAc,GAAG,cAAc,GAAG,CAAC,GAAG,SAAS,CAAC,  
CAAC,CAAC,CAAC;MACzD,MAAM,YAAY,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACiC,MAAM,UAA  
U,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MACHe,MAAM  
,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;MACrD,MAAM,cAAc,GAAG,c  
AAc,GAAG,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;MAEzD,MAAM,GAAG,GAAG,OAAO,CAAC,U  
AAU,CAAC,QAAQ,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;MAC5D,MAAM,KAAK,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,MAAM,IAAI,GAAG,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACjD,MAAM,Q  
AAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;M  
AEzD,uBAAuB,CACnB,IAAI,EAAE,QAAQ,EAAE,SAAS,EAAE,YAAY,EAAE,WAAW,EAAE,QAAQ,EAAE,O  
AAO,EACvE,UAAU,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,EAAE,YAAY,EAAE,WAAW,EACvE,MAAM,  
EAAE,OAAO,EAAE,KAAK,EAAE,KAAK,EAAE,KAAK,EAAE,YAAY,EAAE,UAAU,EAC9D,UAAU,EAAE,c  
AAc,EAAE,YAAY,EAAE,UAAU,EAAE,UAAU,EACHe,cAAc,EAAE,KAAK,CAAC,CAAC;MAC3B,OAAO,GA  
AG,CAAC;EACb,CAAC;EAEM,MAAM,yBAAYB,GAAiB;MACrD,UAAU,EAAE0B,4BAAmB;MAC/B,WAAW,  
EAAE,MAAM;MACnB,SAAS,EAAEpB,OAAK;MACHB,UAAU,EAAE,mBAAuC;GACpD;;EC/HD;;;;;;;;;;E  
AqBO,MAAM,SAAS,GAAiB,uBAAuB,CAACqB,YAAG,CAAC;;ECrBnE;;;;;;;;;;EAOBO,MAAM,UAAU,GA  
AiB,uBAAuB,CAACC,aAAI,CAAC;;ECpBrE;;;;;;;;;;EABuBA;EACA,IAAK,mBAGJ;EAHD,WAAK,mBAAmB  
;MACtB,qEAAy,CAAA;MACZ,mEAAW,CAAA;EACb,CAAC,EAHI,mBAAmB,KAAAnB,mBAAmB,QAGvB;EA  
ED,IAAI,iBAGkE,CAAC;EAEvE,SAAStB,OAAK,CAAC,OAAoB;MACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,  
CAAC,KAAK,CAACuB,sBAAa,EAAE,IAAI,WAAW;UACnE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAA  
Q;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAA  
C;EAEL,CAAC;EAED,SAAS,aAAa,CAAC,IAItB;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,E  
AAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,MAAM,EAAE,kBAaKB,EAAE,QAAQ,EAAC,GAAG,KAAK,  
CAAC;MACrD,MAAM,EAAC,KAAK,EAAE,KAAK,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;MAEtC,MA  
AM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAEhC,MAAM,CAAC,UAAU,EAAE,S

AAS,CAAC,GAAG,QAA4B,CAAC;MAC7D,MAAM,QAAQ,GAAG,CAAC,QAAQ,EAAE,UAAU,EAAE,SAAS,  
EAAE,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;MAEnE,IAAI,UAAU,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;MACrD,IAAI,UAAU,CAAC;MACf,IAAI,KAA  
K,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,UAAU,GAAG,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,  
EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CA  
AC;UAC5E,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OA  
CvD;MAED,MAAM,QAAQ,GAAG,UAAU,CAAC,EAAE,CAAC;MAC/B,MAAM,OAAO,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACvD,MAAM,QAAQ,GAA  
G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,MA  
AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MACpD,MAAM,KAAK,G  
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,  
MAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,MAAM,  
CAAC,CAAC;MAE5E,iBAAiB,CACb,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,QAAQ,EAAE,gBAAgB,EAA  
E,UAAU,EACnE,SAAS,EACT,mBAAmB,CAAC,MAAgD,CAAC,EACrE,kBAaKB,EAAE,KAAK,CAAC,CAAC  
;MAE/B,IAAI,UAAU,IAAI,IAAI,EAAE;UACtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,C  
AAC;OACxC;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,mBAAmB,GAAiB;MAC/C,UAAU,EA  
AEA,sBAAa;MACzB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEvB,OAAK;MACHB,UAAU,EAAE,aAAiC;G  
AC9C;;ECjGD;,,,,,;EAYBA,IAAI,UACsE,CAAC;EAE3E,SAASA,OAAK,CAAC,OAAoB;MACjC,UAAU,G  
AAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACwB,eAAM,EAAE,IAAI,aAAa;UACvD,QAAQ;UACR,QAAQ;U  
ACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;WAEe,MAAM,C  
ACpB,IAAsE;MAEtE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,  
MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,EAAC,IAAI,EAAE,SAAS,EAAE,OAAO,  
EAAC,GAAG,KAAK,CAAC;MACzC,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAE  
7B9B,aAAI,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,OAA  
O,EACtD,MAAM,2BAA2B,CAAC,CAAC,KAAK,8BAA8B,CAAC,CAAC;;MAE1E,MAAM,WAAW,GAAGE,q  
BAAY,CAAC,kBAaKB,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;MACnE,IAAI,SAAS,GAAG,C  
AAC,CAAC;MACIB,IAAI,WAAW,KAAK,IAAI,EAAE;UACxB,SAAS,GAAG,SAAS,CAAC,EAAC,MAAM,EA  
AE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,WAAW,EAAC,EAAE,OAAO,EAAC,CAAC,  
CAAC;OAC3E;MACD,MAAM,YAAY,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,CAAC,EAAE,KAAK,CAAC,C  
AAC,CAAC,CAAC,CAAC;MACHEA,qBAAY,CAAC,0BAA0B,CAAC,QAAQ,EAAE,CAAC,YAAY,CAAC,EA  
AE,KAAK,CAAC,CAAC;MAEzE,MAAM,WAAW,GAAG,OAAO,CAAC,UAAU,CAAC,SAAS,CAAC,KAAK,E  
AAE,SAAS,CAAC,KAAK,CAAC,CAAC;MACzE,MAAM,QAAQ,GAAG,SAAS,CAAC,KAAK,CAAC,YAAY,C  
AAC,CAAC;MAC/C,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;MAC/D,MAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,  
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnE,UAAU,CAAC,WAAW,EAAE,SAAS,GAAG,CAAC,GAAG  
,CAAC,EAAE,OAAO,GAAG,CAAC,GAAG,CAAC,EAAE,QAAQ,EACzD,aAAa,EAAE,QAAQ,CAAC,CAAC,C  
AAC,KAAK,CAAC,CAAC,CAAC;;MAG7C,IAAI,GAAG,GAAG,WAAW,CAAC;MACtB,IAAI,WAAW,KAAK,I  
AAI,EAAE;UACxB,MAAM,eAAe,GAAGA,qBAAY,CAAC,sBAAsB,CAAC,WAAW,CAAC,CAAC;UACzE,GA  
AG,GAAG,SAAS,CACb,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,KAAK,EAAE,EA  
C,IAAI,EAAE,eAAe,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;UACvE,OAAO,CAAC,WAAW,CAAC,SAAS,C  
AAC,MAAM,CAAC,CAAC;UACtC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;OACz  
C;MACD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,YAAY,GAAiB;MACxC,UAAU,EAAE4B,eAAM;  
MACIB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAExB,OAAK;MACHB,UAAU,EAAE,MAA0B;GACvC;;ECIF  
D;,,,,,;EAqBA,IAAI,gBAGuC,CAAC;EAE5C,SAASA,OAAK,CAAC,OAAoB;MACjC,gBAAgB,GAAG,O  
AAO,CAAC,IAAI,CAAC,KAAK,CAACyB,qBAAY,EAAE,IAAI,WAAW;UACjE,QAAQ;UACR,QAAQ;UACR,  
QAAQ;UACR,OAAO;UACP,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,C  
AAC;EAEL,CAAC;WAEe,YAAY,CAAC,IAI5B;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,E  
AAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,EAAC,



SAAS,EAAE,UAAU,EAAC,GAAG,KAAK,CAAC;MAEtC,MAAM,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAC7B,MAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACtE,MAAM,UAAU,GAA G,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MACrE,MAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC, KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAEtE,MAAM,YAAY, GAAG,WAAW,GAAG,SAAS,CAAC;MAC7C,MAAM,WAAW,GAAG,UAAU,GAAG,SAAS,CAAC;MAC3C,M AAM,WAAW,GAAG,UAAU,IAAI,SAAS,GAAG,SAAS,CAAC,CAAC;MAEzD,MAAM,WAAW,GAAG,CAAC, UAAU,KAAK,MAAM;UACtC,CAAC,SAAS,EAAE,YAAY,EAAE,WAAW,EAAE,WAAW,CAAC;UACnD,CAA C,SAAS,EAAE,WAAW,EAAE,YAAY,EAAE,WAAW,CAAC,CAAC;MAExD,MAAM,GAAG,GAAG,OAAO,C AAC,UAAU,CAAC,WAAW,EAAE,SAAS,CAAC,CAAC;MAEvD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS, CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAC9C,MAAM,GAAG,GAAG,KAAK,CAAC,EAA E,CAAC;MACrB,MAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC/B,aAAI,CAAC,cAAc,CAAC,CA AC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAExE,MAAM,gBAAgB,GAAG,IAAI,UAAU, CAAC,IAAI,UAAU,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,CAAC;MAC5E,MAAM,eAAe,GACjB,IAAI, UAAU,CAAC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,C AAC;MAE5E,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC, CAAC,EAAE,CAAC;MACnD,MAAM,YAAY,GAAG,UAAU,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAA C;MACnD,gBAAgB,CACZ,GAAG,EAAE,SAAS,EAAE,YAAY,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAA C,MAAM,GAAG,CAAC,EAC/D,gBAAgB,EAAE,eAAe,EAAE,WAAW,CAAC,MAAM,EAAE,KAAK,CAAC,C AAC;MAEIE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,kBAaKB,GAAiB;MAC9C,UAAU,EAAE+B,q BAAY;MACxB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEzB,OAAK;MACHb,UAAU,EAAE,YAAgC;GAC7 C;;;EcvFD;;;EAqBA,IAAI,mBAMsB,CAAC;EAE3B,SAASA,OAAK,CAAC,OAAoB;MACjC,mBAAmB; UACf,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC0B,8BAaQb,EAAE,IAAI,aAAa;cACzD,QAAQ;cACR,QAAQ;c ACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAA Q;cACR,QAAQ;WACT,CAAC,CAAC;EACT,CAAC;EAED,SAAS,eAAe,CAAC,IAIxB;MACC,MAAM,EAAC, MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAEtC,MAAM,EAAC,CAAC,EAAE,MAAM, EAAC,GAAG,MAAM,CAAC;MAC3B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAA C,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GA AG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,MAAM,EAAC,OAAO,EAAE,SAAS,E AAE,GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;MAEzD,MAAM,UAAU,GAAG,SAAS,IAAI,IAAI,GAA G,CAAC,CAAC,EAAE,CAAC,CAAC,GAAG,SAAS,CAAC;MAEID,MAAM,QAAQ,GAAG9B,qBAAY,CAAC,i BAAiB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EACzD,UAAwC,EAAE,GA AG,EAAE,eAAe,EAC/D,IAAI,iBAAiB,CAAC;MAEIB,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;M AC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,O AAO,CAAC,GAAG,CAAC;MACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;MACx C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MAC1C,MAAM,OAAO,GAAG,QAAQ,C AAC,OAAO,CAAC,IAAI,CAAC;MAEtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,MAAM,aA Aa,GAAG,QAAQ,CAAC,aAAa,CAAC;MAC7C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3C,M AAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAA C;MAC1C,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;MAC5C,MAAM,SAAS,GAAG,QAAQ,CAAC,O AAO,CAAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;MAE3D,IAAI,QAAQ,CAAC,UAAU,KA AK,cAAc,EAAE;UAC1C,MAAM,IAAI,KAAK,CACX,kEAAkE;cACIE,GAAG,QAAQ,CAAC,UAAU,+BAA+B, CAAC,CAAC;OAC5D;MAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAA E,SAAS,CAAC,CAAC;MAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAA C,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,mBAAmB,CACf,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,C AAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CA

AC,EAAE,QAAQ,EAAE,YAAY,EAC/D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EA  
AE,SAAS,EAC5D,cAAc,EAAE,aAAa,EAAE,YAAY,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,C  
AAC,CAAC;MAC3B,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,2BAA2B,GAAiB;MACvD,UAAU,EA  
AE8B,8BAAqB;MACjC,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE1B,OAAK;MACHb,UAAU,EAAE,eAAm  
C;GACHd;;EC7GD;;;;;;;EAoBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC2B,YAAG,CAAC;;ECpBnE;;;;;;;  
;;;;;EAoBA,MAAMC,uBAAqB,GAAG,KAAK,CAAC;EAC7B,MAAM,WAAW,GACpB,wBAAwB,CAACC,cAA  
K,EAAED,uBAAqB,EAAE,MAAM,CAAC;;ECTBIe;;;;;;;EAoBO,MAAM,SAAS,GAAiB,uBAAuB,CAACE,  
YAAG,EAAE,SAAS,CAAC;;ECpB9E;;;;;;;WAsBgB,UAAU,CAAC,IAI1B;MACC,MAAM,EAAC,MAAM,  
EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,  
CAAC;MACvB,MAAM,EAAC,GAAG,EAAC,GAAG,KAAK,CAAC;MAEpB,MAAM,SAAS,GAAG,KAAK,CA  
AC,KAAK,CAAC,MAAM,CAAC;MACrC,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,C  
AAC;MACrC,IAAI,IAAI,GAAG,GAAG,CAAC;MACf,IAAI,GAAG,GAAG,CAAC,EAAE;;UAEXpC,aAAI,CAA  
C,MAAM,CACP,EAAE,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,EACvB,MAAM,iCAAiC,EAAG,SAAS,GAA  
G,CAAC,CAAC,KACpD,SAAS,GAAG,CAAC,CAAC;UACtB,IAAI,GAAG,SAAS,GAAG,GAAG,GAAG,CAAC,  
CAAC;OAC5B;MACD,QAAQ,CAAC,MAAM,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;MAE5B,  
OAAO,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,OAAO,EAAE,KAAK,E  
AAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;EAC1E,CAAC;EAEM,MAAM,gBAAgB,GAAiB  
;MAC5C,UAAU,EAAEqC,mBAAU;MACtB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,UAA8B;GAC3C;;E  
CnDD;;;;;;;WAsBgB,IAAI,CAAC,IAA8C;MACjE,MAAM,EAAC,KAAK,EAAE,EAAC,KAAK,EAAE,KA  
AK,EAAE,KAAK,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACrD,MAAM,GAAG,GAAG,OAAO,CA  
AC,UAAU,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;MAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,  
CAAC,GAAG,CAAC,CAAC;MACHd,OAAO,CAAC,IAAI,CAAC,KAAe,CAAC,CAAC;MAC9B,OAAO,GAAG,  
CAAC;EACb,CAAC;EAEM,MAAM,UAAU,GAAiB;MACtC,UAAU,EAAEC,aAAI;MACHb,WAAW,EAAE,MA  
AM;MACnB,UAAU,EAAE,IAAwB;GACrC;;ECICD;;;;;;;EAqBA,IAAI,iBAE2C,CAAC;EAehD,SAASHc,  
OAAK,CAAC,OAAoB;MACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiC,sBAAa,EAAE,IAA  
I,aAAa;UACrE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,  
CAAC;EAEL,CAAC;WAEe,aAAa,CACzB,IAAyD;MAC3D,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAA  
G,IAAI,CAAC;MAC/B,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,CAAC;MAEvB,MAAM,GAAG,GAAG,O  
AAO,CAAC,UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;MACzD,MAAM,  
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;  
MACvD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA  
C,EAAE,CAAC;MAEnD,MAAM,CAAC,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,CAAC,GAAG,K  
AAK,CAAC,KAAK,CAAC;MAEIE,iBAAiB,CACb,OAAO,EAAE,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,  
WAAW,EAAE,KAAK,CAAC,CAAC;MACjE,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,mBAAmB,G  
AAiB;MAC/C,UAAU,EAAEA,sBAAa;MACzB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,aAAiC;MAC7C,  
SAAS,EAAEjC,OAAK;GACjB;;ECzDD;;;;;;;EAmBO,MAAM,WAAW,GAAiB,uBAAuB,CAACKc,cAAK,  
CAAC;;ECnBvE;;;;;;;EAqBA,MAAMN,uBAAqB,GAAG,KAAK,CAAC;EAC7B,MAAM,cAAc,GACvB,wB  
AAwB,CAACO,iBAAQ,EAAEP,uBAAqB,CAAC;;ECvB7D;;;;;;;EAqBA,IAAI,aAEgE,CAAC;EAERe,SAA  
S5B,OAAK,CAAC,OAAoB;MACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAC9BoC,uBAAc,EAAE,  
IAAI,aACpB,CAAC,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QA  
AQ,CAAC,CAAC,CAAC;EAC9E,CAAC;EAED,SAAS,cAAc,CAAC,IAIvB;MACC,MAAM,EAAC,OAAO,EAA  
E,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,eAAe,EAAC,GAAG,KAAK,CAAC;  
MACHc,MAAM,EAAC,CAAC,EAAE,IAAI,EAAE,QAAQ,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,MAAM,  
CAAC;MACID,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAA  
C,CAAC,EAAE,CAAC;MAC/C,MAAM,MAAM,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC  
,MAAM,CAAC,CAAC,EAAE,CAAC;MACrD,MAAM,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA  
C,QAAQ,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC7D,MAAM,QAAQ,GAAG,MAAM,IAAI,IAAI,GAA  
G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAA



nB,SAAS,EAAErC,OAAK;MACHb,UAAU,EAAE,WAA+B;GAC5C;;ECzJD;,,,,,;EAuBA,IAAI,wBAQQ,C  
AAC;EAEb,SAASA,OAAK,CAAC,OAAoB;MACjC,wBAAwB;UACpB,OAAO,CAAC,IAAI,CAAC,KAAC,CAA  
CsC,6BAAoB,EAAE,IAAI,aAAa;cACxD,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,  
QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cAC  
R,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cACR,QAAQ;cA  
CR,QAAQ;cACR,QAAQ;WACT,CAAC,CAAC;EACT,CAAC;EAED,SAAS,oBAAoB,CAAC,IAI7B;MACC,MA  
AM,EAAC,MAAM,EAAE,KAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EA  
AE,MAAM,EAAE,IAAI,EAAE,sBAAsB,EAAC,GAAG,MAAM,CAAC;MACzD,MAAM,EACJ,OAAO,EACP,G  
AAG,EACH,SAAS,EACT,UAAU,EACV,eAAe,EACf,UAAU,EACV,cAAc,EACf,GAAG,KAAC,CAAC;MAEV,  
MAAM,QAAQ,GAAGIC,qBAAY,CAAC,iBAAiB,CACiC,CAAc,CAAC,KAAC,EAAG,MAAmB,CAAC,KAAC,  
EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EAAE,IAAI,iBAAiB,CAAC;MAEhD,MAAM,eAAe,GA  
CjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;MACiE,IAAI,eAAe,IAAI,IAAI,EAAE;UAC3B,MAAM,IAAI,KAAC  
,CACX,GAAG,UAAU,yDAAYD;cACtE,sBAAsB,CAAC,CAAC;OAC7B;MAED,MAAM,GAAG,GAAG,OAAO,  
CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,QAAQ,  
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD  
,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;MAE5C,IAAI,MAAM,GAAG,CAAC,CAAC;MACf,IAAI,I  
AAI,IAAI,IAAI,EAAE;UACHb,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,  
MAAM,CAAC,CAAC;UACpD,IAAI,QAAQ,CAAC,KAAC,CAAC,MAAM,KAAC,CAAC,EAAE;cAC/B,MAAM  
,IAAI,KAAC,CACX,yDAAYD;kBACzD,QAAQ,QAAQ,CAAC,KAAC,CAAC,MAAM,GAAG,CAAC,CAAC;WA  
CvC;UACD,IAAI,QAAQ,CAAC,KAAC,CAAC,CAAC,CAAC,KAAC,cAAc,EAAE;cACxC,MAAM,IAAI,KAAC  
,CACX,oCAAoC,QAAQ,CAAC,KAAC,aAAa;kBAC/D,wCAAwC,cAAc,GAAG,CAAC,CAAC;WACHe;UACD,  
MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;OACtB;MAED,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAA  
C;MAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,MAAM,GAAG,QAAQ,CAA  
C,OAAO,CAAC,GAAG,CAAC;MACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAC,CAAC;M  
ACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MACiC,MAAM,OAAO,GAAG,QAA  
Q,CAAC,OAAO,CAAC,IAAI,CAAC;MACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,MAAM  
,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;MAC7C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MAC3  
C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,C  
AAC;MACiC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAC,MAAM,GAAG,CAAC,GAAG,C  
AAC,CAAC;MAC3D,MAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;MACrC,MAAM,QAAQ,GAAG,QAAQ  
,CAAC,QAAQ,CAAC;MACnC,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC;MAEjC,IAAI,UAAU,KAA  
K,MAAM,EAAE;UACzB,MAAM,IAAI,KAAC,CACX,iEAAiE;cACjE,GAAG,UAAU,uBAAuB,CAAC,CAAC;O  
AC3C;MAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,  
CAAC;MAC7D,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAA  
C,CAAC,EAAE,CAAC;MACnD,MAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;UAC3D,CAAC;UACD,OAAO,  
CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAE5D,wBAAwB,C  
ACpB,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,YAAY,EAAE,WAAW,EACtE,M  
AAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE  
,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EA  
AE,KAAC,CAAC,CAAC;MAE3E,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,0BAA0B,GAAiB;MACTD  
,UAAU,EAAE0C,6BAAoB;MACHc,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEtC,OAAK;MACHb,UAAU,E  
AAE,oBAAwC;GACrD;;ECiJD;,,,,,;EAuBA,IAAI,YAGI,CAAC;EAET,SAASA,OAAK,CAAC,OAAoB;M  
ACjC,YAAY,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACuC,iBAAQ,EAAE,IAAI,WAAW;UACzD,QAAQ;  
UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACP,QAAQ;OACT,  
CAAC,CAAC;EACL,CAAC;EAED,SAAS,QAAQ,CAAC,IAAoD;MAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,  
EAAC,GAAG,IAAI,CAAC;MAC/B,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,MAAM,CAAC;MAEjC  
,MAAM,CAAC,WAAW,EAAE,SAAS,EAAE,SAAS,EAAE,OAAO,CAAC,GAC9CC,oBAAW,CAAC,kBAaKb,C  
AAC,MAAM,EAAE,OAAO,CAAC,CAAC;MAEpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAA

W,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;MAC1D,IAAI,SAAS,KAAK,CAAC,EAAE;UACnB,OAAO,GAA  
G,CAAC;OACZ;MAED,MAAM,YAAY,GAAG,OAAO,CAAC,KAAK,CAAC;MACnC,MAAM,SAAS,GAAG,Y  
AAY,CAAC,YAAY,CAAC,MAAM,GAAG,CAAC,CAAC,CAAC;MAExD,MAAM,KAAK,GAAG,OAAO,CAAC  
,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;MACnD,MAAM,GAAG,GAAG,KAAK,CA  
AC,EAAE,CAAC;MACrB,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,M  
AAM,CAAC,CAAC;MAC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,MAAM,YAAY,GAA  
G,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,MAAM,KAAK  
,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD  
,YAAY,CACR,GAAG,EAAE,QAAQ,CAAC,MAAM,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,S  
AAS,EAAE,SAAS,EACvE,YAAY,EAAE,KAAK,CAAC,CAAC;MAEzB,OAAO,GAAG,CAAC;EACb,CAAC;EA  
EM,MAAM,cAAc,GAAiB;MAC1C,UAAU,EAAED,iBAAQ;MACpB,WAAW,EAAE,MAAM;MACnB,SAAS,EA  
AEvC,OAAK;MACHB,UAAU,EAAE,QAAQ;GACrB;;EC7ED;::::::::::;EAWBA,IAAI,UAGsB,CAAC;EAE3B,S  
AASA,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,I  
AAI,WAAW;UACvD,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,  
OAAO;UACP,QAAQ;OACT,CAAC,CAAC;EACL,CAAC;EAED,SAAS,QAAQ,CACb,IAA0E;MAE5E,MAAM,E  
AAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAE,OA  
AO,EAAC,GAAG,MAAM,CAAC;MAC5B,MAAM,EAAC,IAAI,EAAE,SAAS,EAAC,GAAG,KAAK,CAAC;;MA  
GhC,MAAM,UAAU,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAA  
C,CAAC,CAAC;MACzD,MAAM,WAAW,GAAG,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAe,C  
AAC;MACnE,MAAM,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,CAAC;MACpC,KAAK,IAAI,  
CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,WAAW,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;UAC3C,MAA  
M,KAAK,GAAG,WAAW,CAAC,CAAC,CAAC,CAAC;UAC7BA,aAAI,CAAC,MAAM,CACP,KAAK,IAAI,OA  
AO,GAAG,CAAC,IAAI,KAAK,IAAI,CAAC,EAC1C,MAC1,6BAA6B,KAAK,kBAakB,OAAO,GAAG,CAAC,GA  
AG,CAAC,CAAC;OAC7E;MAED,MAAM,SAAS,GAAGE,qBAAY,CAAC,YAAY,CAAC,wBAawB,CACHE,CA  
AW,EAAE,OAAiB,EAAE,UAAU,EAAE,SAAS,CAAC,CAAC;MAE3D,MAAM,QAAQ,GAAG,OAAO,CAAC;U  
ACvB,MAAM,EAAE,EAAC,CAAC,EAAC;UACX,KAAK,EAAE;cACL,KAAK,EAAE;kBACL,SAAS,CAAC,SA  
AS,EAAE,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,OAAO;kBAC3D,SAAS,CAAC,SAAS;eAcPb;WACF;UAC  
D,OAAO;OACR,CAAC,CAAC;MACH,MAAM,WAAW,GAAGF,aAAI,CAAC,aAAa,CAAC,OAAO,CAAC,KAA  
K,CAAC,CAAC;MACtD,MAAM,YAAY,GAAG,OAAO,CAAC;UAC3B,MAAM,EAAE,EAAC,CAAC,EAAE,O  
AAO,EAAC;UACpB,KAAK,EAAE,EAAC,KAAK,EAAE,CAAC,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SA  
AS,CAAC,SAAS,CAAC,EAAC;UACxE,OAAO;OACR,CAAC,CAAC;MACH,MAAM,kBAakB,GAAG;UACzB,  
SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS;UAC3E,SAAS,CA  
AC,SAAS;OACpB,CAAC;MAEF,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,kBAakB,EAAE,CAAC,  
CAAC,KAAK,CAAC,CAAC;MAC5D,IAAIA,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,C  
AAC,EAAE;UACrC,OAAO,GAAG,CAAC;OACZ;MACD,MAAM,WAAW,GAAG,QAAQ,CAAC,KAAK,CAAC,  
MAAM,GAAG,CAAC,CAAC;MAE9C,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,QAA  
Q,CAAC,MAAM,CAAC,CAAC;MACrD,MAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;MAErB,MAAM,  
WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC;MAC/D,MAA  
M,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GA  
AG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,MAAM,aAAa,GAAG,IAAI,UAAU,CA  
ChC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAA  
C,CAAC;MACHe,MAAM,eAAe,GAAG,IAAI,UAAU,CAC1C,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,k  
BAakB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,UAAU,CACN,GAAG,EAAE,QAAQ,CAAC,CAA  
C,CAAC,KAAK,CAAC,EAAE,aAAa,EAAE,WAAW,EAAE,SAAS,EAC7D,SAAS,CAAC,SAAS,EAAE,eAAe,EA  
AE,KAAK,CAAC,CAAC;MAEjD,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;MACrC,  
OAAO,CAAC,WAAW,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC;;MAGzC,GAAG,CAAC,KAAK,GAAG,SA  
AS,CAAC,WAAW,CAAC;MAC1C,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,cAAc,GAAiB;MAC1C,U  
AAU,EAAE+C,iBAAQ;MACpB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEzC,OAAK;MACHB,UAAU,EAA

E,QAA4B;GACzC;;ECzHD;;;;;;;;;EAoBA,MAAM4B,uBAAqB,GAAG,KAAK,CAAC;EAC7B,MAAM,aAAa ,GACtB,wBAAwB,CAACc,gBAAO,EAAEd,uBAAqB,EAAE,MAAM,CAAC;;ECtBpE;;;;;;;;;EAoBA,MAAM A,uBAAqB,GAAG,KAAK,CAAC;EAC7B,MAAM,kBAAkB,GAC3B,wBAAwB,CAACe,qBAAY,EAAEf,uBAAq B,EAAE,MAAM,CAAC;;ECtBzE;;;;;;;;;EAuBA,IAAIxB,UAC0E,CAAC;EAE/E,SAASwC,WAAS,CAAC,O AAoB;MACrCx,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACyC,kBAAS,EAAE,IAAI,aAAa;UACx D,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;WAEe,SAAS,CACrB, IAC0E;MAE5E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAC, EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAEpD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG, CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;MAG/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAA U,CAAC,CAAC,CAAC,KAAK,EAAE,SAAS,CAAC,CAAC;MAEnD,IAAIInD,aAAI,CAAC,aAAa,CAAC,CAAC, CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACrC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG, CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnDU,UAAQ,CAAC,GAAG,EAAE,QAAQ,CAA C,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,EAAE,KAAK,CAAC,CAAC;OAChD;MAED,OAAO,GAAG,CAA C;EACb,CAAC;EAEM,MAAM,eAAe,GAAiB;MAC3C,UAAU,EAAEyC,kBAAS;MACrB,WAAW,EAAE,MAA M;iBACnBD,WAAS;MACT,UAAU,EAAE,SAA6B;GAC1C;;EC3DD;;;;;;;;;EAmBA,MAAMhB,uBAAqB,G AAG,KAAK,CAAC;EAC7B,MAAM,UAAU,GACnB,wBAAwB,CAACkB,aAAI,EAAEIB,uBAAqB,EAAE,MAA M,CAAC;;ECrBjE;;;;;;;;;EAoBA,MAAMA,uBAAqB,GAAG,KAAK,CAAC;EAC7B,MAAM,eAAe,GACxB, wBAAwB,CAACmB,kBAAS,EAAEnB,uBAAqB,EAAE,MAAM,CAAC;;ECtBtE;;;;;;;;;EAmBO,MAAM,SA AS,GAAiB,uBAAuB,CAACoB,YAAG,CAAC;;ECnBnE;;;;;;;;;EAmBA,MAAMpB,uBAAqB,GAAG,KAAK, CAAC;EAC7B,MAAM,gBAAgB,GACzB,wBAAwB,CAACqB,mBAAU,EAAErB,uBAAqB,EAAE,MAAM,CAA C;;ECrBvE;;;;;;;;;EAwBA,IAAI,OACI,CAAC;EAET,SAAS5B,OAAK,CAAC,OAAoB;MACjC,OAAO,GAA G,OAAO,CAAC,IAAI,CAAC,KAAK,CAACKD,YAAG,EAAE,IAAI,WAAW;UAC/C,QAAQ;UACR,QAAQ;UAC R,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;MAE3E,MAA M,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,gBAAgB,EA AE,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MACjD,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CA AC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,C AAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MA Ed,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAAkB,EAAC,GACtD,uBAAuB,CAAC,CAAC,E AAE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,kBAAkB,EAAE;UACtB,MAAM,YAAY,GAAG,OAAO,C AAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,KAAK,GAAG,U AAU,CAAC;UACnB,OAAO,GAAG,YAAY,CAAC;OACxB;MAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK ,CAAC,MAAM,CAAC;MACrCtD,qBAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CA AC;MACHe,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzBA,qBAAY,CAAC,yBAAyB,CAAC,KAAK,C AAC,KAAK,EAAE,IAAI,CAAC,CAAC;MAC9D,MAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,C AAC,CAAC;MAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK, CAAC,CAAC;MACID,IAAIa,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UA CzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,E AAE,CAAC;UACnD,OAAO,CAAC,OAAO,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAAU,E AAE,KAAK,CAAC,CAAC;OACxD;MAED,IAAI,kBAAkB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAA U,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBAAY,C AAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG, QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,SAAS,GAAiB;MACrC,UAA U,EAAEsD,YAAG;MACf,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEID,OAAK;MACHB,UAAU,EAAE,GAA uB;GACpC;;ECrFD;;;;;;;;;EAmBA,MAAM4B,uBAAqB,GAAG,KAAK,CAAC;EAC7B,MAAM,aAAa,GACt B,wBAAwB,CAACuB,gBAAO,EAAEvB,uBAAqB,CAAC;;ECrB5D;;;;;;;;;EAqBA,IAAI,WAKqE,CAAC;EA EIE,SAAS5B,OAAK,CAAC,OAAoB;MACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACoD,gBA AO,EAAE,IAAI,aAAa;UACzD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAA Q;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC R,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UAC

R,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,OAAO,  
CACZ,IAAwE;MACIE,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAEtC  
,MAAM,CAAC,GAAG,MAAM,CAAC,CAAA,CAAC;MAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAA  
C,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAU/C1D,aAAI,CAAC,MAAM,CAC  
P,CAAC,CAAC,KAAK,KAAK,SAAS,EACrB,MACI,0DAA0D,CAAC,CAAC,KAAK,GAAG,CAAC,CAAC;MA  
E9E,MAAM,EAAC,UAAU,EAAE,OAAO,EAAE,GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;MACID,M  
AAM,QAAQ,GAAGE,qBAAY,CAAC,iBAAiB,CAC3C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAA  
E,CAAC,kBAAkB,GAAG,EAAE,eAAe,CAAC,CAAC;MAE3E,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CA  
AC;MAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,MAAM,GAAG,QAAQ,CA  
AC,OAAO,CAAC,GAAG,CAAC;MACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;  
MACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;MACIC,MAAM,OAAO,GAAG,Q  
AAQ,CAAC,OAAO,CAAC,IAAI,CAAC;MACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;MAC/C,MA  
AM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;MAC7C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;MA  
C3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;MACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAA  
U,CAAC;MACIC,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;MAE5C,IAAI,QAAQ,CAAC,UAAU,KA  
AK,cAAc,EAAE;UAC1C,MAAM,IAAI,KAAK,CACX,4CAA4C;cAC5C,GAAG,QAAQ,CAAC,UAAU,+BAA+B,  
CAAC,CAAC;OAC5D;MAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAA  
E,SAAS,CAAC,CAAC;MAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAA  
C,MAAM,CAAC,CAAC,EAAE,CAAC;MAEhD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CA  
AC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAA  
C,EAAE,YAAY,EAAE,WAAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,cAAc,EAAE,a  
AAa,EACnE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EAAE,KAAK,CAAC,CAAC;MACrE,OAAO,GA  
AG,CAAC;EACb,CAAC;EAEM,MAAM,aAAa,GAiB;MACzC,UAAU,EAAEwD,gBAAO;MACnB,WAAW,EA  
AE,MAAM;MACnB,SAAS,EAAEpD,OAAK;MACHB,UAAU,EAAE,OAA2B;GACxC;;EC5GD;EAWB  
A,IAAI,QAAkE,CAAC;EAEvE,SAASA,OAAK,CAAC,OAAoB;MACjC,QAAQ;UACJ,OAAO,CAAC,IAAI,CAA  
C,KAAK,CAACqD,aAAI,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAAC,CAAC,CAAC;EACIE,CAAC;WAEe,IA  
AI,CACHB,IAAkE;MAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MA  
CtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MAC/B,MAAM,EAAC,CAAC,EAAC,GA  
AG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,KAAK,GAAG,CA  
AC,CAAC;MAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAAkB,EAAC,GACtD,uBAAuB,C  
AAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;MACzB,IAAI,k  
BAAkB,EAAE;UACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAA  
M,CAAC,CAAC,EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;cAGxB,KAAK,GAAG,UAAU,CAA  
C;cACnB,OAAO,GAAG,YAAY,CAAC;cACvB,aAAa,GAAGzD,qBAAY,CAAC,gBAAgB,CACzC,aAAa,CAAC,  
MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;WAC/C;OACF;MAEDA,qBAAY,CAAC,0B  
AA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;MAC/C,MAA  
M,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzBA,qBAAY,CAAC,yBAAYB,CAAC,KAAK,CAAC,KAAK,EAAE  
,aAAa,CAAC,CAAC;MACvE,MAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MACn  
D,IAAI,WAAW,GAAG,KAAK,CAAC;MACxB,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,WAA  
W;cACP,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,E  
AAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;UACnE,OAAO,GAAG,OAAO,CAAC,SAAS,CA  
AC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;OACxD;MAED,MAAM,GAAG,GAAG,  
OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MACpD,IAAIA,aAAI,CAAC,aAAa,CAAC,KA  
AK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GA  
AG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EA  
AE,KAAK,CAAC,CAAC;OACtC;MAED,IAAI,kBAAkB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,C  
AAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBAAY,CAA

C,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QA  
AQ,CAAC;OACtB;MAED,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,OAAO,CAAC,WAAW,CA  
AC,WAAW,CAAC,MAAM,CAAC,CAAC;OACzC;MAED,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,  
UAAU,GAAiB;MACtC,UAAU,EAAEyD,aAAI;MACHb,WAAW,EAAE,MAAM;MACnB,SAAS,EAAErD,OAA  
K;MACHb,UAAU,EAAE,IAAwB;GACrC;;ECIGD;;;;;;;EAWBA,IAAI,OACI,CAAC;EAET,SAASA,OAAK,  
CAAC,OAAoB;MACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACsD,YAAG,EAAE,IAAI,WAA  
W;UAC/C,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS  
,GAAG,CAAC,IAAgE;MAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;  
MACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MAC/B,MAAM,EAAC,CAAC,EAAC,  
GAAG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAA  
C,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACiB,IAAI,KAAK,GAAG  
,CAAC,CAAC;MAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAaKB,EAAC,GACtD,uBAAu  
B,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,kBAaKB,EAAE;UACtB,MAAM,YAA  
Y,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACj  
E,IAAI,YAAY,KAAK,GAAG,EAAE;;cAGxB,KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,GAAG,YAAY,CAA  
C;WACxB;OACF;MAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;MAErC1D,qBAA  
Y,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;MACHe,MAAM,CAAC,QAAQ,EAA  
E,WAAW,CAAC,GACzBA,qBAAy,CAAC,yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;  
MAC9D,MAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,MAAM,GAAG,GA  
AG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;MACtD,IAAIa,aAAI,CAA  
C,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,MAAM,KAAK,GAAG,OAAO,CAA  
C,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OAA  
O,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;OACxD;MAE  
D,IAAI,kBAaKB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;M  
AED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBAAy,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAA  
K,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;OACtB;MAED,OAAO,GA  
AG,CAAC;EACb,CAAC;EAEM,MAAM,SAAS,GAAiB;MACrC,UAAU,EAAE0D,YAAG;MACf,WAAW,EAAE,  
MAAM;MACnB,SAAS,EAAEtD,OAAK;MACHb,UAAU,EAAE,GAaB;GACpC;;EC1FD;;;;;;;EAmBA,M  
AAM4B,uBAaqB,GAAG,KAAK,CAAC;EAC7B,MAAM,aAAa,GACtB,wBAawB,CAAC2B,gBAAO,EAAE3B,u  
BAAqB,CAAC;;ECrB5D;;;;;;;EAuBA;EACA,IAAK,iBAGJ;EAHD,WAAK,iBAAiB;MACpB,+DAAW,CA  
AA;MACX,mEAAa,CAA;EACf,CAAC,EAHI,iBAAiB,KAAjB,iBAAiB,QAGrB;EAED,IAAI,aAGsB,CAAC;EA  
E3B,SAAS5B,OAAK,CAAC,OAAoB;MACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACwD,kBAA  
S,EAAE,IAAI,aAAa;UAC7D,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UACR,OAAO;UACP,OAAO;  
UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,SAAS,CAAC,IAiB;MACC,MA  
AM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,QAAQ,EAAE,IAAI,  
EAAC,EAAC,GAAG,IAAI,CAAC;MAE7D,MAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACzB,CAAC,CAAC,  
EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAA  
G,CAAC,CAAC,CAAC,CAAC,gBAAgB,CAAC;MACvE,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,  
UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACiD,MAAM,KAAK,GAAG,OAAO,CAAC  
,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,MAAM,WAAW,GA  
AG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAEn  
E,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,IAAI,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC;  
MAC9D,MAAM,gBAAgB,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,IAAI,QAAQ,CAAC,CAAC,CAAC,CAA  
C,CAAC;MAC/D,MAAM,gBAAgB,GACiB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAA  
M,CAAC,CAAC;MAC3D,MAAM,iBAAiB,GACnB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,C  
AAC,MAAM,CAAC,CAAC;MAE5D,aAAa,CACT,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,M  
AAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,gBAAgB,EACrE,iBAAiB,EAAE,iBAAiB,CAA



C,IAAI,CAAC,EAAE,KAAC,CAAC,CAAC;MACvD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,eAAe,  
GAAiB;MAC3C,UAAU,EAAEA,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,SAA6B;MACz  
C,SAAS,EAAExD,OAAK;GACjB;;EC/ED;;EAqBA,MAAM4B,uBAAqB,GAAG,IAAI,CAAC;EAC5B,  
MAAM,cAAc,GACvB,wBAAwB,CAAC6B,iBAAQ,EAAE7B,uBAAqB,CAAC;;ECvB7D;;EAmBO,MA  
AM,SAAS,GAAiB,uBAAuB,CAAC8B,YAAG,CAAC;;ECnBnE;;EA0BA;;;WAIgB,iBAAiB,CAC7B,O  
AAoB,EAAE,SAAiB;MACzC,MAAM,MAAM,GAAG,IAAI,UAAU,CAAC,OAAO,CAAC,IAAI,CAAC,MAAM,  
CAAC,MAAM,EAAE,SAAS,EAAE,CAAC,CAAC,CAAC;MACxE,MAAM,gBAAgB,GAAG,MAAM,CAAC,CA  
AC,CAAC,CAAC;MACnC,MAAM,YAAY,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;MAC/B,MAAM,eAAe,  
GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;MACiC,MAAM,aAAa,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC  
;;MAEHc,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC;MAC9B,OAAO,EAAC,gBAAgB,EAA  
E,YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,CAAC;EACiE;;ECxCA;;EAuBA,IAAI,UAEuD,CAAC;E  
AE5D,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CACzBuD,4B  
AAmB,EACnB,QAAQ;MACR;UACE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT  
,CAAC,CAAC;EACT,CAAC;EAED,SAAS,UAAU,CAAC,IAInB;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,E  
AAE,KAAC,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EAAE,cAAc,EAAC,GAA  
G,KAAC,CAAC;MAC5D,MAAM,EAAC,KAAC,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;MAE/B,MAAM,  
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;  
MACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAA  
C,EAAE,CAAC;MAEzD,MAAM,SAAS,GACXvD,UAAQ,CAAC,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YA  
AY,EAAE,cAAc,CAAC,CAAC;MAE7E,MAAM,EAAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EAAE,aAAa,EA  
C,GACiE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;;MAGiC,OAAO,CAAC,IAAI,CAAC,KAAC,CAA  
C,eAAe,CAAC,CAAC;MACpC,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,aAAa,CAAC,CAAC;MAEiC,MAAM,  
qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CA  
AC;MAEiE,OAAO,qBAAqB,CAAC;EAC/B,CAAC;EAEM,MAAM,yBAAyB,GAAiB;MACrD,UAAU,EAAEuD,  
4BAAmB;MAC/B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE3D,OAAK;MACHb,UAAU,EAAE,UAA8B;GA  
C3C;;ECzED;;EAuBA,IAAI,UAGsC,CAAC;EAE3C,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,G  
AAG,OAAO,CAAC,IAAI,CAAC,KAAC,CACzBwD,4BAAmB,EACnB,QAAQ;MACR;UACE,QAAQ;UACR,QA  
AQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,MAAM;OACP,CAAC,CAAC;EACT,CAAC;EAED,SA  
S,mBAAmB,CAAC,IAI5B;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAC,EAAC,GAAG,IAAI,CA  
AC;MACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EAAE,cAAc,EAAE,kBAakB,EAAC,GACnE,KAAC,CAAC;M  
ACv,MAAM,EAAC,KAAC,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;MAE/B,MAAM,OAAO,GAAG,OAA  
O,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACvD,MAAM,QA  
AQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MA  
EzD,MAAM,SAAS,GAAGxD,UAAQ,CACtB,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EA  
C9D,kBAakB,CAAC,CAAC;MAExB,MAAM,EAAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,  
GACiE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;;MAGiC,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,  
eAAe,CAAC,CAAC;MAEpC,MAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EA  
AE,OAAO,EAAE,gBAAgB,CAAC,CAAC;MAEiE,MAAM,kBAakB,GAAG,OAAO,CAAC,UAAU,CAAC,EAAE  
,EAAE,OAAO,EAAE,aAAa,CAAC,CAAC;MAEiE,OAAO,CAAC,qBAAqB,EAAE,kBAakB,CAAC,CAAC;EAC  
rD,CAAC;EAEM,MAAM,yBAAyB,GAAiB;MACrD,UAAU,EAAEwD,4BAAmB;MAC/B,WAAW,EAAE,MAA  
M;MACnB,SAAS,EAAE5D,OAAK;MACHb,UAAU,EAAE,mBAAuC;GACpD;;EC9ED;;EAuBA,IAAI,  
UAGU,CAAC;EAef,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,  
CACzByD,4BAAmB,EACnB,QAAQ;MACR;UACE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,  
QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACT,CAAC;EAED,SAAS,YAAU,CAAC,IAInB;MACC,MAAM,  
EAAC,OAAO,EAAE,MAAM,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,YAAY,EAAE,a  
AAa,EAAE,cAAc,EAAE,YAAY,EAAC,GAAG,KAAC,CAAC;MACiE,MAAM,EAAC,KAAC,EAAE,MAAM,E  
AAC,GAAG,MAAM,CAAC;MAE/B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,  
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAA

G,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEzD,MAAM,SAAS,GAAG1D,UAAQ,CACtB,  
OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,YAAY,CAAC,CAAC;MAEIB,MAAM,E  
AAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,GACIE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CA  
AC,CAAC;;;MAIIC,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,aAAa,CAAC,CAAC;MAEIC,MAAM,qBAAqB,G  
ACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;MACIE  
,MAAM,oBAAoB,GACtB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,SAAS,EAAE,eAAe,CAAC  
,CAAC;MAEnE,OAAO,CAAC,qBAAqB,EAAE,oBAAoB,CAAC,CAAC;EACvD,CAAC;EAEM,MAAM,yBAAy  
B,GAAiB;MACrD,UAAU,EAAEyD,4BAAmB;MAC/B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE7D,OAAK;  
MACHB,UAAU,EAAE8D,YAA8B;GAC3C;;EC9ED;;;;;;;EAmBA,MAAMIC,uBAAqB,GAAG,KAAK,CAA  
C;EAC7B,MAAM,cAAc,GACvB,wBAAwB,CAACmC,iBAAQ,EAAEnC,uBAAqB,EAAE,MAAM,CAAC;;ECrBr  
E;;;;;;;EAqBA,IAAI,UAEsB,CAAC;EAE3B,SAAS5B,OAAK,CAAC,OAAoB;MACjC,UAAU,GAAG,OAA  
O,CAAC,IAAI,CAAC,KAAK,CAACgE,eAAM,EAAE,IAAI,aAAa;UACvD,QAAQ;UACR,QAAQ;UACR,QAAQ;  
UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,MAAM,CACX,IAAsE;MACxE,  
MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,OAAO,  
EAAC,GAAG,MAAM,CAAC;MACzB,MAAM,EAAC,KAAK,EAAE,OAAO,EAAE,QAAQ,EAAC,GAAG,KAA  
K,CAAC;MAEzC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,GAAG,OAAO,CAAC,KAAK,EA  
AE,KAAK,CAAC,EAAE,OAAO,CAAC,CAAC;MACnE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GA  
AG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,MAAM,WAAW,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;MAC1D,MAAM,SAAS,GAAG,WAAW,CAA  
C,EAAE,CAAC;MAEjC,UAAU,CAAC,SAAS,EAAE,KAAK,EAAE,OAAO,EAAE,QAAQ,EAAE,KAAK,CAAC,  
CAAC;MAEvD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,YAAY,GAAiB;MACxC,UAAU,EAAEA,eA  
AM;MACIB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEH,EAAC;MACHB,UAAU,EAAE,MAA0B;GACvC;;  
ECzDD;;;;;;;EAqBA,SAAS,QAAQ,CAAC,IAAoD;MACpE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,E  
AAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACpC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,C  
AAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,MAAM,OAAO,GAAG,OAAO,CAAC,k  
BAakB,CAAC,GAAG,CAAC,CAAC;MACHD,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC;MACHB,OAAO  
,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,cAAc,GAAiB;MAC1C,UAAU,EAAEiE,iBAAQ;MACpB,WAAW,E  
AAE,MAAM;MACnB,UAAU,EAAE,QAA4B;GACzC;;ECjCD;;;;;;;WAuBgB,IAAI,CACHB,IAAK;MAEp  
E,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,IAAI,  
EAAC,GAAG,KAAK,CAAC;MAErB,IAAI,MAAM,CAAC,MAAM,KAAK,CAAC,EAAE;UACvB,OAAO,UAAU  
,CACb,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,EAAC,EAAE,OAAO,EAAE,K  
AAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;OACHE;MAED,MAAM,KAAK,GAAG,MA  
AM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;MAC9B,MAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,  
CAAC,KAAK,CAAC;MAE9B,MAAM,CAAC,OAAO,CAAC,CAAC;UACdvE,aAAI,CAAC,iBAAiB,CACIB,KA  
AK,EAAE,CAAC,CAAC,KAAK,EACd,uDAAuD,CAAC,CAAC;UAC7DA,aAAI,CAAC,MAAM,CACP,KAAK,K  
AAK,CAAC,CAAC,KAAK,EACjB,MAAM,uDAAuD,CAAC,CAAC;OACpE,CAAC,CAAC;MAEH,MAAM,uBA  
AuB,GAAiB,EAAE,CAAC;MACjD,MAAM,eAAe,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC;UACIC,MAAM,  
SAAS,GACX,UAAU,CAAC,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE,K  
AAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;UACIE,uBAAuB,CAAC,IAAI,CAAC,SA  
S,CAAC,CAAC;UACxC,OAAO,SAAS,CAAC;OACIB,CAAC,CAAC;MAEH,MAAM,MAAM,GAAG,MAAM,C  
AAC,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,IAAI,EAAC,EAAC,CAAC,CAAC;  
MAEzE,uBAAuB,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,WAAW,CAAC,CAAC,MAAM,CAA  
C,CAAC,CAAC;MAEpE,OAAO,MAAM,CAAC;EACHB,CAAC;EAEM,MAAM,UAAU,GAAiB;MACtC,UAAU,  
EAAEW,eAAI;MACHB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,IAAwB;GACrC;;ECjED;;;;;;;EAY  
BA,IAAI,SAG6C,CAAC;EAEID,SAASIE,OAAK,CAAC,OAAoB;MACjC,SAAS,GAAG,OAAO,CAAC,IAAI,CA  
AC,KAAK,CAACmE,cAAK,EAAE,IAAI,aAAa;UACrD,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;UA  
CR,OAAO;UACP,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,GAAG  
,CACR,IAAoE;MACtE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,

EAAC,QAAQ,EAAE,aAAa,EAAC,EAAC,GAAG,IAAI,CAAC;MAEtE,MAAM,QAAQ,GAAG,QAAQ,CAAC,G  
AAG,CACzB,CAAC,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,mBAaMB,CAAC,CAAC,KAAK  
,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,gBAaGB,CAAC;MAEvE,IAAIzE,aAAI,CAAC,aAAa,  
CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;;;UAGrC,OAAO,IAAI,CAAC;cACV,OAAO;cACP,K  
AAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAE,KAAK,EAAE,aAAa,EAAE,KAAK,EAAE,CAAC,CAAC,KAA  
K,EAAC;WAC/D,CAAC,CAAC;OACJ;MAED,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA  
C,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CA  
AC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACID,MAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAA  
C,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACxD,MAAM,KAAK,GAAG,aAAa,CAAC,EAAE,CA  
AC;MAE/B,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAA  
C,MAAM,CAAC,CAAC;MAEnE,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,IAAI,QAAQ,CAA  
C,CAAC,CAAC,CAAC,CAAC;MAC9D,MAAM,gBAaGB,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,IAAI,QA  
AQ,CAAC,CAAC,CAAC,CAAC,CAAC;MAC/D,MAAM,gBAaGB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CA  
AC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;MAC3D,MAAM,iBAaIB,GACnB,IAAI,UAAU,CAAC,IAAI,UA  
AU,CAAC,gBAaGB,CAAC,CAAC,MAAM,CAAC,CAAC;MAE5D,SAAS,CACL,GAAG,EAAE,WAAW,EAAE,  
CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,gBAaGB,EACr  
E,iBAaIB,EAAE,aAAa,EAAE,KAAK,CAAC,CAAC;MAC7C,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAA  
M,WAAW,GAAiB;MACvC,UAAU,EAAEyE,cAAK;MACjB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,GA  
AuB;MACnC,SAAS,EAAEnE,OAAK;GACjB;;ECpFD;;;;;;;EAmBA,MAAM4B,uBAaQB,GAAG,KAAK,C  
AAC;EAC7B,MAAM,SAAS,GACIB,wBAaWB,CAACwC,YAAG,EAAExC,uBAaQB,CAAC;;ECrBxD;;;;;;;  
;EAuBA,IAAI,SAaKE,CAAC;EAEvE,SAAS5B,OAAK,CAAC,OAAoB;MACjC,SAAS,GAAG,OAAO,CAAC,IA  
AI,CAAC,KAAK,CAACqE,cAAK,EAAE,IAAI,aAAa;UACrD,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAA  
C,CAAC;EAEL,CAAC;EAED,SAAS,KAAK,CAAC,IAAiD;MAC9D,MAAM,EAAC,MAAM,EAAE,OAAO,EAA  
C,GAAG,IAAI,CAAC;MAC/B,MAAM,EAAC,CAAC,EAAE,KAAK,EAAC,GAAG,MAAM,CAAC;MAC1B,MA  
AM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CA  
AC;MAC/C,MAAM,SAAS,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CA  
AC,EAAE,CAAC;MAEzD,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,MAAM,KAAK,GAAG,CAAC,CAAC;M  
AChB,IAAI,WAAW,GAAG,KAAK,CAAC;MACxB,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,W  
AAW,GAAG,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAA  
C,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;UACtE,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;OACxD;MAED,MAAM,GAAG,GAAG,OAAO,CA  
AC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,SAAS,CAAC,CAAC;MACnD,MAAM,KAAK,GAAG,OAAO,C  
AAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,SAAS,CAAC,O  
AAO,EAAE,SAAS,EAAE,KAAK,CAAC,CAAC;MAErC,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC  
7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;OACzC;MACD,OAAO,GAAG,CAAC;  
EACb,CAAC;EAEM,MAAM,WAAW,GAAiB;MACvC,UAAU,EAAEA,cAAK;MACjB,WAAW,EAAE,MAAM;  
MACnB,SAAS,EAAErE,OAAK;MAChB,UAAU,EAAE,KAAyB;GACtC;;EC9DD;;;;;;;EAYBA,IAAI,QAEEq  
C,CAAC;EAE1C,SAASA,OAAK,CAAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CA  
ACsE,aAAI,EAAE,IAAI,WAAW;UACjD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CA  
AC;EAEL,CAAC;EAED,SAAS,IAAI,CAAC,IAIb;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,E  
AAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MAC/B,MA  
AM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;M  
ACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAA  
kB,EAAC,GACtD,uBAaIB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,aAAa,GAAG  
,IAAI,CAAC;MACzB,IAAI,kBAaKB,EAAE;UACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG  
,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;;cAGxB,  
KAAK,GAAG,UAAU,CAAC;cACnB,OAAO,GAAG,YAAY,CAAC;cACvB,aAAa,GAAG1E,qBAAY,CAAC,gBA

AgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;WAC/C;OACF;  
MAEDA,qBAAY,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,C  
AAC,CAAC;MAC/C,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzBA,qBAAY,CAAC,yBAAyB,CAAC,K  
AAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAAC;MACvE,MAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,W  
AAW,CAAC,CAAC;MAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,  
KAAK,CAAC,CAAC;MACtD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EA  
AE;UACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,C  
AAC,EAAE,CAAC;UACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,C  
AAC,EAAE,KAAK,CAAC,CAAC;OAC3D;MAED,IAAI,kBAaKB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC  
,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBA  
AY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,G  
AAG,QAAQ,CAAC;OACtB;MAED,OAAO,GAAG,CAAC;EAcB,CAAC;EAEM,MAAM,UAAU,GAAiB;MACtC  
,UAAU,EAAE0E,aAAI;MACHB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEtE,OAAK;MACHB,UAAU,EAAE  
,IAAwB;GACrC;;ECjGD;;;;;;;EAsBO,MAAM,KAAK,GACd,CAAC,IAA+C;MAC9C,MAAM,EAAC,OAA  
O,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MAC9B,MAAM,EAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KA  
AK,EAAC,GAAG,KAAK,CAAC;MACzC,MAAM,MAAM,GAAGuE,SAAY,CAAC,KAAK,EAAE,IAAI,EAAE,I  
AAI,EAAE,KAAK,CAAC,CAAC;MAEtD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,MAAM,  
CAAC,MAAM,CAAC,EAAE,KAAK,CAAC,CAAC;MACvD,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CA  
AC,GAAG,CAAC,CAAC;MACHD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACpB,OAAO,GAAG,  
CAAC;EAcB,CAAC,CAAC;EAEC,MAAM,WAAW,GAAiB;MACvC,UAAU,EAAEC,cAAK;MACjB,WAAW,E  
AAE,MAAM;MACnB,UAAU,EAAE,KAAyB;GACtC;;ECtCD;;;;;;;EAqBA,MAAM5C,uBAAqB,GAAG,IA  
AI,CAAC;EAC5B,MAAM,aAAa,GACtB,wBAAwB,CAAC6C,gBAAO,EAAE7C,uBAAqB,CAAC;;ECvB5D;;;;;  
;;;;;;;EAmBO,MAAM,UAAU,GAAiB,uBAAuB,CAAC8C,aAAI,CAAC;;ECnBrE;;;;;;;EAmBO,MAAM,WA  
AW,GAAiB,uBAAuB,CAACC,cAAK,CAAC;;ECnBvE;;;;;;;EAuBA,IAAI,kBAGsE,CAAC;EAE3E,SAAS3  
E,OAAK,CAAC,OAAoB;MACjC,kBAaKB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC4E,uBAAc,EAAE,I  
AAI,WAAW;UACrE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,  
QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,cAAc,CA  
AC,IAIvB;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MAEtC,MA  
AM,EAAC,MAAM,EAAC,GAAG,MAAM,CAAC;MACxB,MAAM,EAAC,YAAY,EAAE,gBAAgB,EAAE,IAAI,  
EAAC,GAAG,KAAK,CAAC;MACtD,MAAM,CAAC,SAAS,EAAE,QAAQ,CAAC,GAAG,IAAI,CAAC;MAEnC,  
MAAM,CAAC,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,CAAC,GAAG,MAAM,CAAC,KAAK,CAAC;  
MAC/D,MAAM,QAAQ,GAAG,CAAC,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,CAAC,CAAC;MAE3  
D,IAAI,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;MACj  
D,IAAI,UAAU,CAAC;MACf,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;UAC7B,UAAU;cACN,IAAI,CA  
AC,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,KAAK,EAAE,EAAC,KAA  
K,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;UACpE,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,  
UAAU,CAAC,MAAM,CAAC,CAAC;OACID;MACD,MAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;MAE  
rB,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;MACpD,IAAIIF,aA  
AI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UAC1C,OAAO,GAAG,CAAC;OAC  
Z;MACD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CA  
AC,EAAE,CAAC;MAEnD,kBAaKB,CACd,GAAG,EAAE,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,E  
AAE,SAAS,EAAE,QAAQ,EACjE,YAAY,GAAG,CAAC,GAAG,CAAC,EAAE,gBAAgB,GAAG,CAAC,GAAG,C  
AAC,EAAE,KAAK,CAAC,CAAC;MAE3D,IAAI,UAAU,IAAI,IAAI,EAAE;UACtB,OAAO,CAAC,WAAW,CAA  
C,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;MAED,OAAO,GAAG,CAAC;EAcB,CAAC;EAEM,MAAM,oB  
AAoB,GAAiB;MACHD,UAAU,EAAEkF,uBAAc;MAC1B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAE5E,OA  
AK;MACHB,UAAU,EAAE,cAAkC;GAC/C;;ECxFD;;;;;;;EAwBA,IAAI,WAE8C,CAAC;EAEnD,SAASA,O  
AAK,CAAC,OAAoB;MACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC6E,gBAAO,EAAE,IAAI  
,EAAE;UAC9C,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,

CAAC;EACL,CAAC;WAEe,OOAO,CACnB,IAAwE;MAEIE,MAAM,EAAC,MAAM,EAAE,OOAO,EAAE,KAA  
K,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,EA  
AC,IAAI,EAAC,GAAG,KAAK,CAAC;MAErB,MAAM,IAAI,GAAGnF,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,  
CAAC,CAAC,KAAK,CAAC,CAAC;MAEhD,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;  
UACxB,OOAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OOAO,EAAC,CAAC,CAAC;  
OACzC;MAED,MAAM,GAAG,GAAG,OOAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC  
,KAAK,CAAC,CAAC;MACjD,MAAM,GAAG,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC  
,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,KAAK,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAA  
C,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,MAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,  
UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;MAC9D,MAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IA  
AI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MAErE,WAAW,CACP,GAAG,EA  
AE,SAAS,EAAE,IAAI,CAAC,MAAM,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,  
CAAC,CAAC;MAEvE,MAAM,QAAQ,GACV,OOAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,GAAG  
,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,EAAE,OOAO,EAAC,CAAC,C  
AAC;MAEIE,OOAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;MACHC,OOAO,QAAQ,CAA  
C;EACIB,CAAC;EAEM,MAAM,aAAa,GAAiB;MACzC,UAAU,EAAEmF,gBAAO;MACnB,WAAW,EAAE,MA  
AM;MACnB,UAAU,EAAE,OOA2B;MACvC,SAAS,EAAE7E,OAAK;GACjB;;EC1ED;;;,;,,,,,;EA5BA,IAAI,U  
AGIE,CAAC;EAEtE,SAASA,OAAK,CAAC,OOAoB;MACjC,UAAU,GAAG,OOAO,CAAC,IAAI,CAAC,KAAK,  
CAAC8E,yBAAgB,EAAE,IAAI,aAAa;UACjE,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAA  
Q;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAA  
C;EACL,CAAC;WAEe,gBAAgB,CAAC,IAIhC;MACC,MAAM,EAAC,MAAM,EAAE,OOAO,EAAE,KAAK,EA  
AC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,CAAC;MACvB,MAAM,EAAC,O  
AAO,EAAE,SAAS,EAAE,MAAM,EAAC,GAAG,KAAK,CAAC;MAE3C,MAAM,GAAG,GAAG,OOAO,CAAC,  
UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;MACzD,MAAM,OOAO,GAA  
G,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACvD,MA  
AM,KAAK,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CA  
AC;MAEnD,MAAM,CAAC,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,CAAC,GAAG,KAAK,CAAC,  
KAAK,CAAC;MAEIE,MAAM,CAAC,OOAO,EAAE,OOAO,CAAC,GACpBIF,qBAAY,CAAC,cAAc,CAAC,MA  
AM,EAAE,WAAW,EAAE,UAAU,CAAC,CAAC;MAEjE,MAAM,WAAW,GAAG,SAAS,KAAK,CAAC,CAAC;  
MACpC,MAAM,gBAAgB,GAAG,GAAG,CAAC;MAE7B,MAAM,UAAU,GAAG,OOAO,SAAS,KAAK,QAAQ;  
UAC5C,CAAC,SAAS,EAAE,SAAS,EAAE,SAAS,EAAE,WAAW,GAAG,CAAC,GAAG,gBAAgB,CAAC;UACrE  
,CAAC,GAAG,SAAS,EAAE,gBAAgB,CAAC,CAAC;MACrC,MAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,  
UAAU,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,UAAU,CACN,OOAO,EAAE,KAAK,EAAE,  
WAAW,EAAE,UAAU,EAAE,WAAW,EAAE,OOAO,EAAE,OOAO,EActE,OOAO,EAAE,SAAS,EAAE,UAAU,  
CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;MACID,OOAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,sBAAs  
B,GAAiB;MACID,UAAU,EAAEkF,yBAAgB;MAC5B,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,gBAAoC;  
MACHD,SAAS,EAAE9E,OAAK;GACjB;;EChFD;;;,;,,,,,;EAoBO,MAAM,WAAW,GAAiB,uBAAuB,CAAC+E  
,cAAK,CAAC;;ECpBvE;;;,;,,,,,;EAmBO,MAAM,WAAW,GAAiB,uBAAuB,CAACC,cAAK,CAAC;;ECnBvE;;  
,,;,,,,,;EAuBA,IAAI,aAG0C,CAAC;EAE/C,SAASHf,OAAK,CAAC,OOAoB;MACjC,aAAa,GAAG,OOAO,CA  
AC,IAAI,CAAC,KAAK,CAACiF,kBAAS,EAAE,IAAI,WAAW;UAC3D,QAAQ;UACR,QAAQ;UACR,QAAQ;U  
ACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;  
OACT,CAAC,CAAC;EA  
CL,CAAC;EAED,SAAS,SAAS,CACd,IAC0E;MAE5E,MAAM,EAAC,OOAO,EAAE,MAAM,EAAE,KAAK,EA  
C,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,OOAO,EAAE,OOAO,EAAC,GAAG,MAAM,CAAC;MACiC,MA  
AM,EAAC,KAAK,EAAC,GAAG,KAAK,CAAC;MAEtB,MAAM,GAAG,GAAG,OOAO,CAAC,UAAU,CAAC,K  
AAK,EAAE,OOAO,CAAC,KAAK,CAAC,CAAC;MACrD,IAAIvF,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KA  
AK,CAAC,EAAE;UACnC,OOAO,GAAG,CAAC;OACZ;MAED,MAAM,EAAC,SAAS,EAAE,UAAU,EAAE,SA  
AS,EAAE,OOAO,EAAE,UAAU,EAAC,GACzDwF,qBAAY,CAAC,eAAe,CAAC,OOAO,EAAE,OOAO,EAAE,K  
AAK,CAAC,CAAC;MAEID,MAAM,WAAW,GAAG,OOAO,CAAC,SAAS,CAAC,GAAG,CAAC,OOAO,CAAC,

MAAM,CAAC,CAAC;MAC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,MAAM,WAAW,G  
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;MAC1D,MAAM,SAAS,  
GAAG,WAAW,CAAC,EAAE,CAAC;MAEjC,MAAM,YAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,O  
AAO,CAAC,CAAC,MAAM,CAAC,CAAC;MAEpE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,aAAa,CACT,SAAS,EAAE,SAAS,EAAE,Q  
AAQ,CAAC,OAAO,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,UAAU,EACpE,SAAS,EAAE,YAAY,EAAE,UA  
AU,EAAE,KAAK,CAAC,CAAC;MAEhD,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,eAAe,GAAiB;M  
AC3C,UAAU,EAAED,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEjF,OAAK;MACHB,UAAU  
,EAAE,SAA6B;GAC1C;;EC/ED;;;;;;;EAqBA,IAAI,UAESB,CAAC;EAE3B,SAASA,OAAK,CAAC,OAAoB;  
MACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,EAAE;UACHD,QAAQ;U  
ACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,MA  
AM,CAAC,IAAKD;MACHE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MAC/B,MAAM,  
EAAC,SAAS,EAAE,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;MAEjC,MAAM,WAAW,GAAG,OAA  
O,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/D,MAAM,GAA  
G,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/  
C,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAA  
E,CAAC;MAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAA  
C,KAAK,CAAC,CAAC;MACjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CA  
AC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,MAAM,KAAK,GAAG,SAAS,CAAC,KAAK,CAAC,MAAM,C  
AAC;MACrC,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;MAE7B,MAAM,MAAM,GA  
AG,KAAK,KAAK,CAAC,IAAI,KAAK,GAAG,CAAC,IAAI,KAAK,KAAK,CAAC;UACiD,CAAC;UACDN,aAAI  
,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAEzC,UAAU,  
CAAC,WAAW,EAAE,GAAG,EAAE,GAAG,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;MACjD,OAAO,GAAG  
,CAAC;EACb,CAAC;EAEM,MAAM,YAAY,GAAiB;MACxC,UAAU,EAAEyF,eAAM;MACiB,WAAW,EAAE,  
MAAM;MACnB,UAAU,EAAE,MAA0B;MACtC,SAAS,EAAEnF,OAAK;GACjB;;EC7DD;;;;;;;EAqBA,IA  
AII,UAA8C,CAAC;EAEnD,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,  
KAAK,CAACgF,gBAAO,EAAE,IAAI,aAAa,CAAC,QAAQ,EAAE,QAAQ,CAAC,CAAC,CAAC;EAChF,CAAC;  
EAED,SAAS,OAAO,CAAC,IAAmD;MAEIE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAC,  
EAAC,GAAG,IAAI,CAAC;MACpC,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,  
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAA  
C,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAA  
S,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;MAGnD,IAAIIF,aAAI,CAAC,aAA  
a,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACvC,OAAO,GAAG,CAAC;OACZ;MAEDU,UA  
AQ,CAAC,GAAG,EAAE,KAAK,CAAC,CAAC;MACrB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,aA  
Aa,GAAiB;MACzC,UAAU,EAAE,SAAS;MACrB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEJ,OAAK;MACH  
B,UAAU,EAAE,OAA2B;GACxC;;EChDD;;;;;;;EAmBO,MAAM,SAAS,GAAiB,uBAAuB,CAACqF,YAAG,  
CAAC;;ECnBnE;;;;;;;EAqBA,IAAIjF,UACI,CAAC;EAET,SAASJ,OAAK,CAAC,OAAoB;MACjCI,UAAQ,  
GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACKF,gBAAO,EAAE,IAAI,aAAa;UACtD,QAAQ;UACR,QAAQ;  
UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAEL,CAAC;EAED,SAAS,OAAO,CACZ,IAAwE;MAEIE,  
MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,MAAM,EAAC,EAAE,KAAK,EAAE,EAAC,GAAG,EAAC,  
EAAC,GAAG,IAAI,CAAC;MACvD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,  
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAA  
M,CAAC,KAAK,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;MAC3D,MAAM,KAAK,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAEnD,MAAM,QAAQ,GAAG,  
MAAM,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC;MACnC,MAAM,KAAK,GAAG5F,aAAI,CAAC,aAAa,CAA  
C,MAAM,CAAC,KAAK,CAAC,GAAG,QAAQ,CAAC;;MAG1D,IAAIA,aAAI,CAAC,aAAa,CAAC,GAAG,CAA  
C,KAAK,CAAC,KAAK,CAAC,EAAE;UACvC,OAAO,GAAG,CAAC;OACZ;MAEDU,UAAQ,CAAC,GAAG,EA  
AE,KAAK,EAAE,QAAQ,EAAE,KAAK,CAAC,CAAC;MACtC,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MA

AM,aAAa,GAAiB;MACzC,UAAU,EAAEkF,gBAAO;MACnB,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEtF,  
OAAK;MACHB,UAAU,EAAE,OAA2B;GACxC;;EC1DD;;;;;;;EAYBA,SAAS,cAAc,CAAC,IAIvB;MACC,  
MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,  
EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,EAAC,UAAU,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MAE  
rC,MAAM,IAAI,GAAGN,aAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;MAE5C,MAAM,gBAAgB,GAA4B,C  
AAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;MAC3D,gBAAgB,CAAC,IAAI,CAAC,GAAL,QAAoC,C  
AAC,CAAC;MAEhE,KAAK,IAAI,CAAC,GAAG,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,CAAC,GAAG,C  
AAC,CAAC,KAAK,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;UAC3D,gBAAgB,CAAC,IAAI,CAAC,CAAC,C  
AAC,EAAE,CAAC,CAAC,CAAC,CAAC;OAC/B;MAED,MAAM,OAAO,GAAG,WAAW,CAAC,UAAU,CAAC;  
UACrC,MAAM,EAAE,EAAC,CAAC,EAAC;UACX,OAAO;UACP,KAAK,EAAE,EAAC,QAAQ,EAAE,gBAAgB  
,EAAE,aAAa,EAAE,CAAC,EAAC;OACtD,CAAe,CAAC;MAEjB,MAAM,mBAAmB,GACrBE,qBAAY,CAAC,  
WAAW,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;MAErE,MAAM,i  
CAAiC,GAAGA,qBAAY,CAAC,WAAW,CAC9D,mBAAmB,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,EAA  
E,KAAK,CAAC,CAAC;MAEID,MAAM,YAAY,GACdA,qBAAY,CAAC,mBAAmB,CAAC,OAAO,CAAC,KAA  
K,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;MAE7E,MAAM,aAAa,GAakB,EAAC,CAAC,EAAE,  
OAAO,EAAC,CAAC;MACID,MAAM,YAAY,GAAiB,EAAC,KAAK,EAAE,mBAAmB,EAAC,CAAC;MACHe,  
MAAM,eAAe,GACjB,OAAO,CAAC,EAAC,MAAM,EAAE,aAAa,EAAE,OAAO,EAAE,KAAK,EAAE,YAAY,E  
AAC,CAAC,CAAC;MAEnE,MAAM,eAAe,GAAoB,EAAC,CAAC,EAAE,eAAe,EAAC,CAAC;MAC9D,MAAM,  
cAAc,GACC,EAAC,IAAI,EAAE,iCAAiC,EAAC,CAAC;MAC/D,MAAM,QAAQ,GACV,SAAS,CAAC,EAAC,M  
AAM,EAAE,eAAe,EAAE,OAAO,EAAE,KAAK,EAAE,cAAc,EAAC,CAAC,CAAC;MAEzE,MAAM,mBAAmB,  
GAakB,EAAC,CAAC,EAAE,QAAQ,EAAC,CAAC;MACzD,MAAM,kBAakB,GAAiB,EAAC,KAAK,EAAE,YA  
AY,EAAC,CAAC;MAC/D,MAAM,MAAM,GAAG,OAAO,CACIB,EAAC,MAAM,EAAE,mBAAmB,EAAE,OAA  
O,EAAE,KAAK,EAAE,kBAakB,EAAC,CAAC,CAAC;MAEvE,OAAO,CAAC,WAAW,CAAC,OAAO,CAAC,M  
AAM,CAAC,CAAC;MACpC,OAAO,CAAC,WAAW,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC;MAC5C,OAA  
O,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;MAErC,OAAO,MAAM,CAAC;EACHB,CAAC;E  
AEM,MAAM,oBAAoB,GAAiB;MACHD,UAAU,EAAE2F,uBAAc;MAC1B,WAAW,EAAE,MAAM;MACnB,UA  
AU,EAAE,cAAc;GAC/C;;ECrFD;;;;;;;WAwBgB,MAAM,CACIB,IAAsE;MACxE,MAAM,EAAC,MAAM,  
EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,  
CAAC;MACnB,MAAM,EAAC,eAAe,EAAE,IAAI,EAAC,GAAG,KAAK,CAAC;MAEtC,MAAM,KAAK,GAAG7  
F,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;MAEpD,M  
AAM,UAAU,GAAGE,qBAAY,CAAC,gBAAgB,CAAC,CAAC,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC;MAC5  
E,MAAM,KAAK,GAAG,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,  
CAAC,CAAC,CAAC;MACHD,MAAM,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;MAC7B  
,OAAO,UAAU,CAAC,GAAG,CAAC,CAAC;UACrB,MAAM,UAAU,GAAG,CAAC,GAAG,IAAI,CAAC,CAAC;  
UAC7B,UAAU,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC;UACtB,MAAM,MAAM,GACR,KAAK,CAAC,EAA  
C,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,IAAI,EAAE,UAAU,EAAC,E  
AAE,OAAO,EAAC,CAAC,CAAC;UACpE,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;UACIB,OAAO,M  
AAM,CAAC;OACf,CAAC,CAAC;EAEL,CAAC;EAEM,MAAM,YAAY,GAAiB;MACxC,UAAU,EAAE4F,eAA  
M;MACIB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,MAA0B;GACvC;;ECjDD;;;;;;;EAoBO,MAAM,  
UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;ECpBrE;;;;;;;EAmBO,MAAM,YAAY,GAAiB,uBAAuB,C  
AACC,eAAM,CAAC;;ECnBzE;;;;;;;EakBA,MAAM9D,uBAAqB,GAAG,IAAI,CAAC;EAC5B,MAAM,uB  
AAuB,GACHC,wBAawB,CAAC+D,0BAAiB,EAAE/D,uBAAqB,CAAC;;ECpBtE;;;;;;;EAuBA,IAAI,QACI,  
CAAC;EAET,SAAS5B,OAAK,CAAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAA  
C4F,aAAI,EAAE,IAAI,WAAW;UACjD,QAAQ;UACR,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAA  
C;EAEL,CAAC;EAED,SAAS,IAAI,CACT,IAAkE;MAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,  
EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,KAAK,EAAC,GAAG,KAAK,CAAC;MACtB,MAAM,EAAC  
,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA  
C,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAE/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CA

AC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACjD,MAAM,KAAK,GAAG,OAAO,C  
AAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MACnD,QAAQ,CAAC,G  
AAG,EAAE,KAAK,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;MAC/C,O  
AAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,UAAU,GAAiB;MACtC,UAAU,EAAEA,aAAI;MACHb,WAA  
W,EAAE,MAAM;MACnB,SAAS,EAAE5F,OAAK;MACHb,UAAU,EAAE,IAAwB;GACrC;;ECtDD;;;;;;;E  
AuBA,IAAI,gBAI8C,CAAC;EAEnD,SAASA,OAAK,CAAC,OAAoB;MACjC,gBAAgB,GAAG,OAAO,CAAC,IA  
AI,CAAC,KAAK,CAAC6F,qBAAY,EAAE,IAAI,WAAW;UACjE,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,O  
AAO;UACP,OAAO;UACP,OAAO;UACP,OAAO;UACP,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CA  
AC;EAcl,CAAC;WAEe,YAAY,CAAC,IAI5B;MACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EA  
AC,GAAG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MAEnB,MAAM,EACJ,K  
AAK,EAcl,GAAG,EACH,OAAO,EACP,SAAS,EACT,OAAO,EACP,YAAY,EACZ,WAAW,EACX,cAAc,EACf,  
GAAG,KAAK,CAAC;MAEV,MAAM,EACJ,gBAAgB,EACHb,UAAU,EACV,UAAU,EACV,SAAS,EACT,aAAa,  
EACb,KAAK,EAAE,MAAM,EACb,GAAG,EAAE,IAAI,EACT,OAAO,EAAE,QAAQ,EACIB,GACGpF,mBAAU,  
CAAC,SAAS,CACHb,CAAC,CAAC,KAAK,EAAE,KAAK,EAAE,GAAG,EAAE,OAAO,EAAE,SAAS,EAAE,OA  
AO,EAAE,YAAY,EAC9D,WAAW,EAAE,cAAc,CAAC,CAAC;MAErC,IAAI,MAAM,CAAC;MAEX,IAAI,UAA  
U,EAAE;;UAEd,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAA  
E,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;OACtE;WAAM,IAAI,SAAS,IAAI,aA  
Aa,EAAE;;UAErCf,aAAI,CAAC,MAAM,CACP,CAAC,CAAC,KAAK,CAAC,MAAM,IAAI,CAAC,EACnB,MA  
AM,yCAAYC,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,CAAC,CAAC;UAErE,MAAM,IAAI,GAAGe,mBAA  
U,CAAC,eAAe,CAAC,MAAM,EAAE,IAAI,EAAE,QAAQ,CAAC,CAAC;;UAehE,MAAM,MAAM,GAAG,KAA  
K,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,  
MAAM,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;UAC3E,MAAM;cACF,OAAO,CAAC,EAAC,MAAM,EAAE,E  
AAC,CAAC,EAAE,MAAM,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EA  
AC,CAAC,CAAC;UACxE,OAAO,CAAC,WAAW,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;OACpC;WAA  
M;UACL,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,gBAAgB,EAAE,SAAS,CAAC,CAAC;UAE5D,M  
AAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,C  
AAC;UAC/C,MAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAACf,aAAI,CAAC,cAAc,CAAC,CAAC,C  
AAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;UACxE,MAAM,UAAU,GAAG,IAAI,UAAU,CAAC,I  
AAI,UAAU,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC;UACjE,MAAM,QAAQ,GAAG,IAAI,UAAU,C  
AAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;UAC7D,MAAM,YAAY,GAAG,IAAI,UAA  
U,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;UAErE,MAAM,gBAAgB,GACIB,IA  
AI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;UAC5D,MAAM,eAAe,GA  
AG,IAAI,UAAU,CACiC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,gBAAgB,CAAC,CAAC,CAAC,MAA  
M,CAAC,CAAC;UACIE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;UAEnD,gBAAgB,CACZ,GAAG,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CA  
AC,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,YAAY,EACtE,gBAAgB,EAAE,eAAe,EAAE,gBAAgB,CAAC,M  
AAM,EAAE,KAAK,CAAC,CAAC;UAEvE,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,  
EAAE,GAAG,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CA  
AC;UAElE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;OACjC;MAED,OAAO,MAAM,  
CAAC;EACHb,CAAC;EAEM,MAAM,kBAakB,GAAiB;MAC9C,UAAU,EAAEmG,qBAAY;MACxB,WAAW,E  
AAE,MAAM;MACnB,SAAS,EAAE7F,OAAK;MACHb,UAAU,EAAE,YAAgC;GAC7C;;EC/HD;;;;;;;EAKB  
A,MAAM4B,uBAAqB,GAAG,IAAI,CAAC;EAC5B,MAAM,SAAS,GACIB,wBAAwB,CAACKe,YAAG,EAAEIE,  
uBAAqB,CAAC;;ECPBxD;;;;;;;EAwBA,IAAI,OACI,CAAC;EAET,SAAS5B,OAAK,CAAC,OAAoB;MACj  
C,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC+F,YAAG,EAAE,IAAI,WAAW;UAC/C,QAAQ;UAC  
R,QAAQ;UACR,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EAcl,CAAC;EAED,SAAS,GAAG,CAAC,IAAgE;  
MAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;MACtC,MAAM,EA  
C,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;MAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAA  
C;MACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CA



AC,EAAE,CAAC;MAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;MACIB,IAAI,KAAK,GAAG,CAAC,CAAC;MAE  
d,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAakB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EA  
AE,IAAI,EAAE,OAAO,CAAC,CAAC;MAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;MACzB,IAAI,kBAakB,EAAE;  
UACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC  
,EAAE,CAAC;UACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;;cAGxB,KAAK,GAAG,UAAU,CAAC;cACnB,OAAO  
,GAAG,YAAY,CAAC;cACvB,aAAa,GAAGnG,qBAAY,CAAC,gBAAGb,CACzC,aAAa,CAAC,MAAM,EAAE,K  
AAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;WAC/C;OACF;MAEDA,qBAAY,CAAC,0BAA0B,CACnC,K  
AAK,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;MAC9C,MAAM,CAAC,QAAQ,E  
AAE,WAAW,CAAC,GACzBA,qBAAY,CAAC,yBAAYb,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAA  
C;MACvE,MAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;MAEnD,MAAM,GAAG,G  
AAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;MACtD,IAAIA,aAAI,CA  
AC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;UACzC,MAAM,KAAK,GAAG,OAAO,CA  
AC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;UACnD,OAAO,CAAC,OA  
AO,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;OACID;MA  
ED,IAAI,kBAakB,EAAE;;UAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;OACxC;  
MAED,IAAI,QAAQ,EAAE;;UAEZ,MAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KA  
AK,EAAE,YAAY,CAAC,CAAC;UAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;OACtB;MAED,OAAO,G  
AAG,CAAC;EACb,CAAC;EAEM,MAAM,SAAS,GAAiB;MACrC,UAAU,EAAEmG,YAAG;MACf,WAAW,EAA  
E,MAAM;MACnB,SAAS,EAAE/F,OAAK;MACHb,UAAU,EAAE,GAAuB;GACpC;;EC5FD;;;;;;;EAmBO,  
MAAM,SAAS,GAAiB,uBAAuB,CAACgG,YAAG,CAAC;;ECnBnE;;;;;;;EAmBO,MAAM,UAAU,GAAiB,u  
BAAuB,CAACC,aAAI,CAAC;;ECnBrE;;;;;;;EAuBA,IAAI,QAE2D,CAAC;EAEhE,SAASjG,OAAK,CAAC,  
OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACkG,aAAI,EAAE,IAAI,aAAa;UACnD,  
QAAQ;UACR,OAAO;UACP,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACL,C  
AAC;EAED,SAAS,IAAI,CACT,IAAkE;MACpE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GA  
AG,IAAI,CAAC;MACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,GAAG,GAAG,  
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;MAC/C,MAAM,  
EAAC,IAAI,EAAC,GAAG,KAAK,CAAC;MAEtB,MAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,CAAC,CAAC,KA  
AK,CAAC,MAAM,CAAC,CAAC;MACrD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CA  
AC,MAAM,EAAE,CAAC,EAAE,EAAE;UACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CA  
AC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;OACpC;MACD,MAAM,WAAW,GAAG,IAAI,UA  
AU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;MACnE,MAAM,aA  
Aa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;MAEtE,MAA  
M,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MACID,MA  
AM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CA  
AC;MACnD,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,aAAa,EA  
AE,QAAQ,CAAC,MAAM,EACHe,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;M  
AChC,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,UAAU,GAAiB;MACtC,UAAU,EAAEA,aAAI;MACH  
B,WAAW,EAAE,MAAM;MACnB,SAAS,EAAEIG,OAAK;MACHb,UAAU,EAAE,IAAwB;GACrC;;ECjED;;;;;;  
;;;;;EAsBA,IAAI,QAG6B,CAAC;EAEIC,SAASA,OAAK,CAAC,OAAoB;MACjC,QAAQ,GAAG,OAAO,CAAC,  
IAAI,CAAC,KAAK,CAACmG,aAAI,EAAE,IAAI,aAAa;UACnD,QAAQ;UACR,OAAO;UACP,QAAQ;UACR,Q  
AAQ;UACR,QAAQ;UACR,MAAM;UACN,QAAQ;UACR,QAAQ;OACT,CAAC,CAAC;EACL,CAAC;EAEM,M  
AAM,IAAI,GAEmB,CAAC,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC;MACnD,MAAM,EAAC,CAAC,  
EAAC,GAAG,MAAM,CAAC;MACnB,MAAM,EAAC,CAAC,EAAE,MAAM,EAAC,GAAG,KAAK,CAAC;MAE  
IB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EA  
AE,CAAC;MAC/C,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAA  
C,CAAC,MAAM,CAAC,CAAC;MACnE,MAAM,WAAW,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,C  
AAC;MACpC,WAAW,CAAC,WAAW,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC;MACxC,MA  
AM,SAAS,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;MAC3D,M



AAO,EAAC,CAAC,CAAC;OACtE;MACD,OAAO,IAAI,CAAC,GAAG,CAAC,CAAC,EAAC,MAAM,EAAE,KA  
AK,EAAC,MAAM,EAAC,MAAM,EAAE,KAAC,EAAE,KAAC,EAAE,QAAQ,EAAC,CAAC,CAAC,CAAC;EA  
C3E,CAAC;EAEM,MAAM,YAAY,GAaIB;MACxC,UAAU,EAAEgG,eAAM;MACIB,WAAW,EAAE,MAAM;M  
ACnB,UAAU,EAAE,MAA0B;GACvC;;EC1DD;,,,,,,,,,,,,,EAqBA,SAAS,SAAS,CAAC,IAAqD;MACtE,MAAM,  
EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;MACpC,MAAM,GAAG,  
GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;MACjD,  
MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;MACHD,OAAO,CAAC,IAAI,CAA  
C,CAAC,CAAC,CAAC;MACHB,OAAO,GAAG,CAAC;EACb,CAAC;EAEM,MAAM,eAAe,GAaIB;MAC3C,UA  
AU,EAAEC,kBAAS;MACrB,WAAW,EAAE,MAAM;MACnB,UAAU,EAAE,SAA6B;GAC1C;;ECjCD;,,,,,,,,,,,,,  
EAsHA;EACA,MAAM,aAAa,GAaMB;MACpC,SAAS;MACT,SAAS;MACT,UAAU;MACV,SAAS;MACT,SAA  
S;MACT,YAAY;MACZ,aAAa;MACb,iBAaIB;MACjB,oBAaOB;MACpB,UAAU;MACV,UAAU;MACV,iBAaI  
B;MACjB,YAAY;MACZ,YAAY;MACZ,yBAaYB;MACzB,SAAS;MACT,UAAU;MACV,mBAaMB;MACnB,Y  
AAY;MACZ,kBAaKB;MACIB,2BAa2B;MAC3B,SAAS;MACT,WAAW;MACX,SAAS;MACT,gBAaGB;MACH  
B,UAAU;MACV,mBAaMB;MACnB,WAAW;MACX,cAAc;MACd,iBAaIB;MACjB,oBAaOB;MACpB,iBAaIB;  
MACjB,0BAa0B;MAC1B,cAAc;MACd,cAAc;MACd,aAAa;MACb,kBAaKB;MACIB,cAAc;MACd,eAAe;MACf,  
UAAU;MACV,eAAe;MACf,SAAS;MACT,gBAaGB;MACHB,SAAS;MACT,aAAa;MACb,aAAa;MACb,UAAU;  
MACV,SAAS;MACT,aAAa;MACb,eAAe;MACf,cAAc;MACd,SAAS;MACT,yBAaYB;MACzB,yBAaYB;MACz  
B,yBAaYB;MACzB,cAAc;MACd,YAAY;MACZ,cAAc;MACd,UAAU;MACV,WAAW;MACX,SAAS;MACT,W  
AAW;MACX,UAAU;MACV,WAAW;MACX,aAAa;MACb,UAAU;MACV,WAAW;MACX,aAAa;MACb,oBAa  
oB;MACpB,aAAa;MACb,sBAaSB;MACtB,WAAW;MACX,WAAW;MACX,eAAe;MACf,YAAY;MACZ,aAAa;  
MACb,SAAS;MACT,WAAW;MACX,aAAa;MACb,oBAaOB;MACpB,YAAY;MACZ,UAAU;MACV,YAAY;MA  
CZ,uBAaUB;MACvB,UAAU;MACV,kBAaKB;MACIB,SAAS;MACT,SAAS;MACT,SAAS;MACT,UAAU;MAC  
V,UAAU;MACV,UAAU;MACV,eAAe;MACf,eAAe;MACf,YAAY;MACZ,eAAe;GACHB,CAAC;EAEF,KAAC,  
MAAM,YAAY,IAAI,aAAa,EAAE;MACxCC,uBAaC,CAAC,YAAY,CAAC,CAAC;;EC3N/B;,,,,,,,,,,,,,;EAMBA,  
MAAM,GAAG,GAAGC,YAAG,EAAE,CAAC;EAEIB;;;EAGA;EACA,GAAG,CAAC,YAAY;EACZ;EACA;EAC  
A;EACA,uBAaUB,EAAE,YAAY,WAAW,CAAC,QAAQ,CAAC,IAAI,UAAU,CAAC;MACvE,CAAC,EAAE,EA  
AE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,  
CAAC,EAAE,CAAC,EAAI,EAAE,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC;MACrD,CAAC,EAAE,CAAC,EA  
AG,CAAC,EAAI,EAAE,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,E  
AAE,GAAG,EAAE,EAAE,EAAE,EAAE,EAAE,EAAE;GACpD,CAAC,CAAC,CAAC,CAAC;EAET;;;EAGA;EA  
CA,GAAG,CAAC,YAAY,CAAC,8BAa8B,EAAE;;;MAG/C,IAAI,GAAG,CAAC,GAAG,CAAC,SAAS,CAAC,E  
AAE;UACtB,OAAO,KAAC,CAAC;OACd;MAED,IAAI;;;UAGF,IAAI,cAAc,EAAE,CAAC,KAAC,CAAC,WAA  
W,CAAC,IAAI,iBAaIB,CAAC,CAAC,CAAC,CAAC,CAAC;;;UAGjE,OAAO,WAAW,CAAC,QAAQ,CAAC,IA  
AI,UAAU,CAAC;cACzC,CAAC,EAAE,EAAE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAG,  
CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,EAAE,EAAE,CAAC,EAAI,CAAC,EA  
G,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC;cAcPE,CAAC,EAAE,CAAC,EAAG,CAAC,E  
AAI,CAAC,EAAI,CAAC,EAAE,EAAE,EAAE,EAAE,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,E  
AAE,CAAC,EAAG,GAAG,EAAE,EAAE,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,EAAE;WACnE,CAA  
C,CAAC,CAAC;OACL;MAAC,OAAO,CAAC,EAAE;UACV,OAAO,KAAC,CAAC;OACd;EACH,CAAC,CAAC;  
;,,,,,;ECzDF,IAAI,6BAa6B,GAAG,CAAC,WAAW;EACHD,EAAE,IAAI,UAAU,GAAG,OAAO,QAAQ,KAAC,  
WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC,GAAG,GAAG,SAAS,CAAC;EACtH,EA  
AE,IAAI,OAAO,UAAU,KAAC,WAAW,EAAE,UAAU,GAAG,UAAU,IAAI,UAAU,CAAC;EAC/E,EAAE;EACF,  
SAAS,6BAa6B,EAAE;EACxC,EAAE,6BAa6B,GAAG,6BAa6B,IAAI,EAAE,CAAC;AACtE;EACA,SAAS,gBA  
AgB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAa0B,CAAC,UAAU,CAAC,  
MAAM,EAAC,CAAC,OAAO,KAAC,CAAC,SAAS,gBAaGB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EA  
E,MAAM,CAAC,CAAC,0BAa0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iB  
AAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAa0B,CAAC,UAAU,CAAC  
,MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iBAaIB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EA

E,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,SAAS,iB  
AAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC  
,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,IAAI,MAAM,CAAC,OAAO,6BAA6B,GAAG,WAAW,CAAC,6BA  
A6B,CAAC,EAAE,CAAC,IAAI,mBAAmB,CAAC,kBAaKB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,  
OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,mBAAmB,CAAC,OAAO,CAAC,kBAaKB,CAAC,O  
AAM,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,C  
AAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAA  
C,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAg  
B,CAAC,IAAI,KAaK,CAAC,SAAS,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,k  
BAaKB,CAAC,KAaK,CAAC,IAAI,qBAaQB,CAAC,KAaK,CAAC,IAAI,mBAAmB,CAAC,KAaK,CAAC,IAAI  
,oBAAoB,CAAC,KAaK,CAAC,kBAaKB,CAAC,OAAO,MAAM,GAAG,QAAQ,CAAC,qBAaQB,CAAC,OAAO,  
aAAa,GAAG,UAAU,CAAC,mBAAmB,CAAC,OAAO,OAAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAA  
Q,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,CAAC,IAAI,GAAG,QAAQ,CAAC,oBAAoB,CAAC,CAA  
C,kBAaKB,EAAE,CAAC,mBAAmB,EAAE,CAAC,qBAaQB,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBA  
AwB,CAAC,EAAE,KAaK,CAAC,GAAG,sBAAsB,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,  
CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,YAA  
Y,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAA Y,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,e  
AAe,CAAC,IAAI,KAaK,KAaK,CAAC,SAAS,CAAC,UAAU,CAAGB,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,  
GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,eAAe,CAACC,IAAe,CAAC,OAAO,CAAC,eA  
Ae,CAAC,CAAC,IAAG,CAAC,KAaI,CAAC,eAAe,CAAC,SAAS,CAAC,IAAG,CAAC,KAaK,CAAC,SAAS,UA  
AU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACC,EAAa,CAAC,G  
AAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,Q  
AAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MA  
AM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAaK  
,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,I  
AAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,C  
AAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,  
OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAaK,CAAC,GAAG,EAAC,CAAC,  
UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KAaK,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,C  
AAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAA Y,UAAU,CAAC,CAAC,C  
AAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,oBAAoB,CAAC,KAaK,C  
AAC,CAAC,KAaK,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,EAAC,C  
AAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,4BAA4B,CAAC,CAAC,IAAI,iBAAiB,  
CAAC,GAAG,CAAC,iBAAiB,CAACE,eAAyB,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,CAAC,KAaK,CAA  
C,yGAAYG,CAAC,CAAC,MAAM,CAAC,CAACC,cAAM,CAAC,MAAM,CAAC,iBAAiB,CAAC,OAAM,CAAC  
,KAaK,GAAG,oBAAoB,CAAC,CAAC,GAAG,OAAO,IAAI,EAAE,WAAW,CAAC,CAAC,KAaK,CAAC,SAAS,  
UAAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UA  
AU,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,OAAO,UAAU,GAAG,UAAU,CAAC,CAAC,OAAO,I  
AAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,  
CAAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,GAAG,OA  
AO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WAAU,CAAC,KAaK,GAAG,OAAO,SAAS,EAAE,WA  
AW,CAAC,CAAC,UAAU,CAAC,UAA S,CAAC,GAAG,OAAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAaK,CAA  
C,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,EAAC,CAAC,GAAG,OAAO,KAaK,GAAG,WAA  
W,CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,OAAO,CAAC,GA  
AG,CAAC,KAaK,CAAC,OAAO,CAAC,IAAI,CAAC,OAAO,CAAC,KAaK,CAAC,OAAO,QAAQ,GAAG,WAA  
W,CAAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAaK,GAAG,kBAaKB,EAAE,qBAaQB,CAAC,CAAC,GAAG,q  
BAaQB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAAC,KAaI,CAAC,KAaK,GAAG,OAAO,QAAQ,GA  
AG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,

GAAG,OAAO,UAAU,KAAK,WAAW,IAAI,UAAU,CAAC,CAAC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,eAAe,CAAC,GAAG,CAAC,GAAG,mBAAmB,CAAC,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACF,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAAC,D,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,UAAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAQ,GAAG,mBAAmB,CAAC,CAAC,GAAG,OAAO,WAAW,GAAG,WAAW,CAAC,CAACG,cAAM,CAAC,WAAW,CAAC,UAAYqB,CAAC,YAAW,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAAa,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,KAAK,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,EAAC,CAAC,CAAmH,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG,OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAAiC,EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,KAAK,CAAC,KAAK,CAAGb,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,oBAAB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QAAQ,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,+BAA+B,CAAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,QAAQ,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EAAE,GAAG,GAAG,SAAS,EAAE,GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAAB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAAB,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,QAAQ,CAAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,CAAC,OAAO,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAAK,CAAC,CAAC,IAAI,KAAK,CAAC,EAAE,CAAC,IAAI,KA

AK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,KAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,YAAY,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAK,CAAC,SAAS,IAAI,CAAC,CAAC,OAAO,IAAI,GAAG,QA AQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU,GAAG,QAAQ,CAAC,GAAG,UAAU,EAAE,WAAW,EAA E,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,KAAK,CAAC,CAAC,OAAO,UAAU,CAAC,OAAO,KAAK, CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,SAAc,CAAC,CAAC,CAAC,SAAS,iBAaIB,CAAC,IAAI,CA AC,GAAG,CAAC,cAAc,CAAC,CAAC,IAAI,MAAM,CAAC,GAAG,CAAC,cAAc,CAAC,IAAI,GAAG,CAAC,E AAE,CAAC,MAAM,EAAE,GAAG,EAAE,MAAM,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAA G,EAAE,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,OAAO,GAAG,CAAC,GAAG,EAAE,EAAE,CAAC,GAAG, CAAC,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EA AE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG, GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,CAAC,C AAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE, CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,E AAE,GAAG,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,GAAE,CAAC,KAAI,CAAC,EAAE,CAAC,CAAC,EAAE ,CAAC,CAAC,GAAG,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,IAAI,CAAC,GAA G,EAAE,CAAC,CAAC,GAAE,CAAC,GAAG,EAAE,CAAC,KAAK,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC ,YAAY,CAAC,EAAE,EAAE,CAAC,KAAI,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,EA A E,MAAM,CAAC,YAAY,CAAC,KAAK,CAAC,EAAE,EAAE,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,E AAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,YAAY,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,OAAO,GA AG,CAAC,iBAaIB,CAAC,gBAaB,CAAC,EAAE,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,EAAE,CAAC,SAAS,iBA AiB,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,GAAG,EAAE,eAAe,CAAC,CAAC, CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,e AAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC, EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CA AC,EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,IAAI,EAAE,CAAC,GAAG,CAAC,UAAU,CAAC, EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAA C,EAAE,CAAC,KAAI,CAAC,GAAG,CAAC,EAAE,GAAG,CAAC,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC ,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,EAAC,CAAC,KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,CA AC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GA AG,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC, GAAE,CAAC,KAAK,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM, CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CA AC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAA M,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,KAAI,CAAC,GAAG,MAAM,CAAC,CAAC ,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,C AAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,EAAE,CAAC,IAAI, CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MA AM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAA C,CAAC,CAAC,OAAO,MAAM,CAAC,QAAQ,CAAC,SAAS,YAAY,CAAC,GAAG,CAAC,MAAM,CAAC,eAAe ,CAAC,CAAC,OAAO,iBAaIB,CAAC,GAAG,CAAC,gBAaB,CAAC,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAA C,SAAS,eAAe,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC

,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,C  
AAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CA  
AC,CAAC,KAAK,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,  
EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,EAAE,GAAG,CAAC,EAAE,GAAG,CAAC,KAAK,GA  
AG,CAAC,EAAE,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,KAAK,GAAG,CAAC,EAAE,KAAK,CAAC,GAAG,  
EAAE,CAAC,CAAC,KAAK,GAAG,EAAE,EAAC,CAAC,OAAO,GAAG,CAAC,SAAS,kBAakB,CAAC,KAAK,  
CAAC,MAAM,CAAC,CAAC,gBAagB,EAAE,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,SAA  
S,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,GAAG,CAAC,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,  
CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,SAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,KAAK,CA  
AC,MAAM,CAAC,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,OAAO,CAAC,S  
AAS,0BAA0B,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC  
,KAAK,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,I  
AAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CA  
AC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CA  
AC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,WAaw,CAAC,GAAG,CAAC,CAAC,MAA  
M,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,WAaw,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,  
CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OA  
AO,CAAC,IAAI,YAAY,CAAC,GAAG,EAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAagB,CAAC,EAAE  
,QAAQ,CAAC,GAAG,sBAAsB,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CA  
AC,MAAM,CAAC,QAAQ,EAAC,CAAC,KAai,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,UA  
AU,CAAC,MAAM,CAAC,YAAY,EAAC,CAAC,KAai,CAAC,UAAU,CAAC,IAAI,WAaw,CAAC,MAAM,CA  
AC,CAAC,SAAS,CAAC,cAAc,CAAC,KAAK,CAAC,SAAS,CAAC,UAAU,CAAC,KAAK,CAAC,QAAQ,CAAC,  
IAAI,CAAC,CAAC,CAAC,GAAG,EAAE,UAAU,CAAC,MAAM,YAAY,iBAaiB,CAAC,CAAC,CAAC,GAAG,C  
AAC,6NAA6N,CAAC,CAAC,GAAG,mBAamB,CAAC,CAAC,OAAO,CAAC,GAAG,CAAC,mHAaH,EAAC,  
CAAC,MAAM,KAAK,CAAC,YAAY,CAAC,CAAC,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,MAAM,CAAC,  
UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,UAAU,CAAC,0BAA0B,CAAC,MAAM,CAAC,CAA  
C,IAAI,SAAS,CAAC,IAAI,YAAY,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,  
EAAE,CAAmB,IAAI,aAAa,CAAC,EAAE,CAAsD,GAAG,CAAC,sBAAsB,CAAC,UAAU,CAAC,IAAI,CAAC,C  
AAC,IAAI,CAAC,UAAU,CAAC,kBAakB,GAAE,CAAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,GA  
AG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,  
QAAQ,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,  
CAAC,CAAC,MAAM,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,WAaw,CAAC,MAAM,CA  
AC,QAAQ,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,YAAY,EAAC,CAAC,SAAS,WA  
AW,EAAE,CAAyB,GAAG,sBAAsB,CAAC,OAAO,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,  
CAAC,GAAG,sBAAsB,CAAC,OAAO,oBAAoB,CAAC,UAAU,EAAC,CAA4E,SAAS,OAAO,EAAE,CAAC,GA  
AG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,S  
AAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CA  
AC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,MAAM,CAAC,S  
AAS,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,aAAa,EAAC,CAAC,SAAS,WAaw,C  
AAC,EAAE,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,EAAE,EAAC,CAAC,SAAS,YAAY,CAAC,EAAE,CAA  
C,CAAC,aAAa,CAAC,OAAO,CAAC,EAAE,EAAC,CAAC,IAAI,eAAe,CAAC,CAAC,CAA+B,IAAI,qBAaqB,C  
AAC,IAAI,CAAC,SAAS,gBAagB,CAAC,EAAE,CAAC,CAAC,MAAM,CAAC,CAAC,sBAAsB,CAAC,qDAaq  
D,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAawB,CAAC,CAAC,CAAC,MAAM,CAAC,wB  
AAwB,CAAC,CAAC,eAAe,EAAC,CAAC,CAAC,SAAS,mBAamB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,C  
AAC,GAAG,MAAM,CAAC,wBAawB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAawB,CAAC,CAAC,eAAe,EA  
AC,CAAC,GAAG,eAAe,EAAE,CAAC,CAAC,CAA+F,GAAG,qBAaqB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBA  
AqB,CAAC,qBAaqB,CAAC,IAAI,CAAC,QAAQ,GAAE,CAAC,CAAC,CAAC,MAAM,CAAC,iBAaiB,CAAC,C  
AAC,EAAE,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,EAAE,CAAC,SAAS,KAAK,CAAC,IAAI,CAAC,CA

AC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC  
,GAAG,sBAAsB,CAAC,OAAO,CAAC,KAAC,CAAC,sBAAsB,CAAC,CAAC,IAAI,KAAC,EAAE,KAAC,CAAC  
,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,IAAI,CAAc,IAAI,CAAC,Q  
AAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,IAAI,CAAC,CAAC,IAAI,WAAW,CAAC,YAAY,CAAC,IAAI,CAAC  
,CAAC,kBAAkB,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,SAAS,SAAS,CAAC,GAAG,CAAC,MAA  
M,CAAC,CAAC,OAAO,MAAM,CAAC,SAAS,CAAC,UAAU,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAA  
C,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC  
,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa  
,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAA  
C,CAAC,IAAI,cAAc,CAAC,sCAAsC,CAAC,GAAG,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CA  
AC,UAAU,CAAC,cAAc,EAAC,CAAC,SAAS,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,IAAI,EA  
AE,cAAc,EAAE,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,  
CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,MAAK,iDAAiD,CAAC,CAAC,MAAM,GAAG,  
CAAC,CAAC,KAAC,CAAC,GAAG,EAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,  
GAAG,kBAAkB,EAAE,qBAAqB,CAAC,CAAC,CAAC,GAAG,OAAO,KAAC,GAAG,UAAU,EAAE,CAAC,SA  
AS,CAAC,cAAc,CAAC,CAAC,CAAC,OAAO,KAAC,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,  
CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAA  
C,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,CAAC,OAAO,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,  
CAAC,KAAC,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,GA  
AG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,  
cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,EAAC,CAAC,CAA  
C,MAAM,EAAC,CAAC,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,OAAO,EAAE,CAAC,IAAI,CAAC,  
UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,  
CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,IAA  
I,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,  
MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,GAAG,CAAC,sBAAs  
B,CAAC,CAAC,IAAI,gBAAgB,CAAC,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,  
OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,OAAO,CAAC,sBAAsB,CAAC,CAAC,CAAC,UAAU,CAAC,GAAG,  
CAAC,EAAE,gBAAgB,CAAC,mBAAmB,CAAmB,EAAC,CAAC,EAAC,CAAC,EAAC,CAAC,CAAC,GAAG,C  
AAC,sBAAsB,CAAC,CAAC,gBAAgB,CAAmB,EAAC,CAAC,SAAS,yBAAyB,CAAC,MAAM,CAAC,CAAC,eA  
Ae,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,sBAAsB,C  
AAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAAE,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,W  
AAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SA  
AS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAAyC,CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,MAAM,EAAC,  
CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAA  
oB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,O  
AAO,KAAC,GAAG,UAAU,CAAC,CAAC,OAAO,KAAC,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CA  
AC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAAoB,CAA  
C,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,CAAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC  
,CAAC,GAAG,CAAC,iCAAiC,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBA  
AsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB  
,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,  
MAAM,CAAC,iBAAiB,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,C  
AAC,CAAC,GAAG,CAAC,qDAAqD,CAAC,CAAC,CAAC,CAAC,OAAO,KAAC,CAAC,CAAC,gBAAgB,EAA  
E,CAAC,KAAC,CAAC,kBAAkB,CAAC,CAAC,OAAM,EAAE,CAAC,IAAI,UAAU,CAAC,CAAC,KAAC,CAA  
C,UAAU,CAAC,MAAK,WAAW,CAAC,CAAC,KAAC,CAAC,SAAS,EAAE,CAAC,EAAE,CAAC,CAAC,UAA  
U,CAAC,UAAU,CAAC,kCAAkC,CAAC,EAAE,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAA  
C,CAAC,SAAS,cAAc,EAAE,CAAC,OAAO,CAAC,WAAW,GAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS,CAAC,



CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAAK,EA  
AE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CA  
AC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,GAAG,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QA  
AQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAAI,C  
AAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,KAAI,CAAC  
,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAA  
C,CAAC,IAAI,WAAW,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,  
EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,KAAK,C  
AAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,M  
AAM,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,  
CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,  
EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,MAAM,C  
AAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,M  
AAM,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CA  
AC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EA  
AE,CAAC,IAAI,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC  
,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAA  
M,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CA  
AC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,GA  
AG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,C  
AAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,M  
AAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,C  
AAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,  
EAAE,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,C  
AAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,CAAC,QA  
AQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CA  
AC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,QAAQ,CAAC,GA  
AG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,YAA Y,CAAC,EAAE,CAAC,KAAK,CAA  
C,EAAE,CAAC,UAAU,CAAC,GAAG,CAAC,YAA Y,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,OAAO,  
CAAC,EAAE,CAAC,YAA Y,CAAC,CAAC,CAAC,UAAU,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,W  
AAW,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CAAC,YAA Y,CAAC,EAAE,CAAC,UAAU,CAAC,CAAC,CA  
AC,YAA Y,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,SAAS,CAAC,EAA  
E,CAAC,SAAS,CAAC,GAAG,CAAC,YAA Y,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,QAAQ,CAAC,  
CAAC,CAAC,YAA Y,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,eAAe,CAA  
C,GAAG,CAAC,aAAa,CAAC,CAAC,CAAC,SAAS,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,C  
AAC,EAAE,CAAC,YAA Y,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,M  
AAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CA  
AC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,UAAU,CAAC,EAAE,C  
AAC,QAAQ,CAAC,GAAG,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,GAAG,IA  
AI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,CAAC,  
EAAE,KAAK,CAAC,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,KAAK,EAAE,CAAC,CAAC,OAAO,C  
AAC,CAAC,GAAG,KAAK,EAAE,UAAU,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,qBAaQb,CAAC,OAAO,C  
AAC,IAAI,CAAC,iBAaiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,CAAC,CAA  
C,GAAG,qBAaQb,EAAE,IAAI,CAAC,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,eAAe,CAAC,iBAaiB,EAAE,  
CAAC,8BAA8B,EAAE,CAAC,CAAC,qBAaQb,CAAC,CAAC,CAAC,CAAC,GAAG,UAAU,EAAE,qBAaQb,CA  
AC,CAAC,EAAE,KAAK,CAAC,eAAe,CAAC,CAAC,CAAC,GAAG,KAAK,EAAE,CAAC,CAAC,OAAO,CAAC  
,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,iBAaiB,EAAE,CAAC,IAAI,EAAE,CAAC,CA  
AC,KAAK,CAAC,CAAC,GAAG,GAAG,EAAE,CAAC,CAAC,OAAO,GAAG,CAAC,eAAe,CAAC,MAAK,8CA

A8C,CAAC,GAAG,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,sBAAsB,CAAC,SAAS,UAAU,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,oFAAoF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,iDAAD,CAAC,iBAAiB,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,EAAE,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,UAAU,CAAC,SAAS,YAAY,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,sFAAsF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,mDAAmD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,aAAa,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,uFAAuF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,oDAAoD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,GAAG,OAAO,CAAC,CAAC,iBAAiB,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,kBAaKB,CAAC,MAAM,EAAC,CAAC,CAAC,IAAI,OAAO,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,oBAaOB,GAAE,CAAC,CAAC,CAAC,WAAW,CAAC,UAAU,CAAC,IAAI,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,EAAE,CAAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,SAAS,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,wBAAwB,CAAC,EAAE,CAAC,CAAC,qBAaQB,CAAC,CAAC,CAAC,CAAC,2CAA2C,CAAC,EAAE,EAAC,CAAC,CAAC,UAAU,CAAC,UAAU,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,kBAaKB,CAAC,EAAE,CAAC,eAAe,CAAC,UAAU,EAAE,CAAC,eAAe,CAAC,UAAU,CAAC,MAAM,OAAO,CAAC,kBAaKB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,GAAG,EAAE,GAAE,CAAC,GAAG,sBAAsB,EAAE,aAAa,EAAE,CAAC,wBAAwB,GAAE,CAAC,CAAC,8BAA8B,CAAC,SAAS,EAAE,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,eAAe,EAAE,CAAC,OAAO,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,UAAU,CAAC,CAAC,wBAAwB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,UAAU,CAAC,SAAS,QAAQ,CAAC,CAAC,IAAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,OAAO,CAAC,8BAA8B,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,EAAC,CAAC,CAAC,CAAC,CAAC,YAAY,CAAC,UAAU,CAAC,OAAO,CAAC,8BAA8B,CAAC,aAAa,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,OAAO,EAAE,OAAO,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAO,CAAC,MAAM,EAAC,CAAC,CAAC,OAAO,CAAC,QAAQ,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,aAAa,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,C

AAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,cAAc,CAAC,GAAE,CAAC,CAAC,cAAc,CAAC,SAAS ,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,GAAG,OAAO,CAAC,gBAAgB,CAAC,CAAC,IAAI, SAAS,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,iBAAi B,EAAE,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,CAA C,SAAS,CAAC,CAAC,KAAC,CAAC,OAAO,CAAC,gBAAgB,EAAC,CAAC,OAAO,CAAC,gBAAgB,CAAC,CA AC,CAAC,GAAG,OAAO,CAAC,iBAAiB,EAAE,OAAO,CAAC,SAAS,CAAC,KAAC,CAAC,OAAO,CAAC,SA AS,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,OAAO,CAA C,MAAM,CAAC,OAAO,CAAC,KAAC,CAAC,CAAC,kBAaB,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CA AC,+BAA+B,CAAC,UAAU,CAAC,OAAO,OAAO,CAAC,QAAQ,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAg B,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,M AAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,CA AC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,UAAU,CAAC,EAAC,CAA C,CAAC,+BAA+B,CAAC,SAAS,IAAI,CAAC,CAAC,iBAAiB,EAAE,CAAC,4CAA4C,EAAE,CAAC,CAAC,CA AC,CAAC,CAAC,GAAG,CAAC,IAAI,GAAE,CAAC,OAAO,CAAC,iBAAiB,EAAE,CAAC,4CAA4C,EAAE,CA AC,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,qBAaqB,CAAC,SAAS,IAAI,CAAC,EAAE,CAAC,sBAAsB,CA AC,SAAS,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,SAAS,CAAC,CAAC,CAAC,IAA I,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,KAAC,CAAC,CAAC,G AAG,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,mCAAmC,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAgB,C AAC,GAAG,CAAC,CAAC,cAAc,CAAC,EAAE,CAAC,CAAC,cAAc,CAAC,EAAE,aAAa,EAAE,CAAC,CAAC,I AAI,MAAM,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,YAAY,CAAC,CAAC,GAAG,MAAM,CAAC,C AAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,cAAc,CAAC,EA AC,CAAC,KAAC,CAAC,OAAO,CAAC,KAAC,CAAC,yCAayC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,C AAC,cAAc,CAAC,CAAC,qCAAqC,EAAC,CAAC,OAAO,CAAC,mCAAmC,CAAC,SAAS,CAAC,MAAM,CAA C,GAAG,GAAG,GAAG,6BAA6B,CAAC,CAAC,4CAA4C,GAAE,CAAC,KAAC,GAAG,GAAG,GAAG,aAAa,C AAC,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,eAAe,CAAC,CAA C,aAAa,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,YAAY,CAAC,CAAC, UAAU,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,cAAc,CAAC,CAAC,Y AAY,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,M AAM,CAAC,MAAM,CAAC,IAAI,CAAC,GAAG,iBAAiB,CAAC,iBAAiB,CAAC,MAAM,CAAC,CAAC,GAAG, MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,UAAU,EAAE,CAAC,OAAO,MAAM,CAAC,WAAU,CAA C,CAAC,KAAC,GAAG,GAAG,GAAG,OAAO,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU ,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,UAAU,C AAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAA M,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,OAAO,CAAC,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC ,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAC,GAAG,GAAG,G AAG,MAAM,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,OAAO,EAAE,OAAO,CAAC,IAAI,CAAC,iBA AiB,EAAE,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAgB,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,Q AAQ,CAAC,CAAC,OAAO,CAAC,kBAaB,CAAC,MAAM,EAAC,CAAC,CAAC,KAAC,GAAG,GAAG,GAAG, aAAa,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,CAAC,YAAY,CAAC,EAAC,CAAC,MAAM,CAAC,CA AC,CAAC,GAAG,CAAC,YAAY,UAAU,CAAC,OAAO,MAAM,CAAC,CAAC,CAAC,KAAC,GAAG,GAAG,GA AG,YAAY,CAAC,CAAC,OAAO,CAAC,kBAaB,CAAC,MAAM,EAAC,CAAC,KAAC,GAAG,GAAG,GAAG,g BAAGB,CAAC,CAAC,OAAO,CAAC,qBAaqB,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAC,GAAG,CAAC, CAAC,IAAI,CAAC,MAAM,GAAG,cAAc,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EA AC,CAAC,KAAC,CAAC,GAAG,CAAC,iCAaiC,CAAC,GAAG,EAAC,CAAC,OAAO,CAAC,mCAAmC,CAAC, UAAS,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,yBAayB,CAAC ,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,OAAO,E AAC,CAAC,CAAC,GAAG,mBAaB,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,SAAS,IAAI,C AAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,EAAC,CAAC,CAAC,CAAC,MAA

M,CAAC,EAAE,CAAC,OAAO,CAAC,SAAS,IAAI,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,IAAI,EAAC,C  
AAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,SAAS,IAAI,CAAC,EAAE,EAAC,CAAC,MA  
AM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,WAAW,CAAC,MAAM,CAAC,qBAAqB,CAA  
C,EAAE,UAAU,CAAC,YAAY,CAAC,UAAU,CAAC,YAAY,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,oBAA  
oB,CAAC,UAAU,CAAC,IAAI,aAAa,CAAC,UAAU,CAAC,2CAA2C,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,  
IAAI,CAAC,IAAI,MAAM,CAAC,aAAa,CAAC,EAAC,CAAC,CAAC,YAAY,CAAC,UAAU,CAAC,GAAG,OAA  
O,CAAC,aAAa,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,oBAAoB,EAAE,CAAC,OAAO,CAA  
C,sBAAsB,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,CAAC,EAAC,CAAC,GAAG,OAAO,CAAC,aAAa,CAAC,  
MAAM,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,aAAa,CAAC,GAAG,EAAE,CAAC,KAAK,OAAO,IAAI,CA  
AC,CAAC,YAAY,CAAC,SAAS,KAAK,CAAC,CAAC,IAAI,CAAC,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC  
,KAAK,CAAC,MAAM,WAAW,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,  
mBAAmB,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,4BAA4B,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,Y  
AAY,CAAC,QAAQ,EAAC,CAAC,MAAM,CAAC,qBAAqB,CAAC,CAAC,mBAAmB,CAAC,SAAS,gBAAgB,E  
AAE,CAAC,OAAO,aAAa,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,gBAAgB,CAAC,SAAS,gBAAgB,CAA  
C,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,GAAG,CAAC,  
CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,gBAAgB,CAAC,SAAS,cAAc,CAAC,SAAS,CAAC,QAAQ,CAA  
C,IAAI,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,QAAQ,C  
AAC,CAAC,QAAQ,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,kBAakB,CAAC,IAAI,CAAC,IAAI,CAAC,YA  
AY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,EAAC,CAAC,SAAS,YAAY,CAAC,IAAI,CAAC,IAAI,CAAC,C  
AAC,IAAI,UAAU,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,IAAI,mBAAmB,CAAC,GAAG,mBA  
AmB,CAAC,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC,OAAO,CAAC,QAAQ,CAAC,EAAE,C  
AAC,OAAO,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,EA  
AC,CAAC,KAAK,GAAG,sBAAsB,CAAC,CAAC,mBAAmB,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,GAA  
G,EAAE,CAAC,MAAM,CAAC,+BAA+B,CAAC,EAAC,CAAC,KAAK,GAAG,OAAO,OAAO,GAAG,WAAW,C  
AAC,CAAC,mBAAmB,CAAC,QAAO,CAAC,KAAK,mBAAmB,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,G  
AAG,EAAE,CAAC,CAAC,SAAS,QAAQ,CAAC,KAAK,CAAC,CAAC,iBAaiB,EAAE,CAAC,iBAaiB,EAAE,E  
AAE,CAAC,CAAC,CAAC,KAAK,CAAC,OAAO,KAAK,CAAC,SAAS,OAAO,CAAC,IAAI,CAAC,GAAG,CAA  
C,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CA  
AC,CAAC,SAAS,gCAAgC,CAAC,cAAc,CAAC,YAAY,CAAC,CAAC,GAAG,cAAc,EAAE,YAAY,CAAC,CAA  
C,WAAW,CAAC,CAAC,KAAK,CAAC,6BAA6B,CAAC,EAAC,CAAC,KAAK,GAAG,sBAAsB,CAAC,CAAC,  
WAAW,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,KAAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,KAAI,CAAC,I  
AAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,EAAE,OAA  
O,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,C  
AAC,KAAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,OAAO,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,KAAK,  
GAAE,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,IAAI,CAAC,gB  
AAgB,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,I  
AAI,CAAC,IAAI,CAAC,CAAC,SAAS,iDAaiD,CAAC,cAAc,CAAC,SAAS,CAAC,EAAE,SAAS,sBAAsB,CAAC  
,IAAI,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EA  
AE,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,CAAC  
,kBAakB,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,IAAI,CAAC,iBAaiB,EAAE,CAAC,IAAI,EAAE,CA  
AC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,GAAG,GAAG,WAAW,CAAC,OAAM,CAAC,EAAE,CA  
AC,GAAG,GAAG,GAAG,WAAW,CAAC,OAAM,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,CAAC,OA  
AO,CAAC,CAAC,MAAK,4CAA4C,CAAC,GAAG,CAAC,KAAI,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,iBA  
AiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,I  
AAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,IAAI,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,IAAI,QAAQ,C  
AAC,OAAO,CAAC,QAAQ,CAAC,iBAaiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,CAAC,CAAC,M  
AAM,CAAC,CAAC,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,GAAG,IAAI,CAAC,IAAI,CAAC,  
CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAaiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAA

C,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAA  
C,8BAA8B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,QAAQ,EAAE,CAAC,CAAC,CAAC,KAAC,CAA  
C,4CAA4C,EAAE,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,  
EAAE,GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,  
EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,EAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sBAAsB,  
CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,gBAAgB,EAAE,CAAC,UAAU,CAAC,IAAI,CAAC,GA  
AG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,6BAA6B,EAAE,CAAC,GAAG,mBAAmB,CAAC,OAAO  
C,EAAa,CAAC,IAAI,EAAE,CAAC,MAAM,CAAC,OAAO,SAAS,CAAC,qBAaQB,CAAC,CAAC,SAAS,mCAA  
mC,CAAC,KAAC,CAAC,IAAI,CAAC,CAAC,IAAI,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,  
IAAI,KAAC,CAAC,SAAS,EAAE,CAAC,IAAI,qBAaQB,CAAC,WAAW,CAAC,IAAI,IAAI,CAAC,UAAU,CAA  
C,qBAaQB,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,IAAI,IAAI,CAAC,CAA  
C,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,SAAS,CAAC,C  
AAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAG,CAAC,IAA  
I,GAAG,CAAC,yCAAYC,CAAC,KAAC,CAAC,qBAaQB,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,YAAAY,CAAC  
,KAAC,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,8CAA8C,CAAC,EAAE,CAAC,IAAI,qBAaQB,CAAC,EAAE,  
CAAC,SAAS,gBAAgB,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,qBAaQB,CAAC,MAAM,CAAC,CAAC,CA  
AC,IAAI,EAAE,CAAC,GAAG,GAAG,CAAC,CAAC,MAAM,EAAE,CAAC,gBAAgB,EAAE,CAAC,MAAM,EA  
AE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,GAAG,CAAC,GAAG,MAAM,EAAE,GAAG,CAA  
C,CAAC,CAAC,GAAG,EAAE,CAAC,qBAaQB,CAAC,IAAI,CAAC,MAAM,CAAC,iBAAiB,EAAE,CAAC,GAA  
G,EAAE,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE,IAAG,CAAC,  
OAAO,qBAaQB,CAAC,SAAS,qCAAqC,CAAC,KAAC,CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,8CAA8C,CA  
AC,MAAM,CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CA  
AC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,EAAE,CAAC,CAAC,8CAA8C,CAAC,CAAC,CAAC,CAAC,iB  
AAiB,EAAE,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,YAAAY,CAAC,KAAC,CAAC,CAAC,CAAC,IAAI,  
IAAI,CAAC,CAAC,YAAAY,CAAC,oBAAoB,CAAC,KAAC,CAAC,CAAC,UAAU,CAAC,CAAC,KAAC,CAAC,  
CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,KAAC,CAAC,IAAI,CAAC,8CAA8C,CAAC,CAAC,SAAS,yBAAYB,E  
AAE,CAAC,OAAO,gBAAgB,EAAE,CAAC,MAAM,CAAC,SAAS,yBAAYB,CAAC,IAAI,CAAC,CAAC,GAAG,  
CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,UAAU,CAAC,KAAC,GAAG,EAAE,CAAC,CA  
AC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,C  
AAC,SAAS,uBAAuB,CAAC,aAAa,CAAC,CAAC,IAAI,OAAO,CAAC,yBAAYB,EAAE,CAAC,GAAG,aAAa,EA  
AE,OAAO,CAAC,CAAC,OAAO,KAAC,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,GAAG,aAAa,CAAC,WAA  
W,CAAC,CAAC,OAAO,KAAC,CAAC,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,O  
AAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,OAAO,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO,CAA  
C,CAAC,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iBAAiB,CAAC,aAAa,CAAC,SAAS,CAAC,CAAC,IAAI,O  
AAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,aAAa,CAAC  
,iBAAiB,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,yBAAYB,CAAC,OAAO,CAAC,CAA  
C,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,OAAO,KAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,c  
AAc,CAAC,CAAC,CAAC,uBAAuB,CAAC,UAAU,CAAC,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC  
,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,cAAc,C  
AAC,CAAC,EAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,GAAE,CAAC  
,CAAC,4BAA4B,CAAC,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,8BAA8B,CAAC,CAAmD,QAAQ,CAAC,8  
BAA8B,CAAC,KAAC,CAAC,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,SAAS,CAAC,SAAS,cAAc,CAAC,UAA  
U,CAAC,QAAQ,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,GAAG,IAAI,CAAC,MA  
AM,EAAE,IAAI,CAAC,MAAM,CAAC,OAAO,KAAC,CAAC,IAAI,IAAI,CAAC,IAAI,IAAI,CAAC,CAAC,GAA  
G,IAAI,CAAC,CAAC,CAAC,EAAE,IAAI,CAAC,CAAC,CAAC,CAAC,OAAO,KAAC,CAAC,OAAO,IAAI,CAA  
C,IAAI,IAAI,CAAC,IAAI,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,aAAa,CAAC,CA  
AC,CAAC,CAAC,GAAG,IAAI,CAAC,cAAc,EAAE,cAAc,EAAE,sBAAsB,CAAC,IAAI,CAAC,QAAQ,CAAC,Q  
AAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC,cAAc,CAAC



CAAC,SAAS,CAAC,CAAC,CAAC,eAAe,CAAC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,SAAS,qDAAqD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,EAAC,CAAC,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,SAAS,sBAAsB,CAAC,OAAO,CAAC,CAAC,OAAO,OAAO,CAAC,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,OAAO,CAAC,IAAI,kBAakB,CAAC,CAAC,CAAC,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,CAAC,CAAC,OAAO,MAAM,GAAG,WAAW,CAAC,MAAM,CAAC,CAAC,CAAC,SAAS,eAAe,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,kBAakB,CAAC,MAAM,CAAC,GAAG,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,UAAU,CAAC,SAAS,qBAAqB,CAAC,MAAM,CAAC,CAAC,OAAO,eAAe,CAAC,MAAM,CAAC,CAAC,SAAS,kDAakD,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,eAAe,CAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,EAAE,CAAC,CAAC,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAM,CAAC,GAAG,MAAM,CAAC,eAAe,EAAE,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,GAAG,MAAM,CAAC,eAAe,CAAC,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,IAAI,kBAakB,CAAC,KAAC,CAAC,GAAG,MAAM,CAAC,WAAW,EAAE,MAAM,CAAC,WAAW,CAAC,KAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,WAAW,CAAC,KAAC,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,YAAY,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,OAAM,CAAC,MAAM,CAAC,KAAC,CAAC,KAAC,CAAC,MAAM,CAAC,MAAM,CAAC,MAAM,CAAC,GAAG,kBAakB,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,KAAC,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,CAAC,KAAC,GAAG,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,YAAY,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,qDAAqD,CAAC,YAAY,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,KAAC,CAAC,OAAM,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,+CAA+C,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,OAAO,kDAakD,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,OAAO,kDAakD,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,OAAO,+CAA+C,CAAC,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,SAAS,qCAAqC,CAAC,SAAS,CAAC,EAAE,SAAS,2BAA2B,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE,SAAS,qCAAqC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,wBAAwB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,qBAAqB,CAAC,CAAC,SAAS,KAAC,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,KAAC,CAAC,OAAO,EAAC,CAAC,CAAC,GAAG,CAAC,qBAAqB,CAAC,CAAC,SAAS,IAAI,CAAC,KAAC,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,IAAI,CAAC,KAAC,CAAC,KAAC,CAAC,SAAS,EAAC,CAAC,CAAC,GAAG,CAAC,uBAAuB,CAAC,CAAC,SAAS,IAAI,CAAC,KAAC,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,4BAA4B,CAAC,CAAC,IAAI,CAAC,KAAC,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sCAAsC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,yBAAyB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAO,GAAG,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,mBAAmB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,iBAAiB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,oBAAoB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,eAAe,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,kBAakB,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,iCAAiC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,oBAAoB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,+BAA+B,

CAAC,GAAG,CAAC,CAAC,OAAM,CAAC,EAAE,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,YAAY,CAAC,kB  
AAkB,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAA  
C,QAAQ,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,aAAa,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,C  
AAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE  
,CAAC,iBAAiB,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,WAAW,CAAC,E  
AAE,CAAC,eAAe,CAAC,CAAC,CAAC,WAAW,CAAC,SAAS,WAAW,CAAC,SAAS,CAAC,CAAC,GAAG,CA  
AC,EAAE,CAAC,SAAS,CAAC,CAAC,EAAE,CAAC,SAAS,CAAC,UAAS,CAAC,CAAC,CAAC,QAAQ,CAAC,  
SAAS,KAAK,CAAC,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,OAAO,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,  
KAAK,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,C  
AAC,CAAC,KAAI,CAAC,OAAO,GAAG,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,KAAK,CAAC,MA  
AM,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,C  
AAC,CAAC,KAAK,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,iBAAiB,EAAE,CA  
AC,MAAM,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,YA  
AY,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CA  
AC,CAAC,CAAC,SAAS,CAAC,GAAG,EAAC,CAAC,OAAO,MAAM,CAAC,CAAC,aAAa,CAAC,SAAS,MAA  
M,CAAC,sBAAsB,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,OAAO,CAAC,sBAAsB,CA  
AC,CAAC,GAAG,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,eAAe,CAAC,  
GAAG,CAAC,sBAAsB,CAAC,CAAC,OAAO,MAAM,CAAC,CAAC,eAAe,CAAC,SAAS,GAAG,CAAC,sBAAs  
B,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAA  
C,CAAC,EAAE,CAAC,CAAC,CAAC,aAAa,EAAE,CAAC,IAAI,OAAO,CAAC,CAAC,MAAM,CAAC,MAAM,C  
AAC,UAAU,CAAC,sBAAsB,CAAC,OAAO,CAAC,sBAAsB,CAAC,YAAY,CAAC,KAAK,CAAC,GAAG,CAAC  
,CAAC,GAAG,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,WAAW,CAAC,OAAO,CAAC,EAA  
E,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,GAAG,OAAO,sBAAsB,CAAC,yBAAYB,GAAG,  
WAAW,EAAE,sBAAsB,CAAC,yBAAYB,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,OAAO,EAAC,CAAC,OAA  
O,MAAM,CAAC,CAAC,kBAaKB,CAAC,SAAS,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,  
QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,CAAC,cAAc,EAAE,EA  
AE,CAAC,cAAc,CAAC,KAAK,CAAC,OAAM,EAAE,aAAa,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,UAAU,  
CAAC,SAAS,aAAa,CAAC,CAAC,OAAO,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,aAAa,CAAC  
,SAAS,aAAa,CAAC,CAAC,GAAG,EAAE,CAAC,cAAc,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAA  
C,EAAE,CAAC,cAAc,CAAC,IAAI,CAAC,GAAG,OAAO,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC,yBAAYB,  
CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,GAAG,EAAE,C  
AAC,QAAQ,CAAC,aAAa,CAAC,EAAE,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAA  
M,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,WAAW,CAAC,SAAS  
,CAAC,KAAK,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,Q  
AAQ,CAAC,aAAa,CAAC,CAAC,KAAI,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,  
OAAO,CAAC,OAAO,CAAC,EAAE,CAAC,cAAc,CAAC,GAAG,OAAO,CAAC,kBAaKB,CAAC,OAAO,OAAO,  
CAAC,kBAaKB,CAAC,IAAI,CAAC,IAAI,KAAK,CAAC,OAAO,CAAC,KAAK,CAAC,qCAAqC,CAAC,KAAK,  
CAAC,CAAC,sCAAsC,CAAC,KAAK,CAAC,CAAC,iCAAiC,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,qBAA  
qB,CAAC,KAAK,CAAC,YAAY,CAAC,0BAA0B,CAAC,CAAC,+BAA+B,CAAC,KAAK,CAAC,CAAC,IAAI,IA  
AI,CAAC,KAAK,CAAC,sBAAsB,EAAE,EAAE,EAAE,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,  
CAAC,GAAG,GAAG,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,OAAO,CAAC,O  
AAO,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,YAAY,CAAC,GAAG,EAAC,CAAC,CAAC,EAAC,CA  
AC,CAAC,oBAAoB,CAAC,SAAS,OAAO,CAAC,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,OAA  
O,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,  
EAAE,CAAC,gBAAgB,CAAC,CAAC,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,yBAAYB,CAAC,CAAC,CA  
AC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,IAAI,WAAW,CAAC,KAAK,CAAC,mBA  
AmB,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAA  
W,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,gBAAgB,CAAC,CAAC,CAAC,CAAC



,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,GAA  
G,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAA  
C,KAAK,CAAC,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,CA  
AC,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,CAAC,EAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,kBAak  
B,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,QA  
AQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,  
CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,IAAI,IAAI,CAAC  
,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAA  
C,IAAI,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,KAAK,CAAC,kBAakB,CAAC,CAA  
C,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,  
EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,IAAG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,oCA  
AoC,CAAC,CAAC,SAAS,CAAC,WAAW,CAAC,kBAakB,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAA  
C,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,UAAU,EAAE,CAAC,CAAC,IAAI,eAAe,CAAC,iBAaiB,EAAE,CA  
AC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,IAAI,iBAaiB,CAAC,CAAC,OAAO,CAAC,CAAC,  
CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,C  
AAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CA  
AC,iBAaiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,CA  
AC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,oBAaoB,CAAC,CAAC,CA  
AC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,uBAauB,CAAC,CAAC,CA  
AC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,iBAaiB,CAAC,oCAoC,C  
AAC,eAAe,CAAC,CAAC,8BAA8B,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,C  
AAC,CAAC,CAAC,CAAC,YAAY,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CA  
AC,CAAC,YAAY,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,yBA  
AyB,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,i  
BAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,wBAawB,CAAC,iBAaiB,EAA  
E,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,4BAA4B,CAAC,iBAaiB,EAAE,CAAC,CAA  
C,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,qBAaqB,CAAC,MAAM,CAA  
C,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,iBAaiB,CAAC,mBAAmB,CAAC,  
CAAC,OAAO,CAAC,CAAC,IAAI,aAAa,CAAC,EAAE,CAAC,aAAa,CAAC,MAAM,CAAC,iBAaiB,CAAC,CA  
AC,OAAO,aAAa,CAAC,SAAS,gCAAgC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,OAAO,mCAAmC,CAAC,E  
AAE,CAAC,EAAE,CAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAA  
C,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC,CAAC,IAA  
I,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,EAAE,IAAI,G  
AAG,EAAE,CAAC,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBAaiB,CAAC,  
MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAC,CAAC,KAAI,CAAC,MAAM  
,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAA  
C,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,iBAaiB,EAAE,CAAC,QAAQ,CAAC,OAAO,  
CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CAAC,C  
AAC,IAAI,GAAG,CAAC,YAAY,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAK,CAAC,SA  
S,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,CA  
AC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,OAAO,  
CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,C  
AAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,UAAU,CAA  
C,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CAAC,MAA  
M,CAAC,IAAI,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,EA  
AE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CA  
AC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,iBAai  
B,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,iBAaiB,

EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI  
,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,SAAS,C  
AAC,EAAE,CAAC,gBAAgB,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,GAAG,EAAE,IAAG,CA  
AC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,SAAS,oBAA  
oB,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,kBAakB,CAAC,GAAG,EAAE,CAAC,GAA  
G,OAAO,CAAC,OAAO,GAAE,CAAC,SAAS,qBAaqB,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,CA  
AC,kBAakB,CAAC,IAAI,CAAC,UAAU,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,EA  
C,CAAC,EAAC,CAAC,SAAS,WAAW,CAAC,YAA Y,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,qFAAqF,C  
AAC,IAAI,MAAM,CAAC,OAAO,CAAC,YAA Y,EAAE,CAAC,GAAG,MAAM,CAAC,OAAO,GAAG,SAAS,CA  
AC,MAAK,iBAAiB,CAAC,GAAG,CAAC,YAA Y,CAAC,WAAW,CAAC,MAAK,iCAAiC,CAAC,OAAO,CAAC,  
cAAc,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,IAAI,SAAS,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAA  
C,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,CAAC,CAAC,iBA  
AiB,EAAE,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,SAAS,C  
AAC,YAA Y,CAAC,SAAS,CAAC,YAA Y,CAAC,SAAS,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAA  
C,YAA Y,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,SAAS,CAAC,YAA Y,CAAC,SA  
S,CAAC,SAAS,CAAC,YAA Y,CAAC,SAAS,CAAC,iBAAiB,CAAC,YAA Y,CAAC,iBAAiB,CAAC,gBAAgB,CA  
AC,YAA Y,CAAC,WAAW,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,gBAAgB,EAAE,CAAC,CAAC,OA  
AO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,YAA Y,CAA  
C,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAA  
C,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,  
EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,gBAAgB,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAA  
E,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,YAA Y,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,K  
AAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OA  
AO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,YAA Y,CA  
AC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,CAAC,CAA  
C,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,  
EAAE,GAAG,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,YAA Y,CAAC,QAAQ,CAAC,CAAC,IAAI,WAAW,CA  
AC,2BAA2B,EAAE,CAAC,IAAI,aAAa,CAAC,WAAW,CAAC,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBA  
AiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,OAA  
O,CAAC,OAAO,CAAC,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,eAAe,CAAC,YAA Y,CAAC,Y  
AA Y,CAAC,KAAK,CAAC,YAA Y,CAAC,GAAG,CAAC,kBAakB,CAAC,YAA Y,CAAC,WAAW,CAAC,WAA  
W,CAAC,YAA Y,CAAC,SAAS,CAAC,WAAW,CAAC,YAA Y,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,UAA  
U,CAAC,UAAU,CAAC,GAAG,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,WAA  
W,CAAC,GAAG,CAAC,YAA Y,CAAC,YAA Y,EAAC,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CA  
AC,MAAM,CAAC,UAAU,EAAE,CAAC,OAAO,MAAM,CAAC,WAAU,CAAC,CAAC,SAAS,eAAe,CAAC,WA  
AW,CAAC,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,CAAC,GAAG,OAAO,iBAAiB,GAAG,WAAW,CAAC,CA  
AC,GAAG,CAAC,qFAAqF,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,WAAW,CAAC,CAAC,GAAG,C  
AAC,mDAAmD,CAAC,CAAC,OAAO,EAAE,CAAC,IAAI,YAA Y,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CA  
AC,CAAC,GAAG,sBAAsB,GAAG,YAA Y,CAAC,MAAM,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,O  
AAO,qCAAqC,CAAC,SAAS,CAAC,WAAW,CAAC,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,CAAuB,IAAI,SA  
AS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,CAAC,GAAG,IAAI,EA  
AE,IAAI,EAAE,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,C  
AAC,SAAS,EAAE,KAAK,CAAC,SAAS,CAAC,iBAAiB,EAAE,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC  
,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,IAAI,CAAC,EAAE,EAAE,CAAC,CAAC,GAAG,EAAC,CAAC,K  
AAI,CAAC,SAAS,CAAC,QAAO,CAAC,IAAI,iBAAiB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,iBAAiB,CAA  
C,CAAC,SAAS,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,EAAC,CAAC,KAAI,CAAC,SAAS,EAAE,SAAS,CAA  
C,MAAM,CAAC,SAAS,CAAC,CAAC,EAAC,CAAC,IAAI,gBAAgB,CAAC,OAAO,CAAC,GAAG,CAAC,CAA  
C,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,iBA

AiB,EAAE,CAAC,CAAC,gBAAgB,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,C  
AAC,WAAW,EAAE,CAAC,CAAC,CAAC,gBAAgB,CAAC,iBAAiB,EAAE,CAAC,gBAAgB,CAAC,EAAE,EAA  
E,CAAC,CAAC,CAAC,gBAAgB,CAAC,IAAI,OAAO,CAAC,gBAAgB,CAAC,GAAG,CAAC,iBAAiB,EAAE,CA  
AC,OAAO,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,S  
AAS,CAAC,SAAS,CAAC,iBAAiB,CAAC,iBAAiB,CAAC,QAAQ,CAAC,QAAQ,CAAC,YAAY,CAAC,aAAa,C  
AAC,WAAW,CAAC,gBAAgB,CAAC,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,GAAG  
,sBAAsB,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,aAAa,CAAC,WAAW,CAAC,YAAY,CAAC,YAAY,EAAC  
,CAAC,KAAl,CAAC,WAAW,CAAC,YAAY,EAAE,CAAC,OAAO,CAAC,CAAC,SAAS,uBAAuB,EAAE,CAAC,  
GAAG,CAAC,sBAAsB,CAAC,OAAO,IAAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,OA  
AO,IAAI,cAAc,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,C  
AAC,CAAC,GAAG,cAAc,CAAC,OAAO,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC  
,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,EAAE,CAAC,CAAC,MAAK,WAAW,CAAC,  
SAAS,kCAAkC,EAAE,CAAC,GAAG,mBAAmB,CAAC,OAAO,GAAG,qBAaQB,CAAC,OAAO,QAAQ,CAAC,0  
IAA0I,EAAE,CAAC,SAAS,4BAA4B,CAAC,MAAM,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAA  
C,MAAM,CAAC,CAAC,GAAG,CAAC,kDAaKD,CAAC,CAAC,OAAO,WAAW,CAAC,KAAC,CAAC,GAAG,s  
BAAsB,EAAE,aAAa,EAAE,EAAE,MAAM,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,mCAAm  
C,CAAC,CAAC,OAAO,WAAW,CAAC,OAAO,CAAC,KAAC,GAAG,CAAC,sBAAsB,EAAE,kCAAkC,EAAE,E  
AAE,MAAM,CAAC,CAAC,GAAG,CAAC,cAAc,CAAC,MAAM,CAAC,mCAAmC,CAAC,CAAC,OAAO,WAA  
W,CAAC,OAAO,CAAC,IAAI,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,C  
AAC,GAAG,IAAI,GAAG,MAAM,CAAC,CAAC,GAAG,CAAC,mCAAmC,CAAC,MAAM,CAAC,sEAAeE,CAA  
C,CAAC,OAAO,WAAW,CAAC,KAAC,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,  
CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,GAAG,CAAC,2BAA2B  
,CAAC,MAAM,CAAC,+BAA+B,CAAC,CAAC,OAAO,WAAW,CAAC,MAAM,CAAC,GAAG,KAAC,CAAC,C  
AAC,kCAAkC,GAAE,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CA  
AC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,YAAY,EAAE,CAAC,CAAC,CAAC,IAAI,cAAc,  
CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,G  
AAG,MAAM,CAAC,iBAAiB,EAAE,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,cAAc,CAAC,OAAO,CAAC,K  
AAK,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,C  
AAC,sBAAsB,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,KAAC,WAAW,CAAC,CAAC,KAAC,CAAC,eAAe,C  
AAC,QAAQ,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,O  
AAO,WAAW,CAAC,KAAC,CAAC,uBAAuB,EAAE,CAAC,GAAG,CAAC,sBAAsB,CAAC,4CAA4C,EAAE,CA  
AC,sBAAsB,CAAC,MAAM,CAAC,CAAC,CAAC,YAAY,CAAC,sBAAsB,CAAC,GAAG,CAAC,CAAC,EAAE,  
CAAC,CAAC,SAAS,aAAa,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,OAAO,4BAA4B,CAAC,MAAM,CAA  
C,MAAM,CAAC,IAAI,CAAC,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,  
mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,EAAE,KAAC,EAAE,CAAC,O  
AAO,KAAC,CAAC,KAAC,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,KAAC,C  
AAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,EAAE,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,C  
AAC,KAAC,EAAE,CAAC,KAAC,GAAG,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CA  
AC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,GAAG,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAA  
C,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,CAAC,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC  
,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,  
KAAC,GAAG,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,GAAG,CAAC,K  
AAK,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KA  
AK,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,OAAO,MAAM,CAAC,KAAC,EAAE,CAAC,KAA  
K,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,EAAE,CAAC,KAAC,EAAE,CAAC,KAAC  
,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,  
GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,  
GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,GAAG,CAAC,KAAC,G

AAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,G  
AAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EA  
AE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAM,CAAC,CAAC,CAAC,KAA  
K,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAA  
K,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK  
,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,  
CAAC,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,C  
AAC,CAAC,OAAO,IAAI,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAA  
E,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,UAAU,CAAC,KAAK,EAAE,  
CAAC,KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,C  
AAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,IAAI,CAAC,KAAK,CAAC,CAAC,OAAO,OAAO,CAA  
C,KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC  
,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,  
KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,O  
AAO,GAAG,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,KAAK,GAAG,CAAC,OAAO,EAAE,CAAC,K  
AAK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OA  
AO,CAAC,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,GAAG,OAAO,SA  
S,GAAG,QAAQ,CAAC,OAAO,SAAS,CAAC,qBAaQB,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAA  
C,QAAQ,CAAC,EAAE,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,OAAO,CAA  
C,mBAAmB,EAAE,CAAC,IAAI,KAAK,CAAC,IAAI,oBAaOB,CAAC,CAAC,IAAI,CAAC,OAAO,CAAC,+CAA  
+C,CAAC,SAAS,CAAC,QAAQ,CAAC,SAAS,CAAC,QAAQ,CAAC,CAAC,IAAI,aAAa,CAAC,CAAC,GAAG,C  
AAC,cAAc,CAAC,GAAG,CAAC,YAAY,CAAC,GAAG,CAAC,gCAAgC,CAAC,GAAG,CAAC,MAAM,CAAC,  
GAAG,CAAC,yBAAYb,CAAC,GAAG,CAAC,iDAaiD,CAAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,sB  
AAsB,CAAC,GAAG,CAAC,mBAAmB,CAAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,6BAA6B,CAAC,G  
AAG,CAAC,qCAAqC,CAAC,GAAG,CAAC,uBAaUB,CAAC,GAAG,CAAC,mCAAmC,CAAC,GAAG,CAAC,q  
CAAqC,CAAC,GAAG,CAAC,2BAA2B,CAAC,GAAG,CAAC,gCAAgC,CAAC,GAAG,CAAC,SAAS,CAAC,GA  
AG,CAAC,QAAQ,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,UAAU,EAAE  
,MAAM,CAAC,YAAY,CAAC,CAAC,GAAG,CAAC,oBAaOB,CAAC,GAAG,CAAC,qBAaQB,CAAC,GAAG,C  
AAC,eAAe,CAAC,GAAG,CAAC,aAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,  
EAAE,CAAC,IAAI,kBAaKB,CAAC,MAAM,CAAC,oBAaOB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBA  
AkB,CAAC,MAAM,CAAC,oBAaOB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,  
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAA  
C,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CA  
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAawB,CAA  
C,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,wBAawB,CAAC,MAAM,CAAC,0BAA  
0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,kBAaKB,CAAC,MAAM,CAAC,oBAaOB,CAAC,CAAC,UAAU,CAAC,OAAM,CAA  
C,kBAaKB,CAAC,MAAM,CAAC,oBAaOB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,  
EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,gBAaGB,CAAC,MAAM,CAAC,kBAaKB,  
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,gBAaGB,CAAC,MAAM,CAAC,kBAaKB,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,  
aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eA  
Ae,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,Q  
AAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,  
UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,

CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,  
MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MA  
AM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAA  
M,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAA  
C,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OA  
AO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SA  
AS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,Q  
AAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,  
UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAA  
M,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CA  
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC  
,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,M  
AAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sB  
AAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MA  
AM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CA  
AC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAA  
C,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,  
EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CA  
AC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,K  
AAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,  
CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,  
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CA  
AC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,C  
AAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,U  
AAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAAK,CA  
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MA  
AM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CA  
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC  
,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC  
,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC  
,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,C  
AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAg  
B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CA  
AC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MA

AM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,  
QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,  
SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC  
,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,MAAM,CAAC,KAAK,CAA  
C,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAA  
M,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,  
MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA  
C,IAAI,qBAAqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qBAAqB,CAAC,  
MAAM,CAAC,uBAAuB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,  
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI  
,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAA  
W,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CA  
AC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QA  
AQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,U  
AAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS  
,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aA  
Aa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CA  
AC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CA  
AC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,M  
AAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,  
CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC  
,CAAC,UAAU,CAAC,OAAM,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,KAA  
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,  
MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC  
,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA  
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OA  
AO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IA  
AI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MA  
AM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,Q  
AAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KA  
AK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,  
UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC  
,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,

CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAA  
C,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,  
CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,O  
AAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA  
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,s  
BAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,M  
AAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,M  
AAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAA  
S,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAA  
C,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAA  
M,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,Q  
AAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS  
,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IA  
AI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAA  
K,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,U  
AAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,  
CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,  
MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA  
C,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAA  
M,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,C  
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OA  
AM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CA  
AC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,  
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAA  
C,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe  
,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAi  
B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CA  
AC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAA  
Q,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK  
,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,  
UAAU,CAAC,OAAM,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAK,C  
AAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,  
MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAA  
C,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA  
AC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CA  
AC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAA  
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,C  
AAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,I  
AAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,  
WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAA  
M,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA

AI,QAAQ,CAAC,MAAM,CAAC,UAUU,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CA  
AC,UAUU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,  
SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAUU,CAAC,OAAM,CA  
AC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA  
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAUU,CAAC,C  
AAC,UAUU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAUU,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,  
MAAM,CAAC,OAAO,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,OAAO,CAAC,  
MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAakB,CAAC,MAAM,CAAC,oBAaoB,CAAC,CAAC,UAUU,CA  
AC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAaoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAA  
C,OAAO,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MA  
AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I  
AAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAA  
C,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA  
AS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC  
,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,  
UAUU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,C  
AAC,MAAM,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,M  
AAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,  
CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAUU,CAAC,OAA  
M,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAA  
C,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,C  
AAC,CAAC,UAUU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,  
KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAUU,  
CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,UAUU,CAAC,MAAM,CAAC,YAAY  
,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,UAUU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,UAUU  
,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAUU,C  
AAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IA  
AI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,S  
AAS,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,K  
AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,  
OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA  
S,CAAC,CAAC,CAAC,IAAI,iBAaiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAUU,CAAC,OAAM,C  
AAC,iBAaiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAA  
C,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,2BAA2B,CAAC,MAAM,CAAC,6BAA6  
B,CAAC,CAAC,UAUU,CAAC,OAAM,CAAC,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,MAAM,  
CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,a



AAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eA  
Ae,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,C  
AAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAA  
C,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM,CAAC,8CAA8C,C  
AAC,CAAC,UAAU,CAAC,OAAM,CAAC,4CAA4C,CAAC,MAAM,CAAC,8CAA8C,CAAC,CAAC,MAAM,CA  
AC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,+C  
AA+C,CAAC,MAAM,CAAC,iDAAiD,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,+CAA+C,CAAC,MAAM,CA  
AC,iDAAiD,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC  
,SAAS,CAAC,CAAC,CAAC,IAAI,2CAA2C,CAAC,MAAM,CAAC,6CAA6C,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,2CAA2C,CAAC,MAAM,CAAC,6CAA6C,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,C  
AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kCAAkC,CAAC,MAAM,CAAC,oCA  
AoC,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,MAA  
M,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA  
AI,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kCAAkC,CAAC,MA  
AM,CAAC,oCAAoC,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,qCAAqC,CAAC,MAAM,CAAC,uCAAuC,CAAC,CAAC,UAAU,CA  
AC,OAAM,CAAC,qCAAqC,CAAC,MAAM,CAAC,uCAAuC,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,yCAAyC,CAAC,MAAM,C  
AAC,2CAA2C,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,yCAAyC,CAAC,MAAM,CAAC,2CAA2C,CAAC,C  
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,  
CAAC,IAAI,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,2BAA2B,C  
AAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,U  
AAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CA  
AC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,  
MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0  
B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CA  
AC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,  
CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAA  
K,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UA  
AU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CA  
AC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CA  
AC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,M  
AAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,4BAA4B,CAAC,MAAM,CAAC,8BAA8B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,4BAA4B,CAAC,M  
AAM,CAAC,8BAA8B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA  
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM,CAAC,8  
CAA8C,CAAC,CAAC,KAAK,CAAC,IAAI,8BAA8B,CAAC,MAAM,CAAC,gCAAgC,CAAC,CAAC,KAAK,CA  
AC,MAAM,CAAC,OOO,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OOO,CAAC,MA  
AM,CAAC,SAAS,CAAC,CAAC,OOO,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CA  
AC,YAAY,CAAC,CAAC,UAAU,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,MAAM,CAAC,CAAC,IAAI,C  
AAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,OOO,CAAC,+BAA+B,CAAC,MAAM,CAAC,GAAG,CAAC,IA  
AI,CAAC,MAAM,CAAC,OAAM,CAAC,qBAAqB,CAAC,SAAS,SAAS,EAAE,CAAC,GAAG,CAAC,SAAS,CA  
AC,GAAG,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,qBAAqB,CAAC,UAAU,CAAC,CAAC,SAAS,GAAG,CA  
AC,IAAI,CAAC,CAAuB,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,sBAAsB,CAAC,CA

AC,mBAAmB,CAAC,MAAM,CAAC,CAAC,WAAW,EAAE,CAAC,WAAW,CAAC,CAAC,KAAC,CAAC,QAA  
Q,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAA  
M,CAAC,SAAS,KAAC,EAAE,CAAC,GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,CAAC,  
WAAW,CAAC,CAAC,IAAI,CAAC,GAAG,KAAC,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CAAC,  
mBAAmB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,sBAAsB  
,CAAC,EAAE,CAAC,OAAO,GAAE,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAA  
C,WAAW,CAAC,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,MAA  
M,CAAC,WAAW,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,GAAE,CAAC,CAA  
C,CAAC,EAAC,CAAC,KAAC,CAAC,KAAC,GAAE,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,  
CAAC,SAAS,IAAI,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,GAAG,QAAQ,EAAE,aAAa,EAAE,MAAM,GA  
AG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,W  
AAW,CAAC,CAAC,KAAC,CAAC,aAAa,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,IAAI,UA  
AU,CAAC,MAAM,CAAC,CAAO,CAAC,GAAG,aAAa,CAAC,CAAE,KAAC,CAAC,OAAO,CAAC,mBAAmB,E  
AAE,CAAIc,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,  
CAAC,KAAC,CAAC,KAAC,CAAC,KAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,EAAC,C  
AAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,U  
AAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,M  
AAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,G  
AAG,EAAE,GAAE,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,aAAa,CAAC,KAAC,CAAC,OAAO,CAAC,U  
AAU,GAAE,CAAC,GAAG,EAAE,CAAC;AACn5mE;AACa;EACA,EAAE,OAAO,6BAA6B,CAAC,KAAC;EAC  
5C,CAAC;EACD,EAAE;EACF,CAAC,GAAG,CAAC;EAEH,cAAc,GAAG,6BAA6B;;;EChBzC,MAAM,kBAaKB  
,GAAG,ikGAAikG;;;ECCnmG,IAAI,iBAAiB,GAAG,CAAC,WAAW;EACpC,EAAE,IAAI,UAAU,GAAG,OAAO,  
QAAQ,KAAC,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC,GAAG,GAAG,SAAS,CA  
AC;EACtH,EAAE,IAAI,OAAO,UAAU,KAAC,WAAW,EAAE,UAAU,GAAG,UAAU,IAAI,UAAU,CAAC;EAC/  
E,EAAE;EACF,SAAS,iBAAiB,EAAE;EAC5B,EAAE,iBAAiB,GAAG,iBAAiB,IAAI,EAAE,CAAC;AAC9C;EAC  
A,IAAI,MAAM,CAAC,OAAO,iBAAiB,GAAG,WAAW,CAAC,iBAAiB,CAAC,EAAE,CAAC,IAAI,mBAAmB,C  
AAC,kBAaKB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,C  
AAC,CAAC,mBAAmB,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,  
EAAE,CAAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAA  
C,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,  
IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAgB,CAAC,IAAI,KAAC,CAAC,SAAS,MAAM,CA  
AC,OAAO,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAaKB,CAAC,KAAC,CAAC,IAAI,qBAaQB,C  
AAC,KAAC,CAAC,IAAI,mBAAmB,CAAC,KAAC,CAAC,IAAI,oBAaOB,CAAC,KAAC,CAAC,kBAaKB,CAA  
C,OAAO,MAAM,GAAG,QAAQ,CAAC,qBAaQB,CAAC,OAAO,aAAa,GAAG,UAAU,CAAC,mBAAmB,CAAC,  
OAAO,OAAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,  
QAAQ,CAAC,IAAI,GAAG,QAAQ,CAAC,oBAaOB,CAAC,CAAC,kBAaKB,EAAE,CAAC,mBAAmB,EAAE,CA  
AC,qBAaQB,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,  
CAAC,YAAY,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CA  
AC,OAAO,eAAe,CAAC,IAAI,KAAC,KAAC,CAAC,SAAS,CAAC,UAAU,CAAgB,IAAI,MAAM,CAAC,IAAI,Q  
AAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,eAAe,CAACL,IAAe,CAAC,OAA  
O,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAC,CAAC,eAAe,CAAC,SAAS,CAAC,IAAG,CAAC,KAAC,CAA  
C,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACC,EA  
Aa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CA  
AC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAA  
I,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,C  
AAC,KAAC,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GA  
AG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAA  
O,GAAG,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,WA

AW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,GAAG,EA  
AC,CAAC,UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OAAO,CA  
AC,IAAI,CAAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAAY,UAAU,CA  
AC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,oBAAoB,CA  
AC,KAAK,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,MA  
AM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,4BAA4B,EAAC,CAAC,K  
AAK,GAAG,oBAAoB,CAAC,CAAC,GAAG,OAAO,IAAI,EAAE,WAAW,CAAC,CAAC,KAAK,CAAC,SAAS,U  
AAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UAA  
U,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,OAAO,UAAU,GAAG,UAAU,CAAC,CAAC,OAAO,IA  
AI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,C  
AAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,GAAG,OAA  
O,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WAAU,CAAC,KAAK,GAAG,OAAO,SAAS,EAAE,WAA  
W,CAAC,CAAC,UAAU,CAAC,UAAS,CAAC,GAAG,OAAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAAK,CAAC,  
SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,EAAC,CAAC,GAAG,OAAO,KAAK,GAAG,WAAW,  
CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,  
CAAC,KAAK,CAAC,OAAO,CAAC,IAAI,CAAC,OAAO,CAAC,KAAK,CAAC,OAAO,QAAQ,GAAG,WAAW,C  
AAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAAK,GAAG,kBAaKB,EAAE,qBAaQB,CAAC,CAAC,GAAG,qBA  
AqB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAAC,KAAI,CAAC,KAAK,GAAG,OAAO,QAAQ,GAAG  
,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,GA  
AG,UAAU,CAAC,CAAC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAA  
G,CAAC,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,G  
AAG,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,eAAe,CAAC,GAAE,CAAC,CAAC,KAAK,CAAC,SAAS  
,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,  
CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAA  
C,CAAC,GAAG,qBAaQB,CAAC,CAAC,UAAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,c  
AAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,YAA  
Y,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAA  
C,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,G  
AAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,G  
AAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,M  
AAM,EAAE,GAAG,EAAE,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,M  
AAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,O  
AAO,CAAC,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,EAAC,EAAC,CAaQD,CAAO,IAAI,GAAG,CAAC,  
MAAM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GA  
AG,CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,I  
AAI,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,  
CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAA  
M,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,a  
AAa,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,C  
AAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,C  
AAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAA  
C,EAAE,IAAI,CAAC,GAAG,OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAAiC,EAAC,CAA  
C,IAAI,UAAU,CAAC,IAAI,KAAK,CAAC,KAAK,CAaGB,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CA  
AC,GAAG,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QAA  
Q,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,  
CAAC,IAAI,CAAC,+BAA+B,CAAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAK,  
CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC  
,QAAQ,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EA

AE,GAAG,GAAG,SAAS,EAAE,GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,  
MAAM,EAAE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,  
GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,C  
AAC,CAAC,IAAI,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAaKB,CAAC,GAAG,C  
AAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAaKB,CAAC,GAAG,CAAC,CAAC,G  
AAG,UAAU,GAAG,QAAQ,CAAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,C  
AAC,OAAO,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAA  
K,CAAC,CAAC,IAAI,KAAK,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAA  
C,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAA  
C,IAAI,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,G  
AAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,SA  
AS,CAAC,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,IAAI,CA  
AC,CAAC,EAAC,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CA  
AC,CAAC,GAAG,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,YAAY,C  
AAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CA  
AC,IAAI,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAK,  
CAAC,SAAS,IAAI,CAAC,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU,  
GAAG,QAAQ,CAAC,GAAG,UAAU,EAAE,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,K  
AAK,CAAC,CAAC,OAAO,UAAU,CAAC,OAAO,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,S  
AAc,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,OAAO,WAAW,GAAG,WAAW,CAAC,IAAI,WAAW,CAAC,M  
AAM,CAAC,CAAC,SAAS,CAAC,SAAS,iBAaiB,CAAC,IAAI,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,IAAI,  
MAAM,CAAC,GAAG,CAAC,cAAc,CAAC,IAAI,MAAM,CAAC,GAAG,CAAC,MAAM,IAAI,CAAC,MAAM,C  
AAC,EAAE,EAAE,MAAM,EAAE,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,GAAG,MAAM,CAAC,GAAG,  
CAAC,EAAE,EAAE,IAAI,CAAC,QAAQ,EAAE,WAAW,CAAC,CAAC,OAAO,WAAW,CAAC,MAAM,CAAC,I  
AAI,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,CAAC,KAAI,CAAC,IAAI,GAAG,CAAC,EAA  
E,CAAC,MAAM,GAAG,CAAC,MAAM,CAAC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,C  
AAC,GAAG,EAAE,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EA  
AE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,G  
AAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,C  
AAC,EAAE,CAAC,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,  
CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,C  
AAC,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,GAAE,CAA  
C,KAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,GAAG,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,E  
AAE,EAAE,CAAC,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAE,CAAC,GAAG,EAAE,CAAC,KAA  
K,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,EAAC,CAAC,KAAI,CAAC,IAAI,EAAE,C  
AAC,EAAE,CAAC,KAAK,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,KAAK,CAAC,EAAE,EAAE,EA  
AE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,YAAY,  
CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,OAAO,GAAG,CAAC,iBAaiB,CAAC,MAAM,CAAC,GAAG,CAAC,  
cAAc,CAAC,CAAC,EAAE,CAAC,SAAS,iBAaiB,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,eAAe,CAA  
C,CAAC,GAAG,EAAE,eAAe,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,C  
AAC,IAAI,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,  
CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UA  
AU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,IAAI,  
EAAE,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,C  
AAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,KAAI,CAAC,GAAG,CAAC,EAAE,GAAG,CAAC  
,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,EAAC,CAAC,  
KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,I  
AAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,MAAM,EAA

E,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,KAAC,GAAG,CAAC,EAAE,KAAC,CAAC,CAAC,  
GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,  
CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CA  
AC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,  
KAAI,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,  
CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CA  
AC,EAAE,EAAE,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,  
CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CA  
AC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OOAO,MAAM,CAAC,QAAQ,CAAC,SAAS,YAA  
Y,CAAC,GAAG,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,OOAO,iBAaiB,CAAC,GAAG,CAAC,MAAM,CA  
AC,MAAM,CAAC,eAAe,CAAC,CAAC,SAAS,kBAakB,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,KAAC,C  
AAC,GAAG,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,SAAS,OOAO,CAAC,CAAC,CAAC,QAAQ,CAAC,CA  
AC,GAAG,CAAC,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,SAA  
Q,CAAC,OOAO,CAAC,CAAC,IAAI,MAAM,CAAC,KAAC,CAAC,MAAM,CAAC,MAAM,CAAC,OOAO,CAA  
C,MAAM,CAAC,OOAO,CAAC,OOAO,CAAC,OOAO,CAAC,SAAS,0BAA0B,CAAC,GAAG,CAAC,CAAC,MA  
AM,CAAC,GAAG,CAAC,MAAM,CAAC,OOAO,CAAC,CAAC,KAAC,CAAC,IAAI,SAAS,CAAC,GAAG,CAA  
C,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAA  
M,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAA  
Q,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,  
OOAO,CAAC,IAAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OOAO,CAAC,I  
AAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OOAO,CAAC,IAAI,YAAY,CA  
AC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OOAO,CAAC,IAAI,YAAY,CAAC,GAAG,EAAC  
,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAagB,CAAC,EAAE,QAAQ,CAAC,IAAI,SAAS,CAAC,IAAI,YAA  
Y,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,aAAa,CAAC  
,EAAE,CAA8B,UAAU,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,kBAakB,GAAE,CAAC,CAAC,C  
AAC,CAAC,SAAS,MAAM,EAAE,CAAC,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,GAAG,OOAO,M  
AAM,CAAC,QAAQ,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,  
QAAQ,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,WAAW,CAA  
C,MAAM,CAAC,QAAQ,CAAC,CAAC,KAAC,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,YAAY,EAAC,CA  
AC,SAAS,WAAW,EAAE,CAAyB,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OOAO,EAAE,CAAC,oBAAoB,  
CAAC,UAAU,EAAC,CAAC,SAAS,OOAO,EAAE,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,G  
AAG,OOAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,M  
AAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,Y  
AAY,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,KAAC,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,aAAa,E  
AAC,CAAC,SAAS,WAAW,CAAC,EAAE,CAAC,CAAC,YAAY,CAAC,OOAO,CAAC,EAAE,EAAC,CAAC,SA  
AS,YAAY,CAAC,EAAE,CAAC,CAAC,aAAa,CAAC,OOAO,CAAC,EAAE,EAAC,CAAC,IAAI,eAAe,CAAC,CA  
AC,CAA+B,IAAI,qBAaqB,CAAC,IAAI,CAAC,SAAS,gBAagB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAA  
C,GAAG,MAAM,CAAC,wBAawB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAawB,CAAC,CAAC,eAAe,EAAC,  
CAAC,CAAC,SAAS,mBAAmB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAA  
wB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAawB,CAAC,CAAC,eAAe,EAAC,CAAC,GAAG,eAAe,EAAE,CA  
AC,CAAC,CAA+F,GAAG,qBAaqB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBAaqB,CAAC,qBAaqB,CAAC,IAAI,  
CAAC,QAAQ,GAAE,CAAC,CAAC,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,EAAE,CAAC,MAAM,CAAC  
,iBAaiB,CAAC,CAAC,EAAE,CAAC,SAAS,KAAK,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,SAAS,C  
AAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,  
CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,IAAI,CAAc,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,  
IAAI,CAAC,CAAC,IAAI,WAAW,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,CAAC,CAAC,CA  
AC,MAAM,CAAC,CAAC,SAAS,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OOAO,MAAM,CAAC,SA  
AS,CAAC,UAAU,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,OOAO,CAAC,MA

AM,CAAC,GAAG,CAAC,CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,  
,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,  
QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,wBAAwB,C  
AAC,GAAG,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EAAC,CAAC,  
SAAS,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAAC,CAAC,  
OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CA  
AC,CAAC,KAAI,CAAC,MAAK,iDAAiD,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC,GAAG,E  
AAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,GAAG,kBAAkB,EAAE,qBAAqB,CAA  
C,CAAC,CAAC,GAAG,OAAO,KAAK,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,  
OAAO,KAAK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAA  
Q,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,  
GAAG,CAAC,OAAO,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,UAAU,CAAC,O  
AAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,  
OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CA  
AC,OAAO,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,EAAC,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAA  
C,CAAC,CAAC,OAAO,OAAO,CAAC,OAAO,EAAE,CAAC,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,c  
AAc,CAAC,CAAC,CAAC,CAAC,SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,C  
AAC,CAAC,SAAS,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAA  
O,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK,CAAC,CA  
AC,GAAG,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,MAAM,CAAC,K  
AAK,CAAC,CAAC,GAAG,CAAC,CAAC,mBAAmB,CAAmB,EAAC,CAAC,gBAAgB,CAAmB,CAAC,CAAC,S  
AAS,yBAAyB,CAAC,MAAM,CAAC,CAAC,eAAe,CAAC,MAAM,CAAC,UAAU,CAAC,EAAC,CAAC,SAAS,s  
BAA sB,CAAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAAE,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,  
OAAO,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,C  
AAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAAyC,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,MAA  
M,EAAC,CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CA  
AC,oBAAoB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,  
EAAE,OAAO,KAAK,GAAG,UAAU,CAAC,CAAC,OAAO,KAAK,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,a  
AAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAA  
oB,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,CAAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAA  
M,CAAC,CAAC,GAAG,CAAC,iCAAiC,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,O  
AAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAI,CAAC,OAAO,sBAAsB,CAA  
C,yBAAyB,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OA  
AO,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,OAAO,CAAC,MAA  
M,CAAC,CAAC,CAAC,GAAG,CAAC,qDAAqD,CAAC,CAAC,CAAC,CAAC,OAAO,KAAK,CAAC,CAAC,gB  
AAgB,EAAE,CAAC,KAAK,CAAC,kBAAkB,CAAC,CAAC,OAAM,EAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS  
,CAAC,CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,K  
AAK,EAAE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,Q  
AAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,GAAG,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,G  
AAG,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,GAAE,CAA  
C,KAAI,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,K  
AAI,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAC,  
CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,KAAK,GAAE,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,G  
AAG,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,GA  
AG,EAAC,CAAC,SAAS,yBAAyB,EAAE,CAAC,OAAO,MAAM,CAAC,MAAM,CAAC,SAAS,yBAAyB,CAAC,  
IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,UAAU,CAAC,KAA  
K,GAAG,EAAE,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC,SAAS,uBAAuB,CAAC,aAAa,CAAC,CAAC,IAAI,OAAO,CAAC,yBAAyB,EA

AE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,GAAG,aAAa,CAAC,WAAW,CAAC,CAAC,OAAO,KAAK,CAA  
C,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,IA  
AI,iBAAiB,CAAC,OAAO,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,iBAAiB,CAAC,IAAI,CAA  
C,GAAG,CAAC,iBAAiB,CAAC,aAAa,CAAC,SAAS,CAAC,CAAC,IAAI,OAAO,CAAC,IAAI,CAAC,GAAG,CA  
AC,WAAW,CAAC,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,aAAa,CAAC,iBAAiB,CAAC,CAAC,KAAK,CAA  
C,CAAC,CAAC,IAAI,WAAW,CAAC,yBAAYB,CAAC,OAAO,CAAC,CAAC,GAAG,WAAW,CAAC,CAAC,OA  
AO,IAAI,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,QAAQ,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,  
CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC  
,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,E  
AAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBA  
AiB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAC,CAAC,KAAI,CA  
AC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,  
UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,QAAQ,CAAC,O  
AAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CA  
AC,CAAC,IAAI,GAAG,CAAC,YAAY,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAK,CAA  
C,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CA  
AC,CAAC,OAAO,CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CA  
AC,SAAS,CAAC,EAAE,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,I  
AAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CA  
AC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE  
,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAA  
C,CAAC,QAAQ,CAAC,SAAS,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,  
GAAG,EAAE,IAAG,CAAC,MAAM,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CA  
AC,SAAS,eAAe,EAAE,CAAC,OAAO,CAAC,CAAC,SAAS,aAAa,EAAE,CAAC,OAAO,EAAE,CAAC,SAAS,Q  
AAQ,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,iBAAiB,EAAE,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,O  
AAO,KAAK,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,EAAE,KAAK,EAAE,CAAC,OAAO,  
KAAK,CAAC,KAAK,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,  
KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,  
KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,K  
AAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KA  
AK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAA  
K,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK  
,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,E  
AAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EA  
AE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,MAAM,CAAC,KAAK,EAAE,CAAC,KAAK,GAA  
G,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG  
,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,  
CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,C  
AAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,C  
AAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CA  
AC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAM,CAAC,CAAC,CAAC,KAAK,GAA  
G,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAA  
G,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG  
,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,  
CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,CAAC,C  
AAC,OAAO,IAAI,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAA

C, KAAK, EAAE, CAAC, KAAK, EAAE, CAAC, KAAK, EAAE, CAAC, OAAO, UAAU, CAAC, KAAK, EAAE, CAAC, KAAK, CAAC, CAAC, OAAO, KAAK, CAAC, KAAK, EAAE, CAAC, KAAK, EAAE, CAAC, OAAO, EAAE, CAAC, KAAK, EAAE, CAAC, KAAK, EAAE, CAAC, OAAO, IAAI, CAAC, KAAK, CAAC, CAAC, OAAO, OAAO, CAAC, KAAK, CAAC, CAAC, OAAO, KAAK, CAAC, KAAK, EAAE, CAAC, OAAO, KAAK, CAAC, KAAK, EAAE, CAAC, OAAO, KAAK, CAAC, KAAK, EAAE, CAAC, OAAO, GAAG, CAAC, KAAK, EAAE, CAAC, OAAO, GAAG, CAAC, KAAK, EAAE, CAAC, OAAO, GAAG, CAAC, KAAK, EAAE, CAAC, OAAO, GAAG, CAAC, KAAK, CAAC, CAAC, OAAO, GAAG, CAAC, KAAK, GAAG, CAAC, OAAO, EAAE, CAAC, KAAK, EAAE, CAAC, OAAO, EAAE, CAAC, KAAK, CAAC, CAAC, OAAO, EAAE, CAAC, KAAK, CAAC, CAAC, OAAO, CAAC, CAAC, KAAK, EAAE, CAAC, OAAO, CAAC, CAAC, KAAK, EAAE, CAAC, CAAC, GAAG, OAAO, SAAS, GAAG, QAAQ, CAAC, OAAO, SAAS, CAAC, qBAaQB, CAAC, EAAE, CAAC, CAAC, OAAO, CAAC, CAAC, CAAC, QAAQ, CAAC, EAAE, CAAC, CAAC, OAAM, CAAC, CAAC, CAAC, IAAI, aAAa, CAAC, CAAC, GAAG, CAAC, MAAM, CAAC, GAAG, CAAC, sBAAsB, CAAC, GAAG, CAAC, uBAaUB, CAAC, GAAG, CAAC, SAAS, CAAC, GAAG, CAAC, QAAQ, CAAC, GAAG, CAAC, SAAS, CAAC, GAAG, CAAC, eAAe, CAAC, GAAG, CAAC, aAAa, CAAC, GAAG, CAAC, QAAQ, CAAC, CAAC, IAAI, GAAG, CAAC, UAAU, EAAE, CAAC, IAAI, kBAaKB, CAAC, MAAM, CAAC, oBAaOB, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, kBAaKB, CAAC, MAAM, CAAC, oBAaOB, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, KAAK, CAAC, MAAM, CAAC, OAAO, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, KAAK, CAAC, MAAM, CAAC, OAAO, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, wBAawB, CAAC, MAAM, CAAC, 0BAA0B, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, wBAawB, CAAC, MAAM, CAAC, 0BAA0B, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, kBAaKB, CAAC, MAAM, CAAC, oBAaOB, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, kBAaKB, CAAC, MAAM, CAAC, oBAaOB, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, gBAaGB, CAAC, MAAM, CAAC, kBAaKB, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, gBAaGB, CAAC, MAAM, CAAC, kBAaKB, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, aAAa, CAAC, MAAM, CAAC, eAAe, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, aAAa, CAAC, MAAM, CAAC, eAAe, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, QAAQ, CAAC, MAAM, CAAC, UAAU, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, QAAQ, CAAC, MAAM, CAAC, UAAU, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, IAAI, CAAC, MAAM, CAAC, MAAM, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, IAAI, CAAC, MAAM, CAAC, MAAM, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, IAAI, CAAC, MAAM, CAAC, MAAM, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, IAAI, CAAC, MAAM, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, KAAK, CAAC, MAAM, CAAC, OAAO, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, OAAO, CAAC, MAAM, CAAC, SAAS, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, OAAO, CAAC, MAAM, CAAC, SAAS, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAAS, CAAC, CAAC, CAAC, IAAI, IAAI, CAAC, MAAM, CAAC, MAAM, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, IAAI, CAAC, MAAM, CAAC, CAAC, MAAM, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, IAAI, CAAC, MAAM, CAAC, MAAM, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, IAAI, CAAC, MAAM, CAAC, MAAM, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, YAAAY, CAAC, MAAM, CAAC, cAAc, CAAC, CAAC, UAAU, CAAC, OAAM, CAAC, YAAAY, CAAC, MAAM, CAAC, cAAc, CAAC, CAAC, MAAM, CAAC, KAAK, CAAC, CAAC, GAAG, CAAC, EAAE, KAAK, CAAC, IAAI, CAAC, SAA



S,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,qBAaqB,CAAC,MAAM,CAAC,uBAauB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qBAaqB,CAAC,MAAM,CAAC,uBAauB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC

,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KA  
AAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,C  
AAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CA  
AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC  
,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,  
CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CA  
AC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,  
CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,  
MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,  
CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,C  
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CA  
AC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,C  
AAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,K  
AAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,C  
AAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,  
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ  
,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU  
,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC  
,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAA  
M,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA  
AI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CA  
AC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,  
SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,C  
AAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EA  
AE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,  
CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAA  
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,  
MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,oBAAsB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAsB,  
CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAsB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,  
UAAU,CAAC,OAAM,CAAC,oBAAsB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,C  
AAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAsB,CAAC,  
MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAsB,CAAC,MAAM,CAAC,sBAAsB,  
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,  
CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA

C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,MA AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA AI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CA AC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC, SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,UAAU,CAAC,OAAM,CA AC,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E AA E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC ,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAA K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QA AQ,CAA C,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QA AQ,CAAC,MAAM,CAAC,UAAU,CA AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,C AAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CA AC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAA C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,UAAU,C AAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IA AI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,i BAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAA M,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA AI,QA AQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QA AQ,CAAC,MAAM,CA AC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC, SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAA M,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,C AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,MAAM,CA AC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MA AM,CAAC,MAAM,CAAC,QA AQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC, QA AQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAA S,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC, UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,K AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAA C,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CA AC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QA AQ,CAAC,MA AM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QA AQ,CAAC,MAAM,CAAC,UAAU,CAAC,C AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC, CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MA AM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI ,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QA AQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,O AAM,CAAC,QA AQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,C AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAA C,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OA A O,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAA S,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CA AC,CAAC,CAAC,IAAI,kBAAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,k BAAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,C AAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,

CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,M  
AAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAA  
C,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,  
CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,  
CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,  
MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC  
,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA  
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YA  
AY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,U  
AAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,  
YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAA  
S,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aA  
Aa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAA  
C,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MA  
AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I  
AAI,iBAaIB,CAAC,MAAM,CAAC,mBAaMB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAaIB,CAAC,MA  
AM,CAAC,mBAaMB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc  
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,  
KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,  
CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY  
,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAK,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,  
MAAM,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,OAAO,CAAC,+BAA+B,CAAC,M  
AAM,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,OAAM,CAAC,qBAaQB,CAAC,SAAS,SAAS,EAAE,C  
AAC,GAAG,CAAC,SAAS,CAAC,GAAG,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,qBAaQB,CAAC,UAAS,C  
AAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAaUB,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAA  
C,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,KAAK,EAAE,CAAC,  
GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,IAAI,CAAC,GA  
AG,KAAK,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CAAC,mBAaMB,CAAC,MAAM,CAAC,CAAC,  
GAAG,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,sBAAsB,CAAC,EAAE,CAAC,OAAO,GAAE,CA  
AC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,YAAY,CAAC,  
CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,EAAE,

EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,KAAC,CAAC,KA  
AK,GAAE,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,GAAG,MAAM,CAAC,SAAS,CA  
AC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CA  
AC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MA  
AM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,EAAE,GAAE,CAAC,CAAC,GAA  
G,EAAE,CAAC;AAC334B;AACa;EACA,EAAE,OAAO,iBAAiB,CAAC,KAAC;EACHC,CAAC;EACD,EAAE;E  
ACF,CAAC,GAAG,CAAC;EAEH,cAAc,GAAG,iBAAiB;;;EChBpC;;;;;;;QAuCa,WAAy,SAAQM,sBAAa;  
MAK5C,YAAmB,IAAqD;UACtE,KAAK,EAAE,CAAC;UADS,SAAI,GAAG,IAAI,CAAI;UAHhE,qBAAGB,GA  
AG,CAAC,CAAC;UAK3B,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,oBAAoB,CAAC,YAAy,CAAC,CAAC;UACI  
D,kBAaKB,GAAG,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,eAAe,EAAE,CAAC;UACtD,IAAI,CAAC,SAAS,GAA  
G,IAAIC,oBAAW,CAAC,IAAI,EAAEC,eAAM,EAAE,CAAC,CAAC;OACID;MAED,KAAK,CAAC,MAAkC,EA  
AE,KAAe,EAAE,KAAe;UAExE,MAAM,MAAM,GAAG,EAAC,EAAE,EAAE,IAAI,CAAC,gBAAGB,EAAE,EA  
AC,CAAC;UAC7C,IAAI,CAAC,IAAI,CAAC,MAAM,EAAE,MAAM,EAAE,KAAK,EAAE,KAAK,EAAE,CAAC  
,CAAC,CAAC;UAC3C,OAAO,MAAM,CAAC;OACf;MAED,UAAU;UACR,OAAO,IAAI,CAAC,SAAS,CAAC,U  
AAU,EAAE,CAAC;OACpC;MAED,MAAM,IAAI,CAAC,CAAa;UACtB,MAAM,KAAK,GAAGvH,aAAI,CAAC,  
GAAG,EAAE,CAAC;UACzB,CAAC,EAAE,CAAC;UACJ,MAAM,QAAQ,GAAGA,aAAI,CAAC,GAAG,EAAE,  
GAAG,KAAK,CAAC;UACpC,OAAO,EAAC,QAAQ,EAAC,CAAC;OACnB;MAED,IAAI,CACA,MAAc,EAAE,  
MAAkC,EAAE,KAAe,EACnE,KAAe,EAAE,QAAgB;UACnC,MAAM,EAAE,GAAG,IAAI,CAAC,gBAAGB,EAA  
E,CAAC;UACnC,IAAI,KAAK,KAAK,QAAQ,EAAE;cActB,MAAM,WAAW,GAAG,MAAsB,CAAC;cAC3C,IA  
AI,CAAC,SAAS,CAAC,GAAG,CACd,MAAM,EACN,EAAC,EAAE,EAAE,WAAW,EAAE,KAAK,EAAE,KAAK  
,EAAE,YAAy,EAAE,IAAI,EAAE,QAAQ,EAAC,CAAC,CAAC;cACnE,OAAO;WACR;UAED,MAAM,IAAI,GA  
AGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;UACvC,MAAM,QAAQ,GAAG,IAAI,GAAGA,aAAI,CA  
AC,eAAe,CAAC,KAAK,CAAC,CAAC;UACpD,MAAM,YAAy,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,  
QAAQ,CAAC,CAAC;UAEjD,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,EAAE,YA  
AY,EAAE,KAAK,EAAE,KAAK,EAAE,QAAQ,EAAC,CAAC,CAAC;UAEvE,IAAI,CAAC,IAAI,CAAC,IAAI,C  
AAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAy,CAAC,CAAC;UAEtD,IAAI,MAAM,IAAI,IAAI,EAAE;cA  
CIB,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,GAAG,CACHb,IAAI,UAAU,CACT,MAAkC,CAAC,MAAM,EAC  
zC,MAAkC,CAAC,UAAU,EAAE,QAAQ,CAAC,EAC7D,YAAy,CAAC,CAAC;WACnB;OACF;MAED,MAAM,I  
AAI,CAAC,MAAc;UACvB,OAAO,IAAI,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;OAC9B;MAED,QAAQ,C  
AAC,MAAc;UACrB,MAAM,EAAC,YAAy,EAAE,KAAK,EAAE,KAAK,EAAE,WAAW,EAAC,GAC3C,IAAI,C  
AAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;UAC/B,IAAI,KAAK,KAAK,QAAQ,EAAE;cActB,OA  
AO,WAAW,CAAC;WACpB;UACD,MAAM,KAAK,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,KAAK,CA  
ChC,YAAy,EACZ,YAAy,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,GAAGA,aAAI,CAAC,eAAe,CAA  
C,KAAK,CAAC,CAAC,CAAC;UAC5E,OAAO,oBAAoB,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,CAAC,C  
AAC;OACID;;;;;MAQD,WAAW,CAAC,MAAc,EAAE,KAAK,GAAG,KAAK;UACvC,IAAI,IAAI,CAAC,SAAS  
,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE;cAC9B,MAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,C  
AAC,MAAM,CAAC,CAAC;cACxC,IAAI,CAAC,QAAQ,EAAE,CAAC;cACHb,IAAI,CAAC,KAAK,IAAI,IAAI,  
CAAC,QAAQ,GAAG,CAAC,EAAE;kBAC/B,OAAO,KAAK,CAAC;eACd;cAED,IAAI,CAAC,IAAI,CAAC,KAA  
K,CAAC,IAAI,CAAC,YAAy,CAAC,CAAC;cACnC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,WAAW,CAAC,IAAI  
,CAAC,EAAE,CAAC,CAAC;cACpC,IAAI,CAAC,SAAS,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;WAC/B;  
UACD,OAAO,IAAI,CAAC;OACb;;MAGD,QAAQ,CAAC,MAAc;UACrB,IAAI,IAAI,CAAC,SAAS,CAAC,GAA  
G,CAAC,MAAM,CAAC,EAAE;cAC9B,MAAM,UAAU,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAA  
M,CAAC,CAAC;cAC9C,OAAO,UAAU,CAAC,QAAQ,CAAC;WAC5B;UACD,OAAO,CAAC,CAAC;OACV;MA  
ED,MAAM,CAAC,MAAc;UACnB,MAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAA  
C,CAAC;UACxC,IAAI,IAAI,IAAI,IAAI,EAAE;cACHb,IAAI,CAAC,QAAQ,EAAE,CAAC;WACjB;OACF;MAE  
D,cAAc;UACZ,OAAO,EAAE,CAAC;OACX;;MAID,eAAe,CAAC,MAAc;UAC5B,OAAO,IAAI,CAAC,SAAS,C  
AAC,GAAG,CAAC,MAAM,CAAC,CAAC,YAAy,CAAC;OAChD;MAED,OAAO;UACL,IAAI,CAAC,IAAI,CA  
AC,IAAI,CAAC,OAAO,EAAE,CAAC;UACzB,IAAI,SAAS,IAAI,IAAI,CAAC,IAAI,EAAE;cACIB,IAAI,CAAC,I

AAI,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC;WACzC;UACD,IAAI,CAAC,IAAI,GAAG,IAAI,CAAC;OACIB;MAED,MAAM;UACJ,OAAO,EAAE,UAAU,EAAE,KAAK,EAAC,CAAC;OAC5B;,,,,;MAQD,UAAU,CAAC,KAAe,EAAE,KAAe,EAAE,YAAqB;UAEhE,IAAI,MAAU,CAAC;UACf,IAAI,YAAY,IAAI,IAAI,EAAE;cACxB,MAAM,GAAG,IAAI,CAAC,KAAK,CAAC,IAAI,eAAe,KAAK,EAAE,KAAK,CAAC,CAAC;WACtD;eAAM;cACL,MAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;cACnC,MAAM,GAAG,EAAC,EAAE,EAAC,CAAC;cACd,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,EAAE,YAAY,EAAE,KAAK,EAAE,KAAK,EAAE,QAAQ,EAAE,CAAC,EAAC,CAAC,CAAC;cAC1E,MAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;cACvC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;WACvD;UACD,OAAO,EAAC,MAAM,EAAE,KAAK,EAAE,KAAK,EAAC,CAAC;OAC/B;MAED,kBAaKB,CAAC,EAAC,KAAK,EAAE,KAAK,EAAE,MAAM,EAAa;UAEhD,MAAM,MAAM,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC;UACvC,MAAM,EAAC,YAAY,EAAC,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;UACID,MAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;UACvC,QAAQ,KAAK;cACX,KAAK,SAAS;kBACZ,OAAO,IAAI,YAAY,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;cACtD,KAAK,OAAO;kBACV,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;cACpD,KAAK,MAAM;kBACT,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;cACpD;kBACE,MAAM,IAAI,KAAK,CAAC,iBAaIB,KAAK,EAAE,CAAC,CAAC;WAC7C;OACF;GACF;EAED,SAAS,yBAaYB,CAAC,IAAY;,,,;MAI7C,OAAO,CAAC,OAAE,EAAE,QAAa;UACjCA,aAAI,CAAC,KAAK,CAAC,IAAI,EAAE,EAAC,WAAW,EAAE,aAAa,EAAC,CAAC,CAAC,IAAI,CAAC,CAAC,QAAQ;cAC3D,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE;kBACnB,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,uCAAuC,IAAI,GAAG,CAAC,CAAC;eAC/D;cACD,QAAQ,CAAC,WAAW,EAAE,CAAC,IAAI,CAAC,MAAM;kBACbC,WAAW,CAAC,WAAW,CAAC,MAAM,EAAE,OAAO,CAAC,CAAC,IAAI,CAAC,MAAM;sBACID,QAAQ,CAAC,MAAM,CAAC,QAAQ,EAAE,MAAM,CAAC,MAAM,CAAC,CAAC;mBAC1C,CAAC,CAAC;eACJ,CAAC,CAAC;WACJ,CAAC,CAAC;UACH,OAAO,EAAE,CAAC;OACX,CAAC;EACJ,CAAC;EAED;,,,,;EAMA,SAAS,mBAAmB,CACxB,aAAsB,EAAE,gBAaYB,EACjD,gBAaWB;MAC1B,IAAI,QAAQ,IAAI,IAAI,EAAE;,,;UAGpB,OAAO,QAAQ,CAAC;OACjB;MAED,IAAI,IAAI,GAaMB,wBAaWB,CAAC;MACpD,IAAI,aAAa,IAAI,gBAaGB,EAAE;UACrC,IAAI,GAAG,sCAAsC,CAAC;OAC/C;WAAM,IAAI,aAAa,EAAE;UACxB,IAAI,GAAG,6BAa6B,CAAC;OACtC;MAED,IAAI,WAAW,IAAI,IAAI,EAAE;UACvB,IAAI,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,EAAE;cAC7B,OAAO,WAAW,CAAC,IAAI,CAAC,CAAC;WAC1B;OACF;MAED,OAAO,gBAaGB,GAAG,IAAI,CAAC;EACjC,CAAC;EAED;,,,,;EAOO,eAAe,IAAI;MACxB,MAAM,CAAC,aAAa,EAAE,gBAaGB,CAAC,GAAG,MAAM,OAAO,CAAC,GAAG,CAAC;UAC1D8G,YAAG,EAAE,CAAC,QAAQ,CAAC,uBAaUB,CAAC;UACvCA,YAAG,EAAE,CAAC,QAAQ,CAAC,8BAa8B,CAAC;OAC/C,CAAC,CAAC;MAEH,OAAO,IAAI,OAAO,CAAC,CAAC,OAAO,EAAE,MAAM;UACjC,MAAM,aAAa,GAAsB,EAAE,CAAC;,,,,;UAO5C,aAAa,CAAC,UAAU,GAAG,CAAC,IAAI,EAAE,MAAM;cACtC,IAAI,IAAI,CAAC,QAAQ,CAAC,YAAY,CAAC,EAAE;kBAC/B,MAAM,QAAQ,GAAG,kBAaKB,CAAC;kBACpC,MAAM,IAAI,GAAG,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,EAAE,EAAC,IAAI,EAAE,wBAaWB,EAAC,CAAC,CAAC;kBACpE,OAAO,GAAG,CAAC,eAAe,CAAC,IAAI,CAAC,CAAC;eACiC;cAED,IAAI,IAAI,CAAC,QAAQ,CAAC,OAAO,CAAC,EAAE;kBAC1B,OAAO,mBAAmB,CACtB,aAAwB,EAAE,gBAa2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,MAAM,CAAC,CAAC;eACvD;cACD,OAAO,MAAM,GAAG,IAAI,CAAC;WACtB,CAAC;,,,;UAKF,IAAI,WAAW,EAAE;cACf,aAAa,CAAC,eAAe;kBACzB,yBAaYB,CAAC,mBAAmB,CACzC,aAAwB,EAAE,gBAa2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,EAAE,CAAC,CAAC,CAAC;WACxD;UAED,IAAI,WAAW,GAAG,KAAK,CAAC;UACxB,aAAa,CAAC,OAAO,GAAG;cACtB,IAAI,WAAW,EAAE;,,;kBAEf,OAAO;eACR;cACD,IAAI,WAAW,EAAE;,,;kBAGf,OAAO;eACR;cACD,WAAW,GAAG,IAAI,CAAC;cACnB,MAAM,SAAS,GACX,kEAAkE;kBACIE,iIAAiI,CAAC;cACtI,MAAM,CAAC,EAAC,OAAO,EAAE,SAAS,EAAC,CAAC,CAAC;WAC9B,CAAC;UAEF,IAAI,IAAgC,CAAC;UAErC,IAAI,gBAaGB,IAAI,aAAa,IAAI,QAAQ,IAAI,IAAI,EAAE;cACzD,aAAa,CAAC,mBAAmB,GAAG,IAAI,IAAI,CACxC,CAAC,sCAAsC;sBACtCU,2BAaUB,CAAC,QAAQ,EAAE,C AAC,EACpC,EAAC,IAAI,EAAE,iBAaIB,EAAC,CAAC,CAAC;cAC/B,IAAI,GAAGA,2BAaUB,CAAC,aAAa,C AAC,CAAC;WAC/C;eAAM;,,;cAEL,IAAI,GAAGC,eAAW,CAAC,aAAa,CAAC,CAAC;WACnC;,,;UAID,IAAI,CAAC,IAAI,CAAC,CAAC,MAAM;cACf,WAAW,GAAG,IAAI,CAAC;cACnB,WAAW,GAAG,KAAK,CAAC;cAEp

B,MAAM,cAAc,GAAW,IAAI,CAAC;;cAEpC,MAAM,CAAC,IAAI,GAAG;kBACZ,IAAI,EAAE,MAAM,CAAC, KAAK,CAAC,MAAM,EAAE,IAAI,EAAE,EAAE,CAAC;kBACpC,oBAAoB,EACHB,MAAM,CAAC,KAAK,CA AC,yBAAyB,EAAE,IAAI,EAAE,CAAC,QAAQ,CAAC,CAAC;kBAC7D,eAAe,EAAE,MAAM,CAAC,KAAK,CA AC,mBAAmB,EAAE,QAAQ,EAAE,EAAE,CAAC;kBAChE,cAAc,EAAE,MAAM,CAAC,KAAK,CACxB,iBAAi B,EAAE,IAAI,EACvB;sBACE,QAAQ;sBACR,QAAQ;sBACR,QAAQ;mBACT,CAAC;kBACN,WAAW,EAAE, MAAM,CAAC,KAAK,CAAC,cAAc,EAAE,cAAc,EAAE,CAAC,QAAQ,CAAC,CAAC;kBACrE,OAAO,EAAE,M AAM,CAAC,KAAK,CAAC,SAAS,EAAE,cAAc,EAAE,EAAE,CAAC;eACrD,CAAC;cAEF,OAAO,CAAC,EAAC ,IAAI,EAAE,MAAM,EAAC,CAAC,CAAC;WACzB,CAAC,CAAC;OACJ,CAAC,CAAC;EAEL,CAAC;EAED,SA AS,oBAAoB,CACzB,MAAmB,EAAE,KAAe;MACtC,QAAQ,KAAK;UACX,KAAK,SAAS;cACZ,OAAO,IAAI,Y AAY,CAAC,MAAM,CAAC,CAAC;UACIC,KAAK,OAAO;cACV,OAAO,IAAI,UAAU,CAAC,MAAM,CAAC,C AAC;UAChC,KAAK,MAAM;cACT,OAAO,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;UACcC,cACE,MAAM,I AAI,KAAK,CAAC,iBAAiB,KAAK,EAAE,CAAC,CAAC;OAC7C;EACH,CAAC;EAED,MAAM,eAAe,GAAG;M ACtB,wBAAwB,EAAE,6BAA6B;MACvD,sCAAsC;GAC9B,CAAE;EAGZ,IAAI,QAAQ,GAAW,IAAI,CAAC;EA C5B,IAAI,cAAc,GAAW,IAAI,CAAC;EACIC,IAAI,WAAW,GAAuC,EAAE,CAAC;EACzD,IAAI,WAAW,GAAG ,KAAK,CAAC;EACxB,IAAI,WAAW,GAAG,KAAK,CAAC;EAExB;;;;;;;;;WAYgB,WAAW,CAAC,IAAY,EA AE,gBAAgB,GAAG,KAAK;MACHC,wBAAe,CACX,8DAA8D;UAC9D,uCAAuC,CAAC,CAAC;MAC7C,IAAI, WAAW,EAAE;UACf,MAAM,IAAI,KAAK,CACX,+DAA+D;cAC/D,mEAAmE,CAAC,CAAC;OAC1E;MACD,Q AAQ,GAAG,IAAI,CAAC;MACHB,WAAW,GAAG,gBAAgB,CAAC;EACjC,CAAC;EAED;;;;;;;;;;;WAY BgB,YAAY,CACxB,eAA0D,EAC1D,gBAAgB,GAAG,KAAK;MAC1B,IAAI,WAAW,EAAE;UACf,MAAM,IAAI ,KAAK,CACX,+DAA+D;cAC/D,wDAAwD;cACxD,cAAc,CAAC,CAAC;OACrB;MAED,IAAI,OAAO,eAAe,KA AK,QAAQ,EAAE;UACvC,cAAc,GAAG,eAAe,CAAC;OACIC;WAAM;UACL,WAAW,GAAG,eAAe,CAAC;UA C9B,MAAM,YAAY,GACd,eAAe,CAAC,MAAM,CAAC,IAAI,IAAI,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,CA AC,CAAC;UAC9D,IAAI,YAAY,CAAC,MAAM,GAAG,CAAC,EAAE;cAC3B,MAAM,IAAI,KAAK,CACX,0DA A0D;kBAC1D,GAAG,YAAY,CAAC,IAAI,CAAC,GAAG,CAAC,2CAA2C;kBACpE,oEAAoE;kBACpE,oDAAo D,CAAC,CAAC;WAC3D;OACF;MAED,WAAW,GAAG,gBAAgB,CAAC;EACjC,CAAC;EAWD,IAAI,YAAY,G AAG,CAAC,CAAC,CAAC;EACtB,IAAI,kBAaKB,GAAG,CAAC,CAAC,CAAC;EAE5B;;;;;WAMgB,eAAe,CA AC,UAAkB;MACHd,YAAY,GAAG,UAAU,CAAC;EAC5B,CAAC;EAED;;;;;WAKgB,eAAe;MAC7B,IAAI,kBA AkB,KAAK,CAAC,CAAC,EAAE;UAC7B,MAAM,IAAI,KAAK,CAAC,+BAA+B,CAAC,CAAC;OACID;MACD, OAAO,kBAaKB,CAAC;EAC5B;;ECxfA;EAEA;QACM,OAAO,GAAG;;ECHhB;;;;;;;;;;;EA0BA,MAAM,aAAa ,GAAG,CAAC,CAAC;AACxBC,0BAAe,CAAC,MAAM,EAAE;MACtB,MAAM,EAAC,IAAI,EAAC,GAAG,MA AM,IAAI,EAAE,CAAC;MAC5B,OAAO,IAAI,WAAW,CAAC,IAAI,CAAC,CAAC;EAC/B,CAAC,EAAE,aAAa, CAAC;;;;;;;;;;;" }

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.es2017.js.map

No license file was found, but licenses were detected in source scan.

/\* Copyright 2021 Google LLC. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\* =====\*/

Found in path(s):

- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Ceil.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Elu.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Elu.h
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Transform.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Tan.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Cosh.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/elu\_impl.h
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/sin\_cos\_workaround.h
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Any.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/elu\_impl.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/All.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/MirrorPad.cc
- \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/sin\_cos\_workaround.cc

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Sum.js","sourceRoot":"","sources":["../../src/kernels/Sum.ts"],"names":[],"mappings":"AAAA;;;
;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAY,EAA4B,GAAG,EAAMC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI
zH,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AACvD,OAAO,EAAC,QAAQ,EAAC,MAAM,SA
S,CAAC;AAEjC,IAAI,OACI,CAAC;AAET,SAAS,KAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,I
AAI,CAAC,KAAK,CAAC,GAAG,EAAE,IAAI,CAAC,QAAQ,EAAE;QAC/C,QAAQ;QACR,QAAQ;QACR,QAA
Q;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC
,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EA
AC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,G
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IA
AI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,I
AAI,EAAE,YAAY,EAAE,kBAakB,EAAC,GACTd,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,C
AAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAakB,EAAE;QACtB,MAAM,YAAY,GAAG,OAA
O,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,
KAAK,GAAG,EAAE;YACxB,6DAA6D;YAC7D,oBAAoB;YACpB,KAAK,GAAG,UAAU,CAAC;YACnB,OAA
O,GAAG,YAAY,CAAC;YACvB,aAAa,GAAG,YAAY,CAAC,gBAAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KA
AK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;KACF;IAED,YAAY,CAAC,0BAA0B,CACnC,KAAK,E
AAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IAC9C,MAAM,CAAC,QAAQ,EAAE,W
AAW,CAAC,GACzB,YAAY,CAAC,yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAAC;IACvE,
MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAAO,
CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAI,IAAI,CAAC,aAAa,CAAC
,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC
,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,UAAU
,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KACID;IAED,IAAI,kBAakB,
```



EAAE;QACtB,oCAAoC;QACpC,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;QACZ,UAAU;QACV,MAAM,QAAQ,GAAG,YAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,SAAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,GAAuB;CACpC,CAAC", "sourceContent": ["/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmSum: (xId: number, reduceSize: number, dtype: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n 'number', // input_id\n 'number', // reduce_size\n 'number', // dtype\n 'number', // out_id\n]);\n\n function sum(args: { backend: BackendWasm, inputs: SumInputs, attrs: SumAttrs }): TensorInfo {\n const { backend, inputs, attrs } = args;\n const { axis, keepDims } = attrs;\n const { x } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const { transposed, axes, originalAxes, inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n\n let reductionAxes = axes;\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length, input.shape.length);\n }\n }\n\n backend_util.assertAxesAreInnerMostDims('sum', reductionAxes, input.shape.length);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize = util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, input.dtype);\n if (util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmSum(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return out;\n }\n\n export const sumConfig: KernelConfig = {\n kernelName: Sum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: sum as KernelFunc\n };\n}
```

Found in path(s):

\*/opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sum.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"types.js","sourceRoot":"","sources":["../../src/kernels/types.ts"],"names":[],"mappings":"AAAA; ;;;GAEg;AAEH,8DAA8D;AAC9D,MAAM,CAAN,IAAY,QAMX;AAND,WAAy,QAAQ;IACIB,6CAAW, CAAA;IACX,yCAAS,CAAA;IACt,uCAAQ,CAAA;IACr,2CAAU,CAAA;IACv,iDAAa,CAAA;AACf,CAAC,E ANW,QAAQ,KAAR,QAAQ,QAMnB;AAED,+CAA+C;AAC/C,MAAM,CAAN,IAAY,iBAQX;AARD,WAAy,iB AAiB;IAC3B,6DAAU,CAAA;IACv,yDAAQ,CAAA;IACr,2DAAS,CAAA;IACt,2DAAS,CAAA;IACt,mEAAA, CAAA;IACb,+DAAW,CAAA;IACX,uDAAO,CAAA;AACT,CAAC,EARW,iBAAiB,KAAjB,iBAAiB,QAQ5B", "sourcesContent": ["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
```

Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*// This enum must align with the enum defined in cc/backend.h
export enum CppDType { float32 = 0, int32 = 1, bool = 2, string = 3, complex64 = 4 }
// Must match enum in cc/fusable_activations.h
export enum FusableActivation { linear = 0, relu = 1, relu6 = 2, prelu = 3, leakyrelu = 4, sigmoid = 5, elu = 6 }
```

Found in path(s):

```
*/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/types.js.map
```

No license file was found, but licenses were detected in source scan.

```
// Copyright 2019 Google LLC. All Rights Reserved.
// Licensed under the Apache License, Version 2.0 (the "License");
// you may not use this file except in compliance with the License.
// You may obtain a copy of the License at
// http://www.apache.org/licenses/LICENSE-2.0
// distributed under the License is distributed on an "AS IS" BASIS,
```

Found in path(s):

```
*/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/starter/parcel/index.js
*/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/starter/webpack/src/index.js
```

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "RealDiv.js", "sourceRoot": "", "sources": ["../src/kernels/RealDiv.ts"], "names": [], "mappings": "AAA;:::;;GAeG;AAEH,OAAO,EAAe,OAAO,EAAC,MAAM,uBAAuB,CAAC;AAE5D,OAAO,EAAC,wBAwB,EAAC,MAAM,iBAAiB,CAAC;AAEzD,MAAM,qBAAqB,GAAG,IAAI,CAAC;AACnC,MAAM,CAAC,MAAM,aAAa,GACTb,wBAAwB,CAAC,OAAO,EAAE,qBAAqB,CAAC,CAAC", "sourcesContent": ["/*
@license
Copyright 2019 Google LLC. All Rights Reserved.
Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.
You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and limitations under the License.
*/

```

```
=====
*//
import { KernelConfig, RealDiv } from '@tensorflow/tfjs-core';
import { createBinaryKernelConfig } from './binary_kernel';
const supportsFullBroadcast = true;
export const realDivConfig: KernelConfig =
createBinaryKernelConfig(RealDiv, supportsFullBroadcast);
}
```

Found in path(s):

```
*/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/RealDiv.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"GreaterEqual.js","sourceRoot":"","sources":["../src/kernels/GreaterEqual.ts"],"names":[],"mappings":"AAAA;:::;GAEg;AACh,OAaO,EAAC,YAAy,EAAe,MAAM,uBAaB,CAAC;AAEjE,OAaO,EAAC,wBAaB,EAAC,MAAM,iBAaB,CAAC;AAEzD,MAAM,qBAaB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAAM,kBAaB,GAC3B,wBAaB,CAAC,YAAy,EAAE,qBAaB,EAAE,MAAM,CAAC,CAAC","sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { GreaterEqual, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\n createBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n}}\n
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GreaterEqual.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Prod.js","sourceRoot":"","sources":["../src/kernels/Prod.ts"],"names":[],"mappings":"AAAA;:::;GAEg;AAEH,OAaO,EAAC,YAAy,EAA4B,IAAI,EAAqC,IAAI,EAAC,MAAM,uBAaB,CAAC;AAI5H,OAaO,EAAC,uBAaB,EAAC,MAAM,gBAaB,CAAC;AAEvD,OAaO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,QAEqC,CAAC;AAE1C,SAAS,KAAK,CAAC,OAa0B;IACjC,QAAQ,GAAG,OAaO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,CAAC,QAAQ,EAAE;QACjD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACC,MAAM,EAAC,OAaO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAaO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAaO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAy,EAAE,kBAaB,EAAC,GACtD,uBAaB,CAAC,CAAC,EAAE,IAAI,EAAE,OAaO,CAAC,CAAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAaB,EAAE;QACtB,MAAM,YAAy,GAAG,OAaO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAy,KAAK,GAAG,EAAE;YACxB,6DAA6D;YAC7D,oBAa0B;YACpB,KAAK,GAAG,UAAU,CAAC;YACnB,OAaO,GAAG,YAAy,CAAC;YACvB,aAAa,GAAG,YAAy,CAAC,gBAaB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;KACF;IAED,YAAy,CAAC,0BAa0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IAC/C,MAAM,CAAC,QAAQ,EAAE,WAaW,CAAC,GACzB,YAAy,CAAC,yBAaB,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAAC;IACvE,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAaW,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAaO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAaO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,QAAQ,CAAC,OAaO,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KAC3D;IAED,IAAI,kBAaB,EAAE;QACtB,oCAAoC;QACpC,OAaO,CAAC,WAaW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;QACZ,UAAU;QACV,MAAM,QAAQ,GAAG,YAAy,CAAC,oBAa0B,CAAC,GAAG,CA
```

AC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OA  
AO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,UAAU,GAAiB;IACtC,UAAU,EAAE,IAAI;IAC  
hB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,IAAwB;CACrC,CAAC", "sources  
Content":["/\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed under the Apache  
License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You  
may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required  
by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\"\nBASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the  
License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport
{ permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\nlet wasmProd: (\n xId: number, reduceSize: number,\n dtype: number, outId: number) => void;\nfunction setup(backend:
BackendWasm): void {\n wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n 'number',\n 'number',\n 'number',\n 'number'\n]);\n}\nfunction prod(args: {\n backend: BackendWasm,\n inputs: ProdInputs,\n attrs:
ProdAttrs\n}): TensorInfo {\n const { backend, inputs, attrs } = args;\n const { axis, keepDims } = attrs;\n const { x }
= inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n const
{ transposed, axes, originalAxes, inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n let reductionAxes = axes;\n if (inputWasTransposed) {\n const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We
will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length, input.shape.length);\n }\n }\n backend_util.assertAxesAreInnerMostDims(\n 'prod', reductionAxes, input.shape.length);\n const [outShape,
reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize
= util.sizeFromShape(reduceShape);\n const out = backend.makeOutput(outShape, input.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n if (inputWasTransposed) {\n // dispose of
the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n return out;\n}\n\nexport const prodConfig: KernelConfig = {\n kernelName: Prod,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: prod as { } as KernelFunc\n};\n\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Prod.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Sqrt.js","sourceRoot":"","sources":["../../src/kernels/Sqrt.ts"],"names":[],"mappings":"AAAA;;;
;;;;;;;;;GAeG;AAEH,OAAO,EAAe,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAEzD,OAAO,EAAC,uBAAuB,EAA
C,MAAM,gBAAgB,CAAC;AACvD,MAAM,CAAC,MAAM,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC,CAAC
", "sourcesContent":["/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n\n*\n\nimport { KernelConfig, Sqrt } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sqrt.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Identity.js","sourceRoot":"","sources":["../../src/kernels/Identity.ts"],"names":[],"mappings":"AAA;;;;;;;GAeG;AAEH,OAAO,EAAC,QAAQ,EAA2C,MAAM,uBAAuB,CAAC;AAKzF,MAAM,UAUU,QAAQ,CAAC,IAAoD;IAE3E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACpC,MAAM,GAAG,GAAG,OAAO,CAAC,UAUU,CAAC,CAAC,CAAC,KAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACjD,MAAM,MAAM,GAAG,OAAO,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC;IAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IACdD,OAAO,CAAC,GAAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,cAAc,GAAiB;IAC1C,UAUU,EAAE,QAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,UAUU,EAAE,QAA4B;CACzC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *"]}
```

```
=====\n\n*\n\nimport { Identity, IdentityInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport { TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nexport function identity(args: { inputs: IdentityInputs, backend: BackendWasm }):\n TensorInfo {\n const { inputs: { x }, backend } = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const inVals = backend.toArrayFromHeap(x);\n const outVals = backend.toArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\n\nexport const identityConfig: KernelConfig = {\n kernelName: Identity,\n backendName: 'wasm',\n kernelFunc: identity as KernelFunc,\n};\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Identity.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"binary_kernel.js","sourceRoot":"","sources":["../../src/kernels/binary_kernel.ts"],"names":[],"mappings":"AAAA;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAy,EAAoD,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI3G,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,MAAM,UAUU,wBAAwB,CACpC,UAAkB,EAAE,qBAA8B,EACID,KAAgB;IACIB,IAAI,QAGQ,CAAC;IAEb,SAAS,SAAS,CAAC,OAAoB;QACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,UAUU,EAAE,IAAI,CAAC,UAUU,EAAE;YAcZD,QAAQ;YACR,OAAO;YACP,QAAQ;YACR,QAAQ;YACR,OAAO;YACP,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ,CAAG,SAAS;SACrB,CAAC,CAAC;IACL,CAAC;IAED,SAAS,UAUU,CAAC,IAakD;QAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAC,GAAG,IAAI,CAAC;QAC/B,MAAM,EAAC,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;QACtB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM
```





GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,EAAC,OAAO,EAAE,SAAS,EAAE,GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;IAEzD,MAAM,UAAU,GAAG,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC;IAEID,MAM,AAM,QAAQ,GAAG,YAAY,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EACzD,UAAwC,EAAE,GAAG,EAAE,eAAe,EAC/D,IAAI,CAAC,eAAe,CAAC,CAAC;IAE1B,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,cAAc,GAAG,QAAQ,C AAC,cAAc,CAAC;IAC/C,MAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,MAAM,YAAY,GAAG,QA AQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa, GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAC5C,MAA M,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC, CAAC,CAAC,CAAC;IAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QAC1C,MAAM,IAAI,KAAK,CA CX,kEAAkE;YACIE,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC;KAC5D;IAED,MAAM,GAAG,GAA G,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,MAAM,KAAK,GAA G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,mBA AmB,CACf,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAA C,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,YAAY,EAC/D,WAAW,EAAE ,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,EAAE,aAAa,EAAE,YAAY,EA AE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;IAC3B,OAAO,GAAG,CAAC;AACb,CAA C;AAED,MAAM,CAAC,MAAM,2BAA2B,GAAiB;IACvD,UAAU,EAAE,qBAAqB;IACjC,WAAW,EAAE,MAA M;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,eAAmC;CACHD,CAAC", "sourcesContent":["/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*  
===== \n \*/\n\nimport {backend\_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs, DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend\_wasm';\n\nlet wasmDepthwiseConv2d: (\n xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number, padTop: number,\n padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n dilationHeight: number, dilationWidth: number, strideHeight: number, strideWidth: number, inputChannels: number, outputChannels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmDepthwiseConv2d = (\n backend.wasm.cwrap(DepthwiseConv2dNative, null /\* void \*/, [\n 'number', // xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number', // outputChannels\n 'number', // outId\n ]);\n }\n\nfunction depthwiseConv2d(args: {\n inputs: DepthwiseConv2dNativeInputs,\n backend: BackendWasm,\n attrs: DepthwiseConv2dNativeAttrs\n}) {\n const {inputs, attrs, backend} = args;\n const {x, filter} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n const {strides, dilations, pad, dimRoundingMode} = attrs;\n const \$dilations = dilations == null ? [1, 1] : dilations;\n



```
const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n ($dilations as number | [number, number]), pad, dimRoundingMode,\n true /* depthwise */);\nconst filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop =
convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n
const padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n if
(convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend DepthwiseConv2dNative
does not support dataFormat:` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmDepthwiseConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n filterWidth,
padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n outputChannels, outId);\n return out;\n}\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n kernelName: DepthwiseConv2dNative,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: depthwiseConv2d as {} as KernelFunc\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/DepthwiseConv2dNative.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Round.js","sourceRoot":"","sources":["../../src/kernels/Round.ts"],"names":[],"mappings":"AAA
A;:::;;GAEg;AACH,OAAO,EAAe,KAAK,EAAC,MAAM,uBAAuB,CAAC;AAE1D,OAAO,EAAC,uBAAu
B,EAAC,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,WAAW,GAAiB,uBAAuB,CAAC,KAAK,CA
AC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====]\n
*\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Round.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Relu.js","sourceRoot":"","sources":["../../src/kernels/Relu.ts"],"names":[],"mappings":"AAAA;:;
;GAEg;AACH,OAAO,EAAe,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAEzD,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AACvD,MAAM,CAAC,MAAM,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC,CAAC
","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
```

on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport {KernelConfig, Relu} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Relu.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Any.js","sourceRoot":"","sources":["../src/kernels/Any.ts"],"names":[],"mappings":"AAAA;;;;GAEg;AAEH,OAAO,EAAC,GAAG,EAAuB,YAAY,EAAwC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIzH,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AAEvD,IAAI,OAAiE,CAAC;AAEtE,SAAS,KAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,EAAE,IAAI,CAAC,QAAQ,EAAE,CAAC,wBAAwB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACiB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UA AU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAakB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAA O,CAAC,CAAC;IAE9C,IAAI,kBAakB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAA G,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAK,GAAG,UAAU,CAAC;QACnB,OA AO,GAAG,YAAY,CAAC;KACxB;IAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IA CrC,YAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IAChE,MAAM,CAAC,QA AQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,C AAC;IAC9D,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,G AAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACiD,IAAI,IAAI,CAAC ,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAAC, SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO, EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACrC;IAED,IAAI,kBAakB,EAAE;QACtB,oCAAoC;QACpC,OA AO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;QACZ,UAA U;QACV,MAAM,QAAQ,GAAG,YAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,C AAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;A AED,MAAM,CAAC,MAAM,SAAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IACnB,S AAS,EAAE,KAAK;IACb,UAAU,EAAE,GAAuB;CACpC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */\n\nimport {Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {permuteAxesAndTranspose} from './kernel_utils';\nlet wasmAny: (xId: number, reduceSize: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n wasmAny = backend.wasm.cwrap(Any,
```

```

null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: {backend: BackendWasm, inputs: AnyInputs,
attrs: AnyAttrs}):\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis,
backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input = transposed;\n inputId = transposedId;\n }\n\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmAny(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const anyConfig: KernelConfig = {\n kernelName: Any,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: any as {} as KernelFunc\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Any.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"kernel_utils.js","sourceRoot":"","sources":["../../src/kernels/kernel_utils.ts"],"names":[],"mappin
gs":"AAAA;;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,YAAY,EAAC,IAAI,EAAC,MAAM,uBAAB,CAAC;AAErE,
OAAO,EAAC,SAAS,EAAC,MAAM,aAAa,CAAC;AAEtC;;;;;;GAOG;AACH,MAAM,UAAU,uBAAB,CACnC,
CAAa,EAAE,IAAqB,EAAE,OAAoB;IAM5D,MAAM,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC;IACvB,MAA
M,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B,MAAM,YAAY,GAAG,IAAI,CAAC,cAAc
,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;IACvD,IAAI,IAAI,GAAG,YAAY,CAAC;IACxB,MAAM,YAAY,GA
AG,YAAY,CAAC,kBAaKB,CAAC,IAAI,EAAE,KAAK,CAAC,CAAC;IACIE,IAAI,WAAW,GAAG,IAAI,CAAC;
IACvB,IAAI,kBAaKB,GAAG,KAAK,CAAC;IAC/B,IAAI,YAAY,IAAI,IAAI,EAAE;QACxB,MAAM,QAAQ,GA
Aa,IAAI,KAAK,CAAC,KAAK,CAAC,CAAC;QAC5C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,
QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACxC,QAAQ,CAAC,CAAC,GAAG,MAAM,CAAC
,YAAY,CAAC,CAAC,CAAC,CAAC;SACvC;QAED,IAAI,GAAG,YAAY,CAAC,gBAaGB,CAAC,IAAI,C
AAC,MAAM,EAAE,KAAK,CAAC,CAAC;QACzD,WAAW;YACP,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,
CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,YAAY,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;QAE
nE,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EA
AE,CAAC;QAC/C,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,C
AAC,CAAC,EAAE,CAAC;QACIE,IAAI,YAAY,KAAK,GAAG,EAAE;YACxB,kBAaKB,GAAG,IAAI,CAAC;SA
C3B;KACF;IAED,OAAO,EAAC,UAAU,EAAE,WAAW,EAAE,YAAY,EAAE,IAAI,EAAE,kBAaKB,EAAC,CAA
C;AAC3E,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google Inc. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {backend_util, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\nimport {transpose} from './Transpose';\n\n/**\n * Compute permutation axes and do a transpose

```

```

if necessary.\n *\n * Used by reduction ops.\n * @param x input TensorInfo\n * @param axis reduction axes\n * @param backend wasm backend instance\n * \nexport function permuteAxesAndTranspose(\n x: TensorInfo,\n axis: number|number[], backend: BackendWasm): {\n transposed: TensorInfo|null,\n axes: number[],\n originalAxes: number[],\n inputWasTransposed: boolean\n} {\n const xShape = x.shape;\n const xRank = x.shape.length;\n const originalAxes = util.parseAxisParam(axis, xShape);\n let axes = originalAxes;\n const permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n let xTransposed = null;\n let\n inputWasTransposed = false;\n if (permutedAxes != null) {\n const newShape: number[] = new Array(xRank);\n for (let i = 0; i < newShape.length; i++) {\n newShape[i] = xShape[permutedAxes[i]];\n }\n axes =\n backend_util.getInnerMostAxes(axes.length, xRank);\n xTransposed =\n transpose({inputs: {x}, attrs: {perm:\n permutedAxes}, backend});\n const xId = backend.dataIdMap.get(x.dataId).id;\n const transposedId =\n backend.dataIdMap.get(xTransposed.dataId).id;\n if (transposedId !== xId) {\n inputWasTransposed = true;\n }\n }\n return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/kernel_utils.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"NonMaxSuppressionV5.js","sourceRoot":"","sources":["../../src/kernels/NonMaxSuppressionV5.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,mBAAmB,EAAkE,MAAM,uBAAuB,CAAC;AAIrJ,OAAO,EAAc,iBAAiB,EAAc,MAAM,0BAA0B,CAAC;AAE3D,IAAI,QAGU,CAAC;AAEf,SAAS,KAAC,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CACzB,mBAAmB,EACnB,QA AQ,EAAG,UAAU;IACrB;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,UAAU,CAAC,IAInB;IACC,MAAM,EAAc,OAAO,EAAE,MAAM,EAAE,KAAC,EAAc,GAAG,IAAI,CAAC;IACtC,MAAM,EAAc,YAAY,EAAE,aAAa,EAAE,cAAc,EAA E,YAAY,EAAc,GAAG,KAAC,CAAC;IACIE,MAAM,EAAc,KAAC,EAAE,MAAM,EAAc,GAAG,MAAM,CA AC;IAE/B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CA AC,EAAE,CAAC;IACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,M AAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,SAAS,GAAG,QAAQ,CACtB,OAAO,EAAE,QAAQ,EAAE,aA Aa,EAAE,YAAY,EAAE,cAAc,EAC9D,YAAY,CAAC,CAAC;IAEIB,MAAM,EAAc,gBAAgB,EAAE,YAAY,EA AE,eAAe,EAAE,aAAa,EAAc,GACIE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;IAEIC,4EAA4E;IAC5 E,QAAQ;IACR,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,aAAa,CAAC,CAAC;IAEIC,MAAM,qBAAqB,GACvB ,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;IACIE,MAA M,oBAAoB,GACtB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,SAAS,EAAE,eAAe,CAAC,CAA C;IAEnE,OAAO,CAAC,qBAAqB,EAAE,oBAAoB,CAAC,CAAC;AACvD,CAAC;AAED,MAAM,CAAC,MAAM ,yBAAyB,GAAiB;IACrD,UAAU,EAAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;I AChB,UAAU,EAAE,UAA8B;CAC3C,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs, NonMaxSuppressionV5Inputs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc:\n (boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,

```



by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, LessEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LessEqual.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Prelu.js","sourceRoot":"","sources":["../../src/kernels/Prelu.ts"],"names":[],"mappings":"AAAA; ;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,KAAC,EAAC,MAAM,uBAAuB,CAAC;AAInF,OAAO,EAAC,IAAI,EAA C,MAAM,QAAQ,CAAC;AAE5B,IAAI,SAaE,CAAC;AAEvE,SAAS,KAAC,CAAC,OAAoB;IACjC,SAAS,GAA G,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,KAAC,EAAE,IAAI,CAAC,UAAU,EAAE;QACrD,QAAQ;QACR,Q AAQ;QACR,QAAQ,CAAG,SAAS;KACrB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,KAAC,CAAC,IAAiD;IAC 9D,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAE,KAA K,EAAC,GAAG,MAAM,CAAC;IAC1B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAA C,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,SAAS,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG ,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAI,OAAO,GAAG,GAAG,CAAC;IACiB,M AAM,KAAC,GAAG,CAAC,CAAC;IACbB,IAAI,WAAW,GAAG,KAAC,CAAC;IACxB,IAAI,KAAC,CAAC,KA AK,KAAC,SAAS,EAAE;QAC7B,WAAW,GAAG,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAA C,EAAC,EAAE,KAAC,EAAE,EAAC,KAAC,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QACtE,OAAO,GAAG, OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;KACxD;IAED, MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,SAAS,CAAC,CAAC;IACnD, MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE, CAAC;IACnD,SAAS,CAAC,OAAO,EAAE,SAAS,EAAE,KAAC,CAAC,CAAC;IAErC,IAAI,KAAC,CAAC,KAA K,KAAC,SAAS,EAAE;QAC7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;I ACD,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,WAAW,GAaiB;IACvC,UAAU,EAAE, KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAC;IACbB,UAAU,EAAE,KAAyB;CACtC,CAA C","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *"]}
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Prelu, PreluInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { cast } from './Cast';\nlet wasmPrelu: (xId: number, weightsId: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPrelu = backend.wasm.cwrap(Prelu, null /* void */, [\n 'number', // x_id\n 'number', // weights_id\n 'number' // out_id\n]);\n\n function prelu(args: { inputs: PreluInputs, backend: BackendWasm }) {\n const { inputs, backend } = args;\n const { x, alpha } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const weightsId = backend.dataIdMap.get(alpha.dataId).id;\n\n let inputId = xId;\n const input = x;\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput = cast({ backend, inputs: { x }, attrs: { dtype: 'float32' }});\n inputId =
```

```
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(x.shape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmPrelu(inputId, weightsId, outId);\n\n if (input.dtype\n !== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n return out;\n}\n\nexport const preluConfig:\n KernelConfig = {\n kernelName: Prelu,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: prelu as {} as\n KernelFunc\n};\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-
zip/tfjs-backend-
wasm/dist/kernels/Prelu.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"index.js","sourceRoot":"","sources":["../src/index.ts"],"names":[],"mappings":"AAAA;:::;;GAG;AAEH,OAAO,wBAAwB,CAAC;AAChC,cAAc,QAAQ,CAAC","sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
=====\n *\nimport './register_all_kernels';\nexport * from './base';\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-
zip/tfjs-backend-wasm-
wasm/dist/index.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"SquaredDifference.js","sourceRoot":"","sources":["../src/kernels/SquaredDifference.ts"],"names":["names":[],"mappings":"AAAA;:::;;GAG;AACH,OAAO,EAAe,iBAaiB,EAAC,MAAM,uBAAuB,CAAC;AACtE,OAAO,EAAC,wBAAwB,EAAC,MAAM,iBAaiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,IAAI,CAAC;AACnCC,MAAM,CAAC,MAAM,uBAAuB,GACHc,wBAAwB,CAAC,iBAaiB,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====\n *\nimport { KernelConfig, SquaredDifference } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig =\n createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-
zip/tfjs-backend-
wasm/dist/kernels/SquaredDifference.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"FusedDepthwiseConv2D.js","sourceRoot":"","sources":["../src/kernels/FusedDepthwiseConv2D.ts"],"names":["names":[],"mappings":"AAAA;:::;;GAG;AAEH,OAAO,EAAC,YAAY,EAAE,oBAAoB,EAA4F,MA
```

AM,uBAAuB,CAAC;AAIpK,OAAO,EAAC,iBAAiB,EAAC,MAAM,SAAS,CAAC;AAE1C,IAAI,wBAQQ,CAAC  
;AAEb,SAAS,KAAK,CAAC,OAAoB;IACjC,wBAAwB;QACpB,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,oBA  
AoB,EAAE,IAAI,CAAC,UAAU,EAAE;YACxD,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QA  
AQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YA  
CR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QA  
AQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,oBAAoB,CA  
AC,IAI7B;IACC,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACtC,MAA  
M,EAAC,CAAC,EAAE,MAAM,EAAE,IAAI,EAAE,sBAAsB,EAAC,GAAG,MAAM,CAAC;IACzD,MAAM,EAC  
J,OAAO,EACP,GAAG,EACH,SAAS,EACT,UAAU,EACV,eAAe,EACf,UAAU,EACV,cAAc,EACf,GAAG,KAA  
K,CAAC;IAEV,MAAM,QAAQ,GAAG,YAAY,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,C  
AAC,KAAK,EAAE,OAAO,EAAE,SAAS,EACtE,GAAG,EAAE,eAAe,EAAE,IAAI,CAAC,eAAe,CAAC,CAAC;I  
AEhD,MAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;IAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;QAC3  
B,MAAM,IAAI,KAAK,CACX,GAAG,UAAU,yDAAYD;YACtE,sBAAsB,CAAC,CAAC;KAC7B;IAED,MAAM,  
GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I  
AC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC;IAEzD,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAE5C,IAAI,MAAM,GAAG,CAAC,C  
AAC;IACf,IAAI,IAAI,IAAI,IAAI,EAAE;QChB,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C  
AAC,IAAI,CAAC,MAAM,CAAC,CAAC;QACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EA  
AE;YAC/B,MAAM,IAAI,KAAK,CACX,yDAAYD;gBACzD,QAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,GAA  
G,CAAC,CAAC;SACvC;QACD,IAAI,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,cAAc,EAAE;YACxC,  
MAAM,IAAI,KAAK,CACX,oCAAoC,QAAQ,CAAC,KAAK,aAAa;gBAC/D,wCAAwC,cAAc,GAAG,CAAC,CA  
AC;SACHE;QACD,MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;KACtB;IAED,MAAM,YAAY,GAAG,QAAQ,C  
AAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GA  
AG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,K  
AAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,  
GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/  
C,MAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAA  
C;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,U  
AAU,CAAC;IAC1C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,CAAC,CAAC,CA  
AC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC;IAC3D,MAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;IACr  
C,MAAM,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC;IACnC,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CA  
AC;IAEjC,IAAI,UAAU,KAAK,MAAM,EAAE;QACzB,MAAM,IAAI,KAAK,CACX,iEAAiE;YACjE,GAAG,UA  
AU,uBAAuB,CAAC,CAAC;KAC3C;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,  
QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G  
AAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI,CAAC,  
CAAC;QAC7D,CAAC,CAAC,CAAC;QACH,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAA  
M,CAAC,CAAC,EAAE,CAAC;IAE5D,wBAAwB,CACpB,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,EA  
AE,QAAQ,EAAE,YAAY,EAAE,WAAW,EACtE,MAAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OA  
AO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,e  
AAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IAE3E,OAAO,GAAG,CAAC;AA  
Cb,CAAC;AAED,MAAM,CAAC,MAAM,0BAA0B,GAAiB;IACtD,UAAU,EAAE,oBAAoB;IAChC,WAAW,EAA  
E,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,oBAAwC;CACrD,CAAC", "sourcesContent":["/\*\n  
 \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version  
 2.0 (the "License");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a  
 copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable  
 law or agreed to in writing, software\n \* distributed under the License is distributed on an "AS IS" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for  
 the specific language governing permissions and\n \* limitations under the License.\n \*/



```

=====
*\n\nimport { backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from './backend_wasm';\n\nimport { FusibleActivation } from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number,\n biasId: number, padTop: number, padRight:
number, padBottom: number,\n padLeft: number, isSamePad: number, dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels:
number, activation: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
 void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedDepthwiseConv2d =\n backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
'number', // inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n]);\n\n function
fusedDepthwiseConv2d(args: {\n inputs: FusedDepthwiseConv2DInputs,\n backend: BackendWasm,\n attrs:
FusedDepthwiseConv2DAttrs\n }) {\n const { inputs, attrs, backend } = args;\n const { x, filter, bias,
preluActivationWeights } = inputs;\n const {\n strides,\n pad,\n dilations,\n dataFormat,\n
 dimRoundingMode,\n activation,\n leakyreluAlpha\n } = attrs;\n const convInfo =
backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n
 pad, dimRoundingMode, true /* depthwise */);\n const fusedActivation =\n FusibleActivation[activation as]\n as key of type of FusibleActivation];\n if (fusedActivation == null) {\n throw new Error(\n `${activation}\n
activation not yet supported for FusedDepthwiseConv2D` +\n `in the wasm backend.`);\n }\n const xId =
backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n const
outputChannels = convInfo.outChannels;\n let biasId = 0;\n if (bias != null) {\n const biasData =
backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n throw new Error(\n
`FusedDepthwiseConv2D only supports rank-1 bias but got ` +\n `rank ${biasData.shape.length}.`);\n }\n
 if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n `FusedDepthwiseConv2D bias shape\n
(${biasData.shape}) does not ` +\n `match the number of output channels (${outputChannels})`);\n }\n
 biasId = biasData.id;\n }\n const filterHeight = convInfo.filterHeight;\n const filterWidth =
convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const
padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedDepthwiseConv2D does not support\n
dataFormat:` +\n `${dataFormat}`. Please use 'NHWC'.`);\n }\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n wasmFusedDepthwiseConv2d(\n xId, batchSize,\n inHeight, inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft,\n isSamePad, dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n return out;\n }\n\n export const
fusedDepthwiseConv2DConfig: KernelConfig = {\n kernelName: FusedDepthwiseConv2D,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: fusedDepthwiseConv2d as { } as KernelFunc\n };
}\n

```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedDepthwiseConv2D.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"MirrorPad.js","sourceRoot":"","sources":["../../src/kernels/MirrorPad.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,SAAS,EAAkC,MAAM,uBAAB,CAAC;AAI3G,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,kCAAK;AACIC,IAAK,iBAGJ;AAHD,WAAK,iBAAiB;IACpB,+DAAW,CAAA;IACX,mEAAa,CAAA;AACf,CAAC,EAHI,iBAAiB,KAAjB,iBAAiB,QAGrB;AAED,IAAI,aAGsB,CAAC;AAE3B,SAAS,KAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,SAAS,EAAE,IAAI,CAAC,UAAU,EAAE;QAC7D,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,SAAS,CAAC,IAIIB;IACC,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,QA AQ,EAAE,IAAI,EAAC,EAAC,GAAG,IAAI,CAAC;IAE7D,MAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACz B,CAAC,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,eAAe,GAAG,CAAC,C AAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC;IACvE,MA AM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CA AC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CA AC;IACID,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CA AC,EAAE,CAAC;IACnD,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAA K,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,CAA C,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC;IAC9D,MAAM,gBAAgB,GAAG,QAAQ,CAAC,GA AG,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC;IAC/D,MAAM,gBAAgB,G ACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;IAC3D,MAAM,iBA AiB,GACnB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5D,aA Aa,CACT,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CA AC,KAAK,CAAC,EAAE,gBAAgB,EACrE,iBAAiB,EAAE,iBAAiB,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,C AAC;IACvD,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,eAAe,GAAiB;IAC3C,UAAU,E AAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAE,KAAK;CACjB,C AAC","sourcesContent":["/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from './types';\n\n// Must match enum in MirrorPad.cc\nenum MirrorPaddingMode {\n reflect = 0,\n symmetric = 1\n}\n\nlet wasmMirrorPad: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-paddings\n 'array', // post-paddings\n 'number', // mode\n 'number', // outId\n]);\n}\n\nfunction mirrorPad(args: {\n inputs: MirrorPadInputs,\n backend: BackendWasm,\n attrs: MirrorPadAttrs\n}) {\n const { inputs: { x }, backend, attrs: { paddings, mode } } = args;\n const outShape = paddings.map((p, i) => p[0] /*
```

```
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =
backend.makeOutput(outShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const
postPaddingsBytes =\n new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmMirrorPad(\n
xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes,
MirrorPaddingMode[mode], outId);\n return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n
kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as { } as KernelFunc,\n setupFunc:
setup\n};\n\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/MirrorPad.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"flags_wasm.js","sourceRoot":"","sources":["../src/flags_wasm.ts"],"names":[],"mappings":"AA
AA;;;;;GAeG;AAEH,OAAO,EAAC,GAAG,EAAC,MAAM,uBAAB,CAAC;AAEIC,MAAM,GAAG,GAA
G,GAAG,EAAE,CAAC;AAEIB;;GAEG;AACH,gEAAgE;AAChE,GAAG,CAAC,YAAY;AACZ,2EAA2E;AAC3E
,8DAA8D;AAC9D,gBAAGB;AAChB,uBAAB,EAAC,KAAK,IAAI,EAAC,CAAC,WAAW,CAAC,QAAQ,CAAC,
IAAI,UAAU,CAAC;IACvE,CAAC,EAAE,EAAE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAA
E,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC,EAAL,EAAE,EAAE,CAAC,EAAG,CAAC,EA
AE,CAAC;IACrD,CAAC,EAAE,CAAC,EAAG,CAAC,EAAL,EAAE,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,
EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,GAAG,EAAE,EAAE,EAAE,EAAE,EAAE,EAAE;CACpD,CA
AC,CAAC,CAAC,CAAC;AAET;;GAEG;AACH,gEAAgE;AAChE,GAAG,CAAC,YAAY,CAAC,8BAA8B,EAAE
,KAAK,IAAI,EAAC;IAC1D,gEAAgE;IACHe,iDAAiD;IACjD,IAAI,GAAG,CAAC,GAAG,CAAC,SAAS,CAAC,E
AAE;QACtB,OAAO,KAAK,CAAC;KACd;IAED,IAAI;QACF,wDAAwD;QACxD,sFAAsF;QACtF,IAAI,cAAc,E
AAE,CAAC,KAAK,CAAC,WAAW,CAAC,IAAI,iBAAB,CAAC,CAAC,CAAC,CAAC;QACjE,gEAAgE;
QACHe,gBAAGB;QACChB,OAAO,WAAW,CAAC,QAAQ,CAAC,IAAI,UAAU,CAAC;YACzC,CAAC,EAAE,EA
AE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,
CAAC,EAAE,CAAC,EAAG,EAAE,EAAE,CAAC,EAAL,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAA
G,CAAC,EAAE,CAAC;YACpE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAL,CAAC,EAAL,CAAC,EAAE,EAAE,E
AAE,EAAE,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAG,GAAG,EAAE,EAAE
,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,EAAE;SACnE,CAAC,CAAC,CAAC;KACL;IAAC,OAAO,CA
AC,EAAE;QACV,OAAO,KAAK,CAAC;KACd;AACH,CAAC,CAAC,CAAC","sourcesContent":["/**\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\\n
*/\n\nimport {env} from 'tensorflow/tfjs-core';\n\nconst ENV = env();\n\n/**\n * True if SIMD is supported.\n *\\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\n\nENV.registerFlag(\n // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
Uint8Array([\n 0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n 2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
11\n]));\n\n/**\n * True if threads are supported.\n *\\n// From:
```

```
feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
 TODO(annxingyuan): Enable node support once this is resolved:\n //
 https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n return false;\n }\n try {\n //
 Test for transferability of SABs (needed for Firefox)\n //
 https://groups.google.com/forum#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
 MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
 program containing threaded\n // instructions.\n return WebAssembly.validate(new Uint8Array([\n 0, 97,
 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
 11\n]));\n } catch (e) {\n return false;\n }\n});\n\n}}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/flags_wasm.js.map
```

No license file was found, but licenses were detected in source scan.

```
/**
```

```
 * @license
```

```
 * Copyright 2021 Google LLC. All Rights Reserved.
```

```
 * Licensed under the Apache License, Version 2.0 (the "License");
```

```
 * you may not use this file except in compliance with the License.
```

```
 * You may obtain a copy of the License at
```

```
 *
```

```
 * http://www.apache.org/licenses/LICENSE-2.0
```

```
 *
```

```
 * Unless required by applicable law or agreed to in writing, software
```

```
 * distributed under the License is distributed on an "AS IS" BASIS,
```

```
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
 * See the License for the specific language governing permissions and
```

```
 * limitations under the License.
```

```
 * =====
```

```
 */
```

```
/**
```

```
 * @license
```

```
 * Copyright 2019 Google LLC. All Rights Reserved.
```

```
 * Licensed under the Apache License, Version 2.0 (the "License");
```

```
 * you may not use this file except in compliance with the License.
```

```
 * You may obtain a copy of the License at
```

```
 *
```

```
 * http://www.apache.org/licenses/LICENSE-2.0
```

```
 *
```

```
 * Unless required by applicable law or agreed to in writing, software
```

```
 * distributed under the License is distributed on an "AS IS" BASIS,
```

```
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
 * See the License for the specific language governing permissions and
```

```
 * limitations under the License.
```

```
 * =====
```

```
 */
```

```
/**
```

```
* @license
* Copyright 2020 Google LLC. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
```

```
* =====
*/
```

```
/**
* @license
* Copyright 2020 Google Inc. All Rights Reserved.
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
```

```
* =====
*/
```

```
/*! *****
Copyright (c) Microsoft Corporation.
```

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

```
***** */
/**
```

```
* @deprecated Use `setWasmPaths` instead.
* Sets the path to the `.wasm` file which will be fetched when the wasm
```

```

* backend is initialized. See
* https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers
* for more details.
* @param path wasm file path or url
* @param usePlatformFetch optional boolean to use platform fetch to download
* the wasm file, default to false.
*
* @doc {heading: 'Environment', namespace: 'wasm'}
*/

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.node.js
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/miniprogram/index.js

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"FloorDiv.js","sourceRoot":"","sources":["../../src/kernels/FloorDiv.ts"],"names":[],"mappings":"
AAAA;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,QAAQ,EAAe,MAAM,uBAAuB,CAAC;AAE7D,OAAO,EAAC,wB
AAwB,EAAC,MAAM,iBAAiB,CAAC;AAEzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,
MAAM,cAAc,GACvB,wBAAwB,CAAC,QAAQ,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport {FloorDiv, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const floorDivConfig: KernelConfig =\ncreateBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n\n"]}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FloorDiv.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"Sub.js","sourceRoot":"","sources":["../../src/kernels/Sub.ts"],"names":[],"mappings":"
AAAA;;;;;;;;;;GAeG;AACH,OAAO,EAAe,GAAG,EAAC,MAAM,uBAAuB,CAAC;AACxD,OAAO,EAAC,wBAAwB,E
AAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,IAAI,CAAC;AACnC,MAAM,CAAC,MAAM,S
AAS,GACIB,wBAAwB,CAAC,GAAG,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
\n"]}

```

```
*\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
 './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const subConfig: KernelConfig =\ncreateBinaryKernelConfig(Sub, supportsFullBroadcast);\n"]}
```

Found in path(s):

`/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sub.js.map`

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2020 Google Inc. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

Found in path(s):

`/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/kernel_utils.js`

`/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/kernel_utils.d.ts`

`/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/kernel_utils.ts`

No license file was found, but licenses were detected in source scan.

```
/**
 * @license
 * Copyright 2021 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
```

\* limitations under the License.

\* =====

\*/

/\*\*

\* @license

\* Copyright 2019 Google LLC. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\* =====

\*/

/\*\*

\* @license

\* Copyright 2020 Google LLC. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\* =====

\*/

/\*\*

\* @license

\* Copyright 2020 Google Inc. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and



\* limitations under the License.

\* =====  
\*/

/\*! \*\*\*\*\*

Copyright (c) Microsoft Corporation.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\*\*\*\*\* \*/

/\*\*

- \* @deprecated Use `setWasmPaths` instead.
- \* Sets the path to the `wasm` file which will be fetched when the wasm backend is initialized. See
- \* <https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers>
- \* for more details.
- \* @param path wasm file path or url
- \* @param usePlatformFetch optional boolean to use platform fetch to download the wasm file, default to false.
- \*
- \* @doc {heading: 'Environment', namespace: 'wasm'}
- \*/

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.js

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"FlipLeftRight.js","sourceRoot":"","sources":["../../src/kernels/FlipLeftRight.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;GAeG;AAEH,OAAO,EAAC,aAAa,EAA4D,MAAM,uBAAuB,CAAC;AAI/G,IAAI,iBAE2C,CAAC;AAEhD,SAAS,KAAC,CAAC,OAAoB;IACjC,iBAaiB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,aAAa,EAAE,IAAI,CAAC,UAAU,EAAE;QACrE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,MAAM,UAAU,aAAa,CACzB,IAAyD;IAC3D,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,KAAC,EAAC,GAAG,MAAM,CAAC;IAEvB,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAC,CAAC,KAAC,EAAE,KAAC,CAAC,KAAC,CAAC;IACzD,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,CAAC,KAAC,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,CAAC,GAAG,KAAC,CAAC,KAAC,CAAC;IAEIE,iBAaiB,CACb,OAAO,EAAE,KAAC,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,EAAE,KAAC,CAAC,CAAC;IACjE,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,mBAAmB,GAAiB;IAC/C,UAAU,EAAE,aAAa;IACzB,WAAW,EAA
```

E,MAAM;IACnB,UAAU,EAAE,aAAiC;IAC7C,SAAS,EAAE,KAAK;CACjB,CAAC", "sourcesContent":["/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFlipLeftRight: (\n xId: number, batch: number, imageHeight: number, imageWidth: number,\n numChannels: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight, null /* void */, [\n 'number', // xId\n 'number', // batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', // outId\n]);\n}\n\nexport function flipLeftRight(\n args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n const {inputs, backend} = args;\n const {image} = inputs;\n const out = backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n wasmFlipLeftRight(\n imageId, batch, imageHeight, imageWidth, numChannels, outId);\n return out;\n}\n\nexport const flipLeftRightConfig:\n KernelConfig = {\n kernelName: FlipLeftRight,\n backendName: 'wasm',\n kernelFunc: flipLeftRight as {} as KernelFunc,\n setupFunc: setup\n};\n\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FlipLeftRight.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Elu.js","sourceRoot":"","sources":["../src/kernels/Elu.ts"],"names":[],"mappings":"AAAA;;;;;GAeG;AACH,OAAO,EAAE,GAAG,EAAE,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAE,uBAAuB,EAA C,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC,CAAC", "sourcesContent":["/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from '../unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Elu.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Neg.js","sourceRoot":"","sources":["../src/kernels/Neg.ts"],"names":[],"mappings":"AAAA;;;GAeG;AACH,OAAO,EAAE,GAAG,EAAE,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAE,uBAAuB,EA
```

AC,MAAM,gBAAGB,CAAC;AACvD,MAAM,CAAC,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC,CAAC", "sourcesContent":["/\*\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport {KernelConfig, Neg} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Neg.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Sin.js","sourceRoot":"","sources":["../src/kernels/Sin.ts"],"names":[],"mappings":"AAAA;:::;;GAG;AACH,OAAO,EAAe,GAAG,EAAC,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,uBAAuB,EAA C,MAAM,gBAAGB,CAAC;AACvD,MAAM,CAAC,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC,CAA C","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, Sin} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sin.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Square.js","sourceRoot":"","sources":["../src/kernels/Square.ts"],"names":[],"mappings":"AA AA;:::;;GAG;AACH,OAAO,EAAe,MAAM,EAAC,MAAM,uBAAuB,CAAC;AAE3D,OAAO,EAAC,uBAA uB,EAAC,MAAM,gBAAGB,CAAC;AACvD,MAAM,CAAC,MAAM,YAAY,GAAiB,uBAAuB,CAAC,MAAM,C AAC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
```

```
./unary_kernel';\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Square.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Minimum.js","sourceRoot":"","sources":["../../src/kernels/Minimum.ts"],"names":[],"mappings":":AAAA;,,,,,;GAeG;AACH,OAAO,EAAe,OAAO,EAAC,MAAM,uBAAuB,CAAC;AAE5D,OAAO,EAAC,wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAAM,aAAa,GACTb,wBAAwB,CAAC,OAAO,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====\n *\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const minimumConfig: KernelConfig =\ncreateBinaryKernelConfig(Minimum, supportsFullBroadcast);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Minimum.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Tan.js","sourceRoot":"","sources":["../../src/kernels/Tan.ts"],"names":[],"mappings":":AAAA;,,,,,;GAeG;AACH,OAAO,EAAe,GAAG,EAAC,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAgB,CAAC;AACvD,MAAM,CAAC,MAAM,SAAS,GAaiB,uBAAuB,CAAC,GAAG,CAAC,CAAC","sourcesContent":["/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
=====\n *\nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tan.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"PadV2.js","sourceRoot":"","sources":["../../src/kernels/PadV2.ts"],"names":[],"mappings":":AA
AA;,,,,,;GAeG;AAEH,OAAO,EAA2B,KAAK,EAA2B,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAIrG,OAAO
```

,EAAC,IAAI,EAAC,MAAM,QAAQ,CAAC;AAE5B,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,SAG6C,CAAC;AAEID,SAAS,KAAK,CAAC,OAAoB;IACjC,SAAS,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,UAAU,EAAE;QACrD,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CACR,IAAoE;IACtE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,QAAQ,EAAE,aAAa,EAAC,EAAC,GAAG,IAAI,CAAC;IAEtE,MAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACzB,CAAC,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,eAAe,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC;IAEvE,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,kEAAkE;QACIE,oDAAoD;QACPd,OAAO,IAAI,CAAC;YACv,OOAO;YACP,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAE,KAAK,EAAE,aAAa,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC;SAC/D,CAAC,CAAC;KACJ;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,MAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACxD,MAAM,KAAK,GAAG,aAAa,CAAC,EAAE,CAAC;IAE/B,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC;IAC9D,MAAM,gBAAgB,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC;IAC/D,MAAM,gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;IAC3D,MAAM,iBAAiB,GACnB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5D,SAAS,CACL,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,gBAAgB,EACrE,iBAAiB,EAAE,aAAa,EAAE,KAAK,CAAC,CAAC;IAC7C,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,WAAW,GAAiB;IACvC,UAAU,EAAE,KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,GAauB;IACnC,SAAS,EAAE,KAAK;CACjB,CAAC", "sourcesContent":["/\*\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*  
=====\n \*\n\nimport { KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend\_wasm';\nimport { fill } from './Fill';\nimport { CppDType } from './types';\n\nlet wasmPadV2: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n constantValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPadV2 = backend.wasm.cwrap(PadV2, null /\* void \*/, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-paddings\n 'array', // post-paddings\n 'number', // constantValue\n 'number', // outId\n ]);\n\n function pad(\n args: { inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs }) {\n const { inputs: { x }, backend, attrs: { paddings, constantValue } } = args;\n\n const outShape = paddings.map(\n (p, i) => p[0] /\* beforePad \*/ + x.shape[i] + p[1] /\* afterPad \*/);\n\n if (util.sizeFromShape(x.shape) === 0) {\n // Short-circuit the computation, since x doesn't have value, only\n // the shape is used to compute output shape to pad.\n return fill({\n backend,\n attrs: { shape: outShape, value: constantValue, dtype: x.dtype }\n });\n }\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n const outTensorData = backend.dataIdMap.get(out.dataId);\n const outId = outTensorData.id;\n\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n const prePaddingsBytes =

```
new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const postPaddingsBytes =\n new\n Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmPadV2(\n xId, xShapeBytes, x.shape.length,\n CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes, constantValue, outId);\n return out;}\n\nexport\n const padV2Config: KernelConfig = {\n kernelName: PadV2,\n backendName: 'wasm',\n kernelFunc: pad as {} as\n KernelFunc,\n setupFunc: setup\n};\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/PadV2.js.map

No license file was found, but licenses were detected in source scan.

```
/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n * =====\n */
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FloorDiv.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/setup\_test.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GatherNd.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/RotateWithOffset.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/types.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/LogicalAnd.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ArgMax.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Cast.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Log.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/RealDiv.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sum.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Minimum.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Multiply.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Max.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/\_FusedMatMul.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Exp.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Prelu.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedConv2D.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Rsqrt.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GreaterEqual.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Sub.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ExpandDims.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/RealDiv.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ArgMax.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/AvgPool.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Min.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Relu.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FloorDiv.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LeakyRelu.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/binary\_kernel.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV5.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Greater.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Add.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Rsqrt.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tanh.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Concat.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/binary\_kernel.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GatherV2.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ScatterNd.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Sigmoid.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/GatherNd.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-

wasm/dist/kernels/BatchMatMul.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/NonMaxSuppressionV3.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Exp.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/FusedDepthwiseConv2D.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Multiply.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/NonMaxSuppressionV5.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Prelu.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Cos.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/AddN.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Minimum.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FlipLeftRight.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Log.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tile.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/FusedConv2D.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/RealDiv.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/LeakyRelu.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/DepthToSpace.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Tanh.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/unary\_kernel.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/index.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/GreaterEqual.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sub.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ResizeBilinear.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Maximum.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/SquaredDifference.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Tanh.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/index\_test.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedConv2D.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Concat.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Greater.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/BatchMatMul.d.ts



\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Log.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/FusedBatchNorm.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Unpack.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Transpose.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/AvgPool.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Add.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Less.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Reshape.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ResizeBilinear.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/index\_test.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Pow.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Abs.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV3.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Conv2D.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/LessEqual.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/binary\_kernel.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GatherNd.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/CropAndResize.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Tile.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sum.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Relu6.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Square.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Max.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Square.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/types.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/unary\_kernel.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LeakyRelu.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Relu.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SquaredDifference.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LessEqual.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Unpack.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/ClipByValue.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/RotateWithOffset.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/FloorDiv.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LogicalAnd.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Less.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Slice.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cast.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Relu6.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ClipByValue.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Prelu.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedDepthwiseConv2D.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/ScatterNd.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FlipLeftRight.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/BatchMatMul.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/MaxPool.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/CropAndResize.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Sum.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/index.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GatherV2.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/FlipLeftRight.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Minimum.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/DepthToSpace.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Conv2D.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/DepthwiseConv2dNative.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedBatchNorm.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/RotateWithOffset.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/index.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-

wasm/dist/kernels/\_FusedMatMul.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/DepthToSpace.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/AddN.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/ClipByValue.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Sin.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Min.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Cos.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/\_FusedMatMul.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/MaxPool.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV3.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Tile.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Pow.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Conv2D.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/GatherV2.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Sigmoid.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/NonMaxSuppression\_util.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/ResizeBilinear.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Greater.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Max.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Reshape.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/Cast.js  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppressionV5.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/Multiply.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/Slice.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/PadV2.d.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/Reshape.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/PadV2.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/src/kernels/ArgMax.ts  
\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-  
zip/tfjs-backend-wasm/dist/kernels/LogicalAnd.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/DepthwiseConv2dNative.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Unpack.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Transpose.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/wasm-out/tfjs-backend-wasm.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/types.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Concat.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Transpose.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/AddN.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/ExpandDims.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/CropAndResize.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Maximum.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/MaxPool.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Min.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Rsqrt.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ExpandDims.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sin.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/GreaterEqual.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Add.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/unary\_kernel.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Less.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Abs.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/setup\_test.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedDepthwiseConv2D.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Slice.d.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/FusedBatchNorm.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Sin.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Abs.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/AvgPool.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/DepthwiseConv2dNative.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cos.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Relu.ts

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Relu6.js

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Pow.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/SquaredDifference.js  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Exp.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppression\_util.d.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/NonMaxSuppression\_util.js  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/kernels/Square.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/ScatterNd.js  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/PadV2.js  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sigmoid.d.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/LessEqual.d.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Maximum.d.ts  
 \* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sub.js

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "BatchToSpaceND.js", "sourceRoot": "", "sources": ["../src/kernels/BatchToSpaceND.ts"], "names": [], "mappings": "AAAA;:::;;:::;;GAeG;AAEH,OAAO,EAAC,YAA,Y,EAAC,cAAc,EAAsE,MAAM,uBAAB,CAAC;AAIxI,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AACIC,OAAO,EAAC,KAAK,EAAC,MAAM,SAAS,CAAC;AAC9B,OAAO,EAAC,SAAS,EAAC,MAAM,aAAa,CAAC;AAEtC,SAAS,cAAc,CAAC,IAIvB;IACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,UAAU,EAAE,KAAK,EAAC,GAAG,KAAK,CAAC;IAEIC,MAAM,IAAI,GAAG,UAAU,CAAC,MAAM,CAAC,CAAC,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC;IAEhD,MAAM,QAAQ,GAAG,YAA,Y,CAAC,WAAW,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IACrE,MAAM,QAAQ,GAAG,YAA,Y,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC9E,MAAM,gBAAgB,GACIB,YAA,Y,CAAC,mBAAB,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IACHe,MAAM,gBAAgB,GACIB,YAA,Y,CAAC,mBAAB,CAAC,KAAK,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC/D,MAAM,SAAS,GACX,YAA,Y,CAAC,YAA,Y,CAAC,gBAAgB,EAAE,KAAK,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAEIE,MAAM,SAAS,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IACIE,MAAM,mBAAB,GAAG,OAAO,CAC/B,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAC,EAAC,CAAC,CAAC;IAC3E,MAAM,MAAM,GAAG,KAAK,CAAC;QACnB,MAAM,EAAE,EAAC,CAAC,EAAE,mBAAB,EAAC;QACChC,OAAO;QACP,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAE,IAAI,EAAE,SAAS,EAAAC;KACID,CAAC,CAAC;IAEH,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IACtC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;IACxC,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IAEtC,OAAO,MAAM,CAAC;AACHB,CAAC;AAED,MAAM,CAAC,MAAM,oBABoB,GAAiB;IAChD,UAAU,EAAE,cAAc;IAC1B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAc;CAC/C,C AAC", "sourcesContent": ["/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *

```

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,
KernelFunc } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport
{ reshape } from './Reshape';\n\nimport { slice } from './Slice';\n\nimport { transpose } from './Transpose';\n\nfunction
batchToSpaceND(args: {\n inputs: BatchToSpaceNDInputs,\n backend: BackendWasm,\n attrs:
BatchToSpaceNDAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {blockShape,
crops} = attrs;\n\n const prod = blockShape.reduce((a, b) => a * b);\n\n const reshaped =
backend_util.getReshaped(x.shape, blockShape, prod);\n const permuted =
backend_util.getPermuted(reshaped.length, blockShape.length);\n const reshapedPermuted =\n
backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n const sliceBeginCoords =\n
backend_util.getSliceBeginCoords(crops, blockShape.length);\n const sliceSize =\n
backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n\n const xReshaped = reshape({inputs:
{x}, backend, attrs: {shape: reshaped}});\n const xTransposed =\n transpose({inputs: {x: xReshaped}, backend,
attrs: {perm: permuted}});\n const xTransposedReshaped = reshape(\n {inputs: {x: xTransposed}, backend,
attrs: {shape: reshapedPermuted}});\n const result = slice({\n inputs: {x: xTransposedReshaped},\n backend,\n
attrs: {begin: sliceBeginCoords, size: sliceSize}\n });\n\n backend.disposeData(xReshaped.dataId);\n
backend.disposeData(xTransposed.dataId);\n backend.disposeData(xReshaped.dataId);\n\n return
result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n kernelName: BatchToSpaceND,\n
backendName: 'wasm',\n kernelFunc: batchToSpaceND as {} as KernelFunc\n};\n}]]
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/BatchToSpaceND.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"index.js","sources":["../../src/kernels/types.ts","../../src/kernels/_FusedMatMul.ts","../../src/kernels/unary_kernel.ts","../../src/kernels/Abs.ts","../../src/kernels/binary_kernel.ts","../../src/kernels/Add.ts","../../src/kernels/AddN.ts","../../src/kernels/Identity.ts","../../src/kernels/Transpose.ts","../../src/kernels/kernel_utils.ts","../../src/kernels/All.ts","../../src/kernels/Any.ts","../../src/kernels/ArgMax.ts","../../src/kernels/AvgPool.ts","../../src/kernels/Reshape.ts","../../src/kernels/BatchMatMul.ts","../../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js","../../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js","../../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Slice.js","../../src/kernels/Slice.ts","../../src/kernels/BatchToSpaceND.ts","../../src/kernels/Cast.ts","../../src/kernels/Ceil.ts","../../src/kernels/ClipByValue.ts","../../src/kernels/Concat.ts","../../src/kernels/Conv2D.ts","../../src/kernels/Conv2DBackpropInput.ts","../../src/kernels/Cos.ts","../../src/kernels/Cosh.ts","../../src/kernels/CropAndReshape.ts","../../src/kernels/Cumsum.ts","../../src/kernels/DepthToSpace.ts","../../src/kernels/DepthwiseConv2dNative.ts","../../src/kernels/Elu.ts","../../src/kernels/Equal.ts","../../src/kernels/Exp.ts","../../src/kernels/ExpandDims.ts","../../src/kernels/Fill.ts","../../src/kernels/FlipLeftRight.ts","../../src/kernels/Floor.ts","../../src/kernels/FloorDiv.ts","../../src/kernels/FusedBatchNorm.ts","../../src/kernels/FusedConv2D.ts","../../src/kernels/FusedDepthwiseConv2D.ts","../../src/kernels/GatherNd.ts","../../src/kernels/GatherV2.ts","../../src/kernels/Greater.ts","../../src/kernels/GreaterEqual.ts","../../src/kernels/LeakyRelu.ts","../../src/kernels/Less.ts","../../src/kernels/LessEqual.ts","../../src/kernels/Log.ts","../../src/kernels/LogicalAnd.ts","../../src/kernels/Max.ts","../../src/kernels/Maximum.ts","../../src/kernels/MaxPool.ts","../../src/kernels/Mean.ts","../../src/kernels/Min.ts","../../src/kernels/Minimum.ts","../../src/kernels/MirrorPad.ts","../../src/kernels/Multiply.ts","../../src/kernels/Neg.ts","../../src/kernels/NonMaxSuppression_util.ts","../../src/kernels/NonMaxSu
```

```
ppressionV3.ts", "../src/kernels/NonMaxSuppressionV4.ts", "../src/kernels/NonMaxSuppressionV5.ts", "../src/ke
rnels/NotEqual.ts", "../src/kernels/OneHot.ts", "../src/kernels/OnesLike.ts", "../src/kernels/Pack.ts", "../src/kerne
ls/PadV2.ts", "../src/kernels/Pow.ts", "../src/kernels/Prelu.ts", "../src/kernels/Prod.ts", "../src/kernels/Range.ts", "
../src/kernels/RealDiv.ts", "../src/kernels/Relu.ts", "../src/kernels/Relu6.ts", "../src/kernels/ResizeBilinear.ts", "..
../src/kernels/Reverse.ts", "../src/kernels/RotateWithOffset.ts", "../src/kernels/Round.ts", "../src/kernels/Rsqrt.ts"
,"../src/kernels/ScatterNd.ts", "../src/kernels/Select.ts", "../src/kernels/Sigmoid.ts", "../src/kernels/Sin.ts", "../sr
c/kernels/Softmax.ts", "../src/kernels/SpaceToBatchND.ts", "../src/kernels/SplitV.ts", "../src/kernels/Sqrt.ts", "../
src/kernels/Square.ts", "../src/kernels/SquaredDifference.ts", "../src/kernels/Step.ts", "../src/kernels/StridedSlice.
ts", "../src/kernels/Sub.ts", "../src/kernels/Sum.ts", "../src/kernels/Tan.ts", "../src/kernels/Tanh.ts", "../src/kerne
ls/Tile.ts", "../src/kernels/TopK.ts", "../src/kernels/Transform.ts", "../src/kernels/Unpack.ts", "../src/kernels/Zero
sLike.ts", "../src/register_all_kernels.ts", "../src/flags_wasm.ts", "../wasm-out/tfjs-backend-wasm-threaded-
simd.js", "../wasm-out/tfjs-backend-wasm-threaded-simd.worker.js", "../wasm-out/tfjs-backend-
wasm.js", "../src/backend_wasm.ts", "../src/version.ts", "../src/base.ts"], "sourcesContent": ["/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\n// This enum must align with the enum defined in cc/backend.h.\nexport enum CppDType {\n float32 = 0,\n int32 = 1,\n bool = 2,\n string = 3,\n complex64 = 4\n}\n\n// Must match enum in cc/fusable_activations.h.\nexport
enum FusableActivation {\n linear = 0,\n relu = 1,\n relu6 = 2,\n prelu = 3,\n leakyrelu = 4,\n sigmoid = 5,\n elu
= 6\n}\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache
License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You
may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required
by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\"
BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the
License for the specific language governing permissions and\n * limitations under the License.\n *
=====
*\n\nimport { _FusedMatMul, _FusedMatMulAttrs, _FusedMatMulInputs, KernelConfig, KernelFunc } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { FusableActivation } from
'./types';\n\nlet wasmFusedMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, activation: number,\n biasId: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedMatMul = backend.wasm.cwrap(_FusedMatMul,
null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n
'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n
'number', // activation\n 'number', // biasId\n 'number', // preluActivationWeightsId\n 'number', //
leakyreluAlpha\n 'number' // out_id\n]);\n\nfunction fusedBatchMatMul(args: {\n inputs:
_FusedMatMulInputs,\n backend: BackendWasm,\n attrs: _FusedMatMulAttrs\n}) {\n const {inputs, backend,
attrs} = args;\n const {a, b, bias, preluActivationWeights} = inputs;\n\n if (a.dtype !== 'float32' || b.dtype !==
'float32') {\n throw new Error(\n ` _FusedMatMul for non non-float32 tensors not yet supported.`);\n }\n\n const {transposeA, transposeB, activation, leakyreluAlpha} = attrs;\n const aId =
backend.dataIdMap.get(a.dataId).id;\n const bId = backend.dataIdMap.get(b.dataId).id;\n\n let biasId = 0;\n if
(bias !== null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n ` _FusedMatMul only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}`);\n }\n biasId = biasData.id;\n }\n\n const preluActivationWeightsId =
```

```

preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n const
fusedActivation =\n FusableActivation[activation as { } as keyof typeof FusableActivation];\n if
(fusedActivation == null) {\n throw new Error(\n `${activation} activation not yet supported for
FusedConv2D` +\n ` in the wasm backend.`);\n };\n\n const leftDim = transposeA ? a.shape[2] : a.shape[1];\n
const rightDim = transposeB ? b.shape[1] : b.shape[2];\n const batchDim = a.shape[0];\n\n const out =
backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const aShapeBytes = new Uint8Array(new
Int32Array(a.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n
wasmFusedMatMul(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n transposeA, transposeB, fusedActivation, biasId, preluActivationWeightsId,\n leakyreluAlpha || 0, outId);\n\n return
out;\n}\n\nexport const fusedMatMulConfig: KernelConfig = {\n kernelName: _FusedMatMul,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchMatMul as { } as KernelFunc\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {DataType, KernelConfig, TensorInfo, UnaryInputs, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport function
createUnaryKernelConfig(\n kernelName: string, outType?: DataType): KernelConfig {\n let wasmFunc: (xId:
number, dtype: number, outId: number) => void;\n\n function setupFunc(backend: BackendWasm): void {\n
 wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // out_id\n]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}):
TensorInfo {\n const {backend, inputs: {x}} = args;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const
out = backend.makeOutput(x.shape, outType || x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId, CppDType[x.dtype], outId);\n return out;\n }\n\n return {kernelName, backendName: 'wasm',
setupFunc, kernelFunc};\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations 0 under the License.\n *
=====\n
*/\n\nimport {Abs, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'../unary_kernel';\n\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport

```



```

function createBinaryKernelConfig(\n kernelName: string, supportsFullBroadcast: boolean,\n dtype?:\n DataType): KernelConfig {\n let wasmFunc:\n (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n number,\n bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n void;\n\n function setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(kernelName, null /*\n void */, [\n 'number', // a_id,\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // dtype\n 'number' // out_id\n]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: BinaryInputs}): \n TensorInfo {\n const {backend,\n inputs} = args;\n const {a, b} = inputs;\n const aId = backend.dataIdMap.get(a.dataId).id;\n const bId =\n backend.dataIdMap.get(b.dataId).id;\n const outputType = dtype != null ? dtype : a.dtype;\n const newShape =\n backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n const out = backend.makeOutput(newShape,\n outputType);\n\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(newShape) === 0) {\n return\n out;\n }\n\n const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n const bShapeBytes =\n new Uint8Array(new Int32Array(b.shape).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const kernelFunc = () => wasmFunc(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n CppDType[a.dtype], outId);\n\n // Currently only some float operations support full broadcast.\n if\n (supportsFullBroadcast && a.dtype === 'float32') {\n kernelFunc();\n return out;\n }\n\n const\n aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n const bBroadcastDims =\n backend_util.getBroadcastDims(b.shape, newShape);\n const loopsOverAllOfA = aBroadcastDims.every((v, i) =>\n v === i);\n const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n if (loopsOverAllOfA &&\n loopsOverAllOfB) {\n kernelFunc();\n return out;\n } else {\n throw new Error(\n `Broadcasting\n along outer dims is not yet `+\n `supported for ${a.dtype} ${kernelName}.`);\n }\n\n return\n {kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n }\n\n /**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n *=====\n *\n *\n import {Add, KernelConfig} from '@tensorflow/tfjs-core';\n import {createBinaryKernelConfig} from\n './binary_kernel';\n const supportsFullBroadcast = true;\n export const addConfig: KernelConfig =\n createBinaryKernelConfig(Add, supportsFullBroadcast);\n /**\n * @license\n * Copyright 2019 Google LLC. All\n Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *

http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n *=====\n *\n *\n import {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n import\n {BackendWasm} from './backend_wasm';\n import {CppType} from './types';\n let wasmFunc:\n (inputIds:\n Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\n\n function setupFunc(backend:\n BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n 'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n]);\n }\n\n function addn(args: {inputs:\n TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =\n backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n\n // Short-circuit zero-sized tensors.\n if\n (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n const inputIds = inputs.map(x =>\n backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n }

```

```

const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,
CppType[out.dtype], outId);\n\n return out;\n}\n\nexport const addNConfig: KernelConfig = {\n kernelName:
AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport
{TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function
identity(args: {inputs: IdentityInputs, backend: BackendWasm}):\n TensorInfo {\n const {inputs: {x}, backend} =
args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const inVals = backend.typedArrayFromHeap(x);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\n\nexport const
identityConfig: KernelConfig = {\n kernelName: Identity,\n backendName: 'wasm',\n kernelFunc: identity as {} as
KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the 'License');\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {identity} from
'./Identity';\n\nimport {CppType} from './types';\n\nlet wasmTranspose: (\n xId: number, xShape: Uint8Array,
xShapeLength: number, dtype: CppDType,\n outId: number, perm: Uint8Array, permLength: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n wasmTranspose = backend.wasm.cwrap(Transpose, null /*
void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // dtype\n
'number', // outId\n 'array', // perm\n 'number', // perm.length\n]);\n}\n\nexport function transpose(\n args:\n {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs}):\n TensorInfo {\n const {inputs,
backend, attrs} = args;\n // Reduce any dimensions with size one. Lower-rank transpose kernel performs\n // better
due to simpler memory access pattern.\n const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,
attrs.perm);\n\n let permIsNoOp = true;\n for (let i = 0; i < perm.length; i++) {\n if (perm[i] !== i) {\n
permIsNoOp = false;\n }\n }\n const outShape = computeOutShape(inputs.x.shape, attrs.perm);\n const x = {\n
dataId: inputs.x.dataId,\n shape: reducedShape,\n dtype: inputs.x.dtype\n};\n\n if (permIsNoOp) {\n const
cloned = identity({inputs, backend});\n cloned.shape = outShape;\n return cloned;\n }\n\n const out =
backend.makeOutput(outShape, x.dtype);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const outId =
backend.dataIdMap.get(out.dataId).id;\n const permBytes = new Uint8Array(new Int32Array(perm).buffer);\n
const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n wasmTranspose(\n xId,\n xShapeBytes,
x.shape.length, CppDType[x.dtype], outId, permBytes,\n perm.length);\n return
out;\n}\n\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\n const outShape = new
Array(inShape.length);\n for (let i = 0; i < outShape.length; i++) {\n outShape[i] = inShape[perm[i]];\n }\n
return outShape;\n}\n\nfunction removeOneSizeDims(\n shape: number[], perm: number[]): [number[], number[]]\n
{\n const newShape: number[] = [];\n const newPerm: number[] = [];\n for (let i = 0; i < shape.length; ++i) {\n
if (shape[i] !== 1) {\n newShape.push(shape[i]);\n }\n if (shape[perm[i]] !== 1) {\n
newPerm.push(perm[i]);\n }\n}\n for (let i = 0; i < newPerm.length; ++i) {\n let minValIdx = -1;\n for (let j =

```

```

0; j < newPerm.length; ++j) {\n if (newPerm[j] >= i &&\n (minValIdx === -1 || newPerm[minValIdx] >
newPerm[j])) {\n minValIdx = j;\n }\n }\n newPerm[minValIdx] = i;\n }\n return [newShape,
newPerm];\n}\n\nexport const transposeConfig: KernelConfig = {\n kernelName: Transpose,\n backendName:
'wasm',\n kernelFunc: transpose as {} as KernelFunc,\n setupFunc: setup,\n};\n\n"/**\n * @license\n * Copyright
2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { backend_util, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from
'./backend_wasm';\nimport { transpose } from './Transpose';\n\n/**\n * Compute permutation axes and do a transpose
if necessary.\n * Used by reduction ops.\n * @param x input TensorInfo\n * @param axis reduction axes\n *
@param backend wasm backend instance\n */\nexport function permuteAxesAndTranspose(\n x: TensorInfo,
axis: number|number[], backend: BackendWasm): {\n transposed: TensorInfo|null,\n axes: number[],\n
originalAxes: number[],\n inputWasTransposed: boolean}\n {\n const xShape = x.shape;\n const xRank =
x.shape.length;\n const originalAxes = util.parseAxisParam(axis, xShape);\n let axes = originalAxes;\n const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n let xTransposed = null;\n let
inputWasTransposed = false;\n if (permutedAxes !== null) {\n const newShape: number[] = new Array(xRank);\n
for (let i = 0; i < newShape.length; i++) {\n newShape[i] = xShape[permutedAxes[i]];\n }\n axes =
backend_util.getInnerMostAxes(axes.length, xRank);\n xTransposed =\n transpose({inputs: {x}, attrs: {perm:
permutedAxes}, backend});\n const xId = backend.dataIdMap.get(x.dataId).id;\n const transposedId =
backend.dataIdMap.get(xTransposed.dataId).id;\n if (transposedId !== xId) {\n inputWasTransposed = true;\n
}\n }\n\n return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n\n"/**\n * @license\n *
Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAll: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmAll = backend.wasm.cwrap(All, null
/*void*/, ['number, number, number']);\n}\n\nfunction all(args: {backend: BackendWasm, inputs: AllInputs, attrs:
AllAttrs}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x}
= inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const
{transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if
(inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input =
transposed;\n inputId = transposedId;\n }\n\n const inputRank = input.shape.length;\n
backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmAll(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n
backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =

```

```

backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const allConfig: KernelConfig = {\n kernelName: All,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: all as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport
{ permuteAxesAndTranspose } from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmAny = backend.wasm.cwrap(Any,
null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: { backend: BackendWasm, inputs: AnyInputs,
attrs: AnyAttrs }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { axis, keepDims } = attrs;\n const { x } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n const { transposed, axes, originalAxes, inputWasTransposed } =\n permuteAxesAndTranspose(x, axis,
backend);\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input = transposed;\n inputId = transposedId;\n }\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmAny(inputId, reduceSize, outId);\n }\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n return
out;\n}\n\nexport const anyConfig: KernelConfig = {\n kernelName: Any,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: any as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { permuteAxesAndTranspose } from
'./kernel_utils';\n\nimport { CppDType } from './types';\n\nlet wasmFunc: (\n xId: number, dtype: number, outerSize:
number, innerSize: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // outer_size\n 'number', // inner_size\n 'number' // out_id\n]);\n}\n\nfunction argmax(\n args:
{ inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs }) {\n const { backend, inputs, attrs } = args;\n const { axis } = attrs as {} as ArgMaxAttrs;\n const { x } = inputs as {} as ArgMaxInputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n const { transposed, axes,
inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n if (inputWasTransposed) {\n
const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose
was not a no-op. We will need to dispose of this\n // once we are done.\n input = transposed;\n inputId =

```

```

transposedId;\n }\n }\n\n const outShape = input.shape.slice(0, -1);\n const out =
backend.makeOutput(outShape, 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const outerSize =
util.sizeFromShape(out.shape);\n const innerSize = input.shape[axes[0]];\n wasmFunc(inputId,
CppType[input.dtype], outerSize, innerSize, outId);\n\n if (inputWasTransposed) {\n // dispose of the
transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n return out;\n}\n\nexport const
argMaxConfig: KernelConfig = {\n kernelName: ArgMax,\n backendName: 'wasm',\n kernelFunc: argmax as { }
as KernelFunc,\n setupFunc: setup\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmAvgPool: (\n xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, strideHeight: number,\n
strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n
'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterHeight\n 'number', // filterWidth\n
'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', //
strideHeight\n 'number', // strideWidth\n 'number', // channels\n 'number', // outId\n]);\n}\n\nfunction
avgPool(\n args: { inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs }) {\n const { inputs, attrs,
backend } = args;\n\n const x = inputs.x as Tensor4D;\n const xId = backend.dataIdMap.get(x.dataId).id;\n\n const
{ filterSize, strides, pad, dimRoundingMode } = attrs;\n const convInfo = backend_util.computePool2DInfo(\n
x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight =
convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const
padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft =
convInfo.padInfo.left;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n
const channels = convInfo.inChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n
`wasm backend does not support dataFormat: ` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n
}\n\n if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n throw new Error(\n `was backend
only supports average pooling with dilation = [1, 1],`\n `got [${convInfo.dilationHeight},\n
${convInfo.dilationWidth}].`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const
outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmAvgPool(\n xId, x.shape[0], x.shape[1], x.shape[2],
filterHeight, filterWidth,\n padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n
outId);\n return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n kernelName: AvgPool,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: avgPool as { } as KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nexport function reshape(\n args: { inputs:

```

```

ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm)) {\n const {inputs, attrs} = args;\n const {x} =
inputs;\n const {shape} = attrs;\n const xSize = util.sizeFromShape(x.shape);\n const $shape =
util.inferFromImplicitShape(shape, xSize);\n util.assert(\n xSize === util.sizeFromShape($shape),\n () =>
`new shape: ${$shape}, old shape: ${x.shape}. New shape and old `+\n `shape must have the same number of
elements.`);\n // Backend needs to track refCount for the dataId for reshape op\n args.backend.incref(x.dataId);\n return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n
kernelName: Reshape,\n backendName: 'wasm',\n kernelFunc: reshape as {} as KernelFunc\n};\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {reshape} from
'./Reshape';\n\nlet wasmBatchMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm) {\n wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,
null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n 'number' // out_id\n]);\n}\n\nfunction batchMatMul(args: {\n inputs: BatchMatMulInputs,\n backend:
BackendWasm,\n attrs: BatchMatMulAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {a, b} = inputs;\n const {transposeA, transposeB} = attrs;\n if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n throw new Error(\n `BatchMatMul for non float32 tensors not yet supported.`);\n }\n const aRank = a.shape.length;\n const bRank = b.shape.length;\n const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n const innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n const outerShapeA = transposeA ? a.shape[aRank - 1] : a.shape[aRank - 2];\n const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank - 1];\n const outerDimsA = a.shape.slice(0, -2);\n const outerDimsB = b.shape.slice(0, -2);\n const batchDimA = util.sizeFromShape(outerDimsA);\n const batchDimB = util.sizeFromShape(outerDimsB);\n const batchDimsCompatible =\n batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n util.assert(\n aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n () => `Error in matMul: the input batch dimensions must either be the `+\n `same or at least one input batch dimension must be 1. Got input `+\n `batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n const outShapeOuterDims =\n batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\n const outShape =
outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n util.assert(\n innerShapeA === innerShapeB,\n () => `Error in matMul: inner shapes (${innerShapeA}) and `+\n ` ${innerShapeB} of Tensors with shapes\n ${a.shape} and `+\n ` ${b.shape} and transposeA=${transposeA} `+\n ` and transposeB=${transposeB}\n must match.`);\n const a3dShape = transposeA ? [batchDimA, innerShapeA, outerShapeA] :\n [batchDimA, outerShapeA, innerShapeA];\n const b3dShape = transposeB ? [batchDimB, outerShapeB,\n innerShapeB] :\n [batchDimB, innerShapeB, outerShapeB];\n // The rest of the
implementation is designed to operate on rank-3 tensors\n const a3d = reshape({inputs: {x: a}, backend, attrs:
{shape: a3dShape}});\n const b3d = reshape({inputs: {x: b}, backend, attrs: {shape: b3dShape}});\n const a3dId =
backend.dataIdMap.get(a3d.dataId).id;\n const b3dId = backend.dataIdMap.get(b3d.dataId).id;\n const leftDim =
transposeA ? a3d.shape[2] : a3d.shape[1];\n const rightDim = transposeB ? b3d.shape[1] : b3d.shape[2];\n const batchDim = Math.max(batchDimA, batchDimB);\n const out = backend.makeOutput([batchDim, leftDim, rightDim], a3d.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const aShapeBytes = new Uint8Array(new Int32Array(a3d.shape).buffer);\n const bShapeBytes = new Uint8Array(new

```













XJuIG91dEJ1Zi52YWx1ZXMGYXMGVHLwZWRBcnJheTtcbn1cblxuZXhwb3J0IGZ1bmN0aW9uIHNSaWNlKFxuICAgIGFyZ3M6IHtpbnB1dHM6IFNSaWNlSW5wdXRzLCBiYWNRZw5kOiBNYXR0cmFja2VuZENQVSwgYXR0cnM6IFNSaWNlQXR0cnN9KTpciAgICBUZw5zb3JjbmZvIHtcbiAgY29uc3Qge2lucHV0cywgYmFja2VuZCwgYXR0cnN9ID0gYXJncztcbiAgY29uc3Qge3h9ID0gaW5wdXRzO1xuICBjb25zdCB7YmVnaW4sIHNPemV9ID0gYXR0cnM7XG5cbiAgYXNzZXJ0Tm90Q29tcGxleCh4LCAnc2xpY2UnKTtcblxuICBjb25zdCBbJGJlZ2luLCAkc2l6ZV0gPSBzbGljZV91dGlslNbHcnNIU2xpY2VQYXJhbXMoeCwgYmVnaW4sIHNPemUpO1xuICBzbGljZV91dGlslmFzc2VydFBhcmFtc1ZhbGkKHgsICRiZwdpbiwgJHNpemUpO1xuXG4gIGNvbnN0IHZhbHMgPSBiYWNRZw5kLmRhdGEuZ2V0KHguZGF0YUlkKS52YWx1ZXM7XG4gIGNvbnN0IG91dFZhbHMgPSBzbGljZUlcGwodmFscywJGJlZ2luLCAkc2l6ZSwgeC5zaGFwZSwgeC5kdHlwZSk7XG4gIHJldHVybiBiYWNRZw5kLm1ha2VUZw5zb3JjbmZvKCRzaXplLCB4LmR0eXBILCBvdXRWYWxzKTtcbn1cblxuZXhwb3J0IGNvbnN0IHNSaWNlQ29uZmlnOiBLZXJlZw5kb25maWcgPSB7XG4gIGtcm5lbE5hbWU6IFNSaWNlFxuICBiYWNRZw5kTmFtZTogJ2NwdScsXG4gIGtcm5lbEZ1bmM6IHNSaWNlIGFzIHt9IGFzIEtcm5lbEZ1bmNcbn07XG4iXX0=","/>  
@license  
\* Copyright 2019 Google LLC. All Rights Reserved.  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\* http://www.apache.org/licenses/LICENSE-2.0  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.

```
=====
*/
\n\nimport {backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util}
from '@tensorflow/tfjs-core';
\n\nimport {BackendWasm} from '../backend_wasm';
\n\nimport {sliceImplCPU} from '../kernel_utils/shared';
\n\nexport function slice(\n args: {inputs: SliceInputs, attrs: SliceAttrs, backend: BackendWasm}) {\n const {inputs: {x}, attrs: {begin, size}, backend} = args;
\n\n const [begin_, size_] = slice_util.parseSliceParams(x, begin, size);
\n\n const isContinuous = slice_util.isSliceContinuous(x.shape, begin_, size_);
\n\n const xVals = backend.readSync(x.dataId);
\n\n const out = backend.makeOutput(size_, x.dtype);
\n\n const xStrides = util.computeStrides(x.shape);
\n\n const outData = backend.dataIdMap.get(out.dataId);
\n\n if (isContinuous) {\n const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);
\n\n if (x.dtype === 'string') {\n outData.stringBytes =\n (xVals as Uint8Array[]).slice(flatOffset, flatOffset +\n util.sizeFromShape(size_));
\n } else {\n const outVals = backend.typedArrayFromHeap(out);
\n outVals.set(\n (xVals as TypedArray).subarray(flatOffset, flatOffset +\n util.sizeFromShape(size_));
\n }
\n\n return out;
\n }
\n\n if (x.dtype === 'string') {\n const res = sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);
\n outData.stringBytes = res as Uint8Array[];
\n return out;
\n }
\n\n const outVals = backend.typedArrayFromHeap(out);
\n const rank = x.shape.length;
\n if (rank === 2) {\n slice2d(\n xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],\n size_ as [number, number]);
\n } else if (rank === 3) {\n slice3d(\n xVals as TypedArray, xStrides[0], xStrides[1], outVals,\n begin_ as [number, number, number], size_ as [number, number, number]);
\n } else if (rank === 4) {\n slice4d(\n xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,\n begin_ as [number, number, number, number], size_ as [number, number, number, number]);
\n } else {\n const res =\n sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;
\n outVals.set(res);
\n }
\n\n return out;
\n\n}\n\nfunction slice2d(\n xVals: backend_util.TypedArray, xStride: number,\n outVals: backend_util.TypedArray, begin: [number, number],\n size: [number, number]): void {\n let outOffset = 0;
\n const beginI = begin[0];
\n const beginJ = begin[1];
\n const endI = beginI + size[0];
\n for (let i = beginI; i < endI; i++) {\n const xOffset = i * xStride + beginJ;
\n outVals.set(xVals.subarray(xOffset, xOffset + size[1]),\n outOffset);
\n outOffset += size[1];
\n }
\n}\n\nfunction slice3d(\n xVals: backend_util.TypedArray, xStride1:
number, xStride2: number,\n outVals: backend_util.TypedArray, begin: [number, number, number],\n size: [number, number, number]): void {\n let outOffset = 0;
\n const beginI = begin[0];
\n const beginJ = begin[1];
\n const beginK = begin[2];
\n const endI = beginI + size[0];
\n const endJ = beginJ + size[1];
\n for (let i = beginI; i < endI; i++) {\n for (let j = beginJ; j < endJ; j++) {\n const xOffset = i * xStride1 + j * xStride2 + beginK;
\n }
\n }
\n}
```

```

outVals.set(xVals.subarray(xOffset, xOffset + size[2]), outOffset);\n outOffset += size[2];\n }\n}\n}\n\nfunction slice4d(\n xVals: backend_util.TypedArray, xStride1: number, xStride2: number,\n xStride3: number, outVals: backend_util.TypedArray,\n begin: [number, number, number, number],\n size: [number, number, number, number]): void {\n let outOffset = 0;\n const beginI = begin[0];\n const beginJ = begin[1];\n const beginK = begin[2];\n const endI = beginI + size[0];\n const endJ = beginJ + size[1];\n const endK = beginK + size[2];\n const beginL = begin[3];\n for (let i = beginI; i < endI; i++) {\n for (let j = beginJ; j < endJ; j++)\n {\n for (let k = beginK; k < endK; k++) {\n const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +\n beginL;\n outVals.set(xVals.subarray(xOffset, xOffset + size[3]), outOffset);\n outOffset += size[3];\n }\n }\n }\n}\n\nexport const sliceConfig: KernelConfig = {\n kernelName: Slice,\n backendName: 'wasm',\n kernelFunc: slice as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *\n *=====\n\n*/\n\nimport { backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,\n KernelFunc } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport\n { reshape } from './Reshape';\nimport { slice } from './Slice';\nimport { transpose } from './Transpose';\n\nfunction\n batchToSpaceND(args: {\n inputs: BatchToSpaceNDInputs,\n backend: BackendWasm,\n attrs:\n BatchToSpaceNDAttrs\n}) {\n const { inputs, backend, attrs } = args;\n const { x } = inputs;\n const { blockSize,\n crops } = attrs;\n const prod = blockSize.reduce((a, b) => a * b);\n const reshaped =\n backend_util.getReshaped(x.shape, blockSize, prod);\n const permuted =\n backend_util.getPermuted(reshaped.length, blockSize.length);\n const reshapedPermuted =\n backend_util.getReshapedPermuted(x.shape, blockSize, prod);\n const sliceBeginCoords =\n backend_util.getSliceBeginCoords(crops, blockSize.length);\n const sliceSize =\n backend_util.getSliceSize(reshapedPermuted, crops, blockSize.length);\n const xReshaped = reshape({ inputs:\n { x }, backend, attrs: { shape: reshaped } });\n const xTransposed =\n transpose({ inputs: { x: xReshaped }, backend,\n attrs: { perm: permuted } });\n const xTransposedReshaped = reshape(\n { inputs: { x: xTransposed }, backend,\n attrs: { shape: reshapedPermuted } });\n const result = slice({\n inputs: { x: xTransposedReshaped },\n backend,\n attrs: { begin: sliceBeginCoords, size: sliceSize }\n });\n backend.disposeData(xReshaped.dataId);\n backend.disposeData(xTransposed.dataId);\n backend.disposeData(xReshaped.dataId);\n return\n result;\n}\n\nexport const batchToSpaceNDConfig: KernelConfig = {\n kernelName: BatchToSpaceND,\n backendName: 'wasm',\n kernelFunc: batchToSpaceND as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *\n *=====\n\n*/\n\nimport { Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc } from '@tensorflow/tfjs-core';\nimport\n { TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nexport function\n cast(\n args: {\n inputs: CastInputs, attrs: CastAttrs, backend: BackendWasm\n}): TensorInfo {\n const { inputs:\n { x }, attrs: { dtype }, backend } = args;\n const out = backend.makeOutput(x.shape, dtype);\n const inVals =\n backend.toArrayFromHeap(x);\n const outVals = backend.toArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\n\nexport const castConfig: KernelConfig = {\n kernelName: Cast,\n backendName: 'wasm',\n}

```

kernelFunc: cast as { } as KernelFunc;\n};\n", "/\*\n \* @license\n \* Copyright 2021 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* \n \* http://www.apache.org/licenses/LICENSE-2.0\n \* \n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport {KernelConfig, Ceil} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nlet wasmClip: (xId: number, min: number, max: number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n wasmClip = backend.wasm.cwrap(ClipByValue, null /* void */, [\n 'number', // x_id\n 'number', // min\n 'number', // max\n 'number' // out_id\n]);\n function clip(args: {\n inputs: ClipByValueInputs,\n backend: BackendWasm,\n attrs: ClipByValueAttrs\n }) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {clipValueMin, clipValueMax} = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmClip(xId, clipValueMin, clipValueMax, outId);\n return out;\n }\n export const clipByValueConfig: KernelConfig = {\n kernelName: ClipByValue,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: clip as { } as KernelFunc\n };\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {concatImplCPU} from './kernel_utils/shared';\nimport {identity} from './Identity';\nimport {reshape} from './Reshape';\nexport function concat(\n args: {\n inputs: ConcatInputs,\n backend: BackendWasm,\n attrs: ConcatAttrs\n }) {\n const {inputs, backend} = args;\n const axis = util.parseAxisParam(args.attrs.axis, inputs[0].shape)[0];\n let outShape = backend_util.computeOutShape(inputs.map(t => t.shape), axis);\n // Keep only non-empty tensors (ignore tensors with 0 in their shape).\n const $inputs = inputs.filter(t => util.sizeFromShape(t.shape) > 0);\n if ($inputs.length === 1) {\n return identity({inputs: {x: $inputs[0]}, backend});\n }\n const out = backend.makeOutput(outShape, inputs[0].dtype);\n if (util.sizeFromShape(outShape) === 0) {\n return out;\n }\n const shapes = $inputs.map(t => t.shape);\n backend_util.assertParamsConsistent(shapes, axis);\n if ($inputs[0].dtype === 'string') {\n // Any concat of n-dimensional tensors across any axis can be reduced to\n // a concatenation of two-dimensional tensors across the axis 1 by first\n // partitioning the axes of the original tensors into those less than\n // axis to be concatenated and the rest. Then reshape the tensors\n // into a two-dimensional tensor by
```

```

collapsing these two sets of axes and\n // concatenate the resulting matrices across the axis 1, finally reshaping\n
// the result to have the proper shape.\n const inputs2D = $inputs.map(t => {\n const innerSize =
util.sizeFromShape(t.shape.slice(axis));\n const shape = [-1, innerSize];\n return reshape({inputs: {x: t},
backend, attrs: {shape}});\n });\n\n const inputsValShapes = inputs2D.map(t => {\n return {vals:
backend.readSync(t.dataId), shape: t.shape};\n });\n\n // Concat 2d tensors along axis=1.\n outShape =\n backend_util.computeOutShape(inputs2D.map(t => t.shape), 1 /* axis */);\n const simplyConcat =
inputs2D[0].shape[0] === 1;\n const outVals = concatImplCPU(\n inputsValShapes, outShape,
inputs[0].dtype,\n simplyConcat) as string[];\n\n const finalOutShape =\n backend_util.computeOutShape($inputs.map(t => t.shape), axis);\n\n out.shape = finalOutShape;\n const
outData = backend.dataIdMap.get(out.dataId);\n outData.stringBytes =
backend_util.fromStringArrayToUint8(outVals);\n\n inputs2D.forEach(t => backend.disposeData(t.dataId));\n\n
return out;\n })\n\n const batchDim = util.sizeFromShape($inputs[0].shape.slice(0, axis));\n let sumInnerDims =
0;\n const innerDims = $inputs.map(input => {\n const innerDim = util.sizeFromShape(input.shape.slice(axis));\n
sumInnerDims += innerDim;\n return innerDim;\n });\n const inVals = $inputs.map(input =>
backend.typedArrayFromHeap(input));\n const outVals = backend.typedArrayFromHeap(out);\n for (let b = 0; b <
batchDim; b++) {\n let outOffset = b * sumInnerDims;\n for (let i = 0; i < inVals.length; i++) {\n const
innerDim = innerDims[i];\n const inOffset = b * innerDim;\n const vals = inVals[i].subarray(inOffset,
inOffset + innerDim);\n outVals.set(vals, outOffset);\n outOffset += innerDim;\n }\n }\n return
out;\n }\n\nexport const concatConfig: KernelConfig = {\n kernelName: Concat,\n backendName: 'wasm',\n
kernelFunc: concat as {} as KernelFunc,\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, Conv2D, Conv2DAttrs, Conv2DInputs, KernelConfig, KernelFunc, Tensor4D} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmConv2d: (\n xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number,
filterWidth: number, padTop: number,\n padRight: number, padBottom: number, padLeft: number, isSamePad:
number,\n dilationHeight: number, dilationWidth: number, strideHeight: number,\n strideWidth: number,
inputChannels: number, outputChannels: number,\n outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n wasmConv2d = backend.wasm.cwrap(Conv2D, null /* void */, [\n 'number', // xId\n
'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n
'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n
'number', // outputChannels\n 'number', // outId\n]);\n}\n\nfunction conv2d(\n args: {inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs}) {\n const {inputs, attrs, backend} = args;\n\n const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n
const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode, false,
$dataFormat);\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const
padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom =
convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =

```

```

convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const outputChannels = convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend
Conv2D does not support dataFormat:` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n wasmConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n outputChannels, outId);\n return out;\n }\n\nexport
const conv2DConfig: KernelConfig = {\n kernelName: 'Conv2D',\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: conv2d as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====*\n\nimport { backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n outHeight: number, outWidth: number, outChannels: number,\n strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n xRowStride: number, xColStride: number, xChannelStride: number,\n yBatchStride: number, yRowStride:
number, yColStride: number,\n yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n 'number', //
filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n 'number', //
outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number',
// fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number',
// yChannelStride\n 'number', // outId\n]);\n\nfunction conv2DBackpropInput(args: {\n backend:
BackendWasm,\n inputs: Conv2DBackpropInputInputs,\n attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const { backend, inputs, attrs } = args;\n const { dy, filter } = inputs;\n const { strides, pad, dataFormat,
dimRoundingMode, inputShape } = attrs;\n\n const dilations = 1;\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
inputShape, filter.shape as [number, number, number, number], strides,\n dilations, pad, dimRoundingMode,
false /* depthwise */, $dataFormat);\n const {\n batchSize,\n filterHeight,\n filterWidth,\n inChannels,\n
inHeight,\n inWidth,\n outChannels,\n outHeight,\n outWidth,\n strideHeight,\n strideWidth\n } =
convInfo;\n\n const topPad = filterHeight - 1 - convInfo.padInfo.top;\n const leftPad = filterWidth - 1 -
convInfo.padInfo.left;\n\n const isChannelsLast = convInfo.dataFormat === 'channelsLast';\n const dxStrides =
util.computeStrides(convInfo.inShape);\n const dyStrides = util.computeStrides(dy.shape);\n const [fltS0, fltS1,
fltS2] = util.computeStrides(filter.shape);\n const xBatchStride = dxStrides[0];\n const xRowStride =
isChannelsLast ? dxStrides[1] : dxStrides[2];\n const xColStride = isChannelsLast ? dxStrides[2] : 1;\n const
xChannelStride = isChannelsLast ? 1 : dxStrides[1];\n const yBatchStride = dyStrides[0];\n const yRowStride =
isChannelsLast ? dyStrides[1] : dyStrides[2];\n const yColStride = isChannelsLast ? dyStrides[2] : 1;\n const
yChannelStride = isChannelsLast ? 1 : dyStrides[1];\n\n const out = backend.makeOutput(convInfo.inShape,

```





```

cast({backend, inputs: {x: image}, attrs: {dtype: 'float32'}});\n imagesData =
backend.dataIdMap.get(castedData.dataId);\n }\n\n const imagesId = imagesData.id;\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n\n const
out = backend.makeOutput(outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const
imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n\n wasmCropAndResize(\n
imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,\n cropWidth,\n
InterpolationMethod[method as { } as keyof typeof InterpolationMethod],\n extrapolationValue, outId);\n\n if
(castedData != null) {\n backend.disposeData(castedData.dataId);\n }\n\n return out;\n}\n\n\nexport const
cropAndResizeConfig: KernelConfig = {\n kernelName: CropAndResize,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: cropAndResize as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from
'/types';\n\nimport {transpose} from './Transpose';\n\nlet wasmCumsum: (xId: number, exclusive: number, reverse:
number,\n finalDim: number, outId: number, dtype: CppDType) => void;\n\nfunction setup(backend:
BackendWasm) {\n wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\n 'number', // x_id\n
'number', // exclusive\n 'number', // reverse\n 'number', // final_dim\n 'number', // out_id\n 'number' //
dtype\n]);\n}\n\n\nexport function cumsum(\n args: {inputs: CumsumInputs, backend: BackendWasm, attrs:
CumsumAttrs});\n\nTensorInfo {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {axis,
exclusive, reverse} = attrs;\n const xRank = x.shape.length;\n util.assert(x.dtype === 'float32' || x.dtype ===
'int32',\n () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\n // permute required axis
to inner most axis\n const permutation = backend_util.getAxesPermutation([axis], xRank);\n let permutedX = x;\n
if (permutation !== null) {\n permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n }\n
const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n
backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n\n const permutedOut =
backend.makeOutput(permutedX.shape, permutedX.dtype);\n const finalDim = permutedX.shape[permutedAxis];\n
const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n const permutedOutId =
backend.dataIdMap.get(permutedOut.dataId).id;\n wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0,
finalDim,\n permutedOutId, CppDType[x.dtype]);\n\n // transpose data back if permuted\n let out =
permutedOut;\n if (permutation !== null) {\n const undoPermutation =
backend_util.getUndoAxesPermutation(permutation);\n out = transpose(\n {inputs: {x: permutedOut}, attrs:
{perm: undoPermutation}, backend});\n backend.disposeData(permutedX.dataId);\n
backend.disposeData(permutedOut.dataId);\n }\n return out;\n}\n\n\nexport const cumsumConfig: KernelConfig =
{\n kernelName: Cumsum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: cumsum as { } as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\\n

```

```

*\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmDepthToSpace:
(\n xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n xStridesLength: number, outputShape: Uint8Array, outputStrides: Uint8Array,\n outSize: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\n 'number', // xId\n 'number', // blockSize\n 'number', // channelsLast\n 'array', // xStrides\n
'number', // xStridesLength\n 'array', // outputShape\n 'array', // outputStrides\n 'number', // outSize\n
'number', // outId\n]);\n\n export function depthToSpace(args: {\n backend: BackendWasm,\n inputs:
DepthToSpaceInputs,\n attrs: DepthToSpaceAttrs\n }): TensorInfo {\n const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n const {blockSize, dataFormat} = attrs;\n\n const batchSize = x.shape[0];\n const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n const
outputHeight = inputHeight * blockSize;\n const outputWidth = inputWidth * blockSize;\n const outputDepth =
inputDepth / (blockSize * blockSize);\n\n const outputShape = (dataFormat === 'NHWC') ?\n [batchSize,
outputHeight, outputWidth, outputDepth] :\n [batchSize, outputDepth, outputHeight, outputWidth];\n\n const
out = backend.makeOutput(outputShape, 'float32');\n\n const xData = backend.dataIdMap.get(x.dataId);\n const
xId = xData.id;\n const xStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n const outStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n wasmDepthToSpace(\n xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n return
out;\n }\n\n export const depthToSpaceConfig: KernelConfig = {\n kernelName: DepthToSpace,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: depthToSpace as {} as KernelFunc\n };}\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number, padTop:
number,\n padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n dilationHeight:
number, dilationWidth: number, strideHeight: number,\n strideWidth: number, inputChannels: number,
outputChannels: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmDepthwiseConv2d =\n backend.wasm.cwrap(DepthwiseConv2dNative, null /*void*/, [\n 'number', //
xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', //
filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
'number', // inputChannels\n 'number', // outputChannels\n 'number', // outId\n]);\n\n function
depthwiseConv2d(args: {\n inputs: DepthwiseConv2dNativeInputs,\n backend: BackendWasm,\n attrs:
DepthwiseConv2dNativeAttrs\n }) {\n const {inputs, attrs, backend} = args;\n\n const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n
const
{strides, dilations, pad, dimRoundingMode} = attrs;\n\n const $dilations = dilations == null ? [1, 1] : dilations;\n\n

```

```

const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n ($dilations as number | [number, number]), pad, dimRoundingMode,\n true /* depthwise */);\n\nconst filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop =
convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n\nconst padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n if
(convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend DepthwiseConv2dNative
does not support dataFormat:` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n };\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\nwasmDepthwiseConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n filterWidth,
padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n outputChannels, outId);\n return out;\n);\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n kernelName: DepthwiseConv2dNative,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: depthwiseConv2d as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n=====\n\n*/\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
\n\n=====\n\n*/\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const equalConfig: KernelConfig =\n createBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n=====\n\n*/\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from './Reshape';\n\nexport function expandDims(args: {\n inputs: ExpandDimsInputs,\n attrs: ExpandDimsAttrs,\n backend: BackendWasm\n}) {\n const {inputs, attrs, backend} = args;\n const {input} = inputs;\n const {dim} = attrs;\n const inputRank = input.shape.length;\n const newShape = input.shape.slice();\n let $dim = dim;\n if (dim < 0) {\n // Negative value is counted from the tail of rank.\n util.assert(\n -(inputRank + 1) <= dim,\n () => `Axis must be in the interval [${-(inputRank + 1)}, ${inputRank}]`);\n $dim = inputRank + dim + 1;\n }\n newShape.splice($dim, 0, 1);\n return reshape({inputs: {x: input}, backend, attrs: {shape: newShape}});\n}\n\nexport const expandDimsConfig: KernelConfig = {\n kernelName: ExpandDims,\n backendName: 'wasm',\n kernelFunc: expandDims as {} as KernelFunc,\n};\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nexport function fill(args: {attrs: FillAttrs, backend: BackendWasm}) {\n const {attrs: {shape, value, dtype}, backend} = args;\n const out = backend.makeOutput(shape, dtype);\n const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(value as number);\n return out;\n}\n\nexport const fillConfig: KernelConfig = {\n kernelName: Fill,\n backendName: 'wasm',\n kernelFunc: fill as {} as KernelFunc,\n};\n\n/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFlipLeftRight: (\n xId: number, batch: number, imageHeight: number, imageWidth: number,\n numChannels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight, null /* void */, [\n 'number', // xId\n 'number', // batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', // outId\n]);\n}\n\nexport function flipLeftRight(\n args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n const {inputs, backend} = args;\n const {image} = inputs;\n const out = backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n wasmFlipLeftRight(\n imageId, batch, imageHeight, imageWidth, numChannels, outId);\n return out;\n}\n\nexport const flipLeftRightConfig: KernelConfig = {\n kernelName: FlipLeftRight,\n backendName: 'wasm',\n kernelFunc: flipLeftRight as {} as KernelFunc,\n setupFunc: setup\n};\n\n/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n */
```



```

*\n\nimport {backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc,
Tensor4D} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport
{FusableActivation} from './types';\n\nlet wasmFusedConv2d:\n (xId: number, batchSize: number, inputHeight:
number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number,\n biasId: number,
padTop: number, padRight: number, padBottom: number,\n padLeft: number, isSamePad: number,
dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n
inputChannels: number, outputChannels: number, activation: number,\n preluActivationWeightsId: number,
leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n
wasmFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', //
inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n]);\n\nfunction
fusedConv2d(args: {\n inputs: FusedConv2DInputs,\n backend: BackendWasm,\n attrs: FusedConv2DAttrs\n})
{\n const {inputs, attrs, backend} = args;\n const {x, filter, bias, preluActivationWeights} = inputs;\n const
{strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } =
attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as
Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode);\n\n const fusedActivation =\n
FusableActivation[activation as {} as keyof typeof FusableActivation];\n if (fusedActivation == null) {\n
throw new Error(\n ` ${activation} activation not yet supported for FusedConv2D ` +\n ` in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if
(bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `FusedConv2D only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}.`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not ` +\n `match the number of output channels
(${outputChannels}).`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedConv2D does not support
dataFormat:` +\n ` ${dataFormat}. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n kernelName: FusedConv2D,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,

```

software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { FusibleActivation } from './types';\n\nlet wasmFusedDepthwiseConv2d:\n (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number,\n biasId: number, padTop: number, padRight: number, padBottom: number,\n padLeft: number, isSamePad: number, dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels: number, activation: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedDepthwiseConv2d =\n backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', // preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n]);\n\n function fusedDepthwiseConv2d(args: {\n inputs: FusedDepthwiseConv2DInputs,\n backend: BackendWasm,\n attrs: FusedDepthwiseConv2DAttrs\n }) {\n const { inputs, attrs, backend } = args;\n const { x, filter, bias, preluActivationWeights } = inputs;\n const { strides, pad, dilations, dataFormat, dimRoundingMode, activation, leakyreluAlpha } = attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode, true /* depthwise */);\n\n const fusedActivation = FusibleActivation[activation as {} as keyof typeof FusibleActivation];\n if (fusedActivation == null) {\n throw new Error(\n `${activation} activation not yet supported for FusedDepthwiseConv2D` +\n `in the wasm backend.`);\n }\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if (bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n throw new Error(\n `FusedDepthwiseConv2D only supports rank-1 bias but got ` +\n `rank ${biasData.shape.length}`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n `FusedDepthwiseConv2D bias shape (${biasData.shape}) does not ` +\n `match the number of output channels (${outputChannels})`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize = convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if (dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedDepthwiseConv2D does not support dataFormat:` +\n `${dataFormat}'. Please use 'NHWC'.`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const preluActivationWeightsId = preluActivationWeights == null ? 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedDepthwiseConv2d(\n xId, batchSize, inHeight, inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft, isSamePad, dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n
```



```
fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n kernelName: FusedDepthwiseConv2D,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: fusedDepthwiseConv2d as { } as KernelFunc\n};\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
'License');\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo } from '@tensorflow/tfjs-
core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport { CppDType } from './types';\n\nlet
wasmGatherNd: (\n xId: number, dtype: CppDType, indicesId: number, numSlices: number,\n sliceRank:
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n 'number', // xId\n
'number', // dtype\n 'number', // indicesId\n 'number', // numSlices\n 'number', // sliceRank\n
'number', // sliceSize\n 'array', // strides\n 'number' // outId\n]);\n}\n\nfunction gatherNd(args: { backend: BackendWasm,
inputs: GatherNdInputs }):\n TensorInfo {\n const { backend, inputs } = args;\n const { params, indices } =
inputs;\n\n const [resultShape, numSlices, sliceSize, strides] =\n gather_util.prepareAndValidate(params,
indices);\n\n const out = backend.makeOutput(resultShape, params.dtype);\n if (numSlices === 0) {\n return
out;\n }\n\n const indicesShape = indices.shape;\n const sliceRank = indicesShape[indicesShape.length - 1];\n\n
const xData = backend.dataIdMap.get(params.dataId);\n const xId = xData.id;\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
wasmGatherNd(\n xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n stridesBytes,
outId);\n\n return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n kernelName: GatherNd,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherNd\n};\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n
* you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n
* http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an 'AS IS' BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n
*\n\nimport { backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,
TensorInfo, TypedArray, util } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from
'./backend_wasm';\n\nimport { reshape } from './Reshape';\n\nimport { CppDType } from './types';\n\nlet
wasmGather: (\n xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n indicesId:
number, batchSize: number, outStrides: Uint8Array,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n 'number', // xId\n 'number', // dtype\n
'array', // xStrides\n 'number', // stridesSize\n 'number', // indicesId\n 'number', // batchSize\n
'array', // outStrides\n 'number' // outId\n]);\n}\n\nfunction gatherV2(\n args: { backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { x,
indices } = inputs;\n const { axis, batchDims } = attrs;\n\n // Throw error when any index is out of bound.\n const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n const axisDim = x.shape[parsedAxis];\n for (let i = 0; i < indicesVals.length; ++i) {\n const index
= indicesVals[i];\n util.assert(\n index <= axisDim - 1 && index >= 0,\n () =>\n `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]);\n }\n\n const shapeInfo =
```

```

backend_util.segment_util.collectGatherOpShapeInfo(\n x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n const flattenX = reshape({\n inputs: {x},\n attrs: {\n shape: [\n shapeInfo.batchSize,\n shapeInfo.outerSize, shapeInfo.dimSize,\n shapeInfo.sliceSize\n]\n },\n backend\n });\n const
indicesSize = util.sizeFromShape(indices.shape);\n const flattenIndex = reshape({\n inputs: {x: indices},\n attrs:
{shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n backend\n });\n const flattenOutputShape =
[\n shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n shapeInfo.sliceSize\n];\n\n
const out = backend.makeOutput(flattenOutputShape, x.dtype);\n if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n }\n\n const stridesSize = flattenX.shape.length - 1;\n\n const xData =
backend.dataIdMap.get(flattenX.dataId);\n const xId = xData.id;\n\n const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n const indicesId = indicesData.id;\n\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const xStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n const outStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n wasmGather(\n xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n shapeInfo.batchSize, outStridesBytes, outId);\n\n
backend.disposeData(flattenX.dataId);\n backend.disposeData(flattenIndex.dataId);\n\n // reshape\n out.shape =
shapeInfo.outputShape;\n return out;\n }\n\n\nexport const gatherV2Config: KernelConfig = {\n kernelName:
GatherV2,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherV2 as { } as KernelFunc\n};\n\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport { Greater, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const greaterConfig: KernelConfig =\ncreateBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport { GreaterEqual, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig }
from '/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const greaterEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n\n", "/*\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport { KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { CppDType } from
'/types';\n\nlet wasmFunc: (\n xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>
void;\n\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(LeakyRelu,

```

```

null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // leakyrelu_alpha\n 'number', //
out_id\n]);\n\n\nexport function leakyRelu(\n args:\n {inputs: LeakyReluInputs, attrs: LeakyReluAttrs,
backend: BackendWasm});\n TensorInfo {\n const {inputs: {x}, attrs: {alpha}, backend} = args;\n\n const xId =
backend.dataIdMap.get(x.dataId).id;\n // According to TF API, LeakyRelu returns float32 when input is either
float32\n // or int32.\n const out = backend.makeOutput(x.shape, 'float32');\n\n if (util.sizeFromShape(x.shape)
!== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(xId, CppDType[x.dtype], alpha,
outId);\n }\n\n return out;\n}\n\n\nexport const leakyReluConfig: KernelConfig = {\n kernelName: LeakyRelu,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: leakyRelu as {} as KernelFunc,\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {KernelConfig, Less} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, LessEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\ncreateBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you

```

may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \*\n \* <http://www.apache.org/licenses/LICENSE-2.0>\n \*\n \* Unless required by applicable law or agreed to in writing,  
software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language  
governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport
{ permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmMax: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n 'number', // x_id\n 'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n\n function max(args: { backend:
BackendWasm, inputs: MaxInputs, attrs: MaxAttrs }):
TensorInfo {\n const { backend, inputs, attrs } = args;\n const { reductionIndices: axis, keepDims } = attrs;\n const { x } = inputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const { transposed, axes, originalAxes,
inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input = transposed;\n inputId =
transposedId;\n }\n\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('max',
axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmMax(inputId, CppDType[x.dtype], reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the
transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return out;\n }\n\n export const maxConfig: KernelConfig = {\n kernelName: Max,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: max as { } as KernelFunc\n };
}\n\n/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Maximum } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const maximumConfig: KernelConfig =\n createBinaryKernelConfig(Maximum, supportsFullBroadcast);\n\n/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util }
from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmMaxPool: (\n xId:
number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth:
number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, dilationHeight: number,\n
```



```

reductionAxes, input.shape.length);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput =\n cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(outShape, 'float32');\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmMean(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed
tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n if (input.dtype
!== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n\n return out;\n}\n\nexport const meanConfig:
KernelConfig = {\n kernelName: Mean,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: mean as { }
as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmMin: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n 'number', // x_id\n
'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n}\n\nfunction min(args: {backend:
BackendWasm, inputs: MinInputs, attrs: MinAttrs}):\n TensorInfo {\n const {backend, inputs, attrs} = args;\n
const {axis, keepDims} = attrs;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n
let\n inputId = xId;\n let input = x;\n const {transposed, axes, originalAxes, inputWasTransposed} =\n
permuteAxesAndTranspose(x, axis, backend);\n if (inputWasTransposed) {\n const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We
will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n }\n }\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('min', axes,
inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape,
axes);\n const reduceSize = util.sizeFromShape(reduceShape);\n const out = backend.makeOutput(outShape,
input.dtype);\n if (util.sizeFromShape(input.shape) !== 0) {\n const outId =
backend.dataIdMap.get(out.dataId).id;\n wasmMin(inputId, CCppType[x.dtype], reduceSize, outId);\n }\n if
(inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n if (keepDims) {\n // reshape\n const newShape = backend_util.expandShapeToKeepDim(out.shape,
originalAxes);\n out.shape = newShape;\n }\n return out;\n}\n\nexport const minConfig: KernelConfig = {\n
kernelName: Min,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: min as { } as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n

```

```
*/\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const minimumConfig: KernelConfig =\n createBinaryKernelConfig(Minimum, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {CppType} from './types';\n\n// Must match enum in MirrorPad.cc\nenum MirrorPaddingMode {\n reflect = 0,\n symmetric = 1\n}\n\nlet wasmMirrorPad: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-paddings\n 'array', // post-paddings\n 'number', // mode\n 'number', // outId\n]);\n}\n\nfunction mirrorPad(args: {\n inputs: MirrorPadInputs,\n backend: BackendWasm,\n attrs: MirrorPadAttrs\n}) {\n const {inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple => padTuple[0]);\n\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n\n const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n\n const postPaddingsBytes =\n new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmMirrorPad(\n xId, xShapeBytes, x.shape.length, CCppType[x.dtype], prePaddingsBytes,\n postPaddingsBytes, MirrorPaddingMode[mode], outId);\n\n return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as { } as KernelFunc,\n setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, Multiply} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\n createBinaryKernelConfig(Multiply, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*/\nimport {KernelConfig, Neg} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
```

```
./unary_kernel';\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { BackendWasm } from './backend_wasm';\n\n// Analogous to `struct Result` in\n`non_max_suppression_impl.h`\n\ninterface Result {\n pSelectedIndices: number;\n selectedSize: number;\n pSelectedScores: number;\n pValidOutputs: number;\n}\n\n/*\n * Parse the result of the c++ method, which has the\n * shape equivalent to\n * `Result`\n */\n\nexport function parseResultStruct(\n backend: BackendWasm, resOffset:\n number): Result {\n const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n const\n pSelectedIndices = result[0];\n const selectedSize = result[1];\n const pSelectedScores = result[2];\n const\n pValidOutputs = result[3];\n // Since the result was allocated on the heap, we have to delete it.\n backend.wasm._free(resOffset);\n return {pSelectedIndices, selectedSize, pSelectedScores,\n pValidOutputs};\n}\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under\n * the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,\n NonMaxSuppressionV3Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from\n './backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number)\n=> number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n NonMaxSuppressionV3,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n]);\n}\n\nfunction kernelFunc(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV3Inputs,\n attrs:\n NonMaxSuppressionV3Attrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {iouThreshold,\n maxOutputSize, scoreThreshold} = attrs;\n const {boxes, scores} = inputs;\n const boxesId =\n backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n const\n resOffset =\n wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n const\n {pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n parseResultStruct(backend, resOffset);\n // Since we are not using scores for V3, we have to delete it from the heap.\n backend.wasm._free(pSelectedScores);\n backend.wasm._free(pValidOutputs);\n const selectedIndicesTensor\n =\n backend.makeOutput([selectedSize, 'int32'], pSelectedIndices);\n return\n selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n kernelName:\n NonMaxSuppressionV3,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc as {\n } as\n KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the
```



License.\n \*

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs, NonMaxSuppressionV4Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n NonMaxSuppressionV4,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n 'bool', // padToMaxOutputSize\n]);\n\n function nonMaxSuppressionV4(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV4Inputs,\n attrs: NonMaxSuppressionV4Attrs\n }): TensorInfo[] {\n const { backend, inputs, attrs } = args;\n const { iouThreshold, maxOutputSize, scoreThreshold, padToMaxOutputSize } =\n attrs;\n const { boxes, scores } = inputs;\n\n const boxesId =\n backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n padToMaxOutputSize);\n\n const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n parseResultStruct(backend, resOffset);\n\n // Since we are not using scores for V4, we have to delete it from the heap.\n backend.wasm._free(pSelectedScores);\n\n const selectedIndicesTensor =\n backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n const validOutputsTensor =\n backend.makeOutput([], 'int32', pValidOutputs);\n\n return [selectedIndicesTensor, validOutputsTensor];\n }\n\n export const nonMaxSuppressionV4Config: KernelConfig = {\n kernelName: NonMaxSuppressionV4,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV4 as KernelFunc,\n };\n\n /*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n}
```

```
=====\n\n*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs, NonMaxSuppressionV5Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number, softNmsSigma: number) =>\n number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n NonMaxSuppressionV5,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n 'number', // softNmsSigma\n]);\n\n function kernelFunc(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV5Inputs,\n attrs: NonMaxSuppressionV5Attrs\n }): TensorInfo[] {\n const { backend, inputs, attrs } = args;\n const { iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma } =\n attrs;\n const { boxes, scores } = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n softNmsSigma);\n\n const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n parseResultStruct(backend, resOffset);\n\n // Since we are not using validOutputs for V5, we have to delete it from the\n // heap.\n backend.wasm._free(pValidOutputs);\n\n const selectedIndicesTensor =\n backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n const selectedScoresTensor =\n backend.makeOutput([selectedSize], 'float32', pSelectedScores);\n\n return [selectedIndicesTensor, selectedScoresTensor];\n }\n\n export const nonMaxSuppressionV5Config: KernelConfig =
```

```
{\n kernelName: NonMaxSuppressionV5,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc
as { } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n*\nimport {KernelConfig, NotEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
 './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const notEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\nlet wasmOneHot: (\n indicesId: number, depth:
number, onValue: number, offValue: number,\n outId: number) => void;\nfunction setup(backend:
BackendWasm) {\n wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n 'number', // indices_id\n 'number', // depth,\n 'number', // onValue\n 'number', // offValue\n 'number' // out_id\n]);\n}\nfunction
oneHot(\n args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n const {inputs,
backend, attrs} = args;\n const {indices} = inputs;\n const {depth, onValue, offValue} = attrs;\n const out =
backend.makeOutput([...indices.shape, depth], 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const indicesData = backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n wasmOneHot(indicesId, depth, onValue, offValue, outId);\n return out;\n}\nexport const oneHotConfig:
KernelConfig = {\n kernelName: OneHot,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: oneHot as
{ } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs} from '@tensorflow/tfjs-core';\nimport
{BackendWasm} from './backend_wasm';\nfunction onesLike(args: {inputs: OnesLikeInputs, backend:
BackendWasm}) {\n const {inputs: {x}, backend} = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const outVals = backendtypedArrayFromHeap(out);\n outVals.fill(1);\n return out;\n}\nexport const
onesLikeConfig: KernelConfig = {\n kernelName: OnesLike,\n backendName: 'wasm',\n kernelFunc: onesLike as
{ } as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
```

implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {concat} from './Concat';\nimport {expandDims} from './ExpandDims';\n\nexport function pack(\n args: {inputs: PackInputs, backend: BackendWasm, attrs: PackAttrs});\n TensorInfo {\n const {inputs, backend, attrs} = args;\n const {axis} = attrs;\n\n if (inputs.length === 1) {\n return expandDims(\n {inputs: {input: inputs[0]}, backend, attrs: {dim: axis}});\n }\n\n const shape = inputs[0].shape;\n const dtype = inputs[0].dtype;\n\n inputs.forEach(t => {\n util.assertShapesMatch(\n shape, t.shape, \n 'All tensors passed to stack must have matching shapes');\n util.assert(\n dtype === t.dtype, \n () => 'All tensors passed to stack must have matching dtypes');\n });\n\n const intermediateTensorInfos: TensorInfo[] = [];\n const expandedTensors = inputs.map(t => {\n const expandedT =\n expandDims({inputs: {input: t}, backend, attrs: {dim: axis}});\n intermediateTensorInfos.push(expandedT);\n return expandedT;\n });\n\n const result = concat({inputs: expandedTensors, backend, attrs: {axis}});\n\n intermediateTensorInfos.forEach(t =>\n backend.disposeData(t.dataId));\n\n return result;\n }\n\nexport const packConfig: KernelConfig = {\n kernelName: Pack,\n backendName: 'wasm',\n kernelFunc: pack as {} as KernelFunc;\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n\n*\n\nimport {KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {fill} from './Fill';\nimport {CppType} from './types';\n\nlet wasmPadV2: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n constantValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPadV2 = backend.wasm.cwrap(PadV2, null\n/* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-paddings\n 'array', // post-paddings\n 'number', // constantValue\n 'number', // outId\n]);\n\nfunction pad(\n args: {inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs}) {\n const {inputs: {x}, backend, attrs: {paddings, constantValue}} = args;\n\n const outShape = paddings.map((p, i) => p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n if (util.sizeFromShape(x.shape) === 0) {\n // Short-circuit the computation, since x doesn't have value, only\n // the shape is used to compute output shape to pad.\n return fill({\n backend,\n attrs: {shape: outShape, value: constantValue, dtype: x.dtype}\n });\n }\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n const outTensorData = backend.dataIdMap.get(out.dataId);\n const outId = outTensorData.id;\n\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const postPaddingsBytes =\n new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmPadV2(\n xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes, constantValue, outId);\n return out;\n}\n\nexport const padV2Config: KernelConfig = {\n kernelName: PadV2,\n backendName: 'wasm',\n kernelFunc: pad as {} as KernelFunc,\n setupFunc: setup;\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
```

software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport {KernelConfig, Pow} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const powConfig: KernelConfig =\ncreateBinaryKernelConfig(Pow, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, Prelu, PreluInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {cast} from './Cast';\nlet wasmPrelu: (xId: number, weightsId: number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n wasmPrelu = backend.wasm.cwrap(Prelu, null /* void */, [\n 'number', // x_id\n 'number', // weights_id\n 'number' // out_id\n]);\n function prelu(args: {inputs: PreluInputs, backend: BackendWasm}) {\n const {inputs, backend} = args;\n const {x, alpha} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const weightsId = backend.dataIdMap.get(alpha.dataId).id;\n let inputId = xId;\n const input = x;\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput = cast({backend, inputs: {x}, attrs: {dtype: 'float32'}});\n inputId = backend.dataIdMap.get(castedInput.dataId).id;\n }\n const out = backend.makeOutput(x.shape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmPrelu(inputId, weightsId, outId);\n if (input.dtype !== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n return out;\n }\n export const preluConfig: KernelConfig = {\n kernelName: Prelu,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: prelu as KernelFunc\n }; \n}"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\nlet wasmProd: (\n xId: number, reduceSize: number, dtype: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n 'number',\n 'number',\n 'number',\n 'number'\n]);\n function prod(args: {\n backend: BackendWasm,\n inputs: ProdInputs,\n attrs: ProdAttrs\n }): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n const {transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n let reductionAxes = axes;\n if (inputWasTransposed) {\n const transposedId =\n backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n }\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length, input.shape.length);\n }\n backend_util.assertAxesAreInnerMostDims(\n 'prod', reductionAxes, input.shape.length);\n const [outShape,
```

```

reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize
= util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, input.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n\n if (inputWasTransposed) {\n // dispose of
the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n
return out;\n}\n\nexport const prodConfig: KernelConfig = {\n kernelName: Prod,\n backendName: 'wasm',\n
setupFunc: setup,\n kernelFunc: prod as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo } from '@tensorflow/tfjs-core';\nimport
{ BackendWasm } from '../backend_wasm';\nimport { rangeImplCPU } from '../kernel_utils/shared';\n\nexport const
range =\n (args: { backend: BackendWasm, attrs: RangeAttrs }): TensorInfo => {\n const { backend, attrs } =
args;\n const { start, stop, step, dtype } = attrs;\n const values = rangeImplCPU(start, stop, step, dtype);\n
const out = backend.makeOutput([values.length], dtype);\n const outVals =
backend.typedArrayFromHeap(out);\n outVals.set(values);\n return out;\n };\n\nexport const rangeConfig:
KernelConfig = {\n kernelName: Range,\n backendName: 'wasm',\n kernelFunc: range as { } as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*/\n\nimport { KernelConfig, RealDiv } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const realDivConfig: KernelConfig =\n createBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*/\n\nimport { KernelConfig, Relu } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\nimport {KernelConfig, Relu6} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n", "/**\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====
*\nimport {KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,
util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {cast} from
'./Cast';\n\nlet wasmResizeBilinear: (\n xId: number, batch: number, oldHeight: number, oldWidth: number,\n numChannels: number, newHeight: number, newWidth: number,\n alignCorners: number, halfPixelCenters:
number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmResizeBilinear =
backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n 'number', // xId\n 'number', // batch\n 'number', //
oldHeight\n 'number', // oldWidth\n 'number', // numChannels\n 'number', // newHeight\n 'number', //
newWidth\n 'number', // alignCorners\n 'number', // halfPixelCenters\n 'number' // outId\n]);\n\nfunction
resizeBilinear(args: {\n backend: BackendWasm,\n inputs: ResizeBilinearInputs,\n attrs: ResizeBilinearAttrs\n}):
TensorInfo {\n const {backend, inputs, attrs} = args;\n const {images} = inputs;\n const {alignCorners,
halfPixelCenters, size} = attrs;\n const [newHeight, newWidth] = size;\n const [batch, oldHeight, oldWidth,
numChannels] = images.shape;\n const outShape = [batch, newHeight, newWidth, numChannels];\n let xData =
backend.dataIdMap.get(images.dataId);\n let castedData;\n if (xData.dtype !== 'float32') {\n castedData =\n
cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n xData =
backend.dataIdMap.get(castedData.dataId);\n }\n const xId = xData.id;\n const out =
backend.makeOutput(outShape, 'float32');\n if (util.sizeFromShape(images.shape) === 0) {\n return out;\n }\n
const outId = backend.dataIdMap.get(out.dataId).id;\n wasmResizeBilinear(\n xId, batch, oldHeight,
oldWidth, numChannels, newHeight, newWidth,\n alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n if
(castedData !== null) {\n backend.disposeData(castedData.dataId);\n }\n return out;\n}\n\nexport const
resizeBilinearConfig: KernelConfig = {\n kernelName: ResizeBilinear,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: resizeBilinear as {} as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*\nimport {KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {identity} from
'./Identity';\nimport {reshape} from './Reshape';\n\nlet wasmReverse: (\n xId: number, axes: Uint8Array,
axesLength: number, outShape: Uint8Array,\n outShapeLength: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n wasmReverse = backend.wasm.cwrap(Reverse, null, [\n 'number', // x_id\n
'array', // axes\n 'number', // axes_length\n 'array', // out_shape\n 'number', // out_shape_length\n
'number' // out_id\n]);\n\nexport function reverse(\n args: {\n inputs: ReverseInputs, backend: BackendWasm, attrs:
ReverseAttrs\n }):\n TensorInfo {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {dims} =
attrs;\n const axes = util.parseAxisParam(dims, x.shape);\n if (x.shape.length === 0) {\n return
identity({inputs: {x}, backend});\n }\n const out = backend.makeOutput(x.shape, x.dtype);\n const xId =

```

```

backend.dataIdMap.get(x.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const axesBytes =
new Uint8Array(new Int32Array(axes).buffer);\n const outShapeBytes = new Uint8Array(new
Int32Array(x.shape).buffer);\n\n wasmReverse(\n xId, axesBytes, axes.length, outShapeBytes, x.shape.length,
outId);\n\n const reshaped =\n reshape({inputs: {x: out}, attrs: {shape: x.shape}, backend});\n\n backend.disposeData(out.dataId);\n return reshaped;\n}\n\nexport const reverseConfig: KernelConfig = {\n
kernelName: Reverse,\n backendName: 'wasm',\n kernelFunc: reverse as {} as KernelFunc,\n setupFunc:
setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,
TensorInfo} from '@tensorflow/tfjs-core';\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmRotate: (\n xId: number, batch: number, imageHeight:
number, imageWidth: number,\n numChannels: number, radians: number, centerX: number, centerY: number,\n
fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n 'number', // xId\n 'number', //
batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', //
radians\n 'number', // centerX\n 'number', // centerY\n 'array', // fillBytes\n 'number', // fillLength\n
'number', // outId\n]);\n\nexport function rotateWithOffset(args: {\n inputs: RotateWithOffsetInputs,\n
backend: BackendWasm,\n attrs: RotateWithOffsetAttrs\n}): TensorInfo {\n const {inputs, backend, attrs} =
args;\n const {image} = inputs;\n const {radians, fillValue, center} = attrs;\n\n const out =
backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n
const outId = backend.dataIdMap.get(out.dataId).id;\n\n const [batch, imageHeight, imageWidth, numChannels] =
image.shape;\n\n const [centerX, centerY] =\n backend_util.getImageCenter(center, imageHeight,
imageWidth);\n\n const fillIsBlack = fillValue === 0;\n const fullOpacityValue = 255;\n const fillValues =
typeof fillValue === 'number' ?\n [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] :\n
[...fillValue, fullOpacityValue];\n const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n\n
wasmRotate(\n imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n centerY,
fillBytes, fillValues.length, outId);\n return out;\n}\n\nexport const rotateWithOffsetConfig: KernelConfig = {\n
kernelName: RotateWithOffset,\n backendName: 'wasm',\n kernelFunc: rotateWithOffset as {} as KernelFunc,\n
setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *

```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*\nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppDType} from './types';\nlet wasmScatterNd: (\n indicesId: number, updatesId: number, dtype: CppDType, sliceRank: number,\n numUpdates: number, sliceSize: number, strides: Uint8Array,\n outputSize: number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n wasmScatterNd = backend.wasm.cwrap(ScatterNd, null /*void*/, [\n 'number', // indicesId\n 'number', // updatesId\n 'number', // dtype\n 'number', // sliceRank\n 'number', // numUpdates\n 'number', // sliceSize\n 'array', // strides\n 'number', // outputSize\n 'number' // outId\n]);\n function scatterNd(\n args: {\n backend: BackendWasm, inputs: ScatterNdInputs, attrs: ScatterNdAttrs\n }): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {indices, updates} = inputs;\n const {shape} = attrs;\n const out = backend.makeOutput(shape, updates.dtype);\n if (util.sizeFromShape(shape) === 0) {\n return out;\n }\n const {sliceRank, numUpdates, sliceSize, strides, outputSize} =\n scatter_util.calculateShapes(updates, indices, shape);\n const indicesData = backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n const updatesData = backend.dataIdMap.get(updates.dataId);\n const updatesId = updatesData.id;\n const stridesBytes = new Uint8Array(new Int32Array(strides).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmScatterNd(\n indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n sliceSize, stridesBytes, outputSize, outId);\n return out;\n }\n export const scatterNdConfig: KernelConfig = {\n kernelName: ScatterNd,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: scatterNd as {} as KernelFunc\n };}\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {KernelConfig, KernelFunc, Select, SelectInputs, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nlet wasmSelect: (\n conditionId: number, tId: number, eId: number, offset: number,\n outId: number) => void;\nfunction setup(backend: BackendWasm) {\n wasmSelect = backend.wasm.cwrap('SelectV2', null, [\n 'number', // conditionId\n 'number', // tId\n 'number', // eId\n 'number', // offset\n 'number', // outId\n]);\n function select(args: {inputs: SelectInputs, backend: BackendWasm}) {\n const {inputs, backend} = args;\n const {condition, t, e} = inputs;\n const conditionId = backend.dataIdMap.get(condition.dataId).id;\n const tId = backend.dataIdMap.get(t.dataId).id;\n const eId = backend.dataIdMap.get(e.dataId).id;\n const out = backend.makeOutput(t.shape, t.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const cRank = condition.shape.length;\n const tRank = t.shape.length;\n const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n 1 : \n
```



```
util.sizeFromShape(t.shape.slice(1));\n\n wasmSelect(conditionId, tId, eId, offset, outId);\n return out;\n}\n\nexport\nconst selectConfig: KernelConfig = {\n kernelName: Select,\n backendName: 'wasm',\n kernelFunc: select as { }\n as KernelFunc,\n setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
=====
```

```
\n*\n\nimport { KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util } from '@tensorflow/tfjs-\ncore';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId: number) =>\nvoid;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(Sigmoid, null /*\nvoid */ , ['number', 'number']);\n}\n\nfunction sigmoid(args: { backend: BackendWasm, inputs: SigmoidInputs }):\nTensorInfo {\n const { backend, inputs: { x } } = args;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out\n = backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n // Short-\ncircuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId,\noutId);\n return out;\n}\n\nexport const sigmoidConfig: KernelConfig = {\n kernelName: 'Sigmoid',\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: sigmoid as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
=====
```

```
\n*\n\nimport { KernelConfig, Sin } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n '../unary_kernel';\n\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
=====
```

```
\n*\n\nimport { KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId:\nnumber, channels: number, batch: number) =>\nvoid;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(Softmax, null /* void */ , [\n 'number', // xId\n 'number', // outId\n 'number', // channels\n 'number' // batch\n]);\n}\n\nfunction softmax(\n args: { backend: BackendWasm,\n inputs: SoftmaxInputs, attrs: SoftmaxAttrs }):\nTensorInfo {\n const { backend, inputs: { logits }, attrs: { dim } } =\nargs;\n const xId = backend.dataIdMap.get(logits.dataId).id;\n const out = backend.makeOutput(logits.shape,\nlogits.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const channels = logits.shape[dim];\n const batch = util.sizeFromShape(logits.shape) / channels;\n\n // Short-circuit zero-sized tensors.\n if\n (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId, outId, channels, batch);\n return\nout;\n}\n\nexport const softmaxConfig: KernelConfig = {\n kernelName: Softmax,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: softmax as { } as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2021 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
```

use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \*\n \* <http://www.apache.org/licenses/LICENSE-2.0>\n \*\n \* Unless required by applicable law or agreed to in writing,  
software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language  
governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport {backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,
SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {padV2Config} from './PadV2';\n\nimport {reshape} from './Reshape';\n\nimport {transpose} from './Transpose';\n\nfunction
spaceToBatchND(args: {\n inputs: SpaceToBatchNDInputs,\n backend: BackendWasm,\n attrs:
SpaceToBatchNDAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {blockShape,
padding} = attrs;\n const prod = util.sizeFromShape(blockShape);\n const completePadding: Array<[number,
number]> = [[0, 0]];\n completePadding.push(...(padding as Array<[number, number]>));\n for (let i = 1 +
blockShape.length; i < x.shape.length; ++i) {\n completePadding.push([0, 0]);\n }\n const paddedX =
padV2Config.kernelFunc({\n inputs: {x},\n backend,\n attrs: {padding: completePadding, constantValue:
0}\n}) as TensorInfo;\n const reshapedPaddedShape =\n backend_util.getReshaped(paddedX.shape,
blockShape, prod, false);\n const permutedReshapedPaddedPermutation = backend_util.getPermuted(\n reshapedPaddedShape.length, blockShape.length, false);\n const flattenShape =\n backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n const reshapeInputs:
ReshapeInputs = {x: paddedX};\n const reshapeAttrs: ReshapeAttrs = {shape: reshapedPaddedShape};\n const
paddedXReshaped =\n reshape({inputs: reshapeInputs, backend, attrs: reshapeAttrs});\n const transposeInputs:
TransposeInputs = {x: paddedXReshaped};\n const transposeAttrs:\n TransposeAttrs = {perm:
permutedReshapedPaddedPermutation};\n const paddedXT =\n transpose({inputs: transposeInputs, backend,
attrs: transposeAttrs});\n const resultReshapeInputs: ReshapeInputs = {x: paddedXT};\n const
resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};\n const result = reshape(\n {inputs:
resultReshapeInputs, backend, attrs: resultReshapeAttrs});\n backend.disposeData(paddedX.dataId);\n backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n return
result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n backendName: 'wasm',\n kernelFunc: spaceToBatchND as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';\n\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {slice} from './Slice';\n\nexport function splitV(\n args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {\n const {inputs, attrs, backend} = args;\n const {x} = inputs;\n const
{numOrSizeSplits, axis} = attrs;\n const $axis = util.parseAxisParam(axis, x.shape)[0];\n const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n const begin = new Array(x.shape.length).fill(0);\n const size = x.shape.slice();\n return splitSizes.map(s => {\n const xSliceSize = [...size];\n xSliceSize[$axis] =
s;\n const xSlice =\n slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});\n begin[$axis] += s;\n return xSlice;\n });\n}\n\nexport const splitVConfig: KernelConfig = {\n kernelName: SplitV,\n backendName:
'wasm',\n kernelFunc: splitV as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
```

file except in compliance with the License.\n \* You may obtain a copy of the License at\n \*\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing,  
software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES  
OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language  
governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, Sqrt } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, Square } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, SquaredDifference } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig }\n from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig\n =\n createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/**\n * @license\n * Copyright\n * 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo }\n from '@tensorflow/tfjs-\n core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from './types';\nlet wasmStep:\n (xId: number, alpha: number, dtype: number, outId: number) =>\n void;\nfunction setup(backend:\n BackendWasm): void {\n wasmStep = backend.wasm.cwrap(Step, null /*void*/, [\n 'number', // x_id\n 'number', // alpha\n 'number', // dtype\n 'number', // out_id\n]);\n}\nfunction step(\n args: {\n backend:\n BackendWasm,\n inputs: StepInputs,\n attrs: StepAttrs\n }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { alpha } = attrs;\n const { x } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =\n backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmStep(xId,\n alpha, CppDType[x.dtype], outId);\n return out;\n}\n\nexport const stepConfig: KernelConfig = {\n kernelName:\n Step,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: step as {} as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
```

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. \* See the License for the specific language governing permissions and \* limitations under the License.\*

```
=====
*/n\nimport {KernelConfig, KernelFunc, slice_util, StridedSlice, StridedSliceAttrs, StridedSliceInputs, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from
 './Reshape';\nimport {slice} from './Slice';\n\nlet wasmStridedSlice: (\n xId: number, xStridesBytes: Uint8Array,
xRank: number,\n beginBytes: Uint8Array, endBytes: Uint8Array, stridesBytes: Uint8Array,\n outShapeBytes:
 Uint8Array, outStridesBytes: Uint8Array,\n outShapeLength: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n wasmStridedSlice = backend.wasm.cwrap(StridedSlice, null /*void*/, [\n
 'number', // xId\n 'array', // xStrides\n 'number', // xRank\n 'array', // beginBytes\n 'array', // endBytes\n
 'array', // stridesBytes\n 'array', // outShapeBytes\n 'array', // outStridesBytes\n 'number', //
 outShapeLength\n 'number', // outId\n]);\n\n nexport function stridedSlice(args: {\n backend: BackendWasm,\n
 inputs: StridedSliceInputs,\n attrs: StridedSliceAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n
 const {x} = inputs;\n\n const {\n begin,\n end,\n strides,\n beginMask,\n endMask,\n ellipsisMask,\n
 newAxisMask,\n shrinkAxisMask\n } = attrs;\n\n const {\n finalShapeSparse,\n finalShape,\n isIdentity,\n
 sliceDim0,\n isSimpleSlice,\n begin: $begin,\n end: $end,\n strides: $strides\n } =\n slice_util.sliceInfo(\n
 x.shape, begin, end, strides, beginMask, endMask, ellipsisMask,\n newAxisMask, shrinkAxisMask);\n\n let result;\n\n if (isIdentity) {\n // Optimization #1, slice is a no-op plus reshape\n result = reshape({inputs: {x},
 backend, attrs: {shape: finalShape}});\n } else if (sliceDim0 || isSimpleSlice) {\n // Optimization #2, slice is
 memory contiguous (only occurs in dim 0)\n util.assert(\n x.shape.length >= 1,\n () => `Input must have
 rank at least 1, got: ${x.shape.length}`);\n\n const size = slice_util.computeOutShape($begin, $end, $strides);\n
 // To tolerate begin[0] > end[0] (a 0-output slice), we min(begin, end).\n const sliced = slice({inputs: {x},
 backend, attrs: {begin: $begin, size}});\n result =\n reshape({inputs: {x: sliced}, backend, attrs: {shape:
 finalShape}});\n backend.disposeData(sliced.dataId);\n } else {\n const out =
 backend.makeOutput(finalShapeSparse, 'float32');\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const
 xStridesBytes =\n new Uint8Array(new Int32Array(util.computeStrides(x.shape)).buffer);\n const beginBytes
 = new Uint8Array(new Int32Array($begin).buffer);\n const endBytes = new Uint8Array(new
 Int32Array($end).buffer);\n const stridesBytes = new Uint8Array(new Int32Array($strides).buffer);\n\n const
 outputShapeBytes =\n new Uint8Array(new Int32Array(finalShapeSparse).buffer);\n const outStridesBytes =
 new Uint8Array(\n new Int32Array(util.computeStrides(finalShapeSparse)).buffer);\n const outId =
 backend.dataIdMap.get(out.dataId).id;\n\n wasmStridedSlice(\n xId, xStridesBytes, x.shape.length,
 beginBytes, endBytes, stridesBytes,\n outputShapeBytes, outStridesBytes, finalShapeSparse.length, outId);\n\n
 result = reshape({inputs: {x: out}, backend, attrs: {shape: finalShape}});\n\n backend.disposeData(out.dataId);\n
 }\n\n return result;\n\n}\n\nexport const stridedSliceConfig: KernelConfig = {\n kernelName: StridedSlice,\n
 backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: stridedSlice as {} as KernelFunc\n};\n\n"/**\n *
 @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n */
 =====\n*/n\nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
 './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const subConfig: KernelConfig =\n createBinaryKernelConfig(Sub, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All
 Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
 file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
 law or agreed to in writing,
```

software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport\n { permuteAxesAndTranspose } from './kernel_utils';\nimport { CppDType } from './types';\n\nlet wasmSum: (xId:\n number, reduceSize: number, dtype: number, outId: number) =>\n void;\n\nfunction setup(backend:\n BackendWasm): void {\n wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n 'number', // input_id\n 'number', // reduce_size\n 'number', // dtype\n 'number', // out_id\n]);\n}\n\nfunction sum(args: { backend:\n BackendWasm, inputs: SumInputs, attrs: SumAttrs }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { axis, keepDims } = attrs;\n const { x } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let\n inputId = xId;\n let input = x;\n const { transposed, axes, originalAxes, inputWasTransposed } =\n permuteAxesAndTranspose(x, axis, backend);\n let reductionAxes = axes;\n if (inputWasTransposed) {\n const\n transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was\n not a no-op. We will need to dispose of this\n // once we are done.\n input = transposed;\n inputId =\n transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length,\n input.shape.length);\n }\n }\n backend_util.assertAxesAreInnerMostDims(\n 'sum', reductionAxes,\n input.shape.length);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =\n util.sizeFromShape(reduceShape);\n const out = backend.makeOutput(outShape, input.dtype);\n if\n (util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmSum(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n if (inputWasTransposed) {\n // dispose of\n the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n if (keepDims) {\n // reshape\n const\n newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n return out;\n}\n\nexport const sumConfig: KernelConfig = {\n kernelName: Sum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: sum as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *
Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\nimport { KernelConfig, Tan } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *
Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n */\n\n=====\n\nimport { KernelConfig, Tanh } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *
Unless required by applicable law or
```

agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```

=====
\n\nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmTile: (\n xId: number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\n newShapeSize: number, dtype: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmTile = backend.wasm.cwrap(Tile, null / void */, [\n 'number', // x_id\n 'array', // x_shape\n 'number', // x_shape.length\n 'array', // new_shape\n 'number', // new_shape.length\n 'number' // out_id\n]);\n\n function tile(\n args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const {reps} = attrs;\n\n const newShape: number[] = new Array(x.shape.length);\n for (let i = 0; i < newShape.length; i++) {\n newShape[i] = x.shape[i] * reps[i];\n }\n\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n\n const out = backend.makeOutput(newShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmTile(\n xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n CppDType[out.dtype], outId);\n\n return out;\n }\n\n export const tileConfig: KernelConfig = {\n kernelName: Tile,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: tile as {} as KernelFunc\n };
 }

 /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
=====

```

```

=====
\n\nimport {KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet wasmTopK: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n xDtype: CppDType, k: number, sorted: boolean, outValuesId: number,\n outIndicesId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmTopK = backend.wasm.cwrap(TopK, null / void */, [\n 'number', // xId\n 'array', // x_shape\n 'number', // x_shape.length\n 'number', // x_dtype\n 'number', // k\n 'bool', // sorted\n 'number', // outValuesId\n 'number', // outIndicesId\n]);\n\n export const topk: (\n args: {inputs: TopKInputs, backend: BackendWasm, attrs: TopKAttrs}) => \n TensorInfo[] | TensorInfo = ({inputs, backend, attrs}) => {\n const {x} = inputs;\n const {k, sorted} = attrs;\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const outputShape = x.shape.slice();\n outputShape[outputShape.length - 1] = k;\n\n const outValues = backend.makeOutput(outputShape, x.dtype);\n\n const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n const outIndices = backend.makeOutput(outputShape, 'int32');\n\n const outIndicesId = backend.dataIdMap.get(outIndices.dataId).id;\n\n wasmTopK(\n xId, xShapeBytes, x.shape.length, CppDType[x.dtype], k, sorted,\n outValuesId, outIndicesId);\n\n return [outValues, outIndices];\n };\n\n export const topKConfig: KernelConfig = {\n kernelName: TopK,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: topk as {} as KernelFunc\n };
 }

 /**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
=====

```

governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmTransform: (\n imageId: number, transformsId: number, isBatchTransform: boolean,\n batch: number, outHeight: number, outWidth: number, numChannels: number,\n imageWidth: number, imageHeight: number, strides: Uint8Array,\n stridesLength: number, interpolationModeId: number, fillModeId: number,\n fillValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmTransform = backend.wasm.cwrap(Transform, null /*void*/, [\n 'number', // imageId\n 'number', // transformsId\n 'bool', // isBatchTransform\n 'number', // batch\n 'number', // outHeight\n 'number', // outWidth\n 'number', // numChannels\n 'number', // imageWidth\n 'number', // imageHeight\n 'array', // strides\n 'number', // stridesLength\n 'number', // interpolationModeId\n 'number', // fillModeId\n 'number', // fillValue\n 'number' // outId\n]);\n\n function transform(\n args: {\n backend: BackendWasm, inputs: TransformInputs, attrs: TransformAttrs\n }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { image, transforms } = inputs;\n const { interpolation, fillMode, fillValue, outputShape } = attrs;\n const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n const [outHeight, outWidth] =\n outputShape != null ? outputShape : [imageHeight, imageWidth];\n const outShape =\n [batch, outHeight, outWidth, numChannels] as [number, number, number, number];\n const strides =\n new Uint8Array(new Int32Array(util.computeStrides(image.shape)).buffer);\n\n const out = backend.makeOutput(outShape, image.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const imageData = backend.dataIdMap.get(image.dataId);\n const imageId = imageData.id;\n\n const transformsData = backend.dataIdMap.get(transforms.dataId);\n const transformsId = transformsData.id;\n\n const interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n let fillModeId;\n switch (fillMode) {\n case 'constant':\n fillModeId = 1;\n break;\n case 'reflect':\n fillModeId = 2;\n break;\n case 'wrap':\n fillModeId = 3;\n break;\n case 'nearest':\n fillModeId = 4;\n break;\n default:\n fillModeId = 1;\n break;\n }\n\n wasmTransform(\n imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n outWidth, numChannels, imageWidth, imageHeight, strides,\n image.shape.length - 1, interpolationModeId, fillModeId, fillValue,\n outId);\n\n return out;\n }\n\n export const transformConfig: KernelConfig = {\n kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as {\n } as KernelFunc\n };\n}\n\n/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { slice } from './Slice';\n\nfunction unpack(\n args: {\n inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs\n }):\n TensorInfo[] {\n const { inputs, backend, attrs } = args;\n const { value } = inputs;\n let { axis } = attrs;\n if (axis < 0) {\n axis += value.shape.length;\n }\n\n const numOutputs = value.shape[axis];\n const rank = value.shape.length;\n const outShape: number[] = new Array(rank - 1);\n let outIndex = 0;\n for (let i = 0; i < rank; i++) {\n if (i !== axis) {\n outShape[outIndex++] = value.shape[i];\n }\n }\n\n const outs: TensorInfo[] = new Array(numOutputs);\n const begin = new Array(rank).fill(0);\n const size = value.shape.slice();\n size[axis] = 1;\n for (let i = 0; i < outs.length; i++) {\n begin[axis] = i;\n outs[i] = slice({\n inputs: { x: value },\n attrs: { begin, size, backend\n });\n }\n\n return outs.map(({ dataId, dtype }) => ({\n dataId, dtype, shape: outShape\n }));\n}\n\nexport const unpackConfig: KernelConfig = {\n kernelName: Unpack,\n backendName: 'wasm',\n kernelFunc: unpack as {\n } as KernelFunc\n};
```

KernelFunc,\n};\n"/\*\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n *\n\nimport {KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nfunction zerosLike(args: {inputs: ZerosLikeInputs, backend: BackendWasm}) {\n const {inputs: {x}, backend} = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(0);\n return out;\n}\n\nexport const zerosLikeConfig: KernelConfig = {\n kernelName: ZerosLike,\n backendName: 'wasm',\n kernelFunc: zerosLike\n} as KernelFunc;\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n *\n\nWe explicitly import the modular kernels so they get registered in the\n// global registry when we compile the library. A modular build would replace\n// the contents of this file and import only the kernels that are needed.\nimport {KernelConfig, registerKernel} from '@tensorflow/tfjs-core';\nimport {fusedMatMulConfig} from './kernels/_FusedMatMul';\nimport {absConfig} from './kernels/Abs';\nimport {addConfig} from './kernels/Add';\nimport {addNConfig} from './kernels/AddN';\nimport {allConfig} from './kernels/All';\nimport {anyConfig} from './kernels/Any';\nimport {argMaxConfig} from './kernels/ArgMax';\nimport {avgPoolConfig} from './kernels/AvgPool';\nimport {batchMatMulConfig} from './kernels/BatchMatMul';\nimport {batchToSpaceNDConfig} from './kernels/BatchToSpaceND';\nimport {castConfig} from './kernels/Cast';\nimport {ceilConfig} from './kernels/Ceil';\nimport {clipByValueConfig} from './kernels/ClipByValue';\nimport {concatConfig} from './kernels/Concat';\nimport {conv2DConfig} from './kernels/Conv2D';\nimport {conv2DBackpropInputConfig} from './kernels/Conv2DBackpropInput';\nimport {cosConfig} from './kernels/Cos';\nimport {coshConfig} from './kernels/Cosh';\nimport {cropAndResizeConfig} from './kernels/CropAndResize';\nimport {cumsumConfig} from './kernels/Cumsum';\nimport {depthToSpaceConfig} from './kernels/DepthToSpace';\nimport {depthwiseConv2dNativeConfig} from './kernels/DepthwiseConv2dNative';\nimport {eluConfig} from './kernels/Elu';\nimport {equalConfig} from './kernels/Equal';\nimport {expConfig} from './kernels/Exp';\nimport {expandDimsConfig} from './kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from './kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from './kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport {fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from './kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport {gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport {greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport {leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport {lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport {logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport {maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport
```



```

{meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
 './kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from
 './kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
 './kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
 './kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
 './kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
 from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
 './kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
 './kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
 {rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
 from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
 './kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
 './kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
 from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
 './kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
 './kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
 {softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
 './kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
 './kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
 './kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
 './kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
 './kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
 {tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
 './kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
 './kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n absConfig,\n addConfig,\n addNConfig,\n allConfig,\n anyConfig,\n
 argMaxConfig,\n avgPoolConfig,\n batchMatMulConfig,\n batchToSpaceNDConfig,\n castConfig,\n
 ceilConfig,\n clipByValueConfig,\n concatConfig,\n conv2DConfig,\n conv2DBackpropInputConfig,\n
 cosConfig,\n coshConfig,\n cropAndResizeConfig,\n cumsumConfig,\n depthToSpaceConfig,\n
 depthwiseConv2dNativeConfig,\n eluConfig,\n equalConfig,\n expConfig,\n expandDimsConfig,\n fillConfig,\n
 flipLeftRightConfig,\n floorConfig,\n floorDivConfig,\n fusedMatMulConfig,\n fusedBatchNormConfig,\n
 fusedConv2DConfig,\n fusedDepthwiseConv2DConfig,\n gatherNdConfig,\n gatherV2Config,\n greaterConfig,\n
 greaterEqualConfig,\n identityConfig,\n leakyReluConfig,\n lessConfig,\n lessEqualConfig,\n logConfig,\n
 logicalAndConfig,\n maxConfig,\n maximumConfig,\n maxPoolConfig,\n meanConfig,\n minConfig,\n
 minimumConfig,\n mirrorPadConfig,\n multiplyConfig,\n negConfig,\n nonMaxSuppressionV3Config,\n
 nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n
 onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n
 realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n
 rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n
 sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n
 squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n
 tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n
 zerosLikeConfig\n];\n\nfor (const kernelConfig of kernelConfigs) {\n registerKernel(kernelConfig);\n}\n\n"/**\n *
 @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for

```

the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n
*\n\nimport {env} from '@tensorflow/tfjs-core';\n\nconst ENV = env();\n\n**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
Uint8Array([\n 0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n 2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
11\n]));\n\n**\n * True if threads are supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-
feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n return false;\n }\n\n try {\n //
Test for transferability of SABs (needed for Firefox)\n //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
program containing threaded\n // instructions.\n return WebAssembly.validate(new Uint8Array([\n 0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
11\n]));\n } catch (e) {\n return false;\n }\n});\n\n", "\nvar WasmBackendModuleThreadedSimd = (function) {\n
var __scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') __scriptDir = __scriptDir || __filename;\n return
(\nfunction(WasmBackendModuleThreadedSimd) {\n WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module[\"ready\"] =new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram= \"/this.program\";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window==="object";ENVIRONMENT_IS_WORKER=typeof
importScripts==="function";ENVIRONMENT_IS_NODE=typeof process==="object"&&typeof
process.versions==="object"&&typeof
process.versions.node==="string";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module[\"ENVIRONMENT_IS_PTHREAD\"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module[\"buffer\"]}var scriptDirectory=\"\";function
locateFile(path){if(Module[\"locateFile\"]){return Module[\"locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
```

```

nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\"path\").
dirname(scriptDirectory)+\"/\"}else{scriptDirectory=__dirname+\"/\"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\"fs\");if(!nodePath)nodePath=require(\"path\");filename=n
odePath[\"normalize\"](filename);return
nodeFS[\"readFileSync\"](filename,binary?null:\"utf8\");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process[\"argv\"].length>1){thisProgram=process[\"argv\"][1].replace(/\\\\\\\\g,\\\"/\")}arguments_=process[\"arg
v\"].slice(2);process[\"on\"](\"uncaughtException\",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process[\"on\"](\"unhandledRejection\",abort);quit_=function(status){process[\"exit\"](status)};Module[\"insp
ect\"]=function(){return\"[Emscripten Module object]\"};var
nodeWorkerThreads;try{nodeWorkerThreads=require(\"worker_threads\")}catch(e){console.error(\"The
\\\"worker_threads\\\" module is not supported in this node.js build - perhaps a newer version is needed?\");throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!=\"undefined\"){read_=function shell_read(f){return read(f)}}readBinary=function readBinary(f){var
data;if(typeof readbuffer===\"function\"){return new
Uint8Array(readbuffer(f))}data=read(f,\"binary\");assert(typeof data===\"object\");return data};if(typeof
scriptArgs!=\"undefined\"){arguments_=scriptArgs}else if(typeof
arguments!=\"undefined\"){arguments_=arguments}if(typeof
quit===\"function\"){quit_=function(status){quit(status)}}if(typeof print!=\"undefined\"){if(typeof
console===\"undefined\")console={};console.log=print;console.warn=console.error=typeof
printErr!=\"undefined\"?printErr:print} }else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=\"undefined\"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !== \"undefined\" &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf(\"blob:\")!==0){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf(\"/\")+1)}else{scriptDirectory=\\\"/\"}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\"fs\");if(!nodePath)nodePath=require(\"path\");filename=n
odePath[\"normalize\"](filename);return
nodeFS[\"readFileSync\"](filename,binary?null:\"utf8\");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret} }else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.responseType=\"arraybuffer\";xhr.send(null);return new
Uint8Array(xhr.response)} }readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,true);xhr.responseType=\"arraybuffer\";xhr.onload=function(){if(xhr.status
===200||xhr.status===0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} }else{if(ENVIRONMENT_IS_NODE){if(typeof
performance===\"undefined\"){global.performance=require(\"perf_hooks\").performance} }var
out=Module[\"print\"]||console.log.bind(console);var err=Module[\"printErr\"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} }moduleOverr
ides=null;if(Module[\"arguments\"]arguments_=Module[\"arguments\"];if(Module[\"thisProgram\"]thisProgram=
Module[\"thisProgram\"];if(Module[\"quit\"]quit_=Module[\"quit\"];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)} }var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var

```

```

wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!=="object"){abort("no native wasm
support detected")}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function '"+ident+"', make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str="";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var
len=0;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10|str.charCodeAt(++i)&1023);if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new

```

```

Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmmem
ory=Module["wasmMemory"];buffer=Module["buffer"]}else{if(Module["wasmMemory"]){wasmMemory=
Module["wasmMemory"]}else{wasmMemory=new
WebAssembly.Memory({"initial":INITIAL_MEMORY/65536,"maximum":2147483648/65536,"shared":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err("requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag");if(ENVIRONMENT_IS_NODE){console.log("(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)")}throw Error("bad
memory")}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlob
alBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctors()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof
Module["postRun"]=="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,"addRunDependency cannot be used in a
pthread
worker");runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](ru
nDependencies)}}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=nul
l}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}if(ENVIRONMENT_IS_PTHREAD)console.err
or("Pthread aborting at "+(new
Error).stack);what+="\n";err(what);ABORT=true;EXITSTATUS=1;what="abort("+what+"). Build with -s
ASSERTIONS=1 for more info.";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw
e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://^";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-wasm-threaded-
simd.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function

```

```

getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\"function\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\"same-
origin\").then(function(response){if(!response[\"ok\"]){throw\"failed to load wasm binary file at
\"+wasmBinaryFile+\"\"}return response[\"arrayBuffer\"]()).catch(function(){return
getBinary(wasmBinaryFile)}})else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))}}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)}})function createWasm(){var info={\"a\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\"asm\"]=exports;wasmTable=Module[\"asm\"][\"I\"];wasmModule=module;if(!E
NVIRONMENT_IS_PTHREAD){var
numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.load
WasmModuleToWorker(w,function(){if!--numWorkersToLoad)removeRunDependency(\"wasm-
instantiate\")}})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency(\"wasm-instantiate\")}function
receiveInstantiatedSource(output){receiveInstance(output[\"instance\"],output[\"module\"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}.then(receiver,function(reason){err(\"failed to asynchronously prepare
wasm: \"+reason);abort(reason)}))}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\"function\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\"function\"){return fetch(wasmBinaryFile,{credentials:\"same-
origin\").then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\"wasm streaming compile failed: \"+reason);err(\"falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(Promise.reject);return{}}var
ASM_CONSTS={10520:function(){throw\"Canceled!\"},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0}});function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg
)}}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,E
BADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA
TCH:110,ENOSIG:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADE:113,EBADR:114,EXFULL:115,ENOA
NO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:
117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM
:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:1
28,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,
ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,
EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOCK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFU
SED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOS
TDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,E
PROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,EN
OTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:14

```

```

8,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:13
5};function
__emscripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)retu
rn-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,mainTh
readWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return
1}}var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw`Atomics.notify returned an unexpected value
`+ret}Module["_emscripten_futex_wake"]=__emscripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw`Internal Error! killThread() can only ever be
called from main application thread!`;if(!pthread_ptr)throw`Internal Error! Null pthread_ptr in
killThread!`;GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread pthreads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runni
ngWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker pthread=undefined}functio
n cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw`Internal Error! cancelThread() can only
ever be called from main application thread!`;if(!pthread_ptr)throw`Internal Error! Null pthread_ptr in
cancelThread!`;var
pthread=PThread pthreads[pthread_ptr];pthread.worker.postMessage({"cmd\":"cancel"})}function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw`Internal Error! cleanupThread() can only
ever be called from main application thread!`;if(!pthread_ptr)throw`Internal Error! Null pthread_ptr in
cleanupThread!`;var
pthread=PThread pthreads[pthread_ptr];if(pthread){GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)}var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}},initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);__emscripten_thread_init(tb,1,ENVIRON
MENT_IS_WORKER,1);__emscripten_register_main_browser_thread_id(tb),initWorker:function(){},pthreads:{},t
hreadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.l
ength>0){PThread.threadExitHandlers.pop()}if(ENVIRONMENT_IS_PTHREAD&&__pthread_self())__pthread
_tsd_run_dtors(),runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U
32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor
e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emscri
pten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=__pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({"cmd\":"exit"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({"cmd\":"cancelDone"})}},terminateAllThreads:function(){for(var t in
PThread.pthreads){var
pthread=PThread pthreads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)}PThre
ad.pthreads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[]},freeTh

```

```

readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread pthreads[worker pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker pthread);worker pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_m
ain_runtime_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e["data"];var
cmd=d["cmd"];if(worker pthread)PThread.currentProxiedOperationCallerThread=worker pthread.threadInfoStruct;
if(d["targetThread"]&&d["targetThread"]!="_pthread_self"){var
thread=PThread pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d["transferList"]);}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\' to target pthread '+d["targetThread"]+'\', but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\'processQueuedMainThread
Work\'){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\'spawnThread\'){spawnThread(e.data)}else
if(cmd===\'cleanupThread\'){cleanupThread(d["thread"])}else
if(cmd===\'killThread\'){killThread(d["thread"])}else
if(cmd===\'cancelThread\'){cancelThread(d["thread"])}else
if(cmd===\'loaded\'){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\'print\'){out("Thread \"+d["threadId"]+"":
'+d["text"])}else if(cmd===\'printErr\'){err("Thread \"+d["threadId"]+"": '+d["text"])}else
if(cmd===\'alert\'){alert("Thread \"+d["threadId"]+"": '+d["text"])}else if(cmd===\'exit\'){var
detached=worker pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}else
if(cmd===\'exitProcess\'){try{exit(d["returnCode"])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\'cancelDone\'){PThread.returnWorkerToPool(worker)}else
if(cmd===\'objectTransfer\'){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\'setImmediate\'){worker.postMessage(e.data)}else{err("worker sent an unknown command
'+cmd)}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err("pthread sent
an error! \"+e.filename+"":'+e.lineno+":
'+e.message)};if(ENVIRONMENT_IS_NODE){worker.on("message",function(data){worker.onmessage({data:d
ata}});worker.on("error",function(data){worker.onerror(data)});worker.on("exit",function(data){})}worker.post
Message({"cmd":\'load\',\'urlOrBlob\':Module["mainScriptUrlOrBlob"]|_scriptDir,\'wasmMemory\':wasmMe
memory,\'wasmModule\':wasmModule}},allocateUnusedWorker:function(){var pthreadMainJs=locateFile("tfjs-
backend-wasm-threaded-simd.worker.js");PThread.unusedWorkers.push(new
Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnus
edWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>
0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var
t=performance.now()+msecs;while(performance.now()<t){}}};function
establishStackSpace(stackTop,stackMax){__emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop
)}Module["establishStackSpace"]=establishStackSpace;function getNoExitRuntime(){return
noExitRuntime}Module["getNoExitRuntime"]=getNoExitRuntime;function invokeEntryPoint(ptr,arg){return
wasmTable.get(ptr)(arg)}Module["invokeEntryPoint"]=invokeEntryPoint;function

```



```

__assert_fail(condition,filename,line,func){abort("\Assertion failed: \"+UTF8ToString(condition)+\", at:
\"+[filename?UTF8ToString(filename):\"unknown filename\",line,func?UTF8ToString(func):\"unknown
function\"])}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var
_emsripten_get_now;if(ENVIRONMENT_IS_NODE){_emsripten_get_now=function(){var
t=process[\"hrtime\"]();return t[0]*1e3+t[1]/1e6}}else
if(ENVIRONMENT_IS_PTHREAD){_emsripten_get_now=function(){return performance.now()-
Module[\"__performance_now_clock_drift\"]}}else if(typeof
dateNow!=\"undefined\"){_emsripten_get_now=dateNow}else _emsripten_get_now=function(){return
performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return
value}function _atexit(func,arg){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(1,1,func,arg)}function
_emsripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessag
e({\"cmd\": \"processQueuedMainThreadWork\"})}else
if(ENVIRONMENT_IS_PTHREAD){postMessage({\"targetThread\":targetThreadId,\"cmd\": \"processThreadQueue
e\"})}else {var pthread=PThread.pthreads[targetThreadId];var
worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({\"cmd\": \"processThreadQueue\"})}ret
urn 1}function _abort(){abort()}function _emsripten_asm_const_int(code,sigPtr,argbuf){var
args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function
_emsripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function
_emsripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-
28;if(!ENVIRONMENT_IS_WEB){var
ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret===\"timed-out\")return-
73;if(ret===\"not-equal\")return-6;if(ret===\"ok\")return 0;throw\"Atomics.wait returned an unexpected value
\"+ret}else {if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var
tNow=performance.now();var tEnd=tNow+timeout;var
lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,addr);while(1){tNo
w=performance.now();if(tNow>tEnd){lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_mai
n_thread_futex>>2,0);return-
73}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,0);if(lastAddr==
0){break}_emsripten_main_thread_process_queued_calls();if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!
=val){return-
6}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emsripten_main_thread_futex>>2,addr)}return
0}}function
_emsripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function
_emsripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require(\"os\").cpus().length;return
navigator[\"hardwareConcurrency\"]}function _emsripten_proxy_to_main_thread_js(index,sync){var
numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var
args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emsripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);retur
n ret}var _emsripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emsripten_receive_on_main_thread_js(index,numCallArgs,args){_emsripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emsripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v

```

```

ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emscripten_receive_on_main_thread_js_callArgs)}function
_emscripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emscripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmmemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){var
oldSize=_emscripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListene
rs:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List))return}}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList
});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence}),removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef
erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;_emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f

```

```

unction(targetThread){ switch(targetThread){ case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread } },getNodeNameForTarget:function(target){ if(!target)return "";if(target==window)return "#window";
if(target==screen)return "#screen";return
target&&target.nodeName?target.nodeName:""},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){ var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emsripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){ var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){ targetCanvasPtr=stringToNewUTF8(targetCanvas)}GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emsripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emsripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){ targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):"";_emsripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){ return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=="undefined"?document:0,typeof window!=="undefined"?window:0];function
findEventTarget(target){ target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=="undefined"?document.querySelector(target):undefined);return domElement}function
findCanvasEventTarget(target){ return findEventTarget(target)}function
_emsripten_set_canvas_element_size_calling_thread(target,width,height){ var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){ GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){ if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){ var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]==0&&prev
Viewport[1]==0&&prevViewport[2]==canvas.width&&prevViewport[3]==canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){ canvas.GLctxObject.GLctx.viewport(0,0,width,height)}}else
if(canvas.canvasSharedPtr){ var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emsripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1}else{return-4}return 0}function
_emsripten_set_canvas_element_size_main_thread(target,width,height){ if(ENVIRONMENT_IS_PTHREAD)retur
n _emsripten_proxy_to_main_thread_js(2,1,target,width,height);return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emsripten_set_canvas_element_size(target,width,height){ var
canvas=findCanvasEventTarget(target);if(canvas){ return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}else{return
_emsripten_set_canvas_element_size_main_thread(target,width,height)}}function
_emsripten_set_current_thread_status(newStatus){ }function
_emsripten_set_thread_name(threadId,name){ }function __webgl_enable_ANGLE_instanced_arrays(ctx){ var
ext=ctx.getExtension("ANGLE_instanced_arrays");if(ext){ ctx["vertexAttribDivisor"]=function(index,divisor){ ex
t["vertexAttribDivisorANGLE"](index,divisor)};ctx["drawArraysInstanced"]=function(mode,first,count,primcou
nt){ ext["drawArraysInstancedANGLE"](mode,first,count,primcount)};ctx["drawElementsInstanced"]=function(
mode,count,type,indices,primcount){ ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount)};

```

```

return 1 } }function __webgl_enable_OES_vertex_array_object(ctx){ var
ext=ctx.getExtension("OES_vertex_array_object");if(ext){ ctx["createVertexArray"]=function(){ return
ext["createVertexArrayOES"]();}; ctx["deleteVertexArray"]=function(vao){ ext["deleteVertexArrayOES"](vao);};
ctx["bindVertexArray"]=function(vao){ ext["bindVertexArrayOES"](vao);}; ctx["isVertexArray"]=function(vao)
{return ext["isVertexArrayOES"](vao);};return 1 } }function __webgl_enable_WEBGL_draw_buffers(ctx){ var
ext=ctx.getExtension("WEBGL_draw_buffers");if(ext){ ctx["drawBuffers"]=function(n,bufs){ ext["drawBuffers
WEBGL"](n,bufs);};return 1 } }function
__webgl_enable_WEBGL_multi_draw(ctx){return!(ctx.multiDrawWebgl=ctx.getExtension("WEBGL_multi_dra
w"))} }var
GL={ counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{ },offscreenCanvases:{ },timerQueriesEXT:[],programInfos:{ },stringCache:{ },unpackAlignment:4,recordError:
function recordError(errorCode){ if(!GL.lastError){ GL.lastError=errorCode } },getNewId:function(table){ var
ret=GL.counter++;for(var i=table.length;i<ret;i++){ table[i]=null }return
ret },getSource:function(shader,count,string,length){ var source="\"";for(var i=0;i<count;++i){ var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return
source },createContext:function(canvas,webGLContextAttributes){ var
ctx=canvas.getContext("webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle },registerContext:function(ctx,webGLContextAttributes){ var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={ handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:
ctx };if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault===undefined||webGLContextAttributes.enableExtensions
ByDefault){ GL.initExtensions(context)}return
handle },makeContextCurrent:function(contextHandle){ GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){ return
GL.contexts[contextHandle]},deleteContext:function(contextHandle){ if(GL.currentContext===GL.contexts[context
Handle])GL.currentContext=null;if(typeof
JSEvents===undefined)JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null },initExtensions:f
unction(context){ if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("
EXT_disjoint_timer_query");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){ if(ext.indexOf("lose_context")<0&&ext.inde
xOf("debug")<0){ GLctx.getExtension(ext) } }),populateUniformTable:function(program){ var
p=GL.programs[program];var
ptable=GL.programInfos[program]={ uniforms:{ },maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1 };var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){ var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)!="\"){ name=name.slice(0,name.lastIndexOf("\\"))} var loc=GLctx.getUniformLocation(p,name);if(loc){ var
id=GL.getNewId(GL.uniforms);utable[name]=[u.size,id];GL.uniforms[id]=loc;for(var j=1;j<u.size;++j){ var

```

```

n=name+"\["+j+"\]";loc=GLctx.getUniformLocation(p,n);id=GL.getNewId(GL.uniforms);GL.uniforms[id]=loc }}
});var __emscripten_webgl_power_preferences=["default","low-power","high-performance"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],"failIfMajorPerf
ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)]};var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GL.createContext(canvas,contextAttributes);return contextHandle}function
__emscripten_webgl_create_context(a0,a1){return __emscripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){stream===1?out:err}(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
__fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return __emscripten_proxy_to_main_thread_js(3,1,fd);return
0}function __fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return
__emscripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
__fd_write(fd,iiov,iiovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
__emscripten_proxy_to_main_thread_js(5,1,fd,iiov,iiovcnt,pnum);var num=0;for(var i=0;i<iiovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iiov+i*8>>2];var len=GROWABLE_HEAP_I32()[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j])}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function __pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
__pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasnTable.get(routine)(arg)})}f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! spawnThread()
can only ever be called from main application thread!";var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw"Internal
error!";if(!threadParams.pthread_ptr)throw"Internal error, no pthread
ptr!";PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;++i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var
pthread=PThread.pthreads[threadParams.pthread_ptr]={worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=__emscripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr

```

```

ead=pthread;var
msg={"cmd\\":\\"run\\",\\"start_routine\\":threadParams.startRoutine,\\"arg\\":threadParams.arg,\\"threadInfoStruct\\":theadParams.pthread_ptr,\\"stackBase\\":threadParams.stackBase,\\"stackSize\\":threadParams.stackSize};worker.runPthead=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded){worker.runPthead();delete worker.runPthead}}function
__pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===\\"undefined\\"){err(\\"Current environment does not support SharedArrayBuffer, pthreads are not available!\\");return
6}if(!pthread_ptr){err(\\"pthread_create called with a null thread pointer!\\");return 28}var transferList=[];var error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return
__emscripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==0}else{stackSize=2097152}var allocatedOwnStack=stackBase===0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var i=0;i<228>>2;+i)GROWABLE_HEAP_U32()[threadInfoStruct>>2+i]=0;GROWABLE_HEAP_I32()[pthread_ptr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_PTHREAD){threadParams.cmd=\\\"spawnThread\\\";postMessage(threadParams,transferList)}else{spawnThread(threadParams)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var tb=__pthread_self();if(!tb)return;var cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled===2)throw\\"Canceled!\\"}function __emscripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKER)return;warnOnce(\\"Blocking on the main thread is very dangerous, see https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread\\")}function __emscripten_do_pthread_join(thread,status,block){if(!thread){err(\\"pthread_join attempted on a null thread pointer!\\");return ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&__pthread_self()===thread){err(\\"PThread \"+thread+\\\" is attempting to join to itself!\\");return ERRNO_CODES.EDEADLK}else if(!ENVIRONMENT_IS_PTHREAD&&__emscripten_main_browser_thread_id()===thread){err(\\"Main thread \"+thread+\\\" is attempting to join to itself!\\");return ERRNO_CODES.EDEADLK}var self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!==thread){err(\\"pthread_join attempted on thread \"+thread+\\\", which does not point to a valid thread, or does not exist anymore!\\");return ERRNO_CODES.ESRCH}var detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err(\\"Attempted to join thread \"+thread+\\\", which was already detached!\\");return ERRNO_CODES.EINVAL}if(block){__emscripten_check_blocking_allowed()}for(;;){var threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus===1){var threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[status>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PTHREAD)cleanupThread(thread);else postMessage({\\"cmd\\":\\"cleanupThread\\",\\"thread\\":thread});return 0}if(!block){return ERRNO_CODES.EBUSY}}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emscripten_main_thread_process_queued_calls();_emscripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1)}}function __pthread_join(thread,status){return __emscripten_do_pthread_join(thread,status,true)}function

```

```

_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emsripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emsripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_wr
ite,_sysconf];var
asmLibraryArg={\"e\":__assert_fail,\"r\":__call_main,\"x\":_emsripten_notify_thread_queue,\"b\":_abort,\"y\":
_emsripten_asm_const_int,\"j\":_emsripten_conditional_set_current_thread_status,\"d\":_emsripten_futex_wait,\"
c\":_emsripten_futex_wake,\"f\":_emsripten_get_now,\"p\":_emsripten_memcpy_big,\"A\":_emsripten_num_l
ogical_cores,\"u\":_emsripten_receive_on_main_thread_js,\"q\":_emsripten_resize_heap,\"v\":_emsripten_set_ca
nvas_element_size,\"i\":_emsripten_set_current_thread_status,\"s\":_emsripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory||Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"C\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"E\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"F\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"G\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"H\"]).apply(
null,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"J\"]).apply(null,arguments
)};var
_Add=Module[\"_Add\"]=function(){return(_Add=Module[\"_Add\"]=Module[\"asm\"][\"K\"]).apply(null,argumen
ts)};var
_AddN=Module[\"_AddN\"]=function(){return(_AddN=Module[\"_AddN\"]=Module[\"asm\"][\"L\"]).apply(null,ar
guments)};var
_All=Module[\"_All\"]=function(){return(_All=Module[\"_All\"]=Module[\"asm\"][\"M\"]).apply(null,arguments)};
var

```

```

_Any=Module["_Any"]=function(){return(_Any=Module["_Any"]=Module["asm"][\["N\"]).apply(null,arguments)};var
_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm"][\["O\"]).apply(null,arguments)};var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm"][\["P\"]).apply(null,arguments)};var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"][\["Q\"]).apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"][\["R\"]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][\["S\"]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][\["T\"]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["asm"][\["U\"]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][\["V\"]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][\["W\"]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][\["X\"]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][\["Y\"]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][\["Z\"]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["asm"][\["_\"]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][\["$\"]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][\["aa\"]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][\["ba\"]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][\["ca\"]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][\["da\"]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][\["ea\"]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][\["fa\"]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][\["ga\"]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["asm"][\["ha\"]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][\["ia\"]).apply(null,arguments)};var

```



```

_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"])[\ja"]
)}.apply(null,arguments);var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"])[\ka"]}.apply(
null,arguments);var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module[
"asm"])[\la"]}.apply(null,arguments);var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"])[\
ma"]}.apply(null,arguments);var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"])[\na"]}.apply(null,argume
nts);var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"])[\o
a"]}.apply(null,arguments);var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"])[\pa"]}.apply(null,argument
s);var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm
"])[\qa"]}.apply(null,arguments);var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"])[\ra"]}.apply(null,argume
nts);var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"])[\sa"]}.
apply(null,arguments);var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"])[\ta
a"]}.apply(null,arguments);var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"])[\ua"]}.apply(null,ar
guments);var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"])[\va"]}.apply(null,argumen
ts);var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"])[\wa
"]}.apply(null,arguments);var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"])[\x
a"]}.apply(null,arguments);var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"])[\ya
"]}.apply(null,arguments);var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"])[\za"]}.apply(null,argumen
ts);var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Mod
ule["_NonMaxSuppressionV3"]=Module["asm"])[\Aa"]}.apply(null,arguments);var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Mod
ule["_NonMaxSuppressionV4"]=Module["asm"])[\Ba"]}.apply(null,arguments);var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Mod
ule["_NonMaxSuppressionV5"]=Module["asm"])[\Ca"]}.apply(null,arguments);var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"])[\Da
"]}.apply(null,arguments);var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"])[\Ea"]}.appl
y(null,arguments);var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"])[\Fa"]}.apply(nu
ll,arguments);var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"])[\Ga"]}.apply(null,argume
nts);var

```

```

_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"]["Ha"]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"]["Ia"]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"]["Ja"]).apply(null,arguments)};var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"]["Ka"]).apply(null,arguments)};var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"]["La"]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"]["Ma"]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"]["Na"]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"]["Oa"]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"]["Pa"]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"]["Qa"]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"]["Ra"]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"]["Sa"]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"]["Ta"]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"]["Ua"]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"]["Va"]).apply(null,arguments)};var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"]["Wa"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"]["Xa"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"]["Ya"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"]["Za"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"]["_a"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["$a"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["ab"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["bb"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["cb"]).apply(null,arguments)};var

```

```

 Tile=Module["_Tile"]=function(){return(Tile=Module["_Tile"]=Module["asm"][["db"]]).apply(null,argument
s)};var
 TopK=Module["_TopK"]=function(){return(TopK=Module["_TopK"]=Module["asm"][["eb"]]).apply(null,ar
guments)};var
 Transform=Module["_Transform"]=function(){return(Transform=Module["_Transform"]=Module["asm"][["f
b"]]).apply(null,arguments)};var
 Transpose=Module["_Transpose"]=function(){return(Transpose=Module["_Transpose"]=Module["asm"][["g
b"]]).apply(null,arguments)};var
 FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=
Module["asm"][["hb"]]).apply(null,arguments)};var
 malloc=Module["_malloc"]=function(){return(malloc=Module["_malloc"]=Module["asm"][["ib"]]).apply(nul
l,arguments)};var
 free=Module["_free"]=function(){return(free=Module["_free"]=Module["asm"][["jb"]]).apply(null,arguments
)};var
 __errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_locati
on"]=Module["asm"][["kb"]]).apply(null,arguments)};var
 emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=function(){return(emscripten_get_global
_libc=Module["_emscripten_get_global_libc"]=Module["asm"][["lb"]]).apply(null,arguments)};var
 pthread_self=Module["_pthread_self"]=function(){return(pthread_self=Module["_pthread_self"]=Module["as
m"][["mb"]]).apply(null,arguments)};var
 __pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=M
odule["__pthread_tsd_run_dtors"]=Module["asm"][["nb"]]).apply(null,arguments)};var
 emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=fu
nction(){return(emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_que
ued_calls"]=Module["asm"][["ob"]]).apply(null,arguments)};var
 emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]
=function(){return(emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_proc
ess_queued_calls"]=Module["asm"][["pb"]]).apply(null,arguments)};var
 emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=functi
on(){return(emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread
_id"]=Module["asm"][["qb"]]).apply(null,arguments)};var
 emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=function(){return(emsc
ripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=Module["asm"][["rb"]]).app
ly(null,arguments)};var
 __emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=function(){return(__emsc
ripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=Module["asm"][["sb"]]).apply(n
ull,arguments)};var
 emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=function(){retur
n(emscripten_sync_run_in_main_thread_4=Module["_emscripten_sync_run_in_main_thread_4"]=Module["asm"]
)[["tb"]]).apply(null,arguments)};var
 emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=function(
){return(emscripten_run_in_main_runtime_thread_js=Module["_emscripten_run_in_main_runtime_thread_js"]=
Module["asm"][["ub"]]).apply(null,arguments)};var
 __emscripten_call_on_thread=Module["__emscripten_call_on_thread"]=function(){return(__emscripten_call_on_t
hread=Module["__emscripten_call_on_thread"]=Module["asm"][["vb"]]).apply(null,arguments)};var
 emscripten_tls_init=Module["_emscripten_tls_init"]=function(){return(emscripten_tls_init=Module["_emscrip
ten_tls_init"]=Module["asm"][["wb"]]).apply(null,arguments)};var
 __emscripten_thread_init=Module["__emscripten_thread_init"]=function(){return(__emscripten_thread_init=Mod

```

```

ule["__emscripten_thread_init"]=Module["asm"][["xb"]].apply(null,arguments);var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][["yb"]]).a
pply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"
][["zb"]]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][["Ab"
]).apply(null,arguments)};var
__emscripten_stack_set_limits=Module["__emscripten_stack_set_limits"]=function(){return(__emscripten_stack_set_
limits=Module["_emscripten_stack_set_limits"]=Module["asm"][["Bb"]]).apply(null,arguments)};var
__memalign=Module["_memalign"]=function(){return(__memalign=Module["_memalign"]=Module["asm"][["Cb
"]]).apply(null,arguments)};var
__emscripten_allow_main_runtime_queued_calls=Module["__emscripten_allow_main_runtime_queued_calls"]=1
0512;var
__emscripten_main_thread_futex=Module["__emscripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap
;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasmMemory"]=wasmMemory;Module
["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit("+status+")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromis
eResolve(Module);initRuntime();postMessage({"cmd":"loaded"});return}preRun();if(runDependencies>0){retur
n}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("Running..");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"]("");},1)});doRun(),1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":"exitProcess","returnCode":status});throw new
ExitStatus(status)}else{}}if(noExitRuntime){}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunti
me();if(Module["onExit"])Module["onExit"](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=[Module["preInit"]];while(Module["preInit"].length>0){
Module["preInit"].pop()}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n\n);nif (typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports["WasmBackendModuleThreadedSimd"] =
WasmBackendModuleThreadedSimd;\n", "export const wasmWorkerContents = 'var Module={};function
threadPrintErr(){var text=Array.prototype.slice.call(arguments).join(" ");console.error(text)}function
threadAlert(){var text=Array.prototype.slice.call(arguments).join("
");postMessage({cmd:"alert",text:text,threadId:Module["_pthread_self"]()})}var
err=threadPrintErr;this.alert=threadAlert;Module["instantiateWasm"]=function(info,receiveInstance){var
instance=new
WebAssembly.Instance(Module["wasmModule"],info);Module["wasmModule"]=null;receiveInstance(instance);r
eturn instance.exports};function
moduleLoaded(){}this.onmessage=function(e){try{if(e.data.cmd==="load"){Module["wasmModule"]=e.data.wa
smModule;Module["wasmMemory"]=e.data.wasmMemory;Module["buffer"]=Module["wasmMemory"].buffer;
Module["ENVIRONMENT_IS_PTHREAD"]=true;if(typeof

```

```

e.data.urlOrBlob===\"string\") {importScripts(e.data.urlOrBlob)} else {var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)}
WasmBackendModuleThreadedSimd(Module).then(function(instance){Module=instance;moduleLoaded()}) else
if(e.data.cmd===\"objectTransfer\") {Module[\"PThread\"].receiveObjectTransfer(e.data)} else
if(e.data.cmd===\"run\") {Module[\"__performance_now_clock_drift\"]=performance.now()-
e.data.time;Module[\"__emscripten_thread_init\"](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module[\"establishStackSpace\"](top,max);Module[\"_emscripten_tls_init\"](
);Module[\"PThread\"].receiveObjectTransfer(e.data);Module[\"PThread\"].setThreadStatus(Module[\"_pthread_self
\")(0,1);try {var
result=Module[\"invokeEntryPoint\"](e.data.start_routine,e.data.arg);if(!Module[\"getNoExitRuntime\"]())Module[\"
PThread\"].threadExit(result)} catch(ex){if(ex===\"Canceled!\"){Module[\"PThread\"].threadCancel()} else
if(ex!==\"unwind\") {if(ex instanceof
Module[\"ExitStatus\"]){if(Module[\"getNoExitRuntime\"]()){} else {Module[\"PThread\"].threadExit(ex.status)}} el
se {Module[\"PThread\"].threadExit(-2);throw ex}} } else
if(e.data.cmd===\"cancel\") {if(Module[\"_pthread_self\"]()){Module[\"PThread\"].threadCancel()} } else
if(e.data.target===\"setimmediate\") {} else
if(e.data.cmd===\"processThreadQueue\") {if(Module[\"_pthread_self\"]()){Module[\"_emscripten_current_thread_
process_queued_calls\"]())} else {err(\"worker.js received unknown command
\"+e.data.cmd);err(e.data)}} catch(ex){err(\"worker.js onmessage() captured an uncaught exception:
\"+ex);if(ex&&ex.stack)err(ex.stack);throw ex}};if(typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof process.versions.node===\"string\") {self={location:{href: __filename}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require(\"worker_threads\");global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on(\"message\",function(data){onmessage({data:data})});var
nodeFS=require(\"fs\");var nodeRead=function(filename){return nodeFS.readFileSync(filename,\"utf8\")};function
globalEval(x){global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));postMessage=function(msg){parentPort.postMessage(msg)};if(typeof
performance===\"undefined\") {performance={now:function(){return Date.now()}}};\", \"\nvar
WasmBackendModule = (function() {\n var _scriptDir = typeof document !== 'undefined' &&
document.currentScript ? document.currentScript.src : undefined;\n if (typeof __filename !== 'undefined')
_scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n WasmBackendModule =
WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!==\"undefined\"?WasmBackendModule:{};var
readyPromiseResolve,readyPromiseReject;Module[\"ready\"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram= \"/this.program\";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window===\"object\";ENVIRONMENT_IS_WORKER=typeof
importScripts===\"function\";ENVIRONMENT_IS_NODE=typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof
process.versions.node===\"string\";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory=\"\";function
locateFile(path){if(Module[\"locateFile\"]){return Module[\"locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\"path\").

```

```

dirname(scriptDirectory)+"^"}else{scriptDirectory=__dirname+"^"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require("fs");if(!nodePath)nodePath=require("path");filename=
odePath["normalize"](filename);return
nodeFS["readFileSync"](filename,binary?null:"utf8");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process["argv"].length>1){thisProgram=process["argv"][1].replace(/\\/g,"^")}arguments_=process["arg
v"].slice(2);process["on"]("uncaughtException",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process["on"]("unhandledRejection",abort);quit_=function(status){process["exit"](status)};Module["insp
ect"]=function(){return"[Emscripten Module object]"}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!="undefined"){read_=function shell_read(f){return read(f)}readBinary=function readBinary(f){var
data;if(typeof readbuffer==="function"){return new
Uint8Array(readbuffer(f))data=read(f,"binary");assert(typeof data==="object");return data};if(typeof
scriptArgs!="undefined"){arguments_=scriptArgs}else if(typeof
arguments!="undefined"){arguments_=arguments}if(typeof
quit==="function"){quit_=function(status){quit(status)}}if(typeof print!="undefined"){if(typeof
console==="undefined")console={};console.log=print;console.warn=console.error=typeof
printErr!="undefined"?printErr:print} else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!="undefined"&&document.currentScript){scriptDirectory=document.currentScript.src;if(_scriptDir){s
criptDirectory=_scriptDir}if(scriptDirectory.indexOf("blob:")!==0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf("^")+1)}else{scriptDirectory=""}}read_=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open("GET",url,false);xhr.responseType="arraybuffer";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open("GET",url,true);xhr.responseType="arraybuffer";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title} else { } var
out=Module["print"]||console.log.bind(console);var err=Module["printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} } moduleOverr
ides=null;if(Module["arguments"])arguments_=Module["arguments"];if(Module["thisProgram"])thisProgram=
Module["thisProgram"];if(Module["quit"])quit_=Module["quit"];var
wasmBinary;if(Module["wasmBinary"])wasmBinary=Module["wasmBinary"];var
noExitRuntime=Module["noExitRuntime"]||true;if(typeof WebAssembly!="object"){abort("no native wasm
support detected")}var wasmMemory;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort("Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},"array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType==="string")return UTF8ToString(ret);if(returnType==="boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return

```

```

ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type==="number"});var
numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)} }var UTF8Decoder=typeof
TextDecoder!=="undefined"?new TextDecoder("utf8"):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){ var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{ var
str="";while(idx<endPtr){ var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue } var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue } var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{ var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)} }return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):""}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){ var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){ var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function
preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]=="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"](runDependencies)} }function removeRunDependency(id){runDependencies--

```

```

;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](runDependencies)}if(runDepend
encies==0){if(runDependencyWatcher!==null){clearInterval(runDependencyWatcher);runDependencyWatcher=null
}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what+="abort(\"+what+\"). Build with -s ASSERTIONS=1 for more info.\";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix=\"data:application/octet-stream;base64,\";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix=\"file://\";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile=\"tfjs-backend-
wasm.wasm\";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw\"both async and sync fetching of the
wasm failed\"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\"function\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\"same-
origin\"}).then(function(response){if(!response[\"ok\"]){throw\"failed to load wasm binary file at
\"+wasmBinaryFile+\"\"}return response[\"arrayBuffer\"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\"a\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\"asm\"]=exports;wasmMemory=Module[\"asm\"][\"j\"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module[\"asm\"][\"r\"];removeRunDependency(\"wasm-
instantiate\")}addRunDependency(\"wasm-instantiate\");function
receiveInstantiatedSource(output){receiveInstance(output[\"instance\"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\"failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\"function\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\"function\"){return fetch(wasmBinaryFile,{credentials:\"same-
origin\"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\"wasm streaming compile failed: \"+reason);err(\"falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)})})}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}function _abort(){abort()}function
_emscripten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscripten_get_heap_size(){return HEAPU8.length}function
emscripten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return

```



```

1 }catch(e){}}function _emscripten_resize_heap(requestedSize){var oldSize=_emscripten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requeste
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4]>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iiov,iiovcnt,pnum){var num=0;for(var
i=0;i<iiovcnt;i++){var ptr=HEAP32[iiov+i*8>>2];var len=HEAP32[iiov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _thread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-1}var
asmLibraryArg={\"a\":_abort,\"d\":_emscripten_memcpy_big,\"e\":_emscripten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_thread_create,\"g\":_thread_join,\"i\":_sysconf};var asm=createWasm();var
___wasm_call_ctors=Module[\"___wasm_call_ctors\"]=function(){return(___wasm_call_ctors=Module[\"___wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"m\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"n\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"o\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"
asm\"][\"p\"]).apply(null,arguments)};var
_dispose=Module[\"_dispose\"]=function(){return(_dispose=Module[\"_dispose\"]=Module[\"asm\"][\"q\"]).apply(n
ull,arguments)};var
_Abs=Module[\"_Abs\"]=function(){return(_Abs=Module[\"_Abs\"]=Module[\"asm\"][\"s\"]).apply(null,arguments

```

```

});var
_Add=Module["_Add"]=function(){return(_Add=Module["_Add"]=Module["asm"]["t"]).apply(null,arguments)};var
_AddN=Module["_AddN"]=function(){return(_AddN=Module["_AddN"]=Module["asm"]["u"]).apply(null,arguments)};var
_All=Module["_All"]=function(){return(_All=Module["_All"]=Module["asm"]["v"]).apply(null,arguments)};
var
_Any=Module["_Any"]=function(){return(_Any=Module["_Any"]=Module["asm"]["w"]).apply(null,arguments)};var
_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm"]["x"]).apply(null,arguments)};var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm"]["y"]).apply(null,arguments)};var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"]["z"]).apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"]["A"]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"]["B"]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"]["C"]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=Module["asm"]["D"]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"]["E"]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"]["F"]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"]["G"]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"]["H"]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"]["I"]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"]["J"]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"]["K"]).apply(null,arguments)};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"]["L"]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"]["M"]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"]["N"]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"]["O"]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"]["P"]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]

```

```

orm"]=Module["asm\"][["Q"]].apply(null,arguments);var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm\"][["R"]].apply(null,arguments));var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm\"][["S"]].apply(null,arguments));var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm\"][["T"]].apply(null,arguments));var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm\"][["U"]].apply(null,arguments));var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm\"][["V"]].apply(null,arguments));var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm\"][["W"]].apply(null,arguments));var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm\"][["X"]].apply(null,arguments));var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm\"][["Y"]].apply(null,arguments));var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm\"][["Z"]].apply(null,arguments));var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm\"][["_"]].apply(null,arguments));var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm\"][["$"]].apply(null,arguments));var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm\"][["aa"]].apply(null,arguments));var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm\"][["ba"]].apply(null,arguments));var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm\"][["ca"]].apply(null,arguments));var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm\"][["da"]].apply(null,arguments));var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm\"][["ea"]].apply(null,arguments));var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm\"][["fa"]].apply(null,arguments));var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm\"][["ga"]].apply(null,arguments));var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm\"][["ha"]].apply(null,arguments));var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm\"][["ia"]].apply(null,arguments));var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm\"][["ja"]].apply(null,arguments));var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm\"][["ka"]].apply(null,arguments));var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm\"][["la"]].apply(null,arguments));var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm\"][["ma"]].

```

```

).apply(null,arguments));var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][_"na"]).apply(
null,arguments));var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][_"oa"]).apply(
null,arguments));var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][_"pa"]).apply(
null,arguments));var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][_"qa"]).apply(
null,arguments));var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][_"ra"]).apply(
null,arguments));var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][_"sa"]).
apply(
null,arguments));var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][_"ta"]).apply(
null,arguments));var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][_"ua"]).apply(
null,arguments));var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=
Module["asm"][_"va"]).apply(
null,arguments));var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][_"wa"]).
apply(
null,arguments));var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWith
Offset"]=Module["asm"][_"xa"]).apply(
null,arguments));var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][_"ya"]).apply(
null,arguments));var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][_"za"]).apply(
null,arguments));var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][_"Aa
"]).apply(
null,arguments));var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][_"Ba"]).
apply(
null,arguments));var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][_"Ca"]).
apply(
null,arguments));var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][_"Da"]).apply(
null,arguments));var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][_"Ea"]).
apply(
null,arguments));var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][_"Fa"]).apply(
null,arguments));var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][_"Ga"]).apply(
null,arguments));var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_Squared
Difference"]=Module["asm"][_"Ha"]).apply(
null,arguments));var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][_"Ia"]).apply(
null,arguments));var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["as
m"][_"Ja"]).apply(
null,arguments));var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][_"Ka"]).apply(
null,arguments));var

```

```

s});var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][_"La"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][_"Ma"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][_"Na"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][_"Oa"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][_"Pa"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][_"Qa"]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][_"Ra"]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=Module["asm"][_"Sa"]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"][_"Ta"]).apply(null,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"][_"Ua"]).apply(null,arguments)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_location"]=Module["asm"][_"Va"]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][_"Wa"]).apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"][_"Xa"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][_"Ya"]).apply(null,arguments)};Module["cwrap"]=cwrap;var calledRun;function
ExitStatus(status){this.name=_"ExitStatus";this.message=_"Program terminated with
exit("+status+"");this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"](_"Running...");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"](_"");},1);doRun()},1)}else{doRun()}}Module["run"]=run;if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop()}run();\n\n\n return WasmBackendModule.ready\n\n\n);nif (typeof exports ===
'object' && typeof module === 'object')\n module.exports = WasmBackendModule;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModule; });\nelse if (typeof exports ===
'object')\n exports["WasmBackendModule"] = WasmBackendModule;\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\nimport './flags_wasm';\n\nimport {backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,
engine, env, KernelBackend, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasmModule,
WasmFactoryConfig} from './wasm-out/tfjs-backend-wasm';\n\nimport {BackendWasmThreadedSimdModule} from
'./wasm-out/tfjs-backend-wasm-threaded-simd';\n\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-
backend-wasm-threaded-simd.worker.js';\n\n// @ts-ignore\nimport {wasmWorkerContents} from './wasm-out/tfjs-backend-
wasm-threaded-simd.worker.js';\n\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\n\ninterface
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:
number;\n /** Only used for string tensors, storing encoded bytes. */\n stringBytes?: Uint8Array[];\n}\n\n\nexport
type DataId = object; // object instead of {} to force non-primitive.\n\n\nexport class BackendWasm extends
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:
DataStorage<TensorData>;\n\n constructor(public wasm:
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n
this.wasm.tfjs.initWithThreadsCount(threadsCount);\n actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n
this.dataIdMap = new DataStorage(this, engine());\n }\n\n write(values: backend_util.BackendValues, shape:
number[], dtype: DataType):\n DataId {\n const dataId = {id: this.dataIdNextNumber++};\n
this.move(dataId, values, shape, dtype, 1);\n return dataId;\n }\n\n numDataIds(): number {\n return
this.dataIdMap.numDataIds();\n }\n\n async time(f: () => void): Promise<BackendTimingInfo> {\n const start =
util.now();\n f();\n const kernelMs = util.now() - start;\n return {kernelMs};\n }\n\n move(\n dataId:
DataId, values: backend_util.BackendValues, shape: number[],\n dtype: DataType, refCount: number): void {\n
const id = this.dataIdNextNumber++;\n if (dtype === 'string') {\n const stringBytes = values as Uint8Array[];\n
this.dataIdMap.set(\n dataId,\n {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n
return;\n }\n\n const size = util.sizeFromShape(shape);\n const numBytes = size *
util.bytesPerElement(dtype);\n const memoryOffset = this.wasm._malloc(numBytes);\n\n
this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n\n this.wasm.tfjs.registerTensor(id, size,
memoryOffset);\n\n if (values != null) {\n this.wasm.HEAPU8.set(\n new Uint8Array(\n (values
as backend_util.TypedArray).buffer,\n (values as backend_util.TypedArray).byteOffset, numBytes),\n
memoryOffset);\n }\n }\n\n read(dataId: DataId): Promise<backend_util.BackendValues> {\n return
this.readSync(dataId);\n }\n\n readSync(dataId: DataId): backend_util.BackendValues {\n const {memoryOffset,
dtype, shape, stringBytes} =\n this.dataIdMap.get(dataId);\n if (dtype === 'string') {\n return stringBytes;\n
}\n const bytes = this.wasm.HEAPU8.slice(\n memoryOffset,\n memoryOffset +
util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n return typedArrayFromBuffer(bytes.buffer, dtype);\n
}\n\n /**\n * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n * is released, false
otherwise.\n * @param dataId\n * @oaram force Optional, remove the data regardless of refCount\n */\n
disposeData(dataId: DataId, force = false): boolean {\n if (this.dataIdMap.has(dataId)) {\n const data =
this.dataIdMap.get(dataId);\n data.refCount--;\n if (!force && data.refCount > 0) {\n return false;\n
}\n\n this.wasm._free(data.memoryOffset);\n this.wasm.tfjs.disposeData(data.id);\n
this.dataIdMap.delete(dataId);\n }\n return true;\n }\n\n /** Return refCount of a `TensorData`. */\n
refCount(dataId: DataId): number {\n if (this.dataIdMap.has(dataId)) {\n const tensorData =
this.dataIdMap.get(dataId);\n return tensorData.refCount;\n }\n return 0;\n }\n\n incRef(dataId: DataId) {\n
const data = this.dataIdMap.get(dataId);\n if (data != null) {\n data.refCount++;\n }\n }\n\n floatPrecision():
32 {\n return 32;\n }\n\n // Returns the memory offset of a tensor. Useful for debugging and unit\n // testing.\n
getMemoryOffset(dataId: DataId): number {\n return this.dataIdMap.get(dataId).memoryOffset;\n }\n\n dispose() {\n
this.wasm.tfjs.dispose();\n if ('PThread' in this.wasm) {\n
this.wasm.PThread.terminateAllThreads();\n }\n this.wasm = null;\n }\n\n memory() {\n return {unreliable:
false};\n }\n\n /**\n * Make a tensor info for the output of an op. If `memoryOffset` is not\n * present, this
method allocates memory on the WASM heap. If `memoryOffset`\n * is present, the memory was allocated
elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n makeOutput(shape:

```

```

number[], dtype: DataType, memoryOffset?: number):\n TensorInfo {\n let dataId: {};\n if (memoryOffset\n == null) {\n dataId = this.write(null /* values */, shape, dtype);\n } else {\n const id =\n this.dataIdNextNumber++;\n dataId = {id};\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,\n refCount: 1});\n const size = util.sizeFromShape(shape);\n this.wasm.tfjs.registerTensor(id, size,\n memoryOffset);\n }\n return {dataId, shape, dtype};\n }\n\n TypedArrayFromHeap({shape, dtype, dataId}:\n TensorInfo):\n backend_util.TypedArray {\n const buffer = this.wasm.HEAPU8.buffer;\n const\n {memoryOffset} = this.dataIdMap.get(dataId);\n const size = util.sizeFromShape(shape);\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer, memoryOffset, size);\n case 'int32':\n return new\n Int32Array(buffer, memoryOffset, size);\n case 'bool':\n return new Uint8Array(buffer, memoryOffset,\n size);\n default:\n throw new Error(`Unknown dtype ${dtype}`);\n }\n }\n\n function\n createInstantiateWasmFunc(path: string) {\n // this will be replace by rollup plugin patchWechatWebAssembly in\n // miniprogram's output.\n // tslint:disable-next-line:no-any\n return (imports: any, callback: any) => {\n util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n if (!response['ok']) {\n imports.env.a(`failed to load wasm binary file at '${path}'`);\n }\n response.arrayBuffer().then(binary => {\n WebAssembly.instantiate(binary, imports).then(output => {\n callback(output.instance, output.module);\n });\n });\n });\n return {};\n });\n }\n\n /**\n * Returns the path of the WASM binary.\n * @param\n simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n * @param\n wasmModuleFolder the directory containing the WASM binaries.\n */\n function getPathToWasmBinary(\n simdSupported: boolean, threadsSupported: boolean,\n wasmModuleFolder: string) {\n if (wasmPath != null) {\n // If wasmPath is defined, the user has supplied a full path to\n // the vanilla .wasm binary.\n return\n wasmPath;\n }\n\n let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n if (simdSupported &&\n threadsSupported) {\n path = 'tfjs-backend-wasm-threaded-simd.wasm';\n } else if (simdSupported) {\n path =\n 'tfjs-backend-wasm-simd.wasm';\n }\n\n if (wasmFileMap != null) {\n if (wasmFileMap[path] != null) {\n return\n wasmFileMap[path];\n }\n }\n\n return\n wasmModuleFolder + path;\n }\n\n /**\n * Initializes the wasm\n module and creates the js <--> wasm bridge.\n * NOTE: We wrap the wasm module in a object with property\n 'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in\n Chrome 76).\n */\n export async function init(): Promise<{wasm: BackendWasmModule}> {\n const\n [simdSupported, threadsSupported] = await Promise.all([\n env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n]);\n\n return\n new Promise((resolve, reject) => {\n const\n factoryConfig: WasmFactoryConfig = {};\n\n /**\n * This function overrides the Emscripten\n module locateFile utility.\n * @param\n path The relative path to the file that needs to be loaded.\n * @param\n prefix The path to the main JavaScript file's directory.\n */\n factoryConfig.locateFile = (path, prefix) => {\n if\n (path.endsWith('.worker.js')) {\n const\n response = wasmWorkerContents;\n const\n blob = new\n Blob([response], {type: 'application/javascript'});\n return\n URL.createObjectURL(blob);\n }\n\n if\n (path.endsWith('.wasm')) {\n return\n getPathToWasmBinary(\n simdSupported as boolean,\n threadsSupported as boolean,\n wasmPathPrefix != null ?\n wasmPathPrefix : prefix);\n }\n\n return\n prefix\n + path;\n });\n\n // Use the instantiateWasm override when system fetch is not available.\n // Reference:\n //\n https://github.com/emscripten-core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7fecfa907/tests/manual_wasm_instantiate.html#L170\n if\n (customFetch) {\n factoryConfig.instantiateWasm =\n createInstantiateWasmFunc(getPathToWasmBinary(\n simdSupported as boolean, threadsSupported as\n boolean,\n wasmPathPrefix != null ?\n wasmPathPrefix : ''));\n }\n\n let\n initialized = false;\n\n factoryConfig.onAbort = () => {\n if\n (initialized) {\n // Emscripten already called console.warn so no need to\n double\n log.\n return;\n }\n\n if\n (initAborted) {\n // Emscripten calls `onAbort` twice, resulting in double\n error\n // messages.\n return;\n }\n\n init\n Aborted = true;\n const\n rejectMsg =\n 'Make sure the\n server can serve the `.wasm` file relative to the ' +\n 'bundled js file. For more details see\n https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers';\n\n reject\n ({message: rejectMsg});\n });\n\n let\n wasm: Promise<BackendWasmModule>;\n // If `wasmPath` has

```

```

been defined we must initialize the vanilla module.\n if (threadsSupported && simdSupported && wasmPath ==
null) {\n factoryConfig.mainScriptUrlOrBlob = new Blob(\n [var WasmBackendModuleThreadedSimd = `
+\n wasmFactoryThreadedSimd.toString()),\n {type: 'text/javascript'});\n wasm =
wasmFactoryThreadedSimd(factoryConfig);\n } else {\n // The wasmFactory works for both vanilla and SIMD
binaries.\n wasm = wasmFactory(factoryConfig);\n }\n\n // The WASM module has been successfully
created by the factory.\n // Any error will be caught by the onAbort callback defined above.\n
wasm.then((module) => {\n initialized = true;\n initAborted = false;\n\n const voidReturnType: string =
null;\n // Using the tfjs namespace to avoid conflict with emscripten's API.\n module.tfjs = {\n init:
module.cwrap('init', null, []),\n initWithThreadsCount:\n module.cwrap('init_with_threads_count', null,
['number']),\n getThreadsCount: module.cwrap('get_threads_count', 'number', []),\n registerTensor:
module.cwrap(\n 'register_tensor', null,\n [\n 'number', // id\n 'number', // size\n
'number', // memoryOffset\n]),\n disposeData: module.cwrap('dispose_data', voidReturnType,
['number']),\n dispose: module.cwrap('dispose', voidReturnType, []),\n }; \n\n resolve({ wasm: module });\n
});\n});\n\nfunction typedArrayFromBuffer(\n buffer: ArrayBuffer, dtype: DataType):
backend_util.TypedArray {\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer);\n case
'int32':\n return new Int32Array(buffer);\n case 'bool':\n return new Uint8Array(buffer);\n default:\n
throw new Error(`Unknown dtype ${dtype}`);\n }\n}\n\nconst wasmBinaryNames = ['tfjs-backend-
wasm.wasm', 'tfjs-backend-wasm-simd.wasm', 'tfjs-backend-wasm-threaded-simd.wasm'] as const;\n\nlet WasmBinaryName =
typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix:
string = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet
customFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `.wasm` file
which will be fetched when the wasm\n * backend is initialized. See\n *
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more
details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch
to download\n * the wasm file, default to false.\n * @doc {heading: 'Environment', namespace: 'wasm'}\n
*\n * ^\n * @export function setWasmPath(path: string, usePlatformFetch = false): void {\n deprecationWarn(\n
'setWasmPath has been deprecated in favor of setWasmPaths and' +\n ' ' will be removed in a future release.);\n if
(initAborted) {\n throw new Error(\n 'The WASM backend was already initialized. Make sure you call ' +\n
 '\n `setWasmPath()` before you call `tf.setBackend()` or `tf.ready()`);\n }\n wasmPath = path;\n customFetch =
usePlatformFetch;\n}\n\n/**\n * Configures the locations of the WASM binaries.\n * @param usePlatformFetch optional
boolean to use platform fetch to download\n * the wasm file, default to false.\n * @doc {heading:
'Environment', namespace: 'wasm'}\n * ^\n * @export function setWasmPaths(\n * prefixOrFileMap: string | {[key in
WasmBinaryName]?: string},\n * usePlatformFetch = false): void {\n if (initAborted) {\n throw new Error(\n
'The WASM backend was already initialized. Make sure you call ' +\n '\n `setWasmPaths()` before you call
`tf.setBackend()` or ' +\n '\n `tf.ready()`);\n }\n if (typeof prefixOrFileMap === 'string') {\n wasmPathPrefix
= prefixOrFileMap;\n } else {\n wasmFileMap = prefixOrFileMap;\n const missingPaths =\n wasmBinaryNames.filter(name => wasmFileMap[name] == null);\n if (missingPaths.length > 0) {\n throw new
Error(\n `There were no entries found for the following binaries: ` +\n ` ${missingPaths.join(',')}. Please
either call setWasmPaths with a ` +\n ` map providing a path for each binary, or with a string indicating ` +\n
 ` the directory where all the binaries can be found.`);\n }\n }\n customFetch = usePlatformFetch;\n}\n\n/**
Used in unit tests. *\n * @export function resetWasmPath(): void {\n wasmPath = null;\n wasmPathPrefix = null;\n
}

```



```
wasmFileMap = {};
customFetch = false;
initAborted = false;

let threadsCount = -1;
let actualThreadsCount = -1;

/** Sets the number of threads that will be used by XNNPACK to create
 * threadpool (default to the number of logical CPU cores).
 * This must be called before calling
 * tf.setBackend('wasm').
 */
export function setThreadsCount(numThreads: number) {
 threadsCount = numThreads;
}

/** Gets the actual threads count that is used by XNNPACK.
 * It is set after the backend is initialized.
 */
export function getThreadsCount(): number {
 if (actualThreadsCount === -1) {
 throw new Error('WASM backend not initialized.');
```

```

}
return actualThreadsCount;
}

/** @license See the LICENSE file.
 * This code is auto-generated, do not modify this file!
const version = '3.11.0';
export {version};
/** @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */

import './flags_wasm';
import {registerBackend} from '@tensorflow/tfjs-core';
import {BackendWasm, init} from './backend_wasm';
export {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath, setWasmPaths} from './backend_wasm';
export {version as version_wasm} from './version';
const WASM_PRIORITY = 2;
registerBackend('wasm', async () => {
 const {wasm} = await init();
 return new BackendWasm(wasm);
}, WASM_PRIORITY);

names:["_FusedMatMul", "util", "Abs", "backend_util", "Add", "AddN", "Identity", "setup", "Transpose", "All", "Any", "wasmFunc", "ArgMax", "AvgPool", "Reshape", "BatchMatMul", "slice_util", "buffer", "sliceImplCPU", "Slice", "BatchToSpaceND", "Cast", "Ceil", "ClipByValue", "concatImplCPU", "Concat", "Conv2D", "Conv2DBackpropInput", "Cos", "Cosh", "CropAndResize", "Cumsum", "DepthToSpace", "DepthwiseConv2dNative", "Elu", "supportsFullBroadcast", "Equal", "Exp", "ExpandDims", "Fill", "FlipLeftRight", "Floor", "FloorDiv", "FusedBatchNorm", "FusedConv2D", "FusedDepthwiseConv2D", "GatherNd", "GatherV2", "Greater", "GreaterEqual", "setupFunc", "LeakyRelu", "Less", "LessEqual", "Log", "LogicalAnd", "Max", "Maximum", "MaxPool", "Mean", "Min", "Minimum", "MirrorPad", "Multiply", "Neg", "NonMaxSuppressionV3", "NonMaxSuppressionV4", "NonMaxSuppressionV5", "kernelFunc", "NotEqual", "OneHot", "OnesLike", "Pack", "PadV2", "Pow", "Prelu", "Prod", "rangeImplCPU", "Range", "RealDiv", "Relu", "Relu6", "ResizeBilinear", "Reverse", "RotateWithOffset", "Round", "Rsqrt", "ScatterNd", "Select", "Sigmoid", "Sin", "Softmax", "SpaceToBatchND", "SplitV", "Sqrt", "Square", "SquaredDifference", "Step", "StridedSlice", "Sub", "Sum", "Tan", "Tanh", "Tile", "TopK", "Transform", "Unpack", "ZerosLike", "registerKernel", "env", "tslib_1.__extends", "DataStorage", "engine", "KernelBackend", "tslib_1.__awaiter", "registerBackend"], mappings:";AAAA;AAAA;AAAA;AAiBA;AACAA,IAAY,QAMX;AAND,WAAY,QAAQ;IACIB,6CAAW,CAAA;IACX,yCAAS,CAAA;IACT,uCAAQ,CAAA;IACR,2CAAU,CAAA;IACV,iDAaA,CAAA;AACf,CAAC,EANW,QAAQ,KAAR,QAAQ,QAMnB;AAED;AACAA,IAAY,iBAQX;AARD,WAAY,iBAaIB;IAC3B,6DAAU,CAAA;IACV,yDAAQ,CAAA;IACR,2DAAS,CAAA;IACT,2DAAS,CAAA;IACT,mEAaA,CAAA;IACb,+DAAW,CAAA;IACX,uDAAO,CAAA;AACT,CAAC,EARW,iBAaIB,KAAjB,iBAaIB;AC3B7B;AAAA;AAuBA,IAAI,eAKQ,CAAC;AAEb,SAAS,KAAC,CAAC,OAaOB;IACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACA,qBAAY,EAAE,IAAI,aAAa;QACIE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,gBAAGb,CAAC,IAIzB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,EAAE,YAAC,EAAE,kBAAI,EAAE,sDAAsB,CAAW;IAEpD,IAAI,CAAC,CAAC,KAAC,KAAC,SAAS,IAAI,CAAC,CAAC,KAAC,KAAC,SAAS,EAAE;QACID,MAAM,IAAI,KAAC,CACX,6DAA6D,CAAC,CAAC;KACpE;IAEM,IAAA,6BAAU,EAAE,6BAAU,EAAE,6BAAU,EAAE,qCAAc,CAAU;IACnE,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE/
```

C,IAAI,MAAM,GAAG,CAAC,CAAC;IACf,IAAI,IAAI,IAAI,IAAI,EAAE;QACb,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;QACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;YAC/B,MAAM,IAAI,KAAK,CACX,iDAAiD;iBACjD,UAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,MAAG,CAAA,CAAC,CAAC;SACvC;QACD,MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;KACtB;IACD,IAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;QAC3D,CAAC;QACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC5D,IAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;IAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;QAC3B,MAAM,IAAI,KAAK,CACR,UAAU,mDAAgD;YAC7D,sBAAsB,CAAC,CAAC;KAC7B;IAED,IAAM,OAAO,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACrD,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACtD,IAAM,QAAQ,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAE5B,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACvE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,eAAe,CACX,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,UAAU,EAAE,UAAU,EAAE,eAAe,EAAE,MAAM,EAAE,wBAAwB,EACzE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IAEhC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,iBAAiB,GAAiB;IAC7C,UAAU,EAAEA,qBAAY;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,gBAAoC;CACjD;;AC7GD;;;;;;;SAuBgB,uBAAuB,CACnC,UAAkB,EAAE,OAAkB;IACxC,IAAI,QAA6D,CAAC;IAEIE,SAAS,SAAS,CAAC,OAAoB;QACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;YACzD,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;KACJ;IAED,SAAS,UAAU,CAAC,IAAiD;QAE5D,IAAA,sBAAO,EAAW,iBAAC,CAAU;QACpC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,OAAO,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC;QAC5D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;QAGnD,IAAIC,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;YACvC,OAAO,GAAG,CAAC;SACZ;QAED,QAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;QACxC,OAAO,GAAG,CAAC;KACZ;IAED,OAAO,EAAC,UAAU,YAAA,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,WAAA,EAAE,UAAU,YAAA,EAAC,CAAC;AACIE;;ACpDA;;;;;;;AAoBO,IAAM,SAAS,GAAiB,uBAAuB,CAACC,YAAG,CAAC;;ACpBnE;;;;;;;SAuBgB,wBAAwB,CACpC,UAAkB,EAAE,qBAA8B,EACID,KAAgB;IACIB,IAAI,QAGQ,CAAC;IAEb,SAAS,SAAS,CAAC,OAAoB;QACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;YACzD,QAAQ;YACR,OA AO;YACP,QAAQ;YACR,QAAQ;YACR,OAAO;YACP,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;KACJ;IAED,SAAS,UAAU,CAAC,IAAkD;QAE7D,IAAA,sBAAO,EAAE,oBAAM,CAAS;QACxB,IAAA,YAAC,EAAE,YAAC,CAAW;QACtB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAE/C,IAAM,UAAU,GAAG,KAAK,IAAI,IAAI,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC;QACnD,IAAM,QAAQ,GAAGC,qBAAY,CAAC,0BAA0B,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;QAC3E,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,UAAU,CAAC,CAAC;;QAGrD,IAAIF,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;YACtC,OAAO,GAAG,CAAC;SACZ;QAED,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;QACnE,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;QACnE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,IAAM,UAAU,GAAG,cAAM,OAAA,QAAQ,CAC7B,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,QAAQ,CAAC,CA

AC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,GAAA,CAAC;;QAG9B,IAAI,qBAAqB,IAAI,CAAC,CAAC,KA  
AK,KAAK,SAAS,EAAE;YACID,UAAU,EAAE,CAAC;YACb,OAAO,GAAG,CAAC;SACZ;QAED,IAAM,cAAc,  
GAAGE,qBAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;QACxE,IAAM,cA  
Ac,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;QACxE,IAAM,  
eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,UAAU,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,KAAK,CAAC,GAA  
A,CAAC,CAAC;QAChE,IAAM,eAAe,GAAG,cAAc,CAAC,KAAK,CAAC,UAAU,CAAC,EAAE,CAAC,IAAK,O  
AAA,CAAC,KAAK,CAAC,GAAA,CAAC,CAAC;QACHe,IAAI,eAAe,IAAI,eAAe,EAAE;YACtC,UAAU,EAAE,  
CAAC;YACb,OAAO,GAAG,CAAC;SACZ;aAAM;YACL,MAAM,IAAI,KAAK,CACX,2CAA2C;iBAC3C,mBA  
AiB,CAAC,CAAC,KAAK,SAAI,UAAU,MAAG,CAAA,CAAC,CAAC;SACbD;KACF;IAED,OAAO,EAAC,UAA  
U,YAAA,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,WAAA,EAAE,UAAU,YAAA,EAAC,CAAC;AACIE;;ACx  
FA;;;;;;;AAqBA,IAAM,qBAAqB,GAAG,IAAI,CAAC;AAE5B,IAAM,SAAS,GACIB,wBAAwB,CAACC,Y  
AAG,EAAE,qBAAqB,CAAC;;ACxBxD;;;;;;;AAuBA,IAAI,QAEQ,CAAC;AAEb,SAAS,SAAS,CAAC,OAA  
oB;IACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,aAAI,EAAE,IAAI,aAAa;QACnD,OAAO;  
QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAA  
kD;IACvD,IAAA,oBAAM,EAAE,sBAAO,CAAS;IAC/B,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MA  
AM,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;;IA  
GjE,IAAI,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACvC,OAAO,GAAG  
,CAAC;KACZ;IAED,IAAM,QAAQ,GAAG,MAAM,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,OAAO,C  
AAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,GAAA,CAAC,CAAC;IACrE,IAA  
M,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IACtE,IA  
AM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CA  
AC;IACnD,QAAQ,CAAC,aAAa,EAAE,QAAQ,CAAC,MAAM,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAA  
C,EAAE,KAAK,CAAC,CAAC;IAErE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,UAAU,GAaiB;IACtC,  
UAAU,EAAEI,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS,WAAA;IACT,UAAU,EAAE,IAAwB;CACrC;  
;AC1DD;;;;;;;SAsBgB,QAAQ,CAAC,IAAoD;IAE3D,IAAA,iBAAC,EAAG,sBAAO,CAAS;IACpC,IAAM,G  
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IA  
CjD,IAAM,MAAM,GAAG,OAAO,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC;IAC7C,IAAM,OAAO,GAAG,  
OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IACbD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAA  
C;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,GAaiB;IAC1C,UAAU,EAAEC,iBAAQ;IAC  
pB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,QAA4B;CACzC;;ACpCD;;;;;;;AAwBA,IAAI,aAE4D,CA  
AC;AAEjE,SAASC,OAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,kB  
AAS,EAAE,IAAI,aAAa;QAC7D,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,OAA  
O;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,SAAS,CACrB,IAC0E;IAErE,IAAA,oBAAM,EAAE,s  
BAAO,EAAE,kBAAK,CAAS;;IAGhC,IAAA,kDAAoE,EAAnE,oBAAY,EAAE,YAAqD,CAAC;IAE3E,IAAI,UA  
AU,GAAG,IAAI,CAAC;IACtB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,E  
AAE,CAAC,EAAE,EAAE;QACpC,IAAI,IAAI,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACjB,UAAU,GAA  
G,KAAK,CAAC;SACpB;KACF;IACD,IAAM,QAAQ,GAAG,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,  
EAAE,KAAK,CAAC,IAAI,CAAC,CAAC;IAC7D,IAAM,CAAC,GAAG;QACR,MAAM,EAAE,MAAM,CAAC,C  
AAC,CAAC,MAAM;QACvB,KAAK,EAAE,YAAY;QACnB,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,KAAK  
;KACtB,CAAC;IAEF,IAAI,UAAU,EAAE;QACd,IAAM,MAAM,GAAG,QAAQ,CAAC,EAAC,MAAM,QAAA,E  
AAE,OAAO,SAAA,EAAC,CAAC,CAAC;QAC3C,MAAM,CAAC,KAAK,GAAG,QAAQ,CAAC;QACxB,OAAO,  
MAAM,CAAC;KACf;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,K  
AAK,CAAC,CAAC;IACID,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA  
G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,C  
AAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9D,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UA  
AU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,aAAa,CACT,GAAG,EAAE,WAAW  
,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,

EAAE,SAAS,EACrE,IAAI,CAAC,MAAM,CAAC,CAAC;IACjB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,eAAe,CAAC,OAAiB,EAAE,IAAc;IACxD,IAAM,QAAQ,GAAG,IAAI,KAAC,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC3C,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;KAChC;IACD,OAAO,QAAQ,CAAC;AACIB,CAAC;AAED,SAAS,iBAAiB,CACtB,KAAe,EAAE,IAAc;IACjC,IAAM,QAAQ,GAAa,EAAE,CAAC;IAC9B,IAAM,OAAO,GAAa,EAAE,CAAC;IAC7B,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAC,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QACrC,IAAI,KAAC,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE;YACIB,QAAQ,CAAC,IAAI,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC,CAAC;SACzB;QACD,IAAI,KAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE;YACxB,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC;SACvB;KACF;IACD,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QACvC,IAAI,SAAS,GAAG,CAAC,CAAC,CAAC;QACnB,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;YACvC,IAAI,OAAO,CAAC,CAAC,CAAC,IAAI,CAAC;iBACd,SAAS,KAAC,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,CAAC,GAAG,OAAO,CAAC,CAAC,CAAC,CAAC,EAAE;gBACzD,SAAS,GAAG,CAAC,CAAC;aAcF;SACF;QACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC;KACxB;IACD,OAAO,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;AAC7B,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEA,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAED,OAAK;CACjB;;ACtHD;;;;;;;;;;AAqBA;;;;;;;SAQgB,uBAAB,CACnC,CAAA,EAAE,IAAQB,EAAE,OAAoB;IAM5D,IAAM,MAAM,GAAG,CAAC,CAAC,KAAC,CAAC;IACvB,IAAM,KAAC,GAAG,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC;IAE7B,IAAM,YAAY,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;IACvD,IAAI,IAAI,GAAG,YAAY,CAAC;IACxB,IAAM,YAAY,GAAGE,qBAAY,CAAC,kBAaKB,CAAC,IAAI,EAAE,KAAC,CAAC,CAAC;IACIE,IAAI,WAAW,GAAG,IAAI,CAAC;IACvB,IAAI,kBAaKB,GAAG,KAAC,CAAC;IAC/B,IAAI,YAAY,IAAI,IAAI,EAAE;QACxB,IAAM,QAAQ,GAAa,IAAI,KAAC,CAAC,KAAC,CAAC,CAAC;QAC5C,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,CAAC,CAAC;SACvC;QAED,IAAI,GAAGA,qBAAY,CAAC,gBAaGB,CAAC,IAAI,CAAC,MAAM,EAAE,KAAC,CAAC,CAAC;QACzD,WAAW;YACP,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAC,EAAC,EAAC,IAAI,EAAE,YAAY,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;QAEEnE,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACIE,IAAI,YAAY,KAAC,GAAG,EAAE;YACxB,kBAaKB,GAAG,IAAI,CAAC;SAC3B;KACF;IAED,OAAO,EAAC,UAAU,EAAE,WAAW,EAAE,YAAY,cAAA,EAAE,IAAI,MAAA,EAAE,kBAaKB,oBAAA,EAAC,CAAC;AAC3E;;AC9DA;;;;;;;;;;AAuBA,IAAI,OAAiE,CAAC;AAEtE,SAASI,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACE,YAAG,EAAE,IAAI,WAAW,CAAC,wBAaWB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAaK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAC,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IAAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAC,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,YAAY,CAAC;KACxB;IAED,IAAM,SAAS,GAAG,KAAC,CAAC,KAAC,CAAC,MAAM,CAAC;IACrCN,qBAAY,CAAC,0BAA0B,CAAC,KAAC,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACID,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;IAC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACID,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAC,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACzC,IAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,KAAC,CAAC,CAAC;KACrC;IAED,IAAI,kBAaKB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KA

CxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,K  
AAK,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,G  
AAG,CAAC;AACb,CAAC;AAEM,IAAM,SAAS,GAAiB;IACrC,UAAU,EAAEM,YAAG;IACf,WAAW,EAAE,M  
AAM;IACnB,SAAS,EAAEF,OAAK;IACbB,UAAU,EAAE,GAAuB;CACpC;;AC9ED;;;;;;;AAuBA,IAAI,O  
AAiE,CAAC;AAEtE,SAASA,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,C  
AACG,YAAG,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG  
,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ  
,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,  
CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAA  
K,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CA  
AC;IAE9C,IAAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UA  
AU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAK,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,Y  
AAY,CAAC;KACxB;IAED,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrCP,qBAAY,  
CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACID,IAAA,uEACuD,EADtD,gBAA  
Q,EAAE,mBAC4C,CAAC;IAC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAE  
nD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACI  
D,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,  
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,  
OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACrC;IAED,IAAI,kBAaKB,EAAE;;QAEtB,  
OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,I  
AAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC  
5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAA  
M,SAAS,GAAiB;IACrC,UAAU,EAAEO,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEH,OAAK;IA  
ChB,UAAU,EAAE,GAAuB;CACpC;;AC9ED;;;;;;;AAwBA,IAAII,UAESB,CAAC;AAE3B,SAASJ,OAAK,C  
AAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACC,eAAM,EAAE,IAAI,aAAa;QA  
CrD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AA  
ED,SAAS,MAAM,CACX,IAAsE;IACjE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBA  
AI,CAA+B;IACnC,IAAA,YAAC,CAAI;IACzC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA  
C,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,K  
AAK,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,0CACoB,CAAC;IAE9C,I  
AAI,kBAaKB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,C  
AAC;YACnB,OAAO,GAAG,YAAY,CAAC;SACxB;KACF;IAED,IAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,C  
AAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACIC,IAAM,GAAG,GAAG,OAAO,CAAC,UA  
AU,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;IACID,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA  
G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,SAAS,GAAGX,aAAI,CAAC,aAAa,  
CAAC,GAAG,CAAC,KAAK,CAAC,CAAC;IACnD,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CA  
AC,CAAC,CAAC,CAAC;IACvCU,UAAQ,CAAC,OAAO,EAAE,QAAQ,CAAC,KAAK,CAAC,KAAK,CA  
AC,EAAE,SAAS,EAAE,SAAS,EAAE,KAAK,CAAC,CAAC;IAEtE,IAAI,kBAaKB,EAAE;;QAEtB,OAAO,CAA  
C,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAE  
M,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEC,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,M  
AA0B;IACtC,SAAS,EAAEL,OAAK;CACjB;;AChFD;;;;;;;AAqBA,IAAI,WAI6D,CAAC;AAEIE,SAASA,O  
AAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACM,gBAAO,EAAE,IAAI,a  
AAa;QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;Q  
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,C  
AAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IACnE,IAAA,oBAAM,EAAE,kBAAK,EAAE,sB  
AAO,CAAS;IAEtC,IAAM,CAAC,GAAG,MAAM,CAAC,CAAa,CAAC;IAC/B,IAAM,GAAG,GAAG,OAAO,CA  
AC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAExC,IAAA,6BAAU,EAA

E,uBAAO,EAAE,eAAG,EAAE,uCAAe,CAAU;IAC1D,IAAM,QAAQ,GAAGV,qBAAY,CAAC,iBAAiB,CAC3C, CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,kBAaKB,GAAG,EAAE,eAAe,CAAC,CAAC;I AE3E,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW, CAAC;IACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,IAAM,QAAQ,GAAG, QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM, CAAC;IAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,IAAM,YAAY,GAAG,QA AQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,QAAQ,G AAG,QAAQ,CAAC,UAAU,CAAC;IAErC,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QAC1C,MAAM,IAA I,KAAK,CACX,4CAA4C;aACzC,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;KAC5D;IAED,IAAI,QA AQ,CAAC,aAAa,KAAK,CAAC,IAAI,QAAQ,CAAC,cAAc,KAAK,CAAC,EAAE;QACjE,MAAM,IAAI,KAAK,C ACX,oEAAoE;aACpE,UAAQ,QAAQ,CAAC,cAAc,UAAK,QAAQ,CAAC,aAAa,OAAI,CAAA,CAAC,CAAC;KA CrE;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAA C;IAC7D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAA C,EAAE,CAAC;IAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC, CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,YAAY,EAAE,W AAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAAE,WAAW,EAAE,QAAQ,E ACzE,KAAK,CAAC,CAAC;IACX,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UA AU,EAAEU,gBAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEN,OAAK;IACbB,UAAU,EAAE,OAA2 B;CACxC;;AC9FD;;;;;;;SAqBgB,OAAO,CACnB,IAAwE;IACnE,IAAA,oBAAM,EAAE,kBAaK,CAAS;IA CtB,IAAA,YAAC,CAAW;IACZ,IAAA,mBAaK,CAAU;IAEtB,IAAM,KAAK,GAAGN,aAAI,CAAC,aAAa,CAA C,CAAC,CAAC,KAAK,CAAC,CAAC;IAC1C,IAAM,MAAM,GAAGA,aAAI,CAAC,sBAAsB,CAAC,KAAK,EA AE,KAAK,CAAC,CAAC;IAEzDA,aAAI,CAAC,MAAM,CACP,KAAK,KAAKA,aAAI,CAAC,aAAa,CAAC,MA AM,CAAC,EACpC,cAAM,OAAA,gBAAc,MAAM,qBAaGB,CAAC,CAAC,KAAK,yBAAsB;QACnE,8CAA8C,G AAA,CAAC,CAAC;;IAGxD,IAAI,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IA C9B,OAAO,EAAE,MAAM,EAAE,CAAC,CAAC,MAAM,EAAE,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,C AAC,CAAC,KAAK,EAAE,CAAC;AAC3D,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAEa,gBAAO; IACnB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,OAA2B;CACxC;;AC5CD;;;;;;;AAuBA,IAAI,eAG2C, CAAC;AAEHd,SAASP,OAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACQ ,oBAAW,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,Q AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,WAAW,C AAC,IAIpB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAaK,CAAS;IAC/B,IAAA,YAAC,EAAE,YAAC,CA AW;IACf,IAAA,6BAAU,EAAE,6BAAU,CAAU;IAEvC,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC, CAAC,KAAK,KAAK,SAAS,EAAE;QACID,MAAM,IAAI,KAAK,CACX,4DAA4D,CAAC,CAAC;KACnE;IAED, IAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAC7B,IAAM,KAAK,GAAG,CAAC,CAAC, KAAK,CAAC,MAAM,CAAC;IAE7B,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK ,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IACzE,IAAM, WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC, KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC, KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC, CAAC;IACzE,IAAM,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC, GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,IAAM,UAAU,GAAG,CAAC,C AAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACxC,IAAM,UAAU,GAAG,CA AC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IAExC,IAAM,SAAS,GAAG d,aAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;IACjD,IAAM,SAAS,GAAGA,aAAI,CAAC,aAAa,CAAC,UA AU,CAAC,CAAC;IAEjD,IAAM,mBAAmB,GACrB,SAAS,KAAK,SAAS,IAAI,SAAS,KAAK,CAAC,IAAI,SAAS ,KAAK,CAAC,CAAC;IAEIEA,aAAI,CAAC,MAAM,CACP,KAAK,IAAI,CAAC,IAAI,KAAK,IAAI,CAAC,IAAI, mBAAmB,EAC/C,cAAM,OAAA,iEAAiE;QACnE,kEAAkE;SACIE,0BAAwB,UAAU,eAAU,UAAU,OAAI,CAA A,GAAA,CAAC,CAAC;IAEpE,IAAM,iBAAiB,GACnB,SAAS,GAAG,SAAS,GAAG,CAAC,CAAC,KAAK,CAA

C,KA AK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KA AK,CAAC,KA AK,CAAC,CAAC,  
EAAE,CAAC,CAAC,CAAC,CAAC;IACxE,IAAM,QAAQ,GAAG,iBA AiB,CAAC,MAAM,CAAC,CAAC,WAA  
W,EAAE,WAAW,CAAC,CAAC,CAAC;IAEtEA,aAAI,CAAC,MAAM,CACP,WAAW,KA AK,WAAW,EAC3B,c  
AAM,OAAA,oCAAkC,WAAW,YAAS;SACrD,WAAW,iCAA4B,CAAC,CAAC,KA AK,UAAO,CAAA;SACrD,C  
AAC,CAAC,KA AK,wBAAmB,UAA Y,CAAA;SACzC,qBAAmB,UAAU,iBAAc,CAAA,GAAA,CAAC,CAAC;IA  
ErD,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;QACrC,CAAC,S  
AAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;IACpE,IAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,SAAS,E  
AAE,WAAW,EAAE,WAAW,CAAC;QACrC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;;IAGp  
E,IAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,  
SAAA,EAAE,KA AK,EAAE,EAAC,KA AK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IACzE,IAAM,GAAG,GA  
AG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EAAE,KAA  
K,EAAE,EAAC,KA AK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAEzE,IAAM,KA AK,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,KA AK,GAAG,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,OA  
AO,GAAG,UAAU,GAAG,GAAG,CAAC,KA AK,CAAC,CAAC,CAAC,GAAG,GAAG,CAAC,KA AK,CAAC,CA  
AC,CAAC,CAAC;IACzD,IAAM,QAAQ,GAAG,UAAU,GAAG,GAAG,CAAC,KA AK,CAAC,CAAC,CAAC,GA  
AG,GAAG,CAAC,KA AK,CAAC,CAAC,CAAC,CAAC;IAC1D,IAAM,QAAQ,GAAG,IAAI,CAAC,GAAG,CAA  
C,SAAS,EAAE,SAAS,CAAC,CAAC;IAEhD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,  
EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,GAAG,CAAC,KA AK,CAAC,CAAC;IACzE,IAAM,KA AK,GAAG,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,W  
AAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KA AK,CAAC,CAAC,MAAM,CAAC,CAA  
C;IACtE,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KA AK,CAAC,CAAC,M  
AAM,CAAC,CAAC;IAEtE,eAAe,CACX,KA AK,EAAE,WAAW,EAAE,GAAG,CAAC,KA AK,CAAC,MAAM,E  
AAE,KA AK,EAAE,WAAW,EACxD,GAAG,CAAC,KA AK,CAAC,MAAM,EAAE,UAAU,EAAE,UAAU,EAAE,  
KA AK,CAAC,CAAC;IAErD,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAC hC,OAAO  
,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEhC,GAAG,CAAC,KA AK,GAAG,QAAQ,CAA  
C;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,iBA AiB,GAAiB;IAC7C,UAAU,EAAEc,oBA AW;IA  
CvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAER,OAAK;IAC hB,UAAU,EAAE,WAA+B;CAC5C;;ACjID;AAC  
A;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AAE  
O,SAAS,UAAU,CAAC,MAAM,EAAE,QAAQ,EAAE,KA AK,EAAE,YAAY,EAAE;AACIE,IAAI,MAAM,OAAO,  
GAAGN,aAAI,CAAC,iBA AiB,CAAC,KA AK,EAAEA,aAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,CAAC,CAAC;  
AAChF,IAAI,IAAI,YAAY,IAAI,KA AK,KA AK,QAAQ,EAAE;AAC5C;AACa,QAAQ,IAAI,MAAM,GAAG,CA  
AC,CAAC;AACvB,QAAQ,MAAM,CAAC,OAAO,CAAC,KA AK,IAAI;AAChC,YAAY,MAAM,IAAI,GAAGA,a  
AAI,CAAC,aAAa,CAAC,KA AK,CAAC,KA AK,CAAC,CAAC;AACzD,YAAY,OAAO,CAAC,GAAG,CAAC,KA  
AK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;AAC5C,YAAY,MAAM,IAAI,IAAI,CAAC;AAC3B,SAAS,CAAC  
,CAAC;AACX,KA AK;AACL,SAAS;AACT,QAAQ,IAAI,SAAS,GAAG,CAAC,CAAC;AAC1B,QAAQ,MAAM,C  
AAC,OAAO,CAAC,KA AK,IAAI;AAChC,YAAY,MAAM,WAAW,GAAG,KA AK,KA AK,QAAQ;AACID,gBAA  
gBE,qBAAY,CAAC,sBAAsB,CAAC,KA AK,CAAC,IAAI,CAAC;AAC/D,gBAAgB,KA AK,CAAC,IAAI,CAAC;A  
AC3B,YAAY,IAAI,IAAI,GAAG,CAAC,CAAC;AACzB,YAAY,KA AK,IAAI,GAAG,GAAG,CAAC,EAAE,GAA  
G,GAAG,KA AK,CAAC,KA AK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,EAAE;AAC3D,gBAAgB,MAAM,M  
AAM,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC;AAC7D,gBAAgB,KA AK,IAAI,  
GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KA AK,CAAC,KA AK,CAAC,CAAC,CAAC,EAAE,EAAE,GAAG,E  
AAE;AAC/D,oBAAoB,OAAO,CAAC,MAAM,GAAG,GAAG,CAAC,GAAG,WAAW,CAAC,IAAI,EAAE,CAAC,  
CAAC;AAChE,iBA AiB;AACjB,aAAa;AACb,YAAY,SAAS,IAAI,KA AK,CAAC,KA AK,CAAC,CAAC,CAAC,C  
AAC;AACxC,SAAS,CAAC,CAAC;AACX,KA AK;AACL,IAAI,OAAO,OAAO,CAAC;AACnB;;AC7CA;AACa;  
AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AAEO,  
SAAS,SAAS,CAAC,KA AK,EAAE,IAAI,EAAE,IAAI,EAAE,KA AK,EAAE;AACpD,IAAI,MAAM,aAAa,GAAG,  
KA AK,KA AK,IAAI,CAAC;AACzC,IAAI,MAAM,2BAA2B,GAAG,KA AK,GAAG,IAAI,IAAI,IAAI,GAAG,CAA

C,CAAC;AACjE,IAAI,MAAM,2BAA2B,GAAG,IAAI,GAAG,KAAK,IAAI,IAAI,GAAG,CAAC,CAAC;AACjE,I  
AAI,IAAI,aAAa,IAAI,2BAA2B;AACpD,QAAQ,2BAA2B,EAAE;AACrC,QAAQ,OAAOF,aAAI,CAAC,mBAAM  
B,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC;AACID,KAAK;AACL,IAAI,MAAM,WAAW,GAAG,IAAI,CAAC,  
GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,KAAK,IAAI,IAAI,CAAC,CAAC,CAAC;AACnE,I  
AAI,MAAM,MAAM,GAAGA,aAAI,CAAC,mBAAMB,CAAC,WAAW,EAAE,KAAK,CAAC,CAAC;AACHE,IA  
AI,IAAI,IAAI,GAAG,KAAK,IAAI,IAAI,KAAK,CAAC,EAAE;AACpC;AACA;AACA,QAAQ,IAAI,GAAG,CAA  
C,CAAC,CAAC;AACIB,KAAK;AACL,IAAI,MAAM,CAAC,CAAC,CAAC,GAAG,KAAK,CAAC;AACtB,IAAI,  
KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;A  
AC5C,QAAQ,MAAM,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,GAAG,CAAC,CAAC,GAAG,IAAI,C  
AAC;AACzC,KAAK;AACL,IAAI,OAAO,MAAM,CAAC;AACIB;;ACrCA;AACA;AACA;AACA;AACA;AACA;  
AACA;AACA;AACA;AACA;AACA;AACA;AACA;AACA;AACA;AAGO,SAAS,SAAS,CAAC,IAAI,EA  
AE,KAAK,EAAE,IAAI,EAAE,KAAK,EAAE,KAAK,EAAE;AAC3D,IAAI,MAAM,WAAW,GAAGe,mBAAU,C  
AAC,gBAAgB,CAAC,KAAK,EAAE,KAAK,EAAE,IAAI,CAAC,CAAC;AACxE,IAAI,MAAM,MAAM,GAAGf,a  
AAI,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC;AAC5C,IAAI,MAAM,QAAQ,GAAGA,aAAI,CAAC,cAAc,CAAC,  
KAAK,CAAC,CAAC;AAChD,IAAI,IAAI,WAAW,EAAE;AACrB,QAAQ,MAAM,UAAU,GAAGe,mBAAU,CAA  
C,iBAaiB,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;AACzE,QAAQ,IAAI,KAAK,KAAK,QAAQ,EAAE;AAC  
C,YAAy,OAAO,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC;AAC/D,SAAS  
;AACT,QAAQ,OAAO,IAAI,CAAC,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,CAAC,CAAC;AAC9D,  
KAAK;AACL,IAAI,MAAM,WAAW,GAAG,KAAK,KAAK,QAAQ;AAC1C,QAAQq,qBAAY,CAAC,sBAASB,C  
AAC,IAAI,CAAC;AACjD,QAAQ,IAAI,CAAC;AACb,IAAI,MAAM,KAAK,GAAGc,eAAM,CAAC,KAAK,EAA  
E,KAAK,EAAE,WAAW,CAAC,CAAC;AACpD,IAAI,MAAM,MAAM,GAAGA,eAAM,CAAC,IAAI,EAAE,KA  
AK,CAAC,CAAC;AACvC,IAAI,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,IAAI,  
EAAE,EAAE,CAAC,EAAE;AAC1C,QAAQ,MAAM,MAAM,GAAG,MAAM,CAAC,UAAU,CAAC,CAAC,CAA  
C,CAAC;AAC5C,QAAQ,MAAM,KAAK,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,GAAG,EAAE,CAAC,KA  
AK,GAAG,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;AAC7D,QAAQ,MAAM,CAAC,GAAG,CAAC,K  
AAK,CAAC,GAAG,CAAC,GAAG,KAAK,CAAC,EAAE,GAAG,MAAM,CAAC,CAAC;AACnD,KAAK;AACL,I  
AAI,IAAI,KAAK,KAAK,QAAQ,EAAE;AAC5B,QAAQ,OAAOd,qBAAY,CAAC,sBAASB,CAAC,MAAM,CAAC  
,MAAM,CAAC,CAAC;AACIE,KAAK;AACL,IAAI,OAAO,MAAM,CAAC,MAAM,CAAC;AACzB;;AC3CA;::;  
::;::;::;SAsBgB,KAAK,CACjB,IAAoE;IACtD,IAAA,iBAAC,EAAG,eAAoB,EAZ,gBAAK,EAAE,cAAI,EAAG,s  
BAAO,CAAS;IAEpD,IAAA,yDAA6D,EAA5D,cAAM,EAAE,aAAoD,CAAC;IAEpE,IAAM,WAAW,GAAGa,mB  
AAU,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;IACxE,IAAM,  
KAAK,GAAG,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IACzC,IAAM,GAAG,GAAG,  
OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAC/C,IAAM,QAAQ,GAAGf,a  
AAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;IAC9C,IAAM,OAAO,GAAG,OAAO,CAAC,SAA  
S,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEID,IAAI,WAAW,EAAE;QACf,IAAM,UAAU,  
GAAGe,mBAAU,CAAC,iBAaiB,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC;QAEIE,IAAI,CAAC,CAAC,KAA  
K,KAAK,QAAQ,EAAE;YACxB,OAAO,CAAC,WAAW;gBACd,KAAkB;qBACIB,KAAK,CAAC,UAAU,EAAE,  
UAAU,GAAGf,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC;SACpE;aAAM;YAACL,IAAM,SAAO,GA  
AG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;YAChD,SAAO,CAAC,GAAG,CACN,KAAoB;iBAC  
hB,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;  
SACxE;QAED,OAAO,GAAG,CAAC;KACZ;IAED,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;QACxB,IA  
AM,GAAG,GAAGiB,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,C  
AAC,CAAC,KAAK,CAAC,CAAC;QACjE,OAAO,CAAC,WAAW,GAAG,GAAMB,CAAC;QAC1C,OAAO,GAA  
G,CAAC;KACZ;IAED,IAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IAC  
hD,IAAM,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAC5B,IAAI,IAAI,KAAK,CAAC,EAAE;QACd,OA  
AO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EAAE,MAA0B,EACrE,KAAyB,CAAC,  
CAAC;KACHc;SAAM,IAAI,IAAI,KAAK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,C  
AAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACtD,MAAkC,EAAE,KAAiC,CAAC,CAAC;K



AC5E;SAAM,IAAI,IAAI,KAAK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACnE,MAA0C,EAC1C,KAAyC,CAAC,CAAC;KACHd;SAAM;QACL,IAAM,GAAG,GACLA,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAc,CAAC;QACvE,OAAO,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC;KACIB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,OAAe,EAC/C,OAAgC,EAAE,KAAuB,EACzD,IAAsB;IACxB,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC1C,IAAM,OAAO,GAAG,CAAC,GAAG,OAAO,GAAG,MAAM,CAAC;QACrC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QA AQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;QACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;KACtB;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,OAAgC,EAAE,KAA+B,EACjE,IAA8B;IAChC,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC1C,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;YAC1C,IAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;YACrD,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;YACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;SACtB;KACf;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,QAAgB,EAAE,OAAgC,EACID,KAAuB,EACvC,IAAsC;IACxC,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,IAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,IAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IAExB,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC1C,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;YAC1C,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;gBAC1C,IAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;gBACpE,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;gBACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;aACtB;SACf;KACf;AACH,CAAC;AAEM,IAAM,WAAW,GAaiB;IACvC,UAAU,EAAEC,cAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC;;AChJD;;,;,,;AAyBA,SAAS,cAAc,C AAC,IAIvB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,6BAAU,EAAE,mBAAK,CAAU;IAE1C,IAAM,IAAI,GAAG,UAAU,CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,GAAG,CAAC,GAAA,CAAC,CAAC;IAEhD,IAAM,QAAQ,GAAGhB,qBAAY,CAAC,WAAW,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IACrE,IAAM,QAAQ,GAAG A,qBAAY,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC9E,IAAM,gBAAgB,GACIBA,qBAAY,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IAChE,IAAM,gBAAgB,GACIBA,qBAAY,CAAC,mBAAmB,CAAC,KAAK,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC/D,IAAM,SAAS,GACXA,qBAAY,CAAC,YAAY,CAAC,gBAAgB,EAAE,KAAK,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAE1E,IAAM,SAAS,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAS,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAC5E,IAAM,WAAW,GACb,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,SAAS,EAAC,EAAE,OAAO,SAAS,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAC1E,IAAM,mBAAmB,GAAG,OAAO,CAC/B,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,OAAO,S

AAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAC,EAAC,CAAC,CAAC;IAC3E,IAAM,MAAM,G  
AAG,KAAK,CAAC;QACnB,MAAM,EAAE,EAAC,CAAC,EAAE,mBAAmB,EAAC;QACChC,OAAO,SAAA;QA  
CP,KAAK,EAAE,EAAC,KAAK,EAAE,gBAAgB,EAAE,IAAI,EAAE,SAAS,EAAC;KACID,CAAC,CAAC;IAEH,  
OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IACtC,OAAO,CAAC,WAAW,CAAC,WAA  
W,CAAC,MAAM,CAAC,CAAC;IACxC,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IAE  
tC,OAAO,MAAM,CAAC;AACbB,CAAC;AAEM,IAAM,oBAAoB,GAAiB;IAChD,UAAU,EAAEiB,uBAAc;IACI  
B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAkC;CAC/C;;ACnED;;;;;;;;;;;;;;SAsBgB,IAAI,CACbB,IAAk  
E;IAEpD,IAAA,iBAAC,EAAW,wBAAK,EAAG,sBAAO,CAAS;IACpD,IAAM,GAAG,GAAG,OAAO,CAAC,UA  
AU,CAAC,CAAC,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;IAC/C,IAAM,MAAM,GAAG,OAAO,CAAC,kBA  
AkB,CAAC,CAAC,CAAC,CAAC;IAC7C,IAAM,OAAO,GAAG,OAAO,CAAC,kBAkBB,CAAC,GAAG,CAAC,C  
AAC;IAChD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;A  
AEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEC,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,I  
AAwB;CACrC;;ACrCD;;;;;;;;;;;;;;AAoBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;ACpBrE;;;;;;;;;  
;;;;;;;;AAqBA,IAAI,QAAwE,CAAC;AAE7E,SAASf,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,  
IAAI,CAAC,KAAK,CAACgB,oBAAW,EAAE,IAAI,aAAa;QAC1D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACQ,IAAA,oBAAM,EAAE,sBAA  
O,EAAE,kBAkK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,iCAAY,EAAE,iCAAY,CAAU;IAC3C,IAAM,  
GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I  
AC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,C  
AAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CA  
AC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,YAAY,EAAE,YAAY,EAAE,KAAK,CAAC,CAA  
C;IACjD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,iBAaiB,GAAiB;IAC7C,UAAU,EAAEA,oBAAW;I  
ACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEhB,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACpDD;;;;  
;;;;;;;;;;SAwBgB,MAAM,CACIB,IAAsE;IACjE,IAAA,oBAAM,EAAE,sBAAO,CAAS;IAE/B,IAAM,IAAI,GAA  
GN,aAAI,CAAC,cAAc,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KA  
AK,CAAC,CAAC,CAAC,CAAC,CAAC;IAEtE,IAAI,QAAQ,GAAGE,qBAAY,CAAC,eAAe,CAAC,MAAM,CAA  
C,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,IAAI,CAAC,CAAC;;I  
AG5E,IAAM,OAAO,GAAG,MAAM,CAAC,MAAM,CAAC,UAAA,CAAC,IAAI,OAAAF,aAAI,CAAC,aAAa,CA  
AC,CAAC,CAAC,KAAK,CAAC,GAAG,CAAC,GAAA,CAAC,CAAC;IACpE,IAAI,OAAO,CAAC,MAAM,KAA  
K,CAAC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,CAAC,CAA  
C,CAAC,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;KACrD;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,  
UAAU,CAAC,QAAQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;IAE1D,IAAIA,aAAI,C  
AAC,aAAa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;QACtC,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,MAA  
M,GAAG,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,CAAC;  
IACzCE,qBAAY,CAAC,sBAAsB,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC;IAEID,IAAI,OAAO,CAAC,CAAC,  
CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;;;;;;;;;QAQjC,IAAM,QAAQ,GAAG,OAAO,CAAC,GAAG,CAAC,UA  
AA,CAAC;YAC5B,IAAM,SAAS,GAAGF,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAA  
C,IAAI,CAAC,CAAC,CAAC;YAC1D,IAAM,KAAK,GAAG,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;Y  
AC9B,OAAO,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,SAAA,EA  
AE,KAAK,EAAE,EAAC,KAAK,OAAA,EAAC,EAAC,CAAC,CAAC;SAC3D,CAAC,CAAC;QAEH,IAAM,eAAe  
,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,CAAC;YACpC,OAAO,EAAC,IAAI,EAAE,OAAO,CAAC,QAAQ,C  
AAC,CAAC,CAAC,MAAM,CAAC,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,CAAC;SAC3D,CAAC,C  
AAC;;QAGH,QAAQ;YACJE,qBAAY,CAAC,eAAe,CAAC,QAAQ,CAAC,GAAG,CAAC,UAAA,CAAC,IAAI,O  
AAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,CAAC,YAAY,CAAC;QAC3E,IAAM,YAAY,GAAG,QAAQ,C  
AAC,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC;QACbD,IAAM,SAAO,GAAGqB,  
UAAa,CACT,eAAe,EAAE,QAAQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,EAC1C,YAAY,CAAa,C  
AAC;QAE9C,IAAM,aAAa,GACfrB,qBAAY,CAAC,eAAe,CAAC,OAAO,CAAC,GAAG,CAAC,UAAA,CAAC,I  
AAI,OAAA,CAAC,CAAC,KAAK,GAAA,CAAC,EAAE,IAAI,CAAC,CAAC;QAEIE,GAAG,CAAC,KAAK,GAA

G,aAAa,CAAC;QAC1B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAA  
M,CAAC,CAAC;QACID,OAAO,CAAC,WAAW,GAAGA,qBAAY,CAAC,sBAAsB,CAAC,SAAO,CAAC,CAAC;  
QAEEnE,QAAQ,CAAC,OAAO,CAAC,UAAA,CAAC,IAAI,OAAA,OAAO,CAAC,WAAW,CAAC,CAAC,CAAC,  
MAAM,CAAC,GAAA,CAAC,CAAC;QAErD,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,QAAQ,GAAGF,aAAI,  
CAAC,aAAa,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,KAAC,CAAC,CAAC,EAAE,IAAI,CAA  
C,CAAC,CAAC;IACrE,IAAI,YAAY,GAAG,CAAC,CAAC;IACrB,IAAM,SAAS,GAAG,OAAO,CAAC,GAAG,C  
AAC,UAAA,KAAC;QACjC,IAAM,QAAQ,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAC,CAAC,KAAC,CAAC,KA  
AK,CAAC,IAAI,CAAC,CAAC,CAAC;QAC7D,YAAY,IAAI,QAAQ,CAAC;QACzB,OAAO,QAAQ,CAAC;KACj  
B,CAAC,CAAC;IACH,IAAM,MAAM,GAAG,OAAO,CAAC,GAAG,CAAC,UAAA,KAAC,IAAI,OAAA,OAAO,  
CAAC,kBAakB,CAAC,KAAC,CAAC,GAAA,CAAC,CAAC;IACvE,IAAM,OAAO,GAAG,OAAO,CAAC,kBAA  
kB,CAAC,GAAG,CAAC,CAAC;IAChD,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,EAAE,  
CAAC,EAAE,EAAE;QACjC,IAAI,SAAS,GAAG,CAAC,GAAG,YAAY,CAAC;QACjC,KAAC,IAAI,CAAC,GA  
AG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACtC,IAAM,QAAQ,GA  
AG,SAAS,CAAC,CAAC,CAAC,CAAC;YAC9B,IAAM,QAAQ,GAAG,CAAC,GAAG,QAAQ,CAAC;YAC9B,IA  
AM,IAAI,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,QAAQ,GAAG,QAAQ,CAA  
C,CAAC;YAC/D,OAAO,CAAC,GAAG,CAAC,IAAI,EAAE,SAAS,CAAC,CAAC;YAC7B,SAAS,IAAI,QAAQ,C  
AAC;SACvB;KACF;IACD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,E  
AAEWb,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;CACvC;;AC/GD;;:::;AAqB  
A,IAAI,UAMsB,CAAC;AAE3B,SAASIB,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CA  
AC,KAAC,CAACmB,eAAM,EAAE,IAAI,aAAa;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;Q  
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q  
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;K  
ACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,MAAM,CACX,IAAsE;IACjE,IAAA,oBAAM,EAAE,kBAAK,E  
AAE,sBAAO,CAAS;IAE/B,IAAA,YAAC,EAAE,sBAAM,CAAW;IAC3B,IAAM,GAAG,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,QAAQ,GAAG,OA  
AO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEID,IAAA,uBA  
AO,EAAE,2BAAS,EAAE,eAAG,EAAE,uCAAE,EAAE,6BAAU,CAAU;IACrE,IAAM,WAAW,GAAGvB,qBAAY  
,CAAC,uBAAuB,CAAC,UAAU,CAAC,CAAC;IACrE,IAAM,QAAQ,GAAGA,qBAAY,CAAC,iBAAiB,CAC1C,C  
AAc,CAAC,KAAC,EAAG,MAAmB,CAAC,KAAC,EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EA  
AE,KAAC,EAAE,WAAW,CAAC,CAAC;IAE9C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IA  
AM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,  
GAAG,CAAC;IACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAC,CAAC;IACxC,IAAM,SAAS,G  
AAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,I  
AAI,CAAC;IACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,a  
AAa,CAAC;IAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,C  
AAC,WAAW,CAAC;IACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,IAAM,cAAc,GAAG,QA  
AQ,CAAC,WAAW,CAAC;IAC5C,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAC,MAAM,GA  
AG,CAAC,GAAG,CAAC,CAAC;IAE3D,IAAI,QAAQ,CAAC,UAAU,KAAC,cAAc,EAAE;QAC1C,MAAM,IAAI,  
KAAC,CACX,mDAAmD;aChD,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;KAC5D;IAED,IAAM,G  
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,IAAM,KA  
AK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC  
nD,UAAU,CACN,GAAG,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAC,CAA  
C,CAAC,CAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,YAAY,EAC/D,WAA  
W,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,EAAE,aAAa,EAAE,Y  
AAY,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAC,CAAC,CAAC;IAC3B,OAAO,GAAG,CAAC;AA  
Cb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEuB,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,  
SAAS,EAAEnB,OAAK;IACbB,UAAU,EAAE,MAA0B;CACvC;;ACtGD;;:::;AAqBA,IAAI,uBAQ8C,CAA  
C;AAEnD,SAASA,OAAK,CAAC,OAAoB;IACjC,uBAAuB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACoB,



G,UAAU,CAAC,EAAE,CAAC;IAC/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,iBAAiB,CACb,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,QAAQ,EAAE,gBAAgB,EAAE,UAAU,EACnE,SAAS,EACT,mBAAmB,CAAC,MAAgD,CAAC,EACrE,kBAAkB,EAAE,KAAK,CAAC,CAAC;IAE/B,IAAI,UAAU,IAAI,IAAI,EAAE;QACtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,mBAAmB,GAAiB;IAC/C,UAAU,EAAEA,sBAAa;IACzB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEvB,OAAK;IACbB,UAAU,EAAE,aAAiC;CAC9C;;ACjGD;;;;;;;;;;;;;;;;AAyBA,IAAI,UACsE,CAAC;AAE3E,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACwB,eAAM,EAAE,IAAI,aAAa;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,MAAM,CACpB,IAAsE;IAE/D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,iBAAI,EAAE,2BAAS,EAAE,uBAAO,CAAU;IACzC,IAAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B9B,aAAI,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,OAAO,EACtD,cAAM,OAAA,6BAA2B,CAAC,CAAC,KAAK,iCAA8B,GAAA,CAAC,CAAC;;IAE1E,IAAM,WAAW,GAAGE,qBAAY,CAAC,kBAAkB,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IACnE,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,SAAS,GAAG,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,WAAW,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;KAC3E;IACD,IAAM,YAAY,GAAGA,qBAAY,CAAC,gBAAgB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IAChEA,qBAAY,CAAC,0BAA0B,CAAC,QAAQ,EAAE,CAAC,YAAY,CAAC,EAAE,KAAK,CAAC,CAAC;IAEzE,IAAM,WAAW,GAAG,OAAO,CAAC,UAAU,CAAC,SAAS,CAAC,KAAK,EAAE,SAAS,CAAC,KAAK,CAAC,CAAC;IACzE,IAAM,QAAQ,GAAG,SAAS,CAAC,KAAK,CAAC,YAAY,CAAC,CAAC;IAC/C,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/D,IAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnE,UAAU,CAAC,WAAW,EAAE,SAAS,GAAG,CAAC,GAAG,CAAC,EAAE,OAAO,GAAG,CAAC,GAAG,CAAC,EAAE,QAAQ,EACzD,aAAa,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC;;IAG7C,IAAI,GAAG,GAAG,WAAW,CAAC;IACtB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,IAAM,eAAe,GAAAG,qBAAY,CAAC,sBAAsB,CAAC,WAAW,CAAC,CAAC;QACzE,GAAG,GAAG,SAAS,CACb,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,eAAe,EAAC,EAAE,OAAO,SAAA,EAAC,CAAC,CAAC;QACvE,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;QACiC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IACD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAE4B,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAExB,OAAK;IACbB,UAAU,EAAE,MAA0B;CACvC;;ACIFD;;;;;;;;;;;;;;AAqBA,IAAI,gBAGuC,CAAC;AAE5C,SAASA,OAAK,CAAC,OAAoB;IACjC,gBAAgB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACyB,qBAAY,EAAE,IAAI,WAAW;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,YAAY,CAAC,IAI5B;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,2BAAS,EAAE,6BAAU,CAAU;IAEtC,IAAM,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAC7B,IAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IACtE,IAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAErE,IAAM,YAAY,GAAG,WAAW,GAAG,SAAS,CAAC;IAC7C,IAAM,WAAW,GAAG,UAAU,GAAG,SAAS,CAAC;IAC3C,IAAM,WAAW,GAAG,UAAU,IAAI,SAAS,GAAG,SAAS,CAAC,CAAC;IAEzD,IAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM;QACtC,C

AAC,SAAS,EAAE,YAA Y,EAAE,WAAW,EAAE,WAAW,CAAC;QACnD,CAAC,SAAS,EAAE,WAAW,EAAE,  
YAA Y,EAAE,WAAW,CAAC,CAAC;IAExD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE  
,SAAS,CAAC,CAAC;IAEvD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M  
AAM,CAAC,CAAC;IAC9C,IAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IACrB,IAAM,aAAa,GACf,IAAI,  
UAAU,CAAC,IAAI,UAAU,CAAC/B,aAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MA  
AM,CAAC,CAAC;IAExE,IAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,WAAW,CAAC,CA  
AC,MAAM,CAAC,CAAC;IAC5E,IAAM,eAAe,GACjB,IAAI,UAAU,CAAC,IAAI,UAAU,CAACA,aAAI,CAAC,c  
AAc,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,IAAM,KAAK,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,YAA Y,GAAG,U  
AAU,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;IACnD,gBAAgB,CACZ,GAAG,EAAE,SAAS,EAAE,  
YAA Y,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,EAC/D,gBAAgB,EAAE,eAAe,E  
AAE,WAAW,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IAEIE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,I  
AAM,kBAAkB,GAAiB;IAC9C,UAAU,EAAE+B,qBAA Y;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEz  
B,OAAK;IACbB,UAAU,EAAE,YAAgC;CAC7C;;ACvFD;,,,,,,,,,,,,,AAqBA,IAAI,mBAMsB,CAAC;AAE3B,SA  
ASA,OAAK,CAAC,OAAoB;IACjC,mBAAmB;QACf,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC0B,8BAAqB,EA  
AE,IAAI,aAAa;YACzD,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YAC  
R,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;  
YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;AACT,CAAC  
;AAED,SAAS,eAAe,CAAC,IAIxB;IACQ,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;IAE/B,IAAA,YA  
AC,EAAE,sBAAM,CAAW;IAC3B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CA  
AC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAA  
C,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEID,IAAA,uBAAO,EAAE,2BAAS,EAAE,eAAG,EAA  
E,uCAAe,CAAU;IAEzD,IAAM,UAAU,GAAG,SAAS,IAAI,IAAI,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,GA  
AG,SAAS,CAAC;IAE1D,IAAM,QAAQ,GAAG9B,qBAA Y,CAAC,iBAAiB,CAC1C,CAAc,CAAC,KAAK,EAAG,  
MAAmB,CAAC,KAAK,EAAE,OAAO,EACzD,UAAwC,EAAE,GAAG,EAAE,eAAe,EAC/D,IAAI,iBAAiB,CAA  
C;IAE1B,IAAM,YAA Y,GAAG,QAAQ,CAAC,YAA Y,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WA  
AW,CAAC;IACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,IAAM,QAAQ,GA  
AG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,IAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MA  
AM,CAAC;IAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,IAAM,cAAc,GAAG,  
QAAQ,CAAC,cAAc,CAAC;IAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,IAAM,YAA Y,GAA  
G,QAAQ,CAAC,YAA Y,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,aAA  
a,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,IAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAC5C,IAAM  
,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;IAE3D,I  
AAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QAC1C,MAAM,IAAI,KAAK,CACX,kEAAkE;aAC/D,QAAQ,C  
AAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;KAC5D;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,  
QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,mBAAmB,CACf,GAAG,EAAE,CAAC,  
CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,K  
AAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,YAA Y,EAC/D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,S  
AAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,EAAE,aAAa,EAAE,YAA Y,EAAE,WAAW,EAAE,aAAa,EACvE  
,cAAc,EAAE,KAAK,CAAC,CAAC;IAC3B,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,2BAA2B,GAAiB  
;IACvD,UAAU,EAAE8B,8BAAqB;IACjC,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE1B,OAAK;IACbB,UAA  
U,EAAE,eAAmC;CACbD;;AC7GD;,,,,,,,,,,,,,AAoBO,IAAM,SAAS,GAAiB,uBAAuB,CAAC2B,YAAG,CAAC;;  
ACpBnE;,,,,,,,,,,,,,AAoBA,IAAMC,uBAAqB,GAAG,KAAK,CAAC;AAC7B,IAAM,WAAW,GACpB,wBAAwB,  
CAACC,cAAK,EAAED,uBAAqB,EAAE,MAAM,CAAC;;ACtBIE;,,,,,,,,,,,,,AAoBO,IAAM,SAAS,GAAiB,uBA  
AuB,CAACE,YAAG,EAAE,SAAS,CAAC;;ACpB9E;,,,,,,,,,,,,,SAsBgB,UAAU,CAAC,IAI1B;IACQ,IAAA,oBA  
AM,EAAE,kBAAK,EAAE,sBAAO,CAAS;IAC/B,IAAA,oBAAK,CAAW;IACbB,IAAA,eAAG,CAAU;IAEpB,IA  
AM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,IAAM,QAAQ,GAAG,KAAK,CAAC,KA

AK,CAAC,KAAK,EAAE,CAAC;IACrC,IAAI,IAAI,GAAG,GAAG,CAAC;IACf,IAAI,GAAG,GAAG,CAAC,EA  
AE;;QAEXpC,aAAI,CAAC,MAAM,CACP,EAAE,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,EACvB,cAAM,OA  
AA,mCAAiC,EAAG,SAAS,GAAG,CAAC,CAAC,UACpD,SAAS,MAAG,GAAA,CAAC,CAAC;QACtB,IAAI,G  
AAG,SAAS,GAAG,GAAG,GAAG,CAAC,CAAC;KAC5B;IACD,QAAQ,CAAC,MAAM,CAAC,IAAI,EAAE,CA  
AC,EAAE,CAAC,CAAC,CAAC;IAE5B,OAAO,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,KAA  
K,EAAC,EAAE,OAAO,SAAS,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;  
AAC1E,CAAC;AAEM,IAAM,gBAAgB,GAAiB;IAC5C,UAAU,EAAEqC,mBAAU;IACtB,WAAW,EAAE,MAA  
M;IACnB,UAAU,EAAE,UAA8B;CAC3C;;ACnDD;;SAsBgB,IAAI,CAAC,IAA8C;IAC1D,IAAA,eAA4  
B,EAAPb,gBAAK,EAAE,gBAAK,EAAE,gBAAK,EAAG,sBAAO,CAAS;IACrD,IAAM,GAAG,GAAG,OAAO,C  
AAC,UAAU,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;IAC7C,IAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,  
CAAC,GAAG,CAAC,CAAC;IAChD,OAAO,CAAC,IAAI,CAAC,KAAe,CAAC,CAAC;IAC9B,OAAO,GAAG,CA  
AC;AACb,CAAC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEC,aAAI;IACbB,WAAW,EAAE,MAAM;IA  
CnB,UAAU,EAAE,IAAwB;CACrC;;AClCD;;AAqBA,IAAI,iBAE2C,CAAC;AAEhD,SAAShC,OAAK,C  
AAC,OAAoB;IACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiC,sBAAa,EAAE,IAAI,aAAa;Q  
ACrE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;A  
ACL,CAAC;SAEe,aAAa,CACzB,IAAyD;IACpD,IAAA,oBAAM,EAAE,sBAAO,CAAS;IACxB,IAAA,oBAAK,C  
AAW;IAEvB,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,K  
AAK,CAAC,CAAC;IACzD,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA  
G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE7C,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,k  
BAAU,EAAE,mBAA0B,CAAC;IAE1E,iBAAiB,CACb,OAAO,EAAE,KAAK,EAAE,WAAW,EAAE,UAAU,EAA  
E,WAAW,EAAE,KAAK,CAAC,CAAC;IACjE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,mBAAmB,G  
AAiB;IAC/C,UAAU,EAAEA,sBAAa;IACzB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,aAAiC;IAC7C,SAAS  
,EAAEjC,OAAK;CACjB;;ACzDD;;AAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACkC,cAAK,CAAC;;  
ACnBvE;;AAqBA,IAAMN,uBAAqB,GAAG,KAAK,CAAC;AAC7B,IAAM,cAAc,GACvB,wBAAwB,C  
AACO,iBAAQ,EAAEP,uBAAqB,CAAC;;ACvB7D;;AAqBA,IAAI,aAEgE,CAAC;AAErE,SAAS5B,OA  
AK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAC9BoC,uBAAc,EAAE,IAAI,aAC  
pB,CAAC,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,CAAC  
,CAAC,CAAC;AAC9E,CAAC;AAED,SAAS,cAAc,CAAC,IAIvB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,k  
BAAK,CAAS;IAC/B,IAAA,uCAAe,CAAU;IACzB,IAAA,YAAC,EAAE,kBAAI,EAAE,0BAAQ,EAAE,sBAAM,E  
AAE,oBAAK,CAAW;IACID,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,MAAM,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IA  
AI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACrD,IAAM,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAA  
G,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC7D,IAAM,QAAQ,GAAG,MAAM,IAAI,IAAI,  
GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,  
CAAC;IAC9E,IAAM,OAAO,GAAG,KAAK,IAAI,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAA  
K,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC;IAE3E,IAAM,GAAG,GAAG,OAAO,CAAC,UAA  
U,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;;IAEjD,IAAIiC,aAAI,CAAC,aAAa,  
CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,K  
AAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA  
EnD,aAAa,CACT,GAAG,EAAE,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,OAAO,EAAE,eAAe,EAAE,KAAK  
,CAAC,CAAC;IACxE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,oBAAoB,GAAiB;IAChD,UAAU,EAA  
E0C,uBAAc;IAC1B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEpC,OAAK;IACbB,UAAU,EAAE,cAAkC;CAC/  
C;;AC/DD;;AAuBA,IAAI,eAAQ,CAAC;AAEb,SAASA,OAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,O  
AAO,CAAC,IAAI,CAAC,KAAK,CAACqC,oBAAW,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,QAAQ;QACR,Q  
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q  
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q  
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,C





AG,QAAQ,CAAC,WAAW,CAAC;IAE5C,IAAI,MAAM,GAAG,CAAC,CAAC;IACf,IAAI,IAAI,IAAI,IAAI,EAA  
E;QACHb,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;  
QACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;YAC/B,MAAM,IAAI,KAAK,CACX,y  
DAAYd;iBACzD,UAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,MAAG,CAAA,CAAC,CAAC;SACvC;QACD,IA  
AI,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,cAAc,EAAE;YACxC,MAAM,IAAI,KAAK,CACX,sCAA  
oC,QAAQ,CAAC,KAAK,gBAAa;iBAC/D,0CAAwC,cAAc,MAAG,CAAA,CAAC,CAAC;SACHe;QACD,MAAM  
,GAAG,QAAQ,CAAC,EAAE,CAAC;KACtB;IAED,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,I  
AAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC  
,GAAG,CAAC;IACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,IAAM,SAAS,  
GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,  
IAAI,CAAC;IACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,IAAM,aAAa,GAAG,QAAQ,CAAC,  
aAAa,CAAC;IAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,  
CAAC,WAAW,CAAC;IACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,IAAM,SAAS,GAAG,Q  
AAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;IAC3D,IAAM,SAAS,GA  
AG,QAAQ,CAAC,SAAS,CAAC;IACrC,IAAM,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC;IACnC,IAAM,OAA  
O,GAAG,QAAQ,CAAC,OAAO,CAAC;IAEjC,IAAI,UAAU,KAAK,MAAM,EAAE;QACzB,MAAM,IAAI,KAAK  
,CACX,iEAAiE;aAC9D,UAAU,0BAAuB,CAAA,CAAC,CAAC;KAC3C;IAED,IAAM,GAAG,GAAG,OAAO,CA  
AC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,IAAM,KAAK,GAAG,OAAO,CAA  
C,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,IAAM,wBAAwB,GA  
AG,sBAAsB,IAAI,IAAI;QAC3D,CAAC;QACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IAE5D,wBAAwB,CACpB,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,E  
AAE,QAAQ,EAAE,YAAY,EAAE,WAAW,EACtE,MAAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,O  
AAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE,YAAY,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,  
eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IAE3E,OAAO,GAAG,CAAC;AA  
Cb,CAAC;AAEM,IAAM,0BAA0B,GAAiB;IACtD,UAAU,EAAE0C,6BAAoB;IAChC,WAAW,EAAE,MAAM;IA  
CnB,SAAS,EAAEtC,OAAK;IACHb,UAAU,EAAE,oBAAwC;CACrD;;AC1JD;;;;;;;;;;;;AAuBA,IAAI,YAGI,CA  
AC;AAET,SAASA,OAAK,CAAC,OAAoB;IACjC,YAAY,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACuC,i  
BAAQ,EAAE,IAAI,WAAW;QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,OAAO;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CAAC,IAAoD;I  
AE7D,IAAA,sBAAO,EAAE,oBAAM,CAAS;IACxB,IAAA,sBAAO,EAAE,wBAAO,CAAW;IAE3B,IAAA,6DAC  
6C,EAD5C,mBAAW,EAAE,iBAAS,EAAE,iBAAS,EAAE,eACS,CAAC;IAEpD,IAAM,GAAG,GAAG,OAAO,CA  
AC,UAAU,CAAC,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;IAC1D,IAAI,SAAS,KAAK,CAAC,EAA  
E;QACnB,OAAO,GAAG,CAAC;KACZ;IAED,IAAM,YAAY,GAAG,OAAO,CAAC,KAAK,CAAC;IACnC,IAAM  
,SAAS,GAAG,YAAY,CAAC,YAAY,CAAC,MAAM,GAAG,CAAC,CAAC,CAAC;IAExD,IAAM,KAAK,GAAG,  
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;IACnD,IAAM,GAAG,GAAG,  
KAAK,CAAC,EAAE,CAAC;IACrB,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,C  
AAC,MAAM,CAAC,CAAC;IAC1D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,IAAM,YAAY,G  
AAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,IAAM,KAA  
K,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACn  
D,YAAY,CACR,GAAG,EAAE,QAAQ,CAAC,MAAM,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,  
SAAS,EAAE,SAAS,EACvE,YAAY,EAAE,KAAK,CAAC,CAAC;IAEzB,OAAO,GAAG,CAAC;AACb,CAAC;A  
AEM,IAAM,cAAc,GAAiB;IAC1C,UAAU,EAAEA,iBAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE  
vC,OAAK;IACHb,UAAU,EAAE,QAAQ;CACrB;;AC7ED;;;;;;;;;;;;AAwBA,IAAI,UAGsB,CAAC;AAE3B,SAA  
SA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,  
WAAW;QACvD,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,OAA  
O;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CACb,IAA0E;IAErE,IAAA,sBAAO,  
EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,EAAE,wBAAO,CAAW;IACrB,IAAA,iBAAI,EAAE,  
2BAAS,CAAU;;IAGhC,IAAM,UAAU,GAAGN,aAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,C

AAC,CAAC,CAAC,CAAC,CAAC;IACzD,IAAM,WAAW,GAAG,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,M  
AAM,CAAE,CAAC;IACnE,IAAM,OAAO,GAAG,CAAC,CAAC,KAAC,CAAC,UAAU,CAAC,CAAC;4BAC3B,  
CAAC;QACR,IAAM,KAAC,GAAG,WAAW,CAAC,CAAC,CAAC,CAAC;QAC7BA,aAAI,CAAC,MAAM,CAC  
P,KAAC,IAAI,OAAO,GAAG,CAAC,IAAI,KAAC,IAAI,CAAC,EACIC;YACI,OAAA,+BAA6B,KAAC,wBAAkB  
,OAAO,GAAG,CAAC,OAAG;SAAA,CAAC,CAAC;;IAL9E,KAAC,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,G  
AAG,WAAW,CAAC,MAAM,EAAE,EAAE,CAAC;gBAAIC,CAAC;KAMT;IAED,IAAM,SAAS,GAAGE,qBAA  
Y,CAAC,YAAI,CAAC,wBAAwB,CACHe,CAAW,EAAE,OAAiB,EAAE,UAAU,EAAE,SAAS,CAAC,CAAC;IA  
E3D,IAAM,QAAQ,GAAG,OAAO,CAAC;QACvB,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC;QACX,KAAC,E  
AAE;YAACL,KAAC,EAAE;gBACL,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,OAAO  
;gBAC3D,SAAS,CAAC,SAAS;aACpB;SACF;QACD,OAAO,SAAA;KACR,CAAC,CAAC;IACH,IAAM,WAAW,  
GAAGF,aAAI,CAAC,aAAa,CAAC,OAAO,CAAC,KAAC,CAAC,CAAC;IACtD,IAAM,YAAI,GAAG,OAAO,C  
AAC;QAC3B,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,EAAC;QACpB,KAAC,EAAE,EAAC,KAAC,EAAE,C  
AAC,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS,CAAC,EAAC;QACxE,OAAO,SAAA;KA  
CR,CAAC,CAAC;IACH,IAAM,kBAAkB,GAAG;QACzB,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAA  
E,WAAW,GAAG,SAAS,CAAC,SAAS;QAC3E,SAAS,CAAC,SAAS;KACpB,CAAC;IAEF,IAAM,GAAG,GAAG,  
OAAO,CAAC,UAAU,CAAC,kBAAkB,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IAC5D,IAAIA,aAAI,CAAC,a  
AAa,CAAC,CAAC,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IACD,IAA  
M,WAAW,GAAG,QAAQ,CAAC,KAAC,CAAC,MAAM,GAAG,CAAC,CAAC;IAE9C,IAAM,KAAC,GAAG,OA  
AO,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IACrD,IAAM,GAAG,GAAG,KA  
AK,CAAC,EAAE,CAAC;IAErB,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,YAAI,CAA  
C,MAAM,CAAC,CAAC;IAC/D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,IAAM,KAAC,GAAG  
,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,a  
AAa,GAAG,IAAI,UAAU,CACHe,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,KAAC,CAAC  
,CAAC,CAAC,MAAM,CAAC,CAAC;IACHe,IAAM,eAAe,GAAG,IAAI,UAAU,CACIC,IAAI,UAAU,CAACA,aA  
AI,CAAC,cAAc,CAAC,kBAAkB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,UAAU,CACN,GAAG,EA  
AE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE,aAAa,EAAE,WAAW,EAAE,SAAS,EAC7D,SAAS,CAAC  
,SAAS,EAAE,eAAe,EAAE,KAAC,CAAC,CAAC;IAEjD,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,C  
AAC,CAAC;IACrC,OAAO,CAAC,WAAW,CAAC,YAAI,CAAC,MAAM,CAAC,CAAC;;IAGzC,GAAG,CAAC,  
KAAC,GAAG,SAAS,CAAC,WAAW,CAAC;IACIC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,G  
AAiB;IAC1C,UAAU,EAAE8C,iBAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAExC,OAAK;IACbB,U  
AAU,EAAE,QAA4B;CACzC;;ACzHD;;;;;;;;;;;;;;AAoBA,IAAM4B,uBAAqB,GAAG,KAAC,CAAC;AAC7B,IAA  
M,aAAa,GACtB,wBAAwB,CAACa,gBAAO,EAAEb,uBAAqB,EAAE,MAAM,CAAC;;ACtBpE;;;;;;;;;;AAoB  
A,IAAMA,uBAAqB,GAAG,KAAC,CAAC;AAC7B,IAAM,kBAAkB,GAC3B,wBAAwB,CAACc,qBAAI,EAAEd  
,uBAAqB,EAAE,MAAM,CAAC;;ACtBzE;;;;;;;;;;AAuBA,IAAIxB,UAC0E,CAAC;AAE/E,SAASuC,WAAS,C  
AAC,OAAoB;IACrCvC,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAACwC,kBAAS,EAAE,IAAI,aAAa;  
QACxD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,SAAS,C  
ACrB,IAC0E;IAE5D,IAAA,iBAAC,EAAG,wBAAK,EAAG,sBAAO,CAAS;IAEpD,IAAM,GAAG,GAAG,OAAO  
,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;IAG/C,IAAM,GAAG,  
GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,SAAS,CAAC,CAAC;IAEnD,IAAIID,aAAI,C  
AAC,aAAa,CAAC,CAAC,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACrC,IAAM,KAAC,GAAG,OAAO,CA  
AC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnDU,UAAQ,CAAC,G  
AAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE,KAAC,EAAE,KAAC,CAAC,CAAC;KACHe;IA  
ED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,eAAe,GAiB;IAC3C,UAAU,EAAEwC,kBAAS;IACrB,  
WAAW,EAAE,MAAM;IACnB,SAAS,aAAA;IACT,UAAU,EAAE,SAA6B;CAC1C;;AC3DD;;;;;;;;AAmBA,I  
AAMhB,uBAAqB,GAAG,KAAC,CAAC;AAC7B,IAAM,UAAU,GACnB,wBAAwB,CAACiB,aAAI,EAAEjB,uB  
AAqB,EAAE,MAAM,CAAC;;ACrBjE;;;;;;;;;;AAoBA,IAAMA,uBAAqB,GAAG,KAAC,CAAC;AAC7B,IAA  
M,eAAe,GACxB,wBAAwB,CAACkB,kBAAS,EAAEiB,uBAAqB,EAAE,MAAM,CAAC;;ACtBtE;;;;;;;;AA  
mBO,IAAM,SAAS,GAAiB,uBAAuB,CAACmB,YAAG,CAAC;;ACnBnE;;;;;;;;AAmBA,IAAMnB,uBAAqB,

GAAG,KAAK,CAAC;AAC7B,IAAM,gBAAgB,GACzB,wBAAwB,CAACoB,mBAAU,EAAEpB,uBAAqB,EAAE  
,MAAM,CAAC;;ACrBvE;,,,,,,,,,,,,;AAwBA,IAAI,OACI,CAAC;AAET,SAAS5B,OAAK,CAAC,OAAoB;IACjC,  
OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiD,YAAG,EAAE,IAAI,WAAW;QAC/C,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CAAC,IAAGe;I  
AEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,6BAAsB,EAAE,yBAAQ,CAAU;IAC1  
C,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,  
MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACiB,IAAI,KAAK,GAAG,CA  
AC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IA  
AI,kBAAkB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;QACjE,KAAK,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,YAAY,CAAC;K  
ACxB;IAED,IAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrCrD,qBAAY,CAAC,0BAA  
0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IAC1D,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBA  
C4C,CAAC;IAC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GA  
AG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAIA,aAAI  
,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,C  
AAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,O  
AAO,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACxD;IA  
ED,IAAI,kBAAkB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;  
IAED,IAAI,QAAQ,EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK  
,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,  
CAAC;AACb,CAAC;AAEM,IAAM,SAAS,GAAiB;IACrC,UAAU,EAAEqD,YAAG;IACf,WAAW,EAAE,MAAM  
;IACnB,SAAS,EAAEjD,OAAK;IAChB,UAAU,EAAE,GAAuB;CACpC;;ACrFD;,,,,,,,,,,,,;AAmBA,IAAM4B,uB  
AAqB,GAAG,KAAK,CAAC;AAC7B,IAAM,aAAa,GACTb,wBAAwB,CAACsB,gBAAO,EAAEtB,uBAAqB,CAA  
C;;ACrB5D;,,,,,,,,,,,,;AAqBA,IAAI,WAKqE,CAAC;AAE1E,SAAS5B,OAAK,CAAC,OAAoB;IACjC,WAAW,G  
AAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACmD,gBAAO,EAAE,IAAI,aAAa;QACzD,QAAQ;QACR,QAAQ;Q  
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;Q  
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;K  
ACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IACnE,IAAA,oBAAM,EAAE,kBAAK,E  
AAE,sBAAO,CAAS;IAEtC,IAAM,CAAC,GAAG,MAAM,CAAC,CAaA,CAAC;IAC/B,IAAM,GAAG,GAAG,OA  
AO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;,,,,,,,,;IAU/CzD,aAA  
I,CAAC,MAAM,CACP,CAAC,CAAC,KAAK,KAAK,SAAS,EACrB;QACI,OAAA,4DAA0D,CAAC,CAAC,KAA  
K,MAAG;KAAA,CAAC,CAAC;IAEvE,IAAA,6BAAU,EAAE,uBAAO,EAAE,eAAG,EAAE,uCAAE,CAAU;IAC1  
D,IAAM,QAAQ,GAAGE,qBAAY,CAAC,iBAAiB,CAC3C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,E  
AAE,CAAC,kBAAkB,GAAG,EAAE,eAAe,CAAC,CAAC;IAE3E,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,C  
AAC;IAC3C,IAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,MAAM,GAAG,QAAQ,CAAC,  
OAAO,CAAC,GAAG,CAAC;IACpC,IAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,I  
AAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,IAAM,OAAO,GAAG,QAAQ,CAAC,O  
AAO,CAAC,IAAI,CAAC;IACtC,IAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,IAAM,aAAa,GAAG,Q  
AAQ,CAAC,aAAa,CAAC;IAC7C,IAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,IAAM,WAAW,G  
AAG,QAAQ,CAAC,WAAW,CAAC;IACzC,IAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,IAAM,cA  
Ac,GAAG,QAAQ,CAAC,WAAW,CAAC;IAE5C,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QAC1C,MAA  
M,IAAI,KAAK,CACX,4CAA4C;aAczC,QAAQ,CAAC,UAAU,kCAA+B,CAAA,CAAC,CAAC;KAC5D;IAED,IA  
AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC7D,IAA  
M,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAA  
C;IAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK  
,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,YAAY,EAAE,WAAW,EACIE,  
MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,cAAc,EAAE,aAAa,EACnE,YAAY,EAAE,WAAW,EA  
AE,aAAa,EAAE,cAAc,EAAE,KAAK,CAAC,CAAC;IACrE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,a

AAa,GAAiB;IACzC,UAAU,EAAEuD,gBAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEnD,OAAK;I  
AChB,UAAU,EAAE,OAA2B;CACxC;;AC5GD;,,,,,;AAwBA,IAAI,QAAkE,CAAC;AAEvE,SAASA,OAAK  
,CAAC,OAAoB;IACjC,QAAQ;QACJ,OAAO,CAAC,IAAI,CAAC,KAAK,CAACoD,aAAI,EAAE,IAAI,WAAW,C  
AAC,wBAAwB,CAAC,CAAC,CAAC;AAC1E,CAAC;SAEe,IAAI,CACHB,IAAkE;IAE7D,IAAA,sBAAO,EAAE,  
oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB  
,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,C  
AAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAER,IAAA,8CACu  
C,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;I  
ACzB,IAAI,kBAAkB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,C  
AAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,  
UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aAAa,GAAGxD,qBAAY,CAAC,gBAAgB,CACzC,  
aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;KACF;IAEDA,qBAAY  
,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACz  
C,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;IACvE,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,C  
AAC,WAAW,CAAC,CAAC;IACnD,IAAI,WAAW,GAAG,KAAK,CAAC;IACxB,IAAI,KAAK,CAAC,KAAK,KA  
AK,SAAS,EAAE;QAC7B,WAAW;YACP,IAAI,CAAC,EAAC,OAAO,SAAS,EAAE,MAAM,EAAE,EAAC,CAA  
C,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QACnE,  
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;  
KACxD;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,I  
AAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GA  
AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,QA  
AQ,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACtC;IAED,IAAI,kBAAkB,EAAE;;QAEtB,OA  
AO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAA  
M,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E,  
GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QA  
C7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IAED,OAAO,GAAG,CAAC;  
AACb,CAAC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEwD,aAAI;IAChB,WAAW,EAAE,MAAM;IAC  
nB,SAAS,EAAEpD,OAAK;IACnB,UAAU,EAAE,IAAwB;CACrC;;ACIGD;,,,,,;AAwBA,IAAI,OACI,CAA  
C;AAET,SAASA,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACqD,YA  
AG,EAAE,IAAI,WAAW;QAC/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AA  
CL,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IA  
C/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CA  
AC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,  
GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EA  
AE,8BAAY,EAAE,0CACM,CAAC;IAE9C,IAAI,kBAAkB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GA  
AG,EAAE;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;SACxB;KACF;IAED,I  
AAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IAErCzD,qBAAY,CAAC,0BAA0B,CAAC,KA  
AK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IAC1D,IAAA,uEACuD,EADtD,gBAAQ,EAAE,mBAC4C,CAAC;I  
AC9D,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,O  
AAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAIA,aAAI,CAAC,aAA  
a,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS  
,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE  
,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACxD;IAED,IAAI,kB  
AAkB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,  
QAAQ,EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YA  
AY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AA  
Cb,CAAC;AAEM,IAAM,SAAS,GAAiB;IACrC,UAAU,EAAEyD,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,S

AAS,EAAErD,OAAK;IACHb,UAAU,EAAE,GAauB;CACpC;;AC1FD;;;;;;;AAMBA,IAAM4B,uBAAqB,G  
AAG,KAAK,CAAC;AAC7B,IAAM,aAAa,GACtB,wBAAwB,CAAC0B,gBAAO,EAAE1B,uBAAqB,CAAC;;ACr  
B5D;;;;;;;AAuBA;AACa,IAAK,iBAGJ;AAHD,WAAK,iBAAiB;IACpB,+DAAW,CAAA;IACX,mEAAa,CA  
AA;AACf,CAAC,EAHI,iBAAiB,KAAjB,iBAAiB,QAGrB;AAED,IAAI,aAGsB,CAAC;AAE3B,SAAS5B,OAAK,  
CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACuD,kBAAS,EAAE,IAAI,aAAa;Q  
AC7D,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,Q  
AAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,SAAS,CAAC,IAIIB;IACiB,IAAA,iBAAC,EAAE,sBAA  
O,EAAE,eAAuB,EAAf,sBAAQ,EAAE,cAAK,CAAS;IAE7D,IAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACz  
B,UAAc,CAAC,EAAE,CAAC,IAAK,OAAA,CAAC,CAAC,CAAC,CAAC,mBAAMb,CAAC,CAAC,KAAK,CA  
AC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,GAAA,gBAAgB,CAAC;IACvE,IAAM,GAAG,GAAG,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GA  
AG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAM,KAA  
K,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACn  
D,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,  
CAAC,CAAC;IAEnE,IAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,QAAQ,IAAI,OAAA,QAAQ,CA  
AC,CAAC,CAAC,GAAA,CAAC,CAAC;IAC9D,IAAM,gBAAgB,GAAG,QAAQ,CAAC,GAAG,CAAC,UAAA,Q  
AAQ,IAAI,OAAA,QAAQ,CAAC,CAAC,CAAC,GAAA,CAAC,CAAC;IAC/D,IAAM,gBAAgB,GACiB,IAAI,UA  
AU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;IAC3D,IAAM,iBAAiB,GACnB,IAAI  
,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5D,aAAa,CACT,GAAG,  
EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,  
EAAE,gBAAgB,EACrE,iBAAiB,EAAE,iBAAiB,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IACvD,OAA  
O,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEA,kBAAS;IACrB,WAAW,EA  
AE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAEvD,OAAK;CACjB;;AC/ED;;;;;;;AAqBA,IA  
AM4B,uBAAqB,GAAG,IAAI,CAAC;AAC5B,IAAM,cAAc,GACvB,wBAAwB,CAAC4B,iBAAQ,EAAE5B,uBA  
AqB,CAAC;;ACvB7D;;;;;;;AAMBO,IAAM,SAAS,GAAiB,uBAAuB,CAAC6B,YAAG,CAAC;;ACnBnE;;;;;  
;;;;;;;AA0BA;;;SAIgb,iBAAiB,CAC7B,OAAoB,EAAE,SAAiB;IACzC,IAAM,MAAM,GAAG,IAAI,UAAU,CA  
AC,OAAO,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,EAAE,SAAS,EAAE,CAAC,CAAC,CAAC;IACxE,IAAM  
,gBAAgB,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IACnC,IAAM,YAAY,GAAG,MAAM,CAAC,CAAC,CA  
AC,CAAC;IAC/B,IAAM,eAAe,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IACiC,IAAM,aAAa,GAAG,MAAM  
,CAAC,CAAC,CAAC,CAAC;;IAEhC,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC;IAC9B,O  
AAO,EAAC,gBAAgB,kBAAA,EAAE,YAAY,cAAA,EAAE,eAAe,iBAAA,EAAE,aAAa,eAAA,EAAC,CAAC;AA  
C1E;;ACxCA;;;;;;;AAuBA,IAAIrD,UAEuD,CAAC;AAE5D,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,  
GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzBsD,4BAAMb,EACnB,QAAQ;IACR;QACE,QAAQ;QACR,QA  
AQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,UAAU,CAA  
C,IAInB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iCAAY,EAAE,mCAAa,EAA  
E,qCAAc,CAAU;IACrD,IAAA,oBAAK,EAAE,sBAAM,CAAW;IAE/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAA  
S,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAA  
O,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,SAAS  
,GACXtD,UAAQ,CAAC,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,CAAC,CAAC;IAEvE,I  
AAA,0CACmC,EADIC,sCAAgB,EAAE,8BAAY,EAAE,oCAAE,EAAE,gCACf,CAAC;;IAG1C,OAAO,CAAC,IA  
AI,CAAC,KAAK,CAAC,eAAe,CAAC,CAAC;IACpC,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,aAAa,CAAC,C  
AAC;IAEIC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,g  
BAAgB,CAAC,CAAC;IAEIE,OAAO,qBAAqB,CAAC;AAC/B,CAAC;AAEM,IAAM,yBAAyB,GAAiB;IACrD,U  
AAU,EAAEsD,4BAAMb;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE1D,OAAK;IACHb,UAAU,EAAE,  
UAA8B;CAC3C;;ACzED;;;;;;;AAuBA,IAAI,UGsC,CAAC;AAE3C,SAASJ,OAAK,CAAC,OAAoB;IACj  
CI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzBuD,4BAAMb,EACnB,QAAQ;IACR;QACE,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;KACP,CAAC,CAAC;AACT,CAAC;  
AAED,SAAS,mBAAMb,CAAC,IAI5B;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA

,iCAAY,EAAE,mCAAa,EAAE,qCAAc,EAAE,6CAAkB,CAC5D;IACH,IAAA,oBAAK,EAAE,sBAAM,CAAW;I  
AE/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,E  
AAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;IAEzD,IAAM,SAAS,GAAGvD,UAAQ,CACtB,OAAO,EAAE,QAAQ,EAAE,aAAa,E  
AAE,YAAY,EAAE,cAAc,EAC9D,kBAAkB,CAAC,CAAC;IAEIB,IAAA,0CACmC,EADIC,sCAAkB,EAAE,8BA  
AY,EAAE,oCAAe,EAAE,gCACf,CAAC;;IAG1C,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,eAAe,CAAC,CAAC  
;IAEpC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBA  
AgB,CAAC,CAAC;IAEIE,IAAM,kBAAkB,GAAG,OAAO,CAAC,UAAU,CAAC,EAAE,EAAE,OAAO,EAAE,aA  
Aa,CAAC,CAAC;IAE1E,OAAO,CAAC,qBAAqB,EAAE,kBAAkB,CAAC,CAAC;AACrD,CAAC;AAEM,IAAM,  
yBAAyB,GAAiB;IACrD,UAAU,EAAEuD,4BAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE3D,OA  
AK;IACbB,UAAU,EAAE,mBAAuC;CACpD;;AC9ED;;;;;;;AAuBA,IAAI,UAGU,CAAC;AAEf,SAASJ,OA  
AK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CACzBwD,4BAAmB,EACnB,QA  
AQ;IACR;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAA  
C,CAAC;AACT,CAAC;AAED,SAASC,YAAU,CAAC,IAInB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAA  
K,CAAS;IAC/B,IAAA,iCAAY,EAAE,mCAAa,EAAE,qCAAc,EAAE,iCAAY,CAAU;IACnE,IAAA,oBAAK,EAA  
E,sBAAM,CAAW;IAE/B,IAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAA  
M,CAAC,CAAC,EAAE,CAAC;IACvD,IAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAA  
M,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAM,SAAS,GAAGzD,UAAQ,CACtB,OAAO,EAAE,QA  
AQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,YAAY,CAAC,CAAC;IAEZ,IAAA,0CACmC,EADIC,sCAA  
kB,EAAE,8BAAAY,EAAE,oCAAe,EAAE,gCACf,CAAC;;IAI1C,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,aAAa  
,CAAC,CAAC;IAEIC,IAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAA  
O,EAAE,gBAAgB,CAAC,CAAC;IACIE,IAAM,oBAAoB,GACtB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,C  
AAC,EAAE,SAAS,EAAE,eAAe,CAAC,CAAC;IAEnE,OAAO,CAAC,qBAAqB,EAAE,oBAAoB,CAAC,CAAC;A  
ACvD,CAAC;AAEM,IAAM,yBAAyB,GAAiB;IACrD,UAAU,EAAEwD,4BAAmB;IAC/B,WAAW,EAAE,MAA  
M;IACnB,SAAS,EAAE5D,OAAK;IACbB,UAAU,EAAE6D,YAA8B;CAC3C;;AC9ED;;;;;;;AAmBA,IAAMj  
C,uBAAqB,GAAG,KAAK,CAAC;AAC7B,IAAM,cAAc,GACvB,wBAAwB,CAACKc,iBAAQ,EAAEIC,uBAAqB,  
EAAE,MAAM,CAAC;;ACrBrE;;;;;;;AAqBA,IAAI,UAEsB,CAAC;AAE3B,SAAS5B,OAAK,CAAC,OAAo  
B;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC+D,eAAM,EAAE,IAAI,aAAa;QACvD,QAAQ  
;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,  
MAAM,CACX,IAAsE;IACjE,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,wBAAO,CAA  
W;IACIB,IAAA,mBAAK,EAAE,uBAAO,EAAE,yBAAQ,CAAU;IAEzC,IAAM,GAAG,GAAG,OAAO,CAAC,UA  
AU,CAAK,OAAO,CAAC,KAAK,SAAE,KAAK,IAAG,OAAO,CAAC,CAAC;IACnE,IAAM,KAAK,GAAG,OAA  
O,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,WAA  
W,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,IAAM,SAA  
S,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,UAAU,CAAC,SAAS,EAAE,KAAK,EAAE,OAAO,EAAE,QAAQ,  
EAAE,KAAK,CAAC,CAAC;IAEvD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,  
UAAU,EAAEA,eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE/D,OAAK;IACbB,UAAU,EAAE,MA  
A0B;CACvC;;ACzDD;;;;;;;AAqBA,SAAS,QAAQ,CAAC,IAAoD;IACpD,IAAA,iBAAC,EAAG,sBAAO,CA  
AS;IACpC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAA  
K,CAAC,CAAC;IACjD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;IACbD,OA  
AO,CAAC,IAAI,CAAC,CAAC,CAAC;IACbB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,cAAc,  
GAAiB;IAC1C,UAAU,EAAEgE,iBAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,QAA4B;CACzC;;  
ACjCD;;;;;;;SAuBgB,IAAI,CACbB,IAAkE;IAE7D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;I  
AC/B,IAAA,iBAAI,CAAU;IAErB,IAAI,MAAM,CAAC,MAAM,KAAK,CAAC,EAAE;QACvB,OAAO,UAAU,C  
ACb,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,EAAC,EAAE,OAAO,SAAS,EA  
AE,KAAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;KACbE;IAED,IAAM,KAAK,GAAG,  
MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;IAC9B,IAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,  
CAAC,KAAK,CAAC;IAE9B,MAAM,CAAC,OAAO,CAAC,UAAA,CAAC;QACdtE,aAAI,CAAC,iBAAiB,CACI



C,MAAM,CAAC,CAAC;KACzC;IACD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,WAAW,GAAiB;IAC  
vC,UAAU,EAAEA,cAAK;IACjB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEpE,OAAK;IAChB,UAAU,EAAE,  
KAAyB;CACtC;;AC9DD;;;;;;;;;;;;;AAyBA,IAAI,QAEqC,CAAC;AAE1C,SAASA,OAAK,CAAC,OAAoB;IACj  
C,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACqE,aAAI,EAAE,IAAI,WAAW;QACjD,QAAQ;QACR  
,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACQ  
,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAAQ,CAAU;IACxB,IAAA,  
YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAA  
C;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAy,EAAE,0CACM,CAAC;IAE9C,IAAI,aAAa,  
GAAG,IAAI,CAAC;IACzB,IAAI,kBAAkB,EAAE;QACtB,IAAM,YAAy,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAy,KAAK,GAAG,EAAE;;;Y  
AGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAy,CAAC;YACvB,aAAa,GAAGzE,qBAAy,CA  
AC,gBAAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;  
KACF;IAEDA,qBAAy,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MA  
AM,CAAC,CAAC;IACzC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;IACvE,IAAM,UAAU,GAAG  
F,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,  
QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KA  
AK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GA  
AG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CA  
AC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KAC3D;IAED,IAAI,kBAAkB,EAAE;;QAEtB,OA  
AO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAA  
M,QAAQ,GAAGE,qBAAy,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAy,CAAC,CAAC;QAC5E,  
GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,U  
AAU,GAAiB;IACtC,UAAU,EAAEyE,aAAI;IAChB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAErE,OAAK;IAC  
hB,UAAU,EAAE,IAAwB;CACrC;;ACjGD;;;;;;;;;;;;;AABo,IAAM,KAAK,GACd,UAAc,IAA+C;IACvC,IAAA,s  
BAAO,EAAE,kBAAK,CAAS;IACvB,IAAA,mBAAK,EAAE,iBAAI,EAAE,iBAAI,EAAE,mBAAK,CAAU;IACzC  
,IAAM,MAAM,GAAGsE,SAAY,CAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAEtD,IA  
AM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAE,KAAK,CAAC,C  
AAC;IACvD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;IAChD,OAAO,CAAC,  
GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC,CAAC;AAEC,IAAM,WAAW,  
GAAiB;IACvC,UAAU,EAAEC,cAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC;;A  
CtCD;;;;;;;;;;;;;AAqBA,IAAM3C,uBAAqB,GAAG,IAAI,CAAC;AAC5B,IAAM,aAAa,GACtB,wBAAwB,CAAC  
4C,gBAAO,EAAE5C,uBAAqB,CAAC;;ACvB5D;;;;;;;;;;;;;AAmBO,IAAM,UAAU,GAAiB,uBAAuB,CAAC6C,a  
AAI,CAAC;;ACnBrE;;;;;;;;;;;;;AAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACC,cAAK,CAAC;;ACnBvE;;;;;  
;;;;;;;;;AAuBA,IAAI,kBAGsE,CAAC;AAE3E,SAAS1E,OAAK,CAAC,OAAoB;IACjC,kBAAkB,GAAG,OAAO,C  
AAC,IAAI,CAAC,KAAK,CAAC2E,uBAAc,EAAE,IAAI,WAAW;QACrE,QAAQ;QACR,QAAQ;QACR,QAAQ;Q  
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,C  
AAC,CAAC;AACL,CAAC;AAED,SAAS,cAAc,CAAC,IAIvB;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBA  
AK,CAAS;IAE/B,IAAA,sBAAM,CAAW;IACjB,IAAA,iCAAY,EAAE,yCAAgB,EAAE,iBAAI,CAAU;IAC9C,IA  
AA,mBAAS,EAAE,kBAAQ,CAAS;IAE7B,IAAA,iBAAwD,EAAvD,aAAK,EAAE,iBAAS,EAAE,gBAAQ,EAAE,  
mBAA2B,CAAC;IAC/D,IAAM,QAAQ,GAAG,CAAC,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,CAAC  
,CAAC;IAE3D,IAAI,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,  
CAAC;IACjD,IAAI,UAAU,CAAC;IACf,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,UAAU;YAC  
N,IAAI,CAAC,EAAC,OAAO,SAAS,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,KAAK,E  
AAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QACpE,KAAK,GAAG,OAAO,CAAC,SAAS,CA  
AC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACID;IACD,IAAM,GAAG,GAAG,KAAK,CAAC,EA  
AE,CAAC;IAErB,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACp  
D,IAAIjF,aAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QAC1C,OAAO,GAAG



,CAAC;KACZ;IACD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;IAEnD,kBAaKb,CACd,GAAG,EAAE,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,W  
AAW,EAAE,SAAS,EAAE,QAAQ,EACjE,YAAY,GAAG,CAAC,GAAG,CAAC,EAAE,gBAAGb,GAAG,CAAC,  
GAAG,CAAC,EAAE,KAAK,CAAC,CAAC;IAE3D,IAAI,UAAU,IAAI,IAAI,EAAE;QACtB,OAAO,CAAC,WAA  
W,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAA  
M,oBAAoB,GAAiB;IAChD,UAAU,EAAEiF,uBAAC;IAC1B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE3E,OA  
AK;IACbB,UAAU,EAAE,cAAkC;CAC/C;;ACxFD;,,,,,,,,,,,,,,,,;AAwBA,IAAI,WAE8C,CAAC;AAEnD,SAASA,O  
AAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC4E,gBAAO,EAAE,IAAI,  
EAAE;QAC9C,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,  
CAAC;AACL,CAAC;SAEe,OAAO,CACnB,IAAwE;IAEnE,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS  
;IAC/B,IAAA,YAAC,CAAW;IACZ,IAAA,iBAAI,CAAU;IAErB,IAAM,IAAI,GAAGIF,aAAI,CAAC,cAAc,CAAC  
,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAEhD,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,KAAK,CA  
AC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SA  
AA,EAAC,CAAC,CAAC;KACzC;IAED,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAA  
K,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,C  
AAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,SAAS,GAAG,IAAI,UAA  
U,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9D,IAAM,aAAa,GAAG,IAAI,UA  
AU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAErE,WAAW,CAC  
P,GAAG,EAAE,SAAS,EAAE,IAAI,CAAC,MAAM,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,E  
AAE,KAAK,CAAC,CAAC;IAEvE,IAAM,QAAQ,GACV,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EA  
AE,GAAG,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,EAAE,OAAO,SAAA  
,EAAC,CAAC,CAAC;IAEIE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAChC,OAAO  
,QAAQ,CAAC;AACIB,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAEKF,gBAAO;IACnB,WAAW,EA  
AE,MAAM;IACnB,UAAU,EAAE,OAA2B;IACvC,SAAS,EAAE5E,OAAK;CACjB;;AC1ED;,,,,,,,,,,,,,,,,;AAsBA,IA  
AI,UAGiE,CAAC;AAEtE,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KA  
AK,CAAC6E,yBAAGb,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q  
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,C  
AAC;AACL,CAAC;SAEe,gBAAGb,CAAC,IAIhC;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;I  
AC/B,IAAA,oBAAK,CAAW;IACbB,IAAA,uBAAO,EAAE,2BAAS,EAAE,qBAAM,CAAU;IAE3C,IAAM,GAAG  
,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACzD,I  
AAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,C  
AAC;IACvD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,C  
AAC,EAAE,CAAC;IAE7C,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,kBAAU,EAAE,mBAA0B,CA  
AC;IAE5D,IAAA,0EAC0D,EADzD,eAAO,EAAE,eACgD,CAAC;IAEjE,IAAM,WAAW,GAAG,SAAS,KAAK,C  
AAC,CAAC;IACpC,IAAM,gBAAGb,GAAG,GAAG,CAAC;IAE7B,IAAM,UAAU,GAAG,OAAO,SAAS,KAAK,  
QAAQ;QAC5C,CAAC,SAAS,EAAE,SAAS,EAAE,SAAS,EAAE,WAAW,GAAG,CAAC,GAAG,gBAAGb,CAAC  
,GACjE,SAAS,SAAE,gBAAGb,EAAC,CAAC;IACrC,IAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CA  
AC,UAAU,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,UAAU,CACN,OAAO,EAAE,KAAK,EAAE,WAAW,EA  
AE,UAAU,EAAE,WAAW,EAAE,OAAO,EAAE,OAAO,EACtE,OAAO,EAAE,SAAS,EAAE,UAAU,CAAC,MAA  
M,EAAE,KAAK,CAAC,CAAC;IACID,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,sBAAsB,GAAiB;IAC  
ID,UAAU,EAAEA,yBAAGb;IAC5B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,gBAAoC;IACbD,SAAS,EAA  
E7E,OAAK;CACjB;;AChFD;,,,,,,,,,,,,,,,,;AAoBO,IAAM,WAAW,GAAiB,uBAAuB,CAAC8E,cAAK,CAAC;;ACpB  
vE;,,,,,,,,,,,,,,,,;AAmBO,IAAM,WAAW,GAAiB,uBAAuB,CAACC,cAAK,CAAC;;ACnBvE;,,,,,,,,,,,,,,,,;AAuBA,IAA  
I,aAG0C,CAAC;AAE/C,SAAS/E,OAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK  
,CAACgF,kBAAS,EAAE,IAAI,WAAW;QAC3D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QA  
AQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAA  
S,SAAS,CACd,IAC0E;IAErE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,wBAAO,EAA

E,wBAAO,CAAW;IAC3B,IAAA,mBAAK,CAAU;IAEtB,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KA  
AK,EAAE,OAAO,CAAC,KAAK,CAAC,CAAC;IACrD,IAAI,IAAI,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,  
CAAC,EAAE;QACnC,OAAO,GAAG,CAAC;KACZ;IAEK,IAAA,mEACmD,EADID,wBAAS,EAAE,0BAAU,EA  
AE,wBAAS,EAAE,oBAAO,EAAE,0BACO,CAAC;IAE1D,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;I  
AEjC,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;I  
AC1D,IAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,IAAM,YAAY,GAAG,IAAI,UAAU,CAAC,IA  
I,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,  
CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,aAAa,CACT,SAAS,EAAE,SA  
AS,EAAE,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,UAAU,EACpE,SAAS,EAAE,YAAY  
,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;IAEhD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,eAAe,G  
AAiB;IAC3C,UAAU,EAAEsF,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEhF,OAAK;IACbB,U  
AAU,EAAE,SAA6B;CAC1C;;AC/ED;;;;;;AAqBA,IAAI,UAESB,CAAC;AAE3B,SAASA,OAAK,CAAC,O  
AAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,EAAE;QACbD,QA  
AQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,CAAC;AAED,SAA  
S,MAAM,CAAC,IAAKD;IACzD,IAAA,oBAAM,EAAE,sBAAO,CAAS;IACxB,IAAA,4BAAS,EAAE,YAAC,EA  
AE,YAAC,CAAW;IAEjC,IAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IAC/D,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAA  
C,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C  
AAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CA  
AC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,KAAK,GAA  
G,SAAS,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,IAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAA  
M,CAAC;IAE7B,IAAM,MAAM,GAAG,KAAK,KAAK,CAAC,IAAI,KAAK,GAAG,CAAC,IAAI,KAAK,KAAK,  
CAAC;QACID,CAAC;QACDN,aAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,C  
AAC,CAAC,CAAC;IAEzC,UAAU,CAAC,WAAW,EAAE,GAAG,EAAE,GAAG,EAAE,MAAM,EAAE,KAAK,C  
AAC,CAAC;IACjD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEuF,  
eAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;IACtC,SAAS,EAAEjF,OAAK;CACjB;;AC  
7DD;;;;;;AAqBA,IAAI,UAA8C,CAAC;AAEnD,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OA  
AO,CAAC,IAAI,CAAC,KAAK,CAAC8E,gBAAO,EAAE,IAAI,aAAa,CAAC,QAAQ,EAAE,QAAQ,CAAC,CAA  
C,CAAC;AACbF,CAAC;AAED,SAAS,OAAO,CAAC,IAAmD;IAE3D,IAAA,sBAAO,EAAW,iBAAC,CAAU;IAC  
pC,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAA  
E,CAAC;IAC/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,  
KAAK,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;;IAGnD,IAAIxI,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KA  
AK,CAAC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAEDU,UAAQ,CAAC,GAAG,EAAE,KAAK,CAAC,CA  
AC;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAE,SAAS;IACrB  
,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEJ,OAAK;IACbB,UAAU,EAAE,OAA2B;CACxC;;ACbDD;;;;;;  
;AAmBO,IAAM,SAAS,GAAiB,uBAAuB,CAACmF,YAAG,CAAC;;ACnBnE;;;;;;AAqBA,IAAI/E,UACI,C  
AAC;AAET,SAASJ,OAAK,CAAC,OAAoB;IACjCI,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACgF,  
gBAAO,EAAE,IAAI,aAAa;QACtD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IAEnE,IAAA,sBAAO,EAAW,2BAAM,EAAW,oBAAG,CAAU;  
IACvD,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC;IACpD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK,EAAE,MAAM,  
CAAC,KAAK,CAAC,CAAC;IAC3D,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,C  
AAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,IAAM,QAAQ,GAAG,MAAM,CAAC,KAAK,CAAC,GAAG,C  
AAC,CAAC;IACnC,IAAM,KAAK,GAAG1F,aAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CAAC,GAAG,Q  
AAQ,CAAC;;IAG1D,IAAIA,aAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QAC

vC,OAAO,GAAG,CAAC;KACZ;IAEDU,UAAQ,CAAC,GAAG,EAAE,KAAK,EAAE,QAAQ,EAAE,KAAK,CAA  
C,CAAC;IACtC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,aAAa,GAAiB;IACzC,UAAU,EAAEgF,gBA  
AO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEpF,OAAK;IACbB,UAAU,EAAE,OAA2B;CACxC;;AC1  
DD;,,,,,,,,,,,,,AAyBA,SAAS,cAAc,CAAC,IAIvB;IACQ,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;I  
AC/B,IAAA,YAAC,CAAW;IACZ,IAAA,6BAAU,EAAE,yBAAQ,CAAU;IAErC,IAAM,IAAI,GAAGN,aAAI,CA  
AC,aAAa,CAAC,UAAU,CAAC,CAAC;IAE5C,IAAM,gBAAgB,GAA4B,CAAC,CAAC,CAAC,EAAE,CAAC,CA  
AC,CAAC,CAAC;IAC3D,gBAAgB,CAAC,IAAI,OAArB,gBAAgB,EAAU,QAAoC,EAAE;IAEhE,KAAK,IAAI,C  
AAC,GAAG,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,E  
AAE,EAAE,CAAC,EAAE;QAC3D,gBAAgB,CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CA  
AC;KAC/B;IAED,IAAM,OAAO,GAAG,WAAW,CAAC,UAAU,CAAC;QACrC,MAAM,EAAE,EAAC,CAAC,G  
AAA,EAAC;QACX,OAAO,SAAA;QACP,KAAK,EAAE,EAAC,QAAQ,EAAE,gBAAgB,EAAE,aAAa,EAAE,CA  
AC,EAAC;KACtD,CAAE,CAAC;IAEjB,IAAM,mBAAmB,GACrBE,qBAAY,CAAC,WAAW,CAAC,OAAO,CAA  
C,KAAK,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAErE,IAAM,iCAAiC,GAAGA,qBAAY,CAA  
C,WAAW,CAC9D,mBAAmB,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IAE1D  
,IAAM,YAAY,GACdA,qBAAY,CAAC,mBAAmB,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,EAA  
E,KAAK,CAAC,CAAC;IAE7E,IAAM,aAAa,GAakB,EAAC,CAAC,EAAE,OAAO,EAAC,CAAC;IACID,IAAM,  
YAAY,GAAiB,EAAC,KAAK,EAAE,mBAAmB,EAAC,CAAC;IACHe,IAAM,eAAe,GACjB,OAAO,CAAC,EA  
C,MAAM,EAAE,aAAa,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,YAAY,EAAC,CAAC,CAAC;IAEnE,IAAM,e  
AAe,GAAoB,EAAC,CAAC,EAAE,eAAe,EAAC,CAAC;IAC9D,IAAM,cAAc,GACC,EAAC,IAAI,EAAE,iCAAiC,  
EAAC,CAAC;IAC/D,IAAM,QAAQ,GACV,SAAS,CAAC,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,SAAA,EA  
AE,KAAK,EAAE,cAAc,EAAC,CAAC,CAAC;IAEzE,IAAM,mBAAmB,GAakB,EAAC,CAAC,EAAE,QAAQ,EA  
AC,CAAC;IACzD,IAAM,kBAakB,GAAiB,EAAC,KAAK,EAAE,YAAY,EAAC,CAAC;IAC/D,IAAM,MAAM,G  
AAG,OAAO,CACIB,EAAC,MAAM,EAAE,mBAAmB,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,kBAakB,EA  
AC,CAAC,CAAC;IAEvE,OAAO,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IACpC,OAAO,C  
AAC,WAAW,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC;IAC5C,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,  
MAAM,CAAC,CAAC;IAErC,OAAO,MAAM,CAAC;AAChB,CAAC;AAEM,IAAM,oBAAoB,GAAiB;IACbD,U  
AAU,EAAEYf,uBAAc;IAC1B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAcC;CAC/C;;ACrFD;,,,,,,,,,,,,;  
SAwBgB,MAAM,CACIB,IAAsE;IACjE,IAAA,oBAAM,EAAE,kBAAK,EAAE,sBAAO,CAAS;IAC/B,IAAA,YA  
AC,CAAW;IACZ,IAAA,uCAAe,EAAE,iBAAI,CAAU;IAEtC,IAAM,KAAK,GAAG3F,aAAI,CAAC,cAAc,CAAC  
,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAEpD,IAAM,UAAU,GAAGE,qBAAY,  
CAAC,gBAAgB,CAAC,CAAC,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC;IAC5E,IAAM,KAAK,GAAG,IAAI,K  
AAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC;IACbD,IAA  
M,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IAC7B,OAAO,UAAU,CAAC,GAAG,CAAC,  
UAAA,CAAC;QACrB,IAAM,UAAU,GAAO,IAAI,QAAC,CAAC;QAC7B,UAAU,CAAC,KAAK,CAAC,GAAG,  
CAAC,CAAC;QACtB,IAAM,MAAM,GACR,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,  
EAAE,KAAK,EAAE,EAAC,KAAK,OAAA,EAAE,IAAI,EAAE,UAAU,EAAC,EAAE,OAAO,SAAA,EAAC,CAA  
C,CAAC;QACpE,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;QACIB,OAAO,MAAM,CAAC;KACf,CAAC  
,CAAC;AACL,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAE0F,eAAM;IACIB,WAAW,EAAE,MA  
AM;IACnB,UAAU,EAAE,MAA0B;CACvC;;ACjDD;,,,,,,,,,,,,,AAoBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC  
,aAAI,CAAC;;ACpBrE;,,,,,,,,,,,,,AAmBO,IAAM,YAAY,GAAiB,uBAAuB,CAACC,eAAM,CAAC;;ACnBzE;,,,,;  
,,,,,,,,,AAkBA,IAAM5D,uBAAqB,GAAG,IAAI,CAAC;AAC5B,IAAM,uBAAuB,GACbC,wBAAwB,CAAC6D,0  
BAAiB,EAAE7D,uBAAqB,CAAC;;ACpBtE;,,,,,,,,,,,,,AAuBA,IAAI,QACI,CAAC;AAET,SAAS5B,OAAK,CAA  
C,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC0F,aAAI,EAAE,IAAI,WAAW;QACj  
D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,C  
ACT,IAAkE;IAE7D,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,mBAAK,CAAU;IACf,I  
AAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;IAE/C,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KA  
AK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA

G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,KAAK,EAA  
E,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IAC/C,OAAO,GAAG,CAAC;AACb,  
CAAC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEA,aAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS  
,EAAEiF,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACtDD;,,,,,;AAuBA,IAAI,gBAI8C,CAAC;AAEn  
D,SAASA,OAAK,CAAC,OAAoB;IACjC,gBAAgB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC2F,qBAAY,  
EAAE,IAAI,WAAW;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,OAAO;QACP,OAAO;Q  
ACP,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,YAAY,CAA  
C,IAI5B;IACQ,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IAGjB,IAAA,  
mBAAK,EACL,eAAG,EACH,uBAAO,EACP,2BAAS,EACT,uBAAO,EACP,iCAAY,EACZ,+BAAW,EACX,qCA  
Ac,CACN;IAEJ,IAAA,+HAY8B,EAXiC,sCAAgB,EACbB,0BAAU,EACV,0BAAU,EACV,wBAAS,EACT,gCAA  
a,EACb,iBAAa,EACb,aAAS,EACT,qBAIkC,CAAC;IAErC,IAAI,MAAM,CAAC;IAEX,IAAI,UAAU,EAAE;;QAE  
d,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAA,EAAE  
,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;KACtE;SAAM,IAAI,SAAS,IAAI,aAAa  
,EAAE;;QAErCjG,aAAI,CAAC,MAAM,CACP,CAAC,CAAC,KAAK,CAAC,MAAM,IAAI,CAAC,EACnB,cAA  
M,OAAA,2CAAYC,CAAC,CAAC,KAAK,CAAC,MAAQ,GAAA,CAAC,CAAC;QAErE,IAAM,IAAI,GAAGe,mB  
AAU,CAAC,eAAe,CAAC,MAAM,EAAE,IAAI,EAAE,QAAQ,CAAC,CAAC;;QAEhE,IAAM,MAAM,GAAG,KA  
AK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,GAAA,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAA  
C,KAAK,EAAE,MAAM,EAAE,IAAI,MAAA,EAAC,EAAC,CAAC,CAAC;QAC3E,MAAM;YACF,OAAO,CAA  
C,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,  
KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;QACxE,OAAO,CAAC,WAAW,CAAC,MAAM,CAAC,MAA  
M,CAAC,CAAC;KACpC;SAAM;QACL,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,gBAAgB,EAAE,SA  
AS,CAAC,CAAC;QAE5D,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;QAC/C,IAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAAU,CAACf,aAAI,CA  
AC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;QACxE,IAAM,UAAU,GAA  
G,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC;QACjE,IAAM,QAAQ,  
GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;QAC7D,IAAM,YA  
AY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;QAErE,IAAM,  
gBAAgB,GACiB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;QAC5  
D,IAAM,eAAe,GAAG,IAAI,UAAU,CACiC,IAAI,UAAU,CAACA,aAAI,CAAC,cAAc,CAAC,gBAAgB,CAAC,C  
AAC,CAAC,MAAM,CAAC,CAAC;QACiE,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G  
AAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAEhD,gBAAgB,CACZ,GAAG,EAAE,aAAa,EAAE,CAAC,C  
AAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,YAAY,EACtE,gBAAgB,EAAE,eAAe,EAAE,g  
BAAgB,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;QAEvE,MAAM,GAAG,OAAO,CAAC,EAAC,MAAM,EA  
AE,EAAC,CAAC,EAAE,GAAG,EAAC,EAAE,OAAO,SAAA,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,  
EAAC,EAAC,CAAC,CAAC;QAEiE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;KACj  
C;IAED,OAAO,MAAM,CAAC;AACHB,CAAC;AAEM,IAAM,kBAakB,GAAiB;IAC9C,UAAU,EAAEiG,qBAA  
Y;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE3F,OAAK;IACbB,UAAU,EAAE,YAAgC;CAC7C;;AC/H  
D;,,,,,;AAkBA,IAAM4B,uBAAqB,GAAG,IAAI,CAAC;AAC5B,IAAM,SAAS,GACiB,wBAAwB,CAACgE,  
YAAG,EAAEhE,uBAAqB,CAAC;;ACpBxD;,,,,,;AAwBA,IAAI,OACI,CAAC;AAET,SAAS5B,OAAK,CA  
AC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC6F,YAAG,EAAE,IAAI,WAAW;QA  
C/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAA  
G,CAAC,IAAgE;IAEpE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,iBAAI,EAAE,yBAA  
Q,CAAU;IACxB,IAAA,YAAC,CAAW;IACnB,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC  
,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACiB,IAAI,KA  
AK,GAAG,CAAC,CAAC;IAER,IAAA,8CACuC,EADtC,0BAAU,EAAE,cAAI,EAAE,8BAAY,EAAE,0CACM,C  
AAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAakB,EAAE;QACtB,IAAM,YAAY,GAAG,OAAO  
,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,K  
AAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aAA

a,GAAGjG,qBAAY,CAAC,gBAAGB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;KACF;IAEDA,qBAAY,CAAC,0BAA0B,CACnC,KAAK,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACxC,IAAA,gFACgE,EAD/D,gBAAQ,EAAE,mBACqD,CAAC;IACvE,IAAM,UAAU,GAAGF,aAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAIA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,IAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KAC1D;IAED,IAAI,kBAakB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,IAAM,QAAQ,GAAGE,qBAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,IAAM,SAAS,GAAiB;IACrC,UAAU,EAAEiG,YAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EA AE7F,OAAK;IACHb,UAAU,EAAE,GAAuB;CACpC;;AC5FD;;;;;;;AAmBO,IAAM,SAAS,GAAiB,uBAAuB,CAAC8F,YAAG,CAAC;;ACnBnE;;;;;;;AAmBO,IAAM,UAAU,GAAiB,uBAAuB,CAACC,aAAI,CAAC;;ACnBrE;;;;;;;AAuBA,IAAI,QAE2D,CAAC;AAEhE,SAAS/F,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACgG,aAAI,EAAE,IAAI,aAAa;QACnD,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CACT,IA AKe;IAC7D,IAAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,YAAC,CAAW;IACnB,IAAM,G AAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA CxC,IAAA,iBAAI,CAAU;IAErB,IAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACrD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,C AAC,EAAE,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,G AAG,IAAI,CAAC,CAAC,CAAC,CAAC;KACpC;IACD,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,IAAM,aAAa,GAAG,IAAI,UAAU,CA AC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IAEtE,IAAM,GAAG,GAAG,OAAO,CAA C,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAM,KAAK,GAAG,OAAO,CAAC, SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CACJ,GAAG,E AAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,aAAa,EAAE,QAAQ,CAAC,MAAM,EACHe,Q AAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IACHc,OAAO,GAAG,CAAC;AACb,CA AC;AAEM,IAAM,UAAU,GAAiB;IACtC,UAAU,EAAEA,aAAI;IACHb,WAAW,EAAE,MAAM;IACnB,SAAS,E AAEhG,OAAK;IACHb,UAAU,EAAE,IAAwB;CACrC;;ACjED;;;;;;;AAsBA,IAAI,QAG6B,CAAC;AAEIC,S AASA,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAACiG,aAAI,EAAE,I AAI,aAAa;QACnD,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;QACN,Q AAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAEM,IAAM,IAAI,GAEmB,UAAU,EAAwB;QAAvB, kBAAM,EAAE,oBAAO,EAAE,gBAAK;IAC3C,IAAA,YAAC,CAAW;IACZ,IAAA,WAAW,EAAE,qBAAM,CAA U;IAE1B,IAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC, EAAE,CAAC;IAC/C,IAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CA AC,CAAC,MAAM,CAAC,CAAC;IACnE,IAAM,WAAW,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CA AC;IACpC,WAAW,CAAC,WAAW,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC;IACxC,IAAM,S AAS,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAC3D,IAAM,W AAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA C/D,IAAM,UAAU,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,OAAO,CAAC,CAAC;IAC5D,IAAM,YA AY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEj E,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAA C,CAAC,KAAK,CAAC,EAAE,CAAC,EAAE,MAAM,EAC9D,WAAW,EAAE,YAAY,CAAC,CAAC;IAE/B,OAA O,CAAC,SAAS,EAAE,UAAU,CAAC,CAAC;AACjC,CAAC,CAAC;AAEH,IAAM,UAAU,GAAiB;IACtC,UAAU, EAAEA,aAAI;IACHb,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEjG,OAAK;IACHb,UAAU,EAAE,IAAwB;CA CrC;;ACnED;;;;;;;AAqBA,IAAI,aAKyC,CAAC;AAE9C,SAASA,OAAK,CAAC,OAAoB;IACjC,aAAa,GAA

G,OAAO,CAAC,IAAI,CAAC,KAAK,CAACKG,kBAAS,EAAE,IAAI,WAAW;QAC3D,QAAQ;QACR,QAAQ;QA  
CR,MAAM;QACN,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,OA  
AO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAA  
C;AAED,SAAS,SAAS,CACd,IAC0E;IAErE,IAAA,sBAAO,EAAE,oBAAM,EAAE,kBAAK,CAAS;IAC/B,IAAA,  
oBAAK,EAAE,8BAAU,CAAW;IAC5B,IAAA,mCAAa,EAAE,yBAAQ,EAAE,2BAAS,EAAE,+BAAW,CAAU;IA  
E1D,IAAA,gBAA2D,EAA1D,aAAK,EAAE,mBAAW,EAAE,kBAAU,EAAE,mBAA0B,CAAC;IAC5D,IAAA,kE  
AC2D,EAD1D,iBAAS,EAAE,gBAC+C,CAAC;IACIE,IAAM,QAAQ,GACV,CAAC,KAAK,EAAE,SAAS,EAAE,  
QAAQ;QAC1B,WAAW,CAAqC,CAAC;IACtD,IAAM,OAAO,GACT,IAAI,UAAU,CAAC,IAAI,UAAU,CAACx  
G,aAAI,CAAC,cAAc,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,IAAM,G  
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAM,KA  
AK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE  
nD,IAAM,SAAS,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACt  
D,IAAM,OAAO,GAAG,SAAS,CAAC,EAAE,CAAC;IAE7B,IAAM,cAAc,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;IACHe,IAAM,YAAY,GAAG,cAAc,CAAC,EAAE,CAAC;IAE  
vC,IAAM,mBAAmB,GAAG,aAAa,KAAK,SAAS,GAAG,CAAC,GAAG,CAAC,CAAC;IACHe,IAAI,UAAU,CAA  
C;IACf,QAAQ,QAAQ;QACd,KAAK,UAAU;YACb,UAAU,GAAG,CAAC,CAAC;YACf,MAAM;QACR,KAAK,  
SAAS;YACZ,UAAU,GAAG,CAAC,CAAC;YACf,MAAM;QACR,KAAK,MAAM;YACT,UAAU,GAAG,CAAC,  
CAAC;YACf,MAAM;QACR,KAAK,SAAS;YACZ,UAAU,GAAG,CAAC,CAAC;YACf,MAAM;QACR;YACE,U  
AAU,GAAG,CAAC,CAAC;YACf,MAAM;KACT;IAED,aAAa,CACT,OAAO,EAAE,YAAY,GAAG,UAAU,CAA  
C,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,KAAK,EAAE,SAAS,EACIE,QAAQ,EAAE,WAAW,EAAE  
,UAAU,EAAE,WAAW,EAAE,OAAO,EACvD,KAAK,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,EAAE,mBA  
AmB,EAAE,UAAU,EAAE,SAAS,EACIE,KAAK,CAAC,CAAC;IAEX,OAAO,GAAG,CAAC;AACb,CAAC;AAE  
M,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEWG,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEIG  
,OAAK;IACb,UAAU,EAAE,SAA6B;CAC1C;;AC5GD;;:::;AAuBA,SAAS,MAAM,CACX,IAAsE;IAEjE,I  
AAA,oBAAM,EAAE,sBAAO,EAAE,kBAAK,CAAS;IAC/B,IAAA,oBAAK,CAAW;IACIB,IAAA,iBAAI,CAAU;I  
AEnB,IAAI,IAAI,GAAG,CAAC,EAAE;QACZ,IAAI,IAAI,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;KAC5B;  
IAED,IAAM,UAAU,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;IACrC,IAAM,IAAI,GAAG,KAA  
K,CAAC,KAAK,CAAC,MAAM,CAAC;IAChC,IAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,IAAI,GAAG,CAAC,C  
AAC,CAAC;IAC/C,IAAI,QAAQ,GAAG,CAAC,CAAC;IACjB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,  
GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC7B,IAAI,CAAC,KAAK,IAAI,EAAE;YACd,QAAQ,CAAC,QAAQ  
,EAAE,CAAC,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;SACvC;KACF;IACD,IAAM,IAAI,GA  
AiB,IAAI,KAAK,CAAC,UAAU,CAAC,CAAC;IACjD,IAAM,KAAK,GAAG,IAAI,KAAK,CAAC,IAAI,CAAC,C  
AAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACtC,IAAM,IAAI,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,  
CAAC;IACjC,IAAI,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC;IACf,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,C  
AAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACpC,KAAK,CAAC,IAAI,CAAC,GAAG,CAA  
C,CAAC;QACbB,IAAI,CAAC,CAAC,CAAC,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,  
KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,OAAA,EAAE,IAAI,MAAA,EAAC,EAAE,OAAO,SAAS,EA  
AC,CAAC,CAAC;KACIE;IACD,OAAO,IAAI,CAAC,GAAG,CAAC,UAAU,EAAE;YAAAd,kBAAM,EAAE,gBAA  
K;QAAM,QAAC,EAAC,MAAM,QAAA,EAAE,KAAK,OAAA,EAAE,KAAK,EAAE,QAAQ,EAAC;KAAC,CAA  
C,CAAC;AAC3E,CAAC;AAEM,IAAM,YAAY,GAAiB;IACxC,UAAU,EAAEmG,eAAM;IACIB,WAAW,EAAE,  
MAAM;IACnB,UAAU,EAAE,MAA0B;CACvC;;AC1DD;;:::;AAqBA,SAAS,SAAS,CAAC,IAAqD;IACtD,  
IAAA,iBAAC,EAAG,sBAAO,CAAS;IACpC,IAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,  
KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,IAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,  
GAAG,CAAC,CAAC;IACdD,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC;IACbB,OAAO,GAAG,CAAC;A  
ACb,CAAC;AAEM,IAAM,eAAe,GAAiB;IAC3C,UAAU,EAAEC,kBAAS;IACrB,WAAW,EAAE,MAAM;IACnB,  
UAAU,EAAE,SAA6B;CAC1C;;ACjCD;;:::;AAshA;AACa,IAAM,aAAa,GAAM;IACpC,SAAS;IACT,SA  
AS;IACT,UAAU;IACV,SAAS;IACT,SAAS;IACT,YAAY;IACZ,aAAa;IACb,iBAAiB;IACjB,oBAAoB;IACpB,U  
AAU;IACV,UAAU;IACV,iBAAiB;IACjB,YAAY;IACZ,YAAY;IACZ,yBAAyB;IACzB,SAAS;IACT,UAAU;IAC

V,mBAAmB;IACnB,YAAy;IACZ,kBAaKB;IACIB,2BAA2B;IAC3B,SAAS;IACT,WAAW;IACX,SAAS;IACT,g  
BAAGB;IACbB,UAAU;IACV,mBAAmB;IACnB,WAAW;IACX,cAAc;IACd,iBAaIB;IACjB,oBAAoB;IACpB,iB  
AAiB;IACjB,0BAA0B;IAC1B,cAAc;IACd,cAAc;IACd,aAAa;IACb,kBAaKB;IACIB,cAAc;IACd,eAAe;IACf,UA  
AU;IACV,eAAe;IACf,SAAS;IACT,gBAAGB;IACbB,SAAS;IACT,aAAa;IACb,aAAa;IACb,UAAU;IACV,SAAS;I  
ACT,aAAa;IACb,eAAe;IACf,cAAc;IACd,SAAS;IACT,yBAAYB;IACzB,yBAAYB;IACzB,yBAAYB;IACzB,cAAc;  
IACd,YAAy;IACZ,cAAc;IACd,UAAU;IACV,WAAW;IACX,SAAS;IACT,WAAW;IACX,UAAU;IACV,WAAW;  
IACX,aAAa;IACb,UAAU;IACV,WAAW;IACX,aAAa;IACb,oBAAoB;IACpB,aAAa;IACb,sBAAsB;IACtB,WAA  
W;IACX,WAAW;IACX,eAAe;IACf,YAAy;IACZ,aAAa;IACb,SAAS;IACT,WAAW;IACX,aAAa;IACb,oBAAoB  
;IACpB,YAAy;IACZ,UAAU;IACV,YAAy;IACZ,uBAAuB;IACvB,UAAU;IACV,kBAaKB;IACIB,SAAS;IACT,S  
AAS;IACT,SAAS;IACT,UAAU;IACV,UAAU;IACV,UAAU;IACV,eAAe;IACf,eAAe;IACf,YAAy;IACZ,eAAe;C  
AChB,CAAC;AAEF,KAA2B,UAAa,EAAb,+BAAa,EAAb,2BAAa,EAAb,IAAa,EAAE;IAArC,IAAM,YAAy,sBA  
AA;IACrBC,uBAAc,CAAC,YAAy,CAAC,CAAC;AC3N/B;AAiBA,sBA0CA;AAxCA,IAAM,GAAG,GAAGC,YAAG,EAAE,CAAC;AAEIB;AAGA;AACa,GAAG,CAA  
C,YAAy;AACZ;AACa;AACa;AACa,uBAAuB,EAAE;QAAY,sBAAA;gBACnC,CAAC,EAAE,EAAE,EAAE,G  
AAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,GA  
E,CAAC,EAAI,EAAE,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,GA  
E,CAAC,EAAE,GAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,GA  
G,EAAE,EAAE,EAAE,EAAE,EAAE,EAAE;aACpD,CAAC,CAAC,EAAA;KAAA,CAAC,CAAC;AAET;AAG  
A;AACa,GAAG,CAAC,YAAy,CAAC,8BAA8B,EAAE;QAG/C,IAAI,GAAG,CAAC,GAAG,CAAC,SAAS,CA  
AC,EAAE;YACtB,sBAAO,KAAK,EAAC;SACd;QAED,IAAI;YAGF,IAAI,cAAc,EAAE,CAAC,KAAK,CAAC,  
WAAW,CAAC,IAAI,iBAaIB,CAAC,CAAC,CAAC,CAAC,CAAC;YAGjE,sBAAO;oBACL,CAAC,EAAE,EAA  
E,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,C  
AAC,EAAE,CAAC,EAAG,EAAE,EAAE,CAAC,EAAI,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG  
,CAAC,EAAE,CAAC;oBACpE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAI,CAAC,EAAI,CAAC,EAAE,EAAE,EA  
AE,EAAE,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,EAAG,GAAG,EAAE,EAAE,E  
AAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,EAAE;IBACnE,CAAC,CAAC,EAAC;SACL;QAAC,OAAO,CA  
AC,EAAE;YACV,sBAAO,KAAK,EAAC;SACd;;KACF,CAAC;ACzDF,IAAI,6BAA6B,GAAG,CAAC,WA  
AW;AAChD,EAAE,IAAI,UAAU,GAAG,OAAO,QAAQ,KAAK,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAA  
Q,CAAC,aAAa,CAAC,GAAG,GAAG,SAAS,CAAC;AACtH,EAAE,IAAI,OAAO,UAAU,KAAK,WAAW,EAAE,  
UAAU,GAAG,UAAU,IAAI,UAAU,CAAC;AAC/E,EAAE;AACF,SAAS,6BAA6B,EAAE;AACxC,EAAE,6BAA6  
B,GAAG,6BAA6B,IAAI,EAAE,CAAC;AACtE;AACa,SAAS,gBAAGB,EAAE,CAAC,GAAG,UAAU,CAAC,MA  
AM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,KAAK,CAAC,  
SAAS,gBAAGB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UA  
AU,CAAC,MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iBAaIB,EAAE,CAAC,GAAG,UAAU,CAAC,M  
AAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,MAAM,CAA  
C,SAAS,iBAaIB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,U  
AAU,CAAC,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,SAAS,iBAaIB,EAAE,CAAC,GAAG,UAAU,CAAC,M  
AAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC  
,IAAI,MAAM,CAAC,OAAO,6BAA6B,GAAG,WAAW,CAAC,6BAA6B,CAAC,EAAE,CAAC,IAAI,mBAAmB,C  
AAC,kBAaKB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,C  
AAC,CAAC,mBAAmB,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,  
EAAE,CAAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAA  
C,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,  
IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAGB,CAAC,IAAI,KAAK,CAAC,SAAS,MAAM,CA  
AC,OAAO,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAaKB,CAAC,KAAK,CAAC,IAAI,qBAaqB,C  
AAC,KAAK,CAAC,IAAI,mBAAmB,CAAC,KAAK,CAAC,IAAI,oBAAoB,CAAC,KAAK,CAAC,kBAaKB,CAA  
C,OAAO,MAAM,GAAG,QAAQ,CAAC,qBAaqB,CAAC,OAAO,aAAa,GAAG,UAAU,CAAC,mBAAmB,CAAC,  
OAAO,OAAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,

QAAQ,CAAC,IAAI,GAAG,QAAQ,CAAC,oBAAoB,CAAC,CAAC,kBAaKB,EAAE,CAAC,mBAAmB,EAAE,CAAC,qBAAqB,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,EAAE,KAAK,CAAC,GAAG,sBAAsB,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,YAAy,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAy,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,eAAe,CAAC,IAAI,KAAK,KAAK,CAAC,SAAS,CAAC,UAAU,CAAgB,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,eAAe,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAI,CAAC,eAAe,CAAC,SAAS,CAAC,IAAG,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,GAAg,CAAC,QAAQ,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,GAAG,EAAC,CAAC,UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OA AO,CAAC,IAAI,CAAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAAy,UA AU,CAAC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,oBAA oB,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,CA AC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,4BAA4B,CAAC,C AAC,IAAI,iBAAiB,CAAC,GAAG,CAAC,iBAAiB,CAAC,6NAAmN,oCAAoC,oBAAoB,CAAC,SAAS,8BAA6B, WAAW,CAAC,qBAAqB,UAAU,oCAAoC,WAAW,UAAU,eAAe,CAAC,sBAAsB,qBAAqB,sBAAsB,qCAAoC,2 BAA2B,kCAAiC,CAAC,UAAU,yBAAyB,eAAe,MAAM,WAAW,mBAAmB,aAAa,oBAAoB,WAAW,6BAA6B,C AAC,oBAAoB,CAAC,aAAa,QAAQ,wBAAwB,aAAy,qBAAqB,uBAAuB,0BAA0B,sBAAsB,CAAC,8BAA6B,W AAW,qBAAqB,+DAA8D,iBAAiB,mGAAG,CAAC,gBAAgB,+DAA8D,qBAAoB,CAAC,4BAA2B,0BAA0B,oB AAoB,CAAC,qBAAqB,MAAM,CAAC,qBAAqB,8CAA8C,CAAC,SAAS,8BAA8B,sBAAsB,CAAC,QAAQ,CAA C,WAAW,SAAS,WAAW,UAAU,4BAA4B,CAAC,cAAc,CAAC,IAAI,CAAC,IAAI,WAAW,MAAK,mBAAmB,a AAY,qBAAoB,KAAK,OAAO,4CAA4C,CAAC,IAAI,CAAC,KAAK,IAAI,CAAC,WAAW,kBAaKB,qBAAqB,sB AAsB,YAAy,4CAA4C,CAAC,IAAI,CAAC,+DAA+D,0BAAyB,CAAC,SAAS,WAAW,aAAa,QAAQ,uCAAuC,C AAC,IAAI,gDAAGD,IAAI,iBAAiB,IAAI,eAAe,iBAAiB,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,eA Ac,gBAAgB,CAAC,IAAI,SAAS,KAAuD,yBAA+B,qBAAqB,GAAG,kFAAyE,EAAE,WAAW,CAAC,KAAK,qC AAqC,QAAQ,SAAS,CAAC,OAAO,aAAa,iBAAiB,qCAAqC,CAAC,iCAAiC,EAAC,iBAAiB,CAAC,eAAe,uBAA uB,QAAQ,qCAAqC,CAAC,WAAW,CAAC,yBAAyB,aAAa,OAAO,cAAc,CAAC,UAAU,QAAQ,KAAK,CAAC,a AAa,CAAC,uBAAuB,CAAC,IAAI,SAAS,MAAM,eAAe,CAAC,MAAM,gBAAgB,kBAAmI,uBAAuB,CAAC,kB AAKB,mBAAmB,aAAa,OAAO,iEAAiE,qCAAoC,kCAAkC,MAAM,eAA8B,MAAM,UAAU,UAAU,CAAC,SAA S,OAAO,8BAA6B,6BAA6B,IAAI,CAAC,WAAW,cAAc,oCAAoC,oCAAoC,CAAC,2CAA2C,cAAc,KAAK,CAA C,KAAK,0BAA0B,MAAM,IAAI,KAAK,kBAaKB,SAAS,KAAK,IAAI,MAAM,IAAI,KAAK,YAAy,KAAK,UAA U,IAAI,CAAC,aAAa,IAAI,IAAI,iBAAgB,wBAAwB,sBAAsB,SAAS,uBAAuB,IAAI,CAAC,OAAO,uCAAuC,GA AG,8CAA8C,8DAA8D,mBAAmB,CAAC,CAAC,UAAU,kBAaKB,MAAM,WAAW,CAAC,EAAE,KAAK,MAA M,CAAC,CAAC,GAAG,KAAK,SAAS,CAAC,GAAG,CAAC,YAAy,CAAC,GAAG,mBAAmB,UAAU,CAAC,iB AAiB,GAAG,UAAU,KAAK,CAAC,WAAW,QAAQ,CAAC,kBAAiB,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC, GAAG,CAAC,mBAAmB,KAAK,QAAQ,GAAG,CAAC,mBAAmB,aAAa,gCAAgC,aAAa,WAAW,YAAy,gCAAg C,SAAS,oBAAoB,oCAAoC,WAAW,IAAI,UAAU,sBAAsB,gBAAgB,cAAc,6BAA6B,+BAAoC,CAAC,UAAU,0B AA0B,CAAC,0BAA0B,CAAC,IAAI,mBAAmB,MAAM,OAAO,uBAAuB,IAAI,WAAW,GAAG,QAAQ,GAAG,IA AI,EAAE,MAAM,GAAG,GAAG,QAAQ,cAAc,EAAE,EAAE,+BAA+B,GAAG,CAAC,SAAS,KAAK,GAAG,Q AAQ,aAAa,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,GAAG,SAAS,YAAy,CAAC,GAAG,GAAG,GAAG,CA AC,GAAG,CAAC,SAAS,KAAK,EAAE,CAAC,IAAI,OAAO,CAAC,EAAE,IAAI,IAAG,KAAI,GAAG,IAAI,CAA



C,IAAI,EAAE,CAAC,EAAE,KAAK,KAAK,CAAC,IAAI,IAAI,GAAG,CAAC,IAAG,KAAK,OAAO,aAAa,iBAA  
gB,CAAC,MAAK,OAAO,oBAAoB,aAAa,MAAM,KAAK,YAAY,eAAc,aAAa,aAAa,GAAG,gEAAgE,uDAAuD,I  
AAI,CAAC,2BAA2B,sDAAsD,+BAA+B,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,IA  
AI,UAAU,GAAG,CAAC,MAAM,KAAK,KAAK,KAAK,CAAC,WAAW,CAAC,aAAa,EAAE,CAAC,EAAE,KAA  
K,EAAE,OAAO,GAAG,YAAW,CAAC,GAAG,CAAC,EAAE,QAAQ,cAAc,OAAO,IAAI,CAAC,MAAM,IAAI,iC  
AAgC,MAAM,WAAW,SAAS,MAAM,CAAC,GAAG,MAAM,mBAAkB,SAAS,GAAG,KAAK,CAAC,UAAU,IA  
AI,aAAa,aAAa,MAAM,CAAC,SAAS,CAAC,MAAM,IAAI,OAAO,EAAE,EAAE,KAAK,SAAS,CAAC,MAAM,I  
AAG,CAAC,KAAI,CAAC,GAAG,QAAQ,SAAS,MAAM,IAAI,CAAC,QAAQ,MAAM,CAAC,SAAS,CAAC,MA  
AM,IAAI,OAAO,EAAE,CAAC,QAAQ,QAAQ,MAAM,GAAG,CAAC,GAAG,CAAC,KAAK,QAAQ,CAAC,MA  
AM,IAAG,CAAC,KAAK,OAAO,IAAI,OAAO,OAAO,kBAAkB,iBAAiB,+BAA+B,0EAA0E,yBAAyB,8BAA8B,  
CAAC,KAAK,IAAI,CAAC,CAAC,IAAI,UAAU,GAAG,CAAC,MAAM,KAAK,KAAK,KAAK,CAAC,UAAU,CA  
AC,CAAC,eAAe,UAAU,CAAC,KAAK,IAAI,CAAC,IAAI,KAAK,CAAC,KAAK,UAAU,MAAM,IAAI,IAAI,SA  
AS,aAAa,EAAE,KAAK,GAAG,EAAE,EAAC,CAAC,WAAW,SAAS,uDAAuD,MAAM,OAAO,EAAC,kBAAkB,  
CAAC,SAAS,CAAC,MAAM,WAAW,wBAAuB,CAAC,SAAS,IAAI,YAAY,CAAC,6BAA6B,OAAO,oDAAoD,C  
AAC,mDAAmD,CAAC,qBAAqB,CAAC,yBAAyB,CAAC,QAAQ,QAAQ,CAAC,0BAA0B,CAAC,QAAQ,QAAQ  
,CAAC,0BAA0B,CAAC,QAAQ,SAAS,cAAc,YAAY,WAAW,CAAC,uBAAuB,YAAY,WAAW,CAAC,uBAAuB,  
YAAY,CAAC,WAAW,YAAY,YAAY,YAAY,CAAC,UAAU,cAAc,oCAAoC,yBAAyB,EAAE,8CAA8C,QAAQ,4  
CAA0C,CAAC,2BAAyB,WAAW,mBAAmB,MAAM,CAAC,UAAU,CAAC,eAAe,iCAAiC,gBAAgB,kCAAkC,w  
RAAwR,CAAC,GAAG,sJAAqJ,YAAY,iBAAiB,uBAAsB,kBAAkB,kEAAkE,CAAC,mCAAmC,IAAsB,kBAAkB,  
6BAAkF,iCAAiC,sBAAqB,CAAC,8EAA8E,sDAAsD,8BAA8B,CAAC,QAAQ,QAAQ,CAAC,CAAC,4DAA2D,C  
AAC,gEAAuF,wCAAuC,oBAAoB,kEAAiE,8EAAyJ,OAAO,mBAAmB,6BAA6B,CAAC,mBAAmB,YAAY,CAA  
C,iBAAiB,CAAC,CAAC,YAAY,CAAC,iBAAiB,CAAC,+BAA8B,CAAC,4HAAyH,eAAe,CAAC,EAAGC,0BAA0  
B,KAAK,0BAA0B,kCAAkC,CAAC,4GAA4G,iCAAiC,CAAC,iDAAgD,EAAE,CAAC,4BAA4B,CAAC,yBAAyB  
,iCAAiC,CAAC,oEAAiK,yGAAwG,4BAA4B,CAAC,SAAS,sBAAsB,UAAU,oDAAmD,CAAC,oEAAoE,CAAC,  
KAAK,OAAO,kBAA+B,CAAC,IAAI,CAAC,mFAAmF,CAAC,KAAK,6BAA6B,CAAC,CAAC,kBAAkB,CAAC,  
GAAG,OAAO,CAAC,sEAAeE,WAAW,MAAM,aAAa,CAAC,qEAAqE,qEAAqE,mBAAmB,UAAU,gIAAgI,CAA  
C,wEAAuE,CAAC,yBAAyB,YAAY,qCAAqC,8BAA8B,WAAU,CAAC,4GAA0G,CAAC,yFAAyF,EAAE,UAAU,  
kBAAkB,YAAY,CAAC,cAAc,CAAC,CAAC,4BAA4B,cAAc,aAAa,CAAC,gBAAgB,6FAA4F,CAAC,6BAA6B,u  
DAAsD,IAAI,QAAQ,SAAS,wGAAsG,mBAAmB,CAAC,SAAS,CAAC,IAAI,CAAC,wEAAwE,IAAI,mBAAmB,  
EAAE,SAAS,6CAA6C,SAAS,OAAO,CAAC,YAAY,CAAC,QAAQ,CAAC,sBAAsB,OAAO,UAAU,CAAC,MAA  
M,CAAC,wDAAwD,CAAC,qBAAqB,QAAQ,cAAc,OAAO,CAAC,0CAA0C,uEAAuF,sBAAsB,CAAC,CAAC,6B  
AA8C,wDAAwD,+BAA8B,CAAC,wEAAwE,yBAAyB,yCAAYC,aAAa,kHAAiH,EAAE,CAAC,mFAAmF,eAAe,  
4BAA4B,4BAA4B,uDAAuD,CAAC,yBAAyB,CAAC,wBAAwB,CAAC,sDAAsD,mSAAkS,MAAM,CAAC,kBA  
AkB,CAAC,iBAAiB,MAAM,CAAC,iBAAiB,OAAO,eAAe,CAAC,CAAC,mGAAG,mBAAmB,0BAAyB,CAAC  
,MAAM,kBAAiB,kBAAkB,CAAC,gBAAgB,sBAAsB,yEAAuE,UAAU,eAAc,UAAU,sDAAsD,CAAC,CAAC,MA  
AM,SAAS,SAAS,CAAC,KAAK,oFAAoF,UAAU,iBAAiB,WAAW,gBAAgB,YAAY,GAAG,UAAU,gBAAe,QAA  
Q,CAAC,eAAc,CAAC,WAAU,SAAS,IAAI,YAAY,eAAe,wBAAuB,CAAC,KAAK,CAAC,kBAAkB,SAAS,OAA  
O,GAAG,MAAM,GAAG,MAAM,EAAE,CAAC,OAAO,SAAS,mBAAmB,cAAc,CAAC,EAAE,OAAO,EAAE,CA  
AC,8BAA8B,CAAC,QAAQ,CAAC,UAAU,KAAK,wBAAwB,CAAC,SAAS,CAAC,UAAU,UAAU,UAAU,UAAU  
,UAAU,CAAC,SAAS,oBAAoB,wBAAwB,QAAQ,CAAC,SAAS,CAAC,SAAS,IAAI,oBAAoB,SAAS,GAAG,CA  
AC,MAAM,CAAC,GAAG,CAAC,8BAA8B,IAAI,OAAO,IAAI,mBAAmB,YAAY,WAAW,UAAU,UAAU,oBAA  
oB,IAAI,OAAO,CAAC,GAAG,CAAC,YAAY,OAAO,CAAC,GAAG,CAAC,UAAU,SAAS,IAAI,mBAAmB,CAA  
C,UAAU,oBAAoB,IAAI,OAAO,CAAC,GAAG,QAAQ,CAAC,WAAW,SAAS,UAAU,CAAC,SAAS,CAAC,GAA  
G,OAAO,CAAC,GAAG,SAAS,CAAC,UAAU,IAAI,UAAU,CAAC,QAAQ,IAAI,OAAO,CAAC,GAAG,CAAC,O  
AAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,QAAQ,IAAI,OAAO,CA  
AC,GAAG,SAAS,CAAC,GAAG,qBAAqB,GAAG,YAAY,GAAG,CAAC,yCAAYC,aAAa,CAAC,wBAAwB,CAA  
C,cAAc,CAAC,YAAY,yEAAyE,CAAC,YAAY,GAAG,WAAW,2CAA2C,CAAC,cAAc,CAAC,WAAW,2CAA2C,  
qCAAqC,EAAE,CAAC,SAAS,GAAG,YAAY,WAAW,CAAC,aAAa,UAAU,CAAC,WAAW,UAAU,WAAW,GA

AG,CAAC,SAAS,CAAC,GAAG,UAAU,6CAA6C,cAAc,+CAA+C,IAAI,CAAC,gBAAgB,GAAG,wBAAwB,aAA  
Y,CAAC,GAAG,QAAQ,CAAC,QAAQ,CAAC,GAAG,wBAAwB,mEAAmE,uDAAuD,EAAE,CAAC,wBAAwB,8  
BAA8B,CAAC,eAAe,CAAC,4EAA4E,CAAC,CAAC,sCAAsC,wBAAwB,CAAC,EAAE,qBAaqB,CAAC,sBAAs  
B,CAAC,iBAaiB,OAAO,iBAaiB,EAAE,CAAC,QAAQ,4GAA2G,wBAAwB,CAAC,iCAaiC,sOAAoO,mBAAm  
B,CAAC,QAAQ,sCAAsC,0BAA0B,QAAQ,CAAC,sBAAsB,CAAC,8BAA8B,QAAQ,eAAe,CAAC,yBAayB,CA  
AC,UAAAS,kCAakC,+NAA6N,kFAaiF,CAAC,4OAA0O,wBAAwB,CAAC,0CAA0C,mBAAmB,eAAe,iGAAGg,i  
EAAiE,CAAC,CAAC,CAAC,gCAA+B,CAAC,uBAauB,CAAC,wBAAwB,IAAI,EAAE,CAAC,OAAO,CAAC,G  
AAG,CAAC,CAAC,iBAaiB,EAAE,CAAC,EAAE,CAAC,CAAC,uBAauB,EAAE,CAAC,EAAE,CAAC,qBAaqB  
,GAAG,IAAI,CAAC,iBAaiB,EAAE,CAAC,wBAAwB,SAAS,CAAC,uBAauB,CAAC,OAAO,IAAI,mBAAmB,C  
AAC,wBAAwB,wBAAwB,MAAM,kBAakB,aAAa,kBAakB,MAAM,kCAakC,2BAA2B,CAAC,CAAC,wEAAu  
E,EAAE,CAAC,WAAW,sBAAsB,sEAsE,8DAA8D,+BAA8B,wCAAwC,uEAsE,CAAC,iBAaiB,MAAM,uBA  
AuB,iBAaiB,MAAM,gCAAgC,kCAakC,MAAM,CAAC,sBAAsB,KAAK,CAAC,iBAaiB,MAAM,CAAC,6BAA  
6B,CAAC,yCAayC,8BAA6B,cAAc,kBAakB,CAAC,KAAK,EAAE,+EAA+E,4CAA2C,WAAW,CAAC,8EAA8E,  
iBAagB,oBAAoB,wBAAwB,8CAA8C,OAAO,SAAS,QAAQ,OAAO,SAAS,4CAA2C,iBAaiB,OAAO,CAAC,SA  
AS,cAAc,CAAC,SAAS,CAAC,aAAa,OAAO,CAAC,eAAe,CAAC,OAAO,CAAC,kCAaiC,GAAG,sBAAsB,eAAe  
,CAAC,SAAS,cAAc,OAAO,CAAC,eAAe,CAAC,qCAaqC,eAAe,QAAQ,CAAC,2CAA0C,6BAA4B,+BAA+B,w  
BAAwB,4DAA4D,OAAO,CAAC,oBAAoB,yBAayB,OAAO,CAAC,oBAAoB,KAAK,CAAC,OAAO,iBAaiB,2B  
AA0B,yDAayD,OAAO,CAAC,SAAS,CAAC,wBAAwB,QAAQ,8BAA8B,yBAawB,yBAayB,mEAAmE,CAAC,  
OAAO,OAAO,CAAC,gBAAgB,wBAAwB,mCAAmC,CAAC,8BAA8B,QAAQ,iCAaiC,CAAC,uBAauB,OAAO,  
CAAC,UAAAS,+IAA6I,+FAA8F,CAAC,wCAAwC,iCAaiC,sDAAsD,CAAC,OAAO,CAAC,kBAakB,4EAA4E,w  
BAAwB,CAAC,sCAAsC,wBAAwB,cAAc,CAAC,UAAU,CAAC,cAAc,oCAAoC,CAAC,EAAC,CAAC,KAAL,CA  
AC,mFAAmF,CAAC,4HAA2H,+GAA8G,kDAaiD,0BAA0B,eAAc,2BAA2B,YAAy,EAAC,CAAC,WAAW,kBA  
AkB,wBAAwB,CAAC,cAAa,WAAW,CAAC,CAAC,cAAc,QAAQ,0CAA0C,wBAAwB,6CAA4C,OAAO,MAAM,  
WAAW,CAAC,eAAe,YAAy,CAAC,yBAawB,MAAM,UAAU,KAAK,wBAAwB,CAAC,yBAawB,MAAM,OAA  
O,CAAC,CAAC,MAAM,SAAS,cAAc,CAAC,yBAawB,MAAM,OAAO,CAAC,aAAa,uBAauB,CAAC,wBAAwB  
,gCAAgC,OAAO,CAAC,qBAaqB,2CAA0C,eAAe,GAAG,MAAM,cAAc,CAAC,SAAQ,CAAC,CAAC,CAAC,2B  
AA2B,aAAa,WAAW,2BAA2B,6DAA4D,+BAA+B,CAAC,sBAaqB,SAAS,cAAc,CAAC,kCAAgC,6HAA2H,MA  
AM,CAAC,iDAaiD,CAAC,cAAc,EAAC,CAAC,CAAC,sBAAsB,CAAC,CAAC,iCAaiC,CAAC,mBAAmB,IAAI,  
CAAC,QAAO,CAAC,UAAU,CAAC,qBAaqB,EAAE,uBAAsB,CAAC,OAAO,SAAS,cAAc,CAAC,EAAE,EAAC,  
OAAO,aAAa,CAAC,wBAAwB,gCAAgC,wBAAwB,UAAU,CAAC,YAAy,CAAC,UAAU,CAAC,wBAauB,CAA  
C,uCAAuC,oEAAoE,SAAS,oBAAoB,KAAI,uBAauB,CAAC,wBAAwB,UAAU,CAAC,gCAAgC,+BAA+B,uBA  
AuB,CAAC,2BAA0B,UAAU,cAAc,CAAC,qCAaqC,CAAC,sBAAsB,wBAAwB,MAAM,CAAC,KAAK,CAAC,i  
BAaiB,CAAC,KAAK,CAAC,MAAM,8GAA8G,UAAAS,CAAC,8BAA8B,qEAAqE,6EAA6E,0BAA0B,OAAO,mE  
AAmE,CAAC,SAAS,cAAc,CAAC,wDAAwD,CAAC,gCAAgC,UAAU,uBAauB,CAAC,kBAakB,KAAK,CAAC,  
kBAakB,yBAawB,CAAC,WAAW,wDAauD,CAAC,uBAauB,CAAC,4CAA4C,UAAU,cAAc,CAAC,QAAQ,CA  
AC,GAAG,QAAO,GAAG,wBAAwB,uDAuD,OAAO,0DAayD,qEAAoE,oCAAoC,mBAAmB,MAAM,CAAC,k  
BAakB,wBAAwB,EAAE,CAAC,mBAAmB,uHAAuH,mLAAkL,yEAAwE,yBAawB,SAAS,eAAe,CAAC,6BAA6  
B,MAAM,CAAC,qEAAoE,wBAAwB,QAAQ,+DAA8D,IAAI,CAAC,uBAauB,CAAC,8BAA8B,CAAC,CAAC,iB  
AAiB,mFAAmF,+DAA+D,uBAauB,GAAG,yBAawB,QAAQ,mBAAmB,CAAC,IAAI,oCAAoC,KAAK,iBAaiB,  
GAAG,MAAM,mBAakB,GAAG,qBAaqB,CAAC,OAAM,GAAG,GAAG,WAAW,OAAO,CAAC,CAAC,4EAA0  
E,oBAAoB,KAAK,kBAaiB,EAAE,CAAC,IAAI,IAAI,aAAa,GAAG,wBAAwB,yGAayG,iBAaiB,CAAC,uBAau  
B,QAAQ,sFAaqF,+FAA+F,CAAC,kFAakF,KAAK,kBAaiB,EAAE,CAAC,QAAQ,yJAAwJ,CAAC,uBAauB,CA  
AC,sEAAqE,mDAAmD,CAAC,uBAauB,gGAAGg,iBAaiB,CAAC,iFAaiF,CAAC,uBAauB,CAAC,CAAC,IAAI,  
qBAaqB,GAAG,WAAW,CAAC,CAAC,EAAE,CAAC,mBAAmB,CAAC,CAAC,CAAC,CAAC,CAAC,2GAA0G,  
CAAC,KAAK,+FAA+F,kCAakC,2BAA2B,uBAauB,CAAC,MAAM,EAAE,CAAC,wCAAwC,GAAG,QAAQ,aA  
Aa,CAAC,GAAG,GAAG,qBAaqB,8BAA8B,MAAM,wBAAwB,EAAE,IAAI,CAAC,4GAA2G,CAAC,sEAsE,C  
AAC,OAAO,WAAW,CAAC,IAAI,uFAAuF,CAAC,CAAC,CAAC,EAAC,iBAaiB,MAAM,CAAC,CAAC,uBAau  
B,CAAC,6CAA6C,0BAA0B,CAAC,4GAA4G,2EAA2E,mBAAmB,KAAK,OAAO,6DAA6D,CAAC,qCAaqC,kF

AAkF,aAAa,wFAAwF,UAAU,WAAW,CAAC,CAAC,qBAAqB,CAAC,uBAAuB,sBAAsB,CAAC,6CAA6C,CAA  
C,aAAa,4BAA4B,CAAC,IAAI,mBAAmB,wBAAwB,kBAakB,CAAC,iDAaiD,CAAC,QAAQ,IAAI,2CAA2C,0B  
AA0B,CAAC,2CAA2C,CAAC,SAAS,CAAC,gCAAgC,CAAC,0BAAyB,CAAC,0BAA0B,yDAAwD,CAAC,gGA  
AiJ,CAAC,iCAAiC,CAAC,2FAA2F,aAAa,KAAK,cAAc,UAAU,SAAS,SAAS,KAAK,CAAC,OAAO,IAAI,sCAAs  
C,QAAQ,CAAC,uBAAuB,CAAC,SAAS,eAAe,EAAE,sCAAsC,wBAAwB,CAAC,+BAA+B,CAAC,oGAAoG,CA  
AC,4BAA4B,UAAU,CAAC,CAAC,CAAC,UAAU,CAAC,wBAAuB,uBAAuB,CAAC,SAAS,cAAc,CAAC,aAAa,  
CAAC,SAAS,CAAC,aAAa,CAAC,eAAe,0CAA0C,cAAc,CAAC,SAAS,CAAC,4FAA2F,kFAAkF,CAAC,sDAAs  
D,UAAU,aAAa,CAAC,SAAS,CAAC,oBAAoB,cAAc,CAAC,wBAAwB,CAAC,SAAS,CAAC,yBAAyB,CAAC,w  
BAAwB,iFAAgF,sBAAsB,CAAC,aAAa,CAAC,SAAS,CAAC,aAAa,CAAC,eAAe,QAAQ,oEAAoE,EAAE,2CAA  
2C,CAAC,SAAQ,eAAe,SAAS,+BAA+B,CAAC,CAAC,4FAA4F,aAAa,CAAC,SAAS,CAAC,2BAA0B,CAAC,uB  
AAuB,4BAA4B,cAAc,CAAC,SAAS,wBAAwB,QAAQ,CAAC,qFAAqF,+DAA8D,iHAAiH,CAAC,mEAAmE,CA  
AC,uBAAuB,CAAC,4BAA4B,6DAA2D,aAAa,CAAC,SAAS,CAAC,aAAa,CAAC,eAAe,QAAQ,cAAc,CAAC,8B  
AA8B,EAAE,wEAAwE,CAAC,SAAQ,CAAC,0GAA0G,SAAS,SAAS,EAAE,YAAy,CAAC,WAAW,uBAAuB,C  
AAC,uBAAuB,CAAC,2CAA2C,CAAC,2CAA2C,oDAAoD,CAAC,2DAA0D,CAAC,CAAC,uDAAuD,2CAA2C,Q  
AAQ,QAAQ,uFAAuF,yCAAwC,sBAAqB,SAAS,0BAAyB,SAAS,QAAQ,wBAAwB,MAAM,SAAS,qGAAqG,CA  
AC,0BAA0B,SAAS,qCAAqC,eAAe,CAAC,QAAQ,QAAQ,sBAAsB,cAAc,CAAC,QAAQ,QAAQ,SAAS,uHAAuH  
,EAAE,YAAy,CAAC,WAAW,uBAAuB,CAAC,EAAE,yKAAwK,wBAAwB,oDAAoD,CAAC,CAAC,wBAAwB,  
CAAC,wBAAuB,CAAC,0QAAyQ,8CAA8C,CAAC,uBAAuB,CAAC,+BAA+B,CAAC,yCAAyC,eAAe,wBAAwB  
,yBAAyB,SAAS,8BAA8B,uBAAuB,oEAAoE,cAAc,kGAakG,CAAC,QAAQ,2FAA2F,uDAAsD,wBAAwB,4CA  
A4C,0BAA0B,0BAA0B,CAAC,uBAAsB,iBAAiB,OAAO,+DAA+D,uBAAuB,uBAAuB,KAAK,wBAAwB,wBAA  
wB,MAAM,YAAy,CAAC,MAAM,CAAC,iBAAiB,kBAakB,CAAC,mBAAmB,qCAAqC,GAAG,GAAG,eAAe,G  
AAG,MAAM,gCAAgC,eAAc,CAAC,oCAAoC,oBAAoB,wBAAwB,mBAAmB,gBAAe,GAAG,MAAM,CAAC,iB  
AAiB,4DAA4D,CAAC,sGAAsG,eAAa,CAAC,QAAQ,CAAC,iFAAiF,yFAAyF,CAAC,CAAC,wFAAwF,mEAAm  
E,qNAAoN,mLAAmL,yBAAyB,qCAAqC,sBAAsB,CAAC,CAAC,4EAA2E,qCAAqC,6DAA4D,CAAC,2BAA2B,  
CAAC,yBAAyB,SAAS,UAAU,CAAC,IAAI,qDAAqD,CAAC,WAAU,CAAC,wFAAwF,2DAA2D,CAAC,uBAAu  
B,uBAAuB,2BAA2B,CAAC,0CAA0C,CAAC,4BAA2B,CAAC,CAAC,sCAAsC,8BAA6B,wBAAwB,qBAAqB,G  
AAG,CAAC,oFAAoF,kDAakD,SAAS,8BAA8B,CAAC,CAAC,kGAAGG,+DAA+D,YAAy,CAAC,YAAy,yCAA  
yC,CAAC,EAAE,CAAC,QAAQ,GAAG,oBAAoB,oBAAoB,CAAC,yFAAyF,qDAAqD,CAAC,UAAU,CAAC,CA  
AC,wBAAwB,CAAC,QAAQ,CAAC,uBAAuB,aAAa,CAAC,IAAI,IAAI,CAAC,CAAC,KAAK,CAAC,QAAO,CA  
AC,UAAU,qBAAqB,kDAakD,CAAC,CAAC,IAAI,MAAM,GAAG,CAAC,QAAQ,CAAC,wBAAwB,2BAA2B,c  
AAc,CAAC,yCAAyC,SAAS,CAAC,GAAG,GAAE,OAAO,+BAA+B,8BAA8B,CAAC,yDAAyD,CAAC,2BAA2B,  
CAAC,GAAG,oBAAoB,uBAAuB,CAAC,+BAA+B,oCAAoC,CAAC,sBAAsB,oBAAoB,kEAAkE,wBAAwB,+BA  
A+B,uBAAuB,CAAC,aAAa,KAAK,MAAM,aAAa,WAAW,wBAAwB,iGAAiG,uDAAsD,CAAC,cAAc,CAAC,0C  
AA0C,CAAC,4CAA4C,CAAC,kCAakC,0BAA0B,wBAAuB,CAAC,MAAM,EAAE,kCAakC,CAAC,SAAS,wBA  
AwB,CAAC,wBAAwB,cAAc,CAAC,uBAAuB,0BAA0B,CAAC,sBAAsB,CAAC,GAAG,eAAe,yEAAyE,CAAC,6  
BAA6B,cAAc,4BAA4B,CAAC,wBAAwB,eAAe,CAAC,wBAAwB,2CAA2C,CAAC,QAAQ,0BAA0B,CAAC,+B  
AA8B,+BAA+B,CAAC,mFAAmF,CAAC,kBAakB,KAAK,CAAC,6RAA6R,8DAA8D,CAAC,OAAO,eAAe,CAA  
C,CAAC,CAAC,EAAE,mBAAmB,GAAG,EAAC,CAAC,yBAAwB,CAAC,uBAAuB,CAAC,mCAAmC,oBAAoB,  
CAAC,EAAE,oDAAoD,CAAC,wEAAwE,kDAakD,cAAc,OAAO,CAAC,CAAC,sBAAsB,CAAC,CAAC,0BAA0  
B,CAAC,gBAAgB,CAAC,gCAAgC,CAAC,uBAAuB,KAAK,CAAC,QAAQ,CAAC,CAAC,eAAe,CAAC,CAAC,  
KAAK,CAAC,WAAW,KAAK,EAAC,CAAC,gCAAgC,wBAAwB,EAAE,CAAC,SAAS,GAAG,QAAQ,CAAC,Y  
AAy,EAAE,CAAC,SAAS,CAAC,YAAy,CAAC,EAAE,CAAC,IAAI,CAAC,IAAI,WAAW,CAAC,IAAI,GAAG,  
CAAC,QAAQ,IAAI,CAAC,GAAG,OAAO,GAAG,MAAM,mBAAmB,KAAK,CAAC,kBAakB,QAAQ,CAAC,G  
AAG,SAAS,GAAG,SAAQ,CAAC,CAAC,iEAAiE,wFAAwF,CAAC,mBAAmB,gBAAgB,uBAAuB,6BAA6B,CA  
AC,CAAC,+BAA+B,EAAE,CAAC,qCAAqC,EAAE,CAAC,iBAAiB,sBAAsB,EAAE,CAAC,iBAAiB,EAAE,CAA  
C,qBAAqB,EAAE,4BAA4B,CAAC,CAAC,CAAC,qBAAqB,EAAE,+BAA+B,CAAC,uBAAuB,EAAE,0BAA0B,4  
GAA4G,EAAE,oBAAoB,CAAC,uBAAuB,oBAAoB,CAAC,uBAAuB,yDAAyD,4BAA4B,uBAAuB,gCAAgC,wB  
AAwB,4DAA4D,oBAAoB,sDAAsD,yFAAyF,CAAC,iBAAiB,gJAAGJ,CAAC,uBAAuB,CAAC,UAAU,SAAS,wB

AAwB,iBAAiB,MAAM,CAAC,QAAQ,eAAe,CAAC,CAAC,OAAO,GAAG,CAAC,4BAA4B,MAAM,kBAAkB,SA  
AAO,CAAC,gBAAgB,EAAE,CAAC,CAAC,sBAAsB,CAAC,UAAU,SAAS,CAAC,eAAe,wBAAwB,qBAAqB,EA  
AE,UAAU,QAAQ,CAAC,YAAY,0BAA0B,oBAAoB,aAAa,IAAI,CAAC,uBAAuB,SAAS,GAAG,CAAC,CAAC,+  
FAA+F,mCAAmC,qHAAqH,wCAAwC,WAAW,SAAS,yFAAyF,CAAC,IAAI,GAAG,GAAG,QAAQ,IAAI,CAAC  
,CAAC,OAAO,CAAC,EAAE,SAAS,CAAC,oBAAoB,GAAG,CAAC,oCAAoC,GAAG,qBAAqB,GAAG,EAAE,C  
AAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,SAAS,SAAS,CAAC,GAAG,uBAAuB,CAAC,kCAAgC,IAAI,iB  
AAiB,UAAU,0EAA0E,mBAAmB,IAAG,2EAA2E,CAAC,wBAAwB,UAAU,6BAA2B,CAAC,YAAY,0JAAyJ,SA  
AS,6CAA4C,4BAA4B,gEAA+D,mCAAmC,MAAM,SAAS,CAAC,QAAQ,GAAG,CAAC,CAAC,CAAC,mBAAm  
B,0BAAyB,SAAS,CAAC,uBAAuB,aAAa,UAAU,4BAA4B,yBAAyB,0BAA0B,CAAC,aAAa,UAAU,uBAAuB,U  
AAU,0FAA0F,kCAAKC,mCAAmC,MAAM,qBAAqB,SAAS,CAAC,CAAC,aAAa,CAAC,iBAAiB,MAAM,oBAA  
oB,CAAC,QAAQ,KAAK,kBAAkB,MAAM,iCAAiC,iCAAiC,MAAM,qBAAqB,UAAU,CAAC,CAAC,aAAa,kBA  
AkB,MAAM,kBAAkB,EAAE,QAAQ,KAAK,kBAAkB,MAAM,gCAAgC,CAAC,CAAC,aAAa,kBAAkB,MAAM,  
qBAAqB,SAAS,CAAC,KAAK,kBAAkB,MAAM,0BAA0B,QAAQ,CAAC,CAAC,uFAAuF,uBAAuB,MAAM,wB  
AAwB,OAAO,CAAC,eAAe,CAAC,OAAO,CAAC,OAAO,uEAAuE,mBAAmB,wBAAwB,YAAY,CAAC,YAAY,  
WAAW,wBAAwB,WAAW,CAAC,qDAAqD,GAAG,MAAM,YAAY,KAAK,sCAAqC,eAAe,uCAAsC,0BAA0B,o  
CAAoC,CAAC,2BAA2B,mIAAmI,6FAA6F,+JAA+J,CAAuB,4CAA4C,UAAU,EAAE,IAAI,wCAAwC,wDAAwD  
,wCAAwC,mBAAiB,UAAU,QAAO,CAAC,uDAAuD,EAAE,sBAAsB,CAAC,WAAU,CAAC,oDAAkD,gBAAgB,  
CAAC,OAAO,gBAAgB,CAAC,QAAQ,IAAI,CAAC,oBAAoB,CAAC,uBAAuB,CAAC,CAAC,mBAAmB,EAAE,  
CAAC,0EAA0E,EAAE,CAAC,gBAAgB,CAAC,IAAI,wBAAwB,wBAAwB,CAAC,wBAAwB,YAAY,YAAY,mJ  
AAmJ,uDAAuD,uDAAuD,8CAA4C,YAAW,8DAA8D,qCAAqC,0DAA0D,IAAI,wBAAwB,qDAAqD,IAAI,CAA  
C,mBAAmB,CAAC,uFAAsF,+BAA+B,4NAA2N,OAAO,MAAM,4EAA4E,4BAA4B,wBAAwB,eAAe,QAAQ,iG  
AAiG,4IAA4I,wBAAwB,sBAAsB,GAAG,MAAM,CAAC,IAAI,CAAC,2IAA2I,8CAA8C,+BAA+B,CAAC,sKAA  
qK,QAAQ,yBAAyB,+BAA+B,CAAC,CAAC,KAAK,eAAe,gCAAgC,wBAAwB,iBAAiB,oCAAoC,CAAC,uBAA  
uB,8CAA8C,sCAAsC,OAAO,CAAC,gBAAgB,QAAQ,sDAAsD,wBAAwB,8BAA8B,sEAAeE,6CAA6C,+BAA8B  
,CAAC,wFAAwF,CAAC,IAAI,CAAC,CAAC,4FAA4F,KAAK,wBAAwB,eAAe,CAAC,mCAAmC,kBAAkB,CAA  
C,KAAK,0BAA0B,mBAAmB,QAAQ,QAAQ,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,  
QAAQ,QAAQ,SAAS,eAAe,CAAC,QAAQ,CAAC,KAAK,GAAG,QAAQ,eAAe,UAAU,QAAQ,CAAC,KAAK,GA  
AG,QAAQ,QAAQ,QAAQ,CAAC,KAAK,GAAG,QAAQ,QAAQ,QAAQ,CAAC,KAAK,EAAE,CAAC,KAAK,EA  
AE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,MAAM,QAAQ,UAAU,cAA  
c,SAAS,UAAU,SAAS,eAAe,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,UAAU,S  
AAS,eAAe,SAAS,SAAS,SAAS,SAAS,UAAU,QAAQ,CAAC,KAAK,GAAG,QAAQ,QAAQ,QAAQ,CAAC,KAA  
K,EAAE,CAAC,QAAO,CAAC,eAAe,SAAS,CAAC,SAAS,QAAQ,QAAQ,SAAS,MAAM,SAAS,UAAU,SAAS,eA  
Ae,SAAS,UAAU,QAAQ,CAAC,QAAQ,QAAQ,QAAQ,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,iBAAiB,kBA  
AkB,CAAC,OAAO,QAAQ,QAAQ,QAAQ,EAAE,CAAC,OAAO,gBAAgB,QAAQ,sCAAsC,QAAQ,QAAQ,UAA  
U,kCAAKC,0CAA0C,qBAAqB,qBAAqB,UAAU,MAAM,mBAAmB,mBAAmB,mBAAmB,kBAAkB,mBAAmB,k  
BAAkB,CAAC,QAAQ,SAAS,CAAC,OAAO,OAAO,EAAE,CAAC,OAAO,OAAO,EAAE,KAAK,mBAAmB,kDA  
AkD,qBAAqB,GAAG,CAAC,SAAQ,CAAC,2BAA2B,gEAAgE,0GAA0G,kBAAkB,CAAC,kBAAkB,CAAC,4KA  
A4K,2BAA2B,uBAAuB,CAAC,GAAG,CAAC,uBAAuB,uGAAuG,CAAC,kLAAkL,cAAc,uBAAuB,mBAAmB,iB  
AAiB,qBAAqB,IAAI,8CAA8C,CAAC,wEAAwE,8HAA6H,CAAC,UAAU,CAAC,yBAAyB,0BAAyB,CAAC,uBA  
AuB,OAAO,gBAAgB,CAAC,UAAU,CAAC,6BAA6B,+EAA8E,kEAAkE,CAAC,UAAU,CAAC,uBAAuB,CAAC,  
8HAA6H,CAAC,UAAU,CAAC,sBAAsB,OAAO,uDAAsD,CAAC,MAAM,CAAC,kDAAkD,CAAC,UAAU,CAA  
C,yBAAyB,iBAAiB,CAAC,wDAAuD,CAAC,MAAM,CAAC,uBAAuB,CAAC,UAAU,CAAC,aAAa,+BAA+B,wB  
AAuB,wBAAwB,kBAAkB,CAAC,UAAU,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,6CAA6C,CAAC,UA  
AU,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,6CAA6C,CAAC,UAAU,CAAC,yBAAyB,0BAAyB,CAAC,u  
BAAuB,OAAO,gBAAgB,CAAC,UAAU,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,6CAA6C,CAAC,UAA  
U,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,6CAA6C,CAAC,UAAU,CAAC,YAAY,CAAC,gBAAgB,6CA  
A4C,QAAQ,MAAM,CAAC,iBAAiB,CAAC,UAAU,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,kBAAkB,CAA  
C,UAAU,CAAC,wBAAwB,CAAC,gBAAgB,uDAAsD,OAAO,uBAAuB,CAAC,UAAU,CAAC,yBAAyB,0BAAy

B,CAAC,uBAAuB,OAAO,gBAAGB,CAAC,UAAU,CAAC,wBAAwB,CAAC,gBAAGB,uDAAsD,OAAO,uBAAuB,CAAC,UAAU,CAAC,YAAY,CAAC,gBAAGB,6CAA4C,QAAQ,MAAM,CAAC,iBAAiB,CAAC,UAAU,CAAC,yBAAYB,+BAA+B,CAAC,sEAAqE,CAAC,8BAA8B,CAAC,UAAU,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,6CAA6C,CAAC,UAAU,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,gBAAGB,CAAC,UAAU,CAAC,2CAA2C,CAAC,0DAAyD,CAAC,OAAO,wBAAwB,CAAC,UAAU,CAAC,YAAY,CAAC,gBAAGB,6CAA4C,QAAQ,MAAM,CAAC,iBAAiB,CAAC,UAAU,CAAC,yBAAYB,iBAAiB,CAAC,wDAAuD,CAAC,MAAM,CAAC,uBAAuB,CAAC,UAAU,CAAC,2DAA2D,4CAA2C,+BAA+B,gCAAGC,CAAC,UAAU,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,6CAA6C,CAAC,UAAU,CAAC,YAAY,iBAAiB,yBAAwB,iBAAiB,CAAC,MAAM,CAAC,MAAM,CAAC,iBAAiB,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,2CAA2C,CAAC,0DAAyD,CAAC,OAAO,yBAAYB,WAAW,CAAC,YAAY,iBAAiB,yBAAwB,iBAAiB,CAAC,MAAM,CAAC,MAAM,CAAC,iBAAiB,WAAW,CAAC,sBAAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,6CAA6C,qCAAoC,OAAO,iBAAiB,iCAAiC,WAAW,CAAC,wBAAwB,CAAC,gBAAGB,uDAAsD,OAAO,wBAAwB,WAAW,CAAC,yDAAyD,CAAC,wEAAuE,CAAC,gCAAGC,WAAW,CAAC,YAAY,CAAC,gBAAGB,6CAA4C,QAAQ,MAAM,CAAC,kBAaKB,WAAW,CAAC,sBAAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,yBAAYB,iBAAiB,CAAC,wDAAuD,CAAC,MAAM,CAAC,wBAAwB,WAAW,CAAC,sBAAsB,CAAC,wBAAwB,0BAAYB,8CAA8C,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,sBAAsB,CAAC,wBAAwB,0BAAYB,8CAA8C,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,uBAAuB,CAAC,mGAaKB,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,sBAAsB,CAAC,wBAAwB,0BAAYB,8CAA8C,WAAW,CAAC,sBAAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,yBAAYB,+BAA+B,CAAC,sEAAqE,CAAC,+BAA+B,WAAW,CAAC,yBAAYB,+BAA+B,CAAC,sEAAqE,CAAC,+BAA+B,WAAW,CAAC,sBAAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,YAAY,CAAC,gBAAGB,6CAA4C,QAAQ,MAAM,CAAC,kBAaKB,WAAW,CAAC,YAAY,iBAAiB,yBAAwB,iBAAiB,CAAC,MAAM,CAAC,MAAM,CAAC,iBAAiB,WAAW,CAAC,MAAM,CAAC,iBAAiB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,YAAY,iBAAiB,yBAAwB,iBAAiB,CAAC,MAAM,CAAC,MAAM,CAAC,iBAAiB,WAAW,CAAC,sBAAsB,CAAC,wBAAwB,0BAAYB,8CAA8C,WAAW,CAAC,sBAAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,aAAa,+BAA+B,wBAAuB,wBAAwB,mBAAmB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,YAAY,CAAC,gBAAGB,6CAA4C,QAAQ,MAAM,CAAC,kBAaKB,WAAW,CAAC,uBAAuB,CAAC,+HAA8H,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,yBAAYB,iBAAiB,CAAC,wDAAuD,CAAC,MAAM,CAAC,wBAAwB,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,uBAAuB,CAAC,CAAC,uBAAsB,CAAC,8CAA8C,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAAW,CAAC,sBAAsB,CAAC,wBAAwB,0BAAYB,8CAA8C,WAAW,CAAC,yBAAYB,iBAAiB,CAAC,wDAAuD,CAAC,MAAM,CAAC,wBAAwB,WAAW,CAAC,YAAY,CAAC,gBAAGB,6CAA4C,QAAQ,MAAM,CAAC,kBAaKB,WAAW,CAAC,yBAAYB,0BAAYB,CAAC,uBAAuB,OAAO,iBAAiB,WAA

W,CAAC,sBAAsB,CAAC,MAAM,0DAAyD,OAAO,qDAAqD,WAAW,CAAC,2LAA0L,WAAW,CAAC,yBAAy  
B,iBAAiB,CAAC,wDAAuD,CAAC,MAAM,CAAC,wBAAwB,WAAW,CAAC,6BAA6B,+EAA8E,mEAAmE,WA  
AW,CAAC,+PAA8P,WAAW,CAAC,2QAA0Q,WAAW,CAAC,2PAA0P,WAAW,CAAC,uNAAsN,WAAW,CAA  
C,uNAAsN,WAAW,CAAC,mOAAkO,WAAW,CAAC,mPAAkP,WAAW,CAAC,2LAA0L,WAAW,CAAC,yBAA  
yB,+BAA+B,CAAC,sEAAqE,CAAC,+BAA+B,WAAW,CAAC,6BAA6B,+EAA8E,mEAAmE,WAAW,CAAC,sB  
AAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,wBAAwB,CAAC,gBAAgB,uDAAsD,OAAO,  
wBAAwB,WAAW,CAAC,sBAAsB,CAAC,wBAAwB,0BAAyB,8CAA8C,WAAW,CAAC,+LAA8L,WAAW,CAA  
C,sBAAsB,uBAAuB,CAAC,wBAAuB,CAAC,4CAA4C,WAAW,CAAC,iNAAiN,sBAAsB,CAAC,CAAC,wBAA  
wB,yCAAyC,gCAAgC,cAAc,UAAU,wBAAwB,iBAAiB,CAAC,KAAK,+DAA+D,QAAO,8CAA8C,oBAAoB,CA  
AC,wDAAuD,CAAC,MAA4B,wDAAwD,8EAA8E,CAAC,MAAM,wBAAwB,sBAAsB,EAAE,CAAC,qDAAqD,  
CAAC,KAAK,4BAA4B,aAAa,6DAA6D,CAAC,8BAA8B,wBAAuB,WAAW,EAAE,CAAC,4CAA4C,YAAY,8C  
AA6C,CAAC,uBAAoB,MAAM,GAAE,QAAQ,CAAC,OAAO,iBAAiB,OAAO,wBAAwB,wBAAwB,aAAa,WAA  
W,GAAG,wBAAwB,4EAA4E,yBAA+B,CAAC,MAAM,CAAC,iCAAiE,MAAM,CAAC,iBAAiB,gBAAgB,CAAC  
,MAAM,CAAC,WAAU,OAAO,CAAC,wBAAuB,CAAC,qBAAqB,CAAC,2BAA2B,aAAa,kDAAkD,UAAU,CAA  
C,CAAC,MAAM,yBAAyB,EAAE,QAAO,wBAAwB,sCAAsC,OAAM;AACx3mE;AACa;AACa,EAAE,OAAO,6  
BAA6B,CAAC,KAAK;AAC5C,CAAC;AACD,EAAE;AACF,CAAC,GAAG,CAAC;AAEH,cAAc,GAAG,6BAA6  
B;;;AChBzC,MAAM,kBAAkB,GAAG,8iGAA8iG;;;ACChlG,IAAI,iBAAiB,GAAG,CAAC,WAAW;AACpC,EAA  
E,IAAI,UAAU,GAAG,OAAO,QAAQ,KAAK,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,C  
AAC,GAAG,GAAG,SAAS,CAAC;AACtH,EAAE,IAAI,OAAO,UAAU,KAAK,WAAW,EAAE,UAAU,GAAG,UA  
AU,IAAI,UAAU,CAAC;AAC/E,EAAE;AACF,SAAS,iBAAiB,EAAE;AAC5B,EAAE,iBAAiB,GAAG,iBAAiB,IA  
AI,EAAE,CAAC;AAC9C;AACa,IAAI,MAAM,CAAC,OAAO,iBAAiB,GAAG,WAAW,CAAC,iBAAiB,CAAC,E  
AAE,CAAC,IAAI,mBAAmB,CAAC,kBAAkB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,  
SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,mBAAmB,CAAC,OAAO,CAAC,kBAAkB,CAAC,OAAM,CAAC,C  
AAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GA  
AG,MAAM,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAA  
C,GAAG,EAAC,CAAC,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAgB,CAAC,IAAI,K  
AAK,CAAC,SAAS,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAAkB,CAAC,K  
AAK,CAAC,IAAI,qBAAqB,CAAC,KAAK,CAAC,IAAI,mBAAmB,CAAC,KAAK,CAAC,IAAI,oBAAoB,CAAC,  
KAAK,CAAC,kBAAkB,CAAC,OAAO,MAAM,GAAG,QAAQ,CAAC,qBAAqB,CAAC,OAAO,aAAa,GAAG,UA  
AU,CAAC,mBAAmB,CAAC,OAAO,OAAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,  
EAAE,OAAO,OAAO,CAAC,QAAQ,CAAC,IAAI,GAAG,QAAQ,CAAC,oBAAoB,CAAC,CAAC,kBAAkB,EAA  
E,CAAC,mBAAmB,EAAE,CAAC,qBAAqB,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IAAI,  
CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAY,CAAC,CAAC,  
IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,eAAe,CAAC,IAAI,KAAK,KAAK,CAAC,SAAS,CAAC,UAAU,CAAgB  
,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,eAA  
e,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAL,CAAC,e  
AAe,CAAC,SAAS,CAAC,IAAG,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAA  
C,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC  
,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAA  
Q,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM  
,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CA  
AC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,  
UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,CAAC  
,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,OAA  
O,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,GAAG,EAAC,CAAC,UAA  
U,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,  
CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAAY,UAAU,CAAC,CAAC,CAAC,  
MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,oBAAoB,CAAC,KAAK,CAAC,

CAAC,KAAC,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,4BAA4B,EAAC,CAAC,KAAC,GAAG,oBAAoB,CAAC,CAAC,GAAG,OAAO,IAAI,EAAE,WAAW,CAAC,CAAC,KAAC,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,OAAO,UAAU,GAAG,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,GAAG,OAAO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WAAU,CAAC,KAAC,GAAG,OAAO,SAAS,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,OAAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAAC,CAAC,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,EAAC,CAAC,GAAG,OAAO,KAAC,GAAG,WAAW,CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,KAAC,CAAC,OAAO,CAAC,IAAI,CAAC,OAAO,CAAC,KAAC,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAAC,GAAG,kBAaKB,EAAE,qBAAqB,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAAC,KAAC,CAAC,KAAC,GAAG,OAAO,QAAQ,GAAG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,GAAG,UAAU,CAAC,CAAC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,KAAC,CAAC,eAAe,CAAC,GAAE,CAAC,CAAC,KAAC,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAC,CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,UAAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAC,CAAC,GAAG,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAO,IAAI,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAAa,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,KAAC,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG,OAAO,wBAAwB,yCAAyC,gEAA8E,eAAe,iCAAiC,EAAC,yBAAyB,2BAA2B,gFAAgF,gEAAgE,SAAS,uBAAuB,SAAS,CAAC,eAAe,iBAAiB,QAAQ,CAAC,SAAS,YAAY,GAAG,EAAE,oBAAoB,0BAA0B,aAAy,sBAAyB,+BAA+B,4BAA4B,YAAY,CAAC,iCAAiC,kDAaKD,8CAA8C,oCAAoC,YAAY,YAAY,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,aAAa,EAAE,EAAE,4BAA4B,CAAC,CAAC,CAAC,cAAc,aAAa,iBAAiB,QAAQ,CAAC,CAAC,gBAAgB,CAAC,CAAC,CAAC,cAAY,CAAC,CAAC,MAAM,CAAC,CAAC,EAAC,CAAC,+BAA+B,4BAA4B,aAAa,oBAAoB,0DAA0D,mBAAmB,EAAE,+CAA+C,wBAAwB,CAAC,oDAAoD,aAAa,OAAO,uBAAuB,oEAAyE,CAAC,yEAAyE,8DAA8D,iEAAiE,EAAE,QAAQ,QAAQ,EAAE,uBAAuB,EAAE,eAAe,aAAa,oDAAoD,CAAC,gBAAe,mBAAmB,MAAM,WAAW,EAAE,KAAC,EAAE,MAAM,CAAC,KAAC,sBAAyB,EAAE,eAAe,WAAW,EAAE,EAAE,OAAO,YAAY,KAAC,qBAAqB,EAAE,GAAG,KAAC,EAAE,EAAE,eAAe,WAAW,EAAE,EAAE,OAAO,YAAY,EAAE,EAAE,EAAE,GAAG,KAAC,GAAG,EAAE,EAAE,EAAE,UAAQ,EAAE,EAAE,EAAE,KAAC,GAAG,EAAE,EAAE,GAAG,EAAE,EAAE,UAAU,EAAE,EAAE,OAAO,QAAQ,KA

AK,sBAAsB,EAAE,aAAW,GAAG,YAAy,4BAA4B,EAAE,EAAE,SAAS,OAAO,EAAC,CAAC,qDAAqD,wDAA  
wD,EAAE,6DAA6D,KAAK,iBAAiB,CAAC,CAAC,SAAS,uDAAuD,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,  
aAAa,EAAE,CAAC,MAAM,gBAAgB,CAAC,CAAC,MAAM,OAAO,GAAG,OAAO,MAAM,kBAAkB,EAAE,CA  
AC,CAAC,CAAC,OAAO,EAAE,CAAC,SAAS,EAAE,EAAE,aAAY,KAAK,WAAW,0BAA0B,EAAE,CAAC,CA  
AC,YAAW,MAAM,WAAW,EAAE,0BAA0B,EAAE,KAAK,EAAE,EAAE,aAAa,EAAE,KAAK,CAAC,EAAE,aA  
AY,OAAO,WAAW,EAAE,0BAA0B,EAAE,KAAK,EAAE,EAAE,cAAc,EAAE,KAAK,EAAE,EAAE,EAAE,cAA  
c,EAAE,KAAK,CAAC,EAAE,mBAAiB,EAAE,0BAA0B,EAAE,KAAK,EAAE,EAAE,cAAc,EAAE,KAAK,EAA  
E,EAAE,GAAG,cAAc,EAAE,KAAK,EAAE,EAAE,EAAE,cAAc,EAAE,KAAK,CAAC,EAAE,GAAE,aAAa,CAA  
C,CAAC,yEAAyE,4DAA4D,0CAA0C,wBAAwB,mBAAkB,CAAC,UAAU,KAAK,UAAU,CAAC,CAAC,CAAC,  
EAAE,UAAU,CAAC,mBAAkB,+GAA+G,2BAA2B,yBAAYB,iBAAiB,2BAA2B,iBAAiB,2BAA2B,iBAAiB,2BA  
A2B,kBAAkB,6BAA6B,kBAAkB,6BAA6B,kBAAkB,8BAA8B,kBAAkB,8BAA8B,8CAA6C,0CAA0C,kBAAkB,  
kBAAkB,qBAaQb,kBAA+C,oCAAoC,GAAE,CAAC,CAAC,iBAAiB,qBAaQb,CAAC,4BAA4B,4BAA4B,CAAC  
,iBAAiB,CAAC,uBAAuB,QAAQ,6BAA6B,OAAO,EAAE,EAAC,mCAAmC,uBAAsB,kCAA0D,mBAAkB,kCAA  
kC,mBAAkB,sBAAsB,CAAC,6BAA6B,6BAA6B,CAAC,kBAAkB,CAAC,wBAAwB,QAAQ,+BAA+B,OAAO,E  
AAE,EAAC,oCAAoC,wBAAuB,EAAE,uBAAuB,EAAE,yBAAwB,EAAE,wBAAwB,EAAE,sBAaQb,CAAC,2D  
AAyF,EAAE,iBAAiB,qCAAqC,CAAC,iCAAiC,iBAAiB,EAAC,+BAA+B,EAAE,iBAAiB,qCAAqC,CAAC,iCAA  
iC,iBAAiB,qBAAoB,EAAE,CAAC,0BAAwH,wEAAwE,GAAE,CAAC,0BAA0B,EAAE,2BAA2B,EAAE,sBAAs  
B,qBAaQb,CAAC,kBAAkB,MAAM,OAAM,EAAE,WAAW,mFAAgG,iCAAiC,wBAAwB,8BAA8B,CAAC,8CA  
A8C,CAAC,sBAAsB,CAAC,kBAAkB,CAAC,KAAK,gIAAgI,kGAAG,2CAA2C,CAAC,6FAA4F,KAAK,CAAC,  
GAAG,IAAI,yCAAYC,0BAA0B,kCAAKC,MAAM,qEAAmE,UAAU,CAAC,kCAAiC,CAAC,4DAA4D,oHAAoH,  
uBAAuB,CAAC,aAAa,kEAAiE,CAAC,iCAAiC,CAAC,qDAAqD,IAAI,KAAI,sBAAsB,yFAAYF,uBAAuB,WAA  
U,EAAC,CAAC,6BAA6B,+CAA+C,0BAA0B,IAAI,KAAK,CAAC,6DAA6D,2EAA2E,CAAC,0EAA0E,CAAC,m  
MAAqO,uDAAuD,MAAM,CAAC,MAAM,CAAC,wBAAwB,MAAM,gDAAGD,OAAO,CAAC,MAAM,oCAAmC  
,0IAA0I,mBAAmB,uDAAuD,iBAAiB,uDAAuD,4DAA4D,wKAaWk,CAAC,oEAAmE,CAAC,4BAA4B,gFAAgF  
,oEAAoE,4DAA4D,CAAC,UAAU,8BAA8B,CAAC,iBAAiB,SAAS,CAAC,sBAAsB,CAAC,kBAAkB,UAAU,UA  
AU,UAAU,CAAC,gBAAgB,CAAC,SAAS,SAAS,eAAe,iBAAiB,4BAA4B,UAAU,CAAC,SAAS,mBAAiB,CAAC  
,SAAS,CAAC,QAAQ,CAAC,UAAU,MAAK,CAAC,UAAU,gBAAgB,cAAc,iBAAgB,gBAAgB,WAAU,gCAAgC,  
KAAK,iBAAiB,UAAU,SAAS,UAAU,mCAAmC,uBAAuB,mCAAmC,CAAC,UAAU,UAAU,CAAC,iBAAiB,WA  
AW,uCAAuC,iBAAiB,CAAC,QAAQ,EAAE,UAAU,yGAAyG,gDAAGD,cAAc,OAAO,EAAE,CAAC,UAAU,CA  
AC,iCAAiC,CAAC,WAAW,EAAE,2BAA2B,yCAAYC,CAAC,sBAAsB,6BAA6B,yCAAYC,mDAAmD,8CAA8C,  
UAAU,QAAQ,CAAC,UAAU,EAAE,QAAQ,EAAE,WAAW,CAAC,SAAS,iBAAiB,MAAM,UAAU,0BAA0B,GA  
AG,IAAI,GAAG,GAAG,WAAW,CAAC,UAAU,2BAA2B,CAAC,OAAO,CAAC,SAAS,uBAAqB,CAAC,WAAU,  
CAAC,SAAS,CAAC,cAAc,UAAU,SAAS,CAAC,SAAS,MAAM,UAAU,SAAS,YAAy,GAAG,kBAAkB,aAAa,4B  
AA4B,OAAO,UAAU,UAAU,UAAU,YAAy,UAAU,YAAy,CAAC,SAAS,sBAAsB,6BAA6B,CAAC,qBAaQb,aA  
Aa,WAAW,IAAI,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,IAAI,MAAM,CAAC,CAAC,EAAE,MAAM,IAAI,MA  
AM,IAAI,MAAM,CAAC,MAAM,GAAG,CAAC,MAAM,IAAI,MAAM,CAAC,GAAG,EAAE,CAAC,IAAI,IAAI,  
CAAC,CAAC,IAAI,IAAI,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,SAAS,CAAC,SAAS,CAAC,GAAG,UAAU  
,GAAG,EAAC,MAAM,WAAU,aAAa,SAAS,yBAAYB,EAAE,SAAS,uBAAuB,EAAE,CAAC,SAAS,oDAAoD,uB  
AAuB,oCAAoC,OAAO,wCAAwC,mCAAmC,SAAS,iBAAiB,SAAS,iBAAiB,eAAe,QAAQ,QAAQ,QAAQ,UAAU  
,eAAe,UAAU,SAAS,MAAM,SAAS,OAAO,UAAU,SAAS,eAAe,QAAQ,UAAU,eAAe,QAAQ,UAAU,eAAe,QAA  
Q,QAAQ,QAAQ,QAAQ,QAAQ,QAAQ,QAAQ,wBAAwB,SAAS,SAAS,eAAe,UAAU,SAAS,SAAS,SAAS,SAAS  
,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,SAAS,eAAe,UAAU,SAAS,SAAS,SAAS,SAAS,SAAS,eAAe,QA  
AQ,UAAU,eAAe,QAAQ,QAAQ,QAAQ,EAAE,SAAQ,CAAC,SAAS,MAAM,SAAS,CAAC,MAAM,SAAS,CAA  
C,SAAS,SAAS,eAAe,UAAU,SAAS,SAAS,eAAe,QAAQ,EAAE,QAAQ,OAAO,QAAQ,QAAQ,QAAQ,iBAAiB,U  
AAU,QAAQ,QAAQ,EAAE,CAAC,OAAO,QAAQ,QAAQ,QAAQ,UAAU,gBAAgB,4BAA4B,QAAQ,EAAE,CAA  
C,OAAO,QAAQ,QAAQ,UAAU,oDAAoD,qBAaQb,qBAaQb,qBAaQb,GAAG,gBAAgB,GAAG,gBAAgB,GAA  
G,gBAAgB,GAAG,OAAO,WAAW,UAAU,SAAS,CAAC,OAAO,QAAQ,EAAE,CAAC,OAAO,SAAS,CAAC,OA  
AO,QAAQ,CAAC,QAAQ,OAAO,EAAE,QAAQ,CAAC,UAAU,sCAAsC,kCAAKC,CAAC,CAAC,QAAQ,CAAC,



UAAU,EAAE,CAAC,8BAA6B,IAAI,iEAAiE,CAAC,aAAa,aAAa,CAAC,mDAAmD,CAAC,QAAQ,UAAU,iEAAiE,0EAAyE,aAAa,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,iBAAiB,aAAa,UAAU,CAAC,4EAA4E,sFAAqF,aAAa,UAAU,CAAC,gEAAgE,0EAAyE,aAAa,UAAU,CAAC,4DAA4D,sEAAqE,aAAa,UAAU,CAAC,sDAAsD,gEAA+D,aAAa,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,mBAAmB,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,iBAAiB,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,kBAAkB,aAAa,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,mBAAmB,aAAa,UAAU,CAAC,oDAAoD,8DAA6D,aAAa,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,iBAAiB,aAAa,UAAU,CAAC,oDAAoD,8DAA6D,aAAa,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,kBAAkB,aAAa,UAAU,CAAC,oEAAoE,8EAA6E,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,iBAAiB,aAAa,UAAU,CAAC,wDAAwD,kEAAiE,aAAa,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,kBAAkB,aAAa,UAAU,CAAC,sDAAsD,gEAA+D,aAAa,UAAU,CAAC,wEAAwE,kFAAiF,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,iBAAiB,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,wDAAwD,kEAAiE,aAAa,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,iBAAiB,aAAa,UAAU,CAAC,gBAAgB,8BAA8B,kBAAiB,CAAC,qCAAqC,aAAa,UAAU,CAAC,0DAA0D,oEAAmE,aAAa,UAAU,CAAC,oDAAoD,8DAA6D,aAAa,UAAU,CAAC,sEAAeE,gFAA+E,aAAa,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,kBAAkB,aAAa,UAAU,CAAC,gBAAgB,8BAA8B,kBAAiB,CAAC,qCAAqC,aAAa,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,mBAAmB,aAAa,UAAU,CAAC,sDAAsD,gEAA+D,aAAa,UAAU,CAAC,gBAAgB,gCAAgC,mBAAkB,uCAAuC,aAAa,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,iBAAiB,aAAa,UAAU,CAAC,gBAAgB,gCAAgC,mBAAkB,uCAAuC,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,8CAA6C,aAAa,UAAU,CAAC,kDAAkD,4DAA2D,aAAa,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,gBAAgB,gCAAgC,mBAAkB,qDAAqD,UAAU,CAAC,gBAAgB,8BAA8B,kBAAiB,CAAC,mDAAmD,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,oEAAoE,4FAA2F,UAAU,CAAC,oEAAoE,4FAA2F,UAAU,CAAC,gBAAgB,8BAA8B,kBAAiB,CAAC,mDAAmD,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,gCAAgC,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,+BAA+B,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,+BAA+B,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,+BAA+B,UAAU,CAAC,0DAA0D,kFAAiF,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,8DAA8D,sFAAqF,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,+BAA+B,UAAU,CAAC,YAAY,iBAAiB,CAAC,UAAU,gCAA+B,CAAC,+BAA+B,UAAU,CAAC,gBAAgB,gCAAgC,mBAAkB,qDAAqD,UAAU,CAAC,gBAAgB,8BAA8B,kBAAiB,CAAC,mDAAmD,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,gCAAgC,YAAY,kBAAiB,iBAAiB,iCAAiC,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,gCAAgC,UAAU,CAAC,gEAAgE,wFAAuF,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,sDAAsD,8EAA6E,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,UAAU,CAAC,yBAAyB,4DAA2D,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,gBAAgB,gCAAgC,mBAAkB,qDAAqD,UAAU,CAAC,sDAAsD,8EAA6E,UAAU,CAAC,8BAA8B,CAAC,WAAW,iCAAgC,CAAC,gCAAgC,UAAU,CAAC,WAAW,CAAC,gBAAgB,UAAU,+BAA8B,+BAA+B,UAAU,CAAC,8DAA8D,sFAAqF,UAAU,CAAC,gBAAgB,8BAA8B,kBAAiB,CAAC,mDAAmD,UAAU,CAAC,oDAAoD,4EAA2E,UAAU,CAAC,gBAAgB,gCAAgC,mBAAkB,qDAAqD,UAAU,CAAC,SAAS,SAAS,UAAU,UAAU,SAAS

,UAAU,kBAaKb,CAAC,oEAAoE,MAAM,8CAA6C,yBAAYB,CAAC,SAAS,CAAC,SAAS,CAAC,+BAA+B,CAAC,WAAU,UAAU,IAAI,KAaK,mBAAYC,CAAC,SAAS,4BAA4B,CAAC,SAAS,qBAaQb,iBAaIB,iCAaIC,MAAM,4BAA4B,EAAE,CAAC,qCAaQc,CAAC,gEAAgE,EAAE,CAAC,UAAS,CAAC,qBAaQb,qCAaQc,WAAW,WAAW,WAAW,6BAA6B,MAAK,EAAE,CAAC,CAAC,CAAC,QAAO,MAAK,KAaI,MAAM,YAAW,UAAU,CAAC,SAAS,CAAC,YAAy,gBAaGB,CAAC,YAAy,iBAaIB,CAAC,SAAS,SAAS,CAAC,wBAawB,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,SAAS,CAAC,MAAM;AAC334B;AACa;AACa,EAAE,OAAO,iBAaIB,CAAC,KAaK;AAChC,CAAC;AACD,EAAE;AACF,CAAC,GAAG,CAAC;AAEH,cAAc,GAAG,iBAaIB;;;ICuBHC,+BAAa;IAK5C,qBAaMb,IAaQD;QAAXE,YACE,iBAAO,SAIR;QALkB,UAAI,GAaJ,IAAI,CAaID;;QAHhE,sBAaGB,GAAG,CAAC,CAAC;QAK3B,KAaI,CAAC,IAAI,CAAC,IAAI,CAAC,oBAAoB,CAAC,YAAy,CAAC,CAAC;QACID,kBAaKb,GAAG,KAaI,CAAC,IAAI,CAAC,IAAI,CAAC,eAAe,EAAE,CAAC;QACID,KAaI,CAAC,SAAS,GAAG,IAaIC,oBAAW,CAAC,KAaI,EAAEC,eAAM,EAAE,CAAC,CAAC;;KACID;IAED,2BAaK,GAAL,UAAAM,MAaKc,EAAE,KAAe,EAAE,KAAe;QAExE,IAAM,MAAM,GAAG,EAAC,EAAE,EAAE,IAaI,CAAC,gBAaGB,EAAE,EAAC,CAAC;QAC7C,IAAI,CAAC,IAAI,CAAC,MAAM,EAAE,MAAM,EAAE,KAAK,EAAE,KAAK,EAAE,CAAC,CAAC,CAAC;QAC3C,OAAO,MAAM,CAAC;KACf;IAED,gCAAU,GAaV;QACE,OAAO,IAAI,CAAC,SAAS,CAAC,UAAU,EAAE,CAAC;KACpC;IAEK,0BAAI,GAaV,UAAW,CAaA;;;gBAC hB,KAAK,GAAG/G,aAAI,CAAC,GAAG,EAAE,CAAC;gBACzB,CAAC,EAAE,CAAC;gBACE,QAAQ,GAAGA,aAAI,CAAC,GAAG,EAAE,GAAG,KAAK,CAAC;gBACpC,sBAAO,EAAC,QAAQ,UAAA,EAAC,EAAC;;;KACnB;IAED,0BAAI,GAaJ,UACI,MAAc,EAAE,MAaKc,EAAE,KAAe,EACnE,KAAe,EAAE,QAAgB;QACnC,IAAM,EAAE,GAAG,IAAI,CAAC,gBAaGB,EAAE,CAAC;QACnC,IAAI,KAAK,KAAK,QAAQ,EAAE;YActB,IAAM,WAAW,GAAG,MAAsB,CAAC;YAC3C,IAAI,CAAC,SAAS,CAAC,GAAG,CACd,MAAM,EACN,EAAC,EAAE,IAAAA,EAAE,WAAW,aAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,YAAy,EAAE,IAAI,EAAE,QAAQ,UAAA,EAAC,CAAC,CAAC;YACnE,OAAO;SACR;QAED,IAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QACvC,IAAM,QAAQ,GAAG,IAAI,GAAGA,aAAI,CAAC,eAAe,CAAC,KAAK,CAAC,CAAC;QACpD,IAAM,YAAy,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC;QAEjD,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,IAAA,EAAE,YAAy,cAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,QAAQ,UAAA,EAAC,CAAC,CAAC;QAEvE,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAy,CAAC,CAAC;QAEtD,IAAI,MAAM,IAAI,IAAI,EAAE;YACIB,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,GAAG,CACHb,IAAI,UAAU,CACT,MAaKc,CAAC,MAAM,EACzC,MAaKc,CAAC,UAAU,EAAE,QAAQ,CAAC,EAC7D,YAAy,CAAC,CAAC;SACnB;KACf;IAEK,0BAAI,GAaV,UAAW,MAAc;;;gBACvB,sBAAO,IAAI,CAAC,QAAQ,CAAC,MAAM,CAAC,EAAC;;;KAC9B;IAED,8BAAQ,GAAR,UAAS,MAAc;QACf,IAAA,+BACwB,EADvB,8BAAy,EAAE,gBAaK,EAAE,gBAaK,EAAE,4BACL,CAAC;QAC/B,IAAI,KAAK,KAAK,QAAQ,EAAE;YActB,OAAO,WAAW,CAAC;SACpB;QACD,IAAM,KAAK,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,KAAK,CACHc,YAAy,EACZ,YAAy,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,GAAGA,aAAI,CAAC,eAAe,CAAC,KAAK,CAAC,CAAC,CAAC;QAC5E,OAAO,oBAaOB,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;KACID;;;;;IAQD,iCAAW,GAAX,UAAy,MAAc,EAAE,KAAa;QAAb,sBAAA,EAAA,aAAa;QACvC,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,C AAC,EAAE;YAC9B,IAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;YACxC,IAAI,CAAC,QAAQ,EAAE,CAAC;YACHb,IAAI,CAAC,KAAK,IAAI,IAAI,CAAC,QAAQ,GAAG,CAAC,EA AE;gBAC/B,OAAO,KAAK,CAAC;aACd;YAED,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,YAAy,C AAC,CAAC;YACnC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,WAAW,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC;YACpC,IAAI,CAAC,SAAS,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;SAC/B;QACD,OAAO,IAAI,CAAC;KACb;;IAGD,8BAAQ,GAAR,UAAS,MAAc;QACrB,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE;YAC9B,IAAM,UAAU,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;YAC9C,OAAO,UAAU,CAAC,QAAQ,CAAC;SAC5B;QACD,OAAO,CAAC,CAAC;KACV;IAED,4BAAM,GAAN,UAAO,MAAc;QACnB,IAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;QACxC,IAAI,IAAI,IAAI,IAAI,EAAE;YACHb,IAAI,CAAC,QAAQ,EAAE,CAAC;SACjB;KACf;IAED,oCAAc,GAAd;QACE,OAAO,EAAE,CAAC;KACX;;;IAID,qCAAE,GAaF,UAAgB,MAAc;QAC5B,OAAO,IAAI,CAAC,SAAS,C AAC,GAAG,CAAC,MAAM,CAAC,CAAC,YAAy,CAAC;KACHD;IAED,6BAAO,GAAP;QACE,IAAI,CAAC,IA

AI,CAAC,IAAI,CAAC,OAAO,EAAE,CAAC;QACzB,IAAI,SAAS,IAAI,IAAI,CAAC,IAAI,EAAE;YAC1B,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC;SACzC;QACD,IAAI,CAAC,IAAI,GAAG,IAAI,CAAC;KACIB;IAED,4BAAM,GAAN;QACE,OAAO,EAAC,UAAU,EAAE,KAAK,EAAC,CAAC;KAC5B;IAQD,gCAAU,GAAG,UAAW,KAAe,EAAE,KAAe,EAAE,YAAqB;QAEhE,IAAI,MAAU,CAAC;QACf,IAAI,YAAY,IAAI,IAAI,EAAE;YACxB,MAAM,GAAG,IAAI,CAAC,KAAK,CAAC,IAAI,eAAe,KAAK,EAAE,KAAK,CAAC,CAAC;SACtD;aAAM;YACL,IAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;YACnC,MAAM,GAAG,EAAC,EAAE,IAAA,EAAC,CAAC;YACd,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,IAAA,EAAE,YAAY,cAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAE,QAAQ,EAAE,CAAC,EAAC,CAAC,CAAC;YAC1E,IAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;YACvC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;SACvD;QACD,OAAO,EAAC,MAAM,QAAA,EAAE,KAAK,OAAA,EAAE,KAAK,OAAA,EAAC,CAAC;KAC/B;IAED,wCAAkB,GAAlB,UAAmB,EAAKc;YAAjC,gBAAK,EAAE,gBAAK,EAAE,kBAAM;QAEtC,IAAM,MAAM,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC;QACChC,IAAA,sDAAY,CAA+B;QACID,IAAM,IAAI,GAAGA,aAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QACvC,QAAQ,KAAK;YACX,KAAK,SAAS;gBACZ,OAAO,IAAI,YAAY,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;YACtD,KAAK,OAAO;gBACV,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;YACpD,KAAK,MAAM;gBACT,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;YACpD;gBACE,MAAM,IAAI,KAAK,CAAC,mBAAiB,KAAO,CAAC,CAAC;SAC7C;KACF;IACH,kBAAC;AAAD,CA3KA,CAAIcGh,sBAaA,GA2K7C;AAED,SAAS,yBAAYB,CAAC,IAAY;;IAE7C;sCACKc;;aAE3B;SASJ;QACD;;AAEJ;AAEA;;AAMA,SAAS,mBAAmB;QAGtB;;QAEF;QACA,eAAe,CAAC;;IAgBIB,OAAOC,gBAAwB;AACjC;AAEA;;AAOA,oBA A0B;;oCACjB;;2CAiBM;;oCAGL;;oDAKgB;;gCAMIB;;gCASf,IAAI;oCACF;;gCAGF,IAAI;;gDAEU;;gCAGd;;gCAUA;;gCAIA;;gCAEA;oCACI;;gDAKK;;2CAME;;wDAEW,EACHb;;oCASJ;;0CAIO;;AAKf;;sBAGkB;;mBAIH;;kBAGH;;AAEZ;AAEA;;AAMA;AACA;AACA;AACA;AACA;AAEA;;AAYA;;AAWA;AAEA;;AAyBA;qCAEI;QACE;QACF,gBACI;YACA;;KAML;;IAAD;AACF;AAEA;AACA;;AAMA;AAEA;AACA;AAEA;;AAMA;AAEA;AAEA;AC9eA;AAEA;IACM,OAAO,GAAG;;ACHhB;;AAiBA,wBacA;AALA,IAAM,aAAa,GAAG,CAAC,CAAC;AACxBc,wBAaE,CAAC,MAAM,EAAE;;oBACP,qBAAM,IAAI,EAAE,EAAA;;gBAApB,IAAI,GAAl,CAAA,SAAY,MAAhB;gBACX,sBAAO,IAAI,WAAW,CAAC,IAAI,CAAC,EAAC;;KAC9B,EAAE,aAAa,CAAC;"} }

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/miniprogram/index.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "Pack.js", "sourceRoot": "", "sources": ["../src/kernels/Pack.ts"], "names": [], "mappings": "AAAA;;GAeG;AAEH,OAAO,EAA2B,IAAI,EAAqC,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAG9G,OAAO,EAA C,MAAM,EAAC,MAAM,UAAU,CAAC;AAChC,OAAO,EAAC,UAAU,EAAC,MAAM,cAAc,CAAC;AAExC,MAAM,UAAU,IAAI,CACHb,IAAKE;IAEpE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAC,GAAG,KAAK,CAAC;IAErB,IAAI,MAAM,CAAC,MAAM,KAA K,CAAC,EAAE;QACvB,OAAO,UAAU,CACb,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,MAAM,CAAC,CAA C,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;KA ChE;IAED,MAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;IAC9B,MAAM,KAAK,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;IAE9B,MAAM,CAAC,OAAO,CAAC,CAAC,CAAC,EAAE;QACjB,IAAI,CAAC,iBAAiB,CACIB,KAAK,EAAE,CAAC,CAAC,KAAK,EACd,uDAAuD,CAAC,CAAC; QAC7D,IAAI,CAAC,MAAM,CACP,KAAK,KAAK,CAAC,CAAC,KAAK,EACjB,GAAG,EAAE,CAAC,uDAAu D,CAAC,CAAC;IACrE,CAAC,CAAC,CAAC;IAEH,MAAM,uBAAuB,GAaiB,EAAE,CAAC;IACjD,MAAM,eA Ae,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE;QACrC,MAAM,SAAS,GACX,UAAU,CAAC,EA AC,MAAM,EAAE,EAAC,KAAK,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,GAAG,EAA
```

E,IAAI,EAAC,EAAC,CAAC,CAAC;QACIE,uBAAuB,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC;QACxC,OAAO,SAAS,CAAC;IACnB,CAAC,CAAC,CAAC;IAEH,MAAM,MAAM,GAAG,MAAM,CAAC,EAAC,MAAM,EAAE,eAAE,EAAE,OAAO,EAAE,KAAC,EAAE,EAAC,IAAI,EAAC,EAAC,CAAC,CAAC;IAEzE,uBAAuB,CAAC,OA AO,CAAC,CAAC,CAAC,EAAE,CAAC,OAAO,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,CA AC;IAEpE,OAAO,MAAM,CAAC;AAChB,CAAC;AAED,MAAM,CAAC,MAAM,UAAU,GAAiB;IACtC,UAAU, EAAE,IAAI;IAChB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,IAAwB;CACrC,CAAC", "sourcesContent":["/\*  
 \* @license  
 \* Copyright 2020 Google LLC. All Rights Reserved.  
 \* Licensed under the Apache License, Version 2.0 (the "License");  
 \* you may not use this file except in compliance with the License.  
 \* You may obtain a copy of the License at  
 \* http://www.apache.org/licenses/LICENSE-2.0  
 \* Unless required by applicable law or agreed to in writing, software  
 \* distributed under the License is distributed on an "AS IS"  
 BASIS,  
 \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
 \* See the License for the specific language governing permissions and  
 \* limitations under the License.  
 \*/

```
=====
*\n\nimport {KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util} from '@tensorflow/tfjs-core';
\nimport {BackendWasm} from './backend_wasm';
\nimport {concat} from './Concat';
\nimport {expandDims} from './ExpandDims';
\n\nexport function pack(\n args: {inputs: PackInputs, backend: BackendWasm, attrs: PackAttrs}):
 TensorInfo {\n const {inputs, backend, attrs} = args;
 const {axis} = attrs;

 if (inputs.length === 1) {\n return expandDims(\n {inputs: {input: inputs[0]}, backend, attrs: {dim: axis}});
 }

 const shape = inputs[0].shape;
 const dtype = inputs[0].dtype;

 inputs.forEach(t => {\n util.assertShapesMatch(\n shape, t.shape, \n 'All tensors passed to stack must have matching shapes');
 util.assert(\n dtype === t.dtype, \n () => 'All tensors passed to stack must have matching dtypes');
 });

 const intermediateTensorInfos: TensorInfo[] = [];
 const expandedTensors = inputs.map(t => {\n const expandedT =\n expandDims({inputs: {input: t}, backend, attrs: {dim: axis}});
 intermediateTensorInfos.push(expandedT);
 return expandedT;
 });

 const result = concat({inputs: expandedTensors, backend, attrs: {axis}});

 intermediateTensorInfos.forEach(t => backend.disposeData(t.dataId));

 return result;
 }
\n\nexport const packConfig: KernelConfig = {\n kernelName: Pack,
 backendName: 'wasm',
 kernelFunc: pack as {} as KernelFunc
};
```

Found in path(s):

\*/opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Pack.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Log.js","sourceRoot":"","sources":["../../src/kernels/Log.ts"],"names":[],"mappings":"AAAA;:::;:::;:::;:::;:::;:::;GAeG;AACH,OAAO,EAAE,GAAG,EAAC,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,uBAAuB,EAAC,MAAM,gBAAGB,CAAC;AACvD,MAAM,CAAC,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC,CAAC","sourcesContent":["/*
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * http://www.apache.org/licenses/LICENSE-2.0
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS"
 BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

```
=====
*\n\nimport {KernelConfig, Log} from '@tensorflow/tfjs-core';
\nimport {createUnaryKernelConfig} from './unary_kernel';
\n\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Log.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Pow.js","sourceRoot":"","sources":["../../src/kernels/Pow.ts"],"names":[],"mappings":"AAAA;;;
;;;;;;;;;;GAeG;AACH,OAAO,EAAe,GAAG,EAAC,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAAM,SAAS,GACIB,wBAAwB,CAAC,GAAG,EAAE,qBAAqB,CAAC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
=====
*\nimport {KernelConfig, Pow} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const powConfig: KernelConfig =\n createBinaryKernelConfig(Pow, supportsFullBroadcast);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Pow.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"SplitV.js","sourceRoot":"","sources":["../../src/kernels/SplitV.ts"],"names":[],"mappings":"AAA
A;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,MAAM,EAA6B,IAAI,EAAC,MAAM,uBAAuB,CAAC;AACxG,OAAO,EAAC,YAAY,EAAC,MAAM,uBAAuB,CAAC;AAInD,OAAO,EAAC,KAAK,EAAC,MAAM,SAAS,CAAC;AAE
9B,MAAM,UAAU,MAAM,CACIB,IAAsE;IACxE,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,eAAe,EA
AE,IAAI,EAAC,GAAG,KAAK,CAAC;IAEtC,MAAM,KAAK,GAAG,IAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAEpD,MAAM,UAAU,GAAG,YAAY,CAAC,gBAAGb,C
AAC,CAAC,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC;IAC5E,MAAM,KAAK,GAAG,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC;IAC7B,MAAM,IAAI,GAAG,
CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IAC7B,OAAO,UAAU,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC;QACxB,MAAM,UAAU,GAAG,CAAC,GAAG,IAAI,CAAC,CAAC;QAC7B,UAAU,CAAC,KAAK,CAAC,
GAAG,CAAC,CAAC;QACtB,MAAM,MAAM,GACR,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,IAAI,EAAE,UAAU,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;QA
CpE,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;QACIB,OAAO,MAAM,CAAC;IAC7B,CAAC,CAAC,CAAC;AACL,CAAC;AAED,MAAM,CAAC,MAAM,YAAY,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,
EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;CACvC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *
=====
*\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
```



on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util } from\n '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nlet wasmTransform: (\n imageId:\n number, transformsId: number, isBatchTransform: boolean,\n batch: number, outHeight: number, outWidth:\n number, numChannels: number,\n imageWidth: number, imageHeight: number, strides: Uint8Array,\n stridesLength: number, interpolationModeId: number, fillModeId: number,\n fillValue: number, outId: number)\n=> void;\n\nfunction setup(backend: BackendWasm): void {\n wasmTransform = backend.wasm.cwrap(Transform,\n null /*void*/, [\n 'number', // imageId\n 'number', // transformsId\n 'bool', // isBatchTransform\n 'number', // batch\n 'number', // outHeight\n 'number', // outWidth\n 'number', // numChannels\n 'number', // imageWidth\n 'number', // imageHeight\n 'array', // strides\n 'number', // stridesLength\n 'number', // interpolationModeId\n 'number', // fillModeId\n 'number', // fillValue\n 'number' // outId\n]);\n}\n\nfunction transform(\n args: \n { backend: BackendWasm, inputs: TransformInputs, attrs:\n TransformAttrs }):\n TensorInfo {\n const { backend, inputs, attrs } = args;\n const { image, transforms } = inputs;\n const { interpolation, fillMode, fillValue, outputShape } = attrs;\n const [batch, imageHeight, imageWidth,\n numChannels] = image.shape;\n const [outHeight, outWidth] =\n outputShape != null ? outputShape :\n [imageHeight, imageWidth];\n const outShape =\n [batch, outHeight, outWidth,\n numChannels] as\n [number, number, number, number];\n const strides =\n new Uint8Array(new\n Int32Array(util.computeStrides(image.shape)).buffer);\n const out = backend.makeOutput(outShape,\n image.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const imageData =\n backend.dataIdMap.get(image.dataId);\n const imageId = imageData.id;\n const transformsData =\n backend.dataIdMap.get(transforms.dataId);\n const transformsId = transformsData.id;\n const\n interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n let fillModeId;\n switch (fillMode) {\n case 'constant':\n fillModeId = 1;\n break;\n case 'reflect':\n fillModeId = 2;\n break;\n case 'wrap':\n fillModeId = 3;\n break;\n case 'nearest':\n fillModeId = 4;\n break;\n default:\n fillModeId = 1;\n break;\n }\n wasmTransform(\n imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n outWidth, numChannels, imageWidth, imageHeight, strides,\n image.shape.length - 1, interpolationModeId,\n fillModeId, fillValue,\n outId);\n return out;\n}\n\nexport const transformConfig: KernelConfig = {\n kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as } as\n KernelFunc\n};\n\n}}\n\n
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Transform.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "Multiply.js", "sourceRoot": "", "sources": ["../src/kernels/Multiply.ts"], "names": [], "mappings": "AAAA;;:::;;GAE;AAEH,OAEO,EAe,QAQ,EAAC,MAAM,uBAAB,CAAC;AAE7D,OAEO,EAAC,wBAAwB,EAAC,MAAM,iBAAB,CAAC;AAEzD,MAAM,qBAAB,GAAG,IAAI,CAAC;AACnC,MAAM,CAAC,MAAM,cAAc,GACvB,wBAAB,CAAC,QAQ,EAe,qBAAB,CAAC,CAAC", "sourcesContent": [" *\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n *"
```

```
=====\n
*\n\nimport {KernelConfig, Multiply} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
 './binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\n createBinaryKernelConfig(Multiply, supportsFullBroadcast);\n\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/Multiply.js.map
```

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"ClipByValue.js","sourceRoot":"","sources":["../src/kernels/ClipByValue.ts"],"names":[],"map
pings":"AAAA;;;;;;;;;;;GAE;AAEH,OAAO,EAAC,WAAW,EAAG,MAAM,uBAAB,CAAC;AAIjH,IAAI,QA
AwE,CAAC;AAE7E,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CA
AC,WAAW,EAAE,IAAI,CAAC,UAAU,EAAE;QAC1D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ,CA
AG,SAAS;KACrB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACC,MAAM,EAAC,MAAM,E
AAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CA
AC;IACnB,MAAM,EAAC,YAAY,EAAE,YAAY,EAAC,GAAG,KAAK,CAAC;IAC3C,MAAM,GAAG,GAAG,O
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,G
AAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IA
CjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,E
AAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,YAAY,EAAE,YAAY,EAAE,KAAK,CAAC,CAAC;IACjD,OA
AO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,iBAAB,GAAB;IAC7C,UAAU,EAAE,WAAW;
IACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACb,UAAU,EAAE,IAAwB;CACrC,CAAC","sour
cesContent":["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\")\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
```

```
=====\n
*\n\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmClip: (xId: number, min:
 number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmClip =
 backend.wasm.cwrap(ClipByValue, null /* void */, [\n 'number', // x_id\n 'number', // min\n 'number', //
 max\n 'number' // out_id\n]);\n\nfunction clip(args: {\n inputs: ClipByValueInputs,\n backend:
 BackendWasm,\n attrs: ClipByValueAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n
const {clipValueMin, clipValueMax} = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =
 backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmClip(xId,
 clipValueMin, clipValueMax, outId);\n return out;\n}\n\nexport const clipByValueConfig: KernelConfig = {\n
kernelName: ClipByValue,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: clip as {} as
KernelFunc\n};\n\n"]}
```

Found in path(s):

```
* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-
wasm/dist/kernels/ClipByValue.js.map
```

No license file was found, but licenses were detected in source scan.



```
/**
 * @license
 * Copyright 2021 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

```
/**
 * @license
 * Copyright 2019 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

```
/**
 * @license
 * Copyright 2020 Google LLC. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

```
/**
 * @license
 * Copyright 2020 Google Inc. All Rights Reserved.
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 * =====
 */
```

```
/**
 * @deprecated Use `setWasmPaths` instead.
 * Sets the path to the `.wasm` file which will be fetched when the wasm
 * backend is initialized. See
 * https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers
 * for more details.
 * @param path wasm file path or url
 * @param usePlatformFetch optional boolean to use platform fetch to download
 * the wasm file, default to false.
 *
 * @doc {heading: 'Environment', namespace: 'wasm'}
 */
```

Found in path(s):

`/opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.es2017.js`

No license file was found, but licenses were detected in source scan.

Copyright 2019 Google LLC. All Rights Reserved.  
Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

=====

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/starter/parcel/index.html

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Sigmoid.js","sourceRoot":"","sources":["../src/kernels/Sigmoid.ts"],"names":[],"mappings":"AAA;;;;;;;;;;;;;GAeG;AAEH,OAAO,EAA2B,OAAO,EAA6B,IAAI,EAAC,MAAM,uBAAB,CAAC;AAIzG,IAAI,QAA8C,CAAC;AAEnD,SAAS,KAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,CAAC,UAAU,EAAE,CAAC,QAAQ,EAAE,QAAQ,CAAC,CAAC,CAAC;AACHf,CAAC;AAED,SAAS,OAAO,CAAC,IAAmD;IAEIE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAC,EAAC,GAAG,IAAI,CAAC;IACpC,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,oCAAoC;IACpC,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAED,QAAQ,CAAC,GAAG,EAAE,KAAK,CAAC,CAAC;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,aAAa,GAAiB;IACzC,UAAU,EAAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACHB,UAAU,EAAE,OAA2B;CACxC,CAAC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n * =====\n *\n * import { KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\n * import { BackendWasm } from '../backend_wasm';\n * let wasmFunc: (xId: number, outId: number) => void;\n * function setup(backend: BackendWasm): void {\n * wasmFunc = backend.wasm.cwrap(Sigmoid, null /* void */, ['number', 'number']);\n * }\n * function sigmoid(args: { backend: BackendWasm, inputs: SigmoidInputs }):\n * TensorInfo {\n * const { backend, inputs: { x } } = args;\n * const xId = backend.dataIdMap.get(x.dataId).id;\n * const out = backend.makeOutput(x.shape, x.dtype);\n * const outId = backend.dataIdMap.get(out.dataId).id;\n * // Short-circuit zero-sized tensors.\n * if (util.sizeFromShape(out.shape) === 0) {\n * return out;\n * }\n * wasmFunc(xId, outId);\n * return out;\n * }\n * export const sigmoidConfig: KernelConfig = {\n * kernelName: 'Sigmoid',\n * backendName: 'wasm',\n * setupFunc: setup,\n * kernelFunc: sigmoid as { } as KernelFunc\n * };"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Sigmoid.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"backend_wasm.js","sourceRoot":"","sources":["../src/backend_wasm.ts"],"names":[],"mappings":"AAAA;;;;;;;;;;;;;GAeG;AACH,OAAO,cAAc,CAAC;AAEtB,OAAO,EAAkC,WAAW,EAAy,eAAe,EAAE,MAAM,EAAE,GAAG,EAAE,aAAa,EAAC,IAAI,EAAC,MAAM,uBAAB,CAAC;AAI5J,OAAO,uBAAB,MAAM,gDAAGD,CAAC;AACrF,aAAa;AACb,OAAO,EAAC,kBAAkB,EAAC,MAAM,uDAAuD,CAAC;AACzF,OAAO,WAAW,MAAM,kCAAkC,CAAC;AAc3D,MAAM,OAAO,WAAy,SAAQ,aAAa;IAK5C,YAAM,IAAQD;QACtE,KAAK,EAAE,CAAC;QADS,SAAI,GAAJ,IAAI,CAAiD;QAJxE,mCAAmC;QAC3B,qBAAgB,GAAG,CAAC,CAAC;QAK3B,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,oBAAoB,CAAC,YAAy,CAAC,CAAC;QACID,kBAAkB,GAAg,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,eAAe,EAAE,CAAC;QACtD,IAAI,CAAC,SAAS,GAAG,IAAI,WAAW,CAAC,IAAI,EAAE,MAAM,EAAE,CAAC,CAAC;IACnD,CAAC;IAED,KAAK,CAAC,MAAkC,EAAE,KAAe,EA
```

AE,KAAe;QAExE,MAAM,MAAM,GAAG,EAAC,EAAE,EAAE,IAAI,CAAC,gBAAgB,EAAE,EAAC,CAAC;QA  
C7C,IAAI,CAAC,IAAI,CAAC,MAAM,EAAE,MAAM,EAAE,KAAK,EAAE,KAAK,EAAE,CAAC,CAAC,CAAC  
;QAC3C,OAAO,MAAM,CAAC;IACbB,CAAC;IAED,UAAU;QACR,OAAO,IAAI,CAAC,SAAS,CAAC,UAAU,E  
AAE,CAAC;IACrC,CAAC;IAED,KAAK,CAAC,IAAI,CAAC,CAaA;QACtB,MAAM,KAAK,GAAG,IAAI,CAAC  
,GAAG,EAAE,CAAC;QACzB,CAAC,EAAE,CAAC;QACJ,MAAM,QAAQ,GAAG,IAAI,CAAC,GAAG,EAAE,G  
AAG,KAAK,CAAC;QACpC,OAAO,EAAE,QAAQ,EAAC,CAAC;IACpB,CAAC;IAED,IAAI,CACA,MAAc,EAA  
E,MAAkC,EAAE,KAAe,EACnE,KAAe,EAAE,QAAgB;QACnC,MAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,E  
AAE,CAAC;QACnC,IAAI,KAAK,KAAK,QAAQ,EAAE;YACtB,MAAM,WAAW,GAAG,MAAsB,CAAC;YAC3  
C,IAAI,CAAC,SAAS,CAAC,GAAG,CACd,MAAM,EACN,EAAE,EAAE,WAAW,EAAE,KAAK,EAAE,K  
AAK,EAAE,YAAY,EAAE,IAAI,EAAE,QAAQ,EAAC,CAAC,CAAC;YACnE,OAAO;SACR;QAED,MAAM,IAA  
I,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QACvC,MAAM,QAAQ,GAAG,IAAI,GAAG,IAAI,CA  
AC,eAAe,CAAC,KAAK,CAAC,CAAC;QACpD,MAAM,YAAY,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,  
QAAQ,CAAC,CAAC;QAEjD,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,EAAE,YA  
AY,EAAE,KAAK,EAAE,KAAK,EAAE,QAAQ,EAAC,CAAC,CAAC;QAEvE,IAAI,CAAC,IAAI,CAAC,IAAI,C  
AAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;QAEtD,IAAI,MAAM,IAAI,IAAI,EAAE;YA  
CIB,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,GAAG,CACbB,IAAI,UAAU,CACT,MAAkC,CAAC,MAAM,EAC  
zC,MAAkC,CAAC,UAAU,EAAE,QAAQ,CAAC,EAC7D,YAAY,CAAC,CAAC;SACnB;IACH,CAAC;IAED,KA  
AK,CAAC,IAAI,CAAC,MAAc;QACvB,OAAO,IAAI,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IAC/B,CAAC  
;IAED,QAAQ,CAAC,MAAc;QACrB,MAAM,EAAC,YAAY,EAAE,KAAK,EAAE,KAAK,EAAE,WAAW,EAAC,  
GAC3C,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;QAC/B,IAAI,KAAK,KAAK,QAAQ,E  
AAE;YACtB,OAAO,WAAW,CAAC;SACpB;QACD,MAAM,KAAK,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,C  
AAC,KAAK,CACc,YAAY,EACZ,YAAY,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,GAAG,IAAI,CAAC  
,eAAe,CAAC,KAAK,CAAC,CAAC,CAAC;QAC5E,OAAO,oBAAoB,CAAC,KAAK,CAAC,MAAM,EAAE,KAA  
K,CAAC,CAAC;IACnD,CAAC;IAED;;;;OAKG;IACH,WAAW,CAAC,MAAc,EAAE,KAAK,GAAG,KAAK;QA  
CvC,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE;YAC9B,MAAM,IAAI,GAAG,IAAI,  
CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;YACxC,IAAI,CAAC,QAAQ,EAAE,CAAC;YACbB,I  
AAI,CAAC,KAAK,IAAI,IAAI,CAAC,QAAQ,GAAG,CAAC,EAAE;gBAC/B,OAAO,KAAK,CAAC;aAcD;YAED  
,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,YAAY,CAAC,CAAC;YACnC,IAAI,CAAC,IAAI,CAAC,I  
AAI,CAAC,WAAW,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC;YACpC,IAAI,CAAC,SAAS,CAAC,MAAM,CAA  
C,MAAM,CAAC,CAAC;SAC/B;QACD,OAAO,IAAI,CAAC;IACd,CAAC;IAED,yCAAyC;IACzC,QAAQ,CAAC,  
MAAc;QACrB,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE;YAC9B,MAAM,UAAU,G  
AAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;YAC9C,OAAO,UAAU,CAAC,QAAQ,CA  
AC;SAC5B;QACD,OAAO,CAAC,CAAC;IACX,CAAC;IAED,MAAM,CAAC,MAAc;QACnB,MAAM,IAAI,GA  
AG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;QACxC,IAAI,IAAI,IAAI,IAAI,EAAE;YAC  
hB,IAAI,CAAC,QAAQ,EAAE,CAAC;SACjB;IACH,CAAC;IAED,cAAc;QACZ,OAAO,EAAE,CAAC;IACZ,CA  
AC;IAED,uEAAuE;IACvE,WAAW;IACX,eAAe,CAAC,MAAc;QAC5B,OAAO,IAAI,CAAC,SAAS,CAAC,GAA  
G,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC;IACjD,CAAC;IAED,OAAO;QACL,IAAI,CAAC,IAAI,CAAC,IA  
AI,CAAC,OAAO,EAAE,CAAC;QACzB,IAAI,SAAS,IAAI,IAAI,CAAC,IAAI,EAAE;YAC1B,IAAI,CAAC,IAAI,  
CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC;SACzC;QACD,IAAI,CAAC,IAAI,GAAG,IAAI,CAAC;IACnB,C  
AAC;IAED,MAAM;QACJ,OAAO,EAAC,UAAU,EAAE,KAAK,EAAC,CAAC;IAC7B,CAAC;IAED;;;;OAKG;I  
ACH,UAAU,CAAC,KAAe,EAAE,KAAe,EAAE,YAAqB;QAEhE,IAAI,MAAU,CAAC;QACf,IAAI,YAAY,IAAI,I  
AAI,EAAE;YACxB,MAAM,GAAG,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,YAAY,EAAE,KAAK,EAAE,KAA  
K,CAAC,CAAC;SACtD;aAAM;YAcl,MAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;YACnC,MA  
AM,GAAG,EAAC,EAAE,EAAC,CAAC;YACd,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,  
EAAE,EAAE,YAAY,EAAE,KAAK,EAAE,KAAK,EAAE,QAAQ,EAAE,CAAC,EAAC,CAAC,CAAC;YAC1E,M  
AAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;YACvC,IAAI,CAAC,IAAI,CAAC,IAAI,CA  
AC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;SACvD;QACD,OAAO,EAAC,MAAM,EAAE,  
KAAK,EAAE,KAAK,EAAC,CAAC;IACHc,CAAC;IAED,kBAAkB,CAAC,EAAC,KAAK,EAAE,KAAK,EAAE,

MAAM,EAAa;QAE nD,MAAM,MAAM,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC;QACv  
C,MAAM,EAAC,YAAY,EAAC,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;QACID  
,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QACvC,QAAQ,KAAK,EAAE;YACb,KA  
AK,SAAS;gBACZ,OAAO,IAAI,YAAY,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;YACtD,KAAK  
,OAAO;gBACV,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;YACpD,KAAK,  
MAAM;gBACT,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAY,EAAE,IAAI,CAAC,CAAC;YACpD;gBACE,  
MAAM,IAAI,KAAK,CAAC,iBAAiB,KAAK,EAAE,CAAC,CAAC;SAC7C;IACH,CAAC;CACF;AAED,SAAS,yB  
AAyB,CAAC,IAAY;IAC7C,kEAAkE;IACIE,uBAAuB;IACvB,kCAAkC;IACIC,OAAO,CAAC,OAAE,EAAE,QA  
Aa,EAAE,EAAE;QACrC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,EAAC,WAAW,EAAE,aAAa,EAAC,CAAC,C  
AAC,IAAI,CAAC,CAAC,QAAQ,EAAE,EAAE;YAC/D,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE;gBACnB  
,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,uCAAuC,IAAI,GAAG,CAAC,CAAC;aAC/D;YACD,QAAQ,CAAC,  
WAAW,EAAE,CAAC,IAAI,CAAC,MAAM,CAAC,EAAE;gBACnC,WAAW,CAAC,WAAW,CAAC,MAAM,EA  
AE,OAAO,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,EAAE;oBACrD,QAAQ,CAAC,MAAM,CAAC,QAAQ,EA  
AE,MAAM,CAAC,MAAM,CAAC,CAAC;gBAC3C,CAAC,CAAC,CAAC;YACL,CAAC,CAAC,CAAC;QACL,C  
AAC,CAAC,CAAC;QACH,OAAO,EAAE,CAAC;IACZ,CAAC,CAAC;AACJ,CAAC;AAED;;;;;GAKG;AACH,S  
AAS,mBAAmB,CACxB,aAAsB,EAAE,gBAAYB,EACjD,gBAAwB;IAC1B,IAAI,QAAQ,IAAI,IAAI,EAAE;QAC  
pB,+DAA+D;QAC/D,4BAA4B;QAC5B,OAAO,QAAQ,CAAC;KACjB;IAED,IAAI,IAAI,GAAmB,wBAAwB,CA  
AC;IACpD,IAAI,aAAa,IAAI,gBAAgB,EAAE;QACrC,IAAI,GAAG,sCAAsC,CAAC;KAC/C;SAAM,IAAI,aAAa,  
EAAE;QACxB,IAAI,GAAG,6BAA6B,CAAC;KACtC;IAED,IAAI,WAAW,IAAI,IAAI,EAAE;QACvB,IAAI,WA  
AW,CAAC,IAAI,CAAC,IAAI,IAAI,EAAE;YAC7B,OAAO,WAAW,CAAC,IAAI,CAAC,CAAC;SAC1B;KACF;I  
AED,OAAO,gBAAgB,GAAG,IAAI,CAAC;AACjC,CAAC;AAED;;;;;GAMG;AACH,MAAM,CAAC,KAAK,UA  
AU,IAAI;IACxB,MAAM,CAAC,aAAa,EAAE,gBAAgB,CAAC,GAAG,MAAM,OAAO,CAAC,GAAG,CAAC;QA  
C1D,GAAG,EAAE,CAAC,QAAQ,CAAC,uBAAuB,CAAC;QACvC,GAAG,EAAE,CAAC,QAAQ,CAAC,8BAA8  
B,CAAC;KAC/C,CAAC,CAAC;IAEH,OAAO,IAAI,OAAO,CAAC,CAAC,OAAO,EAAE,MAAM,EAAE,EAAE;  
QACrC,MAAM,aAAa,GAAAsB,EAAE,CAAC;QAE5C;;;;;WAIG;QACH,aAAa,CAAC,UAAU,GAAG,CAAC,IAAI,  
EAAE,MAAM,EAAE,EAAE;YAC1C,IAAI,IAAI,CAAC,QAAQ,CAAC,YAAY,CAAC,EAAE;gBAC/B,MAAM,Q  
AAQ,GAAG,kBAAkB,CAAC;gBACpC,MAAM,IAAI,GAAG,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,EAAE,EA  
AC,IAAI,EAAE,wBAAwB,EAAC,CAAC,CAAC;gBACpE,OAAO,GAAG,CAAC,eAAe,CAAC,IAAI,CAAC,CAA  
C;aACIC;YAED,IAAI,IAAI,CAAC,QAAQ,CAAC,OAAO,CAAC,EAAE;gBAC1B,OAAO,mBAAmB,CACtB,aA  
AwB,EAAE,gBAA2B,EACrD,cAAc,IAAI,IAAI,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC,MAAM,CAA  
C,CAAC;aACvD;YACD,OAAO,MAAM,GAAG,IAAI,CAAC;QACvB,CAAC,CAAC;QAEF,uEAAuE;QACvE,aA  
Aa;QACb,sIAAsI;QACtI,IAAI,WAAW,EAAE;YACf,aAAa,CAAC,eAAe;gBACzB,yBAAYB,CAAC,mBAAmB,C  
ACzC,aAAwB,EAAE,gBAA2B,EACrD,cAAc,IAAI,IAAI,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC,CAAC,EA  
E,CAAC,CAAC,CAAC;SACxD;QAED,IAAI,WAAW,GAAG,KAAK,CAAC;QACxB,aAAa,CAAC,OAAO,GAA  
G,GAAG,EAAE;YAC3B,IAAI,WAAW,EAAE;gBACf,mEAAmE;gBACnE,OAAO;aACR;YACD,IAAI,WAAW,E  
AAE;gBACf,8DAA8D;gBAC9D,YAAY;gBACZ,OAAO;aACR;YACD,WAAW,GAAG,IAAI,CAAC;YACnB,MA  
AM,SAAS,GACX,kEAAkE;gBACIE,iIAAiI,CAAC;YACtI,MAAM,CAAC,EAAC,OAAO,EAAE,SAAS,EAAC,C  
AAC,CAAC;QAC/B,CAAC,CAAC;QAEF,IAAI,IAAgC,CAAC;QACrC,wEAAwE;QACxE,IAAI,gBAAgB,IAAI,a  
AAa,IAAI,QAAQ,IAAI,IAAI,EAAE;YACzD,aAAa,CAAC,mBAAmB,GAAG,IAAI,IAAI,CACxC,CAAC,sCAAs  
C;oBACtC,uBAAuB,CAAC,QAAQ,EAAE,CAAC,EACpC,EAAC,IAAI,EAAE,iBAAiB,EAAC,CAAC,CAAC;YA  
C/B,IAAI,GAAG,uBAAuB,CAAC,aAAa,CAAC,CAAC;SAC/C;aAAM;YACL,4DAA4D;YAC5D,IAAI,GAAG,W  
AAW,CAAC,aAAa,CAAC,CAAC;SACnC;QAED,gEAAgE;QACHe,kEAAkE;QACIE,IAAI,CAAC,IAAI,CAAC,  
CAAC,MAAM,EAAE,EAAE;YACnB,WAAW,GAAG,IAAI,CAAC;YACnB,WAAW,GAAG,KAAK,CAAC;YAE  
pB,MAAM,cAAc,GAAW,IAAI,CAAC;YACpC,oEAAoE;YACpE,MAAM,CAAC,IAAI,GAAG;gBACZ,IAAI,EA  
AE,MAAM,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,EAAE,EAAE,CAAC;gBACpC,oBAAoB,EACb,MAAM,  
CAAC,KAAK,CAAC,yBAAYB,EAAE,IAAI,EAAE,CAAC,QAAQ,CAAC,CAAC;gBAC7D,eAAe,EAAE,MAAM,  
CAAC,KAAK,CAAC,mBAAmB,EAAE,QAAQ,EAAE,EAAE,CAAC;gBACHe,cAAc,EAAE,MAAM,CAAC,KA  
AK,CACxB,iBAAiB,EAAE,IAAI,EACvB;oBACE,QAAQ;oBACR,QAAQ;oBACR,QAAQ;iBACT,CAAC;gBAC

N,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,cAAc,EAAE,cAAc,EAAE,CAAC,QAAQ,CAAC,CAAC;gBACr  
E,OOAO,EAAE,MAAM,CAAC,KAAK,CAAC,SAAS,EAAE,cAAc,EAAE,EAAE,CAAC;aACrD,CAAC;YAEF,O  
AAO,CAAC,EAAC,IAAI,EAAE,MAAM,EAAC,CAAC,CAAC;QAC1B,CAAC,CAAC,CAAC;IACL,CAAC,CAA  
C,CAAC;AACL,CAAC;AAED,SAAS,oBAAoB,CACzB,MAAmB,EAAE,KAAe;IACtC,QAAQ,KAAK,EAAE;QA  
Cb,KAAK,SAAS;YACZ,OOAO,IAAI,YAAy,CAAC,MAAM,CAAC,CAAC;QACIC,KAAK,OOAO;YACV,OOA  
O,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;QAChC,KAAK,MAAM;YACT,OOAO,IAAI,UAAU,CAAC,MAA  
M,CAAC,CAAC;QAChC;YACE,MAAM,IAAI,KAAK,CAAC,iBAAiB,KAAK,EAAE,CAAC,CAAC;KAC7C;AA  
CH,CAAC;AAED,MAAM,eAAe,GAAG;IACtB,wBAAwB,EAAE,6BAA6B;IACvD,sCAAsC;CAC9B,CAAE;AA  
GZ,IAAI,QAAQ,GAAW,IAAI,CAAC;AAC5B,IAAI,cAAc,GAAW,IAAI,CAAC;AACIC,IAAI,WAAW,GAAC,E  
AAE,CAAC;AACzD,IAAI,WAAW,GAAG,KAAK,CAAC;AACxB,IAAI,WAAW,GAAG,KAAK,CAAC;AAExB;;  
;;;;;;GAWG;AACH,MAAM,UAAU,WAAW,CAAC,IAAY,EAAE,gBAAgB,GAAG,KAAK;IACHe,eAAe,CACX  
,8DAA8D;QAC9D,uCAAuC,CAAC,CAAC;IAC7C,IAAI,WAAW,EAAE;QACf,MAAM,IAAI,KAAK,CACX,+D  
AA+D;YAC/D,mEAAmE,CAAC,CAAC;KAC1E;IACD,QAAQ,GAAG,IAAI,CAAC;IACbB,WAAW,GAAG,gBA  
AgB,CAAC;AACjC,CAAC;AAED;,,,,,,,,,,,,,,,,,,,,,GAwBG;AACH,MAAM,UAAU,YAAy,CACxB,eAAoD,EAC  
1D,gBAAgB,GAAG,KAAK;IAC1B,IAAI,WAAW,EAAE;QACf,MAAM,IAAI,KAAK,CACX,+DAA+D;YAC/D,  
wDAAwD;YACxD,cAAc,CAAC,CAAC;KACrB;IAED,IAAI,OOAO,eAAe,KAAK,QAAQ,EAAE;QACvC,cAAc,  
GAAG,eAAe,CAAC;KACIC;SAAM;QACL,WAAW,GAAG,eAAe,CAAC;QAC9B,MAAM,YAAy,GACd,eAAe,  
CAAC,MAAM,CAAC,IAAI,CAAC,EAAE,CAAC,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,CAAC,CAAC;QAC9  
D,IAAI,YAAy,CAAC,MAAM,GAAG,CAAC,EAAE;YAC3B,MAAM,IAAI,KAAK,CACX,0DAA0D;gBAC1D,G  
AAG,YAAy,CAAC,IAAI,CAAC,GAAG,CAAC,2CAA2C;gBACpE,oEAAoE;gBACpE,oDAAoD,CAAC,CAAC;S  
AC3D;KACF;IAED,WAAW,GAAG,gBAAgB,CAAC;AACjC,CAAC;AAED,0BAA0B;AAC1B,MAAM,UAAU,a  
AAa;IAC3B,QAAQ,GAAG,IAAI,CAAC;IACbB,cAAc,GAAG,IAAI,CAAC;IACtB,WAAW,GAAG,EAAE,CAAC  
;IACjB,WAAW,GAAG,KAAK,CAAC;IACpB,WAAW,GAAG,KAAK,CAAC;AACtB,CAAC;AAED,IAAI,YAAy  
,GAAG,CAAC,CAAC,CAAC;AACtB,IAAI,kBAakB,GAAG,CAAC,CAAC,CAAC;AAE5B;,,,GAKG;AACH,M  
AAM,UAAU,eAAe,CAAC,UAAkB;IACdD,YAAy,GAAG,UAAU,CAAC;AAC5B,CAAC;AAED;,,,GAIG;AACH  
,MAAM,UAAU,eAAe;IAC7B,IAAI,kBAakB,KAAK,CAAC,CAAC,EAAE;QAC7B,MAAM,IAAI,KAAK,CAAC,  
+BAA+B,CAAC,CAAC;KACID;IACD,OOAO,kBAakB,CAAC;AAC5B,CAAC", "sourcesContent":["/\*\n \*  
@license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version  
2.0 (the "License");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a  
copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable  
law or agreed to in writing, software\n \* distributed under the License is distributed on an "AS IS" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for  
the specific language governing permissions and\n \* limitations under the License.\n \*  
=====\n \*\nimport './flags\_wasm';\nimport { backend\_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,  
engine, env, KernelBackend, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasmModule,  
WasmFactoryConfig } from './wasm-out/tfjs-backend-wasm';\nimport { BackendWasmThreadedSimdModule } from  
 './wasm-out/tfjs-backend-wasm-threaded-simd';\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-  
backend-wasm-threaded-simd.js';\n// @ts-ignore\nimport { wasmWorkerContents } from './wasm-out/tfjs-backend-  
wasm-threaded-simd.worker.js';\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\ninterface  
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:  
number;\n /\*\* Only used for string tensors, storing encoded bytes. \*/\n stringBytes?: Uint8Array[];\n}\n\nexport  
type DataId = object; // object instead of {} to force non-primitive.\n\nexport class BackendWasm extends  
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:  
DataStorage<TensorData>;\n\n constructor(public wasm:  
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n this.wasm.tfjs.initWithThreadsCount(threadsCount);\n actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n this.dataIdMap = new DataStorage(this, engine());\n }\n\n write(values: backend\_util.BackendValues, shape:

```

number[], dtype: DataType):\n DataId {\n const dataId = {id: this.dataIdNextNumber++};\n this.move(dataId, values, shape, dtype, 1);\n return dataId;\n }\n numDataIds(): number {\n return this.dataIdMap.numDataIds();\n }\n async time(f: () => void): Promise<BackendTimingInfo> {\n const start = util.now();\n f();\n const kernelMs = util.now() - start;\n return {kernelMs};\n }\n move(\n dataId: DataId, values: backend_util.BackendValues, shape: number[],\n dtype: DataType, refCount: number): void {\n const id = this.dataIdNextNumber++;\n if (dtype === 'string') {\n const stringBytes = values as Uint8Array[];\n this.dataIdMap.set(\n dataId,\n {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n }\n return;\n }\n const size = util.sizeFromShape(shape);\n const numBytes = size * util.bytesPerElement(dtype);\n const memoryOffset = this.wasm._malloc(numBytes);\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n this.wasm.tfjs.registerTensor(id, size, memoryOffset);\n if (values != null) {\n this.wasm.HEAPU8.set(\n new Uint8Array(\n (values as backend_util.TypedArray).buffer,\n (values as backend_util.TypedArray).byteOffset, numBytes),\n memoryOffset);\n }\n }\n async read(dataId: DataId): Promise<backend_util.BackendValues> {\n return this.readSync(dataId);\n }\n readSync(dataId: DataId): backend_util.BackendValues {\n const {memoryOffset, dtype, shape, stringBytes} =\n this.dataIdMap.get(dataId);\n if (dtype === 'string') {\n return stringBytes;\n }\n const bytes = this.wasm.HEAPU8.slice(\n memoryOffset,\n memoryOffset + util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n return typedArrayFromBuffer(bytes.buffer, dtype);\n }\n /**\n * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n * is released, false otherwise.\n * @param dataId\n * @oaram force Optional, remove the data regardless of refCount\n */\n disposeData(dataId: DataId, force = false): boolean {\n if (this.dataIdMap.has(dataId)) {\n const data = this.dataIdMap.get(dataId);\n data.refCount--;\n if (!force && data.refCount > 0) {\n return false;\n }\n this.wasm._free(data.memoryOffset);\n this.wasm.tfjs.disposeData(data.id);\n this.dataIdMap.delete(dataId);\n }\n return true;\n }\n /** Return refCount of a `TensorData`. */\n refCount(dataId: DataId): number {\n if (this.dataIdMap.has(dataId)) {\n const tensorData = this.dataIdMap.get(dataId);\n return tensorData.refCount;\n }\n return 0;\n }\n incRef(dataId: DataId) {\n const data = this.dataIdMap.get(dataId);\n if (data != null) {\n data.refCount++;\n }\n }\n floatPrecision(): 32 {\n return 32;\n }\n // Returns the memory offset of a tensor. Useful for debugging and unit\n // testing.\n getMemoryOffset(dataId: DataId): number {\n return this.dataIdMap.get(dataId).memoryOffset;\n }\n dispose() {\n this.wasm.tfjs.dispose();\n if ('PThread' in this.wasm) {\n this.wasm.PThread.terminateAllThreads();\n }\n this.wasm = null;\n }\n memory() {\n return {unreliable: false};\n }\n /**\n * Make a tensor info for the output of an op. If `memoryOffset` is not\n * present, this method allocates memory on the WASM heap. If `memoryOffset`\n * is present, the memory was allocated elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n makeOutput(shape: number[], dtype: DataType, memoryOffset?: number):\n TensorInfo {\n let dataId: {};\n if (memoryOffset == null) {\n dataId = this.write(null /* values */, shape, dtype);\n } else {\n const id = this.dataIdNextNumber++;\n dataId = {id};\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount: 1});\n const size = util.sizeFromShape(shape);\n this.wasm.tfjs.registerTensor(id, size, memoryOffset);\n }\n return {dataId, shape, dtype};\n }\n typedArrayFromHeap({shape, dtype, dataId}: TensorInfo):\n backend_util.TypedArray {\n const buffer = this.wasm.HEAPU8.buffer;\n const {memoryOffset} = this.dataIdMap.get(dataId);\n const size = util.sizeFromShape(shape);\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer, memoryOffset, size);\n case 'int32':\n return new Int32Array(buffer, memoryOffset, size);\n case 'bool':\n return new Uint8Array(buffer, memoryOffset, size);\n default:\n throw new Error(`Unknown dtype ${dtype}`);\n }\n }\n function createInstantiateWasmFunc(path: string) {\n // this will be replace by rollup plugin patchWechatWebAssembly in\n // miniprogram's output.\n // tslint:disable-next-line:no-any\n return (imports: any, callback: any) => {\n util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n if (!response['ok']) {\n imports.env.a^ failed to load wasm binary file at '${path}';\n }\n response.arrayBuffer().then(binary => {\n WebAssembly.instantiate(binary, imports).then(output => {\n callback(output.instance, output.module);\n });\n });\n });\n };

```





```

'int32':\n return new Int32Array(buffer);\n case 'bool':\n return new Uint8Array(buffer);\n default:\n throw new Error(`Unknown dtype ${dtype}`);\n }\n}\n\nconst wasmBinaryNames = [\n 'tfjs-backend-wasm.wasm',\n 'tfjs-backend-wasm-simd.wasm',\n 'tfjs-backend-wasm-threaded-simd.wasm'\n] as const;\n\ntype WasmBinaryName = typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix: string = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet customFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `.wasm` file which will be fetched when the wasm\n * backend is initialized. See\n * https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch to download\n * the wasm file, default to false.\n */\n * @doc {heading: 'Environment', namespace: 'wasm'}\n * ^\nexport function setWasmPath(path: string, usePlatformFetch = false): void {\n deprecationWarn(\n 'setWasmPath has been deprecated in favor of setWasmPaths and '\n +\n ' will be removed in a future release.);\n if (initAborted) {\n throw new Error(\n 'The WASM backend was already initialized. Make sure you call '\n +\n '\n `setWasmPath()` before you call `tf.setBackend()` or `tf.ready()`);\n }\n wasmPath = path;\n customFetch = usePlatformFetch;\n}\n\n/**\n * Configures the locations of the WASM binaries.\n * @param js\n * setWasmPaths({\n * 'tfjs-backend-wasm.wasm': 'renamed.wasm',\n * 'tfjs-backend-wasm-simd.wasm': 'renamed-simd.wasm',\n * 'tfjs-backend-wasm-threaded-simd.wasm': 'renamed-threaded-simd.wasm'\n * });\n * tf.setBackend('wasm');\n */\n * @param prefixOrFileMap This can be either a string or object:\n * - (string) The path to the directory where the WASM binaries are located.\n * Note that this prefix will be used to load each binary (vanilla,\n * SIMD-enabled, threading-enabled, etc.).\n * - (object) Mapping from names of WASM binaries to custom\n * full paths specifying the locations of those binaries. This is useful if\n * your WASM binaries are not all located in the same directory, or if your\n * WASM binaries have been renamed.\n * @param usePlatformFetch optional boolean to use platform fetch to download\n * the wasm file, default to false.\n */\n * @doc {heading: 'Environment', namespace: 'wasm'}\n * ^\nexport function setWasmPaths(\n prefixOrFileMap: string | {[key in WasmBinaryName]?: string},\n usePlatformFetch = false): void {\n if (initAborted) {\n throw new Error(\n 'The WASM backend was already initialized. Make sure you call '\n +\n '\n `setWasmPaths()` before you call `tf.setBackend()` or '\n +\n '\n `tf.ready()`);\n }\n if (typeof prefixOrFileMap === 'string') {\n wasmPathPrefix = prefixOrFileMap;\n } else {\n wasmFileMap = prefixOrFileMap;\n const missingPaths =\n wasmBinaryNames.filter(name => wasmFileMap[name] == null);\n if (missingPaths.length > 0) {\n throw new Error(\n `There were no entries found for the following binaries: ` +\n `${missingPaths.join(',')}. Please either call setWasmPaths with a ` +\n `map providing a path for each binary, or with a string indicating ` +\n `the directory where all the binaries can be found.`);\n }\n }\n}\n\nlet customFetch = usePlatformFetch;\n}\n\n/**\n * Used in unit tests.\n * ^\nexport function resetWasmPath(): void {\n wasmPath = null;\n wasmPathPrefix = null;\n wasmFileMap = {};\n customFetch = false;\n initAborted = false;\n}\n\nlet threadsCount = -1;\nlet actualThreadsCount = -1;\n\n/**\n * Sets the number of threads that will be used by XNNPACK to create\n * threadpool (default to the number of logical CPU cores).\n * This must be called before calling\n * `tf.setBackend('wasm')`.\n * ^\nexport function setThreadsCount(numThreads: number) {\n threadsCount = numThreads;\n}\n\n/**\n * Gets the actual threads count that is used by XNNPACK.\n * It is set after the backend is initialized.\n * ^\nexport function getThreadsCount(): number {\n if (actualThreadsCount === -1) {\n throw new Error('WASM backend not initialized.);\n }\n return actualThreadsCount;\n}\n\n}}

```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/backend\_wasm.js.map

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"Rsqrt.js","sourceRoot":"","sources":["../../src/kernels/Rsqrt.ts"],"names":[],"mappings":"AAAA;
;;;;;;;;;;GAeG;AACH,OAAO,EAAe,KAAK,EAAC,MAAM,uBAAuB,CAAC;AAE1D,OAAO,EAAC,uBAAuB,E

```

AAC,MAAM,gBAAGB,CAAC;AACvD,MAAM,CAAC,MAAM,WAAW,GAAiB,uBAAuB,CAAC,KAAK,CAAC,CAAC", "sourcesContent": ["/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport { KernelConfig, Rsqrt } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from './unary_kernel';\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Rsqrt.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Less.js","sourceRoot":"","sources":["../../src/kernels/Less.ts"],"names":[],"mappings":"AAAA;;;GAG;AACH,OAAO,EAAE,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAEzD,OAAO,EAAC,wBAAwB,EAAC,MAAM,iBAAiB,CAAC;AACzD,MAAM,qBAAqB,GAAG,KAAK,CAAC;AACpC,MAAM,CAAC,MAAM,UAAU,GACnB,wBAAwB,CAAC,IAAI,EAAE,qBAAqB,EAAE,MAAM,CAAC,CAAC", "sourcesContent": ["/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport { KernelConfig, Less } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\ncreateBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Less.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"LeakyRelu.js","sourceRoot":"","sources":["../../src/kernels/LeakyRelu.ts"],"names":[],"mapping s":"AAAA;;;GAG;AAEH,OAAO,EAA2B,SAAS,EAA+C,IAAI,EAAC,MAAM,uBAAuB,CAAC;AAI7H,OAAO,EAAC,QAAQ,EAAC,MAAM,SAAS,CAAC;AAEjC,IAAI,QAC0E,CAAC;AAE/E,SAAS,SAAS,CAAC,OAAoB;IACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,SAAS,EAAE,IAAI,CAAC,UAAU,EAAE;QACxD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,MAAM,UAAU,SAAS,CACrB,IAC0E;IAE5E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEpD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,8EAA8E;IAC9E,YAAY;IACZ,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,SAAS,CAAC,CAAC;IAEnD,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,
```

QAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,EAAE,KAAK,CAAC,C  
 AAC;KACbD;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,eAAE,GAAiB;IAC3C,U  
 AAU,EAAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS;IACT,UAAU,EAAE,SAA6B;CAC1C,CAAC", "  
 sourcesContent":["/\*\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the  
 Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the  
 License.\n \* You may obtain a copy of the License at\n \*\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \*  
 Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed  
 on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
 implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the  
 License.\n \*  
 =====\n

```

*\n\nimport { KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport { CppDType } from
'./types';\n\nlet wasmFunc: (\n xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>
void;\n\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(LeakyRelu,
null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // leakyrelu_alpha\n 'number', //
out_id\n]);\n}\n\nexport function leakyRelu(\n args: \n { inputs: LeakyReluInputs, attrs: LeakyReluAttrs,
backend: BackendWasm }): \n TensorInfo {\n const { inputs: { x }, attrs: { alpha }, backend } = args;\n\n const xId =
backend.dataIdMap.get(x.dataId).id;\n // According to TF API, LeakyRelu returns float32 when input is either
float32\n // or int32.\n const out = backend.makeOutput(x.shape, 'float32');\n\n if (util.sizeFromShape(x.shape)
!== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(xId, CppDType[x.dtype], alpha,
outId);\n }\n\n return out;\n}\n\nexport const leakyReluConfig: KernelConfig = {\n kernelName: LeakyRelu,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: leakyRelu as } as KernelFunc,\n};\n}

```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-  
 wasm/dist/kernels/LeakyRelu.js.map

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"BatchMatMul.js","sourceRoot":"","sources":["../../src/kernels/BatchMatMul.ts"],"names":["ma
ppings":"AAAA;,,,,,,;GAEg;AAEH,OAAO,EAAC,WAAW,EAAiE,IAAI,EAAC,MAAM,uBAAuB,CAAC;A
AIvH,OAAO,EAAC,OAAO,EAAC,MAAM,WAAW,CAAC;AAEiC,IAAI,eAG2C,CAAC;AAEHd,SAAS,KAAK,
CAAC,OAAoB;IACjC,eAAE,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,WAAW,EAAE,IAAI,CAAC,UA
AU,EAAE;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QA
AQ;QACR,QAAQ;QACR,QAAQ,CAAG,SAAS;KACrB,CAAC,CAAC;AACL,CAAC;AAED,SAAS,WAAW,CA
AC,IAIpB;IACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAA
M,EAAC,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;IACtB,MAAM,EAAC,UAAU,EAAE,UAAU,EAAC,
GAAG,KAAK,CAAC;IAEvC,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,S
AAS,EAAE;QACID,MAAM,IAAI,KAAK,CACX,4DAA4D,CAAC,CAAC;KACnE;IAED,MAAM,KAAK,GAAG,
CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAC7B,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAA
M,CAAC;IAE7B,MAAM,WAAW,GAAG,UAAU,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GA
AG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IACz
E,MAAM,WAAW,GAAG,UAAU,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CA
AC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,MAAM,WA
AW,GAAG,UAAU,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC,CA
AC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IACzE,MAAM,WAAW,GAAG,U
AAU,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC,CAAC,CAAC,CA
AC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,MAAM,UAAU,GAAG,CAAC,CAAC,KA

```

AK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACxC,MAAM,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IAExC,MAAM,SAAS,GAAG,IAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;IACjD,MAAM,SAAS,GAAG,IAAI,CAAC,aAAa,CAAC,UAAU,CAAC,CAAC;IAEjD,MAAM,mBAAmB,GACrB,SAAS,KAAK,SAAS,IAAI,SAAS,KAAK,CAAC,IAAI,SAAS,KAAK,CAAC,CAAC;IAEIE,IAAI,CAAC,MAAM,CACP,KAAK,IAAI,CAAC,IAAI,KAAK,IAAI,CAAC,IAAI,mBAAmB,EAC/C,GAAG,EAAE,CAAC,iEAAiE;QACnE,kEAAkE;QACIE,wBAAwB,UAAU,UAAU,UAAU,IAAI,CAAC,CAAC;IAEpE,MAAM,iBAAiB,GACnB,SAAS,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACxE,MAAM,QAAQ,GAAG,iBAAiB,CAAC,MAAM,CAAC,CAAC,WAAW,EAAE,WAAW,CAAC,CAAC,CAAC;IAEtE,IAAI,CAAC,MAAM,CACP,WAAW,KAAK,WAAW,EAC3B,GAAG,EAAE,CAAC,kCAAkC,WAAW,SAAS;QACxD,GAAG,WAAW,4BAA4B,CAAC,CAAC,KAAK,OAAO;QACxD,GAAG,CAAC,CAAC,KAAK,mBAAmB,UAAU,EAAE;QACzC,mBAAmB,UAAU,cAAc,CAAC,CAAC;IAErD,MAAM,QAAQ,GAAG,UAAU,CAAC,CAAC,CAAC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC,CAAC;QACvC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;IACpE,MAAM,QAAQ,GAAG,UAAU,CAAC,CAAC,CAAC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC,CAAC;QACvC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;IAEpE,0EAA0E;IACIE,MAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IACzE,MAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAEzE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,OAAO,GAAG,UAAU,CAAC,CAAC,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACzD,MAAM,QAAQ,GAAG,UAAU,CAAC,CAAC,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC;IACID,MAAM,QAAQ,GAAG,IAAI,CAAC,GAAG,CAAC,SAAS,EAAE,SAAS,CAAC,CAAC;IAEhD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,QAAQ,EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,GAAG,CAAC,KAAK,CAAC,CAAC;IACzE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACrE,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAErE,eAAe,CACX,KAAK,EAAE,WAAW,EAAE,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,EAAE,WAAW,EACxD,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;IAErD,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACChC,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEhC,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAED,MAAM,CAAC,MAAM,iBAAiB,GAAiB;IAC7C,UAAU,EAAE,WAAW;IACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IAChB,UAAU,EAAE,WAA+B;CAC5C,CAAC", "sourcesContent":["/\*\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \* \n \* \n\nimport { BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend\_wasm';\nimport { reshape } from './Reshape';\n\nlet wasmBatchMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number, bShape: Uint8Array, bShapeSize: number, transposeA: boolean, transposeB: boolean, outId: number) =>

```

void;\n\nfunction setup(backend: BackendWasm) {\n wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul,
null /* void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n 'number' // out_id\n]);\n}\n\nfunction batchMatMul(args: {\n inputs: BatchMatMulInputs,\n backend: BackendWasm,\n attrs: BatchMatMulAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {a, b} = inputs;\n const {transposeA, transposeB} = attrs;\n if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n throw new Error(\n `BatchMatMul for non non-float32 tensors not yet supported.`);\n }\n const aRank = a.shape.length;\n const bRank = b.shape.length;\n const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n const innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n const outerShapeA = transposeA ? a.shape[aRank - 1] : a.shape[aRank - 2];\n const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank - 1];\n const outerDimsA = a.shape.slice(0, -2);\n const outerDimsB = b.shape.slice(0, -2);\n const batchDimA = util.sizeFromShape(outerDimsA);\n const batchDimB = util.sizeFromShape(outerDimsB);\n const batchDimsCompatible =\n batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n util.assert(\n aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n () => `Error in matMul: the input batch dimensions must either be the` +\n ` same or at least one input batch dimension must be 1. Got input` +\n ` batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n const outShapeOuterDims =\n batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\n const outShape =\n outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n util.assert(\n innerShapeA === innerShapeB,\n () => `Error in matMul: inner shapes (${innerShapeA}) and` +\n ` (${innerShapeB}) of Tensors with shapes` +\n ` ${a.shape} and` +\n ` ${b.shape} and transposeA=${transposeA}` +\n ` and transposeB=${transposeB}` +\n ` must match.`);\n const a3dShape = transposeA ? [batchDimA, innerShapeA, outerShapeA] :\n [batchDimA, outerShapeA, innerShapeA];\n const b3dShape = transposeB ? [batchDimB, outerShapeB,\n innerShapeB] :\n [batchDimB, innerShapeB, outerShapeB];\n // The rest of the implementation is designed to operate on rank-3 tensors\n const a3d = reshape({inputs: {x: a}, backend, attrs: {shape: a3dShape}});\n const b3d = reshape({inputs: {x: b}, backend, attrs: {shape: b3dShape}});\n const a3dId = backend.dataIdMap.get(a3d.dataId).id;\n const b3dId = backend.dataIdMap.get(b3d.dataId).id;\n const leftDim = transposeA ? a3d.shape[2] : a3d.shape[1];\n const rightDim = transposeB ? b3d.shape[1] : b3d.shape[2];\n const batchDim = Math.max(batchDimA, batchDimB);\n const out = backend.makeOutput([batchDim, leftDim, rightDim], a3d.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const aShapeBytes = new Uint8Array(new Int32Array(a3d.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b3d.shape).buffer);\n wasmBatchMatMul(\n a3dId, aShapeBytes, a3d.shape.length, b3dId, bShapeBytes,\n b3d.shape.length, transposeA, transposeB, outId);\n backend.disposeData(a3d.dataId);\n backend.disposeData(b3d.dataId);\n out.shape = outShape;\n return out;\n}\n\nexport const batchMatMulConfig: KernelConfig = {\n kernelName: BatchMatMul,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: batchMatMul as {} as KernelFunc\n};\n"}

```

Found in path(s):

```

* /opt/cola/permits/1234600203_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/BatchMatMul.js.map

```

No license file was found, but licenses were detected in source scan.

```

{"version":3,"file":"tf-backend-wasm.fesm.js","sources":["../src/kernels/types.ts","../src/kernels/_FusedMatMul.ts","../src/kernels/unary_kernel.ts","../src/kernels/Abs.ts","../src/kernels/binary_kernel.ts","../src/kernels/Add.ts","../src/kernels/AddN.ts","../src/kernels/Identity.ts","../src/kernels/Transpose.ts","../src/kernels/kernel_utils.ts","../src/kernels/All.ts","../src/kernels/Any.ts","../src/kernels/ArgMax.ts","../src/kernels/AvgPool.ts","../src/kernels/Reshape.ts","../src/kernels/BatchMatMul.ts","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Concat_impl.js","../node_modules/@tensorflow/tfjs-backend-cpu/dist/kernels/Range_impl.js","../node_modules/@tensorflow/tfjs-backend-

```

cpu/dist/kernels/Slice.js", "../src/kernels/Slice.ts", "../src/kernels/BatchToSpaceND.ts", "../src/kernels/Cast.ts", "../src/kernels/Ceil.ts", "../src/kernels/ClipByValue.ts", "../src/kernels/Concat.ts", "../src/kernels/Conv2D.ts", "../src/kernels/Conv2DBackpropInput.ts", "../src/kernels/Cos.ts", "../src/kernels/Cosh.ts", "../src/kernels/CropAndResize.ts", "../src/kernels/Cumsum.ts", "../src/kernels/DepthToSpace.ts", "../src/kernels/DepthwiseConv2dNative.ts", "../src/kernels/Elu.ts", "../src/kernels/Equal.ts", "../src/kernels/Exp.ts", "../src/kernels/ExpandDims.ts", "../src/kernels/Fill.ts", "../src/kernels/FlipLeftRight.ts", "../src/kernels/Floor.ts", "../src/kernels/FloorDiv.ts", "../src/kernels/FusedBatchNorm.ts", "../src/kernels/FusedConv2D.ts", "../src/kernels/FusedDepthwiseConv2D.ts", "../src/kernels/GatherNd.ts", "../src/kernels/GatherV2.ts", "../src/kernels/Greater.ts", "../src/kernels/GreaterEqual.ts", "../src/kernels/LeakyRelu.ts", "../src/kernels/Less.ts", "../src/kernels/LessEqual.ts", "../src/kernels/Log.ts", "../src/kernels/LogicalAnd.ts", "../src/kernels/Max.ts", "../src/kernels/Maximum.ts", "../src/kernels/MaxPool.ts", "../src/kernels/Mean.ts", "../src/kernels/Min.ts", "../src/kernels/Minimum.ts", "../src/kernels/MirrorPad.ts", "../src/kernels/Multiply.ts", "../src/kernels/Neg.ts", "../src/kernels/NonMaxSuppression\_util.ts", "../src/kernels/NonMaxSuppressionV3.ts", "../src/kernels/NonMaxSuppressionV4.ts", "../src/kernels/NonMaxSuppressionV5.ts", "../src/kernels/NotEqual.ts", "../src/kernels/OneHot.ts", "../src/kernels/OnesLike.ts", "../src/kernels/Pack.ts", "../src/kernels/PadV2.ts", "../src/kernels/Pow.ts", "../src/kernels/Prelu.ts", "../src/kernels/Prod.ts", "../src/kernels/Range.ts", "../src/kernels/RealDiv.ts", "../src/kernels/Relu.ts", "../src/kernels/Relu6.ts", "../src/kernels/ResizeBilinear.ts", "../src/kernels/Reverse.ts", "../src/kernels/RotateWithOffset.ts", "../src/kernels/Round.ts", "../src/kernels/Rsqrt.ts", "../src/kernels/ScatterNd.ts", "../src/kernels/Select.ts", "../src/kernels/Sigmoid.ts", "../src/kernels/Sin.ts", "../src/kernels/Softmax.ts", "../src/kernels/SpaceToBatchND.ts", "../src/kernels/SplitV.ts", "../src/kernels/Sqrt.ts", "../src/kernels/Square.ts", "../src/kernels/SquaredDifference.ts", "../src/kernels/Step.ts", "../src/kernels/StridedSlice.ts", "../src/kernels/Sub.ts", "../src/kernels/Sum.ts", "../src/kernels/Tan.ts", "../src/kernels/Tanh.ts", "../src/kernels/Tile.ts", "../src/kernels/TopK.ts", "../src/kernels/Transform.ts", "../src/kernels/Unpack.ts", "../src/kernels/ZerosLike.ts", "../src/register\_all\_kernels.ts", "../src/c/flags\_wasm.ts", "../wasm-out/tfjs-backend-wasm-threaded-simd.js", "../wasm-out/tfjs-backend-wasm-threaded-simd.worker.js", "../wasm-out/tfjs-backend-wasm.js", "../src/backend\_wasm.ts", "../src/version.ts", "../src/base.ts"], "sourcesContent": ["/\*\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the\n \* \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the\n \* License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or\n \* agreed to in writing, software\n \* distributed under the License is distributed on an\n \* \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for\n \* the specific language governing permissions and\n \* limitations under the License.\n \*\n \* =====\n \*\n \* This enum must align with the enum defined in cc/backend.h.\n \* export enum CppDType {\n \* float32 = 0,\n \* int32 = 1,\n \* bool = 2,\n \* string = 3,\n \* complex64 = 4\n \* }\n \* Must match enum in cc/fusable\_activations.h.\n \* export\n \* enum FusableActivation {\n \* linear = 0,\n \* relu = 1,\n \* relu6 = 2,\n \* prelu = 3,\n \* leakyrelu = 4,\n \* sigmoid = 5,\n \* elu = 6\n \* }\n \*/\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache\n \* License, Version 2.0 (the\n \* \"License\");\n \* you may not use this file except in compliance with the License.\n \* You\n \* may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required\n \* by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an\n \* \"AS IS\"\n \* BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the\n \* License for the specific language governing permissions and\n \* limitations under the License.\n \*\n \* =====\n \*\n \* import { \_FusedMatMul, \_FusedMatMulAttrs, \_FusedMatMulInputs, KernelConfig, KernelFunc } from\n \* '@tensorflow/tfjs-core';\n \* import { BackendWasm } from '../backend\_wasm';\n \* import { FusableActivation } from\n \* './types';\n \* let wasmFusedMatMul: (\n \* aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n \* bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n \* transposeB: boolean, activation: number,\n \* biasId: number,\n \* preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n \* void;\n \* function setup(backend: BackendWasm) {\n \* wasmFusedMatMul = backend.wasm.cwrap(\_FusedMatMul,\n \* null /\* void \*/, [\n \* 'number', // a\_id\n \* 'array', // a\_shape\n \* 'number', // a\_shape.length\n \* 'number', // b\_id\n

```

'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n
'number', // activation\n 'number', // biasId\n 'number', // preluActivationWeightsId\n 'number', //
leakyreluAlpha\n 'number' // out_id\n]);\n}\n\nfunction fusedBatchMatMul(args: {\n inputs:
_FusedMatMulInputs,\n backend: BackendWasm,\n attrs: _FusedMatMulAttrs\n}) {\n const {inputs, backend,
attrs} = args;\n const {a, b, bias, preluActivationWeights} = inputs;\n\n if (a.dtype !== 'float32' || b.dtype !==
'float32') {\n throw new Error(\n `_FusedMatMul for non non-float32 tensors not yet supported.`);\n }\n\n
const {transposeA, transposeB, activation, leakyreluAlpha} = attrs;\n const aId =
backend.dataIdMap.get(a.dataId).id;\n const bId = backend.dataIdMap.get(b.dataId).id;\n\n let biasId = 0;\n if
(bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `_FusedMatMul only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}.`);\n }\n biasId = biasData.id;\n }\n const preluActivationWeightsId =
preluActivationWeights == null ?\n 0 : \n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n const
fusedActivation =\n FusableActivation[activation as {} as keyof typeof FusableActivation];\n if
(fusedActivation == null) {\n throw new Error(\n `${activation} activation not yet supported for
FusedConv2D ` +\n `in the wasm backend.`);\n }\n\n const leftDim = transposeA ? a.shape[2] : a.shape[1];\n
const rightDim = transposeB ? b.shape[1] : b.shape[2];\n const batchDim = a.shape[0];\n\n const out =
backend.makeOutput([batchDim, leftDim, rightDim], a.dtype);\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const aShapeBytes = new Uint8Array(new
Int32Array(a.shape).buffer);\n const bShapeBytes = new Uint8Array(new Int32Array(b.shape).buffer);\n\n
wasmFusedMatMul(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n transposeA,
transposeB, fusedActivation, biasId, preluActivationWeightsId,\n leakyreluAlpha || 0, outId);\n\n return
out;\n}\n\nexport const fusedMatMulConfig: KernelConfig = {\n kernelName: _FusedMatMul,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchMatMul as {} as KernelFunc\n};\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
`License`);\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an `AS IS` BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {DataType, KernelConfig, TensorInfo, UnaryInputs, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nexport function
createUnaryKernelConfig(\n kernelName: string, outType?: DataType): KernelConfig {\n let wasmFunc: (xId:
number, dtype: number, outId: number) => void;\n\n function setupFunc(backend: BackendWasm): void {\n
wasmFunc = backend.wasm.cwrap(kernelName, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n
'number', // out_id\n]);\n }\n\n function kernelFunc(args: {backend: BackendWasm, inputs: UnaryInputs}): \n
TensorInfo {\n const {backend, inputs: {x}} = args;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const
out = backend.makeOutput(x.shape, outType || x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
// Short-circuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n
wasmFunc(xId, CCppType[x.dtype], outId);\n return out;\n }\n\n return {kernelName, backendName: 'wasm',
setupFunc, kernelFunc};\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n *
Licensed under the Apache License, Version 2.0 (the `License`);\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an `AS IS` BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n

```

```
*/\nimport { Abs, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const absConfig: KernelConfig = createUnaryKernelConfig(Abs);\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*/\nimport { backend_util, BinaryInputs, DataType, KernelConfig, TensorInfo, util } from '@tensorflow/tfjs-\ncore';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from './types';\nexport\nfunction createBinaryKernelConfig(\n kernelName: string, supportsFullBroadcast: boolean,\n dtype?:\n DataType): KernelConfig {\n let wasmFunc:\n (aId: number, aShape: Uint8Array, aShapeLen: number, bId:\n number,\n bShape: Uint8Array, bShapeLen: number, dtype: number, outId: number) =>\n void;\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(kernelName, null /*\n void */, [\n 'number', // a_id,\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // dtype\n 'number' // out_id\n]);\n}\nfunction kernelFunc(args: { backend: BackendWasm, inputs: BinaryInputs }):\n TensorInfo {\n const { backend,\n inputs } = args;\n const { a, b } = inputs;\n const aId = backend.dataIdMap.get(a.dataId).id;\n const bId =\n backend.dataIdMap.get(b.dataId).id;\n const outputType = dtype != null ? dtype : a.dtype;\n const newShape =\n backend_util.assertAndGetBroadcastShape(a.shape, b.shape);\n const out = backend.makeOutput(newShape,\n outputType);\n // Short-circuit zero-sized tensors.\n if (util.sizeFromShape(newShape) === 0) {\n return\n out;\n }\n const aShapeBytes = new Uint8Array(new Int32Array(a.shape).buffer);\n const bShapeBytes =\n new Uint8Array(new Int32Array(b.shape).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const kernelFunc = () => wasmFunc(\n aId, aShapeBytes, a.shape.length, bId, bShapeBytes, b.shape.length,\n CppDType[a.dtype], outId);\n // Currently only some float operations support full broadcast.\n if\n (supportsFullBroadcast && a.dtype === 'float32') {\n kernelFunc();\n return out;\n }\n const\n aBroadcastDims = backend_util.getBroadcastDims(a.shape, newShape);\n const bBroadcastDims =\n backend_util.getBroadcastDims(b.shape, newShape);\n const loopsOverAllOfA = aBroadcastDims.every((v, i) =>\n v === i);\n const loopsOverAllOfB = bBroadcastDims.every((v, i) => v === i);\n if (loopsOverAllOfA &&\n loopsOverAllOfB) {\n kernelFunc();\n return out;\n } else {\n throw new Error(\n `Broadcasting\n along outer dims is not yet ` +\n `supported for ${a.dtype} ${kernelName}.`);\n }\n }\n return\n {kernelName, backendName: 'wasm', setupFunc, kernelFunc};\n}\n"/**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n */
```

```
=====\n*/\nimport { Add, KernelConfig } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const addConfig: KernelConfig =\n createBinaryKernelConfig(Add, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
```



governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport {AddN, KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport\n{BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmFunc:\n (inputIds:\n Uint8Array, inputIdsLen: number, dtype: number, outId: number) =>\n void;\nfunction setupFunc(backend:\n BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(AddN, null /* void */, [\n 'array', // input_ids\n 'number', // input_ids.length\n 'number', // dtype\n 'number', // out_id\n]);\n}\nfunction addn(args: {inputs:\n TensorInfo[], backend: BackendWasm}) {\n const {inputs, backend} = args;\n const out =\n backend.makeOutput(inputs[0].shape, inputs[0].dtype);\n // Short-circuit zero-sized tensors.\n if\n (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n const inputIds = inputs.map(x =>\n backend.dataIdMap.get(x.dataId).id);\n const inputIdsBytes = new Uint8Array(new Int32Array(inputIds).buffer);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(inputIdsBytes, inputIds.length,\n CppDType[out.dtype], outId);\n return out;\n}\n\nexport const addNConfig: KernelConfig = {\n kernelName:\n AddN,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: addn as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport {Identity, IdentityInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport\n{TensorInfo} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nexport function\nidentity(args: {inputs: IdentityInputs, backend: BackendWasm}):\n TensorInfo {\n const {inputs: {x}, backend} =\n args;\n const out = backend.makeOutput(x.shape, x.dtype);\n const inVals = backend.toArrayFromHeap(x);\n const outVals = backend.toArrayFromHeap(out);\n outVals.set(inVals);\n return out;\n}\n\nexport const\nidentityConfig: KernelConfig = {\n kernelName: Identity,\n backendName: 'wasm',\n kernelFunc: identity as {} as\n KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed\n * on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */
```

```
=====\n*\n\nimport {KernelConfig, KernelFunc, TensorInfo, Transpose, TransposeAttrs, TransposeInputs} from\n '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {identity} from\n './Identity';\nimport {CppType} from './types';\nlet wasmTranspose: (\n xId: number, xShape: Uint8Array,\n xShapeLength: number, dtype: CppDType,\n outId: number, perm: Uint8Array, permLength: number) =>\n void;\nfunction setup(backend: BackendWasm) {\n wasmTranspose = backend.wasm.cwrap(Transpose, null /*\n void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // dtype\n 'number', // outId\n 'array', // perm\n 'number', // perm.length\n]);\n}\n\nexport function transpose(\n args:\n {inputs: TransposeInputs, backend: BackendWasm, attrs: TransposeAttrs}):\n TensorInfo {\n const {inputs,\n backend, attrs} = args;\n // Reduce any dimensions with size one. Lower-rank transpose kernel performs\n // better\n // due to simpler memory access pattern.\n const [reducedShape, perm] = removeOneSizeDims(inputs.x.shape,\n attrs.perm);\n\n let permIsNoOp = true;\n for (let i = 0; i < perm.length; i++) {\n if (perm[i] !== i) {\n permIsNoOp = false;\n }\n }\n\n const outShape = computeOutShape(inputs.x.shape, attrs.perm);\n const x = {\n dataId: inputs.x.dataId,\n shape: reducedShape,\n dtype: inputs.x.dtype\n };\n\n if (permIsNoOp) {\n const
```

```

cloned = identity({inputs, backend});\n cloned.shape = outShape;\n return cloned;\n }\n\n const out =
backend.makeOutput(outShape, x.dtype);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const outId =
backend.dataIdMap.get(out.dataId).id;\n const permBytes = new Uint8Array(new Int32Array(perm).buffer);\n
const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n wasmTranspose(\n xId,
xShapeBytes, x.shape.length, CppDType[x.dtype], outId, permBytes,\n perm.length);\n return
out;\n}\n\nfunction computeOutShape(inShape: number[], perm: number[]): number[] {\n const outShape = new
Array(inShape.length);\n for (let i = 0; i < outShape.length; i++) {\n outShape[i] = inShape[perm[i]];\n }\n
return outShape;\n}\n\nfunction removeOneSizeDims(\n shape: number[], perm: number[]): [number[], number[]]
{\n const newShape: number[] = [];\n const newPerm: number[] = [];\n for (let i = 0; i < shape.length; ++i) {\n
 if (shape[i] !== 1) {\n newShape.push(shape[i]);\n }\n if (shape[perm[i]] !== 1) {\n
 newPerm.push(perm[i]);\n }\n }\n for (let i = 0; i < newPerm.length; ++i) {\n let minValIdx = -1;\n
for (let j = 0; j < newPerm.length; ++j) {\n if (newPerm[j] >= i &&\n (minValIdx === -1 || newPerm[minValIdx] >
newPerm[j])) {\n minValIdx = j;\n }\n }\n newPerm[minValIdx] = i;\n }\n return [newShape,
newPerm];\n}\n\nexport const transposeConfig: KernelConfig = {\n kernelName: Transpose,\n backendName:
'wasm',\n kernelFunc: transpose as {} as KernelFunc,\n setupFunc: setup,\n};\n\n"/**\n * @license\n * Copyright
2020 Google Inc. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*/\n\nimport {backend_util, TensorInfo, util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\nimport {transpose} from './Transpose';\n\n/**\n * Compute permutation axes and do a transpose
if necessary.\n * Used by reduction ops.\n * @param x input TensorInfo\n * @param axis reduction axes\n *
@param backend wasm backend instance\n */\nexport function permuteAxesAndTranspose(\n x: TensorInfo,
axis: number|number[], backend: BackendWasm): {\n transposed: TensorInfo|null,\n axes: number[],\n
originalAxes: number[],\n inputWasTransposed: boolean\n} {\n const xShape = x.shape;\n const xRank =
x.shape.length;\n\n const originalAxes = util.parseAxisParam(axis, xShape);\n let axes = originalAxes;\n const
permutedAxes = backend_util.getAxesPermutation(axes, xRank);\n let xTransposed = null;\n let
inputWasTransposed = false;\n if (permutedAxes !== null) {\n const newShape: number[] = new Array(xRank);\n
for (let i = 0; i < newShape.length; i++) {\n newShape[i] = xShape[permutedAxes[i]];\n }\n\n axes =
backend_util.getInnerMostAxes(axes.length, xRank);\n xTransposed =\n transpose({inputs: {x}, attrs: {perm:
permutedAxes}, backend});\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const transposedId =
backend.dataIdMap.get(xTransposed.dataId).id;\n if (transposedId !== xId) {\n inputWasTransposed = true;\n
 }\n }\n\n return {transposed: xTransposed, originalAxes, axes, inputWasTransposed};\n}\n\n"/**\n * @license\n *
Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
\n\n
=====\n
*/\n\nimport {All, AllAttrs, AllInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from
'@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAll: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmAll = backend.wasm.cwrap(All, null
/*void*/, ['number, number, number']);\n}\n\nfunction all(args: {backend: BackendWasm, inputs: AllInputs, attrs:

```

```

AllAttrs});\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x}
= inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const
{transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if
(inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input =
transposed;\n inputId = transposedId;\n }\n\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('all', axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmAll(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n
backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const allConfig: KernelConfig = {\n kernelName: All,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: all as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {Any, AnyAttrs, AnyInputs, backend_util, KernelConfig, KernelFunc, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmAny: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmAny = backend.wasm.cwrap(Any,
null /*void*/, ['number, number, number']);\n}\n\nfunction any(args: {backend: BackendWasm, inputs: AnyInputs,
attrs: AnyAttrs}):\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n
const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n
const {transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis,
backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n
input = transposed;\n inputId = transposedId;\n }\n\n const inputRank = input.shape.length;\n
backend_util.assertAxesAreInnerMostDims('any', axes, inputRank);\n const [outShape, reduceShape] =\n
backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmAny(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed tensor.\n
backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const anyConfig: KernelConfig = {\n kernelName: Any,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: any as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {ArgMax, ArgMaxAttrs, ArgMaxInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-

```

```

core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {permuteAxesAndTranspose} from
 './kernel_utils';\n\nimport {CppType} from './types';\n\nlet wasmFunc: (\n xId: number, dtype: number, outerSize:
 number, innerSize: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
 wasmFunc = backend.wasm.cwrap(ArgMax, null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // outer_size\n 'number', // inner_size\n 'number' // out_id\n]);\n\n function argmax(\n args:
 {inputs: ArgMaxInputs, backend: BackendWasm, attrs: ArgMaxAttrs}) {\n const {backend, inputs, attrs} = args;\n
 const {axis} = attrs as {} as ArgMaxAttrs;\n const {x} = inputs as {} as ArgMaxInputs;\n const xId =
 backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes,
 inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n
 const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose
 was not a no-op. We will need to dispose of this\n // once we are done.\n input = transposed;\n inputId =
 transposedId;\n }\n }\n\n const outShape = input.shape.slice(0, -1);\n const out =
 backend.makeOutput(outShape, 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const outerSize =
 util.sizeFromShape(out.shape);\n const innerSize = input.shape[axes[0]];\n wasmFunc(inputId,
 CppDType[input.dtype], outerSize, innerSize, outId);\n\n if (inputWasTransposed) {\n // dispose of the
 transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n return out;\n}\n\nexport const
 argMaxConfig: KernelConfig = {\n kernelName: ArgMax,\n backendName: 'wasm',\n kernelFunc: argmax as {}
 as KernelFunc,\n setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
 Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
 except in compliance with the License.\n * You may obtain a copy of the License at\n *
 http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *
 =====\n
 *\n\nimport {AvgPool, AvgPoolAttrs, AvgPoolInputs, backend_util, KernelConfig, KernelFunc, Tensor4D} from
 '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmAvgPool: (\n xId:
 number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth:
 number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, strideHeight: number,\n
 strideWidth: number, channels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
 wasmAvgPool = backend.wasm.cwrap(AvgPool, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n
 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterHeight\n 'number', // filterWidth\n
 'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', //
 strideHeight\n 'number', // strideWidth\n 'number', // channels\n 'number', // outId\n]);\n\n function
 avgPool(\n args: {inputs: AvgPoolInputs, backend: BackendWasm, attrs: AvgPoolAttrs}) {\n const {inputs, attrs,
 backend} = args;\n\n const x = inputs.x as Tensor4D;\n const xId = backend.dataIdMap.get(x.dataId).id;\n\n const
 {filterSize, strides, pad, dimRoundingMode} = attrs;\n const convInfo = backend_util.computePool2DInfo(\n
 x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight =
 convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n
 const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft =
 convInfo.padInfo.left;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n
 const channels = convInfo.inChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n
 `wasm backend does not support dataFormat: ` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n
 }\n\n if (convInfo.dilationWidth !== 1 || convInfo.dilationHeight !== 1) {\n throw new Error(\n
 `was backend
 only supports average pooling with dilation = [1, 1], ` +\n `got [${convInfo.dilationHeight},
 ${convInfo.dilationWidth}].`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n
 const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmAvgPool(\n xId, x.shape[0], x.shape[1], x.shape[2],
 filterHeight, filterWidth,\n padTop, padRight, padBottom, padLeft, strideHeight, strideWidth, channels,\n
 }

```

```

outId);\n return out;\n}\n\nexport const avgPoolConfig: KernelConfig = {\n kernelName: AvgPool,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: avgPool as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
\n
*/\n\nimport {KernelConfig, KernelFunc, Reshape, ReshapeAttrs, ReshapeInputs, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nexport function reshape(\n args: {inputs: ReshapeInputs, attrs: ReshapeAttrs, backend: BackendWasm}) {\n const {inputs, attrs} = args;\n const {x} = inputs;\n const {shape} = attrs;\n\n const xSize = util.sizeFromShape(x.shape);\n const $shape = util.inferFromImplicitShape(shape, xSize);\n\n util.assert(\n xSize === util.sizeFromShape($shape),\n () => `new shape: ${$shape}, old shape: ${x.shape}. New shape and old ` +\n `shape must have the same number of elements.`);\n\n // Backend needs to track refCount for the dataId for reshape op\n args.backend.incref(x.dataId);\n\n return {dataId: x.dataId, shape: $shape, dtype: x.dtype};\n}\n\nexport const reshapeConfig: KernelConfig = {\n kernelName: Reshape,\n backendName: 'wasm',\n kernelFunc: reshape as { } as KernelFunc\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS"\n * BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */

```

```

=====
\n
/\n\nimport {BatchMatMul, BatchMatMulAttrs, BatchMatMulInputs, KernelConfig, KernelFunc, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {reshape} from './Reshape';\n\nlet wasmBatchMatMul: (\n aId: number, aShape: Uint8Array, aShapeSize: number, bId: number,\n bShape: Uint8Array, bShapeSize: number, transposeA: boolean,\n transposeB: boolean, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmBatchMatMul = backend.wasm.cwrap(BatchMatMul, null / void */, [\n 'number', // a_id\n 'array', // a_shape\n 'number', // a_shape.length\n 'number', // b_id\n 'array', // b_shape\n 'number', // b_shape.length\n 'number', // transpose_a\n 'number', // transpose_b\n 'number' // out_id\n]);\n\n function batchMatMul(args: {\n inputs: BatchMatMulInputs,\n backend: BackendWasm,\n attrs: BatchMatMulAttrs\n }) {\n const {inputs, backend, attrs} = args;\n const {a, b} = inputs;\n const {transposeA, transposeB} = attrs;\n\n if (a.dtype !== 'float32' || b.dtype !== 'float32') {\n throw new Error(\n `BatchMatMul for non non-float32 tensors not yet supported.`);\n }\n\n const aRank = a.shape.length;\n const bRank = b.shape.length;\n\n const innerShapeA = transposeA ? a.shape[aRank - 2] : a.shape[aRank - 1];\n const innerShapeB = transposeB ? b.shape[bRank - 1] : b.shape[bRank - 2];\n\n const outerShapeA = transposeA ? a.shape[aRank - 1] : a.shape[aRank - 2];\n const outerShapeB = transposeB ? b.shape[bRank - 2] : b.shape[bRank - 1];\n\n const outerDimsA = a.shape.slice(0, -2);\n const outerDimsB = b.shape.slice(0, -2);\n\n const batchDimA = util.sizeFromShape(outerDimsA);\n const batchDimB = util.sizeFromShape(outerDimsB);\n\n const batchDimsCompatible =\n batchDimA === batchDimB || batchDimA === 1 || batchDimB === 1;\n\n util.assert(\n aRank >= 2 && bRank >= 2 && batchDimsCompatible,\n () => `Error in matMul: the input batch dimensions must either be the ` +\n `same or at least one input batch dimension must be 1. Got input ` +\n `batch dimensions of (${outerDimsA}) and (${outerDimsB}).`);\n\n const outShapeOuterDims =\n batchDimA > batchDimB ? a.shape.slice(0, -2) : b.shape.slice(0, -2);\n const outShape =\n outShapeOuterDims.concat([outerShapeA, outerShapeB]);\n\n util.assert(\n innerShapeA === innerShapeB,\n () => `Error in matMul: inner shapes (${innerShapeA}) and (` +\n ` ${innerShapeB}) of Tensors with shapes

```













```

hdE9mZnNldCwgZmxhdE9mZnNldCArIGxlBmd0aCk7XG4gICAgfVxuXG4gICAgcmV0dXJuICh2YWxzIGFzIF
R5cGVkQXJyYXkpLnN1YmFycmF5KGZsYXRPMZmZzZXQsIGZsYXRPMZmZzZXQgKyBsZW5ndGp01xuICB9
XG5cbiAgY29uc3QgZGVjb2RIZERhdGEgPSBkdHlwZSA9PT0gJ3N0cmluZycpP1xuICAgICAgYmFja2VuZSF91d
GlsLmZyb21VaW50OFRvU3RyaW5nQXJyYXkodmFscyBhcyBVaW50OEFycmF5W10pIDpobiAgICAgICAgIHZhbH
MgYXMGVHlwZWRCbnJheTtcbiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
REYXRhKTtcbiAgY29uc3Qgb3V0QnVmID0gYnVmZmVykHNpemUsIGR0eXB1KTtcbiAgZm9yIChsZXQgaSA
9IDA7IGkgPCBvdXRcdWYuc2l6ZTsGKytpKSB7XG4gICAgY29uc3Qgb3V0TG9jID0gb3V0QnVmLmluZGV4V
G9Mb2MoaSk7XG4gICAgY29uc3QgaW5Mb2MgPSBvdXRmb2MubWFWKChpZG4gIH9jID0gb3V0QnVmLmluZGV4V
WR4ICsgYmVnaW5bal0pO1xuICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
KTtcbiAgfVxuXG4gICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
Zyb21TdHJpbmdBcnJheVRvVWludGob3V0QnVmLnZhbkVlcyBhcyBzdHJpbmdhXSsk7XG4gIH1cbiAgcmV0d
XJuIG91dEJlZi52YWx1ZXMGYXMGVHlwZWRCbnJheTtcbn1cbiAgICAgICAgICAgICAgICAgICAgICAgICAgIC
ICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAg
ICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
R0cnM6IFNsaWNiQXR0cnN9KTpbiAgICBUZw5zb3JjbmZvIHtcbiAgY29uc3Qge2lucHV0cywgYmFja2VuZC
wgYXR0cnN9ID0gYXJncztcbiAgY29uc3Qge3h9ID0gaW5wdXRzO1xuICBjb25zdCB7YmVnaW4sIHNPemV9ID
0gYXR0cnM7XG5cbiAgYXNzZXJ0Tm90Q29tGxleCh4LCAnc2xpY2UnKTtcbiAgICBjb25zdCB7JGJIZ2luLCAk
c2l6ZV0gPSBzbGlyZV91dGlsLnBhcmlu2xpY2VQYXJhbXMoeCwgYmVnaW4sIHNPemUpO1xuICBzbGlyZV9
1dGlsLmFzc2VydFBhcmFtc1ZhbkGkKHGsaWRiZWIJbWZlbnN0IHZhbHMgPSBiYW
NrZW5kLmRhdGEluZV0KHguZGF0YUlkKS52YWx1ZXM7XG4gICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
wodmFscywgJGJIZ2luLCAk2l6ZSwgeC5zaGFwZSwgeC5kdHlwZSk7XG4gIHJldHVybiBiYWNRZW5kLm1ha2
VUZw5zb3JjbmZvKCRzaXplLCB4LmR0eXBILCBvdXRWYwXzKTtcbn1cbiAgICAgICAgICAgICAgICAgICAgIC
IQ29uZmlnOibLZXJJuWxD25maWcgPSB7XG4gICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
TogJ2NwdScsXG4gICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIC
=====\\n
*/\\nimport {backend_util, KernelConfig, KernelFunc, Slice, slice_util, SliceAttrs, SliceInputs, TypedArray, util}
from '@tensorflow/tfjs-core';\\n\\nimport {BackendWasm} from './backend_wasm';\\nimport {sliceImplCPU} from
 './kernel_utils/shared';\\n\\nexport function slice(\\n args: {inputs: SliceInputs, attrs: SliceAttrs, backend:
BackendWasm}) {\\n const {inputs: {x}, attrs: {begin, size}, backend} = args;\\n\\n const [begin_, size_] =
slice_util.parseSliceParams(x, begin, size);\\n\\n const isContinous = slice_util.isSliceContinuous(x.shape, begin_,
size_);\\n const xVals = backend.readSync(x.dataId);\\n const out = backend.makeOutput(size_, x.dtype);\\n const
xStrides = util.computeStrides(x.shape);\\n const outData = backend.dataIdMap.get(out.dataId);\\n\\n if (isContinous)
{\\n const flatOffset = slice_util.computeFlatOffset(begin_, xStrides);\\n\\n if (x.dtype === 'string') {\\n
outData.stringBytes =\\n (xVals as Uint8Array[])\\n .slice(flatOffset, flatOffset +
util.sizeFromShape(size_));\\n } else {\\n const outVals = backend.typedArrayFromHeap(out);\\n
outVals.set(\\n (xVals as TypedArray)\\n .subarray(flatOffset, flatOffset +
util.sizeFromShape(size_));\\n })\\n\\n return out;\\n }\\n\\n if (x.dtype === 'string') {\\n const res =
sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype);\\n outData.stringBytes = res as Uint8Array[];\\n return
out;\\n }\\n\\n const outVals = backend.typedArrayFromHeap(out);\\n const rank = x.shape.length;\\n if (rank === 2)
{\\n slice2d(\\n xVals as TypedArray, xStrides[0], outVals, begin_ as [number, number],\\n size_ as
[number, number]);\\n } else if (rank === 3) {\\n slice3d(\\n xVals as TypedArray, xStrides[0], xStrides[1],
outVals,\\n begin_ as [number, number, number], size_ as [number, number, number]);\\n } else if (rank === 4)
{\\n slice4d(\\n xVals as TypedArray, xStrides[0], xStrides[1], xStrides[2], outVals,\\n begin_ as [number,

```

```

number, number, number],\n size_ as [number, number, number, number]);\n } else {\n const res =\n sliceImplCPU(xVals, begin_, size_, x.shape, x.dtype) as TypedArray;\n outVals.set(res);\n }\n\n return\n out;\n}\n\nfunction slice2d(\n xVals: backend_util.TypedArray, xStride: number,\n outVals:\n backend_util.TypedArray, begin: [number, number],\n size: [number, number]): void {\n let outOffset = 0;\n const beginI = begin[0];\n const beginJ = begin[1];\n const endI = beginI + size[0];\n for (let i = beginI; i < endI;\n i++) {\n const xOffset = i * xStride + beginJ;\n outVals.set(xVals.subarray(xOffset, xOffset + size[1]),\n outOffset);\n outOffset += size[1];\n }\n}\n\nfunction slice3d(\n xVals: backend_util.TypedArray, xStride1:\n number, xStride2: number,\n outVals: backend_util.TypedArray, begin: [number, number, number],\n size:\n [number, number, number]): void {\n let outOffset = 0;\n const beginI = begin[0];\n const beginJ = begin[1];\n const beginK = begin[2];\n const endI = beginI + size[0];\n const endJ = beginJ + size[1];\n for (let i = beginI; i <\n endI; i++) {\n for (let j = beginJ; j < endJ; j++) {\n const xOffset = i * xStride1 + j * xStride2 + beginK;\n outVals.set(xVals.subarray(xOffset, xOffset + size[2]),\n outOffset);\n outOffset += size[2];\n }\n }\n}\n\nfunction slice4d(\n xVals: backend_util.TypedArray, xStride1: number, xStride2: number,\n xStride3:\n number, outVals: backend_util.TypedArray,\n begin: [number, number, number, number],\n size: [number,\n number, number, number]): void {\n let outOffset = 0;\n const beginI = begin[0];\n const beginJ = begin[1];\n const beginK = begin[2];\n const endI = beginI + size[0];\n const endJ = beginJ + size[1];\n const endK = beginK\n + size[2];\n const beginL = begin[3];\n for (let i = beginI; i < endI; i++) {\n for (let j = beginJ; j < endJ; j++)\n {\n for (let k = beginK; k < endK; k++) {\n const xOffset = i * xStride1 + j * xStride2 + k * xStride3 +\n beginL;\n outVals.set(xVals.subarray(xOffset, xOffset + size[3]),\n outOffset);\n outOffset += size[3];\n }\n }\n }\n}\n\nexport const sliceConfig: KernelConfig = {\n kernelName: Slice,\n backendName: 'wasm',\n kernelFunc: slice as { } as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights\n Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file\n except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an\n \"AS IS\"\n BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *\n *=====\n *\n *\n *import {backend_util, BatchToSpaceND, BatchToSpaceNDAttrs, BatchToSpaceNDInputs, KernelConfig,\n KernelFunc} from '@tensorflow/tfjs-core';\n *import {BackendWasm} from '../backend_wasm';\n *import\n *{reshape} from './Reshape';\n *import {slice} from './Slice';\n *import {transpose} from './Transpose';\n *\n *function\n *batchToSpaceND(args: {\n * inputs: BatchToSpaceNDInputs,\n * backend: BackendWasm,\n * attrs:\n * BatchToSpaceNDAttrs\n *}) {\n * const {inputs, backend, attrs} = args;\n * const {x} = inputs;\n * const {blockShape,\n * crops} = attrs;\n *\n * const prod = blockShape.reduce((a, b) => a * b);\n *\n * const reshaped =\n * backend_util.getReshaped(x.shape, blockShape, prod);\n * const permuted =\n * backend_util.getPermuted(reshaped.length, blockShape.length);\n * const reshapedPermuted =\n * backend_util.getReshapedPermuted(x.shape, blockShape, prod);\n * const sliceBeginCoords =\n * backend_util.getSliceBeginCoords(crops, blockShape.length);\n * const sliceSize =\n * backend_util.getSliceSize(reshapedPermuted, crops, blockShape.length);\n *\n * const xReshaped = reshape({inputs:\n * {x}, backend, attrs: {shape: reshaped}});\n * const xTransposed =\n * transpose({inputs: {x: xReshaped}, backend,\n * attrs: {perm: permuted}});\n * const xTransposedReshaped = reshape(\n * {inputs: {x: xTransposed}, backend,\n * attrs: {shape: reshapedPermuted}});\n * const result = slice({\n * inputs: {x: xTransposedReshaped},\n * backend,\n * attrs: {begin: sliceBeginCoords, size: sliceSize}\n * });\n *\n * backend.disposeData(xReshaped.dataId);\n * backend.disposeData(xTransposed.dataId);\n * backend.disposeData(xReshaped.dataId);\n *\n * return\n * result;\n *}\n *\n *export const batchToSpaceNDConfig: KernelConfig = {\n * kernelName: BatchToSpaceND,\n * backendName: 'wasm',\n * kernelFunc: batchToSpaceND as { } as KernelFunc\n *};\n *\n *"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the

```

License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\n\nimport {Cast, CastAttrs, CastInputs, KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport\n{TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nexport function\n cast(\n args: {inputs: CastInputs, attrs: CastAttrs, backend: BackendWasm});\n TensorInfo {\n const {inputs:\n {x}, attrs: {dtype}, backend} = args;\n const out = backend.makeOutput(x.shape, dtype);\n const inVals =\n backend.typedArrayFromHeap(x);\n const outVals = backend.typedArrayFromHeap(out);\n outVals.set(inVals);\n }\n return out;\n}\n\nexport const castConfig: KernelConfig = {\n kernelName: Cast,\n backendName: 'wasm',\n kernelFunc: cast as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights\n * Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file\n * except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====
*\n\nimport {KernelConfig, Ceil} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n '../unary_kernel';\n\nexport const ceilConfig: KernelConfig = createUnaryKernelConfig(Ceil);\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n * 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n * copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n * law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====
\n\nimport {ClipByValue, ClipByValueAttrs, ClipByValueInputs, KernelConfig, KernelFunc} from\n '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmClip: (xId: number, min:\n number, max: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmClip =\n backend.wasm.cwrap(ClipByValue, null / void */, [\n 'number', // x_id\n 'number', // min\n 'number', //\n max\n 'number' // out_id\n]);\n\n function clip(args: {\n inputs: ClipByValueInputs,\n backend:\n BackendWasm,\n attrs: ClipByValueAttrs\n }) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {clipValueMin, clipValueMax} = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =\n backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmClip(xId,\n clipValueMin, clipValueMax, outId);\n return out;\n }\n\n export const clipByValueConfig: KernelConfig = {\n kernelName: ClipByValue,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: clip as {} as\n KernelFunc\n };
\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n * Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the\n * License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n * on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n * implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n * License.\n */
```

```
=====
*\n\nimport {backend_util, Concat, ConcatAttrs, ConcatInputs, KernelConfig, KernelFunc, util} from\n '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {concatImplCPU} from
```



```

dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number',
// outputChannels\n 'number', // outId\n]);\n}\n\nfunction conv2d(\n args: {inputs: Conv2DInputs, backend:
BackendWasm, attrs: Conv2DAttrs}) {\n const {inputs, attrs, backend} = args;\n\n const {x, filter} = inputs;\n
const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n\n
const {strides, dilations, pad, dimRoundingMode, dataFormat} = attrs;\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n
(x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode, false,
$dataFormat);\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const
padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom =
convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =
convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const outputChannels = convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type
=== 'SAME' ? 1 : 0;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend
Conv2D does not support dataFormat: ` +\n `${convInfo.dataFormat}`. Please use 'channelsLast'.`);\n }\n\n
const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId =
backend.dataIdMap.get(out.dataId).id;\n wasmConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId,
filterHeight,\n filterWidth, padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight,
dilationWidth, strideHeight, strideWidth, inputChannels,\n outputChannels, outId);\n return out;\n}\n\nexport
const conv2DConfig: KernelConfig = {\n kernelName: Conv2D,\n backendName: 'wasm',\n setupFunc: setup,\n
kernelFunc: conv2d as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, Conv2DBackpropInput, Conv2DBackpropInputAttrs, Conv2DBackpropInputInputs,
KernelConfig, KernelFunc, TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nlet wasmConv2DBackpropInput: (\n dyId: number, filterId: number, batchSize: number,
filterHeight: number,\n filterWidth: number, inHeight: number, inWidth: number, inChannels: number,\n
outHeight: number, outWidth: number, outChannels: number,\n strideHeight: number, strideWidth: number,
topPad: number, leftPad: number,\n fltS0: number, fltS1: number, fltS2: number, xBatchStride: number,\n
xRowStride: number, xColStride: number, xChannelStride: number,\n yBatchStride: number, yRowStride:
number, yColStride: number,\n yChannelStride: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmConv2DBackpropInput = backend.wasm.cwrap(Conv2DBackpropInput, null, [\n
'number', // dyId\n 'number', // filterId\n 'number', // batchSize\n 'number', // filterHeight\n 'number', //
filterWidth\n 'number', // inHeight\n 'number', // inWidth\n 'number', // inChannels\n 'number', //
outHeight\n 'number', // outWidth\n 'number', // outChannels\n 'number', // strideHeight\n 'number', //
strideWidth\n 'number', // topPad\n 'number', // leftPad\n 'number', // fltS0\n 'number', // fltS1\n 'number',
// fltS2\n 'number', // xBatchStride\n 'number', // xRowStride\n 'number', // xColStride\n 'number', //
xChannelStride\n 'number', // yBatchStride\n 'number', // yRowStride\n 'number', // yColStride\n 'number',
// yChannelStride\n 'number', // outId\n]);\n}\n\nfunction conv2DBackpropInput(args: {\n backend:
BackendWasm,\n inputs: Conv2DBackpropInputInputs,\n attrs: Conv2DBackpropInputAttrs\n}): TensorInfo {\n
const {backend, inputs, attrs} = args;\n const {dy, filter} = inputs;\n const {strides, pad, dataFormat,
dimRoundingMode, inputShape} = attrs;\n\n const dilations = 1;\n\n const $dataFormat =
backend_util.convertConv2DDataFormat(dataFormat);\n const convInfo = backend_util.computeConv2DInfo(\n

```





```

number,\n imagesShape: Uint8Array, cropHeight: number, cropWidth: number,\n method: number,
extrapolationValue: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmCropAndResize = backend.wasm.cwrap(CropAndResize, null /*void*/, [\n 'number', // imagesId\n
'number', // boxesId\n 'number', // boxIndId\n 'number', // numBoxes\n 'array', // images shape\n 'number',
// cropHeight\n 'number', // cropWidth\n 'number', // method\n 'number', // extrapolation value\n 'number'
// out id\n]);\n}\n\nfunction cropAndResize(args: {\n backend: BackendWasm,\n inputs: CropAndResizeInputs,\n
attrs: CropAndResizeAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {method,
extrapolationValue, cropSize} = attrs;\n const {image, boxes, boxInd} = inputs;\n const numBoxes =
boxes.shape[0];\n const [cropHeight, cropWidth] = cropSize as [number, number];\n const outShape =
[numBoxes, cropHeight, cropWidth, image.shape[3]];\n let imagesData =
backend.dataIdMap.get(image.dataId);\n let castedData;\n if (image.dtype !== 'float32') {\n castedData =
cast({backend, inputs: {x: image}, attrs: {dtype: 'float32'}});\n imagesData =
backend.dataIdMap.get(castedData.dataId);\n }\n const imagesId = imagesData.id;\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const boxIndId = backend.dataIdMap.get(boxInd.dataId).id;\n const
out = backend.makeOutput(outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const
imagesShapeBytes = new Uint8Array(new Int32Array(image.shape).buffer);\n\n wasmCropAndResize(\n
imagesId, boxesId, boxIndId, numBoxes, imagesShapeBytes, cropHeight,\n cropWidth,\n
InterpolationMethod[method as {} as keyof typeof InterpolationMethod],\n extrapolationValue, outId);\n\n if
(castedData !== null) {\n backend.disposeData(castedData.dataId);\n }\n\n return out;\n}\n\nexport const
cropAndResizeConfig: KernelConfig = {\n kernelName: CropAndResize,\n backendName: 'wasm',\n setupFunc:
setup,\n kernelFunc: cropAndResize as {} as KernelFunc\n};\n\n",/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *\n
=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Cumsum, CumsumAttrs, CumsumInputs, TensorInfo, util}
from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from
'./types';\n\nimport {transpose} from './Transpose';\n\nlet wasmCumsum: (xId: number, exclusive: number, reverse:
number,\n finalDim: number, outId: number, dtype: CCppType) => void;\n\nfunction setup(backend:
BackendWasm) {\n wasmCumsum = backend.wasm.cwrap(Cumsum, null /* void */, [\n 'number', // x_id\n
'number', // exclusive\n 'number', // reverse\n 'number', // final_dim\n 'number', // out_id\n 'number' //
dtype\n]);\n}\n\nexport function cumsum(\n args: {inputs: CumsumInputs, backend: BackendWasm, attrs:
CumsumAttrs}): TensorInfo {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {axis,
exclusive, reverse} = attrs;\n const xRank = x.shape.length;\n util.assert(x.dtype === 'float32' || x.dtype ===
'int32',\n () => `cumsum does not support ${x.dtype} tensors in the WASM backend`);\n // permute required axis
to inner most axis\n const permutation = backend_util.getAxesPermutation([axis], xRank);\n let permutedX = x;\n
if (permutation !== null) {\n permutedX = transpose({inputs: {x}, attrs: {perm: permutation}, backend});\n }\n
const permutedAxis = backend_util.getInnerMostAxes(1, xRank)[0];\n
backend_util.assertAxesAreInnerMostDims('cumsum', [permutedAxis], xRank);\n const permutedOut =
backend.makeOutput(permutedX.shape, permutedX.dtype);\n const finalDim = permutedX.shape[permutedAxis];\n
const permutedXId = backend.dataIdMap.get(permutedX.dataId).id;\n const permutedOutId =
backend.dataIdMap.get(permutedOut.dataId).id;\n wasmCumsum(permutedXId, exclusive ? 1 : 0, reverse ? 1 : 0,
finalDim,\n permutedOutId, CCppType[x.dtype]);\n\n // transpose data back if permuted\n let out =
permutedOut;\n if (permutation !== null) {\n const undoPermutation =
backend_util.getUndoAxesPermutation(permutation);\n out = transpose(\n {inputs: {x: permutedOut}, attrs:

```

```

{perm: undoPermutation}, backend});\n backend.disposeData(permutedX.dataId);\n
backend.disposeData(permutedOut.dataId);\n } \n return out;\n}\n\nexport const cumsumConfig: KernelConfig =
{\n kernelName: Cumsum,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: cumsum as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
===== \n
*/\n\nimport {DepthToSpace, DepthToSpaceAttrs, DepthToSpaceInputs, KernelConfig, KernelFunc, TensorInfo,
util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmDepthToSpace:
(\n xId: number, blockSize: number, channelsLast: number, xStrides: Uint8Array,\n xStridesLength: number,
outputShape: Uint8Array, outputStrides: Uint8Array,\n outSize: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm): void {\n wasmDepthToSpace = backend.wasm.cwrap(DepthToSpace, null
/*void*/, [\n 'number', // xId\n 'number', // blockSize\n 'number', // channelsLast\n 'array', // xStrides\n
'number', // xStridesLength\n 'array', // outputShape\n 'array', // outputStrides\n 'number', // outSize\n
'number', // outId\n]);\n}\n\nexport function depthToSpace(args: {\n backend: BackendWasm,\n inputs:
DepthToSpaceInputs,\n attrs: DepthToSpaceAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n
const {x} = inputs;\n const {blockSize, dataFormat} = attrs;\n\n const batchSize = x.shape[0];\n const inputHeight
= (dataFormat === 'NHWC') ? x.shape[1] : x.shape[2];\n const inputWidth = (dataFormat === 'NHWC') ?
x.shape[2] : x.shape[3];\n const inputDepth = (dataFormat === 'NHWC') ? x.shape[3] : x.shape[1];\n\n const
outputHeight = inputHeight * blockSize;\n const outputWidth = inputWidth * blockSize;\n const outputDepth =
inputDepth / (blockSize * blockSize);\n\n const outputShape = (dataFormat === 'NHWC') ?\n [batchSize,
outputHeight, outputWidth, outputDepth] :\n [batchSize, outputDepth, outputHeight, outputWidth];\n\n const
out = backend.makeOutput(outputShape, 'float32');\n\n const xData = backend.dataIdMap.get(x.dataId);\n const
xId = xData.id;\n const xStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(x.shape)).buffer);\n\n const outputShapeBytes = new Uint8Array(new
Int32Array(outputShape).buffer);\n const outStridesBytes =\n new Uint8Array(new
Int32Array(util.computeStrides(outputShape)).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n
const channelsLast = dataFormat === 'NHWC' ? 1 : 0;\n wasmDepthToSpace(\n xId, blockSize, channelsLast,
xStridesBytes, x.shape.length - 1,\n outputShapeBytes, outStridesBytes, outputShape.length, outId);\n\n return
out;\n}\n\nexport const depthToSpaceConfig: KernelConfig = {\n kernelName: DepthToSpace,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: depthToSpace as {} as KernelFunc\n};\n", "/*\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *
===== \n
*/\n\nimport {backend_util, DepthwiseConv2dNative, DepthwiseConv2dNativeAttrs,
DepthwiseConv2dNativeInputs, KernelConfig, KernelFunc, Tensor4D} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmDepthwiseConv2d: (\n xId: number, batchSize: number,
inputHeight: number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number, padTop:
number,\n padRight: number, padBottom: number, padLeft: number, isSamePad: number,\n dilationHeight:
number, dilationWidth: number, strideHeight: number,\n strideWidth: number, inputChannels: number,

```

```

outputChannels: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmDepthwiseConv2d =\n backend.wasm.cwrap(DepthwiseConv2dNative, null /* void */, [\n 'number', //
xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', //
filterId\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
'number', // inputChannels\n 'number', // outputChannels\n 'number', // outId\n]);\n}\n\nfunction
depthwiseConv2d(args: {\n inputs: DepthwiseConv2dNativeInputs,\n backend: BackendWasm,\n attrs:
DepthwiseConv2dNativeAttrs\n}) {\n const {inputs, attrs, backend} = args;\n\n const {x, filter} = inputs;\n const
xId = backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n const
{strides, dilations, pad, dimRoundingMode} = attrs;\n\n const $dilations = dilations === null ? [1, 1] : dilations;\n\n
const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape,
strides,\n ($dilations as number | [number, number]), pad, dimRoundingMode,\n true /* depthwise */);\n\n
const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop =
convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n\n
const padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth =
convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth =
convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels =
convInfo.outChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n\n if
(convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend DepthwiseConv2dNative
does not support dataFormat: ` +\n `${convInfo.dataFormat}'. Please use 'channelsLast'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
wasmDepthwiseConv2d(\n xId, x.shape[0], x.shape[1], x.shape[2], filterId, filterHeight,\n filterWidth,
padTop, padRight, padBottom, padLeft, isSamePad,\n dilationHeight, dilationWidth, strideHeight, strideWidth,
inputChannels,\n outputChannels, outId);\n return out;\n}\n\nexport const depthwiseConv2dNativeConfig:
KernelConfig = {\n kernelName: DepthwiseConv2dNative,\n backendName: 'wasm',\n setupFunc: setup,\n
kernelFunc: depthwiseConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n *
\n *
\n *
\n */\n\nimport {Elu, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const eluConfig: KernelConfig = createUnaryKernelConfig(Elu);\n\n"/**\n * @license\n *
Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n *
\n *
\n *
\n */\n\nimport {Equal, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const equalConfig: KernelConfig =\n createBinaryKernelConfig(Equal, supportsFullBroadcast, 'bool');\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
\n *
\n *
\n *
\n */

```

<http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
*\nimport {Exp, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
 './unary_kernel';\nexport const expConfig: KernelConfig = createUnaryKernelConfig(Exp, 'float32');\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====
*\nimport {ExpandDims, ExpandDimsAttrs, ExpandDimsInputs, KernelConfig, KernelFunc, util} from
 '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nimport {reshape} from
 './Reshape';\nexport function expandDims(args: {\n inputs: ExpandDimsInputs,\n attrs: ExpandDimsAttrs,\n backend: BackendWasm\n}) {\n const {inputs, attrs, backend} = args;\n const {input} = inputs;\n const {dim} =
 attrs;\n\n const inputRank = input.shape.length;\n const newShape = input.shape.slice();\n let $dim = dim;\n if
 (dim < 0) {\n // Negative value is counted from the tail of rank.\n util.assert(\n -(inputRank + 1) <= dim,\n () => `Axis must be in the interval [${-(inputRank + 1)}, ${\n inputRank\n }]`);\n $dim = inputRank + dim
 + 1;\n }\n newShape.splice($dim, 0, 1);\n return reshape({inputs: {x: input}, backend, attrs: {shape:
 newShape}});\n}\nexport const expandDimsConfig: KernelConfig = {\n kernelName: ExpandDims,\n backendName: 'wasm',\n kernelFunc: expandDims as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright
 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *
```

```
=====
*\nimport {KernelConfig, KernelFunc} from '@tensorflow/tfjs-core';\nimport {Fill, FillAttrs} from
 '@tensorflow/tfjs-core';\nimport {BackendWasm} from '../backend_wasm';\nexport function fill(args: {attrs:
 FillAttrs, backend: BackendWasm}) {\n const {attrs: {shape, value, dtype}, backend} = args;\n const out =
 backend.makeOutput(shape, dtype);\n const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(value as
 number);\n return out;\n}\nexport const fillConfig: KernelConfig = {\n kernelName: Fill,\n backendName:
 'wasm',\n kernelFunc: fill as {} as KernelFunc,\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All
 Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
 file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
 software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
 OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
 governing permissions and\n * limitations under the License.\n *
```

```
=====
*\nimport {FlipLeftRight, FlipLeftRightInputs, KernelConfig, KernelFunc, TensorInfo} from '@tensorflow/tfjs-
 core';\nimport {BackendWasm} from '../backend_wasm';\nlet wasmFlipLeftRight: (\n xId: number, batch:
 number, imageHeight: number, imageWidth: number,\n numChannels: number, outId: number) =>
 void;\nfunction setup(backend: BackendWasm) {\n wasmFlipLeftRight = backend.wasm.cwrap(FlipLeftRight,

```

```

null /* void */, [n 'number', // xId\n 'number', // batch\n 'number', // imageHeight\n 'number', //
imageWidth\n 'number', // numChannels\n 'number', // outId\n]);\n}\n\nexport function flipLeftRight(\n
args: {inputs: FlipLeftRightInputs, backend: BackendWasm}): TensorInfo {\n const {inputs, backend} = args;\n
const {image} = inputs;\n\n const out = backend.makeOutput(image.shape, image.dtype);\n const imageId =
backend.dataIdMap.get(image.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const [batch,
imageHeight, imageWidth, numChannels] = image.shape;\n\n wasmFlipLeftRight(\n imageId, batch,
imageHeight, imageWidth, numChannels, outId);\n return out;\n}\n\nexport const flipLeftRightConfig:
KernelConfig = {\n kernelName: FlipLeftRight,\n backendName: 'wasm',\n kernelFunc: flipLeftRight as { } as
KernelFunc,\n setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {Floor, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const floorConfig: KernelConfig = createUnaryKernelConfig(Floor);\n", "/*\n *
@license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific
language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {FloorDiv, KernelConfig} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const floorDivConfig: KernelConfig =\ncreateBinaryKernelConfig(FloorDiv, supportsFullBroadcast);\n", "/*\n *
@license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {FusedBatchNorm, FusedBatchNormAttrs, FusedBatchNormInputs, KernelConfig, KernelFunc,
TensorInfo, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nlet
wasmBatchNorm: (\n xId: number, meanId: number, varianceId: number, offsetId: number,\n scaleId: number,
varianceEpsilon: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmBatchNorm = backend.wasm.cwrap(\n FusedBatchNorm, null /* void */,\n ['number', 'number',
'number', 'number', 'number', 'number', 'number']);\n}\n\nfunction fusedBatchNorm(args: {\n backend:
BackendWasm,\n inputs: FusedBatchNormInputs,\n attrs: FusedBatchNormAttrs\n}): TensorInfo {\n const
{backend, inputs, attrs} = args;\n const {varianceEpsilon} = attrs;\n const {x, mean, variance, offset, scale} =
inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const meanId =
backend.dataIdMap.get(mean.dataId).id;\n const varianceId = backend.dataIdMap.get(variance.dataId).id;\n const
offsetId = offset != null ? backend.dataIdMap.get(offset.dataId).id : 0;\n const scaleId = scale != null ?
backend.dataIdMap.get(scale.dataId).id : 0;\n\n const out = backend.makeOutput(x.shape, x.dtype);\n // Short-
circuit zero-sized tensors.\n if (util.sizeFromShape(x.shape) === 0) {\n return out;\n }\n\n const outId =

```

```

backend.dataIdMap.get(out.dataId).id;\n\n wasmBatchNorm(\n xId, meanId, varianceId, offsetId, scaleId,
varianceEpsilon, outId);\n return out;\n}\n\nexport const fusedBatchNormConfig: KernelConfig = {\n kernelName:
FusedBatchNorm,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: fusedBatchNorm as { } as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { backend_util, FusedConv2D, FusedConv2DAttrs, FusedConv2DInputs, KernelConfig, KernelFunc,
Tensor4D } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport
{ FusableActivation } from './types';\n\nlet wasmFusedConv2d:\n (xId: number, batchSize: number, inputHeight:
number, inputWidth: number,\n filterId: number, filterHeight: number, filterWidth: number,\n biasId: number,
padTop: number, padRight: number, padBottom: number,\n padLeft: number, isSamePad: number,
dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n
inputChannels: number, outputChannels: number, activation: number,\n preluActivationWeightsId: number,
leakyreluAlpha: number, outId: number) =>\n void;\n\nfunction setup(backend: BackendWasm) {\n
waswFusedConv2d = backend.wasm.cwrap(FusedConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', // padRight\n
'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', // dilationHeight\n
'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', //
inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n]);\n\nfunction
fusedConv2d(args: {\n inputs: FusedConv2DInputs,\n backend: BackendWasm,\n attrs: FusedConv2DAttrs\n})
{\n const { inputs, attrs, backend } = args;\n const { x, filter, bias, preluActivationWeights } = inputs;\n const {\n
strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } =
attrs;\n\n const convInfo = backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as
Tensor4D).shape, strides, dilations,\n pad, dimRoundingMode);\n\n const fusedActivation =\n
FusableActivation[activation as { } as keyof typeof FusableActivation];\n\n if (fusedActivation == null) {\n
throw new Error(\n ` ${activation} activation not yet supported for FusedConv2D ` +\n ` in the wasm backend.`);\n
}\n\n const xId = backend.dataIdMap.get(x.dataId).id;\n const filterId =
backend.dataIdMap.get(filter.dataId).id;\n\n const outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n
if (bias != null) {\n const biasData = backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n
throw new Error(\n `FusedConv2D only supports rank-1 bias but got ` +\n `rank
${biasData.shape.length}.`);\n }\n if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n
`FusedConv2D bias shape (${biasData.shape}) does not ` +\n `match the number of output channels
(${outputChannels}).`);\n }\n biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const
filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight =
convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n
const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const
strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedConv2D does not support
dataFormat:` +\n ` ${dataFormat}'. Please use 'NHWC'.`);\n }\n\n const out =

```

```

backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n
backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedConv2d(\n xId, batchSize, inHeight,
inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft, isSamePad,
dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n fusedActivation,
preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const fusedConv2DConfig:
KernelConfig = {\n kernelName: FusedConv2D,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc:
fusedConv2d as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====
*/\n\nimport { backend_util, FusedDepthwiseConv2D, FusedDepthwiseConv2DAttrs,
FusedDepthwiseConv2DInputs, KernelConfig, KernelFunc, Tensor4D } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from '../backend_wasm';\n\nimport { FusibleActivation } from './types';\n\nlet
wasmFusedDepthwiseConv2d:\n (xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n
filterId: number, filterHeight: number, filterWidth: number,\n biasId: number, padTop: number, padRight:
number, padBottom: number,\n padLeft: number, isSamePad: number, dilationHeight: number,\n
dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels:
number, activation: number,\n preluActivationWeightsId: number, leakyreluAlpha: number, outId: number) =>\n
void;\n\nfunction setup(backend: BackendWasm) {\n wasmFusedDepthwiseConv2d =\n
backend.wasm.cwrap(FusedDepthwiseConv2D, null /* void */, [\n 'number', // xId\n 'number', //
batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterId\n 'number', //
filterHeight\n 'number', // filterWidth\n 'number', // biasId\n 'number', // padTop\n 'number', //
padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // isSamePad\n 'number', //
dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n
'number', // inputChannels\n 'number', // outputChannels\n 'number', // activation\n 'number', //
preluActivationWeightsId\n 'number', // leakyreluAlpha\n 'number', // outId\n]);\n\nfunction
fusedDepthwiseConv2d(args: {\n inputs: FusedDepthwiseConv2DInputs,\n backend: BackendWasm,\n attrs:
FusedDepthwiseConv2DAttrs\n}) {\n const { inputs, attrs, backend } = args;\n const { x, filter, bias,
preluActivationWeights } = inputs;\n const {\n strides,\n pad,\n dilations,\n dataFormat,\n dimRoundingMode,\n activation,\n leakyreluAlpha\n } = attrs;\n\n const convInfo =
backend_util.computeConv2DInfo(\n (x as Tensor4D).shape, (filter as Tensor4D).shape, strides, dilations,\n
pad, dimRoundingMode, true /* depthwise */);\n\n const fusedActivation =\n FusibleActivation[activation as {}
as keyof typeof FusibleActivation];\n if (fusedActivation == null) {\n throw new Error(\n `${activation}
activation not yet supported for FusedDepthwiseConv2D ` +\n `in the wasm backend.`);\n }\n\n const xId =
backend.dataIdMap.get(x.dataId).id;\n const filterId = backend.dataIdMap.get(filter.dataId).id;\n const
outputChannels = convInfo.outChannels;\n\n let biasId = 0;\n if (bias != null) {\n const biasData =
backend.dataIdMap.get(bias.dataId);\n if (biasData.shape.length !== 1) {\n throw new Error(\n
`FusedDepthwiseConv2D only supports rank-1 bias but got ` +\n `rank ${biasData.shape.length}.`);\n }\n
if (biasData.shape[0] !== outputChannels) {\n throw new Error(\n `FusedDepthwiseConv2D bias shape
(${biasData.shape}) does not ` +\n `match the number of output channels (${outputChannels})`);\n }\n
biasId = biasData.id;\n }\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth =
convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const
padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight =

```

```

convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight =
convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels =
convInfo.inChannels;\n const isSamePad = convInfo.padInfo.type === 'SAME' ? 1 : 0;\n const batchSize =
convInfo.batchSize;\n const inHeight = convInfo.inHeight;\n const inWidth = convInfo.inWidth;\n\n if
(dataFormat !== 'NHWC') {\n throw new Error(\n `wasm backend FusedDepthwiseConv2D does not support
dataFormat:` +\n `${dataFormat}`. Please use 'NHWC'.`);\n }\n\n const out =
backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
preluActivationWeightsId = preluActivationWeights == null ?\n 0 :\n backend.dataIdMap.get(preluActivationWeights.dataId).id;\n\n wasmFusedDepthwiseConv2d(\n xId, batchSize,
inHeight, inWidth, filterId, filterHeight, filterWidth,\n biasId, padTop, padRight, padBottom, padLeft,
isSamePad, dilationHeight,\n dilationWidth, strideHeight, strideWidth, inputChannels, outputChannels,\n
fusedActivation, preluActivationWeightsId, leakyreluAlpha || 0, outId);\n\n return out;\n}\n\nexport const
fusedDepthwiseConv2DConfig: KernelConfig = {\n kernelName: FusedDepthwiseConv2D,\n backendName:
'wasm',\n setupFunc: setup,\n kernelFunc: fusedDepthwiseConv2d as { } as KernelFunc\n};\n\n"/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {gather_util, GatherNd, GatherNdInputs, KernelConfig, TensorInfo} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from './types';\n\nlet
wasmGatherNd: (\n xId: number, dtype: CppDType, indicesId: number, numSlices: number,\n sliceRank:
number, sliceSize: number, strides: Uint8Array, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmGatherNd = backend.wasm.cwrap(GatherNd, null /*void*/, [\n 'number', // xId\n
'number', // dtype\n 'number', // indicesId\n 'number', // numSlices\n 'number', // sliceRank\n 'number', //
sliceSize\n 'array', // strides\n 'number' // outId\n]);\n}\n\nfunction gatherNd(args: {backend: BackendWasm,
inputs: GatherNdInputs}):\n TensorInfo {\n const {backend, inputs} = args;\n const {params, indices} =
inputs;\n\n const [resultShape, numSlices, sliceSize, strides] =\n gather_util.prepareAndValidate(params,
indices);\n\n const out = backend.makeOutput(resultShape, params.dtype);\n if (numSlices === 0) {\n return
out;\n }\n\n const indicesShape = indices.shape;\n const sliceRank = indicesShape[indicesShape.length - 1];\n\n
const xData = backend.dataIdMap.get(params.dataId);\n const xId = xData.id;\n const indicesData =
backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const stridesBytes = new
Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
wasmGatherNd(\n xId, CppDType[params.dtype], indicesId, numSlices, sliceRank, sliceSize,\n stridesBytes,
outId);\n\n return out;\n}\n\nexport const gatherNdConfig: KernelConfig = {\n kernelName: GatherNd,\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherNd\n};\n\n"/**\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport {backend_util, GatherV2, GatherV2Attrs, GatherV2Inputs, KernelConfig, KernelFunc, Tensor,
TensorInfo, TypedArray, util} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'../backend_wasm';\n\nimport {reshape} from './Reshape';\n\nimport {CppType} from './types';\n\nlet wasmGather:

```



```

(\n xId: number, dtype: CppDType, xStrides: Uint8Array, stridesSize: number,\n indicesId: number, batchSize:
number, outStrides: Uint8Array,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmGather = backend.wasm.cwrap('Gather', null /*void*/, [\n 'number', // xId\n 'number', // dtype\n 'array',
// xStrides\n 'number', // stridesSize\n 'number', // indicesId\n 'number', // batchSize\n 'array', //
outStrides\n 'number' // outId\n]);\n}\n\nfunction gatherV2(\n args: {backend: BackendWasm, inputs:
GatherV2Inputs, attrs: GatherV2Attrs}): \n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {x,
indices} = inputs;\n const {axis, batchDims} = attrs;\n\n // Throw error when any index is out of bound.\n const
parsedAxis = util.parseAxisParam(axis, x.shape)[0];\n const indicesVals = backend.readSync(indices.dataId) as
TypedArray;\n const axisDim = x.shape[parsedAxis];\n for (let i = 0; i < indicesVals.length; ++i) {\n const index
= indicesVals[i];\n util.assert(\n index <= axisDim - 1 && index >= 0,\n () =>\n `GatherV2: the
index value ${index} is not in [0, ${axisDim - 1}]`);\n }\n\n const shapeInfo =
backend_util.segment_util.collectGatherOpShapeInfo(\n x as Tensor, indices as Tensor, parsedAxis,
batchDims);\n\n const flattenX = reshape({\n inputs: {x},\n attrs: {\n shape: [\n shapeInfo.batchSize,
shapeInfo.outerSize, shapeInfo.dimSize,\n shapeInfo.sliceSize\n]\n },\n backend\n });\n const
indicesSize = util.sizeFromShape(indices.shape);\n const flattenIndex = reshape({\n inputs: {x: indices},\n attrs:
{shape: [shapeInfo.batchSize, indicesSize / shapeInfo.batchSize]},\n backend\n });\n const flattenOutputShape =
[\n shapeInfo.batchSize, shapeInfo.outerSize, indicesSize / shapeInfo.batchSize,\n shapeInfo.sliceSize\n];\n\n const out = backend.makeOutput(flattenOutputShape, x.dtype);\n if (util.sizeFromShape(x.shape) === 0) {\n
return out;\n }\n const stridesSize = flattenX.shape.length - 1;\n\n const xData =
backend.dataIdMap.get(flattenX.dataId);\n const xId = xData.id;\n\n const indicesData =
backend.dataIdMap.get(flattenIndex.dataId);\n const indicesId = indicesData.id;\n\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const xStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenX.shape)).buffer);\n const outStridesBytes = new Uint8Array(\n new
Int32Array(util.computeStrides(flattenOutputShape)).buffer);\n\n wasmGather(\n xId, CppDType[x.dtype],
xStridesBytes, stridesSize, indicesId,\n shapeInfo.batchSize, outStridesBytes, outId);\n\n backend.disposeData(flattenX.dataId);\n backend.disposeData(flattenIndex.dataId);\n\n // reshape\n out.shape =
shapeInfo.outputShape;\n return out;\n}\n\nexport const gatherV2Config: KernelConfig = {\n kernelName:
GatherV2,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: gatherV2 as { } as KernelFunc\n};\n\n", "/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport {Greater, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterConfig: KernelConfig =\ncreateBinaryKernelConfig(Greater, supportsFullBroadcast, 'bool');\n\n", "/**\n
* @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\nimport {GreaterEqual, KernelConfig} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig}
from './binary_kernel';\n\nconst supportsFullBroadcast = false;\nexport const greaterEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(GreaterEqual, supportsFullBroadcast, 'bool');\n\n", "/**\n
* @license\n * Copyright 2019

```

Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \*\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, LeakyRelu, LeakyReluAttrs, LeakyReluInputs, TensorInfo, util } from\n '@tensorflow/tfjs-core';\nimport { BackendWasm } from './backend_wasm';\nimport { CppDType } from\n './types';\nlet wasmFunc: (\n xId: number, dtype: number, leakyreluAlpha: number, outId: number) =>\n void;\nfunction setupFunc(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(LeakyRelu,\n null /* void */, [\n 'number', // x_id\n 'number', // dtype\n 'number', // leakyrelu_alpha\n 'number', //\n out_id\n]);\n}\nexport function leakyRelu(\n args: {\n inputs: LeakyReluInputs, attrs: LeakyReluAttrs,\n backend: BackendWasm\n }):\n TensorInfo {\n const { inputs: { x }, attrs: { alpha }, backend } = args;\n const xId =\n backend.dataIdMap.get(x.dataId).id;\n // According to TF API, LeakyRelu returns float32 when input is either\n float32\n // or int32.\n const out = backend.makeOutput(x.shape, 'float32');\n if (util.sizeFromShape(x.shape)\n !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmFunc(xId, CppDType[x.dtype], alpha,\n outId);\n }\n return out;\n}\nexport const leakyReluConfig: KernelConfig = {\n kernelName: LeakyRelu,\n backendName: 'wasm',\n setupFunc,\n kernelFunc: leakyRelu as {} as KernelFunc\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n * License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n * agreed to in writing, software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n * the specific language governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, Less } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessConfig: KernelConfig =\n createBinaryKernelConfig(Less, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019 Google\n * LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not\n * use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, LessEqual } from '@tensorflow/tfjs-core';\nimport { createBinaryKernelConfig } from\n './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const lessEqualConfig: KernelConfig =\n createBinaryKernelConfig(LessEqual, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019\n * Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you\n * may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,\n * software\n * distributed under the License is distributed on an\n * \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n * OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n * governing permissions and\n * limitations under the License.\n */
```

```
=====\n*\n\nimport { KernelConfig, Log } from '@tensorflow/tfjs-core';\nimport { createUnaryKernelConfig } from\n './unary_kernel';\nexport const logConfig: KernelConfig = createUnaryKernelConfig(Log);\n"/**\n * @license\n */
```

Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the  
\"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the  
License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or  
agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \*  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for  
the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*/\nimport {KernelConfig, LogicalAnd} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
 './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const logicalAndConfig: KernelConfig =\ncreateBinaryKernelConfig(LogicalAnd, supportsFullBroadcast, 'bool');\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\nimport {backend_util, KernelConfig, KernelFunc, Max, MaxAttrs, MaxInputs, TensorInfo, util} from
 '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmMax: (xId:
number, dtype: number, reduceSize: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmMax = backend.wasm.cwrap(Max, null /*void*/, [\n 'number', // x_id\n 'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n\n function max(args: {backend:
BackendWasm, inputs: MaxInputs, attrs: MaxAttrs}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {reductionIndices, keepDims} = attrs;\n const {x} = inputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes,
inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n input = transposed;\n inputId =
transposedId;\n }\n\n const inputRank = input.shape.length;\n backend_util.assertAxesAreInnerMostDims('max',
axes, inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, axes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, x.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmMax(inputId, CCppType[x.dtype], reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the
transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return out;\n }\n\n export const maxConfig: KernelConfig = {\n kernelName: Max,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: max as {} as KernelFunc\n };\n}/**\n * @license\n * Copyright 2019 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*/\nimport {KernelConfig, Maximum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
 './binary_kernel';\nconst supportsFullBroadcast = false;\nexport const maximumConfig: KernelConfig =\ncreateBinaryKernelConfig(Maximum, supportsFullBroadcast);\n"/**\n * @license\n * Copyright 2019 Google
```

LLC. All Rights Reserved.\n \* Licensed under the Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \*\n \* http://www.apache.org/licenses/LICENSE-2.0\n \*\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, MaxPool, MaxPoolAttrs, MaxPoolInputs, Tensor4D, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nlet wasmMaxPool: (\n xId: number, batchSize: number, inputHeight: number, inputWidth: number,\n filterHeight: number, filterWidth: number, padTop: number, padRight: number,\n padBottom: number, padLeft: number, dilationHeight: number,\n dilationWidth: number, strideHeight: number, strideWidth: number,\n inputChannels: number, outputChannels: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmMaxPool = backend.wasm.cwrap(MaxPool, null /* void */, [\n 'number', // xId\n 'number', // batchSize\n 'number', // inputHeight\n 'number', // inputWidth\n 'number', // filterHeight\n 'number', // filterWidth\n 'number', // padTop\n 'number', // padRight\n 'number', // padBottom\n 'number', // padLeft\n 'number', // dilationHeight\n 'number', // dilationWidth\n 'number', // strideHeight\n 'number', // strideWidth\n 'number', // inputChannels\n 'number', // outputChannels\n 'number', // outId\n]);\n}\n\nfunction maxPool(\n args: { inputs: MaxPoolInputs, backend: BackendWasm, attrs: MaxPoolAttrs }) {\n const { inputs, attrs, backend } = args;\n\n const x = inputs.x as Tensor4D;\n const xId = backend.dataIdMap.get(x.dataId).id;\n\n // TF API supports int32 input. CPU and WebGL backend also support int32\n // input. WASM backend doesn't support it because it uses xnnpack which only\n // supports float32.\n // Add the following assert only for the WASM backend instead of at core op\n // level.\n // TODO: add support for int32 input.\n util.assert(\n x.dtype === 'float32',\n () =>\n `Error in MaxPool: only float32 input is supported. Got ${x.dtype}.`);\n\n const { filterSize, strides, pad, dimRoundingMode } = attrs;\n const convInfo = backend_util.computePool2DInfo(\n x.shape, filterSize, strides, 1 /* dilations */, pad, dimRoundingMode);\n\n const filterHeight = convInfo.filterHeight;\n const filterWidth = convInfo.filterWidth;\n const padTop = convInfo.padInfo.top;\n const padRight = convInfo.padInfo.right;\n const padBottom = convInfo.padInfo.bottom;\n const padLeft = convInfo.padInfo.left;\n const dilationHeight = convInfo.dilationHeight;\n const dilationWidth = convInfo.dilationWidth;\n const strideHeight = convInfo.strideHeight;\n const strideWidth = convInfo.strideWidth;\n const inputChannels = convInfo.inChannels;\n const outputChannels = convInfo.outChannels;\n\n if (convInfo.dataFormat !== 'channelsLast') {\n throw new Error(\n `wasm backend does not support dataFormat: "${convInfo.dataFormat}". Please use 'channelsLast'.`);\n }\n\n const out = backend.makeOutput(convInfo.outShape, 'float32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmMaxPool(\n xId, x.shape[0], x.shape[1], x.shape[2],\n filterHeight, filterWidth,\n padTop, padRight, padBottom, padLeft, dilationHeight, dilationWidth,\n strideHeight, strideWidth, inputChannels, outputChannels, outId);\n return out;\n}\n\nexport const maxPoolConfig: KernelConfig = {\n kernelName: MaxPool,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: maxPool\n} as KernelFunc;\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n
```

```
=====\n*\n\nimport { backend_util, KernelConfig, KernelFunc, Mean, MeanAttrs, MeanInputs, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { cast } from './Cast';\nimport
```

```

{permuteAxesAndTranspose} from './kernel_utils';\n\nlet wasmMean: (xId: number, reduceSize: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmMean =\n backend.wasm.cwrap(Mean, null /*void*/, ['number, number, number']);\n}\n\nexport function mean(\n args:
{backend: BackendWasm, inputs: MeanInputs, attrs: MeanAttrs});\n TensorInfo {\n const {backend, inputs,
attrs} = args;\n const {axis, keepDims} = attrs;\n const {x} = inputs;\n const xId =
backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes,
inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n let reductionAxes = axes;\n if
(inputWasTransposed) {\n const transposedId = backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId
!== xId) {\n // transpose was not a no-op. We will need to dispose of this\n // once we are done.\n input =
transposed;\n inputId = transposedId;\n reductionAxes = backend_util.getInnerMostAxes(\n
reductionAxes.length, input.shape.length);\n }\n }\n\n backend_util.assertAxesAreInnerMostDims(\n 'mean',
reductionAxes, input.shape.length);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize =
util.sizeFromShape(reduceShape);\n let castedInput = input;\n if (input.dtype !== 'float32') {\n castedInput =\n cast({backend, inputs: {x: input}, attrs: {dtype: 'float32'}});\n inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(outShape, 'float32');\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmMean(inputId, reduceSize, outId);\n }\n\n if (inputWasTransposed) {\n // dispose of the transposed
tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const newShape =
backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n if (input.dtype
!== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n\n return out;\n}\n\nexport const meanConfig:
KernelConfig = {\n kernelName: Mean,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: mean as {\n
as KernelFunc\n};\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, Min, MinAttrs, MinInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport
{permuteAxesAndTranspose} from './kernel_utils';\nimport {CppType} from './types';\n\nlet wasmMin: (xId:
number, dtype: number, reduceSize: number, outId: number) =>\n void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmMin = backend.wasm.cwrap(Min, null /*void*/, [\n 'number', // x_id\n 'number', // dtype\n 'number', // reduce_size\n 'number', // out_id\n]);\n}\n\nfunction min(args: {backend:
BackendWasm, inputs: MinInputs, attrs: MinAttrs});\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const
{axis, keepDims} = attrs;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let
inputId = xId;\n let input = x;\n\n const {transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n if (inputWasTransposed) {\n const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We
will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n }\n }\n\n const inputRank = input.shape.length;\n\n backend_util.assertAxesAreInnerMostDims('min', axes,
inputRank);\n const [outShape, reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape,
axes);\n const reduceSize = util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape,
input.dtype);\n if (util.sizeFromShape(input.shape) !== 0) {\n const outId =
backend.dataIdMap.get(out.dataId).id;\n wasmMin(inputId, CppDType[x.dtype], reduceSize, outId);\n }\n\n if
(inputWasTransposed) {\n // dispose of the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n

```

```

}\n\n if (keepDims) {\n // reshape\n const newShape = backend_util.expandShapeToKeepDim(out.shape,
originalAxes);\n out.shape = newShape;\n }\n\n return out;\n}\n\nexport const minConfig: KernelConfig = {\n
kernelName: Min,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: min as {} as
KernelFunc\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {KernelConfig, Minimum} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const minimumConfig: KernelConfig =\ncreateBinaryKernelConfig(Minimum, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2021 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, MirrorPad, MirrorPadAttrs, MirrorPadInputs} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\n// Must match
enum in MirrorPad.cc\nenum MirrorPaddingMode {\n reflect = 0,\n symmetric = 1\n}\n\nlet wasmMirrorPad: (\n
xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype: number,\n prePaddingsBytes:
Uint8Array, postPaddingsBytes: Uint8Array, mode: number,\n outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n wasmMirrorPad = backend.wasm.cwrap(MirrorPad, null /* void */, [\n
'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n 'array', // pre-
paddings\n 'array', // post-paddings\n 'number', // mode\n 'number', // outId\n]);\n}\n\nfunction
mirrorPad(args: {\n inputs: MirrorPadInputs,\n backend: BackendWasm,\n attrs: MirrorPadAttrs\n}) {\n const
{inputs: {x}, backend, attrs: {paddings, mode}} = args;\n\n const outShape = paddings.map(\n (p, i) => p[0] /*
beforePad */ + x.shape[i] + p[1] /* afterPad */);\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out =
backend.makeOutput(outShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const
xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat =
paddings.map(padTuple => padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n
const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const
postPaddingsBytes =\n new Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmMirrorPad(\n
xId, xShapeBytes, x.shape.length, CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes,
MirrorPaddingMode[mode], outId);\n return out;\n}\n\nexport const mirrorPadConfig: KernelConfig = {\n
kernelName: MirrorPad,\n backendName: 'wasm',\n kernelFunc: mirrorPad as {} as KernelFunc,\n setupFunc:
setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n

```

```

*\n\nimport {KernelConfig, Multiply} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'./binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const multiplyConfig: KernelConfig =\ncreateBinaryKernelConfig(Multiply, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, Neg} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'./unary_kernel';\n\nexport const negConfig: KernelConfig = createUnaryKernelConfig(Neg);\n\n"/**\n * @license\n *
Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {BackendWasm} from './backend_wasm';\n\n// Analogous to `struct Result` in
`non_max_suppression_impl.h`\n\ninterface Result {\n pSelectedIndices: number;\n selectedSize: number;\n pSelectedScores: number;\n pValidOutputs: number;\n}\n\n/**\n * Parse the result of the c++ method, which has the
shape equivalent to\n * `Result`\n *\nexport function parseResultStruct(\n backend: BackendWasm, resOffset:
number): Result {\n const result = new Int32Array(backend.wasm.HEAPU8.buffer, resOffset, 4);\n const
pSelectedIndices = result[0];\n const selectedSize = result[1];\n const pSelectedScores = result[2];\n const
pValidOutputs = result[3];\n // Since the result was allocated on the heap, we have to delete it.\n backend.wasm._free(resOffset);\n return {pSelectedIndices, selectedSize, pSelectedScores,
pValidOutputs};\n}\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, NonMaxSuppressionV3, NonMaxSuppressionV3Attrs,
NonMaxSuppressionV3Inputs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from
'./backend_wasm';\n\nimport {parseResultStruct} from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number)
=> number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(\n NonMaxSuppressionV3,\n 'number', // Result*\n [\n 'number', // boxesId\n 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n 'number', // scoreThreshold\n]);\n\n function kernelFunc(args: {\n backend: BackendWasm,\n inputs: NonMaxSuppressionV3Inputs,\n attrs: NonMaxSuppressionV3Attrs\n }): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {iouThreshold,
maxOutputSize, scoreThreshold} = attrs;\n const {boxes, scores} = inputs;\n\n const boxesId =
backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const
resOffset =\n wasmFunc(boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold);\n\n const
{pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs} =\n parseResultStruct(backend, resOffset);\n\n

```

```
// Since we are not using scores for V3, we have to delete it from the heap.\n
backend.wasm._free(pSelectedScores);\n backend.wasm._free(pValidOutputs);\n\n const selectedIndicesTensor\n
=\n backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n return\n
selectedIndicesTensor;\n}\n\nexport const nonMaxSuppressionV3Config: KernelConfig = {\n kernelName:\n
NonMaxSuppressionV3,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc as { } as\n
KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the\n
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *\n
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed\n
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or\n
implied.\n * See the License for the specific language governing permissions and\n * limitations under the\n
License.\n *"
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV4, NonMaxSuppressionV4Attrs,\n
NonMaxSuppressionV4Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from\n
'./backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc: (\n
boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n
padToMaxOutputSize: boolean) => number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =\n
backend.wasm.cwrap(\n NonMaxSuppressionV4,\n 'number', // Result*\n [\n 'number', // boxesId\n
 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n
 'number', //\n scoreThreshold\n 'bool', // padToMaxOutputSize\n]);\n\n function nonMaxSuppressionV4(args: {\n\n
backend: BackendWasm,\n inputs: NonMaxSuppressionV4Inputs,\n attrs: NonMaxSuppressionV4Attrs\n}):

TensorInfo[] {\n const { backend, inputs, attrs } = args;\n const { iouThreshold, maxOutputSize, scoreThreshold,\n
padToMaxOutputSize } =\n attrs;\n const { boxes, scores } = inputs;\n\n const boxesId =\n
backend.dataIdMap.get(boxes.dataId).id;\n const scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const

resOffset = wasmFunc(\n boxesId, scoresId, maxOutputSize, iouThreshold, scoreThreshold,\n
 padToMaxOutputSize);\n\n const { pSelectedIndices, selectedSize, pSelectedScores, pValidOutputs } =\n
parseResultStruct(backend, resOffset);\n\n // Since we are not using scores for V4, we have to delete it from the

heap.\n backend.wasm._free(pSelectedScores);\n\n const selectedIndicesTensor =\n
backend.makeOutput([selectedSize], 'int32', pSelectedIndices);\n\n const validOutputsTensor =\n
backend.makeOutput([], 'int32', pValidOutputs);\n\n return [selectedIndicesTensor,\n
validOutputsTensor];\n}\n\nexport const nonMaxSuppressionV4Config: KernelConfig = {\n kernelName:\n
NonMaxSuppressionV4,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV4 as { }

as KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *\n
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed

on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied.\n * See the License for the specific language governing permissions and\n * limitations under the

License.\n *"
```

```
=====\n
*\n\nimport { KernelConfig, KernelFunc, NonMaxSuppressionV5, NonMaxSuppressionV5Attrs,\n
NonMaxSuppressionV5Inputs, TensorInfo } from '@tensorflow/tfjs-core';\n\nimport { BackendWasm } from\n
'./backend_wasm';\n\nimport { parseResultStruct } from './NonMaxSuppression_util';\n\nlet wasmFunc:\n
(boxesId: number, scoresId: number, maxOutputSize: number,\n iouThreshold: number, scoreThreshold: number,\n
softNmsSigma: number) =>\n number;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc =\n
backend.wasm.cwrap(\n NonMaxSuppressionV5,\n 'number', // Result*\n [\n 'number', // boxesId\n
 'number', // scoresId\n 'number', // maxOutputSize\n 'number', // iouThreshold\n
 'number', //\n softNmsSigma\n]);\n\n return [selectedIndicesTensor,\n
validOutputsTensor];\n}\n\nexport const nonMaxSuppressionV5Config: KernelConfig = {\n kernelName:\n
NonMaxSuppressionV5,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: nonMaxSuppressionV5 as { }

as KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the\n
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the\n
License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *\n
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed

on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied.\n * See the License for the specific language governing permissions and\n * limitations under the

License.\n *"
```



```

scoreThreshold\n 'number', // softNmsSigma\n]);\n\nfunction kernelFunc(args: {\n backend:
BackendWasm,\n inputs: NonMaxSuppressionV5Inputs,\n attrs: NonMaxSuppressionV5Attrs\n}): TensorInfo[]
{\n const {backend, inputs, attrs} = args;\n const {iouThreshold, maxOutputSize, scoreThreshold, softNmsSigma}
= attrs;\n const {boxes, scores} = inputs;\n\n const boxesId = backend.dataIdMap.get(boxes.dataId).id;\n const
scoresId = backend.dataIdMap.get(scores.dataId).id;\n\n const resOffset = wasmFunc(\n boxesId, scoresId,
maxOutputSize, iouThreshold, scoreThreshold,\n softNmsSigma);\n\n const {pSelectedIndices, selectedSize,
pSelectedScores, pValidOutputs} =\n parseResultStruct(backend, resOffset);\n\n // Since we are not using
validOutputs for V5, we have to delete it from the\n // heap.\n backend.wasm._free(pValidOutputs);\n\n const
selectedIndicesTensor =\n backend.makeOutput([selectedSize, 'int32', pSelectedIndices);\n const
selectedScoresTensor =\n backend.makeOutput([selectedSize, 'float32', pSelectedScores);\n\n return
[selectedIndicesTensor, selectedScoresTensor];\n}\n\nexport const nonMaxSuppressionV5Config: KernelConfig =
{\n kernelName: NonMaxSuppressionV5,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: kernelFunc
as {} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\nimport {KernelConfig, NotEqual} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig} from
'/binary_kernel';\nconst supportsFullBroadcast = false;\nexport const notEqualConfig: KernelConfig =\ncreateBinaryKernelConfig(NotEqual, supportsFullBroadcast, 'bool');\n", "/*\n * @license\n * Copyright 2020
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\n\nimport {KernelConfig, KernelFunc, OneHot, OneHotAttrs, OneHotInputs} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\n\nlet wasmOneHot: (\n indicesId: number, depth:
number, onValue: number, offValue: number,\n outId: number) => void;\n\nfunction setup(backend:
BackendWasm) {\n wasmOneHot = backend.wasm.cwrap(OneHot, null /* void */, [\n 'number', // indices_id\n
'number', // depth,\n 'number', // onValue\n 'number', // offValue\n 'number' // out_id\n]);\n}\n\nfunction
oneHot(\n args: {inputs: OneHotInputs, attrs: OneHotAttrs, backend: BackendWasm}) {\n const {inputs,
backend, attrs} = args;\n const {indices} = inputs;\n const {depth, onValue, offValue} = attrs;\n\n const out =
backend.makeOutput([...indices.shape, depth], 'int32');\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n
const indicesData = backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n
wasmOneHot(indicesId, depth, onValue, offValue, outId);\n\n return out;\n}\n\nexport const oneHotConfig:
KernelConfig = {\n kernelName: OneHot,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: oneHot as
{} as KernelFunc,\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
\n
*\n\nimport {KernelConfig, KernelFunc, OnesLike, OnesLikeInputs} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nfunction onesLike(args: {inputs: OnesLikeInputs, backend:
BackendWasm}) {\n const {inputs: {x}, backend} = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(1);\n return out;\n}\n\nexport const
onesLikeConfig: KernelConfig = {\n kernelName: OnesLike,\n backendName: 'wasm',\n kernelFunc: onesLike as
{} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====
\n
*\n\nimport {KernelConfig, KernelFunc, Pack, PackAttrs, PackInputs, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {concat} from './Concat';\n\nimport
{expandDims} from './ExpandDims';\n\nexport function pack(\n args: {inputs: PackInputs, backend:
BackendWasm, attrs: PackAttrs});\n TensorInfo {\n const {inputs, backend, attrs} = args;\n const {axis} =
attrs;\n\n if (inputs.length === 1) {\n return expandDims(\n {inputs: {input: inputs[0]}, backend, attrs: {dim:
axis}});\n }\n\n const shape = inputs[0].shape;\n const dtype = inputs[0].dtype;\n\n inputs.forEach(t => {\n
util.assertShapesMatch(\n shape, t.shape,\n 'All tensors passed to stack must have matching shapes');\n
util.assert(\n dtype === t.dtype,\n () => 'All tensors passed to stack must have matching dtypes');\n });\n\n
const intermediateTensorInfos: TensorInfo[] = [];\n const expandedTensors = inputs.map(t => {\n const
expandedT =\n expandDims({inputs: {input: t}, backend, attrs: {dim: axis}});\n
intermediateTensorInfos.push(expandedT);\n return expandedT;\n });\n\n const result = concat({inputs:
expandedTensors, backend, attrs: {axis}});\n\n intermediateTensorInfos.forEach(t =>
backend.disposeData(t.dataId));\n\n return result;\n }\n\nexport const packConfig: KernelConfig = {\n kernelName:
Pack,\n backendName: 'wasm',\n kernelFunc: pack as {} as KernelFunc,\n};\n\n"/**\n * @license\n * Copyright
2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
\n
*\n\nimport {KernelConfig, KernelFunc, PadV2, PadV2Attrs, PadV2Inputs, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {fill} from './Fill';\n\nimport {CppType}
from './types';\n\nlet wasmPadV2: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number, xDtype:
number,\n prePaddingsBytes: Uint8Array, postPaddingsBytes: Uint8Array,\n constantValue: number, outId:
number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPadV2 = backend.wasm.cwrap(PadV2, null
/* void */, [\n 'number', // xId\n 'array', // x.shape\n 'number', // x.shape.length\n 'number', // x.dtype\n
'array', // pre-paddings\n 'array', // post-paddings\n 'number', // constantValue\n 'number', // outId\n
]);\n\nfunction pad(\n args: {inputs: PadV2Inputs, backend: BackendWasm, attrs: PadV2Attrs}) {\n const
{inputs: {x}, backend, attrs: {paddings, constantValue}} = args;\n\n const outShape = paddings.map(\n (p, i) =>
p[0] /* beforePad */ + x.shape[i] + p[1] /* afterPad */);\n\n if (util.sizeFromShape(x.shape) === 0) {\n // Short-
circuit the computation, since x doesn't have value, only\n // the shape is used to compute output shape to pad.\n
return fill({\n backend,\n attrs: {shape: outShape, value: constantValue, dtype: x.dtype}\n });\n }\n\n const
xId = backend.dataIdMap.get(x.dataId).id;\n const out = backend.makeOutput(outShape, x.dtype);\n const

```

```

outTensorData = backend.dataIdMap.get(out.dataId);\n const outId = outTensorData.id;\n\n const xShapeBytes =
new Uint8Array(new Int32Array(x.shape).buffer);\n\n const prePaddingsFlat = paddings.map(padTuple =>
padTuple[0]);\n const postPaddingsFlat = paddings.map(padTuple => padTuple[1]);\n const prePaddingsBytes =\n new Uint8Array(new Int32Array(prePaddingsFlat).buffer);\n const postPaddingsBytes =\n new
Uint8Array(new Int32Array(postPaddingsFlat).buffer);\n\n wasmPadV2(\n xId, xShapeBytes, x.shape.length,
CppDType[x.dtype], prePaddingsBytes,\n postPaddingsBytes, constantValue, outId);\n return out;\n}\n\nexport
const padV2Config: KernelConfig = {\n kernelName: PadV2,\n backendName: 'wasm',\n kernelFunc: pad as {} as
KernelFunc,\n setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n
* Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in
compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { KernelConfig, Pow } from '@tensorflow/tfjs-core';\n\nimport { createBinaryKernelConfig } from
'./binary_kernel';\n\nconst supportsFullBroadcast = false;\n\nexport const powConfig: KernelConfig =\n createBinaryKernelConfig(Pow, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright 2019 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*/\n\nimport { KernelConfig, KernelFunc, Prelu, PreluInputs } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from './backend_wasm';\n\nimport { cast } from './Cast';\n\nlet wasmPrelu: (xId: number,
weightsId: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmPrelu =
backend.wasm.cwrap(Prelu, null /* void */, [\n 'number', // x_id\n 'number', // weights_id\n 'number' //
out_id\n]);\n\n function prelu(args: { inputs: PreluInputs, backend: BackendWasm }) {\n const { inputs, backend
} = args;\n const { x, alpha } = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const weightsId =
backend.dataIdMap.get(alpha.dataId).id;\n\n let inputId = xId;\n const input = x;\n let castedInput = input;\n if
(input.dtype !== 'float32') {\n castedInput = cast({ backend, inputs: { x }, attrs: { dtype: 'float32' });\n inputId =
backend.dataIdMap.get(castedInput.dataId).id;\n }\n\n const out = backend.makeOutput(x.shape, 'float32');\n
const outId = backend.dataIdMap.get(out.dataId).id;\n wasmPrelu(inputId, weightsId, outId);\n\n if (input.dtype
!== 'float32') {\n backend.disposeData(castedInput.dataId);\n }\n return out;\n }\n\n export const preluConfig:
KernelConfig = {\n kernelName: Prelu,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: prelu as {} as
KernelFunc\n };\n", "/*\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====\n
*/\n\nimport { backend_util, KernelConfig, KernelFunc, Prod, ProdAttrs, ProdInputs, TensorInfo, util } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from './backend_wasm';\n\nimport
{ permuteAxesAndTranspose } from './kernel_utils';\n\nimport { CppDType } from './types';\n\nlet wasmProd: (\n

```

```

xId: number, reduceSize: number,\n dtype: number, outId: number) => void;\n\nfunction setup(backend:
BackendWasm): void {\n wasmProd = backend.wasm.cwrap(Prod, null /*void*/, [\n 'number',\n 'number',\n 'number',\n 'number'\n]);\n}\n\nfunction prod(args: {\n backend: BackendWasm,\n inputs: ProdInputs,\n attrs:
ProdAttrs\n}): TensorInfo {\n const {backend, inputs, attrs} = args;\n const {axis, keepDims} = attrs;\n const {x
} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n let inputId = xId;\n let input = x;\n\n const
{transposed, axes, originalAxes, inputWasTransposed} =\n permuteAxesAndTranspose(x, axis, backend);\n\n let
reductionAxes = axes;\n if (inputWasTransposed) {\n const transposedId =
backend.dataIdMap.get(transposed.dataId).id;\n if (transposedId !== xId) {\n // transpose was not a no-op. We
will need to dispose of this\n // once we are done.\n input = transposed;\n inputId = transposedId;\n
reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length, input.shape.length);\n }\n }\n\n
backend_util.assertAxesAreInnerMostDims(\n 'prod', reductionAxes, input.shape.length);\n const [outShape,
reduceShape] =\n backend_util.computeOutAndReduceShapes(input.shape, reductionAxes);\n const reduceSize
= util.sizeFromShape(reduceShape);\n\n const out = backend.makeOutput(outShape, input.dtype);\n if
(util.sizeFromShape(input.shape) !== 0) {\n const outId = backend.dataIdMap.get(out.dataId).id;\n
wasmProd(inputId, reduceSize, CppDType[out.dtype], outId);\n }\n\n if (inputWasTransposed) {\n // dispose of
the transposed tensor.\n backend.disposeData(transposed.dataId);\n }\n\n if (keepDims) {\n // reshape\n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes);\n out.shape = newShape;\n }\n\n return
out;\n}\n\nexport const prodConfig: KernelConfig = {\n kernelName: Prod,\n backendName: 'wasm',\n
setupFunc: setup,\n kernelFunc: prod as { } as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google
LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not
use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */\n\n
=====\n\n*/\n\nimport {KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nimport {rangeImplCPU} from '../kernel_utils/shared';\n\nexport const
range =\n (args: {\n backend: BackendWasm,\n attrs: RangeAttrs\n}): TensorInfo => {\n const {backend, attrs} =
args;\n const {start, stop, step, dtype} = attrs;\n const values = rangeImplCPU(start, stop, step, dtype);\n\n const
out = backend.makeOutput([values.length], dtype);\n const outVals =
backend.typedArrayFromHeap(out);\n outVals.set(values);\n return out;\n };\n\nexport const rangeConfig:
KernelConfig = {\n kernelName: Range,\n backendName: 'wasm',\n kernelFunc: range as { } as
KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n */\n\n
=====\n\n*/\n\nimport {KernelConfig, RealDiv} from '@tensorflow/tfjs-core';\n\nimport {createBinaryKernelConfig} from
'/binary_kernel';\n\nconst supportsFullBroadcast = true;\n\nexport const realDivConfig: KernelConfig =\n createBinaryKernelConfig(RealDiv, supportsFullBroadcast);\n\n"/**\n * @license\n * Copyright 2019 Google LLC.
All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES

```

OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n\n*\nimport {KernelConfig, Relu} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\nexport const reluConfig: KernelConfig = createUnaryKernelConfig(Relu);\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {KernelConfig, Relu6} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from\n './unary_kernel';\nexport const relu6Config: KernelConfig = createUnaryKernelConfig(Relu6);\n", "/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version\n 2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a\n copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable\n law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n\n*\nimport {KernelConfig, KernelFunc, ResizeBilinear, ResizeBilinearAttrs, ResizeBilinearInputs, TensorInfo,\n util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {cast} from\n './Cast';\nlet wasmResizeBilinear: (\n xId: number, batch: number, oldHeight: number, oldWidth: number,\n numChannels: number, newHeight: number, newWidth: number,\n alignCorners: number, halfPixelCenters:\n number, outId: number) => void;\nfunction setup(backend: BackendWasm): void {\n wasmResizeBilinear =\n backend.wasm.cwrap(ResizeBilinear, null /*void*/, [\n 'number', // xId\n 'number', // batch\n 'number', //\n oldHeight\n 'number', // oldWidth\n 'number', // numChannels\n 'number', // newHeight\n 'number', //\n newWidth\n 'number', // alignCorners\n 'number', // halfPixelCenters\n 'number' // outId\n]);\n}\nfunction\n resizeBilinear(args: {\n backend: BackendWasm,\n inputs: ResizeBilinearInputs,\n attrs: ResizeBilinearAttrs\n}):
TensorInfo {\n const {backend, inputs, attrs} = args;\n const {images} = inputs;\n const {alignCorners,\n halfPixelCenters, size} = attrs;\n const [newHeight, newWidth] = size;\n const [batch, oldHeight, oldWidth,\n numChannels] = images.shape;\n const outShape = [batch, newHeight, newWidth, numChannels];\n let xData =\n backend.dataIdMap.get(images.dataId);\n let castedData;\n if (xData.dtype !== 'float32') {\n castedData =\n cast({backend, inputs: {x: images}, attrs: {dtype: 'float32'}});\n xData =\n backend.dataIdMap.get(castedData.dataId);\n }\n const xId = xData.id;\n const out =\n backend.makeOutput(outShape, 'float32');\n if (util.sizeFromShape(images.shape) === 0) {\n return out;\n }\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmResizeBilinear(\n xId, batch, oldHeight,\n oldWidth, numChannels, newHeight, newWidth,\n alignCorners ? 1 : 0, halfPixelCenters ? 1 : 0, outId);\n if\n (castedData != null) {\n backend.disposeData(castedData.dataId);\n }\n return out;\n}\nexport const\n resizeBilinearConfig: KernelConfig = {\n kernelName: ResizeBilinear,\n backendName: 'wasm',\n setupFunc:\n setup,\n kernelFunc: resizeBilinear as {} as KernelFunc\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC.\n All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this\n file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *
```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Reverse, ReverseAttrs, ReverseInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from './backend_wasm';\n\nimport {identity} from
'./Identity';\nimport {reshape} from './Reshape';\n\nlet wasmReverse: (\n xId: number, axes: Uint8Array,
axesLength: number, outShape: Uint8Array,\n outShapeLength: number, outId: number) => void;\n\nfunction
setup(backend: BackendWasm) {\n wasmReverse = backend.wasm.cwrap(Reverse, null, [\n 'number', // x_id\n
'array', // axes\n 'number', // axes_length\n 'array', // out_shape\n 'number', // out_shape_length\n 'number'
// out_id\n]);\n}\n\nexport function reverse(\n args: {inputs: ReverseInputs, backend: BackendWasm, attrs:
ReverseAttrs});\n TensorInfo {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {dims} =
attrs;\n\n const axes = util.parseAxisParam(dims, x.shape);\n\n if (x.shape.length === 0) {\n return
identity({inputs: {x}, backend});\n }\n\n const out = backend.makeOutput(x.shape, x.dtype);\n const xId =
backend.dataIdMap.get(x.dataId).id;\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const axesBytes =
new Uint8Array(new Int32Array(axes).buffer);\n const outShapeBytes = new Uint8Array(new
Int32Array(x.shape).buffer);\n\n wasmReverse(\n xId, axesBytes, axes.length, outShapeBytes, x.shape.length,
outId);\n\n const reshaped =\n reshape({inputs: {x: out}, attrs: {shape: x.shape}, backend});\n\n backend.disposeData(out.dataId);\n return reshaped;\n }\n\nexport const reverseConfig: KernelConfig = {\n
kernelName: Reverse,\n backendName: 'wasm',\n kernelFunc: reverse as {} as KernelFunc,\n setupFunc:
setup\n};\n\n"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless
required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */
=====

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, RotateWithOffset, RotateWithOffsetAttrs, RotateWithOffsetInputs,
TensorInfo} from '@tensorflow/tfjs-core';\nimport {backend_util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from './backend_wasm';\n\nlet wasmRotate: (\n xId: number, batch: number, imageHeight:
number, imageWidth: number,\n numChannels: number, radians: number, centerX: number, centerY: number,\n
fillBytes: Uint8Array, fillLength: number, outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n
wasmRotate = backend.wasm.cwrap(RotateWithOffset, null /* void */, [\n 'number', // xId\n 'number', //
batch\n 'number', // imageHeight\n 'number', // imageWidth\n 'number', // numChannels\n 'number', //
radians\n 'number', // centerX\n 'number', // centerY\n 'array', // fillBytes\n 'number', // fillLength\n
'number', // outId\n]);\n}\n\nexport function rotateWithOffset(args: {\n inputs: RotateWithOffsetInputs,\n
backend: BackendWasm,\n attrs: RotateWithOffsetAttrs\n}): TensorInfo {\n const {inputs, backend, attrs} =
args;\n const {image} = inputs;\n const {radians, fillValue, center} = attrs;\n\n const out =
backend.makeOutput(image.shape, image.dtype);\n const imageId = backend.dataIdMap.get(image.dataId).id;\n
const outId = backend.dataIdMap.get(out.dataId).id;\n\n const [batch, imageHeight, imageWidth, numChannels] =
image.shape;\n\n const [centerX, centerY] =\n backend_util.getImageCenter(center, imageHeight,
imageWidth);\n\n const fillIsBlack = fillValue === 0;\n const fullOpacityValue = 255;\n\n const fillValues =
typeof fillValue === 'number' ?\n [fillValue, fillValue, fillValue, fillIsBlack ? 0 : fullOpacityValue] :\n [...fillValue, fullOpacityValue];\n const fillBytes = new Uint8Array(new Int32Array(fillValues).buffer);\n\n
wasmRotate(\n imageId, batch, imageHeight, imageWidth, numChannels, radians, centerX,\n centerY,
fillBytes, fillValues.length, outId);\n return out;\n}\n\nexport const rotateWithOffsetConfig: KernelConfig = {\n
kernelName: RotateWithOffset,\n backendName: 'wasm',\n kernelFunc: rotateWithOffset as {} as KernelFunc,\n
setupFunc: setup\n};\n\n"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
=====

```

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
* \nimport {KernelConfig, Round} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
 './unary_kernel';\n\nexport const roundConfig: KernelConfig = createUnaryKernelConfig(Round);\n", "/*\n *
 @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
```

```
=====
* \nimport {KernelConfig, Rsqrt} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
 './unary_kernel';\n\nexport const rsqrtConfig: KernelConfig = createUnaryKernelConfig(Rsqrt);\n", "/*\n *
 @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
 copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
 law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
 the specific language governing permissions and\n * limitations under the License.\n *
=====
\n
```

```
=====
* \n\nimport {KernelConfig, KernelFunc, scatter_util, ScatterNd, ScatterNdAttrs, ScatterNdInputs, TensorInfo, util}
 from '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {CppType} from
 './types';\n\nlet wasmScatterNd: (\n indicesId: number, updatesId: number, dtype: CppDType, sliceRank:
 number,\n numUpdates: number, sliceSize: number, strides: Uint8Array,\n outputSize: number, outId: number)
 => void;\n\nfunction setup(backend: BackendWasm): void {\n wasmScatterNd = backend.wasm.cwrap(ScatterNd,
 null /*void*/, [\n 'number', // indicesId\n 'number', // updatesId\n 'number', // dtype\n 'number', //
 sliceRank\n 'number', // numUpdates\n 'number', // sliceSize\n 'array', // strides\n 'number', // outputSize\n 'number' // outId\n]);\n\n function scatterNd(\n args: \n {backend: BackendWasm, inputs:
 ScatterNdInputs, attrs: ScatterNdAttrs}): \n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {indices,
 updates} = inputs;\n const {shape} = attrs;\n\n const out = backend.makeOutput(shape, updates.dtype);\n if
 (util.sizeFromShape(shape) === 0) {\n return out;\n }\n\n const {sliceRank, numUpdates, sliceSize, strides,
 outputSize} = \n scatter_util.calculateShapes(updates, indices, shape);\n\n const indicesData =
 backend.dataIdMap.get(indices.dataId);\n const indicesId = indicesData.id;\n\n const updatesData =
 backend.dataIdMap.get(updates.dataId);\n const updatesId = updatesData.id;\n\n const stridesBytes = new
 Uint8Array(new Int32Array(strides).buffer);\n\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n wasmScatterNd(\n indicesId, updatesId, CppDType[updates.dtype], sliceRank, numUpdates,\n sliceSize,
 stridesBytes, outputSize, outId);\n\n return out;\n }\n\n export const scatterNdConfig: KernelConfig = {\n kernelName: ScatterNd,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: scatterNd as {} as
 KernelFunc\n };
", "/*\n *
 @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
 Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
 License.\n * You may obtain a copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
 on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
 implied.\n * See the License for the specific language governing permissions and\n * limitations under the
 License.\n *
=====
\n
```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Select, SelectInputs, util} from '@tensorflow/tfjs-core';\n\nimport
{BackendWasm} from '../backend_wasm';\n\nlet wasmSelect: (\n conditionId: number, tId: number, eId: number,
offset: number,\n outId: number) => void;\n\nfunction setup(backend: BackendWasm) {\n wasmSelect =
backend.wasm.cwrap('SelectV2', null, [\n 'number', // conditionId\n 'number', // tId\n 'number', // eId\n
'number', // offset\n 'number', // outId\n]);\n\nfunction select(args: {inputs: SelectInputs, backend:
BackendWasm}) {\n const {inputs, backend} = args;\n const {condition, t, e} = inputs;\n\n const conditionId =
backend.dataIdMap.get(condition.dataId).id;\n const tId = backend.dataIdMap.get(t.dataId).id;\n const eId =
backend.dataIdMap.get(e.dataId).id;\n const out = backend.makeOutput(t.shape, t.dtype);\n const outId =
backend.dataIdMap.get(out.dataId).id;\n\n const cRank = condition.shape.length;\n const tRank =
t.shape.length;\n\n const offset = cRank === 0 || cRank > 1 || tRank === 1 ?\n 1 :\n util.sizeFromShape(t.shape.slice(1));\n\n wasmSelect(conditionId, tId, eId, offset, outId);\n return out;\n}\n\nexport
const selectConfig: KernelConfig = {\n kernelName: Select,\n backendName: 'wasm',\n kernelFunc: select as { }
as KernelFunc,\n setupFunc: setup\n};\n", "/*\n * @license\n * Copyright 2019 Google LLC. All Rights
Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file
except in compliance with the License.\n * You may obtain a copy of the License at\n *\n *
http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Sigmoid, SigmoidInputs, TensorInfo, util} from '@tensorflow/tfjs-
core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId: number) =>
void;\n\nfunction setup(backend: BackendWasm): void {\n wasmFunc = backend.wasm.cwrap(Sigmoid, null /*
void */, ['number', 'number']);\n\nfunction sigmoid(args: {backend: BackendWasm, inputs: SigmoidInputs}):
TensorInfo {\n const {backend, inputs: {x}} = args;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const out
= backend.makeOutput(x.shape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n // Short-
circuit zero-sized tensors.\n if (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId,
outId);\n return out;\n}\n\nexport const sigmoidConfig: KernelConfig = {\n kernelName: 'Sigmoid',\n
backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: sigmoid as { } as KernelFunc\n};\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, Sin} from '@tensorflow/tfjs-core';\n\nimport {createUnaryKernelConfig} from
'/unary_kernel';\n\nexport const sinConfig: KernelConfig = createUnaryKernelConfig(Sin);\n", "/*\n * @license\n
* Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
\"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {KernelConfig, KernelFunc, Softmax, SoftmaxAttrs, SoftmaxInputs, TensorInfo, util} from
'@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nlet wasmFunc: (xId: number, outId:

```



```

number, channels: number, batch: number) =>\n void;\n\nfunction setup(backend: BackendWasm): void {\n
wasmFunc = backend.wasm.cwrap(Softmax, null /* void */, [\n 'number', // xId\n 'number', // outId\n
'number', // channels\n 'number' // batch\n]);\n}\n\nfunction softmax(\n args: {backend: BackendWasm,\n inputs: SoftmaxInputs, attrs: SoftmaxAttrs});\n TensorInfo {\n const {backend, inputs: {logits}, attrs: {dim}} =\n args;\n const xId = backend.dataIdMap.get(logits.dataId).id;\n const out = backend.makeOutput(logits.shape,\n logits.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n const channels = logits.shape[dim];\n const batch = util.sizeFromShape(logits.shape) / channels;\n\n // Short-circuit zero-sized tensors.\n if\n (util.sizeFromShape(out.shape) === 0) {\n return out;\n }\n\n wasmFunc(xId, outId, channels, batch);\n return\n out;\n}\n\nexport const softmaxConfig: KernelConfig = {\n kernelName: Softmax,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: softmax as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2021 Google\n LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the \"License\");\n * you may not\n use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *

http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,\n software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language\n governing permissions and\n * limitations under the License.\n *

=====*\n
*\n\nimport {backend_util, KernelConfig, KernelFunc, ReshapeAttrs, ReshapeInputs, SpaceToBatchND,\n SpaceToBatchNDAttrs, SpaceToBatchNDInputs, TensorInfo, TransposeAttrs, TransposeInputs, util} from\n '@tensorflow/tfjs-core';\n\nimport {BackendWasm} from '../backend_wasm';\n\nimport {padV2Config} from\n './PadV2';\n\nimport {reshape} from './Reshape';\n\nimport {transpose} from './Transpose';\n\nfunction\n spaceToBatchND(args: {\n inputs: SpaceToBatchNDInputs,\n backend: BackendWasm,\n attrs:\n SpaceToBatchNDAttrs\n}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const {blockShape,\n paddings} = attrs;\n\n const prod = util.sizeFromShape(blockShape);\n\n const completePaddings: Array<[number,\n number]> = [[0, 0];\n completePaddings.push(...(paddings as Array<[number, number]>));\n\n for (let i = 1 +\n blockShape.length; i < x.shape.length; ++i) {\n completePaddings.push([0, 0]);\n }\n\n const paddedX =\n padV2Config.kernelFunc({\n inputs: {x},\n backend,\n attrs: {paddings: completePaddings, constantValue:\n 0}\n }) as TensorInfo;\n\n const reshapedPaddedShape =\n backend_util.getReshaped(paddedX.shape,\n blockShape, prod, false);\n\n const permutedReshapedPaddedPermutation =\n backend_util.getPermuted(\n reshapedPaddedShape.length, blockShape.length, false);\n\n const flattenShape =\n backend_util.getReshapedPermuted(paddedX.shape, blockShape, prod, false);\n\n const reshapeInputs:\n ReshapeInputs = {x: paddedX};\n const reshapeAttrs: ReshapeAttrs = {shape: reshapedPaddedShape};\n const\n paddedXReshaped =\n reshape({inputs: reshapeInputs, backend, attrs: reshapeAttrs});\n const transposeInputs:\n TransposeInputs = {x: paddedXReshaped};\n const transposeAttrs:\n TransposeAttrs = {perm:\n permutedReshapedPaddedPermutation};\n const paddedXT =\n transpose({inputs: transposeInputs, backend,\n attrs: transposeAttrs});\n\n const resultReshapeInputs: ReshapeInputs = {x: paddedXT};\n const\n resultReshapeAttrs: ReshapeAttrs = {shape: flattenShape};\n const result = reshape(\n {inputs:\n resultReshapeInputs, backend, attrs: resultReshapeAttrs});\n\n backend.disposeData(paddedX.dataId);\n backend.disposeData(paddedXReshaped.dataId);\n backend.disposeData(paddedXT.dataId);\n\n return\n result;\n}\n\nexport const spaceToBatchNDConfig: KernelConfig = {\n kernelName: SpaceToBatchND,\n backendName: 'wasm',\n kernelFunc: spaceToBatchND as {} as KernelFunc\n};\n\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the\n License at\n * \n *

http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or\n agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES\n OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for\n the specific language governing permissions and\n * limitations under the License.\n *

=====*\n

```

```

*\n\nimport {KernelConfig, KernelFunc, SplitV, SplitVAttrs, SplitVInputs, util} from '@tensorflow/tfjs-
core';\nimport {backend_util} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from
'./backend_wasm';\nimport {slice} from './Slice';\n\nexport function splitV(\n args: {inputs: SplitVInputs, attrs:
SplitVAttrs, backend: BackendWasm}) {\n const {inputs, attrs, backend} = args;\n const {x} = inputs;\n const
{numOrSizeSplits, axis} = attrs;\n const $axis = util.parseAxisParam(axis, x.shape)[0];\n const splitSizes =
backend_util.prepareSplitSize(x, numOrSizeSplits, $axis);\n const begin = new Array(x.shape.length).fill(0);\n
const size = x.shape.slice();\n return splitSizes.map(s => {\n const xSliceSize = [...size];\n xSliceSize[$axis] =
s;\n const xSlice =\n slice({inputs: {x}, attrs: {begin, size: xSliceSize}, backend});\n begin[$axis] += s;\n
return xSlice;\n });\n}\n\nexport const splitVConfig: KernelConfig = {\n kernelName: SplitV,\n backendName:
'wasm',\n kernelFunc: splitV as {} as KernelFunc\n};\n", "/*\n * @license\n * Copyright 2020 Google LLC. All
Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this
file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, Sqrt} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\nexport const sqrtConfig: KernelConfig = createUnaryKernelConfig(Sqrt);\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the
"License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the
License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or
agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, Square} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from
'./unary_kernel';\nexport const squareConfig: KernelConfig = createUnaryKernelConfig(Square);\n", "/*\n * @license\n
* Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * \n * http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, SquaredDifference} from '@tensorflow/tfjs-core';\nimport {createBinaryKernelConfig}
from './binary_kernel';\nconst supportsFullBroadcast = true;\nexport const squaredDifferenceConfig: KernelConfig
=\n createBinaryKernelConfig(SquaredDifference, supportsFullBroadcast);\n", "/*\n * @license\n * Copyright
2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n *
you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * \n
* http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *
=====\n
*\n\nimport {KernelConfig, KernelFunc, Step, StepAttrs, StepInputs, TensorInfo} from '@tensorflow/tfjs-
core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\n\nlet wasmStep:
(xId: number, alpha: number, dtype: number, outId: number) =>\n void;\n\nfunction setup(backend:

```



copy of the License at <http://www.apache.org/licenses/LICENSE-2.0> Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
=====
* \nimport {KernelConfig, Sub} from '@tensorflow/tfjs-core'; \nimport {createBinaryKernelConfig} from
'./binary_kernel'; \nconst supportsFullBroadcast = true; \nexport const subConfig: KernelConfig = \ncreateBinaryKernelConfig(Sub, supportsFullBroadcast); \n", "/* \n * @license \n * Copyright 2019 Google LLC. All
Rights Reserved. \n * Licensed under the Apache License, Version 2.0 (the "License"); \n * you may not use this
file except in compliance with the License. \n * You may obtain a copy of the License at \n * \n *
http://www.apache.org/licenses/LICENSE-2.0 \n * Unless required by applicable law or agreed to in writing,
software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language
governing permissions and \n * limitations under the License. \n *
=====
```

```
=====
* \n \nimport {backend_util, KernelConfig, KernelFunc, Sum, SumAttrs, SumInputs, TensorInfo, util} from
'@tensorflow/tfjs-core'; \nimport {BackendWasm} from './backend_wasm'; \nimport
{permuteAxesAndTranspose} from './kernel_utils'; \nimport {CppType} from './types'; \n \nlet wasmSum: (xId:
number, reduceSize: number, dtype: number, outId: number) => \n void; \n \nfunction setup(backend:
BackendWasm): void { \n wasmSum = backend.wasm.cwrap(Sum, null /*void*/, [\n 'number', // input_id \n
'number', // reduce_size \n 'number', // dtype \n 'number', // out_id \n]); \n \nfunction sum(args: {backend:
BackendWasm, inputs: SumInputs, attrs: SumAttrs}): \n TensorInfo { \n const {backend, inputs, attrs} = args; \n
const {axis, keepDims} = attrs; \n const {x} = inputs; \n const xId = backend.dataIdMap.get(x.dataId).id; \n let
inputId = xId; \n let input = x; \n \n const {transposed, axes, originalAxes, inputWasTransposed} = \n
permuteAxesAndTranspose(x, axis, backend); \n \n let reductionAxes = axes; \n if (inputWasTransposed) { \n const
transposedId = backend.dataIdMap.get(transposed.dataId).id; \n if (transposedId !== xId) { \n // transpose was
not a no-op. We will need to dispose of this \n // once we are done. \n input = transposed; \n inputId =
transposedId; \n reductionAxes = backend_util.getInnerMostAxes(\n reductionAxes.length,
input.shape.length); \n } \n } \n backend_util.assertAxesAreInnerMostDims(\n 'sum', reductionAxes,
input.shape.length); \n const [outShape, reduceShape] = \n
backend_util.computeOutAndReduceShapes(input.shape, reductionAxes); \n const reduceSize =
util.sizeFromShape(reduceShape); \n \n const out = backend.makeOutput(outShape, input.dtype); \n if
(util.sizeFromShape(input.shape) !== 0) { \n const outId = backend.dataIdMap.get(out.dataId).id; \n
wasmSum(inputId, reduceSize, CCppType[out.dtype], outId); \n } \n \n if (inputWasTransposed) { \n // dispose of
the transposed tensor. \n backend.disposeData(transposed.dataId); \n } \n \n if (keepDims) { \n // reshape \n const
newShape = backend_util.expandShapeToKeepDim(out.shape, originalAxes); \n out.shape = newShape; \n } \n \n
return out; \n } \n \nexport const sumConfig: KernelConfig = { \n kernelName: Sum, \n backendName: 'wasm', \n
setupFunc: setup, \n kernelFunc: sum as {} as KernelFunc \n }; \n", "/* \n * @license \n * Copyright 2021 Google
LLC. All Rights Reserved. \n * Licensed under the Apache License, Version 2.0 (the "License"); \n * you may not
use this file except in compliance with the License. \n * You may obtain a copy of the License at \n * \n *
http://www.apache.org/licenses/LICENSE-2.0 \n * Unless required by applicable law or agreed to in writing,
software \n * distributed under the License is distributed on an "AS IS" BASIS, \n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied. \n * See the License for the specific language
governing permissions and \n * limitations under the License. \n *
=====
```

```
=====
* \nimport {KernelConfig, Tan} from '@tensorflow/tfjs-core'; \nimport {createUnaryKernelConfig} from
'./unary_kernel'; \nexport const tanConfig: KernelConfig = createUnaryKernelConfig(Tan); \n", "/* \n * @license \n *
Copyright 2019 Google LLC. All Rights Reserved. \n * Licensed under the Apache License, Version 2.0 (the
```

\"License\");\n \* you may not use this file except in compliance with the License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n*\nimport {KernelConfig, Tanh} from '@tensorflow/tfjs-core';\nimport {createUnaryKernelConfig} from './unary_kernel';\nexport const tanhConfig: KernelConfig = createUnaryKernelConfig(Tanh);\n", /**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, Tile, TileAttrs, TileInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmTile: (\n xId: number, xShape: Uint8Array, xShapeSize: number, newShape: Uint8Array,\n newShapeSize: number, dtype: number, outId: number) => void;\nfunction setup(backend: BackendWasm) {\n wasmTile = backend.wasm.cwrap(Tile, null /* void */, [\n 'number', // x_id\n 'array', // x_shape\n 'number', // x_shape.length\n 'array', // new_shape\n 'number', // new_shape.length\n 'number' // out_id\n]);\n}\nfunction tile(\n args: {inputs: TileInputs, backend: BackendWasm, attrs: TileAttrs}) {\n const {inputs, backend, attrs} = args;\n const {x} = inputs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const {reps} = attrs;\n const newShape: number[] = new Array(x.shape.length);\n for (let i = 0; i < newShape.length; i++) {\n newShape[i] = x.shape[i] * reps[i];\n }\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n const newShapeBytes = new Uint8Array(new Int32Array(newShape).buffer);\n const out = backend.makeOutput(newShape, x.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n wasmTile(\n xId, xShapeBytes, x.shape.length, newShapeBytes, newShape.length,\n CppDType[out.dtype], outId);\n return out;\n}\nexport const tileConfig: KernelConfig = {\n kernelName: Tile,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: tile as {} as KernelFunc\n};\n", /**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the\n * \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n *
```

```
=====\n*\nimport {KernelConfig, KernelFunc, TensorInfo, TopK, TopKAttrs, TopKInputs} from '@tensorflow/tfjs-core';\nimport {BackendWasm} from './backend_wasm';\nimport {CppType} from './types';\nlet wasmTopK: (\n xId: number, xShapeBytes: Uint8Array, xShapeLength: number,\n xDtype: CppDType, k: number, sorted: boolean, outValuesId: number,\n outIndicesId: number) => void;\nfunction setup(backend: BackendWasm) {\n wasmTopK = backend.wasm.cwrap(TopK, null /* void */, [\n 'number', // xId\n 'array', // x_shape\n 'number', // x_shape.length\n 'number', // x_dtype\n 'number', // k\n 'bool', // sorted\n 'number', // outValuesId\n 'number', // outIndicesId\n]);\n}\nexport const topk: (\n args: {inputs: TopKInputs, backend: BackendWasm, attrs: TopKAttrs}) => \n TensorInfo[] | TensorInfo = ({inputs, backend, attrs}) => {\n const {x} = inputs;\n const {k, sorted} = attrs;\n const xId = backend.dataIdMap.get(x.dataId).id;\n const xShapeBytes = new Uint8Array(new Int32Array(x.shape).buffer);\n const outputShape = x.shape.slice();\n outputShape[outputShape.length - 1] = k;\n const outValues = backend.makeOutput(outputShape, x.dtype);\n
```

```

const outValuesId = backend.dataIdMap.get(outValues.dataId).id;\n
backend.makeOutput(outputShape, 'int32');\n
backend.dataIdMap.get(outIndices.dataId).id;\n\n
wasmTopK(\n xId, xShapeBytes, x.shape.length,\n CppDType[x.dtype], k, sorted,\n outValuesId, outIndicesId);\n\n
return [outValues, outIndices];\n
};\n\n
export const topKConfig: KernelConfig = {\n kernelName: TopK,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: topk as { } as KernelFunc,\n};\n\n
"/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====\n
*/\n\n
import {KernelConfig, KernelFunc, TensorInfo, Transform, TransformAttrs, TransformInputs, util} from '@tensorflow/tfjs-core';\n
import {BackendWasm} from '../backend_wasm';\n\n
let wasmTransform: (\n imageId: number, transformsId: number, isBatchTransform: boolean,\n batch: number, outHeight: number, outWidth: number, numChannels: number,\n imageWidth: number, imageHeight: number, strides: Uint8Array,\n stridesLength: number, interpolationModeId: number, fillModeId: number,\n fillValue: number, outId: number) => void;\n\n
function setup(backend: BackendWasm): void {\n wasmTransform = backend.wasm.cwrap(Transform, null /*void*/, [\n 'number', // imageId\n 'number', // transformsId\n 'bool', // isBatchTransform\n 'number', // batch\n 'number', // outHeight\n 'number', // outWidth\n 'number', // numChannels\n 'number', // imageWidth\n 'number', // imageHeight\n 'array', // strides\n 'number', // stridesLength\n 'number', // interpolationModeId\n 'number', // fillModeId\n 'number', // fillValue\n 'number' // outId\n]);\n\n
function transform(\n args: \n {backend: BackendWasm, inputs: TransformInputs, attrs: TransformAttrs});\n TensorInfo {\n const {backend, inputs, attrs} = args;\n const {image, transforms} = inputs;\n const {interpolation, fillMode, fillValue, outputShape} = attrs;\n const [batch, imageHeight, imageWidth, numChannels] = image.shape;\n const [outHeight, outWidth] =\n outputShape != null ? outputShape : [imageHeight, imageWidth];\n const outShape =\n [batch, outHeight, outWidth, numChannels] as [number, number, number, number];\n const strides =\n new Uint8Array(new Int32Array(util.computeStrides(image.shape)).buffer);\n\n const out = backend.makeOutput(outShape, image.dtype);\n const outId = backend.dataIdMap.get(out.dataId).id;\n\n const imageData = backend.dataIdMap.get(image.dataId);\n const imageId = imageData.id;\n\n const transformsData = backend.dataIdMap.get(transforms.dataId);\n const transformsId = transformsData.id;\n\n const interpolationModeId = interpolation === 'nearest' ? 1 : 2;\n let fillModeId;\n switch (fillMode) {\n case 'constant':\n fillModeId = 1;\n break;\n case 'reflect':\n fillModeId = 2;\n break;\n case 'wrap':\n fillModeId = 3;\n break;\n case 'nearest':\n fillModeId = 4;\n break;\n default:\n fillModeId = 1;\n break;\n }\n\n wasmTransform(\n imageId, transformsId, (transforms.shape[0] > 1), batch, outHeight,\n outWidth, numChannels, imageWidth, imageHeight, strides,\n image.shape.length - 1, interpolationModeId, fillModeId, fillValue,\n outId);\n\n return out;\n }\n\n
export const transformConfig: KernelConfig = {\n kernelName: Transform,\n backendName: 'wasm',\n setupFunc: setup,\n kernelFunc: transform as { } as KernelFunc\n};\n\n
"/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language governing permissions and\n * limitations under the License.\n */\n\n
=====

```

```

*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs } from
'@tensorflow/tfjs-core';\n\nimport { BackendWasm } from '../backend_wasm';\n\nimport { slice } from
'./Slice';\n\nfunction unpack(\n args: { inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs }):\n TensorInfo[] {\n const { inputs, backend, attrs } = args;\n const { value } = inputs;\n let { axis } = attrs;\n if (axis <
0) {\n axis += value.shape.length;\n }\n\n const numOutputs = value.shape[axis];\n const rank =
value.shape.length;\n const outShape: number[] = new Array(rank - 1);\n let outIndex = 0;\n for (let i = 0; i < rank;\n i++) {\n if (i !== axis) {\n outShape[outIndex++] = value.shape[i];\n }\n }\n const outs: TensorInfo[] = new
Array(numOutputs);\n const begin = new Array(rank).fill(0);\n const size = value.shape.slice();\n size[axis] = 1;\n for (let i = 0; i < outs.length; i++) {\n begin[axis] = i;\n outs[i] = slice({ inputs: { x: value }, attrs: { begin, size },
backend});\n }\n return outs.map(({ dataId, dtype }) => ({ dataId, dtype, shape: outShape }));\n }\n\nexport const
unpackConfig: KernelConfig = {\n kernelName: Unpack,\n backendName: 'wasm',\n kernelFunc: unpack as { } as
KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n
*\n\nimport { KernelConfig, KernelFunc, ZerosLike, ZerosLikeInputs } from '@tensorflow/tfjs-core';\n\nimport
{ BackendWasm } from '../backend_wasm';\n\nfunction zerosLike(args: { inputs: ZerosLikeInputs, backend:
BackendWasm }) {\n const { inputs: { x }, backend } = args;\n const out = backend.makeOutput(x.shape, x.dtype);\n
const outVals = backend.typedArrayFromHeap(out);\n outVals.fill(0);\n return out;\n }\n\nexport const
zerosLikeConfig: KernelConfig = {\n kernelName: ZerosLike,\n backendName: 'wasm',\n kernelFunc: zerosLike
as { } as KernelFunc,\n};\n", "/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * \n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *

```

```

=====\n *\n//

```

```

We explicitly import the modular kernels so they get registered in the\n// global registry when we compile the
library. A modular build would replace\n// the contents of this file and import only the kernels that are
needed.\n\nimport { KernelConfig, registerKernel } from '@tensorflow/tfjs-core';\n\nimport { fusedMatMulConfig }
from './kernels/_FusedMatMul';\n\nimport { absConfig } from './kernels/Abs';\n\nimport { addConfig } from
'./kernels/Add';\n\nimport { addNConfig } from './kernels/AddN';\n\nimport { allConfig } from './kernels/All';\n\nimport
{ anyConfig } from './kernels/Any';\n\nimport { argMaxConfig } from './kernels/ArgMax';\n\nimport { avgPoolConfig }
from './kernels/AvgPool';\n\nimport { batchMatMulConfig } from './kernels/BatchMatMul';\n\nimport
{ batchToSpaceNDConfig } from './kernels/BatchToSpaceND';\n\nimport { castConfig } from './kernels/Cast';\n\nimport
{ ceilConfig } from './kernels/Ceil';\n\nimport { clipByValueConfig } from './kernels/ClipByValue';\n\nimport
{ concatConfig } from './kernels/Concat';\n\nimport { conv2DConfig } from './kernels/Conv2D';\n\nimport
{ conv2DBackpropInputConfig } from './kernels/Conv2DBackpropInput';\n\nimport { cosConfig } from
'./kernels/Cos';\n\nimport { coshConfig } from './kernels/Cosh';\n\nimport { cropAndResizeConfig } from
'./kernels/CropAndResize';\n\nimport { cumsumConfig } from './kernels/Cumsum';\n\nimport { depthToSpaceConfig }
from './kernels/DepthToSpace';\n\nimport { depthwiseConv2dNativeConfig } from
'./kernels/DepthwiseConv2dNative';\n\nimport { eluConfig } from './kernels/Elu';\n\nimport { equalConfig } from
'./kernels/Equal';\n\nimport { expConfig } from './kernels/Exp';\n\nimport { expandDimsConfig } from

```

```

./kernels/ExpandDims';\nimport {fillConfig} from './kernels/Fill';\nimport {flipLeftRightConfig} from
./kernels/FlipLeftRight';\nimport {floorConfig} from './kernels/Floor';\nimport {floorDivConfig} from
./kernels/FloorDiv';\nimport {fusedBatchNormConfig} from './kernels/FusedBatchNorm';\nimport
{fusedConv2DConfig} from './kernels/FusedConv2D';\nimport {fusedDepthwiseConv2DConfig} from
./kernels/FusedDepthwiseConv2D';\nimport {gatherNdConfig} from './kernels/GatherNd';\nimport
{gatherV2Config} from './kernels/GatherV2';\nimport {greaterConfig} from './kernels/Greater';\nimport
{greaterEqualConfig} from './kernels/GreaterEqual';\nimport {identityConfig} from './kernels/Identity';\nimport
{leakyReluConfig} from './kernels/LeakyRelu';\nimport {lessConfig} from './kernels/Less';\nimport
{lessEqualConfig} from './kernels/LessEqual';\nimport {logConfig} from './kernels/Log';\nimport
{logicalAndConfig} from './kernels/LogicalAnd';\nimport {maxConfig} from './kernels/Max';\nimport
{maximumConfig} from './kernels/Maximum';\nimport {maxPoolConfig} from './kernels/MaxPool';\nimport
{meanConfig} from './kernels/Mean';\nimport {minConfig} from './kernels/Min';\nimport {minimumConfig} from
./kernels/Minimum';\nimport {mirrorPadConfig} from './kernels/MirrorPad';\nimport {multiplyConfig} from
./kernels/Multiply';\nimport {negConfig} from './kernels/Neg';\nimport {nonMaxSuppressionV3Config} from
./kernels/NonMaxSuppressionV3';\nimport {nonMaxSuppressionV4Config} from
./kernels/NonMaxSuppressionV4';\nimport {nonMaxSuppressionV5Config} from
./kernels/NonMaxSuppressionV5';\nimport {notEqualConfig} from './kernels/NotEqual';\nimport {oneHotConfig}
from './kernels/OneHot';\nimport {onesLikeConfig} from './kernels/OnesLike';\nimport {packConfig} from
./kernels/Pack';\nimport {padV2Config} from './kernels/PadV2';\nimport {powConfig} from
./kernels/Pow';\nimport {preluConfig} from './kernels/Prelu';\nimport {prodConfig} from './kernels/Prod';\nimport
{rangeConfig} from './kernels/Range';\nimport {realDivConfig} from './kernels/RealDiv';\nimport {reluConfig}
from './kernels/Relu';\nimport {relu6Config} from './kernels/Relu6';\nimport {reshapeConfig} from
./kernels/Reshape';\nimport {resizeBilinearConfig} from './kernels/ResizeBilinear';\nimport {reverseConfig} from
./kernels/Reverse';\nimport {rotateWithOffsetConfig} from './kernels/RotateWithOffset';\nimport {roundConfig}
from './kernels/Round';\nimport {rsqrtConfig} from './kernels/Rsqrt';\nimport {scatterNdConfig} from
./kernels/ScatterNd';\nimport {selectConfig} from './kernels/Select';\nimport {sigmoidConfig} from
./kernels/Sigmoid';\nimport {sinConfig} from './kernels/Sin';\nimport {sliceConfig} from './kernels/Slice';\nimport
{softmaxConfig} from './kernels/Softmax';\nimport {spaceToBatchNDConfig} from
./kernels/SpaceToBatchND';\nimport {splitVConfig} from './kernels/SplitV';\nimport {sqrtConfig} from
./kernels/Sqrt';\nimport {squareConfig} from './kernels/Square';\nimport {squaredDifferenceConfig} from
./kernels/SquaredDifference';\nimport {stepConfig} from './kernels/Step';\nimport {stridedSliceConfig} from
./kernels/StridedSlice';\nimport {subConfig} from './kernels/Sub';\nimport {sumConfig} from
./kernels/Sum';\nimport {tanConfig} from './kernels/Tan';\nimport {tanhConfig} from './kernels/Tanh';\nimport
{tileConfig} from './kernels/Tile';\nimport {topKConfig} from './kernels/TopK';\nimport {transformConfig} from
./kernels/Transform';\nimport {transposeConfig} from './kernels/Transpose';\nimport {unpackConfig} from
./kernels/Unpack';\nimport {zerosLikeConfig} from './kernels/ZerosLike';\n\n// List all kernel configs here\nconst
kernelConfigs: KernelConfig[] = [\n \n absConfig,\n addConfig,\n addNConfig,\n allConfig,\n anyConfig,\n argMaxConfig,\n avgPoolConfig,\n batchMatMulConfig,\n batchToSpaceNDConfig,\n castConfig,\n ceilConfig,\n clipByValueConfig,\n concatConfig,\n conv2DConfig,\n conv2DBackpropInputConfig,\n cosConfig,\n coshConfig,\n cropAndResizeConfig,\n cumsumConfig,\n depthToSpaceConfig,\n depthwiseConv2dNativeConfig,\n eluConfig,\n equalConfig,\n expConfig,\n expandDimsConfig,\n fillConfig,\n flipLeftRightConfig,\n floorConfig,\n floorDivConfig,\n fusedMatMulConfig,\n fusedBatchNormConfig,\n fusedConv2DConfig,\n fusedDepthwiseConv2DConfig,\n gatherNdConfig,\n gatherV2Config,\n greaterConfig,\n greaterEqualConfig,\n identityConfig,\n leakyReluConfig,\n lessConfig,\n lessEqualConfig,\n logConfig,\n logicalAndConfig,\n maxConfig,\n maximumConfig,\n maxPoolConfig,\n meanConfig,\n minConfig,\n minimumConfig,\n mirrorPadConfig,\n multiplyConfig,\n negConfig,\n nonMaxSuppressionV3Config,\n nonMaxSuppressionV4Config,\n nonMaxSuppressionV5Config,\n notEqualConfig,\n oneHotConfig,\n onesLikeConfig,\n packConfig,\n padV2Config,\n powConfig,\n preluConfig,\n prodConfig,\n rangeConfig,\n

```



```

realDivConfig,\n reluConfig,\n relu6Config,\n reshapeConfig,\n resizeBilinearConfig,\n reverseConfig,\n
rotateWithOffsetConfig,\n rsqrtConfig,\n roundConfig,\n scatterNdConfig,\n selectConfig,\n sigmoidConfig,\n
sinConfig,\n sliceConfig,\n softmaxConfig,\n spaceToBatchNDConfig,\n splitVConfig,\n sqrtConfig,\n
squareConfig,\n squaredDifferenceConfig,\n stepConfig,\n stridedSliceConfig,\n subConfig,\n sumConfig,\n
tanConfig,\n tanhConfig,\n tileConfig,\n topKConfig,\n transformConfig,\n transposeConfig,\n unpackConfig,\n
zerosLikeConfig\n];\n\nfor (const kernelConfig of kernelConfigs) {\n registerKernel(kernelConfig);\n}\n", "/*\n *
@license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version
2.0 (the \"License\");\n * you may not use this file except in compliance with the License.\n * You may obtain a
copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n * Unless required by applicable
law or agreed to in writing, software\n * distributed under the License is distributed on an \"AS IS\" BASIS,\n *
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for
the specific language governing permissions and\n * limitations under the License.\n *

```

```

=====
*\n\nimport {env} from '@tensorflow/tfjs-core';\n\nconst ENV = env();\n\n**\n * True if SIMD is supported.\n
*\n// From: https://github.com/GoogleChromeLabs/wasm-feature-detect\nENV.registerFlag(\n // This typed array
passed in to WebAssembly.validate is WebAssembly binary\n // code. In this case it is a small program that
contains SIMD\n // instructions.\n 'WASM_HAS_SIMD_SUPPORT', async () => WebAssembly.validate(new
Uint8Array([\n 0, 97, 115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3,\n 2, 1, 0, 10, 9, 1, 7, 0, 65, 0, 253, 15, 26,
11\n]));\n\n**\n * True if threads are supported.\n *\n// From: https://github.com/GoogleChromeLabs/wasm-
feature-detect\nENV.registerFlag('WASM_HAS_MULTITHREAD_SUPPORT', async () => {\n //
TODO(annxingyuan): Enable node support once this is resolved:\n //
https://github.com/tensorflow/tfjs/issues/3830\n if (ENV.get('IS_NODE')) {\n return false;\n }\n\n try {\n //
Test for transferability of SABs (needed for Firefox)\n //
https://groups.google.com/forum/#!msg/mozilla.dev.platform/IHkBZIHETpA/dwsMNchWEQAJ\n new
MessageChannel().port1.postMessage(new SharedArrayBuffer(1));\n // This typed array is a WebAssembly
program containing threaded\n // instructions.\n return WebAssembly.validate(new Uint8Array([\n 0, 97,
115, 109, 1, 0, 0, 0, 1, 4, 1, 96, 0, 0, 3, 2, 1, 0, 5,\n 4, 1, 3, 1, 1, 10, 11, 1, 9, 0, 65, 0, 254, 16, 2, 0, 26,
11\n]));\n } catch (e) {\n return false;\n };\n\n", "\nvar WasmBackendModuleThreadedSimd = (function() {\n
var _scriptDir = typeof document !== 'undefined' && document.currentScript ? document.currentScript.src :
undefined;\n if (typeof __filename !== 'undefined') _scriptDir = __scriptDir || __filename;\n return
(function(WasmBackendModuleThreadedSimd) {\n WasmBackendModuleThreadedSimd =
WasmBackendModuleThreadedSimd || {};\n\nfunction
GROWABLE_HEAP_I8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP8}function
GROWABLE_HEAP_U8(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU8}function
GROWABLE_HEAP_I32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAP32}function
GROWABLE_HEAP_U32(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPU32}function
GROWABLE_HEAP_F64(){if(wasmMemory.buffer!=buffer){updateGlobalBufferAndViews(wasmMemory.buffer)}
return HEAPF64}var Module=typeof
WasmBackendModuleThreadedSimd!="undefined"?WasmBackendModuleThreadedSimd: {};var
readyPromiseResolve,readyPromiseReject;Module["ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={};var key;for(key in
Module){if(Module.hasOwnProperty(key)){moduleOverrides[key]=Module[key]}}var arguments_=[];var
thisProgram=\.this.program\";var quit_=function(status,toThrow){throw toThrow};var

```

```

ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window===\"object\";ENVIRONMENT_IS_WORKER=typeof
importScripts===\"function\";ENVIRONMENT_IS_NODE=typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof
process.versions.node===\"string\";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var
ENVIRONMENT_IS_PTHREAD=Module[\"ENVIRONMENT_IS_PTHREAD\"]||false;if(ENVIRONMENT_IS_P
THREAD){buffer=Module[\"buffer\"]}var scriptDirectory=\\\";function
locateFile(path){if(Module[\"locateFile\"]){return Module[\"locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\\\"path\\\").
dirname(scriptDirectory)+\\\"^\"}else{scriptDirectory=__dirname+\\\"^\"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\\\"fs\\\");if(!nodePath)nodePath=require(\\\"path\\\");filename=n
odePath[\\\"normalize\\\"](filename);return
nodeFS[\\\"readFileSync\\\"](filename,binary?null:\\\"utf8\\\");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process[\\\"argv\\\"].length>1){thisProgram=process[\\\"argv\\\"][[1]].replace(/\\\\\\\\\\\\g,\\\"^\\\")}arguments_=process[\\\"arg
v\\\"].slice(2);process[\\\"on\\\"](\\\"uncaughtException\\\",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process[\\\"on\\\"](\\\"unhandledRejection\\\",abort);quit_=function(status){process[\\\"exit\\\"](status)};Module[\\\"insp
ect\\\"]=function(){return\\\"[Emscripten Module object]\\\"};var
nodeWorkerThreads;try{nodeWorkerThreads=require(\\\"worker_threads\\\")}catch(e){console.error(\\\"The
\\\"worker_threads\\\" module is not supported in this node.js build - perhaps a newer version is needed?\\\");throw
e}global.Worker=nodeWorkerThreads.Worker}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!=\"undefined\\\"){read_=function shell_read(f){return read(f)}readBinary=function readBinary(f){var
data;if(typeof readbuffer===\"function\\\"){return new
Uint8Array(readbuffer(f))}data=read(f,\\\"binary\\\");assert(typeof data===\"object\\\");return data};if(typeof
scriptArgs!=\"undefined\\\"){arguments_=scriptArgs}else if(typeof
arguments!=\"undefined\\\"){arguments_=arguments}if(typeof
quit===\"function\\\"){quit_=function(status){quit(status)}}if(typeof print!=\"undefined\\\"){if(typeof
console===\"undefined\\\")console={};console.log=print;console.warn=console.error=typeof
printErr!=\"undefined\\\"?printErr:print}}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=\"undefined\\\"&&document.currentScript){scriptDirectory=document.currentScript.src}if(typeof
_scriptDir !=\"undefined\\\" &&
_scriptDir){scriptDirectory=_scriptDir}if(scriptDirectory.indexOf(\\\"blob:\\\")!=\"\"){scriptDirectory=scriptDirectory.s
ubstr(0,scriptDirectory.lastIndexOf(\\\"^\\")+1)}else{scriptDirectory=\\\"\"}if(ENVIRONMENT_IS_NODE){read_=fun
ction
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\\\"fs\\\");if(!nodePath)nodePath=require(\\\"path\\\");filename=n
odePath[\\\"normalize\\\"](filename);return
nodeFS[\\\"readFileSync\\\"](filename,binary?null:\\\"utf8\\\");readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret}}else{read_=function(url){var xhr=new XMLHttpRequest;xhr.open(\\\"GET\\\",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\\\"GET\\\",url,false);xhr.responseType=\\\"arraybuffer\\\";xhr.send(null);return new
Uint8Array(xhr.response)}}readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\\\"GET\\\",url,true);xhr.responseType=\\\"arraybuffer\\\";xhr.onload=function(){if(xhr.status

```

```

==200||xhr.status===0&&xhr.response){onload(xhr.response);return }onerror();xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title}else{if(ENVIRONMENT_IS_NODE){if(typeof
performance===\undefined\){global.performance=require(\perf_hooks\).performance}}var
out=Module[\print"]||console.log.bind(console);var err=Module[\printErr"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]} }moduleOverr
ides=null;if(Module[\arguments\])arguments_=Module[\arguments\];if(Module[\thisProgram\])thisProgram=
Module[\thisProgram\];if(Module[\quit\])quit_=Module[\quit\];function
warnOnce(text){if(!warnOnce.shown)warnOnce.shown={};if(!warnOnce.shown[text]){warnOnce.shown[text]=1;er
r(text)}}var Atomics_load=Atomics.load;var Atomics_store=Atomics.store;var
Atomics_compareExchange=Atomics.compareExchange;var
wasmBinary;if(Module[\wasmBinary\])wasmBinary=Module[\wasmBinary\];var
noExitRuntime=Module[\noExitRuntime\]||true;if(typeof WebAssembly!=="object"){abort(\no native wasm
support detected)}var wasmMemory;var wasmModule;var ABORT=false;var EXITSTATUS;function
assert(condition,text){if(!condition){abort(\Assertion failed: \'+text)}}function getCFunc(ident){var
func=Module[_\' +ident];assert(func,\Cannot call unknown function \'+ident+, make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC=\\string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},\array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType===\string")return UTF8ToString(ret);if(returnType===\boolean")return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\number"});var
numericRet=returnType!=="string";if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
str=\\";while(!(idx>=endIdx)){var u0=heap[idx++];if(!u0)return
str;if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(GROWABLE_HEAP_U8(),ptr,maxBytesToRead):\\"}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++]
=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,GROWABLE_HEAP_U8(),outPtr,maxBytesToWrite)}function lengthBytesUTF8(str){var

```

```

len=0;for(var i=0;i<str.length;++i){ var
u=str.charCodeAt(i);if(u>=55296&&u<=57343)u=65536+((u&1023)<<10)|str.charCodeAt(++i)&1023;if(u<=127)+
+len;else if(u<=2047)len+=2;else if(u<=65535)len+=3;else len+=4}return len}function
writeArrayToMemory(array,buffer){GROWABLE_HEAP_I8().set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;if(ENVIRONMENT_IS_PTHREAD){wasmmem
ory=Module["wasmMemory"];buffer=Module["buffer"]}else if(Module["wasmMemory"]){wasmMemory=
Module["wasmMemory"]}else{wasmMemory=new
WebAssembly.Memory({"initial":INITIAL_MEMORY/65536,"maximum":2147483648/65536,"shared":true});
if(!(wasmMemory.buffer instanceof SharedArrayBuffer)){err("requested a shared WebAssembly.Memory but the
returned buffer is not a SharedArrayBuffer, indicating that while the browser has SharedArrayBuffer it does not
have WebAssembly threads support - you may need to set a
flag");if(ENVIRONMENT_IS_NODE){console.log("(on node you may need: --experimental-wasm-threads --
experimental-wasm-bulk-memory and also use a recent version)")}throw Error("bad
memory")}}if(wasmMemory){buffer=wasmMemory.buffer}INITIAL_MEMORY=buffer.byteLength;updateGlob
alBufferAndViews(buffer);var wasmTable;var __ATPRERUN__=[];var __ATINIT__=[];var __ATMAIN__=[];var
__ATEXIT__=[];var __ATPOSTRUN__=[];var runtimeInitialized=false;var
runtimeExited=false;if(!ENVIRONMENT_IS_PTHREAD)__ATINIT__.push({func:function(){__wasm_call_ctors()}});function preRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["preRun"]){if(typeof
Module["preRun"]=="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATINIT
__)}function
preMain(){if(ENVIRONMENT_IS_PTHREAD)return;callRuntimeCallbacks(__ATMAIN__)}function
exitRuntime(){if(ENVIRONMENT_IS_PTHREAD)return;runtimeExited=true}function
postRun(){if(ENVIRONMENT_IS_PTHREAD)return;if(Module["postRun"]){if(typeof
Module["postRun"]=="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){assert(!ENVIRONMENT_IS_PTHREAD,"addRunDependency cannot be used in a
pthread
worker");runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"]((ru
nDependencies))}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"]((runDependencies))}if(runDepend
encies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}
if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()}}Module["preloadedImages"]={};Module
["preloadedAudios"]={};function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}if(ENVIRONMENT_IS_PTHREAD)console.err
or("Pthread aborting at "+(new

```

```

Error).stack);what+="\":err(what);ABORT=true;EXITSTATUS=1;what="\abort(\"+what+\"). Build with -s
ASSERTIONS=1 for more info.";var e=new WebAssembly.RuntimeError(what);readyPromiseReject(e);throw
e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="\data:application/octet-stream;base64,\";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="\file://\";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="\tfjs-backend-wasm-threaded-
simd.wasm\";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file===wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw\"both async and sync fetching of the
wasm failed\"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch===\"function\"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:\\"same-
origin\"}).then(function(response){if(!response[\"ok\"]){throw\"failed to load wasm binary file at
\"+wasmBinaryFile+\"\"})return response[\"arrayBuffer\"]()).catch(function(){return
getBinary(wasmBinaryFile)}})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response)),reject}))})}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={\"a\":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module[\"asm\"]=exports;wasmTable=Module[\"asm\"][\"I\"];wasmModule=module;if(!E
NVIRONMENT_IS_PTHREAD){var
numWorkersToLoad=PThread.unusedWorkers.length;PThread.unusedWorkers.forEach(function(w){PThread.load
WasmModuleToWorker(w,function(){if(!--numWorkersToLoad)removeRunDependency(\"wasm-
instantiate\")}})}if(!ENVIRONMENT_IS_PTHREAD){addRunDependency(\"wasm-instantiate\")}function
receiveInstantiatedSource(output){receiveInstance(output[\"instance\"],output[\"module\"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err(\"failed to asynchronously prepare
wasm: \"+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming===\"function\"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch===\"function\"){return fetch(wasmBinaryFile,{credentials:\\"same-
origin\"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err(\"wasm streaming compile failed: \"+reason);err(\"falling
back to ArrayBuffer instantiation\");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return
instantiateArrayBuffer(receiveInstantiatedSource)}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}var
ASM_CONSTS={10520:function(){throw\"Canceled!\"},10538:function($0,$1){setTimeout(function(){__emscript
en_do_dispatch_to_thread($0,$1),0});function initPthreadsJS(){PThread.initRuntime()}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}var
ERRNO_CODES={EPERM:63,ENOENT:44,ESRCH:71,EINTR:27,EIO:29,ENXIO:60,E2BIG:1,ENOEXEC:45,E
BADF:8,ECHILD:12,EAGAIN:6,EWOULDBLOCK:6,ENOMEM:48,EACCES:2,EFAULT:21,ENOTBLK:105,EB
USY:10,EEXIST:20,EXDEV:75,ENODEV:43,ENOTDIR:54,EISDIR:31,EINVAL:28,ENFILE:41,EMFILE:33,EN
OTTY:59,ETXTBSY:74,EFBIG:22,ENOSPC:51,ESPIPE:70,EROFS:69,EMLINK:34,EPIPE:64,EDOM:18,ERAN
GE:68,ENOMSG:49,EIDRM:24,ECHRNG:106,EL2NSYNC:156,EL3HLT:107,EL3RST:108,ELNRNG:109,EUNA

```

```

TCH:110,ENOCESI:111,EL2HLT:112,EDEADLK:16,ENOLCK:46,EBADE:113,EBADR:114,EXFULL:115,ENOANO:104,EBADRQC:103,EBADSLT:102,EDEADLOCK:16,EBFONT:101,ENOSTR:100,ENODATA:116,ETIME:117,ENOSR:118,ENONET:119,ENOPKG:120,EREMOTE:121,ENOLINK:47,EADV:122,ESRMNT:123,ECOMM:124,EPROTO:65,EMULTIHOP:36,EDOTDOT:125,EBADMSG:9,ENOTUNIQ:126,EBADFD:127,EREMCHG:128,ELIBACC:129,ELIBBAD:130,ELIBSCN:131,ELIBMAX:132,ELIBEXEC:133,ENOSYS:52,ENOTEMPTY:55,ENAMETOOLONG:37,ELOOP:32,EOPNOTSUPP:138,EPFNOSUPPORT:139,ECONNRESET:15,ENOBUFS:42,EAFNOSUPPORT:5,EPROTOTYPE:67,ENOTSOK:57,ENOPROTOOPT:50,ESHUTDOWN:140,ECONNREFUSED:14,EADDRINUSE:3,ECONNABORTED:13,ENETUNREACH:40,ENETDOWN:38,ETIMEDOUT:73,EHOSTDOWN:142,EHOSTUNREACH:23,EINPROGRESS:26,EALREADY:7,EDESTADDRREQ:17,EMSGSIZE:35,EPROTONOSUPPORT:66,ESOCKTNOSUPPORT:137,EADDRNOTAVAIL:4,ENETRESET:39,EISCONN:30,ENOTCONN:53,ETOOMANYREFS:141,EUSERS:136,EDQUOT:19,ESTALE:72,ENOTSUP:138,ENOMEDIUM:148,EILSEQ:25,E_OVERFLOW:61,ECANCELED:11,ENOTRECOVERABLE:56,EOWNERDEAD:62,ESTRPIPE:135};function
_emsripten_futex_wake(addr,count){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0||count<0)return-28;if(count==0)return 0;if(count>=2147483647)count=Infinity;var
mainThreadWaitAddress=Atomics.load(GROWABLE_HEAP_I32(),_emsripten_main_thread_futex>>2);var
mainThreadWoken=0;if(mainThreadWaitAddress==addr){var
loadedAddr=Atomics.compareExchange(GROWABLE_HEAP_I32(),_emsripten_main_thread_futex>>2,mainThreadWaitAddress,0);if(loadedAddr==mainThreadWaitAddress){--count;mainThreadWoken=1;if(count<=0)return1}}var ret=Atomics.notify(GROWABLE_HEAP_I32(),addr>>2,count);if(ret>=0)return
ret+mainThreadWoken;throw"Atomic.notify returned an unexpected value
"+ret}Module["_emsripten_futex_wake"]=_emsripten_futex_wake;function
killThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! killThread() can only ever be
called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
killThread!";GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
pthread=PThread.threads[pthread_ptr];pthread.worker.terminate();PThread.freeThreadData(pthread);PThread.runningWorkers.splice(PThread.runningWorkers.indexOf(pthread.worker),1);pthread.worker pthread=undefined}function
cancelThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! cancelThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
cancelThread!";var
pthread=PThread.threads[pthread_ptr];pthread.worker.postMessage({"cmd":"cancel"})}function
cleanupThread(pthread_ptr){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! cleanupThread() can only
ever be called from main application thread!";if(!pthread_ptr)throw"Internal Error! Null pthread_ptr in
cleanupThread!";var
pthread=PThread.threads[pthread_ptr];if(pthread){GROWABLE_HEAP_I32()[pthread_ptr+12>>2]=0;var
worker=pthread.worker;PThread.returnWorkerToPool(worker)}}var
PThread={unusedWorkers:[],runningWorkers:[],initMainThreadBlock:function(){var pthreadPoolSize=8;for(var
i=0;i<pthreadPoolSize;++i){PThread.allocateUnusedWorker()}};initRuntime:function(){var
tb=_malloc(228);for(var
i=0;i<228/4;++i)GROWABLE_HEAP_U32()[tb/4+i]=0;GROWABLE_HEAP_I32()[tb+12>>2]=tb;var
headPtr=tb+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var tlsMemory=_malloc(512);for(var
i=0;i<128;++i)GROWABLE_HEAP_U32()[tlsMemory/4+i]=0;Atomics.store(GROWABLE_HEAP_U32(),tb+100
>>2,tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tb+40>>2,tb);_emsripten_thread_init(tb,!ENVIRONMENT_IS_WORKER,1);_emsripten_register_main_browser_thread_id(tb);initWorker:function(){},threads:{},threadExitHandlers:[],setThreadStatus:function(){},runExitHandlers:function(){while(PThread.threadExitHandlers.length>0){PThread.threadExitHandlers.pop()};if(ENVIRONMENT_IS_PTHREAD&&_pthread_self())__pthread_tsd_run_dtors(),runExitHandlersAndDeinitThread:function(tb,exitCode){Atomics.store(GROWABLE_HEAP_U32(),tb+56>>2,1);Atomics.store(GROWABLE_HEAP_U32(),tb+60>>2,0);PThread.runExitHandlers();Atomics.stor

```

```

e(GROWABLE_HEAP_U32(),tb+4>>2,exitCode);Atomics.store(GROWABLE_HEAP_U32(),tb+0>>2,1);_emsc
ripten_futex_wake(tb+0,2147483647);__emscripten_thread_init(0,0,0)},threadExit:function(exitCode){var
tb=_pthread_self();if(tb){PThread.runExitHandlersAndDeinitThread(tb,exitCode);if(ENVIRONMENT_IS_PTHRE
AD){postMessage({"cmd\\":"exit"})}},threadCancel:function(){PThread.runExitHandlersAndDeinitThread(_pthr
ead_self(),-1);postMessage({"cmd\\":"cancelDone"})},terminateAllThreads:function(){for(var t in
PThread.pthreads){var
pthread=PThread.pthreads[t];if(pthread&&pthread.worker){PThread.returnWorkerToPool(pthread.worker)}PThre
ad.pthreads={};for(var i=0;i<PThread.unusedWorkers.length;++i){var
worker=PThread.unusedWorkers[i];worker.terminate()}PThread.unusedWorkers=[];for(var
i=0;i<PThread.runningWorkers.length;++i){var worker=PThread.runningWorkers[i];var
pthread=worker.pthread;PThread.freeThreadData(pthread);worker.terminate()}PThread.runningWorkers=[],freeTh
readData:function(pthread){if(!pthread)return;if(pthread.threadInfoStruct){var
tlsMemory=GROWABLE_HEAP_I32()[pthread.threadInfoStruct+100>>2];GROWABLE_HEAP_I32()[pthread.thr
eadInfoStruct+100>>2]=0;_free(tlsMemory);_free(pthread.threadInfoStruct)}pthread.threadInfoStruct=0;if(pthread.
allocatedOwnStack&&pthread.stackBase)_free(pthread.stackBase);pthread.stackBase=0;if(pthread.worker)pthread.
worker.pthread=null},returnWorkerToPool:function(worker){PThread.runWithoutMainThreadQueuedCalls(funcio
n){delete
PThread.pthreads[worker.pthread.threadInfoStruct];PThread.unusedWorkers.push(worker);PThread.runningWorker
s.splice(PThread.runningWorkers.indexOf(worker),1);PThread.freeThreadData(worker.pthread);worker.pthread=un
defined}},runWithoutMainThreadQueuedCalls:function(func){GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=0;try{func()}finally{GROWABLE_HEAP_I32()[__emscripten_allow_main_runti
me_queued_calls>>2]=1}},receiveObjectTransfer:function(data){},loadWasmModuleToWorker:function(worker,o
nFinishedLoading){worker.onmessage=function(e){var d=e["data"];var
cmd=d["cmd"];if(worker.pthread)PThread.currentProxiedOperationCallerThread=worker.pthread.threadInfoStruct;
if(d["targetThread"]&&d["targetThread"]!=_pthread_self()){var
thread=PThread.pthreads[d.targetThread];if(thread){thread.worker.postMessage(e.data,d["transferList"])}else{con
sole.error('Internal error! Worker sent a message \''+cmd+'\" to target pthread '+d["targetThread"]+'\", but that
thread no longer
exists!')}PThread.currentProxiedOperationCallerThread=undefined;return}if(cmd===\"processQueuedMainThread
Work\\"){__emscripten_main_thread_process_queued_calls()}else
if(cmd===\"spawnThread\\"){spawnThread(e.data)}else
if(cmd===\"cleanupThread\\"){cleanupThread(d["thread"])}else
if(cmd===\"killThread\\"){killThread(d["thread"])}else
if(cmd===\"cancelThread\\"){cancelThread(d["thread"])}else
if(cmd===\"loaded\\"){worker.loaded=true;if(onFinishedLoading)onFinishedLoading(worker);if(worker.runPthread)
{worker.runPthread();delete worker.runPthread}}else if(cmd===\"print\\"){out(\"Thread \"+d["threadId"]+\"\":
'+d["text"])}else if(cmd===\"printErr\\"){err(\"Thread \"+d["threadId"]+\"\": '+d["text"])}else
if(cmd===\"alert\\"){alert(\"Thread \"+d["threadId"]+\"\": '+d["text"])}else if(cmd===\"exit\\"){var
detached=worker.pthread&&Atomics.load(GROWABLE_HEAP_U32(),worker.pthread.threadInfoStruct+64>>2);if
(detached){PThread.returnWorkerToPool(worker)}else
if(cmd===\"exitProcess\\"){try{exit(d["returnCode"])}catch(e){if(e instanceof ExitStatus)return;throw e}}else
if(cmd===\"cancelDone\\"){PThread.returnWorkerToPool(worker)}else
if(cmd===\"objectTransfer\\"){PThread.receiveObjectTransfer(e.data)}else
if(e.data.target===\"setimmediate\\"){worker.postMessage(e.data)}else{err(\"worker sent an unknown command
'+cmd')}PThread.currentProxiedOperationCallerThread=undefined};worker.onerror=function(e){err(\"pthread sent
an error! \"+e.filename+\":'+e.lineno+\":
'+e.message)};if(ENVIRONMENT_IS_NODE){worker.on(\"message\",function(data){worker.onmessage({data:d
ata})});worker.on(\"error\",function(data){worker.onerror(data)});worker.on(\"exit\",function(data){})}worker.post

```

```

Message({"cmd":"load","urlOrBlob":Module["mainScriptUrlOrBlob"]||_scriptDir,"wasmMemory":wasmMemory,"wasmModule":wasmModule}),allocateUnusedWorker:function(){var pthreadMainJs=locateFile("tfjs-backend-wasm-threaded-simd.worker.js");PThread.unusedWorkers.push(new Worker(pthreadMainJs)),getNewWorker:function(){if(PThread.unusedWorkers.length==0){PThread.allocateUnusedWorker();PThread.loadWasmModuleToWorker(PThread.unusedWorkers[0])}if(PThread.unusedWorkers.length>0)return PThread.unusedWorkers.pop();else return null},busySpinWait:function(msecs){var t=performance.now()+msecs;while(performance.now()<t){}};function establishStackSpace(stackTop,stackMax){_emscripten_stack_set_limits(stackTop,stackMax);stackRestore(stackTop)}Module["establishStackSpace"]=establishStackSpace;function getNoExitRuntime(){return noExitRuntime}Module["getNoExitRuntime"]=getNoExitRuntime;function invokeEntryPoint(ptr,arg){return wasmTable.get(ptr)(arg)}Module["invokeEntryPoint"]=invokeEntryPoint;function __assert_fail(condition,filename,line,func){abort("Assertion failed: "+UTF8ToString(condition)+" , at: "+[filename?UTF8ToString(filename):"unknown filename",line,func?UTF8ToString(func):"unknown function"])}function __call_main(argc,argv){var returnCode=_main(argc,argv)}var _emscripten_get_now;if(ENVIRONMENT_IS_NODE){_emscripten_get_now=function(){var t=process["hrtime"]();return t[0]*1e3+t[1]/1e6}}else if(ENVIRONMENT_IS_PTHREAD){_emscripten_get_now=function(){return performance.now()-Module["__performance_now_clock_drift"]}}else if(typeof dateNow!="undefined"){_emscripten_get_now=dateNow}else _emscripten_get_now=function(){return performance.now()};function setErrNo(value){GROWABLE_HEAP_I32()[__errno_location()>>2]=value;return value}function _atexit(func,arg){if(ENVIRONMENT_IS_PTHREAD)return _emscripten_proxy_to_main_thread_js(1,1,func,arg)}function __emscripten_notify_thread_queue(targetThreadId,mainThreadId){if(targetThreadId==mainThreadId){postMessage({"cmd":"processQueuedMainThreadWork"})}else if(ENVIRONMENT_IS_PTHREAD){postMessage({"targetThread":targetThreadId,"cmd":"processThreadQueue"})}else{var pthread=PThread.threads[targetThreadId];var worker=pthread&&pthread.worker;if(!worker){return}worker.postMessage({"cmd":"processThreadQueue"})}return 1}function _abort(){abort()}function _emscripten_asm_const_int(code,sigPtr,argbuf){var args=readAsmConstArgs(sigPtr,argbuf);return ASM_CONSTS[code].apply(null,args)}function _emscripten_conditional_set_current_thread_status(expectedStatus,newStatus){}function _emscripten_futex_wait(addr,val,timeout){if(addr<=0||addr>GROWABLE_HEAP_I8().length||addr&3!=0)return-28;if(!ENVIRONMENT_IS_WEB){var ret=Atomics.wait(GROWABLE_HEAP_I32(),addr>>2,val,timeout);if(ret=="timed-out")return-73;if(ret=="not-equal")return-6;if(ret=="ok")return 0;throw"Atomics.wait returned an unexpected value "+ret}else{if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}var tNow=performance.now();var tEnd=tNow+timeout;var lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr);while(1){tNow=performance.now();if(tNow>tEnd){lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,0);return-73}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,0);if(lastAddr==0){break}}_emscripten_main_thread_process_queued_calls();if(Atomics.load(GROWABLE_HEAP_I32(),addr>>2)!=val){return-6}lastAddr=Atomics.exchange(GROWABLE_HEAP_I32(),__emscripten_main_thread_futex>>2,addr)}return 0}}function _emscripten_memcpy_big(dest,src,num){GROWABLE_HEAP_U8().copyWithin(dest,src,src+num)}function _emscripten_num_logical_cores(){if(ENVIRONMENT_IS_NODE)return require("os").cpus().length;return navigator["hardwareConcurrency"]}function _emscripten_proxy_to_main_thread_js(index,sync){var numCallArgs=arguments.length-2;var stack=stackSave();var serializedNumCallArgs=numCallArgs;var

```



```

args=stackAlloc(serializedNumCallArgs*8);var b=args>>3;for(var i=0;i<numCallArgs;i++){ var
arg=arguments[2+i];GROWABLE_HEAP_F64()[b+i]=arg}var
ret=_emscripten_run_in_main_runtime_thread_js(index,serializedNumCallArgs,args,sync);stackRestore(stack);return
ret}var _emscripten_receive_on_main_thread_js_callArgs=[];var readAsmConstArgsArray=[];function
readAsmConstArgs(sigPtr,buf){readAsmConstArgsArray.length=0;var
ch;buf>>=2;while(ch=GROWABLE_HEAP_U8()[sigPtr++){ var
double=ch<105;if(double&&buf&1)buf++;readAsmConstArgsArray.push(double?GROWABLE_HEAP_F64()[buf
++>>1]:GROWABLE_HEAP_I32()[buf]);++buf}return readAsmConstArgsArray}function
_emscripten_receive_on_main_thread_js(index,numCallArgs,args){_emscripten_receive_on_main_thread_js_callA
rgs.length=numCallArgs;var b=args>>3;for(var
i=0;i<numCallArgs;i++){_emscripten_receive_on_main_thread_js_callArgs[i]=GROWABLE_HEAP_F64()[b+i]}v
ar isEmAsmConst=index<0;var func=!isEmAsmConst?proxiedFunctionTable[index]:ASM_CONSTS[-index-
1];return func.apply(null,_emscripten_receive_on_main_thread_js_callArgs)}function
_emscripten_get_heap_size(){return GROWABLE_HEAP_U8().length}function
emscripten_realloc_buffer(size){try{wasmmemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscripten_resize_heap(requestedSize){ var
oldSize=_emscripten_get_heap_size();if(requestedSize<=oldSize){return false}var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){ var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscripten_realloc_buffer(newSize);if(replacement){return true}}return false}var
JSEvents={inEventHandler:0,removeAllEventListeners:function(){for(var i=JSEvents.eventHandlers.length-
1;i>=0;--
i){JSEvents._removeHandler(i)}JSEvents.eventHandlers=[];JSEvents.deferredCalls=[]},registerRemoveEventListen
ers:function(){if(!JSEvents.removeEventListenersRegistered){__ATEXIT__.push(JSEvents.removeAllEventListene
rs);JSEvents.removeEventListenersRegistered=true}},deferredCalls:[],deferCall:function(targetFunction,precedence
,argsList){function arraysHaveEqualContent(arrA,arrB){if(arrA.length!=arrB.length)return false;for(var i in
arrA){if(arrA[i]!=arrB[i])return false}return true}for(var i in JSEvents.deferredCalls){ var
call=JSEvents.deferredCalls[i];if(call.targetFunction==targetFunction&&arraysHaveEqualContent(call.argsList,args
List)){return}}JSEvents.deferredCalls.push({targetFunction:targetFunction,precedence:precedence,argsList:argsList
});JSEvents.deferredCalls.sort(function(x,y){return
x.precedence<y.precedence}),removeDeferredCalls:function(targetFunction){for(var
i=0;i<JSEvents.deferredCalls.length;++i){if(JSEvents.deferredCalls[i].targetFunction==targetFunction){JSEvents.d
eferredCalls.splice(i,1);--i}},canPerformEventHandlerRequests:function(){return
JSEvents.inEventHandler&&JSEvents.currentEventHandler.allowsDeferredCalls},runDeferredCalls:function(){if(!J
SEvents.canPerformEventHandlerRequests()){return}for(var i=0;i<JSEvents.deferredCalls.length;++i){ var
call=JSEvents.deferredCalls[i];JSEvents.deferredCalls.splice(i,1);--
i;call.targetFunction.apply(null,call.argsList)},eventHandlers:[],removeAllHandlersOnTarget:function(target,event
TypeString){for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==target&&(!eventTypeString||event
TypeString==JSEvents.eventHandlers[i].eventTypeString)){JSEvents._removeHandler(i--
)}}},_removeHandler:function(i){var
h=JSEvents.eventHandlers[i];h.target.removeEventListener(h.eventTypeString,h.eventListenerFunc,h.useCapture);J
SEvents.eventHandlers.splice(i,1)},registerOrRemoveHandler:function(eventHandler){var jsEventHandler=function
jsEventHandler(event){++JSEvents.inEventHandler;JSEvents.currentEventHandler=eventHandler;JSEvents.runDef

```

```

erredCalls();eventHandler.handlerFunc(event);JSEvents.runDeferredCalls();--
JSEvents.inEventHandler};if(eventHandler.callbackfunc){eventHandler.eventListenerFunc=jsEventHandler;eventH
andler.target.addEventListener(eventHandler.eventTypeString,jsEventHandler,eventHandler.useCapture);JSEvents.e
ventHandlers.push(eventHandler);JSEvents.registerRemoveEventListeners()}else{for(var
i=0;i<JSEvents.eventHandlers.length;++i){if(JSEvents.eventHandlers[i].target==eventHandler.target&&JSEvents.e
ventHandlers[i].eventTypeString==eventHandler.eventTypeString){JSEvents._removeHandler(i--
)}}},queueEventHandlerOnThread_iiii:function(targetThread,eventHandlerFunc,eventTypeId,eventData,userData)
{var stackTop=stackSave();var
varargs=stackAlloc(12);GROWABLE_HEAP_I32()[varargs>>2]=eventTypeId;GROWABLE_HEAP_I32()[varargs
+4>>2]=eventData;GROWABLE_HEAP_I32()[varargs+8>>2]=userData;__emscripten_call_on_thread(0,targetThr
ead,637534208,eventHandlerFunc,eventData,varargs);stackRestore(stackTop)},getTargetThreadForEventCallback:f
unction(targetThread){switch(targetThread){case 1:return 0;case 2:return
PThread.currentProxiedOperationCallerThread;default:return
targetThread}},getNodeNameForTarget:function(target){if(!target)return"";if(target==window)return"#window";
if(target==screen)return"#screen";return
target&&target.nodeName?target.nodeName:""},fullscreenEnabled:function(){return
document.fullscreenEnabled||document.webkitFullscreenEnabled}};function stringToNewUTF8(jsString){var
length=lengthBytesUTF8(jsString)+1;var cString=_malloc(length);stringToUTF8(jsString,cString,length);return
cString}function
_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThread,targetCanvas,width,height){var
stackTop=stackSave();var varargs=stackAlloc(12);var
targetCanvasPtr=0;if(targetCanvas){targetCanvasPtr=stringToNewUTF8(targetCanvas)}GROWABLE_HEAP_I32(
)[varargs>>2]=targetCanvasPtr;GROWABLE_HEAP_I32()[varargs+4>>2]=width;GROWABLE_HEAP_I32()[var
args+8>>2]=height;__emscripten_call_on_thread(0,targetThread,657457152,0,targetCanvasPtr,varargs);stackRestor
e(stackTop)}function
_emscripten_set_offscreencanvas_size_on_target_thread(targetThread,targetCanvas,width,height){targetCanvas=tar
getCanvas?UTF8ToString(targetCanvas):"";_emscripten_set_offscreencanvas_size_on_target_thread_js(targetThr
ead,targetCanvas,width,height)}function maybeCStringToJsString(cString){return
cString>2?UTF8ToString(cString):cString}var specialHTMLTargets=[0,typeof
document!=="undefined"?document:0,typeof window!=="undefined"?window:0];function
findEventTarget(target){target=maybeCStringToJsString(target);var
domElement=specialHTMLTargets[target]||(typeof
document!=="undefined"?document.querySelector(target):undefined);return domElement}function
findCanvasEventTarget(target){return findEventTarget(target)}function
_emscripten_set_canvas_element_size_calling_thread(target,width,height){var
canvas=findCanvasEventTarget(target);if(!canvas)return-
4;if(canvas.canvasSharedPtr){GROWABLE_HEAP_I32()[canvas.canvasSharedPtr>>2]=width;GROWABLE_HEA
P_I32()[canvas.canvasSharedPtr+4>>2]=height}if(canvas.offscreenCanvas||!canvas.controlTransferredOffscreen){if
(canvas.offscreenCanvas)canvas=canvas.offscreenCanvas;var
autoResizeViewport=false;if(canvas.GLctxObject&&canvas.GLctxObject.GLctx){var
prevViewport=canvas.GLctxObject.GLctx.getParameter(2978);autoResizeViewport=prevViewport[0]===0&&prev
Viewport[1]===0&&prevViewport[2]===canvas.width&&prevViewport[3]===canvas.height}canvas.width=width;
canvas.height=height;if(autoResizeViewport){canvas.GLctxObject.GLctx.viewport(0,0,width,height)}}else
if(canvas.canvasSharedPtr){var
targetThread=GROWABLE_HEAP_I32()[canvas.canvasSharedPtr+8>>2];_emscripten_set_offscreencanvas_size_o
n_target_thread(targetThread,target,width,height);return 1}else{return-4}return 0}function
_emscripten_set_canvas_element_size_main_thread(target,width,height){if(ENVIRONMENT_IS_PTHREAD)retur
n _emscripten_proxy_to_main_thread_js(2,1,target,width,height);return

```

```

_emsripten_set_canvas_element_size_calling_thread(target,width,height)}function
_emsripten_set_canvas_element_size(target,width,height){var
canvas=findCanvasEventTarget(target);if(canvas){return
_emsripten_set_canvas_element_size_calling_thread(target,width,height)}else{return
_emsripten_set_canvas_element_size_main_thread(target,width,height)}}function
_emsripten_set_current_thread_status(newStatus){}function
_emsripten_set_thread_name(threadId,name){}function __webgl_enable_ANGLE_instanced_arrays(ctx){var
ext=ctx.getExtension("\'ANGLE_instanced_arrays\");if(ext){ctx["vertexAttribDivisor"]=function(index,divisor){ext["vertexAttribDivisorANGLE"](index,divisor)};ctx["drawArraysInstanced"]=function(mode,first,count,primcount){ext["drawArraysInstancedANGLE"](mode,first,count,primcount)};ctx["drawElementsInstanced"]=function(mode,count,type,indices,primcount){ext["drawElementsInstancedANGLE"](mode,count,type,indices,primcount)};return 1}}function __webgl_enable_OES_vertex_array_object(ctx){var
ext=ctx.getExtension("\'OES_vertex_array_object\");if(ext){ctx["createVertexArray"]=function(){return
ext["createVertexArrayOES"]();};ctx["deleteVertexArray"]=function(vao){ext["deleteVertexArrayOES"](vao)};
ctx["bindVertexArray"]=function(vao){ext["bindVertexArrayOES"](vao)};ctx["isVertexArray"]=function(vao)
{return ext["isVertexArrayOES"](vao)};return 1}}function __webgl_enable_WEBGL_draw_buffers(ctx){var
ext=ctx.getExtension("\'WEBGL_draw_buffers\");if(ext){ctx["drawBuffers"]=function(n,bufs){ext["drawBuffers
WEBGL"](n,bufs)};return 1}}function
__webgl_enable_WEBGL_multi_draw(ctx){return!!(ctx.multiDrawWebgl=ctx.getExtension("\'WEBGL_multi_dra
w\'))}var
GL={counter:1,buffers:[],programs:[],framebuffers:[],renderbuffers:[],textures:[],uniforms:[],shaders:[],vaos:[],cont
exts:{},offscreenCanvases:{},timerQueriesEXT:[],programInfos:{},stringCache:{},unpackAlignment:4,recordError:
function recordError(errorCode){if(!GL.lastError){GL.lastError=errorCode}},getNewId:function(table){var
ret=GL.counter++;for(var i=table.length;i<ret;i++){table[i]=null}return
ret},getSource:function(shader,count,string,length){var source="";for(var i=0;i<count;++i){var
len=length?GROWABLE_HEAP_I32()[length+i*4>>2]:-
1;source+=UTF8ToString(GROWABLE_HEAP_I32()[string+i*4>>2],len<0?undefined:len)}return
source},createContext:function(canvas,webGLContextAttributes){var
ctx=canvas.getContext("\'webgl",webGLContextAttributes);if(!ctx)return 0;var
handle=GL.registerContext(ctx,webGLContextAttributes);return
handle},registerContext:function(ctx,webGLContextAttributes){var
handle=_malloc(8);GROWABLE_HEAP_I32()[handle+4>>2]=_pthread_self();var
context={handle:handle,attributes:webGLContextAttributes,version:webGLContextAttributes.majorVersion,GLctx:
ctx};if(ctx.canvas)ctx.canvas.GLctxObject=context;GL.contexts[handle]=context;if(typeof
webGLContextAttributes.enableExtensionsByDefault===undefined||webGLContextAttributes.enableExtensions
ByDefault){GL.initExtensions(context)}return
handle},makeContextCurrent:function(contextHandle){GL.currentContext=GL.contexts[contextHandle];Module.ctx
=GLctx=GL.currentContext&&GL.currentContext.GLctx;return!(contextHandle&&!GLctx)},getContext:function(c
ontextHandle){return
GL.contexts[contextHandle]},deleteContext:function(contextHandle){if(GL.currentContext===GL.contexts[contex
tHandle])GL.currentContext=null;if(typeof
JSEvents===object")JSEvents.removeAllHandlersOnTarget(GL.contexts[contextHandle].GLctx.canvas);if(GL.co
ntexts[contextHandle]&&GL.contexts[contextHandle].GLctx.canvas)GL.contexts[contextHandle].GLctx.canvas.GL
ctxObject=undefined;_free(GL.contexts[contextHandle].handle);GL.contexts[contextHandle]=null},initExtensions:f
unction(context){if(!context)context=GL.currentContext;if(context.initExtensionsDone)return;context.initExtension
sDone=true;var
GLctx=context.GLctx;__webgl_enable_ANGLE_instanced_arrays(GLctx);__webgl_enable_OES_vertex_array_obj
ect(GLctx);__webgl_enable_WEBGL_draw_buffers(GLctx);GLctx.disjointTimerQueryExt=GLctx.getExtension("\'

```

```

EXT_disjoint_timer_query\");__webgl_enable_WEBGL_multi_draw(GLctx);var
exts=GLctx.getSupportedExtensions()||[];exts.forEach(function(ext){if(ext.indexOf("\lose_context")<0&&ext.inde
xOf("\debug")<0){GLctx.getExtension(ext)}}),populateUniformTable:function(program){var
p=GL.programs[program];var
ptable=GL.programInfos[program]={uniforms:{},maxUniformLength:0,maxAttributeLength:-
1,maxUniformBlockNameLength:-1};var utable=ptable.uniforms;var
numUniforms=GLctx.getProgramParameter(p,35718);for(var i=0;i<numUniforms;++i){var
u=GLctx.getActiveUniform(p,i);var
name=u.name;ptable.maxUniformLength=Math.max(ptable.maxUniformLength,name.length+1);if(name.slice(-
1)!="\"){name=name.slice(0,name.lastIndexOf("\("))}var loc=GLctx.getUniformLocation(p,name);if(loc){var
id=GL.getNewId(GL.uniforms);utable[name]=[u.size,id];GL.uniforms[id]=loc;for(var j=1;j<u.size;++j){var
n=name+"\["+j+"]";loc=GLctx.getUniformLocation(p,n);id=GL.getNewId(GL.uniforms);GL.uniforms[id]=loc}}
};var __emscripten_webgl_power_preferences=["default","\low-power","\high-performance"];function
__emscripten_webgl_do_create_context(target,attributes){var a=attributes>>2;var
powerPreference=GROWABLE_HEAP_I32()[a+(24>>2)];var
contextAttributes={"alpha":!!GROWABLE_HEAP_I32()[a+(0>>2)],"depth":!!GROWABLE_HEAP_I32()[a+(4
>>2)],"stencil":!!GROWABLE_HEAP_I32()[a+(8>>2)],"antialias":!!GROWABLE_HEAP_I32()[a+(12>>2)],"p
remultipliedAlpha":!!GROWABLE_HEAP_I32()[a+(16>>2)],"preserveDrawingBuffer":!!GROWABLE_HEAP_
I32()[a+(20>>2)],"powerPreference":__emscripten_webgl_power_preferences[powerPreference],"failIfMajorPerf
ormanceCaveat":!!GROWABLE_HEAP_I32()[a+(28>>2)],majorVersion:GROWABLE_HEAP_I32()[a+(32>>2)],
minorVersion:GROWABLE_HEAP_I32()[a+(36>>2)],enableExtensionsByDefault:GROWABLE_HEAP_I32()[a+(
40>>2)],explicitSwapControl:GROWABLE_HEAP_I32()[a+(44>>2)],proxyContextToMainThread:GROWABLE_
HEAP_I32()[a+(48>>2)],renderViaOffscreenBackBuffer:GROWABLE_HEAP_I32()[a+(52>>2)]};var
canvas=findCanvasEventTarget(target);if(!canvas){return 0}if(contextAttributes.explicitSwapControl){return 0}var
contextHandle=GL.createContext(canvas,contextAttributes);return contextHandle}function
__emscripten_webgl_create_context(a0,a1){return __emscripten_webgl_do_create_context(a0,a1)}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=GROWABLE_HEAP_I32()[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var
ret=UTF8ToString(ptr);return ret},get64:function(low,high){return low}};function
_fd_close(fd){if(ENVIRONMENT_IS_PTHREAD)return __emscripten_proxy_to_main_thread_js(3,1,fd);return
0}function _fd_seek(fd,offset_low,offset_high,whence,newOffset){if(ENVIRONMENT_IS_PTHREAD)return
__emscripten_proxy_to_main_thread_js(4,1,fd,offset_low,offset_high,whence,newOffset)}function
_fd_write(fd,iow,iovcnt,pnum){if(ENVIRONMENT_IS_PTHREAD)return
__emscripten_proxy_to_main_thread_js(5,1,fd,iow,iovcnt,pnum);var num=0;for(var i=0;i<iovcnt;i++){var
ptr=GROWABLE_HEAP_I32()[iow+i*8>>2];var len=GROWABLE_HEAP_I32()[iow+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,GROWABLE_HEAP_U8()[ptr+j])}num+=len}GROWABLE_HEAP_I32
()[pnum>>2]=num;return 0}function _pthread_cleanup_pop(execute){var
routine=PThread.threadExitHandlers.pop();if(execute)routine()}function
_pthread_cleanup_push(routine,arg){PThread.threadExitHandlers.push(function(){wasmTable.get(routine)(arg)})}f
unction spawnThread(threadParams){if(ENVIRONMENT_IS_PTHREAD)throw"Internal Error! spawnThread()
can only ever be called from main application thread!";var
worker=PThread.getNewWorker();if(worker.pthread!==undefined)throw"Internal
error!";if(!threadParams.pthread_ptr)throw"Internal error, no pthread
ptr!";PThread.runningWorkers.push(worker);var tlsMemory=_malloc(128*4);for(var
i=0;i<128;++i){GROWABLE_HEAP_I32()[tlsMemory+i*4>>2]=0}var
stackHigh=threadParams.stackBase+threadParams.stackSize;var

```

```

pthread=PThread.threads[threadParams.pthread_ptr]={ worker:worker,stackBase:threadParams.stackBase,stackSize
:threadParams.stackSize,allocatedOwnStack:threadParams.allocatedOwnStack,threadInfoStruct:threadParams.pthrea
d_ptr};var
tis=pthread.threadInfoStruct>>2;Atomics.store(GROWABLE_HEAP_U32(),tis+(64>>2),threadParams.detached);A
tomics.store(GROWABLE_HEAP_U32(),tis+(100>>2),tlsMemory);Atomics.store(GROWABLE_HEAP_U32(),tis
+(40>>2),pthread.threadInfoStruct);Atomics.store(GROWABLE_HEAP_U32(),tis+(80>>2),threadParams.stackSiz
e);Atomics.store(GROWABLE_HEAP_U32(),tis+(76>>2),stackHigh);Atomics.store(GROWABLE_HEAP_U32(),t
is+(104>>2),threadParams.stackSize);Atomics.store(GROWABLE_HEAP_U32(),tis+(104+8>>2),stackHigh);Atom
ics.store(GROWABLE_HEAP_U32(),tis+(104+12>>2),threadParams.detached);var
global_libc=_emscripten_get_global_libc();var
global_locale=global_libc+40;Atomics.store(GROWABLE_HEAP_U32(),tis+(172>>2),global_locale);worker.pthr
ead=pthread;var
msg={`cmd\":"run\","start_routine":threadParams.startRoutine,"arg":threadParams.arg,"threadInfoStruct":thre
adParams.pthread_ptr,"stackBase":threadParams.stackBase,"stackSize":threadParams.stackSize};worker.runPthre
ad=function(){msg.time=performance.now();worker.postMessage(msg,threadParams.transferList)};if(worker.loaded
){worker.runPthread();delete worker.runPthread}}function
_pthread_create(pthread_ptr,attr,start_routine,arg){if(typeof SharedArrayBuffer===\undefined){err(\Current
environment does not support SharedArrayBuffer, pthreads are not available!")}return
6}if(!pthread_ptr){err(\pthread_create called with a null thread pointer!")}return 28}var transferList=[];var
error=0;if(ENVIRONMENT_IS_PTHREAD&&(transferList.length===0||error)){return
_emscripten_sync_run_in_main_thread_4(687865856,pthread_ptr,attr,start_routine,arg)}if(error)return error;var
stackSize=0;var stackBase=0;var detached=0;if(attr&&attr!=-
1){stackSize=GROWABLE_HEAP_I32()[attr>>2];stackSize+=81920;stackBase=GROWABLE_HEAP_I32()[attr+
8>>2];detached=GROWABLE_HEAP_I32()[attr+12>>2]!==0}else{stackSize=2097152}var
allocatedOwnStack=stackBase==0;if(allocatedOwnStack){stackBase=_memalign(16,stackSize)}else{stackBase=
stackSize;assert(stackBase>0)}var threadInfoStruct=_malloc(228);for(var
i=0;i<228>>2;++i)GROWABLE_HEAP_U32()[(threadInfoStruct>>2)+i]=0;GROWABLE_HEAP_I32()[pthread_p
tr>>2]=threadInfoStruct;GROWABLE_HEAP_I32()[threadInfoStruct+12>>2]=threadInfoStruct;var
headPtr=threadInfoStruct+152;GROWABLE_HEAP_I32()[headPtr>>2]=headPtr;var
threadParams={stackBase:stackBase,stackSize:stackSize,allocatedOwnStack:allocatedOwnStack,detached:detached
,startRoutine:start_routine,pthread_ptr:threadInfoStruct,arg:arg,transferList:transferList};if(ENVIRONMENT_IS_P
THREAD){threadParams.cmd="spawnThread";postMessage(threadParams,transferList)}else{spawnThread(thread
Params)}return 0}function __pthread_testcancel_js(){if(!ENVIRONMENT_IS_PTHREAD)return;var
tb=__pthread_self();if(!tb)return;var
cancelDisabled=Atomics.load(GROWABLE_HEAP_U32(),tb+56>>2);if(cancelDisabled)return;var
canceled=Atomics.load(GROWABLE_HEAP_U32(),tb+0>>2);if(canceled===2)throw\Canceled!}function
_emscripten_check_blocking_allowed(){if(ENVIRONMENT_IS_NODE)return;if(ENVIRONMENT_IS_WORKE
R)return;warnOnce(\Blocking on the main thread is very dangerous, see
https://emscripten.org/docs/porting/pthreads.html#blocking-on-the-main-browser-thread");}function
__emscripten_do_pthread_join(thread,status,block){if(!thread){err(\pthread_join attempted on a null thread
pointer!")}return
ERRNO_CODES.ESRCH}if(ENVIRONMENT_IS_PTHREAD&&__pthread_self()===thread){err(\PThread
"+thread+" is attempting to join to itself!")}return ERRNO_CODES.EDEADLK}else
if(!ENVIRONMENT_IS_PTHREAD&&_emscripten_main_browser_thread_id()===thread){err(\Main thread
"+thread+" is attempting to join to itself!")}return ERRNO_CODES.EDEADLK}var
self=GROWABLE_HEAP_I32()[thread+12>>2];if(self!==thread){err(\pthread_join attempted on thread
"+thread+", which does not point to a valid thread, or does not exist anymore!")}return
ERRNO_CODES.ESRCH}var

```

```

detached=Atomics.load(GROWABLE_HEAP_U32(),thread+64>>2);if(detached){err("Attempted to join thread
\"+thread+\", which was already detached!");return
ERRNO_CODES.EINVAL}if(block){_emscripten_check_blocking_allowed()}for(;;){var
threadStatus=Atomics.load(GROWABLE_HEAP_U32(),thread+0>>2);if(threadStatus==1){var
threadExitCode=Atomics.load(GROWABLE_HEAP_U32(),thread+4>>2);if(status)GROWABLE_HEAP_I32()[sta
tus>>2]=threadExitCode;Atomics.store(GROWABLE_HEAP_U32(),thread+64>>2,1);if(!ENVIRONMENT_IS_PT
HREAD)cleanupThread(thread);else postMessage({"cmd":"cleanupThread","thread":thread});return
0}if(!block){return
ERRNO_CODES.EBUSY}__pthread_testcancel_js();if(!ENVIRONMENT_IS_PTHREAD)_emscripten_main_thre
ad_process_queued_calls();_emscripten_futex_wait(thread+0,threadStatus,ENVIRONMENT_IS_PTHREAD?100:1
)}function _pthread_join(thread,status){return __emscripten_do_pthread_join(thread,status,true)}function
_sysconf(name){if(ENVIRONMENT_IS_PTHREAD)return
_emscripten_proxy_to_main_thread_js(6,1,name);switch(name){case 30:return 16384;case 85:var
maxHeapSize=2147483648;return maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case
235:case 16:case 17:case 18:case 19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case
159:case 154:case 14:case 77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case
48:case 95:case 52:case 51:case 46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case
161:case 181:case 182:case 242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case
49:case 50:case 168:case 169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case
80:case 81:case 79:return-1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case
93:case 129:case 130:case 131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case
31:case 42:case 72:return 32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case
36:return 99;case 43:case 37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case
44:return 32767;case 75:return 16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return
255;case 2:return 100;case 180:return 64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case
84:{if(typeof navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-
1}if(!ENVIRONMENT_IS_PTHREAD)PThread.initMainThreadBlock();var GLctx;var
proxiedFunctionTable=[null,_atexit,_emscripten_set_canvas_element_size_main_thread,_fd_close,_fd_seek,_fd_w
rite,_sysconf];var
asmLibraryArg={\"e\":__assert_fail,\"r\":__call_main,\"x\":__emscripten_notify_thread_queue,\"b\":_abort,\"y\":
_emscripten_asm_const_int,\"j\":_emscripten_conditional_set_current_thread_status,\"d\":_emscripten_futex_wait,\"
c\":_emscripten_futex_wake,\"f\":_emscripten_get_now,\"p\":_emscripten_memcpy_big,\"A\":_emscripten_num_l
ogical_cores,\"u\":_emscripten_receive_on_main_thread_js,\"q\":_emscripten_resize_heap,\"v\":_emscripten_set_ca
nvas_element_size,\"i\":_emscripten_set_current_thread_status,\"s\":_emscripten_set_thread_name,\"w\":_emscript
en_webgl_create_context,\"l\":_fd_close,\"n\":_fd_seek,\"g\":_fd_write,\"o\":initPthreadsJS,\"a\":wasmMemory|Mo
dule[\"wasmMemory\"],\"z\":_pthread_cleanup_pop,\"k\":_pthread_cleanup_push,\"h\":_pthread_create,\"m\":_pthr
ead_join,\"t\":_sysconf};var asm=createWasm();var
__wasm_call_ctors=Module[\"__wasm_call_ctors\"]=function(){return(__wasm_call_ctors=Module[\"__wasm
_call_ctors\"]=Module[\"asm\"][\"B\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"C\"]).apply(null,arguments)};
var
_init_with_threads_count=Module[\"_init_with_threads_count\"]=function(){return(_init_with_threads_count=Mod
ule[\"_init_with_threads_count\"]=Module[\"asm\"][\"D\"]).apply(null,arguments)};var
_get_threads_count=Module[\"_get_threads_count\"]=function(){return(_get_threads_count=Module[\"_get_threads
_count\"]=Module[\"asm\"][\"E\"]).apply(null,arguments)};var
_register_tensor=Module[\"_register_tensor\"]=function(){return(_register_tensor=Module[\"_register_tensor\"]=M
odule[\"asm\"][\"F\"]).apply(null,arguments)};var
_dispose_data=Module[\"_dispose_data\"]=function(){return(_dispose_data=Module[\"_dispose_data\"]=Module[\"

```

```

asm\"][\G\").apply(null,arguments)};var
_dispose=Module["_dispose"]=function(){return(_dispose=Module["_dispose"]=Module["asm\"][\H\").apply(
null,arguments)};var
_Abs=Module["_Abs"]=function(){return(_Abs=Module["_Abs"]=Module["asm\"][\J\").apply(null,arguments
)};var
_Add=Module["_Add"]=function(){return(_Add=Module["_Add"]=Module["asm\"][\K\").apply(null,argumen
ts)};var
_AddN=Module["_AddN"]=function(){return(_AddN=Module["_AddN"]=Module["asm\"][\L\").apply(null,arg
uments)};var
_All=Module["_All"]=function(){return(_All=Module["_All"]=Module["asm\"][\M\").apply(null,arguments)};
var
_Any=Module["_Any"]=function(){return(_Any=Module["_Any"]=Module["asm\"][\N\").apply(null,argumen
ts)};var
_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm\"][\O\").ap
ply(null,arguments)};var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm\"][\P\").a
pply(null,arguments)};var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Modu
le["asm\"][\Q\").apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm\"][\R\").apply(null,argument
s)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module[\
"asm\"][\S\").apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm\"][\T\").app
ly(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Modul
e["_Conv2DBackpropInput"]=Module["asm\"][\U\").apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm\"][\V\").apply(null,arguments
)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm\"][\W\").apply(null,argu
ments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize\"]=
Module["asm\"][\X\").apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm\"][\Y\").a
pply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace\"]=M
odule["asm\"][\Z\").apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=M
odule["_DepthwiseConv2dNative"]=Module["asm\"][_\").apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm\"][\$\").apply(null,arguments)
};var
_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm\"][\aa\").apply(null,ar
guments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm\"][\ba\").apply(null,argument
s)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight\"]=Modu
le["asm\"][\ca\").apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm\"][\da\").apply(null,arg

```

```

uments));var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][\["ea\"]).
apply(null,arguments));var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchN
orm"]=Module["asm"][\["fa\"]).apply(null,arguments));var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Mod
ule["asm"][\["ga\"]).apply(null,arguments));var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=M
odule["_FusedDepthwiseConv2D"]=Module["asm"][\["ha\"]).apply(null,arguments));var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][\["ia\"]).apply(nul
l,arguments));var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][\["ja\
"]).apply(null,arguments));var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][\["ka\"]).apply(
null,arguments));var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module[\
"asm"][\["la\"]).apply(null,arguments));var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][\
["ma\"]).apply(null,arguments));var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][\["na\"]).apply(null,argume
nts));var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][\["o
a\"]).apply(null,arguments));var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][\["pa\"]).apply(null,argument
s));var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm
"][\["qa\"]).apply(null,arguments));var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][\["ra\"]).apply(null,argume
nts));var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][\["sa\"]).
apply(null,arguments));var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][\["t
a\"]).apply(null,arguments));var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][\["ua\"]).apply(null,ar
guments));var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][\["va\"]).apply(null,argumen
ts));var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][\["wa
\"]).apply(null,arguments));var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][\["x
a\"]).apply(null,arguments));var
_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][\["ya\"]).a
pply(null,arguments));var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][\["za\"]).apply(null,argumen
ts));var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Mod
ule["_NonMaxSuppressionV3"]=Module["asm"][\["Aa\"]).apply(null,arguments));var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Mod

```



```

ule["_NonMaxSuppressionV4"]=Module["_asm"]["_Ba"].apply(null,arguments);var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Mod
ule["_NonMaxSuppressionV5"]=Module["_asm"]["_Ca"]).apply(null,arguments);var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["_asm"]["_Da\
"]).apply(null,arguments);var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["_asm"]["_Ea"]).apl
y(null,arguments);var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["_asm"]["_Fa"]).apply(nu
ll,arguments);var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["_asm"]["_Ga"]).apply(null,argume
nts);var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["_asm"]["_Ha"]).apply(nu
ll,arguments);var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["_asm"]["_Ia"]).apply(nu
ll,arguments);var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["_asm"]["_Ja"]).app
ly(null,arguments);var
_RelU=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["_asm"]["_Ka"]).apply(nu
ll,arguments);var
_RelU6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["_asm"]["_La"]).apply(nu
ll,arguments);var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear\
"]=Module["_asm"]["_Ma"]).apply(null,arguments);var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["_asm"]["_Na"]).app
ly(null,arguments);var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWith
Offset"]=Module["_asm"]["_Oa"]).apply(null,arguments);var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["_asm"]["_Pa"]).apply(nu
ll,arguments);var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["_asm"]["_Qa"]).apply(nu
ll,arguments);var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["_asm"]["_Ra
"]).apply(null,arguments);var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["_asm"]["_Sa\
"]).apply(null,arguments);var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["_asm"]["_Ta"]).ap
ply(null,arguments);var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["_asm"]["_Ua"]).apply(null,arguments)
};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["_asm"]["_Va"]).a
pply(null,arguments);var
_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["_asm"]["_Wa"]).apply(nu
ll,arguments);var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["_asm"]["_Xa"]).apply(n
ull,arguments);var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_Squared
Difference"]=Module["_asm"]["_Ya"]).apply(null,arguments);var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["_asm"]["_Za"]).apply(nu
ll,arguments);var

```

```

nts));var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"]["_a"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"]["$a"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"]["ab"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"]["bb"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"]["cb"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"]["db"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"]["eb"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"]["fb"]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"]["gb"]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=Module["asm"]["hb"]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"]["ib"]).apply(null,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"]["jb"]).apply(null,arguments)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_location"]=Module["asm"]["kb"]).apply(null,arguments)};var
_emscripten_get_global_libc=Module["_emscripten_get_global_libc"]=function(){return(_emscripten_get_global_libc=Module["asm"]["lb"]).apply(null,arguments)};var
_thread_self=Module["_thread_self"]=function(){return(_thread_self=Module["_thread_self"]=Module["asm"]["mb"]).apply(null,arguments)};var
__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=function(){return(__pthread_tsd_run_dtors=Module["__pthread_tsd_run_dtors"]=Module["asm"]["nb"]).apply(null,arguments)};var
_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=function(){return(_emscripten_main_thread_process_queued_calls=Module["_emscripten_main_thread_process_queued_calls"]=Module["asm"]["ob"]).apply(null,arguments)};var
_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]=function(){return(_emscripten_current_thread_process_queued_calls=Module["_emscripten_current_thread_process_queued_calls"]=Module["asm"]["pb"]).apply(null,arguments)};var
_emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=function(){return(_emscripten_register_main_browser_thread_id=Module["_emscripten_register_main_browser_thread_id"]=Module["asm"]["qb"]).apply(null,arguments)};var
_emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=function(){return(_emscripten_main_browser_thread_id=Module["_emscripten_main_browser_thread_id"]=Module["asm"]["rb"]).apply(null,arguments)};var
__emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=function(){return(__emscripten_do_dispatch_to_thread=Module["__emscripten_do_dispatch_to_thread"]=Module["asm"]["sb"]).apply(null,arguments)};var

```

```

_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=function(){return
(_emsripten_sync_run_in_main_thread_4=Module["_emsripten_sync_run_in_main_thread_4"]=Module["asm\
"]["tb\"]).apply(null,arguments)};var
_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=function(
){return(_emsripten_run_in_main_runtime_thread_js=Module["_emsripten_run_in_main_runtime_thread_js"]=
Module["asm\"]["ub\"]).apply(null,arguments)};var
__emsripten_call_on_thread=Module["__emsripten_call_on_thread"]=function(){return(__emsripten_call_on_t
hread=Module["__emsripten_call_on_thread"]=Module["asm\"]["vb\"]).apply(null,arguments)};var
_emsripten_tls_init=Module["_emsripten_tls_init"]=function(){return(_emsripten_tls_init=Module["_emscript
en_tls_init"]=Module["asm\"]["wb\"]).apply(null,arguments)};var
__emsripten_thread_init=Module["__emsripten_thread_init"]=function(){return(__emsripten_thread_init=Mod
ule["__emsripten_thread_init"]=Module["asm\"]["xb\"]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm\"]["yb\"]).a
pply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm\
"]["zb\"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm\"]["Ab\
"]).apply(null,arguments)};var
_emsripten_stack_set_limits=Module["_emsripten_stack_set_limits"]=function(){return(_emsripten_stack_set
limits=Module["_emsripten_stack_set_limits"]=Module["asm\"]["Bb\"]).apply(null,arguments)};var
_memalign=Module["_memalign"]=function(){return(_memalign=Module["_memalign"]=Module["asm\"]["Cb\
"]).apply(null,arguments)};var
__emsripten_allow_main_runtime_queued_calls=Module["__emsripten_allow_main_runtime_queued_calls"]=1
0512;var
__emsripten_main_thread_futex=Module["__emsripten_main_thread_futex"]=12148;Module["cwrap"]=cwrap
;Module["PThread"]=PThread;Module["PThread"]=PThread;Module["wasMemory"]=wasMemory;Module
["ExitStatus"]=ExitStatus;var calledRun;function
ExitStatus(status){this.name="ExitStatus";this.message="Program terminated with
exit(\"+status+\")";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}if(ENVIRONMENT_IS_PTHREAD){readyPromis
eResolve(Module);initRuntime();postMessage({"cmd":"loaded"});return}preRun();if(runDependencies>0){retur
n}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("Running...");setTimeout(function(){setTimeout(function(){Mo
dule["setStatus"]("")},1);doRun(),1)}else{doRun()}}Module["run"]=run;function
exit(status,implicit){if(implicit&&noExitRuntime&&status===0){return}if(!implicit){if(ENVIRONMENT_IS_PT
HREAD){postMessage({"cmd":"exitProcess","returnCode":status});throw new
ExitStatus(status)}else{}}if(noExitRuntime){}else{PThread.terminateAllThreads();EXITSTATUS=status;exitRunti
me();if(Module["onExit"])Module["onExit"](status);ABORT=true}quit_(status,new
ExitStatus(status))}if(Module["preInit"]){if(typeof
Module["preInit"]=="function")Module["preInit"]=[Module["preInit"]];while(Module["preInit"].length>0){
Module["preInit"].pop()}}if(ENVIRONMENT_IS_PTHREAD){noExitRuntime=false;PThread.initWorker()}run
();\n\n return WasmBackendModuleThreadedSimd.ready\n\n\n));\nif (typeof exports === 'object' && typeof
module === 'object')\n module.exports = WasmBackendModuleThreadedSimd;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModuleThreadedSimd; });\nelse if
(typeof exports === 'object')\n exports["WasmBackendModuleThreadedSimd"] =

```

```

WasmBackendModuleThreadedSimd;\n", "export const wasmWorkerContents = 'var Module={ };function
threadPrintErr(){ var text=Array.prototype.slice.call(arguments).join(" ");console.error(text)}function
threadAlert(){ var text=Array.prototype.slice.call(arguments).join("
\");postMessage({ cmd:"alert",text:text,threadId:Module["_pthread_self"]()})}var
err=threadPrintErr;this.alert=threadAlert;Module["_instantiateWasm"]=function(info,receiveInstance){ var
instance=new
WebAssembly.Instance(Module["_wasmModule"],info);Module["_wasmModule"]=null;receiveInstance(instance);r
eturn instance.exports};function
moduleLoaded(){ }this.onmessage=function(e){ try {if(e.data.cmd===\load\"){Module["_wasmModule"]=e.data.wa
smModule;Module["_wasmMemory"]=e.data.wasmMemory;Module["_buffer"]=Module["_wasmMemory"].buffer;
Module["_ENVIRONMENT_IS_PTHREAD"]=true;if(typeof
e.data.urlOrBlob===\string\){importScripts(e.data.urlOrBlob)}else{ var
objectUrl=URL.createObjectURL(e.data.urlOrBlob);importScripts(objectUrl);URL.revokeObjectURL(objectUrl)}
WasmBackendModuleThreadedSimd(Module).then(function(instance){ Module=instance;moduleLoaded()})}else
if(e.data.cmd===\objectTransfer\"){Module["_PThread"].receiveObjectTransfer(e.data)}else
if(e.data.cmd===\run\"){Module["_performance_now_clock_drift"]=performance.now()-
e.data.time;Module["_emscripten_thread_init"](e.data.threadInfoStruct,0,0);var max=e.data.stackBase;var
top=e.data.stackBase+e.data.stackSize;Module["_establishStackSpace"](top,max);Module["_emscripten_tls_init"](
);Module["_PThread"].receiveObjectTransfer(e.data);Module["_PThread"].setThreadStatus(Module["_pthread_self
"](),1);try{ var
result=Module["_invokeEntryPoint"](e.data.start_routine,e.data.arg);if(!Module["_getNoExitRuntime"]())Module[_
"PThread"].threadExit(result)} catch(ex){ if(ex===\Canceled!\){Module["_PThread"].threadCancel()} else
if(ex!=\unwind\"){if(ex instanceof
Module["_ExitStatus"]){if(Module["_getNoExitRuntime"]()){ } else {Module["_PThread"].threadExit(ex.status)} } el
se {Module["_PThread"].threadExit(-2);throw ex } } } else
if(e.data.cmd===\cancel\"){if(Module["_pthread_self"]()){Module["_PThread"].threadCancel()} } else
if(e.data.target===\setimmediate\"){ } else
if(e.data.cmd===\processThreadQueue\"){if(Module["_pthread_self"]()){Module["_emscripten_current_thread_
process_queued_calls"]()} } else {err(\worker.js received unknown command
\"+e.data.cmd);err(e.data)} } catch(ex){err(\worker.js onmessage() captured an uncaught exception:
\"+ex);if(ex&&ex.stack)err(ex.stack);throw ex } };if(typeof process===\object"\&&typeof
process.versions===\object"\&&typeof process.versions.node===\string"){ self={location:{href:__filename}};var
onmessage=this.onmessage;var
nodeWorkerThreads=require(\worker_threads\);global.Worker=nodeWorkerThreads.Worker;var
parentPort=nodeWorkerThreads.parentPort;parentPort.on(\message",function(data){ onmessage({ data:data})});var
nodeFS=require(\fs\");var nodeRead=function(filename){ return nodeFS.readFileSync(filename,\utf8\");}function
globalEval(x){ global.require=require;global.Module=Module;eval.call(null,x)}importScripts=function(f){globalEva
l(nodeRead(f));}postMessage=function(msg){ parentPort.postMessage(msg)};if(typeof
performance===\undefined\){performance={now:function(){return Date.now()}}};";\nvar
WasmBackendModule = (function() {\n var _scriptDir = typeof document !== 'undefined' &&
document.currentScript ? document.currentScript.src : undefined;\n if (typeof __filename !== 'undefined')
_scriptDir = _scriptDir || __filename;\n return (\nfunction(WasmBackendModule) {\n WasmBackendModule =
WasmBackendModule || {};\n\nvar Module=typeof
WasmBackendModule!==\undefined"?WasmBackendModule: { };var
readyPromiseResolve,readyPromiseReject;Module["_ready"]=new
Promise(function(resolve,reject){readyPromiseResolve=resolve;readyPromiseReject=reject});var
moduleOverrides={ };var key;for(key in
Module){if(Module.hasOwnProperty(key)){ moduleOverrides[key]=Module[key] } }var arguments_=[];var

```

```

thisProgram=\.\/this.program\";var quit_=function(status,toThrow){throw toThrow};var
ENVIRONMENT_IS_WEB=false;var ENVIRONMENT_IS_WORKER=false;var
ENVIRONMENT_IS_NODE=false;var ENVIRONMENT_IS_SHELL=false;ENVIRONMENT_IS_WEB=typeof
window===\"object\";ENVIRONMENT_IS_WORKER=typeof
importScripts===\"function\";ENVIRONMENT_IS_NODE=typeof process===\"object\"&&typeof
process.versions===\"object\"&&typeof
process.versions.node===\"string\";ENVIRONMENT_IS_SHELL=!ENVIRONMENT_IS_WEB&&!ENVIRONM
ENT_IS_NODE&&!ENVIRONMENT_IS_WORKER;var scriptDirectory=\"\";function
locateFile(path){if(Module[\"locateFile\"]){return Module[\"locateFile\"](path,scriptDirectory)}return
scriptDirectory+path}var read_,readAsync,readBinary,setWindowTitle;var nodeFS;var
nodePath;if(ENVIRONMENT_IS_NODE){if(ENVIRONMENT_IS_WORKER){scriptDirectory=require(\"path\").
dirname(scriptDirectory)+\"/\"}else{scriptDirectory=__dirname+\"/\"}read_=function
shell_read(filename,binary){if(!nodeFS)nodeFS=require(\"fs\");if(!nodePath)nodePath=require(\"path\");filename=n
odePath[\"normalize\"](filename);return
nodeFS[\"readFileSync\"](filename,binary?null:\"utf8\");}readBinary=function readBinary(filename){var
ret=read_(filename,true);if(!ret.buffer){ret=new Uint8Array(ret)}assert(ret.buffer);return
ret};if(process[\"argv\"].length>1){thisProgram=process[\"argv\"][1].replace(/\\\\\\\\g,\"/\\");arguments_=process[\"arg
v\"].slice(2);process[\"on\"](\"uncaughtException\",function(ex){if(!(ex instanceof ExitStatus)){throw
ex}});process[\"on\"](\"unhandledRejection\",abort);quit_=function(status){process[\"exit\"](status)};Module[\"insep
ect\"]=function(){return\"[Emscripten Module object]\"}else if(ENVIRONMENT_IS_SHELL){if(typeof
read!=\"undefined\"){read_=function shell_read(f){return read(f)};readBinary=function readBinary(f){var
data;if(typeof readbuffer===\"function\"){return new
Uint8Array(readbuffer(f))}data=read(f,\"binary\");assert(typeof data===\"object\");return data};if(typeof
scriptArgs!=\"undefined\"){arguments_=scriptArgs}else if(typeof
arguments!=\"undefined\"){arguments_=arguments}if(typeof
quit===\"function\"){quit_=function(status){quit(status)}}if(typeof print!=\"undefined\"){if(typeof
console===\"undefined\")console={};console.log=print;console.warn=console.error=typeof
printErr!=\"undefined\"?printErr:print}else
if(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER){if(ENVIRONMENT_IS_WORKER){scriptDire
ctory=self.location.href}else if(typeof
document!=\"undefined\"&&document.currentScript){scriptDirectory=document.currentScript.src;if(_scriptDir){s
criptDirectory=_scriptDir;if(scriptDirectory.indexOf(\"blob:\")!=\"=0){scriptDirectory=scriptDirectory.substr(0,script
Directory.lastIndexOf(\"/\")+1)}else{scriptDirectory=\"\"}}read_=function(url){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.send(null);return
xhr.responseText};if(ENVIRONMENT_IS_WORKER){readBinary=function(url){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,false);xhr.responseType=\"arraybuffer\";xhr.send(null);return new
Uint8Array(xhr.response)};readAsync=function(url,onload,onerror){var xhr=new
XMLHttpRequest;xhr.open(\"GET\",url,true);xhr.responseType=\"arraybuffer\";xhr.onload=function(){if(xhr.status
==200||xhr.status==0&&xhr.response){onload(xhr.response);return}onerror();}xhr.onerror=onerror;xhr.send(null)}
}setWindowTitle=function(title){document.title=title}else{var
out=Module[\"print\"]||console.log.bind(console);var err=Module[\"printErr\"]||console.warn.bind(console);for(key
in
moduleOverrides){if(moduleOverrides.hasOwnProperty(key)){Module[key]=moduleOverrides[key]}}moduleOverr
ides=null;if(Module[\"arguments\"]arguments_=Module[\"arguments\"];if(Module[\"thisProgram\"]thisProgram=
Module[\"thisProgram\"];if(Module[\"quit\"]quit_=Module[\"quit\"];var
wasmBinary;if(Module[\"wasmBinary\"]wasmBinary=Module[\"wasmBinary\"];var
noExitRuntime=Module[\"noExitRuntime\"]||true;if(typeof WebAssembly!=\"object\"){abort(\"no native wasm
support detected\")}var wasmMemory;var ABORT=false;var EXITSTATUS;function

```

```

assert(condition,text){if(!condition){abort("\Assertion failed: "+text)}}function getCFunc(ident){var
func=Module["_"+ident];assert(func,"\Cannot call unknown function "+ident+", make sure it is exported");return
func}function ccall(ident,returnType,argTypes,args,opts){var toC={"string":function(str){var
ret=0;if(str!==null&&str!==undefined&&str!==0){var
len=(str.length<<2)+1;ret=stackAlloc(len);stringToUTF8(str,ret,len)}return ret},\array":function(arr){var
ret=stackAlloc(arr.length);writeArrayToMemory(arr,ret);return ret}};function
convertReturnValue(ret){if(returnType===\string\)return UTF8ToString(ret);if(returnType===\boolean\)return
Boolean(ret);return ret}var func=getCFunc(ident);var cArgs=[];var stack=0;if(args){for(var
i=0;i<args.length;i++){var
converter=toC[argTypes[i]];if(converter){if(stack===0)stack=stackSave();cArgs[i]=converter(args[i])}else{cArgs[i
]=args[i]}}var ret=func.apply(null,cArgs);ret=convertReturnValue(ret);if(stack!==0)stackRestore(stack);return
ret}function cwrap(ident,returnType,argTypes,opts){argTypes=argTypes||[];var
numericArgs=argTypes.every(function(type){return type===\number\});var
numericRet=returnType!==\string\;if(numericRet&&numericArgs&&!opts){return getCFunc(ident)}return
function(){return ccall(ident,returnType,argTypes,arguments,opts)}}var UTF8Decoder=typeof
TextDecoder!=="undefined"?new TextDecoder(\utf8\):undefined;function
UTF8ArrayToString(heap,idx,maxBytesToRead){var endIdx=idx+maxBytesToRead;var
endPtr=idx;while(heap[endPtr]&&!(endPtr>=endIdx))++endPtr;if(endPtr-
idx>16&&heap.subarray&&UTF8Decoder){return UTF8Decoder.decode(heap.subarray(idx,endPtr))}else{var
str="";while(idx<endPtr){var u0=heap[idx++];if(!(u0&128)){str+=String.fromCharCode(u0);continue}var
u1=heap[idx++]&63;if((u0&224)==192){str+=String.fromCharCode((u0&31)<<6|u1);continue}var
u2=heap[idx++]&63;if((u0&240)==224){u0=(u0&15)<<12|u1<<6|u2}else{u0=(u0&7)<<18|u1<<12|u2<<6|heap[id
x++]&63}if(u0<65536){str+=String.fromCharCode(u0)}else{var ch=u0-
65536;str+=String.fromCharCode(55296|ch>>10,56320|ch&1023)}}return str}function
UTF8ToString(ptr,maxBytesToRead){return
ptr?UTF8ArrayToString(HEAPU8,ptr,maxBytesToRead):\"}function
stringToUTF8Array(str,heap,outIdx,maxBytesToWrite){if(!(maxBytesToWrite>0))return 0;var startIdx=outIdx;var
endIdx=outIdx+maxBytesToWrite-1;for(var i=0;i<str.length;++i){var
u=str.charCodeAt(i);if(u>=55296&&u<=57343){var
u1=str.charCodeAt(++i);u=65536+((u&1023)<<10|u1&1023)}if(u<=127){if(outIdx>=endIdx)break;heap[outIdx++
]=u}else if(u<=2047){if(outIdx+1>=endIdx)break;heap[outIdx++]=192|u>>6;heap[outIdx++]=128|u&63}else
if(u<=65535){if(outIdx+2>=endIdx)break;heap[outIdx++]=224|u>>12;heap[outIdx++]=128|u>>6&63;heap[outIdx
++]=128|u&63}else{if(outIdx+3>=endIdx)break;heap[outIdx++]=240|u>>18;heap[outIdx++]=128|u>>12&63;heap[
outIdx++]=128|u>>6&63;heap[outIdx++]=128|u&63}}heap[outIdx]=0;return outIdx-startIdx}function
stringToUTF8(str,outPtr,maxBytesToWrite){return
stringToUTF8Array(str,HEAPU8,outPtr,maxBytesToWrite)}function
writeArrayToMemory(array,buffer){HEAP8.set(array,buffer)}function
alignUp(x,multiple){if(x%multiple>0){x+=multiple-x%multiple}return x}var
buffer,HEAP8,HEAPU8,HEAP16,HEAPU16,HEAP32,HEAPU32,HEAPF32,HEAPF64;function
updateGlobalBufferAndViews(buf){buffer=buf;Module["HEAP8"]=HEAP8=new
Int8Array(buf);Module["HEAP16"]=HEAP16=new Int16Array(buf);Module["HEAP32"]=HEAP32=new
Int32Array(buf);Module["HEAPU8"]=HEAPU8=new Uint8Array(buf);Module["HEAPU16"]=HEAPU16=new
Uint16Array(buf);Module["HEAPU32"]=HEAPU32=new
Uint32Array(buf);Module["HEAPF32"]=HEAPF32=new
Float32Array(buf);Module["HEAPF64"]=HEAPF64=new Float64Array(buf)}var
INITIAL_MEMORY=Module["INITIAL_MEMORY"]||16777216;var wasmTable;var __ATPRERUN__=[];var
__ATINIT__=[];var __ATMAIN__=[];var __ATPOSTRUN__=[];var
runtimeInitialized=false;__ATINIT__.push({func:function(){__wasm_call_ctors()}});function

```

```

preRun(){if(Module["preRun"]){if(typeof
Module["preRun"]!="function")Module["preRun"]=[Module["preRun"]];while(Module["preRun"].length){a
ddOnPreRun(Module["preRun"].shift())}callRuntimeCallbacks(__ATPRERUN__)}function
initRuntime(){runtimeInitialized=true;callRuntimeCallbacks(__ATINIT__)}function
preMain(){callRuntimeCallbacks(__ATMAIN__)}function postRun(){if(Module["postRun"]){if(typeof
Module["postRun"]!="function")Module["postRun"]=[Module["postRun"]];while(Module["postRun"].lengt
h){addOnPostRun(Module["postRun"].shift())}callRuntimeCallbacks(__ATPOSTRUN__)}function
addOnPreRun(cb){__ATPRERUN__.unshift(cb)}function addOnPostRun(cb){__ATPOSTRUN__.unshift(cb)}var
runDependencies=0;var runDependencyWatcher=null;var dependenciesFulfilled=null;function
addRunDependency(id){runDependencies++;if(Module["monitorRunDependencies"]){Module["monitorRunDep
endencies"](+runDependencies)}function removeRunDependency(id){runDependencies--
;if(Module["monitorRunDependencies"]){Module["monitorRunDependencies"](+runDependencies)}if(runDepen
dencies==0){if(runDependencyWatcher!=null){clearInterval(runDependencyWatcher);runDependencyWatcher=null}
}if(dependenciesFulfilled){var
callback=dependenciesFulfilled;dependenciesFulfilled=null;callback()} }Module["preloadedImages"]={ };Module
["preloadedAudios"]={ };function
abort(what){if(Module["onAbort"]){Module["onAbort"](what)}what+="\n";err(what);ABORT=true;EXITSTAT
US=1;what="abort(\n"+what+"\n). Build with -s ASSERTIONS=1 for more info.";var e=new
WebAssembly.RuntimeError(what);readyPromiseReject(e);throw e}function hasPrefix(str,prefix){return
String.prototype.startsWith?str.startsWith(prefix):str.indexOf(prefix)===0}var
dataURIPrefix="data:application/octet-stream;base64,";function isDataURI(filename){return
hasPrefix(filename,dataURIPrefix)}var fileURIPrefix="file://^";function isFileURI(filename){return
hasPrefix(filename,fileURIPrefix)}var wasmBinaryFile="tfjs-backend-
wasm.wasm";if(!isDataURI(wasmBinaryFile)){wasmBinaryFile=locateFile(wasmBinaryFile)}function
getBinary(file){try{if(file==wasmBinaryFile&&wasmBinary){return new
Uint8Array(wasmBinary)}if(readBinary){return readBinary(file)}else{throw"both async and sync fetching of the
wasm failed"}}catch(err){abort(err)}}function
getBinaryPromise(){if(!wasmBinary&&(ENVIRONMENT_IS_WEB||ENVIRONMENT_IS_WORKER)){if(typeof
fetch==="function"&&!isFileURI(wasmBinaryFile)){return fetch(wasmBinaryFile,{credentials:"same-
origin"}).then(function(response){if(!response["ok"]){throw"failed to load wasm binary file at
"+wasmBinaryFile+""}return response["arrayBuffer"]()).catch(function(){return
getBinary(wasmBinaryFile)})}else{if(readAsync){return new
Promise(function(resolve,reject){readAsync(wasmBinaryFile,function(response){resolve(new
Uint8Array(response))},reject)}))}return Promise.resolve().then(function(){return
getBinary(wasmBinaryFile)})}function createWasm(){var info={"a":asmLibraryArg};function
receiveInstance(instance,module){var
exports=instance.exports;Module["asm"]=exports;wasmMemory=Module["asm"]["j"];updateGlobalBufferAnd
Views(wasmMemory.buffer);wasmTable=Module["asm"]["r"];removeRunDependency("wasm-
instantiate")}addRunDependency("wasm-instantiate");function
receiveInstantiatedSource(output){receiveInstance(output["instance"])}function
instantiateArrayBuffer(receiver){return getBinaryPromise().then(function(binary){return
WebAssembly.instantiate(binary,info)}).then(receiver,function(reason){err("failed to asynchronously prepare
wasm: "+reason);abort(reason)})}function instantiateAsync(){if(!wasmBinary&&typeof
WebAssembly.instantiateStreaming==="function"&&!isDataURI(wasmBinaryFile)&&!isFileURI(wasmBinaryFil
e)&&typeof fetch==="function"){return fetch(wasmBinaryFile,{credentials:"same-
origin"}).then(function(response){var result=WebAssembly.instantiateStreaming(response,info);return
result.then(receiveInstantiatedSource,function(reason){err("wasm streaming compile failed: "+reason);err("falling
back to ArrayBuffer instantiation");return instantiateArrayBuffer(receiveInstantiatedSource)}))}else{return

```

```

instantiateArrayBuffer(receiveInstantiatedSource)}}if(Module[\"instantiateWasm\"]){try{var
exports=Module[\"instantiateWasm\"](info,receiveInstance);return exports}catch(e){err(\"Module.instantiateWasm
callback failed with error: \"+e);return false}}instantiateAsync().catch(readyPromiseReject);return{}}function
callRuntimeCallbacks(callbacks){while(callbacks.length>0){var callback=callbacks.shift();if(typeof
callback===\"function\"){callback(Module);continue}var func=callback.func;if(typeof
func===\"number\"){if(callback.arg===undefined){wasmTable.get(func)()}else{wasmTable.get(func)(callback.arg)
}}else{func(callback.arg===undefined?null:callback.arg)}}}function _abort(){abort()}function
_emscipten_memcpy_big(dest,src,num){HEAPU8.copyWithin(dest,src,src+num)}function
_emscipten_get_heap_size(){return HEAPU8.length}function
emscipten_realloc_buffer(size){try{wasmMemory.grow(size-
buffer.byteLength+65535>>>16);updateGlobalBufferAndViews(wasmMemory.buffer);return
1}catch(e){}}function _emscipten_resize_heap(requestedSize){var oldSize=_emscipten_get_heap_size();var
maxHeapSize=2147483648;if(requestedSize>maxHeapSize){return false}for(var
cutDown=1;cutDown<=4;cutDown*=2){var
overGrownHeapSize=oldSize*(1+.2/cutDown);overGrownHeapSize=Math.min(overGrownHeapSize,requestedSize
+100663296);var
newSize=Math.min(maxHeapSize,alignUp(Math.max(requestedSize,overGrownHeapSize),65536));var
replacement=emscipten_realloc_buffer(newSize);if(replacement){return true}}return false}var
SYSCALLS={mappings:{},buffers:[null,[],[]],printChar:function(stream,curr){var
buffer=SYSCALLS.buffers[stream];if(curr===0||curr===10){(stream===1?out:err)(UTF8ArrayToString(buffer,0));
buffer.length=0}else{buffer.push(curr)}},varargs:undefined,get:function(){SYSCALLS.varargs+=4;var
ret=HEAP32[SYSCALLS.varargs-4>>2];return ret},getStr:function(ptr){var ret=UTF8ToString(ptr);return
ret},get64:function(low,high){return low}};function _fd_close(fd){return 0}function
_fd_seek(fd,offset_low,offset_high,whence,newOffset){}function _fd_write(fd,iov,iovcnt,pnum){var num=0;for(var
i=0;i<iovcnt;i++){var ptr=HEAP32[iov+i*8>>2];var len=HEAP32[iov+(i*8+4)>>2];for(var
j=0;j<len;j++){SYSCALLS.printChar(fd,HEAPU8[ptr+j])}num+=len}HEAP32[pnum>>2]=num;return 0}function
_thread_create(){return 6}function _thread_join(){return 28}function
setErrNo(value){HEAP32[___errno_location()>>2]=value;return value}function
_sysconf(name){switch(name){case 30:return 16384;case 85:var maxHeapSize=2147483648;return
maxHeapSize/16384;case 132:case 133:case 12:case 137:case 138:case 15:case 235:case 16:case 17:case 18:case
19:case 20:case 149:case 13:case 10:case 236:case 153:case 9:case 21:case 22:case 159:case 154:case 14:case
77:case 78:case 139:case 82:case 68:case 67:case 164:case 11:case 29:case 47:case 48:case 95:case 52:case 51:case
46:return 200809;case 27:case 246:case 127:case 128:case 23:case 24:case 160:case 161:case 181:case 182:case
242:case 183:case 184:case 243:case 244:case 245:case 165:case 178:case 179:case 49:case 50:case 168:case
169:case 175:case 170:case 171:case 172:case 97:case 76:case 32:case 173:case 35:case 80:case 81:case 79:return-
1;case 176:case 177:case 7:case 155:case 8:case 157:case 125:case 126:case 92:case 93:case 129:case 130:case
131:case 94:case 91:return 1;case 74:case 60:case 69:case 70:case 4:return 1024;case 31:case 42:case 72:return
32;case 87:case 26:case 33:return 2147483647;case 34:case 1:return 47839;case 38:case 36:return 99;case 43:case
37:return 2048;case 0:return 2097152;case 3:return 65536;case 28:return 32768;case 44:return 32767;case 75:return
16384;case 39:return 1e3;case 89:return 700;case 71:return 256;case 40:return 255;case 2:return 100;case 180:return
64;case 25:return 20;case 5:return 16;case 6:return 6;case 73:return 4;case 84:{if(typeof
navigator===\"object\")return navigator[\"hardwareConcurrency\"]||1;return 1}}setErrNo(28);return-1}var
asmLibraryArg={\"a\":_abort,\"d\":_emscipten_memcpy_big,\"e\":_emscipten_resize_heap,\"f\":_fd_close,\"c\":_f
d_seek,\"b\":_fd_write,\"h\":_pthread_create,\"g\":_pthread_join,\"i\":_sysconf};var asm=createWasm();var
___wasm_call_ctors=Module[\"___wasm_call_ctors\"]=function(){return(___wasm_call_ctors=Module[\"___wasm
_call_ctors\"]=Module[\"asm\"][\"k\"]).apply(null,arguments)};var
_init=Module[\"_init\"]=function(){return(_init=Module[\"_init\"]=Module[\"asm\"][\"l\"]).apply(null,arguments)};
var

```



```

_init_with_threads_count=Module["_init_with_threads_count"]=function(){return(_init_with_threads_count=Module["_init_with_threads_count"]=Module["asm"][["m"]]).apply(null,arguments)};var
_get_threads_count=Module["_get_threads_count"]=function(){return(_get_threads_count=Module["_get_threads_count"]=Module["asm"][["n"]]).apply(null,arguments)};var
_register_tensor=Module["_register_tensor"]=function(){return(_register_tensor=Module["_register_tensor"]=Module["asm"][["o"]]).apply(null,arguments)};var
_dispose_data=Module["_dispose_data"]=function(){return(_dispose_data=Module["_dispose_data"]=Module["asm"][["p"]]).apply(null,arguments)};var
_dispose=Module["_dispose"]=function(){return(_dispose=Module["_dispose"]=Module["asm"][["q"]]).apply(null,arguments)};var
_Abs=Module["_Abs"]=function(){return(_Abs=Module["_Abs"]=Module["asm"][["s"]]).apply(null,arguments)};var
_Add=Module["_Add"]=function(){return(_Add=Module["_Add"]=Module["asm"][["t"]]).apply(null,arguments)};var
_AddN=Module["_AddN"]=function(){return(_AddN=Module["_AddN"]=Module["asm"][["u"]]).apply(null,arguments)};var
_All=Module["_All"]=function(){return(_All=Module["_All"]=Module["asm"][["v"]]).apply(null,arguments)};var
_Any=Module["_Any"]=function(){return(_Any=Module["_Any"]=Module["asm"][["w"]]).apply(null,arguments)};var
_ArgMax=Module["_ArgMax"]=function(){return(_ArgMax=Module["_ArgMax"]=Module["asm"][["x"]]).apply(null,arguments)};var
_AvgPool=Module["_AvgPool"]=function(){return(_AvgPool=Module["_AvgPool"]=Module["asm"][["y"]]).apply(null,arguments)};var
_BatchMatMul=Module["_BatchMatMul"]=function(){return(_BatchMatMul=Module["_BatchMatMul"]=Module["asm"][["z"]]).apply(null,arguments)};var
_Ceil=Module["_Ceil"]=function(){return(_Ceil=Module["_Ceil"]=Module["asm"][["A"]]).apply(null,arguments)};var
_ClipByValue=Module["_ClipByValue"]=function(){return(_ClipByValue=Module["_ClipByValue"]=Module["asm"][["B"]]).apply(null,arguments)};var
_Conv2D=Module["_Conv2D"]=function(){return(_Conv2D=Module["_Conv2D"]=Module["asm"][["C"]]).apply(null,arguments)};var
_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=function(){return(_Conv2DBackpropInput=Module["_Conv2DBackpropInput"]=Module["asm"][["D"]]).apply(null,arguments)};var
_Cos=Module["_Cos"]=function(){return(_Cos=Module["_Cos"]=Module["asm"][["E"]]).apply(null,arguments)};var
_Cosh=Module["_Cosh"]=function(){return(_Cosh=Module["_Cosh"]=Module["asm"][["F"]]).apply(null,arguments)};var
_CropAndResize=Module["_CropAndResize"]=function(){return(_CropAndResize=Module["_CropAndResize"]=Module["asm"][["G"]]).apply(null,arguments)};var
_Cumsum=Module["_Cumsum"]=function(){return(_Cumsum=Module["_Cumsum"]=Module["asm"][["H"]]).apply(null,arguments)};var
_DepthToSpace=Module["_DepthToSpace"]=function(){return(_DepthToSpace=Module["_DepthToSpace"]=Module["asm"][["I"]]).apply(null,arguments)};var
_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=function(){return(_DepthwiseConv2dNative=Module["_DepthwiseConv2dNative"]=Module["asm"][["J"]]).apply(null,arguments)};var
_Elu=Module["_Elu"]=function(){return(_Elu=Module["_Elu"]=Module["asm"][["K"]]).apply(null,arguments)};var

```

```

_Equal=Module["_Equal"]=function(){return(_Equal=Module["_Equal"]=Module["asm"][["L"]]).apply(null,arguments)};var
_Exp=Module["_Exp"]=function(){return(_Exp=Module["_Exp"]=Module["asm"][["M"]]).apply(null,arguments)};var
_FlipLeftRight=Module["_FlipLeftRight"]=function(){return(_FlipLeftRight=Module["_FlipLeftRight"]=Module["asm"][["N"]]).apply(null,arguments)};var
_Floor=Module["_Floor"]=function(){return(_Floor=Module["_Floor"]=Module["asm"][["O"]]).apply(null,arguments)};var
_FloorDiv=Module["_FloorDiv"]=function(){return(_FloorDiv=Module["_FloorDiv"]=Module["asm"][["P"]]).apply(null,arguments)};var
_FusedBatchNorm=Module["_FusedBatchNorm"]=function(){return(_FusedBatchNorm=Module["_FusedBatchNorm"]=Module["asm"][["Q"]]).apply(null,arguments)};var
_FusedConv2D=Module["_FusedConv2D"]=function(){return(_FusedConv2D=Module["_FusedConv2D"]=Module["asm"][["R"]]).apply(null,arguments)};var
_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=function(){return(_FusedDepthwiseConv2D=Module["_FusedDepthwiseConv2D"]=Module["asm"][["S"]]).apply(null,arguments)};var
_Gather=Module["_Gather"]=function(){return(_Gather=Module["_Gather"]=Module["asm"][["T"]]).apply(null,arguments)};var
_GatherNd=Module["_GatherNd"]=function(){return(_GatherNd=Module["_GatherNd"]=Module["asm"][["U"]]).apply(null,arguments)};var
_Greater=Module["_Greater"]=function(){return(_Greater=Module["_Greater"]=Module["asm"][["V"]]).apply(null,arguments)};var
_GreaterEqual=Module["_GreaterEqual"]=function(){return(_GreaterEqual=Module["_GreaterEqual"]=Module["asm"][["W"]]).apply(null,arguments)};var
_LeakyRelu=Module["_LeakyRelu"]=function(){return(_LeakyRelu=Module["_LeakyRelu"]=Module["asm"][["X"]]).apply(null,arguments)};var
_Less=Module["_Less"]=function(){return(_Less=Module["_Less"]=Module["asm"][["Y"]]).apply(null,arguments)};var
_LessEqual=Module["_LessEqual"]=function(){return(_LessEqual=Module["_LessEqual"]=Module["asm"][["Z"]]).apply(null,arguments)};var
_Log=Module["_Log"]=function(){return(_Log=Module["_Log"]=Module["asm"][["_"]]).apply(null,arguments)};var
_LogicalAnd=Module["_LogicalAnd"]=function(){return(_LogicalAnd=Module["_LogicalAnd"]=Module["asm"][["$"]]).apply(null,arguments)};var
_Max=Module["_Max"]=function(){return(_Max=Module["_Max"]=Module["asm"][["aa"]]).apply(null,arguments)};var
_MaxPool=Module["_MaxPool"]=function(){return(_MaxPool=Module["_MaxPool"]=Module["asm"][["ba"]]).apply(null,arguments)};var
_Maximum=Module["_Maximum"]=function(){return(_Maximum=Module["_Maximum"]=Module["asm"][["ca"]]).apply(null,arguments)};var
_Mean=Module["_Mean"]=function(){return(_Mean=Module["_Mean"]=Module["asm"][["da"]]).apply(null,arguments)};var
_Min=Module["_Min"]=function(){return(_Min=Module["_Min"]=Module["asm"][["ea"]]).apply(null,arguments)};var
_Minimum=Module["_Minimum"]=function(){return(_Minimum=Module["_Minimum"]=Module["asm"][["fa"]]).apply(null,arguments)};var
_MirrorPad=Module["_MirrorPad"]=function(){return(_MirrorPad=Module["_MirrorPad"]=Module["asm"][["ga"]]).apply(null,arguments)};var

```

```

_Multiply=Module["_Multiply"]=function(){return(_Multiply=Module["_Multiply"]=Module["asm"][["ha"]]).apply(null,arguments)};var
_Neg=Module["_Neg"]=function(){return(_Neg=Module["_Neg"]=Module["asm"][["ia"]]).apply(null,arguments)};var
_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=function(){return(_NonMaxSuppressionV3=Module["_NonMaxSuppressionV3"]=Module["asm"][["ja"]]).apply(null,arguments)};var
_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=function(){return(_NonMaxSuppressionV4=Module["_NonMaxSuppressionV4"]=Module["asm"][["ka"]]).apply(null,arguments)};var
_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=function(){return(_NonMaxSuppressionV5=Module["_NonMaxSuppressionV5"]=Module["asm"][["la"]]).apply(null,arguments)};var
_NotEqual=Module["_NotEqual"]=function(){return(_NotEqual=Module["_NotEqual"]=Module["asm"][["ma"]]).apply(null,arguments)};var
_OneHot=Module["_OneHot"]=function(){return(_OneHot=Module["_OneHot"]=Module["asm"][["na"]]).apply(null,arguments)};var
_PadV2=Module["_PadV2"]=function(){return(_PadV2=Module["_PadV2"]=Module["asm"][["oa"]]).apply(null,arguments)};var
_Pow=Module["_Pow"]=function(){return(_Pow=Module["_Pow"]=Module["asm"][["pa"]]).apply(null,arguments)};var
_Prelu=Module["_Prelu"]=function(){return(_Prelu=Module["_Prelu"]=Module["asm"][["qa"]]).apply(null,arguments)};var
_Prod=Module["_Prod"]=function(){return(_Prod=Module["_Prod"]=Module["asm"][["ra"]]).apply(null,arguments)};var
_RealDiv=Module["_RealDiv"]=function(){return(_RealDiv=Module["_RealDiv"]=Module["asm"][["sa"]]).apply(null,arguments)};var
_Relu=Module["_Relu"]=function(){return(_Relu=Module["_Relu"]=Module["asm"][["ta"]]).apply(null,arguments)};var
_Relu6=Module["_Relu6"]=function(){return(_Relu6=Module["_Relu6"]=Module["asm"][["ua"]]).apply(null,arguments)};var
_ResizeBilinear=Module["_ResizeBilinear"]=function(){return(_ResizeBilinear=Module["_ResizeBilinear"]=Module["asm"][["va"]]).apply(null,arguments)};var
_Reverse=Module["_Reverse"]=function(){return(_Reverse=Module["_Reverse"]=Module["asm"][["wa"]]).apply(null,arguments)};var
_RotateWithOffset=Module["_RotateWithOffset"]=function(){return(_RotateWithOffset=Module["_RotateWithOffset"]=Module["asm"][["xa"]]).apply(null,arguments)};var
_Round=Module["_Round"]=function(){return(_Round=Module["_Round"]=Module["asm"][["ya"]]).apply(null,arguments)};var
_Rsqrt=Module["_Rsqrt"]=function(){return(_Rsqrt=Module["_Rsqrt"]=Module["asm"][["za"]]).apply(null,arguments)};var
_ScatterNd=Module["_ScatterNd"]=function(){return(_ScatterNd=Module["_ScatterNd"]=Module["asm"][["Aa"]]).apply(null,arguments)};var
_SelectV2=Module["_SelectV2"]=function(){return(_SelectV2=Module["_SelectV2"]=Module["asm"][["Ba"]]).apply(null,arguments)};var
_Sigmoid=Module["_Sigmoid"]=function(){return(_Sigmoid=Module["_Sigmoid"]=Module["asm"][["Ca"]]).apply(null,arguments)};var
_Sin=Module["_Sin"]=function(){return(_Sin=Module["_Sin"]=Module["asm"][["Da"]]).apply(null,arguments)};var
_Softmax=Module["_Softmax"]=function(){return(_Softmax=Module["_Softmax"]=Module["asm"][["Ea"]]).apply(null,arguments)};var

```

```

_Sqrt=Module["_Sqrt"]=function(){return(_Sqrt=Module["_Sqrt"]=Module["asm"][\["Fa\"]).apply(null,arguments)};var
_Square=Module["_Square"]=function(){return(_Square=Module["_Square"]=Module["asm"][\["Ga\"]).apply(null,arguments)};var
_SquaredDifference=Module["_SquaredDifference"]=function(){return(_SquaredDifference=Module["_SquaredDifference"]=Module["asm"][\["Ha\"]).apply(null,arguments)};var
_Step=Module["_Step"]=function(){return(_Step=Module["_Step"]=Module["asm"][\["Ia\"]).apply(null,arguments)};var
_StridedSlice=Module["_StridedSlice"]=function(){return(_StridedSlice=Module["_StridedSlice"]=Module["asm"][\["Ja\"]).apply(null,arguments)};var
_Sub=Module["_Sub"]=function(){return(_Sub=Module["_Sub"]=Module["asm"][\["Ka\"]).apply(null,arguments)};var
_Sum=Module["_Sum"]=function(){return(_Sum=Module["_Sum"]=Module["asm"][\["La\"]).apply(null,arguments)};var
_Tan=Module["_Tan"]=function(){return(_Tan=Module["_Tan"]=Module["asm"][\["Ma\"]).apply(null,arguments)};var
_Tanh=Module["_Tanh"]=function(){return(_Tanh=Module["_Tanh"]=Module["asm"][\["Na\"]).apply(null,arguments)};var
_Tile=Module["_Tile"]=function(){return(_Tile=Module["_Tile"]=Module["asm"][\["Oa\"]).apply(null,arguments)};var
_TopK=Module["_TopK"]=function(){return(_TopK=Module["_TopK"]=Module["asm"][\["Pa\"]).apply(null,arguments)};var
_Transform=Module["_Transform"]=function(){return(_Transform=Module["_Transform"]=Module["asm"][\["Qa\"]).apply(null,arguments)};var
_Transpose=Module["_Transpose"]=function(){return(_Transpose=Module["_Transpose"]=Module["asm"][\["Ra\"]).apply(null,arguments)};var
__FusedMatMul=Module["__FusedMatMul"]=function(){return(__FusedMatMul=Module["__FusedMatMul"]=Module["asm"][\["Sa\"]).apply(null,arguments)};var
_malloc=Module["_malloc"]=function(){return(_malloc=Module["_malloc"]=Module["asm"][\["Ta\"]).apply(null,arguments)};var
_free=Module["_free"]=function(){return(_free=Module["_free"]=Module["asm"][\["Ua\"]).apply(null,arguments)};var
__errno_location=Module["__errno_location"]=function(){return(__errno_location=Module["__errno_location"]=Module["asm"][\["Va\"]).apply(null,arguments)};var
stackSave=Module["stackSave"]=function(){return(stackSave=Module["stackSave"]=Module["asm"][\["Wa\"]).apply(null,arguments)};var
stackRestore=Module["stackRestore"]=function(){return(stackRestore=Module["stackRestore"]=Module["asm"][\["Xa\"]).apply(null,arguments)};var
stackAlloc=Module["stackAlloc"]=function(){return(stackAlloc=Module["stackAlloc"]=Module["asm"][\["Ya\"]).apply(null,arguments)};Module["cwrap"]=cwrap;var calledRun;function
ExitStatus(status){this.name="\ExitStatus\";this.message="\Program terminated with
exit(\"+status+\")\";this.status=status}dependenciesFulfilled=function
runCaller(){if(!calledRun)run();if(!calledRun)dependenciesFulfilled=runCaller};function
run(args){args=args||arguments_;if(runDependencies>0){return}preRun();if(runDependencies>0){return}function
doRun(){if(calledRun)return;calledRun=true;Module["calledRun"]=true;if(ABORT)return;initRuntime();preMain(
);readyPromiseResolve(Module);if(Module["onRuntimeInitialized"])Module["onRuntimeInitialized"]();postRun(
)}if(Module["setStatus"]){Module["setStatus"]("\Running...");setTimeout(function(){setTimeout(function(){Module["setStatus"]("\")}
,1)};doRun(),1)}else{doRun()}}Module["run"]=run;if(Module["preInit"]){if(typeof

```

```

Module["preInit"]===\function\)Module["preInit"]=[Module["preInit"];while(Module["preInit"].length>0){
Module["preInit"].pop(0)}run();\n\n\n return WasmBackendModule.ready\n}\n);\n}\n);\nif (typeof exports ===
'object' && typeof module === 'object')\n module.exports = WasmBackendModule;\nelse if (typeof define ===
'function' && define['amd'])\n define([], function() { return WasmBackendModule; });\nelse if (typeof exports ===
'object')\n exports["WasmBackendModule"] = WasmBackendModule;\n"/**\n * @license\n * Copyright 2019
Google LLC. All Rights Reserved.\n * Licensed under the Apache License, Version 2.0 (the "License");\n * you
may not use this file except in compliance with the License.\n * You may obtain a copy of the License at\n *
http://www.apache.org/licenses/LICENSE-2.0\n * \n * Unless required by applicable law or agreed to in writing,
software\n * distributed under the License is distributed on an "AS IS" BASIS,\n * WITHOUT WARRANTIES
OR CONDITIONS OF ANY KIND, either express or implied.\n * See the License for the specific language
governing permissions and\n * limitations under the License.\n *

```

```

=====\n
*\nimport './flags_wasm';\nimport { backend_util, BackendTimingInfo, DataStorage, DataType, deprecationWarn,
engine, env, KernelBackend, TensorInfo, util } from '@tensorflow/tfjs-core';\nimport { BackendWasmModule,
WasmFactoryConfig } from './wasm-out/tfjs-backend-wasm';\nimport { BackendWasmThreadedSimdModule } from
'./wasm-out/tfjs-backend-wasm-threaded-simd';\nimport wasmFactoryThreadedSimd from './wasm-out/tfjs-
backend-wasm-threaded-simd.js';\n// @ts-ignore\nimport { wasmWorkerContents } from './wasm-out/tfjs-backend-
wasm-threaded-simd.worker.js';\nimport wasmFactory from './wasm-out/tfjs-backend-wasm.js';\n\ninterface
TensorData {\n id: number;\n memoryOffset: number;\n shape: number[];\n dtype: DataType;\n refCount:
number;\n /** Only used for string tensors, storing encoded bytes. *\n stringBytes?: Uint8Array[];\n}\n\nexport
type DataId = object; // object instead of {} to force non-primitive.\n\nexport class BackendWasm extends
KernelBackend {\n // 0 is reserved for null data ids.\n private dataIdNextNumber = 1;\n dataIdMap:
DataStorage<TensorData>;\n\n constructor(public wasm:
BackendWasmModule|BackendWasmThreadedSimdModule) {\n super();\n
this.wasm.tfjs.initWithThreadsCount(threadsCount);\n actualThreadsCount = this.wasm.tfjs.getThreadsCount();\n
this.dataIdMap = new DataStorage(this, engine());\n }\n\n write(values: backend_util.BackendValues, shape:
number[], dtype: DataType):\n DataId {\n const dataId = {id: this.dataIdNextNumber++};\n
this.move(dataId, values, shape, dtype, 1);\n return dataId;\n }\n\n numDataIds(): number {\n return
this.dataIdMap.numDataIds();\n }\n\n async time(f: () => void): Promise<BackendTimingInfo> {\n const start =
util.now();\n f();\n const kernelMs = util.now() - start;\n return {kernelMs};\n }\n\n move(\n dataId:
DataId, values: backend_util.BackendValues, shape: number[],\n dtype: DataType, refCount: number): void {\n
const id = this.dataIdNextNumber++;\n if (dtype === 'string') {\n const stringBytes = values as Uint8Array[];\n
this.dataIdMap.set(\n dataId,\n {id, stringBytes, shape, dtype, memoryOffset: null, refCount});\n
return;\n }\n\n const size = util.sizeFromShape(shape);\n const numBytes = size *
util.bytesPerElement(dtype);\n const memoryOffset = this.wasm._malloc(numBytes);\n
this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype, refCount});\n\n this.wasm.tfjs.registerTensor(id, size,
memoryOffset);\n\n if (values != null) {\n this.wasm.HEAPU8.set(\n new Uint8Array(\n (values
as backend_util.TypedArray).buffer,\n (values as backend_util.TypedArray).byteOffset, numBytes),\n
memoryOffset);\n }\n }\n\n async read(dataId: DataId): Promise<backend_util.BackendValues> {\n return
this.readSync(dataId);\n }\n\n readSync(dataId: DataId): backend_util.BackendValues {\n const {memoryOffset,
dtype, shape, stringBytes} =\n this.dataIdMap.get(dataId);\n if (dtype === 'string') {\n return stringBytes;\n
}\n\n const bytes = this.wasm.HEAPU8.slice(\n memoryOffset,\n memoryOffset +
util.sizeFromShape(shape) * util.bytesPerElement(dtype));\n return typedArrayFromBuffer(bytes.buffer, dtype);\n
}\n\n /**\n * Dispose the memory if the dataId has 0 refCount. Return true if the memory\n * is released, false
otherwise.\n * @param dataId\n * @oaram force Optional, remove the data regardless of refCount\n *\n
disposeData(dataId: DataId, force = false): boolean {\n if (this.dataIdMap.has(dataId)) {\n const data =
this.dataIdMap.get(dataId);\n data.refCount--;\n if (!force && data.refCount > 0) {\n return false;\n
}\n\n this.wasm._free(data.memoryOffset);\n this.wasm.tfjs.disposeData(data.id);\n

```

```

this.dataIdMap.delete(dataId);\n }\n return true;\n }\n\n /** Return refCount of a `TensorData`. */\n refCount(dataId: DataId): number {\n if (this.dataIdMap.has(dataId)) {\n const tensorData =\n this.dataIdMap.get(dataId);\n return tensorData.refCount;\n }\n return 0;\n }\n\n incRef(dataId: DataId) {\n const data = this.dataIdMap.get(dataId);\n if (data != null) {\n data.refCount++;\n }\n }\n\n floatPrecision():\n 32 {\n return 32;\n }\n\n // Returns the memory offset of a tensor. Useful for debugging and unit\n // testing.\n getMemoryOffset(dataId: DataId): number {\n return this.dataIdMap.get(dataId).memoryOffset;\n }\n\n dispose() {\n this.wasm.tfjs.dispose();\n if ('PThread' in this.wasm) {\n this.wasm.PThread.terminateAllThreads();\n }\n this.wasm = null;\n }\n\n\n memory() {\n return {unreliable:\n false};\n }\n\n /**\n * Make a tensor info for the output of an op. If `memoryOffset` is not\n * present, this method allocates memory on the WASM heap. If `memoryOffset`\n * is present, the memory was allocated elsewhere (in c++) and we just record\n * the pointer where that memory lives.\n */\n makeOutput(shape:\n number[], dtype: DataType, memoryOffset?: number):\n TensorInfo {\n let dataId: {};\n if (memoryOffset\n == null) {\n dataId = this.write(null /* values */, shape, dtype);\n } else {\n const id =\n this.dataIdNextNumber++;\n dataId = {id};\n this.dataIdMap.set(dataId, {id, memoryOffset, shape, dtype,\n refCount: 1});\n const size = util.sizeFromShape(shape);\n this.wasm.tfjs.registerTensor(id, size,\n memoryOffset);\n }\n return {dataId, shape, dtype};\n }\n\n\n typedArrayFromHeap({shape, dtype, dataId}:\n TensorInfo):\n backend_util.TypedArray {\n const buffer = this.wasm.HEAPU8.buffer;\n const\n {memoryOffset} = this.dataIdMap.get(dataId);\n const size = util.sizeFromShape(shape);\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer, memoryOffset, size);\n case 'int32':\n return new\n Int32Array(buffer, memoryOffset, size);\n case 'bool':\n return new Uint8Array(buffer, memoryOffset,\n size);\n default:\n throw new Error(`Unknown dtype ${dtype}`);\n }\n }\n\n\n\n function\n createInstantiateWasmFunc(path: string) {\n // this will be replace by rollup plugin patchWechatWebAssembly in\n // miniprogram's output.\n // tslint:disable-next-line:no-any\n return (imports: any, callback: any) => {\n util.fetch(path, {credentials: 'same-origin'}).then((response) => {\n if (!response['ok']) {\n imports.env.a(`failed to load wasm binary file at '${path}'`);\n }\n response.arrayBuffer().then(binary => {\n WebAssembly.instantiate(binary, imports).then(output => {\n callback(output.instance, output.module);\n });\n });\n });\n return {};\n });\n }\n\n\n\n /**\n * Returns the path of the WASM binary.\n */\n * @param\n simdSupported whether SIMD is supported\n * @param threadsSupported whether multithreading is supported\n * @param wasmModuleFolder the directory containing the WASM binaries.\n */\n function getPathToWasmBinary(\n simdSupported: boolean, threadsSupported: boolean,\n wasmModuleFolder: string) {\n if (wasmPath != null) {\n // If wasmPath is defined, the user has supplied a full path to\n // the vanilla .wasm binary.\n return\n wasmPath;\n }\n\n let path: WasmBinaryName = 'tfjs-backend-wasm.wasm';\n if (simdSupported &&\n threadsSupported) {\n path = 'tfjs-backend-wasm-threaded-simd.wasm';\n } else if (simdSupported) {\n path =\n 'tfjs-backend-wasm-simd.wasm';\n }\n\n if (wasmFileMap != null) {\n if (wasmFileMap[path] != null) {\n return\n wasmFileMap[path];\n }\n }\n\n return\n wasmModuleFolder + path;\n }\n\n\n\n /**\n * Initializes the wasm\n module and creates the js <--> wasm bridge.\n */\n * NOTE: We wrap the wasm module in a object with property\n 'wasm' instead of\n * returning Promise<BackendWasmModule> to avoid freezing Chrome (last tested\n * in\n Chrome 76).\n */\n function\n async function init(): Promise<{wasm: BackendWasmModule}> {\n const\n [simdSupported, threadsSupported] = await Promise.all([\n env().getAsync('WASM_HAS_SIMD_SUPPORT'),\n env().getAsync('WASM_HAS_MULTITHREAD_SUPPORT')\n]);\n return\n new Promise((resolve, reject) => {\n const\n factoryConfig: WasmFactoryConfig = {};\n\n /**\n * This function overrides the Emscripten\n module locateFile utility.\n */\n * @param path The relative path to the file that needs to be loaded.\n * @param\n prefix The path to the main JavaScript file's directory.\n */\n function\n factoryConfig.locateFile = (path, prefix) => {\n if (path.endsWith('.worker.js')) {\n const\n response = wasmWorkerContents;\n const\n blob = new\n Blob([response], {type: 'application/javascript'});\n return\n URL.createObjectURL(blob);\n }\n if\n (path.endsWith('.wasm')) {\n return\n getPathToWasmBinary(\n simdSupported as boolean,\n threadsSupported as boolean,\n wasmPathPrefix != null ? wasmPathPrefix : prefix);\n }\n return\n prefix\n + path;\n }\n\n // Use the instantiateWasm override when system fetch is not available.\n // Reference:\n //

```

[https://github.com/emscripten-core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7feecfa907/tests/manual\\_wasm\\_instantiate.html#L170](https://github.com/emscripten-core/emscripten/blob/2bca083cbbd5a4133db61fbd74d04f7feecfa907/tests/manual_wasm_instantiate.html#L170)

```

if (customFetch) {\n factoryConfig.instantiateWasm =\n createInstantiateWasmFunc(getPathToWasmBinary(\n simdSupported as boolean, threadsSupported as\n boolean,\n wasmPathPrefix != null ? wasmPathPrefix : ''));\n }\n let initialized = false;\n factoryConfig.onAbort = () => {\n if (initialized) {\n // Emscripten already called console.warn so no need to\n double log.\n return;\n }\n if (initAborted) {\n // Emscripten calls `onAbort` twice, resulting in double\n error\n // messages.\n return;\n }\n initAborted = true;\n const rejectMsg =\n 'Make sure the\n server can serve the `.wasm` file relative to the '+\n 'bundled js file. For more details see\n https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers';\n reject({message: rejectMsg});\n };\n let wasm: Promise<BackendWasmModule>;\n // If `wasmPath` has\n been defined we must initialize the vanilla module.\n if (threadsSupported && simdSupported && wasmPath ==\n null) {\n factoryConfig.mainScriptUrlOrBlob = new Blob([\n var WasmBackendModuleThreadedSimd =\n +\n wasmFactoryThreadedSimd.toString()],\n {type: 'text/javascript'});\n wasm =\n wasmFactoryThreadedSimd(factoryConfig);\n } else {\n // The wasmFactory works for both vanilla and SIMD\n binaries.\n wasm = wasmFactory(factoryConfig);\n }\n // The WASM module has been successfully\n created by the factory.\n // Any error will be caught by the onAbort callback defined above.\n wasm.then((module) => {\n initialized = true;\n initAborted = false;\n\n const voidReturnType: string =\n null;\n // Using the tfjs namespace to avoid conflict with emscripten's API.\n module.tfjs = {\n init:\n module.cwrap('init', null, []),\n initWithThreadCount:\n module.cwrap('init_with_threads_count', null,\n ['number']),\n getThreadCount: module.cwrap('get_threads_count', 'number', []),\n registerTensor:\n module.cwrap(\n 'register_tensor', null,\n [\n 'number', // id\n 'number', // size\n 'number', // memoryOffset\n]),\n disposeData: module.cwrap('dispose_data', voidReturnType,\n ['number']),\n dispose: module.cwrap('dispose', voidReturnType, []),\n };\n\n resolve({wasm: module});\n });\n}\n\nfunction typedArrayFromBuffer(buffer: ArrayBuffer, dtype: DataType):\nbackend_util.TypedArray {\n switch (dtype) {\n case 'float32':\n return new Float32Array(buffer);\n case\n'int32':\n return new Int32Array(buffer);\n case 'bool':\n return new Uint8Array(buffer);\n default:\n throw new Error(`Unknown dtype ${dtype}`);\n }\n}\n\nconst wasmBinaryNames = [\n 'tfjs-backend-wasm.wasm',\n 'tfjs-backend-wasm-simd.wasm',\n 'tfjs-backend-wasm-threaded-simd.wasm'\n] as const;\n\nexport type\nWasmBinaryName = typeof wasmBinaryNames[number];\n\nlet wasmPath: string = null;\nlet wasmPathPrefix:\nstring = null;\nlet wasmFileMap: {[key in WasmBinaryName]?: string} = {};\nlet initAborted = false;\nlet\ncustomFetch = false;\n\n/**\n * @deprecated Use `setWasmPaths` instead.\n * Sets the path to the `.wasm` file\n which will be fetched when the wasm\n * backend is initialized. See\n *
https://github.com/tensorflow/tfjs/blob/master/tfjs-backend-wasm/README.md#using-bundlers\n * for more\n details.\n * @param path wasm file path or url\n * @param usePlatformFetch optional boolean to use platform fetch\n to download\n * the wasm file, default to false.\n * @doc {heading: 'Environment', namespace: 'wasm'}\n */\nexport function setWasmPath(path: string, usePlatformFetch = false): void {\n deprecationWarn(\n 'setWasmPath has been deprecated in favor of setWasmPaths and'\n +\n ' will be removed in a future release.);\n if\n (initAborted) {\n throw new Error(\n 'The WASM backend was already initialized. Make sure you call '\n +\n 'setWasmPath()' before you call `tf.setBackend()` or `tf.ready()`);\n }\n wasmPath = path;\n customFetch =\n usePlatformFetch;\n}\n\n/**\n * Configures the locations of the WASM binaries.\n * @param js\n * setWasmPaths({\n * 'tfjs-backend-wasm.wasm': 'renamed.wasm',\n * 'tfjs-backend-wasm-simd.wasm': 'renamed-simd.wasm',\n * 'tfjs-backend-wasm-threaded-simd.wasm': 'renamed-threaded-simd.wasm'\n * });\n * tf.setBackend('wasm');\n */\nexport function\nsetWasmPaths({\n prefixOrFileMap\n}: {\n prefixOrFileMap: string | {\n [key: string]: string;\n };\n}): void {\n if (typeof prefixOrFileMap === 'string') {\n // (string) The path to the directory\n where the WASM binaries are located.\n Note that this prefix will be used to load each binary (vanilla,\n * SIMD-enabled, threading-enabled, etc.).\n } else {\n // (object) Mapping from names of WASM binaries to custom\n * full paths specifying the locations of those binaries. This is useful if\n * your WASM binaries are not all located\n in the same directory, or if your\n * WASM binaries have been renamed.\n * @param usePlatformFetch optional

```

```

boolean to use platform fetch to download\n * the wasm file, default to false.\n *\n * @doc {heading:
'Environment', namespace: 'wasm'}\n *\nexport function setWasmPaths(\n prefixOrFileMap: string|{\n key in
WasmBinaryName}?: string|,\n usePlatformFetch = false): void {\n if (initAborted) {\n throw new Error(\n
'The WASM backend was already initialized. Make sure you call ' +\n `setWasmPaths()` before you call
`tf.setBackend()` or ' +\n `tf.ready()`);\n }\n\n if (typeof prefixOrFileMap === 'string') {\n wasmPathPrefix
= prefixOrFileMap;\n } else {\n wasmFileMap = prefixOrFileMap;\n const missingPaths =\n
wasmBinaryNames.filter(name => wasmFileMap[name] == null);\n if (missingPaths.length > 0) {\n throw new
Error(\n `There were no entries found for the following binaries: ` +\n `${missingPaths.join(',')}`. Please
either call setWasmPaths with a ` +\n `map providing a path for each binary, or with a string indicating ` +\n
`the directory where all the binaries can be found.`);\n }\n }\n\n customFetch = usePlatformFetch;\n}\n\n/**
Used in unit tests. *\nexport function resetWasmPath(): void {\n wasmPath = null;\n wasmPathPrefix = null;\n
wasmFileMap = {};\n customFetch = false;\n initAborted = false;\n}\n\nlet threadsCount = -1;\nlet
actualThreadsCount = -1;\n\n/**\n * Sets the number of threads that will be used by XNNPACK to create\n *
threadpool (default to the number of logical CPU cores).\n *\n * This must be called before calling
`tf.setBackend('wasm')`.\n *\nexport function setThreadsCount(numThreads: number) {\n threadsCount =
numThreads;\n}\n\n/**\n * Gets the actual threads count that is used by XNNPACK.\n *\n * It is set after the
backend is initialized.\n *\nexport function getThreadsCount(): number {\n if (actualThreadsCount === -1) {\n
throw new Error('WASM backend not initialized.);\n }\n return actualThreadsCount;\n}\n\n"/** @license See the
LICENSE file. *\n\n// This code is auto-generated, do not modify this file!\nconst version = '3.11.0';\nexport
{version};\n"/**\n * @license\n * Copyright 2020 Google LLC. All Rights Reserved.\n * Licensed under the
Apache License, Version 2.0 (the "License");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n *\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an "AS IS" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n */

```

```

=====\n
*\n\nimport './flags_wasm';\n\nimport {registerBackend} from '@tensorflow/tfjs-core';\n\nimport {BackendWasm,
init} from './backend_wasm';\n\nexport {BackendWasm, getThreadsCount, setThreadsCount, setWasmPath,
setWasmPaths} from './backend_wasm';\n\nexport {version as version_wasm} from './version';\n\nconst
WASM_PRIORITY = 2;\nregisterBackend('wasm', async () => {\n const {wasm} = await init();\n return new
BackendWasm(wasm);\n},
WASM_PRIORITY);\n\n], "names": ["setup", "wasmFunc", "sliceImplCPU", "concatImplCPU", "supportsFullBroadcas
t", "setupFunc", "kernelFunc", "rangeImplCPU", "require$$0", "require$$1", "require$$2", "global", "require$$3", "requir
e$$4", "wasmFactoryThreadedSimd", "wasmFactory"], "mappings": ";;;;;;;;;;;;;AAAA;;;;;;;;;;;;;AAiBA;AAC
A,IAAY,QAMX;AAND,WAAY,QAAQ;IACIB,6CAAW,CAAA;IACX,yCAAS,CAAA;IACT,uCAAQ,CAAA;IAC
R,2CAAU,CAAA;IACV,iDAaA,CAAA;AACf,CAAC,EANW,QAAQ,KAAR,QAAQ,QAMnB;AAED;AACA,IAA
Y,iBAQX;AARD,WAAY,iBAaIB;IAC3B,6DAAU,CAAA;IACV,yDAAQ,CAAA;IACR,2DAAS,CAAA;IACT,2D
AAS,CAAA;IACT,mEAAa,CAAA;IACb,+DAAW,CAAA;IACX,uDAAO,CAAA;AACT,CAAC,EARW,iBAaIB,
KAAjB,iBAaIB;AC3B7B;;;;;;;;;;;;;AAuBA,IAAI,eAKQ,CAAC;AAEb,SAAS,KAAC,CAAC,OAAoB;IACjC,eA
Ae,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,YAAY,EAAE,IAAI,aAAa;QACIE,QAAQ;QACR,OAAO;Q
ACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q
AAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,gBAAGb,C
AAC,IAIzB;IACC,MAAM,EAAE,MAAM,EAAE,OAAO,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAA
M,EAAE,CAAC,EAAE,CAAC,EAAE,IAAI,EAAE,sBAAsB,EAAC,GAAG,MAAM,CAAC;IAEpD,IAAI,CAAC,
CAAC,KAAC,KAAC,SAAS,IAAI,CAAC,CAAC,KAAC,KAAC,SAAS,EAAE;QACID,MAAM,IAAI,KAAC,CA
CX,6DAA6D,CAAC,CAAC;KACpE;IAED,MAAM,EAAE,UAAU,EAAE,UAAU,EAAE,UAAU,EAAE,cAAc,EA
AC,GAAG,KAAC,CAAC;IACnE,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CA

```



AC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CA  
AC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE/C,IAAI,MAAM,GAAG,CAAC,CAAC;IACf,IAAI,I  
AAI,IAAI,IAAI,EAAE;QACbB,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,  
MAAM,CAAC,CAAC;QACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;YAC/B,MAA  
M,IAAI,KAAK,CACX,iDAAiD;gBACjD,QAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,CAAC;SA  
CvC;QACD,MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;KACtB;IACD,MAAM,wBAAwB,GAAG,sBAAsB,IAA  
I,IAAI;QAC3D,CAAC;QACD,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAA  
C,EAAE,CAAC;IAC5D,MAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;IAC1E,IAAI,eAAe,IAAI,I  
AAI,EAAE;QAC3B,MAAM,IAAI,KAAK,CACX,GAAG,UAAU,gDAAgD;YAC7D,sBAAsB,CAAC,CAAC;KAC  
7B;IAED,MAAM,OAAO,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAA  
C,KAAK,CAAC,CAAC,CAAC,CAAC;IACrD,MAAM,QAAQ,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAA  
C,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACtD,MAAM,QAAQ,GAAG,CAA  
C,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAE5B,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAA  
C,QAAQ,EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACvE,MAAM,KAA  
K,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEn  
D,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM  
,CAAC,CAAC;IACnE,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,C  
AAC,CAAC,MAAM,CAAC,CAAC;IAEnE,eAAe,CACX,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CA  
AC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EACIE,UAAU,EAAE,U  
AAU,EAAE,eAAe,EAAE,MAAM,EAAE,wBAAwB,EACzE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IAE  
hC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,iBAAiB,GAAiB;IAC7C,UAAU,EAAE,YAAY;IACxB,W  
AAW,EAAE,MAAM;IACnB,SAAS,EAAE,KAAK;IACbB,UAAU,EAAE,gBAAoC;CACjD;;AC7GD;::::::::::S  
AuBgB,uBAAuB,CACnC,UAAkB,EAAE,OAkB;IACxC,IAAI,QAA6D,CAAC;IAEIE,SAAS,SAAS,CAAC,OAA  
oB;QACrC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;YACzD,QAAQ;  
YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;KACJ;IAED,SAAS,UAAU,CAAC,IAAiD;QAEEnE,MAAM,E  
AAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAC,EAAC,GAAG,IAAI,CAAC;QACpC,MAAM,GAAG,G  
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,M  
AAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,OAAO,IAAI,CAAC,CAAC,KA  
AK,CAAC,CAAC;QAC5D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;;QAGnD,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAA  
K,CAAC,EAAE;YACvC,OAAO,GAAG,CAAC;SACZ;QAED,QAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAA  
C,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;QACxC,OAAO,GAAG,CAAC;KACZ;IAED,OAAO,EAAC  
,UAAU,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,EAAE,UAAU,EAAC,CAAC;AACIE;;ACpDA;::::::::::A  
AoBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC;;ACpBnE;::::::::::SAuBgB,wBAAwB,CACpC,U  
AAkB,EAAE,qBAA8B,EACID,KAAgB;IACIB,IAAI,QAGQ,CAAC;IAEb,SAAS,SAAS,CAAC,OAAoB;QACrC,  
QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,IAAI,aAAa;YACzD,QAAQ;YACR,OA  
AO;YACP,QAAQ;YACR,QAAQ;YACR,OAAO;YACP,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAA  
C;KACJ;IAED,SAAS,UAAU,CAAC,IAAkD;QAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAC,GAAG,IAAI,  
CAAC;QAC/B,MAAM,EAAC,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;QACtB,MAAM,GAAG,GAA  
G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,MAA  
M,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAA  
C;QAE/C,MAAM,UAAU,GAAG,KAAK,IAAI,IAAI,GAAG,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC;QACnD  
,MAAM,QAAQ,GAAG,YAAY,CAAC,0BAA0B,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAA  
C,CAAC;QAC3E,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,UAAU,CAAC,CAAC;;QA  
GrD,IAAI,IAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE;YACtC,OAAO,GAAG,CAAC;SACZ;  
QAED,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,M  
AAM,CAAC,CAAC;QACnE,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,K  
AAK,CAAC,CAAC,MAAM,CAAC,CAAC;QACnE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,

CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,MAAM,UAAU,GAAG,MAAM,QAAQ,CAC  
7B,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAC,CAAC,MAAM,EAAE,GAAG,EAAE,WAAW,EAAE,CA  
AC,CAAC,KAAC,CAAC,MAAM,EACIE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE,KAAC,CAAC,CA  
AC;;QAG9B,IAAI,qBAAqB,IAAI,CAAC,CAAC,KAAC,KAAC,SAAS,EAAE;YACID,UAAU,EAAE,CAAC;YA  
Cb,OAAO,GAAG,CAAC;SACZ;QAED,MAAM,cAAc,GAAG,YAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,KA  
AK,EAAE,QAAQ,CAAC,CAAC;QACxE,MAAM,cAAc,GAAG,YAAY,CAAC,gBAAgB,CAAC,CAAC,CAAC,K  
AAK,EAAE,QAAQ,CAAC,CAAC;QACxE,MAAM,eAAe,GAAG,cAAc,CAAC,KAAC,CAAC,CAAC,CAAC,EA  
AE,CAAC,KAAC,CAAC,KAAC,CAAC,CAAC,CAAC;QACxE,MAAM,eAAe,GAAG,cAAc,CAAC,KAAC,CAA  
C,CAAC,CAAC,EAAE,CAAC,KAAC,CAAC,KAAC,CAAC,CAAC,CAAC;QACxE,IAAI,eAAe,IAAI,eAAe,EAA  
E;YACtC,UAAU,EAAE,CAAC;YACb,OAAO,GAAG,CAAC;SACZ;aAAM;YACL,MAAM,IAAI,KAAC,CACX,  
2CAA2C;gBAC3C,iBAAiB,CAAC,CAAC,KAAC,IAAI,UAAU,GAAG,CAAC,CAAC;SACd;KACF;IAED,OAA  
O,EAAC,UAAU,EAAE,WAAW,EAAE,MAAM,EAAE,SAAS,EAAE,UAAU,EAAC,CAAC;AACIE;;ACxFA;;;;;;  
;;;;;;AAqBA,MAAM,qBAAqB,GAAG,IAAI,CAAC;AAE5B,MAAM,SAAS,GACIB,wBAAwB,CAAC,GAAG,E  
AAE,qBAAqB,CAAC;;ACxBxD;;;;;;AAuBA,IAAI,QAEE,CAAC;AAEb,SAAS,SAAS,CAAC,OAAoB;IAC  
rC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,IAAI,EAAE,IAAI,aAAa;QACnD,OAAO;QACP,QA  
AQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAAKD;IAC9D  
,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,  
UAAU,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,KAAC,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAC,  
CAAC,CAAC;;IAGjE,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAC,CAAC,KAAC,CAAC,EAAE;QACv  
C,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,QAAQ,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,OAAO  
,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC;IACrE,MAAM,a  
AAa,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IACtE,MAA  
M,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAA  
C;IACnD,QAAQ,CAAC,aAAa,EAAE,QAAQ,CAAC,MAAM,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAC,CAAC  
,EAAE,KAAC,CAAC,CAAC;IAErE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,UAAU,GAAiB;IACtC,  
UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS;IACt,UAAU,EAAE,IAAwB;CACrC;;ACIDD  
;;;;;;SAsBgB,QAAQ,CAAC,IAAoD;IAE3E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,O  
AAO,EAAC,GAAG,IAAI,CAAC;IACpC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KA  
AK,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACjD,MAAM,MAAM,GAAG,OAAO,CAAC,kBAakB,CAAC,  
CAAC,CAAC,CAAC;IAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IAC  
D,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAA  
M,cAAc,GAAiB;IAC1C,UAAU,EAAE,QAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,QAA4B;CA  
CzC;;ACpCD;;;;;;AAwBA,IAAI,aAE4D,CAAC;AAEjE,SAASA,OAAK,CAAC,OAAoB;IACjC,aAAa,GAA  
G,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,SAAS,EAAE,IAAI,aAAa;QAC7D,QAAQ;QACR,OAAO;QACP,QA  
AQ;QACR,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,SAAS  
,CACrB,IAC0E;IAE5E,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;;IAGtC,  
MAAM,CAAC,YAAY,EAAE,IAAI,CAAC,GAAG,iBAAiB,CAAC,MAAM,CAAC,CAAC,CAAC,KAAC,EAAE,  
KAAC,CAAC,IAAI,CAAC,CAAC;IAE3E,IAAI,UAAU,GAAG,IAAI,CAAC;IACtB,KAAC,IAAI,CAAC,GAAG,  
CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACpC,IAAI,IAAI,CAAC,CAA  
C,CAAC,KAAC,CAAC,EAAE;YACjB,UAAU,GAAG,KAAC,CAAC;SACpB;KACF;IACD,MAAM,QAAQ,GAA  
G,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,KAAC,EAAE,KAAC,CAAC,IAAI,CAAC,CAAC;IAC7D,MAAM,  
CAAC,GAAG;QACR,MAAM,EAAE,MAAM,CAAC,CAAC,CAAC,MAAM;QACvB,KAAC,EAAE,YAAY;QAC  
nB,KAAC,EAAE,MAAM,CAAC,CAAC,CAAC,KAAC;KACtB,CAAC;IAEF,IAAI,UAAU,EAAE;QACd,MAAM  
,MAAM,GAAG,QAAQ,CAAC,EAAC,MAAM,EAAE,OAAO,EAAC,CAAC,CAAC;QAC3C,MAAM,CAAC,KA  
K,GAAG,QAAQ,CAAC;QACxB,OAAO,MAAM,CAAC;KACf;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UA  
AU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACID,MAAM,GAAG,GAAG,OAAO,CAAC,SA  
AS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,KAAC,GAAG,OA  
AO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,SA

AS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9D,MAAM,  
WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,C  
AAC;IAEnE,aAAa,CACT,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,QAAQ,CA  
AC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,EAAE,SAAS,EACrE,IAAI,CAAC,MAAM,CAAC,CAAC;IACjB,  
OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,eAAe,CAAC,OAAiB,EAAE,IAAc;IACxD,MAAM,QAAQ,GA  
AG,IAAI,KAAK,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC3C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,  
CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,  
OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;KAChC;IACD,OAAO,QAAQ,CAAC;AACiB,CAAC;A  
AED,SAAS,iBAAiB,CACtB,KAAe,EAAE,IAAc;IACjC,MAAM,QAAQ,GAAa,EAAE,CAAC;IAC9B,MAAM,OA  
AO,GAAa,EAAE,CAAC;IAC7B,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,KAAK,CAAC,MAA  
M,EAAE,EAAE,CAAC,EAAE;QACrC,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACiB,QAAQ,  
CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;SACzB;QACD,IAAI,KAAK,CAAC,IAAI,CAA  
C,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE;YACxB,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,C  
AAC,CAAC;SACvB;KACF;IACD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAA  
M,EAAE,EAAE,CAAC,EAAE;QACvC,IAAI,SAAS,GAAG,CAAC,CAAC,CAAC;QACnB,KAAK,IAAI,CAAC,G  
AAG,CAAC,EAAE,CAAC,GAAG,OAAO,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;YACvC,IAAI,OAAO,CA  
AC,CAAC,CAAC,IAAI,CAAC;iBACd,SAAS,KAAK,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,CAAC,GAAG,O  
AAO,CAAC,CAAC,CAAC,CAAC,EAAE;gBACzD,SAAS,GAAG,CAAC,CAAC;aACf;SACF;QACD,OAAO,CA  
AC,SAAS,CAAC,GAAG,CAAC,CAAC;KACxB;IACD,OAAO,CAAC,QAAQ,EAAE,OAAO,CAAC,CAAC;AAC  
7B,CAAC;AAEM,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,UA  
AU,EAAE,SAA6B;IACzC,SAAS,EAAEA,OAAK;CACjB;;ACtHD;;;;;;;;;;;;;AAqBA;;;;;;;;;SAQgB,uBAAuB,CA  
CnC,CAAa,EAAE,IAAqB,EAAE,OAAoB;IAM5D,MAAM,MAAM,GAAG,CAAC,CAAC,KAAK,CAAC;IACvB,  
MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B,MAAM,YAAY,GAAG,IAAI,CAAC,  
cAAc,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;IACvD,IAAI,IAAI,GAAG,YAAY,CAAC;IACxB,MAAM,YAA  
Y,GAAG,YAAY,CAAC,kBAakB,CAAC,IAAI,EAAE,KAAK,CAAC,CAAC;IACIE,IAAI,WAAW,GAAG,IAAI,C  
AAC;IACvB,IAAI,kBAakB,GAAG,KAAK,CAAC;IAC/B,IAAI,YAAY,IAAI,IAAI,EAAE;QACxB,MAAM,QAA  
Q,GAAa,IAAI,KAAK,CAAC,KAAK,CAAC,CAAC;QAC5C,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,G  
AAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;YACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,MAAM,  
CAAC,YAAY,CAAC,CAAC,CAAC,CAAC;SACvC;QAED,IAAI,GAAG,YAAY,CAAC,gBAAgB,CAAC,  
IAAI,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;QACzD,WAAW;YACP,SAAS,CAAC,EAAC,MAAM,EAAE,  
EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,YAAY,EAAC,EAAE,OAAO,EAAC,CAAC,CAA  
C;QAEnE,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CA  
AC,EAAE,CAAC;QAC/C,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;QACIE,IAAI,YAAY,KAAK,GAAG,EAAE;YACxB,kBAakB,GAAG,IAAI,C  
AAC;SAC3B;KACF;IAED,OAAO,EAAC,UAAU,EAAE,WAAW,EAAE,YAAY,EAAE,IAAI,EAAE,kBAakB,EA  
AC,CAAC;AAC3E;;AC9DA;;;;;;;;;;;;;AAuBA,IAAI,OAAiE,CAAC;AAEtE,SAASA,OAAK,CAAC,OAAoB;IAC  
jC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAA  
C,CAAC,CAAC;AAC/E,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAA  
M,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,C  
AAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GA  
AG,CAAC;IACiB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,E  
AAE,kBAakB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,kB  
AAkB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;QACjE,KAAK,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,YAAY,CAAC;KACx  
B;IAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACrC,YAAY,CAAC,0BAA0B,CA  
AC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACHE,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACz  
B,YAAY,CAAC,yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;IAC9D,MAAM,UAAU,GAA

G,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC ,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAA K,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAA C,CAAC;KACrC;IAED,IAAI,kBAakB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CA AC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,MAAM,QAAQ,GAAG,YAAY,CAAC,oBAAoB,CAAC,G AAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;I AED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,SAAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WA AW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,GAAuB;CACpC;;AC9ED;;;;;;;;;;;;;AA uBA,IAAI,OAAiE,CAAC;AAEtE,SAASA,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CA AC,KAAK,CAAC,GAAG,EAAE,IAAI,WAAW,CAAC,wBAAwB,CAAC,CAAC,CAAC;AAC/E,CAAC;AAED,S AAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CA AC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAA C,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAA C,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,C AAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAakB,EAAC,GACtD,uBAAuB,C AAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,kBAakB,EAAE;QACtB,MAAM,YAAY,GA AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,KA AK,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,YAAY,CAAC;KACxB;IAED,MAAM,SAAS,GAAG,KAAK,C AAC,KAAK,CAAC,MAAM,CAAC;IACrC,YAAY,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CA AC,CAAC;IACHe,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,yBAAyB,CAAC,KAAK, CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;IAC9D,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CA AC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CA AC,CAAC;IACID,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC, MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE, CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACrC;IAED,IAAI,kBAakB, EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ, EAAE;;QAEZ,MAAM,QAAQ,GAAG,YAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAA C,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAA C;AAEM,MAAM,SAAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,EAA EA,OAAK;IACbB,UAAU,EAAE,GAAuB;CACpC;;AC9ED;;;;;;;;;;;;;AAwBA,IAAIC,UAESB,CAAC;AAE3B,S AASD,OAAK,CAAC,OAAoB;IACjCC,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,MAAM,EAAE, IAAI,aAAa;QACrD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;A ACL,CAAC;AAED,SAAS,MAAM,CACX,IAAsE;IACxE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,E AAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAC,GAAG,KAA0B,CAAC;IAC1C,MAAM,EAAC,CA AC,EAAC,GAAG,MAA4B,CAAC;IACzC,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,C AAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAA K,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,kBAakB,EAAC,GACxC,uBAAuB,CA AC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,kBAakB,EAAE;QACtB,MAAM,YAAY,GAA G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI, YAAY,KAAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;SA CxB;KACF;IAED,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CA AC,CAAC,CAAC;IAC1C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,OAAO,CAAC,CA AC;IACID,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CA AC,EAAE,CAAC;IACnD,MAAM,SAAS,GAAG,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC; IAChD,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACvCA, UAAQ,CAAC,OAAO,EAAE,QAAQ,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,KA AK,CAAC,CAAC;IAEtE,IAAI,kBAakB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,C

AAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,YAAY,GAAiB;IACxC,UAAU,  
EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;IACtC,SAAS,EAAED,OAAK;CA  
CjB;;AChFD;,,,,,;AAqBA,IAAI,WAI6D,CAAC;AAEIE,SAASA,OAAK,CAAC,OAAoB;IACjC,WAAW,GA  
AG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,aAAa;QACzD,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,O  
AAO,CACZ,IAAwE;IAC1E,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IA  
EtC,MAAM,CAAC,GAAG,MAAM,CAAC,CAAa,CAAC;IAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,C  
AAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE/C,MAAM,EAAC,UAAU,EAAE,O  
AAO,EAAE,GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;IAC1D,MAAM,QAAQ,GAAG,YAAY,CAAC,iB  
AAiB,CAC3C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC,kBAaKb,GAAG,EAAE,eAAe,C  
AAC,CAAC;IAE3E,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ  
,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MA  
AM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,O  
AAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,M  
AAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAA  
C;IACzC,MAAM,QAAQ,GAAG,QAAQ,CAAC,UAAU,CAAC;IAErC,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,  
EAAE;QAC1C,MAAM,IAAI,KAAK,CACX,4CAA4C;YAC5C,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,C  
AAC;KAC5D;IAED,IAAI,QAAQ,CAAC,aAAa,KAAK,CAAC,IAAI,QAAQ,CAAC,cAAc,KAAK,CAAC,EAAE;  
QACjE,MAAM,IAAI,KAAK,CACX,oEAAoE;YACpE,QAAQ,QAAQ,CAAC,cAAc,KAAK,QAAQ,CAAC,aAAa,I  
AAI,CAAC,CAAC;KACrE;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EA  
AE,SAAS,CAAC,CAAC;IAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CA  
AC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CA  
AC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAA  
C,EAAE,YAAY,EAAE,WAAW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAAE  
,WAAW,EAAE,QAAQ,EACzE,KAAK,CAAC,CAAC;IACX,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM  
,aAAa,GAAiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACb  
B,UAAU,EAAE,OAA2B;CACxC;;AC9FD;,,,,,;SAqBgB,OAAO,CACnB,IAAwE;IAC1E,MAAM,EAAC,M  
AAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IAC7B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IA  
CnB,MAAM,EAAC,KAAK,EAAC,GAAG,KAAK,CAAC;IAEtB,MAAM,KAAK,GAAG,IAAI,CAAC,aAAa,CAA  
C,CAAC,CAAC,KAAK,CAAC,CAAC;IAC1C,MAAM,MAAM,GAAG,IAAI,CAAC,sBAAsB,CAAC,KAAK,EA  
AE,KAAK,CAAC,CAAC;IAEzD,IAAI,CAAC,MAAM,CACP,KAAK,KAAK,IAAI,CAAC,aAAa,CAAC,MAAM,  
CAAC,EACpC,MAAM,cAAc,MAAM,gBAAgB,CAAC,CAAC,KAAK,sBAAsB;QACnE,8CAA8C,CAAC,CAAC;  
;IAGxD,IAAI,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9B,OAAO,EAAC,  
MAAM,EAAE,CAAC,CAAC,MAAM,EAAE,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,  
EAAC,CAAC;AAC3D,CAAC;AAEM,MAAM,aAAa,GAAiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAA  
E,MAAM;IACnB,UAAU,EAAE,OAA2B;CACxC;;AC5CD;,,,,,;AAuBA,IAAI,eAG2C,CAAC;AAEhD,SAA  
SA,OAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,WAAW,EAAE,IAAI,  
aAAa;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;Q  
ACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,WAAW,CAAC,IAIpB;IACC,MA  
AM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAA  
E,CAAC,EAAC,GAAG,MAAM,CAAC;IACtB,MAAM,EAAC,UAAU,EAAE,UAAU,EAAC,GAAG,KAAK,CAA  
C;IAEvC,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,SAAS,EAAE;QACID,M  
AAM,IAAI,KAAK,CACX,4DAA4D,CAAC,CAAC;KACnE;IAED,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,  
CAAC,MAAM,CAAC;IAC7B,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B,MAA  
M,WAAW,GAAG,UAAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CA  
AC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IACzE,MAAM,WAAW,GAAG,UAAU,GAAG,CAAC,C  
AAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,C

AAC,CAAC;IAEzE,MAAM,WAAW,GAAG,UAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC, CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,CAAC;IACzE,MAAM,WAAW,GAAG ,UAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC, KAAK,GAAG,CAAC,CAAC,CAAC;IAEzE,MAAM,UAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC, CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACxC,MAAM,UAU,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK, CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IAExC,MAAM,SAAS,GAAG,IAAI,CAAC,aAAa,CAAC,UAU U,CAAC,CAAC;IACjD,MAAM,SAAS,GAAG,IAAI,CAAC,aAAa,CAAC,UAU,CAAC,CAAC;IAEjD,MAAM, mBAAmB,GACrB,SAAS,KAAK,SAAS,IAAI,SAAS,KAAK,CAAC,IAAI,SAAS,KAAK,CAAC,CAAC;IAEIE,IA AI,CAAC,MAAM,CACP,KAAK,IAAI,CAAC,IAAI,KAAK,IAAI,CAAC,IAAI,mBAAmB,EAC/C,MAAM,iEAAi E;QACnE,kEAAkE;QACIE,wBAAwB,UAU,UAU,UAU,IAAI,CAAC,CAAC;IAEpE,MAAM,iBAAiB,GACn B,SAAS,GAAG,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC, GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;IACxE,MAAM, QAAQ,GAAG,iBAAiB,CAAC,MAAM,CAAC,CAAC,WAAW,EAAE,WAAW,CAAC,CAAC,CAAC;IAEtE,IAAI, CAAC,MAAM,CACP,WAAW,KAAK,WAAW,EAC3B,MAAM,kCAakC,WAAW,SAAS;QACxD,GAAG,WAA W,4BAA4B,CAAC,CAAC,KAAK,OAAO;QACxD,GAAG,CAAC,CAAC,KAAK,mBAAmB,UAU,EAAE;QACz C,mBAAmB,UAU,cAAc,CAAC,CAAC;IAErD,MAAM,QAAQ,GAAG,UAU,GAAG,CAAC,SAAS,EAAE,WA AW,EAAE,WAAW,CAAC;QACrC,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC,CAAC;IACpE,MAAM, QAAQ,GAAG,UAU,GAAG,CAAC,SAAS,EAAE,WAAW,EAAE,WAAW,CAAC;QACrC,CAAC,SAAS,EAAE, WAAW,EAAE,WAAW,CAAC,CAAC;;IAGpE,MAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EA AC,CAAC,EAAE,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC, CAAC,CAAC;IACzE,MAAM,GAAG,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,CAAC, EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAEzE,MA AM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CA AC;IACnD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,C AAC,EAAE,CAAC;IAEnD,MAAM,OAAO,GAAG,UAU,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,G AAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACzD,MAAM,QAAQ,GAAG,UAU,GAAG,GAAG, CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,GAAG,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACID,MAAM, QAAQ,GAAG,IAAI,CAAC,GAAG,CAAC,SAAS,EAAE,SAAS,CAAC,CAAC;IAEhD,MAAM,GAAG,GAAG,OA AO,CAAC,UAU,CAAC,CAAC,QAAQ,EAAE,OAAO,EAAE,QAAQ,CAAC,EAAE,GAAG,CAAC,KAAK,CAA C,CAAC;IACzE,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAA C,CAAC,EAAE,CAAC;IAEnD,MAAM,WAAW,GAAG,IAAI,UAU,CAAC,IAAI,UAU,CAAC,GAAG,CAAC, KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACrE,MAAM,WAAW,GAAG,IAAI,UAU,CAAC,IAAI,UAU,C AAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAErE,eAAe,CACX,KAAK,EAAE,WAAW,EA AE,GAAG,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,EAAE,WAAW,EACxD,GAAG,CAAC,KAAK,CAAC.M AAM,EAAE,UAU,EAAE,UAU,EAAE,KAAK,CAAC,CAAC;IAErD,OAAO,CAAC,WAAW,CAAC,GAAG,C AAC,MAAM,CAAC,CAAC;IAChC,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAEhC, GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,iBAAi B,GAAiB;IAC7C,UAU,EAAE,WAAW;IACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IAChB, UAAU,EAAE,WAA+B;CAC5C;;ACjID;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AA CA;AACa;AACa;AACa;AACa;AACa;AAEO,SAAS,UAU,CAAC,MAAM,EAAE,QAAQ,EAAE,KAAK,EA AE,YAAY,EAAE;AACIE,IAAI,MAAM,OAAO,GAAG,IAAI,CAAC,iBAAiB,CAAC,KAAK,EAAE,IAAI,CAAC, aAAa,CAAC,QAAQ,CAAC,CAAC,CAAC;AAChF,IAAI,IAAI,YAAY,IAAI,KAAK,KAAK,QAAQ,EAAE;AAC5 C;AACa,QAAQ,IAAI,MAAM,GAAG,CAAC,CAAC;AACvB,QAAQ,MAAM,CAAC,OAAO,CAAC,KAAK,IAA I;AAChC,YAAY,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC;AACzD, YAAY,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC;AAC5C,YAAY,MAAM, IAAI,IAAI,CAAC;AAC3B,SAAS,CAAC,CAAC;AACX,KAAK;AACL,SAAS;AACT,QAAQ,IAAI,SAAS,GAAG, CAAC,CAAC;AAC1B,QAAQ,MAAM,CAAC,OAAO,CAAC,KAAK,IAAI;AAChC,YAAY,MAAM,WAAW,GA AG,KAAK,KAAK,QAAQ;AACID,gBAAgB,YAAY,CAAC,sBAAsB,CAAC,KAAK,CAAC,IAAI,CAAC;AAC/D,

gBAAgB,KAAK,CAAC,IAAI,CAAC;AAC3B,YAAY,IAAI,IAAI,GAAG,CAAC,CAAC;AACzB,YAAY,KAAK,I  
AAI,GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,EAAE,GA  
AG,EAAE;AAC3D,gBAAgB,MAAM,MAAM,GAAG,GAAG,GAAG,QAAQ,CAAC,CAAC,CAAC,GAAG,SAAS,  
CAAC;AAC7D,gBAAgB,KAAK,IAAI,GAAG,GAAG,CAAC,EAAE,GAAG,GAAG,KAAK,CAAC,KAAK,CAAC  
,CAAC,CAAC,EAAE,EAAE,GAAG,EAAE;AAC/D,oBAAoB,OAAO,CAAC,MAAM,GAAG,GAAG,CAAC,GAA  
G,WAAW,CAAC,IAAI,EAAE,CAAC,CAAC;AACHe,iBAaiB;AACjB,aAAa;AACb,YAAY,SAAS,IAAI,KAAK,  
CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;AACxC,SAAS,CAAC,CAAC;AACX,KAAK;AACLI,IAAI,OAAO,O  
AAO,CAAC;AACnB;;AC7CA;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;  
AACa;AACa;AACa;AACa;AACa;AAEO,SAAS,SAAS,CAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KAAK,EA  
AE;AACpD,IAAI,MAAM,aAAa,GAAG,KAAK,KAAK,IAAI,CAAC;AACzC,IAAI,MAAM,2BAA2B,GAAG,KA  
AK,GAAG,IAAI,IAAI,IAAI,GAAG,CAAC,CAAC;AACjE,IAAI,MAAM,2BAA2B,GAAG,IAAI,GAAG,KAAK,I  
AAI,IAAI,GAAG,CAAC,CAAC;AACjE,IAAI,IAAI,aAAa,IAAI,2BAA2B;AACpD,QAAQ,2BAA2B,EAAE;AACr  
C,QAAQ,OAAO,IAAI,CAAC,mBAAmB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC;AACID,KAAK;AACLI,IAA  
I,MAAM,WAAW,GAAG,IAAI,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,KAAK,IAA  
I,IAAI,CAAC,CAAC,CAAC;AACnE,IAAI,MAAM,MAAM,GAAG,IAAI,CAAC,mBAAmB,CAAC,WAAW,EAA  
E,KAAK,CAAC,CAAC;AACHe,IAAI,IAAI,IAAI,GAAG,KAAK,IAAI,IAAI,KAAK,CAAC,EAAE;AACpC;AAC  
A;AACa,QAAQ,IAAI,GAAG,CAAC,CAAC,CAAC;AACIB,KAAK;AACLI,IAAI,MAAM,CAAC,CAAC,CAAC,  
GAAG,KAAK,CAAC;AACtB,IAAI,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,MAAM,CAAC,M  
AAM,EAAE,CAAC,EAAE,EAAE;AAC5C,QAAQ,MAAM,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,  
GAAG,CAAC,CAAC,GAAG,IAAI,CAAC;AACzC,KAAK;AACLI,IAAI,OAAO,MAAM,CAAC;AACIB;;ACrCa;  
AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;  
AAGO,SAAS,SAAS,CAAC,IAAI,EAAE,KAAK,EAAE,IAAI,EAAE,KAAK,EAAE,KAAK,EAAE;AAC3D,IAAI,  
MAAM,WAAW,GAAG,UAAU,CAAC,gBAAgB,CAAC,KAAK,EAAE,KAAK,EAAE,IAAI,CAAC,CAAC;AACx  
E,IAAI,MAAM,MAAM,GAAG,IAAI,CAAC,aAAa,CAAC,IAAI,CAAC,CAAC;AAC5C,IAAI,MAAM,QAAQ,GA  
AG,IAAI,CAAC,cAAc,CAAC,KAAK,CAAC,CAAC;AACHd,IAAI,IAAI,WAAW,EAAE;AACrB,QAAQ,MAAM,  
UAAU,GAAG,UAAU,CAAC,iBAaiB,CAAC,KAAK,EAAE,QAAQ,CAAC,CAAC;AACzE,QAAQ,IAAI,KAAK,  
KAAK,QAAQ,EAAE;AACHc,YAAY,OAAO,IAAI,CAAC,KAAK,CAAC,UAAU,EAAE,UAAU,GAAG,MAAM,  
CAAC,CAAC;AAC/D,SAAS;AACT,QAAQ,OAAO,IAAI,CAAC,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAG,M  
AAM,CAAC,CAAC;AAC9D,KAAK;AACLI,IAAI,MAAM,WAAW,GAAG,KAAK,KAAK,QAAQ;AAC1C,QAAQ  
,YAAY,CAAC,sBAAsB,CAAC,IAAI,CAAC;AACjD,QAAQ,IAAI,CAAC;AACb,IAAI,MAAM,KAAK,GAAG,M  
AAM,CAAC,KAAK,EAAE,KAAK,EAAE,WAAW,CAAC,CAAC;AACpD,IAAI,MAAM,MAAM,GAAG,MAAM  
,CAAC,IAAI,EAAE,KAAK,CAAC,CAAC;AACvC,IAAI,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAA  
G,MAAM,CAAC,IAAI,EAAE,EAAE,CAAC,EAAE;AAC1C,QAAQ,MAAM,MAAM,GAAG,MAAM,CAAC,UA  
AU,CAAC,CAAC,CAAC,CAAC;AAC5C,QAAQ,MAAM,KAAK,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC,G  
AAG,EAAE,CAAC,KAAK,GAAG,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;AAC7D,QAAQ,MAAM,  
CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,GAAG,KAAK,CAAC,EAAE,GAAG,MAAM,CAAC,CAAC;  
AACnD,KAAK;AACLI,IAAI,IAAI,KAAK,KAAK,QAAQ,EAAE;AAC5B,QAAQ,OAAO,YAAY,CAAC,sBAAsB,  
CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;AACIE,KAAK;AACLI,IAAI,OAAO,MAAM,CAAC,MAAM,CAAC  
;AACzB;;AC3CA;,,,,,,;SAsBgB,KAAK,CACjB,IAAoE;IACtE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,  
EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,IAAI,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEID  
,MAAM,CAAC,MAAM,EAAE,KAAK,CAAC,GAAG,UAAU,CAAC,gBAAgB,CAAC,CAAC,EAAE,KAAK,EA  
AE,IAAI,CAAC,CAAC;IAEpE,MAAM,WAAW,GAAG,UAAU,CAAC,gBAAgB,CAAC,CAAC,CAAC,KAAK,E  
AAE,MAAM,EAAE,KAAK,CAAC,CAAC;IACxE,MAAM,KAAK,GAAG,OAAO,CAAC,QAAQ,CAAC,CAAC,C  
AAC,MAAM,CAAC,CAAC;IACzC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,CAAC,  
CAAC,KAAK,CAAC,CAAC;IAC/C,MAAM,QAAQ,GAAG,IAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CA  
AC,CAAC;IAC9C,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CA  
AC,CAAC;IAEID,IAAI,WAAW,EAAE;QACf,MAAM,UAAU,GAAG,UAAU,CAAC,iBAaiB,CAAC,MAAM,EA  
AE,QAAQ,CAAC,CAAC;QAEIE,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;YACxB,OAAO,CAAC,WA

AW:gBACd,KAA5B;qBACIB,KAAK,CAAC,UAAU,EAAE,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC;SACpE;aAAM;YACL,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;YACHd,OAAO,CAAC,GAAG,CACN,KAAoB;iBACHB,QAAQ,CAAC,UAAU,EAAE,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;SACxE;QAED,OAAO,GAAG,CAAC;KACZ;IAED,IAAI,CAAC,CAAC,KAAK,KAAK,QAAQ,EAAE;QACxB,MAAM,GAAG,GAAGE,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;QACjE,OAAO,CAAC,WAAW,GAAG,GAaMB,CAAC;QAC1C,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,OAAO,GAAG,OAAO,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC;IACHd,MAAM,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAC5B,IAAI,IAAI,KAAK,CAAC,EAAE;QACd,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EAAE,MAA0B,EACrE,KAAyB,CAAC,CAAC;KACHc;SAAM,IAAI,IAAI,KAAK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACtD,MAAKC,EAAE,KAAiC,CAAC,CAAC;KAC5E;SAAM,IAAI,IAAI,KAAK,CAAC,EAAE;QACrB,OAAO,CACH,KAAmB,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,EAAE,OAAO,EACnE,MAA0C,EAC1C,KAAyC,CAAC,CAAC;KACHd;SAAM;QACL,MAAM,GAAG,GACLA,SAAY,CAAC,KAAK,EAAE,MAAM,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAE,CAAC;QACvE,OAAO,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC;KACIB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,OAAe,EAC/C,OAAgC,EAAE,KAAuB,EACzD,IAAsB;IACxB,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QACIC,MAAM,OAAO,GAAG,CAAC,GAAG,OAAO,GAAG,MAAM,CAAC;QACrC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;QACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;KACtB;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,OAAgC,EAAE,KAA+B,EACjE,IAA8B;IACHc,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;YACIC,MAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;YACrD,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;YACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;SACtB;KACF;AACH,CAAC;AAED,SAAS,OAAO,CACZ,KAA8B,EAAE,QAAgB,EAAE,QAAgB,EACIE,QAAgB,EAAE,OAAgC,EACID,KAAuC,EACvC,IAAsC;IACxC,IAAI,SAAS,GAAG,CAAC,CAAC;IACIB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IACxB,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,IAAI,GAAG,MAAM,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC;IAC9B,MAAM,MAAM,GAAG,KAAK,CAAC,CAAC,CAAC,CAAC;IAExB,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;YACIC,KAAK,IAAI,CAAC,GAAG,MAAM,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;gBACIC,MAAM,OAAO,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,CAAC,GAAG,QAAQ,GAAG,MAAM,CAAC;gBACpE,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,OAAO,EAAE,OAAO,GAAG,IAAI,CAAC,CAAC,CAAC,CAAC,EAAE,SAAS,CAAC,CAAC;gBACnE,SAAS,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC;aACtB;SACF;KACF;AACH,CAAC;AAEM,MAAM,WAAW,GAAiB;IACvC,UAAU,EAAE,KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC;;AChJD;,,,,,;AAyBA,SAAS,cAAc,CAAC,IAIvB;IACC,MAAM,EAAE,MAAM,EAAE,OAAO,EAAE,KAAK,EAAE,GAAG,IAAI,CAAC;IACtC,MAAM,EAAE,CAAC,E



AAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAE,UAAU,EAAE,KAAC,EAAC,GAAG,KAAC,CAAC;IAEIC,MAAM,IAAI,GAAG,UAAU,CAAC,MAAM,CAAC,CAAC,CAAC,EAAE,CAAC,KAAC,CAAC,GAAG,CAAC,CAAC,CAAC;IAEhD,MAAM,QAAQ,GAAG,YAAI,CAAC,WAAW,CAAC,CAAC,CAAC,KAAC,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IACrE,MAAM,QAAQ,GAAG,YAAI,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC9E,MAAM,gBAAGB,GACIB,YAAI,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAC,EAAE,UAAU,EAAE,IAAI,CAAC,CAAC;IACHe,MAAM,gBAAGB,GACIB,YAAI,CAAC,mBAAmB,CAAC,KAAC,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAC/D,MAAM,SAAS,GACX,YAAI,CAAC,YAAI,CAAC,gBAAGB,EAAE,KAAC,EAAE,UAAU,CAAC,MAAM,CAAC,CAAC;IAEIE,MAAM,SAAS,GAAG,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAC,EAAE,EAAC,KAAC,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IAC5E,MAAM,WAAW,GACb,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,SAAS,EAAC,EAAE,OAAO,EAAE,KAAC,EAAE,EAAC,IAAI,EAAE,QAAQ,EAAC,EAAC,CAAC,CAAC;IACIE,MAAM,mBAAmB,GAAG,OAAO,CAC/B,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,OAAO,EAAE,KAAC,EAAE,EAAC,KAAC,EAAE,gBAAGB,EAAC,EAAC,CAAC,CAAC;IAC3E,MAAM,MAAM,GAAG,KAAC,CAAC;QACnB,MAAM,EAAE,EAAC,CAAC,EAAE,mBAAmB,EAAC;QACChC,OAAO;QACP,KAAC,EAAE,EAAC,KAAC,EAAE,gBAAGB,EAAE,IAAI,EAAE,SAAS,EAAC;KACID,CAAC,CAAC;IAEH,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IACtC,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;IACxC,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;IAEtC,OAAO,MAAM,CAAC;AAChB,CAAC;AAEM,MAAM,oBAAB,GAAB;IAChD,UAAU,EAAE,cAAc;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,cAAc;CAC/C;;ACnED;;;;;;;SAsBgB,IAAI,CACb,IAAK;IAEpE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAC,EAAE,EAAC,KAAC,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,KAAC,CAAC,CAAC;IAC/C,MAAM,MAAM,GAAG,OAAO,CAAC,kBAAB,CAAC,CAAC,CAAC,CAAC;IAC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAAB,CAAC,GAAG,CAAC,CAAC;IAChD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,UAAU,GAAB;IACtC,UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,IAAwB;CACrC;;ACrCD;::::::::::;AAoBO,MAAM,UAAU,GAAB,uBAAB,CAAC,IAAI,CAAC;;ACpBrE;::::::::::;AAqBA,IAAI,QAAwE,CAAC;AAE7E,SAASF,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,WAAW,EAAE,IAAI,aAAa;QACID,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,YAAI,EAAE,YAAI,EAAC,GAAG,KAAC,CAAC;IAC3C,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAC,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACjD,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,YAAI,EAAE,YAAI,EAAE,KAAC,CAAC,CAAC;IACjD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,iBAAB,GAAB;IAC7C,UAAU,EAAE,WAAW;IACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACpDD;::::::::::;SAwBgB,MAAM,CACIB,IAAsE;IACxE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAE/B,MAAM,IAAI,GAAG,IAAI,CAAC,cAAc,CAAC,IAAI,CAAC,KAAC,CAAC,IAAI,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC;IAEtE,IAAI,QAAQ,GAAG,YAAI,CAAC,eAAe,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,EAAE,IAAI,CAAC,CAAC;;IAG5E,MAAM,OAAO,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAC,CAAC,GAAG,CAAC,CAAC,CAAC;IACpE,IAAI,OAAO,CAAC,MAAM,KAAC,CAAC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,CAAC,CAAC,CAAC,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;KACrD;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,MAAM,CAAC,CAAC,CAAC,CAAC,KAAC,CAAC,CAAC;IAEID,IAAI,IAAI,CAAC,aAAa,CAAC,QAAQ,CAAC,KAAC,CAAC,EAAE;QACtC,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,MAAM,GAAG,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,CAAC,CAAC,KAAC,CAAC,CAAC;IACzC,YAAI,CAAC,sBAAsB,CAAC,MAAM,EAAE,IAAI,CAAC,CA



G,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,MAAM,cA  
Ac,GAAG,QAAQ,CAAC,WAAW,CAAC;IAC5C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAA  
K,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;IAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QAC1C  
,MAAM,IAAI,KAAK,CACX,mDAAmD;YACnD,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC;KAC5D  
;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;I  
AC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC;IACnD,UAAU,CACN,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,C  
AAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QAAQ,EAAE,YA  
AY,EAC/D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC5D,cAAc,EAA  
E,aAAa,EAAE,YAA,Y,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;IAC3B,OAAO,G  
AAG,CAAC;AACb,CAAC;AAEM,MAAM,YAA,Y,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,  
MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,MAA0B;CACvC;;ACtGD;;:::;;AAqBA,IAAI,  
uBAQ8C,CAAC;AAEnD,SAASA,OAAK,CAAC,OAAoB;IACjC,uBAAuB,GAAG,OAAO,CAAC,IAAI,CAAC,K  
AAK,CAAC,mBAAmB,EAAE,IAAI,EAAE;QACtE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;  
KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,mBAAmB,CAAC,IAI5B;IACC,MAAM,EAAC,OAAO,EAAE,  
MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,EAAE,EAAE,MAAM,EAAC,GAAG,M  
AAM,CAAC;IAC5B,MAAM,EAAC,OAAO,EAAE,GAAG,EAAE,UAAU,EAAE,eAAe,EAAE,UAAU,EAAC,GA  
AG,KAAK,CAAC;IAEtE,MAAM,SAAS,GAAG,CAAC,CAAC;IAEpB,MAAM,WAAW,GAAG,YAA,Y,CAAC,u  
BAAuB,CAAC,UAAU,CAAC,CAAC;IACrE,MAAM,QAAQ,GAAG,YAA,Y,CAAC,iBAAiB,CAC3C,UAAU,EA  
AE,MAAM,CAAC,KAAyC,EAAE,OAAO,EACrE,SAAS,EAAE,GAAG,EAAE,eAAe,EAAE,KAAK,kBAAkB,W  
AAW,CAAC,CAAC;IACzE,MAAM,EACJ,SAAS,EACT,YAA,Y,EACZ,WAAW,EACX,UAAU,EACV,QAAQ,EA  
CR,OAAO,EACP,WAAW,EACX,SAAS,EACT,QAAQ,EACR,YAA,Y,EACZ,WAAW,EACZ,GAAG,QAAQ,CAA  
C;IAEb,MAAM,MAAM,GAAG,YAA,Y,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACv  
D,MAAM,OAAO,GAAG,WAAW,GAAG,CAAC,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IAExD,MA  
AM,cAAc,GAAG,QAAQ,CAAC,UAAU,KAAK,cAAc,CAAC;IAC9D,MAAM,SAAS,GAAG,IAAI,CAAC,cAAc,  
CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC;IACxD,MAAM,SAAS,GAAG,IAAI,CAAC,cAAc,CAAC,EAAE,CA  
AC,KAAK,CAAC,CAAC;IACbD,MAAM,CAAC,KAAK,EAAE,KAAK,EAAE,KAAK,CAAC,GAAG,IAAI,CAA  
C,cAAc,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC;IACbE,MAAM,YAA,Y,GAAG,SAAS,CAAC,CAAC,CAAC  
,CAAC;IACIC,MAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,C  
AAC,CAAC;IACbE,MAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC;IA  
CrD,MAAM,cAAc,GAAG,cAAc,GAAG,CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACzD,MAAM,YAA  
Y,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACIC,MAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,CAAC,  
CAAC,GAAG,SAAS,CAAC,CAAC,CAAC,CAAC;IACbE,MAAM,UAAU,GAAG,cAAc,GAAG,SAAS,CAAC,C  
AAC,CAAC,GAAG,CAAC,CAAC;IACrD,MAAM,cAAc,GAAG,cAAc,GAAG,CAAC,GAAG,SAAS,CAAC,CAA  
C,CAAC,CAAC;IAEzD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,SAAS,  
CAAC,CAAC;IAC5D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,EAAE,  
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACjD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,  
CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,uBAAuB,CACnB,IAAI,EAAE,QAAQ,EAAE  
,SAAS,EAAE,YAA,Y,EAAE,WAAW,EAAE,QAAQ,EAAE,OAAO,EACvE,UAAU,EAAE,SAAS,EAAE,QAAQ,E  
AAE,WAAW,EAAE,YAA,Y,EAAE,WAAW,EACvE,MAAM,EAAE,OAAO,EAAE,KAAK,EAAE,KAAK,EAAE,  
KAAK,EAAE,YAA,Y,EAAE,UAAU,EAC9D,UAAU,EAAE,cAAc,EAAE,YAA,Y,EAAE,UAAU,EAAE,UAAU,E  
ACbE,cAAc,EAAE,KAAK,CAAC,CAAC;IAC3B,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,yBAAyB,  
GAAiB;IACrD,UAAU,EAAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,U  
AAU,EAAE,mBAAuC;CACpD;;AC/HD;;:::;;AAqBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAA

C;;ACrBnE,,,,,,,,,,,,,,,,;AAoBO,MAAM,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC;;ACpBrE,,,,,,,,,,,,,,,,;AAuBA  
;ACA,IAAK,mBAGJ;AAHD,WAAK,mBAAmB;IACtB,qEAAY,CAAA;IACZ,mEAAW,CAAA;AACb,CAAC,E  
AHI,mBAAmB,KAAAnB,mBAAmB,QAGvB;AAED,IAAI,iBAGkE,CAAC;AAEvE,SAASA,OAAK,CAAC,OAAo  
B;IACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,aAAa,EAAE,IAAI,WAAW;QACnE,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,aAAa,CAAC,IAItB;IACC,MAAM,EAA  
C,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,MAAM,EAAE,kBAA  
kB,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IACrD,MAAM,EAAC,KAAK,EAAE,KAAK,EAAE,MAAM,EA  
AC,GAAG,MAAM,CAAC;IAEtC,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IA  
EhC,MAAM,CAAC,UAAU,EAAE,SAAS,CAAC,GAAG,QAA4B,CAAC;IAC7D,MAAM,QAAQ,GAAG,CAAC,  
QAAQ,EAAE,UAAU,EAAE,SAAS,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC;IAEnE,IA  
AI,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IACrD,IAAI  
,UAAU,CAAC;IACf,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,UAAU,GAAG,IAAI,CAAC,EAA  
C,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,  
SAAS,EAAC,EAAC,CAAC,CAAC;QAC5E,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,C  
AAC,MAAM,CAAC,CAAC;KACvD;IAED,MAAM,QAAQ,GAAG,UAAU,CAAC,EAAE,CAAC;IAC/B,MAAM,  
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I  
ACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC  
,EAAE,CAAC;IAEzD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;I  
ACpD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC;IAEnD,MAAM,gBAAgB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,KAAK,CAAC,KAAK,C  
AAC,CAAC,MAAM,CAAC,CAAC;IAE5E,iBAAiB,CACb,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,QAAQ,E  
AAE,gBAAgB,EAAE,UAAU,EACnE,SAAS,EACT,mBAAmB,CAAC,MAAgD,CAAC,EACrE,kBAaKB,EAAE,K  
AAK,CAAC,CAAC;IAE/B,IAAI,UAAU,IAAI,IAAI,EAAE;QACtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,  
MAAM,CAAC,CAAC;KACxC;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,mBAAmB,GAAiB;IA  
C/C,UAAU,EAAE,aAAa;IACzB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,aA  
AiC;CAC9C;;ACjGD,,,,,,,,,,,,,,,,;AAyBA,IAAI,UACsE,CAAC;AAE3E,SAASA,OAAK,CAAC,OAAoB;IACjC,UA  
AU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,aAAa;QACvD,QAAQ;QACR,QAAQ  
;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,MAAM,  
CACpB,IAAsE;IAEtE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,M  
AAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,IAAI,EAAE,SAAS,EAAE,OAAO,EA  
AC,GAAG,KAAK,CAAC;IACzC,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7B,IA  
AI,CAAC,MAAM,CAAC,CAAC,CAAC,KAAK,KAAK,SAAS,IAAI,CAAC,CAAC,KAAK,KAAK,OAAO,EACt  
D,MAAM,2BAA2B,CAAC,CAAC,KAAK,8BAA8B,CAAC,CAAC;;IAE1E,MAAM,WAAW,GAAG,YAAY,CAA  
C,kBAaKB,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,CAAC;IACnE,IAAI,SAAS,GAAG,CAAC,CAAC;I  
ACIB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,SAAS,GAAG,SAAS,CAAC,EAAC,MAAM,EAAE,EAAC,CAA  
C,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,WAAW,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;KAC3E;I  
ACD,MAAM,YAAY,GAAG,YAAY,CAAC,gBAAgB,CAAC,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,CAAC,  
CAAC;IACHE,YAAY,CAAC,0BAA0B,CAAC,QAAQ,EAAE,CAAC,YAAY,CAAC,EAAE,KAAK,CAAC,CAAC;  
IAEzE,MAAM,WAAW,GAAG,OAAO,CAAC,UAAU,CAAC,SAAS,CAAC,KAAK,EAAE,SAAS,CAAC,KAAK,  
CAAC,CAAC;IACzE,MAAM,QAAQ,GAAG,SAAS,CAAC,KAAK,CAAC,YAAY,CAAC,CAAC;IAC/C,MAAM,  
WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I  
AC/D,MAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,E  
AAE,CAAC;IACnE,UAAU,CAAC,WAAW,EAAE,SAAS,GAAG,CAAC,GAAG,CAAC,EAAE,OAAO,GAAG,C  
AAC,GAAG,CAAC,EAAE,QAAQ,EACzD,aAAa,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CA  
AC;;IAG7C,IAAI,GAAG,GAAG,WAAW,CAAC;IACtB,IAAI,WAAW,KAAK,IAAI,EAAE;QACxB,MAAM,eAA  
e,GAAG,YAAY,CAAC,sBAAsB,CAAC,WAAW,CAAC,CAAC;QACzE,GAAG,GAAG,SAAS,CACb,EAAC,MA  
AM,EAAE,EAAC,CAAC,EAAE,WAAW,EAAC,EAAE,KAAK,EAAE,EAAC,IAAI,EAAE,eAAe,EAAC,EAAE,O

AAO,EAAC,CAAC,CAAC;QACvE,OAAO,CAAC,WAAW,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC;QACtC,  
OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IACD,OAAO,GAAG,CAAC;AAC  
b,CAAC;AAEM,MAAM,YAA Y,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,S  
AAS,EAAEA,OAAK;IACbB,UAAU,EAAE,MAA0B;CACvC;;ACIFD;;;;;;;AAqBA,IAAI,gBAGuC,CAAC;  
AAE5C,SAASA,OAAK,CAAC,OAAoB;IACjC,gBAAGB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,YAA  
Y,EAAE,IAAI,WAAW;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAA  
O;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,YAA Y,CAAC,IAI5B;I  
ACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CA  
AC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,SAAS,EAAE,UAAU,EAAC,GAAG,KAAK,CAAC;IAE  
tC,MAAM,SAAS,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IAC7B,MAAM,WAAW,GAAG,CA  
AC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAA  
C,CAAC,CAAC,CAAC;IACtE,MAAM,UAAU,GAAG,CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK  
,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACrE,MAAM,UAAU,GAAG,  
CAAC,UAAU,KAAK,MAAM,IAAI,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,C  
AAC,CAAC,CAAC,CAAC;IAErE,MAAM,YAA Y,GAAG,WAAW,GAAG,SAAS,CAAC;IAC7C,MAAM,WAAW  
,GAAG,UAAU,GAAG,SAAS,CAAC;IAC3C,MAAM,WAAW,GAAG,UAAU,IAAI,SAAS,GAAG,SAAS,CAAC,  
CAAC;IAEzD,MAAM,WAAW,GAAG,CAAC,UAAU,KAAK,MAAM;QACtC,CAAC,SAAS,EAAE,YAA Y,EAA  
E,WAAW,EAAE,WAAW,CAAC;QACnD,CAAC,SAAS,EAAE,WAAW,EAAE,YAA Y,EAAE,WAAW,CAAC,C  
AAC;IAExD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,SAAS,CAAC,CAAC;IAEvD,  
MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9C,  
MAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IACrB,MAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI,UAA  
U,CAAC,IAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAExE,M  
AAM,gBAAGB,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,CAAC;I  
AC5E,MAAM,eAAe,GACjB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,WAAW,CAAC,  
CAAC,CAAC,MAAM,CAAC,CAAC;IAE5E,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,  
GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,YAA Y,GAAG,UAAU,KAAK,MAAM,GAA  
G,CAAC,GAAG,CAAC,CAAC;IACnD,gBAAGB,CACZ,GAAG,EAAE,SAAS,EAAE,YAA Y,EAAE,aAAa,EAAE,  
CAAC,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,EAC/D,gBAAGB,EAAE,eAAe,EAAE,WAAW,CAAC,MAA  
M,EAAE,KAAK,CAAC,CAAC;IAEIE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,kBAaB,GAAiB;IA  
C9C,UAAU,EAAE,YAA Y;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,  
YAAgC;CAC7C;;ACvFD;;;;;;;AAqBA,IAAI,mBAMsB,CAAC;AAE3B,SAASA,OAAK,CAAC,OAAoB;IA  
CjC,mBAAmB;QACf,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,qBAAGB,EAAE,IAAI,aAAa;YACzD,QAAQ;Y  
ACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;  
YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;  
YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,eAAe,CAAC,IAIx  
B;IACC,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEtC,MAAM,EAAC,C  
AAC,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;IAC3B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,  
GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,EAAC,OAAO,  
EAAE,SAAS,EAAE,GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;IAEzD,MAAM,UAAU,GAAG,SAAS,IA  
AI,IAAI,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,GAAG,SAAS,CAAC;IAEID,MAAM,QAAQ,GAAG,YAA Y  
,CAAC,iBAaB,CAC1C,CAAc,CAAC,KAAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EACzD,UAAwC,E  
AAE,GAAG,EAAE,eAAe,EAC/D,IAAI,iBAaB,CAAC;IAEIB,MAAM,YAA Y,GAAG,QAAQ,CAAC,YAA Y,CA  
AC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAA  
C,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IAC  
xC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,C  
AAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,MAAM,aAAa  
,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,MAAM,YAA Y,GAAG,QAAQ,CAAC,YAA Y,CAAC;IAC3C,MAA

M,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IA  
C1C,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAC5C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,C  
AAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CAAC;IAE3D,IAAI,QAAQ,CAAC,UAAU,KAAK,cAA  
c,EAAE;QAC1C,MAAM,IAAI,KAAK,CACX,kEAAkE;YACIE,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,C  
AAC;KAC5D;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,C  
AAC,CAAC;IAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;IACnD,mBAAmB,CACf,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,  
EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,QA  
AQ,EAAE,YAA Y,EAC/D,WAAW,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAC  
5D,cAAc,EAAE,aAAa,EAAE,YAA Y,EAAE,WAAW,EAAE,aAAa,EACvE,cAAc,EAAE,KAAK,CAAC,CAAC;IA  
C3B,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,2BAA2B,GAAiB;IACvD,UAAU,EAAE,qBAAqB;IACj  
C,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,eAAmC;CACbD;;AC7GD;;;;  
;;;AAoBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC;;ACpBnE;;;;  
;;;AAoBA,MAAMI,uBAAqB  
B,GAAG,KAAK,CAAC;AAC7B,MAAM,WAAW,GACpB,wBAAwB,CAAC,KAAK,EAAEA,uBAAqB,EAAE,M  
AAM,CAAC;;ACtBIE;;;;  
;;;AAoBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,EAAE,SAAS,CAAC;;A  
CpB9E;;;;  
;;;SAsBgB,UAAU,CAAC,IAI1B;IACC,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EA  
AC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,CAAC;IACvB,MAAM,EAAC,GA  
AG,EAAC,GAAG,KAAK,CAAC;IAEpB,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IA  
CrC,MAAM,QAAQ,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IACrC,IAAI,IAAI,GAAG,GAA  
G,CAAC;IACf,IAAI,GAAG,GAAG,CAAC,EAAE;;QAEX,IAAI,CAAC,MAAM,CACP,EAAE,SAAS,GAAG,CA  
AC,CAAC,IAAI,GAAG,EACvB,MAAM,iCAAiC,EAAG,SAAS,GAAG,CAAC,CAAC,KACpD,SAAS,GAAG,CA  
AC,CAAC;QACtB,IAAI,GAAG,SAAS,GAAG,GAAG,GAAG,CAAC,CAAC;KAC5B;IACD,QAAQ,CAAC,MAA  
M,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC;IAE5B,OAAO,OAAO,CAAC,EAAC,MAAM,EAAE,  
EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,QAAQ,EAAC,EA  
AC,CAAC,CAAC;AAC1E,CAAC;AAEM,MAAM,gBAAgB,GAAiB;IAC5C,UAAU,EAAE,UAAU;IACtB,WAA  
W,EAAE,MAAM;IACnB,UAAU,EAAE,UAA8B;CAC3C;;ACnDD;;;;  
;;;SAsBgB,IAAI,CAAC,IAA8C;IACj  
E,MAAM,EAAC,KAAK,EAAE,EAAC,KAAK,EAAE,KAAK,EAAE,KAAK,EAAC,EAAE,OAAO,EAAC,GAAG,  
IAAI,CAAC;IACrD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,KAAK,CAAC,CAAC;I  
AC7C,MAAM,OAAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;IACbD,OAAO,CAAC,IAAI,  
CAAC,KAAe,CAAC,CAAC;IAC9B,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,UAAU,GAAiB;IACtC,  
UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,IAAwB;CACrC;;ACICD;;;;  
;;;AA  
qBA,IAAI,iBAE2C,CAAC;AAEhD,SAASJ,OAAK,CAAC,OAAoB;IACjC,iBAAiB,GAAG,OAAO,CAAC,IAAI,C  
AAC,KAAK,CAAC,aAAa,EAAE,IAAI,aAAa;QACrE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QAC  
R,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,aAAa,CACzB,IAAyD;IAC3D,MAAM,EAAC  
,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,CAAC;I  
AEvB,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,KAAK,  
CAAC,CAAC;IACzD,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;IACvD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,  
CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,CAAC,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,  
WAAW,CAAC,GAAG,KAAK,CAAC,KAAK,CAAC;IAEIE,iBAAiB,CACb,OAAO,EAAE,KAAK,EAAE,WAAW  
,EAAE,UAAU,EAAE,WAAW,EAAE,KAAK,CAAC,CAAC;IACjE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,  
MAAM,mBAAmB,GAAiB;IAC/C,UAAU,EAAE,aAAa;IACzB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,aA  
AiC;IAC7C,SAAS,EAAEA,OAAK;CACjB;;ACzDD;;;;  
;;;AAmBO,MAAM,WAAW,GAAiB,uBAAuB,CAA  
C,KAAK,CAAC;;ACnBvE;;;;  
;;;AAqBA,MAAMI,uBAAqB,GAAG,KAAK,CAAC;AAC7B,MAAM,cAAc,G  
ACvB,wBAAwB,CAAC,QAAQ,EAAEA,uBAAqB,CAAC;;ACvB7D;;;;  
;;;AAqBA,IAAI,aAEgE,CAAC;AA  
ErE,SAASJ,OAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAC9B,cAAc,EAA  
E,IAAI,aACpB,CAAC,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,QAAQ,EAAE,Q  
AAQ,CAAC,CAAC,CAAC;AAC9E,CAAC;AAED,SAAS,cAAc,CAAC,IAIvB;IACC,MAAM,EAAC,OAAO,EAA

E,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,eAAe,EAAC,GAAG,KAAK,CAAC;I  
AChC,MAAM,EAAC,CAAC,EAAE,IAAI,EAAE,QAAQ,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,MAAM,C  
AAC;IACID,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,C  
AAC,EAAE,CAAC;IAC/C,MAAM,MAAM,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IACrD,MAAM,UAAU,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,QA  
AQ,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC7D,MAAM,QAAQ,GAAG,MAAM,IAAI,IAAI,GAAG,OAA  
O,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC;IAC9  
E,MAAM,OAAO,GAAG,KAAK,IAAI,IAAI,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,  
MAAM,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC;IAE3E,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,  
CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;:IAEjD,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC  
,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IAED,MAAM,KAAK,GAAG,  
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,aAAa,C  
ACT,GAAG,EAAE,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,OAAO,EAAE,eAAe,EAAE,KAAK,CAAC,CAA  
C;IACxE,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,oBAAoB,GAAiB;IACHD,UAAU,EAAE,cAAc;IA  
CIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACHB,UAAU,EAAE,cAAc;CAC/C;:AC/DD;:;:;:;  
:;:;:;AAuBA,IAAI,eAQQ,CAAC;AAEb,SAASA,OAAK,CAAC,OAAoB;IACjC,eAAe,GAAG,OAAO,CAAC,IAA  
I,CAAC,KAAK,CAAC,WAAW,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,W  
AAW,CAAC,IAIpB;IACC,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACt  
C,MAAM,EAAC,CAAC,EAAE,MAAM,EAAE,IAAI,EAAE,sBAAsB,EAAC,GAAG,MAAM,CAAC;IACzD,MA  
AM,EACJ,OAAO,EACP,GAAG,EACH,SAAS,EACT,UAAU,EACV,eAAe,EACf,UAAU,EACV,cAAc,EACf,GA  
AG,KAAK,CAAC;IAEV,MAAM,QAAQ,GAAG,YAAY,CAAC,iBAaiB,CAC1C,CAAc,CAAC,KAAK,EAAG,M  
AAmB,CAAC,KAAK,EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,CAAC,CAAC;IAE1B,MAAM,eA  
Ae,GACjB,iBAaiB,CAAC,UAAkD,CAAC,CAAC;IAC1E,IAAI,eAAe,IAAI,IAAI,EAAE;QAC3B,MAAM,IAAI,  
KAAK,CACX,GAAG,UAAU,gDAAgD;YAC7D,sBAAsB,CAAC,CAAC;KAC7B;IAED,MAAM,GAAG,GAAG,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,Q  
AAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IA  
EzD,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAE5C,IAAI,MAAM,GAAG,CAAC,CAAC;IACf,IAAI  
,IAAI,IAAI,IAAI,EAAE;QACHB,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAA  
C,MAAM,CAAC,CAAC;QACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAAK,CAAC,EAAE;YAC/B,MA  
AM,IAAI,KAAK,CACX,gDAAgD;gBACHD,QAAQ,QAAQ,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,CAAC;  
SACvC;QACD,IAAI,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,cAAc,EAAE;YACxC,MAAM,IAAI,KA  
AK,CACX,2BAA2B,QAAQ,CAAC,KAAK,aAAa;gBACtD,wCAAwC,cAAc,GAAG,CAAC,CAAC;SACHe;QAC  
D,MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;KACtB;IAED,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CA  
AC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAA  
C,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IAC  
xC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,C  
AAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,MAAM,aAAa  
,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAA  
M,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IA  
C1C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,GAAG,CAAC,GAAG,CAAC,CA  
AC;IAC3D,MAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;IACrC,MAAM,QAAQ,GAAG,QAAQ,CAAC,QA  
AQ,CAAC;IACnC,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC;IAEjC,IAAI,UAAU,KAAK,MAAM,EA  
AE;QACzB,MAAM,IAAI,KAAK,CACX,wDAAwD;YACxD,GAAG,UAAU,uBAAuB,CAAC,CAAC;KAC3C;IA  
ED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IAC  
7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EA

AE,CAAC;IACnD,MAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;QAC3D,CAAC;QACD,OAAO,CAAC,SAAS,  
CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE5D,eAAe,CACX,GAAG,EAAE,  
SAAS,EAAE,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,YAA,Y,EAAE,WAAW,EACtE,MAAM,EAAE,MAAM,  
EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,EAAE,YAA,Y,EAAE,WAA  
W,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAAC,EAAE,KAAK,CAAC,C  
AAC;IAE3E,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,iBAAiB,GAaiB;IAC7C,UAAU,EAAE,WAA  
W;IACvB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,WAA+B;CAC5C;;ACzJ  
D;;;;;;;AAuBA,IAAI,wBAQQ,CAAC;AAEb,SAASA,OAAK,CAAC,OAAoB;IACjC,wBAAwB;QACpB,OA  
AO,CAAC,IAAI,CAAC,KAAK,CAAC,oBAAoB,EAAE,IAAI,aAAa;YACxD,QAAQ;YACR,QAAQ;YACR,QAA  
Q;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YAC  
R,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAA  
Q;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;YACR,QAAQ;SACT,CAAC,CAAC;AACT,CAAC  
;AAED,SAAS,oBAAoB,CAAC,IAI7B;IACC,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,  
IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAE,MAAM,EAAE,IAAI,EAAE,sBAAsB,EAAC,GAAG,MAAM,C  
AAC;IACzD,MAAM,EACJ,OAAO,EACP,GAAG,EACH,SAAS,EACT,UAAU,EACV,eAAe,EACf,UAAU,EACV,  
cAAc,EACf,GAAG,KAAK,CAAC;IAEV,MAAM,QAAQ,GAAG,YAA,Y,CAAC,iBAAiB,CAC1C,CAAc,CAAC,K  
AAK,EAAG,MAAmB,CAAC,KAAK,EAAE,OAAO,EAAE,SAAS,EACrE,GAAG,EAAE,eAAe,EAAE,IAAI,iBA  
AiB,CAAC;IAEhD,MAAM,eAAe,GACjB,iBAAiB,CAAC,UAAkD,CAAC,CAAC;IAC1E,IAAI,eAAe,IAAI,IAAI,  
EAAE;QAC3B,MAAM,IAAI,KAAK,CACX,GAAG,UAAU,yDAAYD;YACtE,sBAAsB,CAAC,CAAC;KAC7B;IA  
ED,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EA  
AE,CAAC;IAC/C,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;IAEzD,MAAM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAE5C,IAAI,MAAM,GA  
AG,CAAC,CAAC;IACf,IAAI,IAAI,IAAI,IAAI,EAAE;QACbB,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CA  
AC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC;QACpD,IAAI,QAAQ,CAAC,KAAK,CAAC,MAAM,KAA  
K,CAAC,EAAE;YAC/B,MAAM,IAAI,KAAK,CACX,yDAAYD;gBACzD,QAAQ,QAAQ,CAAC,KAAK,CAAC,M  
AAM,GAAG,CAAC,CAAC;SACvC;QACD,IAAI,QAAQ,CAAC,KAAK,CAAC,CAAC,CAAC,KAAK,cAAc,EA  
AE;YACxC,MAAM,IAAI,KAAK,CACX,oCAAoC,QAAQ,CAAC,KAAK,aAAa;gBAC/D,wCAAwC,cAAc,GAA  
G,CAAC,CAAC;SACHe;QACD,MAAM,GAAG,QAAQ,CAAC,EAAE,CAAC;KACtB;IAED,MAAM,YAA,Y,GA  
AG,QAAQ,CAAC,YAA,Y,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,  
MAAM,GAAG,QAAQ,CAAC,OAAO,CAAC,GAAG,CAAC;IACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAA  
O,CAAC,KAAK,CAAC;IACxC,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MA  
AM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC;IACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,  
CAAC;IAC/C,MAAM,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC;IAC7C,MAAM,YAA,Y,GAAG,QAAQ,CAAC,Y  
AA,Y,CAAC;IAC3C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ  
,CAAC,UAAU,CAAC;IAC1C,MAAM,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,IAAI,KAAK,MAAM,GAAG,  
CAAC,GAAG,CAAC,CAAC;IAC3D,MAAM,SAAS,GAAG,QAAQ,CAAC,SAAS,CAAC;IACrC,MAAM,QAAQ,  
GAAG,QAAQ,CAAC,QAAQ,CAAC;IACnC,MAAM,OAAO,GAAG,QAAQ,CAAC,OAAO,CAAC;IAEjC,IAAI,U  
AAU,KAAK,MAAM,EAAE;QACzB,MAAM,IAAI,KAAK,CACX,iEAAiE;YACjE,GAAG,UAAU,uBAAuB,CAA  
C,CAAC;KAC3C;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAA  
S,CAAC,CAAC;IAC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAA  
M,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,wBAAwB,GAAG,sBAAsB,IAAI,IAAI;QAC3D,CAAC;QACD,O  
AAO,CAAC,SAAS,CAAC,GAAG,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE5D,wBAAw  
B,CACpB,GAAG,EAAE,SAAS,EAAE,QAAQ,EAAE,OAAO,EAAE,QAAQ,EAAE,YAA,Y,EAAE,WAAW,EACt  
E,MAAM,EAAE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,SAAS,EAAE,cAAc,EACvE,aAAa,E  
AAE,YAA,Y,EAAE,WAAW,EAAE,aAAa,EAAE,cAAc,EACvE,eAAe,EAAE,wBAAwB,EAAE,cAAc,IAAI,CAA  
C,EAAE,KAAK,CAAC,CAAC;IAE3E,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,0BAA0B,GAaiB;IA  
CtD,UAAU,EAAE,oBAAoB;IACbC,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAA  
E,oBAAwC;CACrD;;AC1JD;;;;;;;AAuBA,IAAI,YAGI,CAAC;AAET,SAASA,OAAK,CAAC,OAAoB;IACj



C,YAAY,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,WAAW;QACzD,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CAAC,IAA0D;IAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAC,  
GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,MAAM,CAAC;IAEjC,MAAM,  
CAAC,WAAW,EAAE,SAAS,EAAE,SAAS,EAAE,OAAO,CAAC,GAC9C,WAAW,CAAC,kBAakB,CAAC,MAA  
M,EAAE,OAAO,CAAC,CAAC;IAEpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,MA  
AM,CAAC,KAAK,CAAC,CAAC;IAC1D,IAAI,SAAS,KAAK,CAAC,EAAE;QACnB,OAAO,GAAG,CAAC;KAC  
Z;IAED,MAAM,YAAY,GAAG,OAAO,CAAC,KAAK,CAAC;IACnC,MAAM,SAAS,GAAG,YAAY,CAAC,YAA  
Y,CAAC,MAAM,GAAG,CAAC,CAAC,CAAC;IAExD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA  
G,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;IACnD,MAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IA  
CrB,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;I  
AC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,MAAM,YAAY,GAAG,IAAI,UAAU,CAAC,I  
AAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,MAAM,KAAK,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,YAAY,CACR,GAAG,E  
AAE,QAAQ,CAAC,MAAM,CAAC,KAAK,CAAC,EAAE,SAAS,EAAE,SAAS,EAAE,SAAS,EAAE,SAAS,EACv  
E,YAAY,EAAE,KAAK,CAAC,CAAC;IAEzB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,cAAc,GAAiB  
;IAC1C,UAAU,EAAE,QAAQ;IACpB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACb,UAAU,EA  
AE,QAAQ;CACrB;;AC7ED;;;;;;AAwBA,IAAI,UAGsB,CAAC;AAE3B,SAASA,OAAK,CAAC,OAAoB;IA  
CjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,QAAQ,EAAE,IAAI,WAAW;QACvD,QAAQ;QAC  
R,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
CAAC;AACL,CAAC;AAED,SAAS,QAAQ,CACb,IAA0E;IAE5E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,  
KAAK,EAAC,GAAG,IAAI,CAAC;IACiC,MAAM,EAAC,CAAC,EAAE,OAAO,EAAC,GAAG,MAAM,CAAC;I  
AC5B,MAAM,EAAC,IAAI,EAAE,SAAS,EAAC,GAAG,KAAK,CAAC;;IAGhC,MAAM,UAAU,GAAG,IAAI,CA  
AC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC;IACzD,MAAM,WAA  
W,GAAG,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAc,CAAC;IACnE,MAAM,OAAO,GAAG,CA  
AC,CAAC,KAAK,CAAC,UAAU,CAAC,CAAC;IACpC,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG  
,WAAW,CAAC,MAAM,EAAE,EAAE,CAAC,EAAE;QAC3C,MAAM,KAAK,GAAG,WAAW,CAAC,CAAC,CA  
AC,CAAC;QAC7B,IAAI,CAAC,MAAM,CACP,KAAK,IAAI,OAAO,GAAG,CAAC,IAAI,KAAK,IAAI,CAAC,E  
ACIC,MACI,6BAA6B,KAAK,kBAakB,OAAO,GAAG,CAAC,GAAG,CAAC,CAAC;KAC7E;IAED,MAAM,SAA  
S,GAAG,YAAY,CAAC,YAAY,CAAC,wBAAwB,CACHe,CAAW,EAAE,OAAiB,EAAE,UAAU,EAAE,SAAS,C  
AAC,CAAC;IAE3D,MAAM,QAAQ,GAAG,OAAO,CAAC;QACvB,MAAM,EAAE,EAAC,CAAC,EAAC;QACX,  
KAAK,EAAE;YAcl,KAAK,EAAE;gBACL,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAAE,SAAS,CAA  
C,OAAO;gBAC3D,SAAS,CAAC,SAAS;aACpB;SACF;QACD,OAAO;KACR,CAAC,CAAC;IACH,MAAM,WAA  
W,GAAG,IAAI,CAAC,aAAa,CAAC,OAAO,CAAC,KAAK,CAAC,CAAC;IACiD,MAAM,YAAY,GAAG,OAAO,  
CAAC;QAC3B,MAAM,EAAE,EAAC,CAAC,EAAE,OAAO,EAAC;QACpB,KAAK,EAAE,EAAC,KAAK,EAAE,  
CAAC,SAAS,CAAC,SAAS,EAAE,WAAW,GAAG,SAAS,CAAC,SAAS,CAAC,EAAC;QACxE,OAAO;KACR,C  
AAC,CAAC;IACH,MAAM,kBAakB,GAAG;QACzB,SAAS,CAAC,SAAS,EAAE,SAAS,CAAC,SAAS,EAAE,W  
AAW,GAAG,SAAS,CAAC,SAAS;QAC3E,SAAS,CAAC,SAAS;KACpB,CAAC;IAEF,MAAM,GAAG,GAAG,O  
AAO,CAAC,UAAU,CAAC,kBAakB,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAC5D,IAAI,IAAI,CAAC,aAA  
a,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACrC,OAAO,GAAG,CAAC;KACZ;IACD,MAAM  
,WAAW,GAAG,QAAQ,CAAC,KAAK,CAAC,MAAM,GAAG,CAAC,CAAC;IAE9C,MAAM,KAAK,GAAG,OA  
AO,CAAC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IACrD,MAAM,GAAG,GAAG,KA  
AK,CAAC,EAAE,CAAC;IAErB,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,YAAY,CA  
AC,MAAM,CAAC,CAAC;IAC/D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,MAAM,KAAK,G  
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,M  
AAM,aAAa,GAAG,IAAI,UAAU,CAChC,IAAI,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,QAAQ,CAAC,KAAK,C  
AAC,CAAC,CAAC,MAAM,CAAC,CAAC;IACHe,MAAM,eAAe,GAAG,IAAI,UAAU,CACIC,IAAI,UAAU,CAA  
C,IAAI,CAAC,cAAc,CAAC,kBAakB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,UAAU,CACN,GAAG

,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAAC,EAAE,aAAa,EAAE,WAaw,EAAE,SAAS,EAC7D,SAAS,C  
AAC,SAAS,EAAE,eAAe,EAAE,KAAC,CAAC,CAAC;IAEjD,OAAO,CAAC,WAaw,CAAC,QAAQ,CAAC,MA  
AM,CAAC,CAAC;IACrC,OAAO,CAAC,WAaw,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC;;IAGzC,GAAG,C  
AAC,KAAC,GAAG,SAAS,CAAC,WAaw,CAAC;IACIC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,c  
AAc,GAAiB;IAC1C,UAAU,EAAE,QAAQ;IACpB,WAaw,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACHB  
,UAAU,EAAE,QAA4B;CACzC;;ACzHD;,,,,,,,,,,,,,,,,;AAoBA,MAAMI,uBAAqB,GAAG,KAAC,CAAC;AAC7B,M  
AAM,aAAa,GACtB,wBAawB,CAAC,OAAO,EAAEA,uBAAqB,EAAE,MAAM,CAAC;;ACtBpE;,,,,,,,,,,,,,,,,;AAo  
BA,MAAMA,uBAAqB,GAAG,KAAC,CAAC;AAC7B,MAAM,kBAakB,GAC3B,wBAawB,CAAC,YAAY,EAA  
EA,uBAAqB,EAAE,MAAM,CAAC;;ACtBzE;,,,,,,,,,,,,,,,,;AAuBA,IAAIH,UAC0E,CAAC;AAE/E,SAASI,WAAS,C  
AAC,OAAoB;IACrCJ,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,SAAS,EAAE,IAAI,aAAa;QACx  
D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,SAAS,CACrB,  
IAC0E;IAE5E,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAC,EAAE,EAAC,KAAC,EAAC,E  
AAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAEpD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CA  
AC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;IAG/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C  
AAC,CAAC,CAAC,KAAC,EAAE,SAAS,CAAC,CAAC;IAEnD,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,K  
AAK,CAAC,KAAC,CAAC,EAAE;QACrC,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G  
AAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnDA,UAAQ,CAAC,GAAG,EAAE,QAAQ,CAAC,CAAC,  
CAAC,KAAC,CAAC,EAAE,KAAC,EAAE,KAAC,CAAC,CAAC;KACHD;IAED,OAAO,GAAG,CAAC;AACb,C  
AAC;AAEM,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAaw,EAAE,MAAM;eACnBI,WAAS  
;IACT,UAAU,EAAE,SAA6B;CAC1C;;AC3DD;,,,,,,,,,,,,,,,,;AAmBA,MAAMD,uBAAqB,GAAG,KAAC,CAAC;AA  
C7B,MAAM,UAAU,GACnB,wBAawB,CAAC,IAAI,EAAEA,uBAAqB,EAAE,MAAM,CAAC;;ACrBjE;,,,,,,,,,,,,,  
;;AAoBA,MAAMA,uBAAqB,GAAG,KAAC,CAAC;AAC7B,MAAM,eAAe,GACxB,wBAawB,CAAC,SAAS,EA  
AEA,uBAAqB,EAAE,MAAM,CAAC;;ACtBtE;,,,,,,,,,,,,,,,,;AAmBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAA  
G,CAAC;;ACnBnE;,,,,,,,,,,,,,,,,;AAmBA,MAAMA,uBAAqB,GAAG,KAAC,CAAC;AAC7B,MAAM,gBAAGB,GA  
CzB,wBAawB,CAAC,UAAU,EAAEA,uBAAqB,EAAE,MAAM,CAAC;;ACrBvE;,,,,,,,,,,,,,,,,;AAwBA,IAAI,OACI  
,CAAC;AAET,SAASJ,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,  
GAAG,EAAE,IAAI,WAaw;QAC/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;  
AACL,CAAC;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAC,  
EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,gBAAGB,EAAE,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAC,C  
AAC;IACjD,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GA  
AG,CAAC;IACIB,IAAI,KAAC,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,E  
AAE,kBAakB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,kB  
AAkB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;QACjE,KAAC,GAAG,UAAU,CAAC;QACnB,OAAO,GAAG,YAAY,CAAC;KACx  
B;IAED,MAAM,SAAS,GAAG,KAAC,CAAC,KAAC,CAAC,MAAM,CAAC;IACrC,YAAY,CAAC,0BAA0B,CA  
AC,KAAC,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACHe,MAAM,CAAC,QAAQ,EAAE,WAaw,CAAC,GACz  
B,YAAY,CAAC,yBAayB,CAAC,KAAC,CAAC,KAAC,EAAE,IAAI,CAAC,CAAC;IAC9D,MAAM,UAAU,GAA  
G,IAAI,CAAC,aAAa,CAAC,WAaw,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC  
,QAAQ,EAAE,CAAC,CAAC,KAAC,CAAC,CAAC;IACID,IAAI,IAAI,CAAC,aAAa,CAAC,KAAC,CAAC,KAA  
K,CAAC,KAAC,CAAC,EAAE;QACzC,MAAM,KAAC,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAA  
G,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,QAAQ,CAAC,CAAC,CAA  
C,KAAC,CAAC,EAAE,UAAU,EAAE,KAAC,CAAC,CAAC;KACxD;IAED,IAAI,kBAakB,EAAE;;QAEtB,OAA  
O,CAAC,WAaw,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,MAA  
M,QAAQ,GAAG,YAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAC,EAAE,YAAY,CAAC,CAAC;QAC5E,G  
AAG,CAAC,KAAC,GAAG,QAAQ,CAAC;KACTB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,S  
AAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WAaw,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACHB,U  
AAU,EAAE,GAAuB;CACpC;;ACrFD;,,,,,,,,,,,,,,,,;AAmBA,MAAMI,uBAAqB,GAAG,KAAC,CAAC;AAC7B,MA

AM,aAAa,GACtB,wBAAwB,CAAC,OAAO,EAAEA,uBAAqB,CAAC;;ACrB5D;;;;;;AAqBA,IAAI,WAKq  
E,CAAC;AAEIE,SAASJ,OAAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAA  
C,OAAO,EAAE,IAAI,aAAa;QACzD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;  
QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,O  
AAO,CACZ,IAAwE;IACIE,MAAM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IA  
EtC,MAAM,CAAC,GAAG,MAAM,CAAC,CAAA,CAAC;IAC/B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,C  
AAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;;;;;IAU/C,IAAI,CAAC,MAAM,CACP  
,CAAC,CAAC,KAAK,KAAK,SAAS,EACrB,MACI,0DAA0D,CAAC,CAAC,KAAK,GAAG,CAAC,CAAC;IAE9  
E,MAAM,EAAC,UAAU,EAAE,OAAO,EAAE,GAAG,EAAE,eAAe,EAAC,GAAG,KAAK,CAAC;IACID,MAAM  
,QAAQ,GAAG,YAAY,CAAC,iBAAiB,CAC3C,CAAC,CAAC,KAAK,EAAE,UAAU,EAAE,OAAO,EAAE,CAAC  
,kBAaKB,GAAG,EAAE,eAAe,CAAC,CAAC;IAE3E,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3  
C,MAAM,WAAW,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,MAAM,GAAG,QAAQ,CAAC,OAAO,  
CAAC,GAAG,CAAC;IACpC,MAAM,QAAQ,GAAG,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC;IACxC,MAA  
M,SAAS,GAAG,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC;IAC1C,MAAM,OAAO,GAAG,QAAQ,CAAC,OA  
AO,CAAC,IAAI,CAAC;IACtC,MAAM,cAAc,GAAG,QAAQ,CAAC,cAAc,CAAC;IAC/C,MAAM,aAAa,GAAG,  
QAAQ,CAAC,aAAa,CAAC;IAC7C,MAAM,YAAY,GAAG,QAAQ,CAAC,YAAY,CAAC;IAC3C,MAAM,WAA  
W,GAAG,QAAQ,CAAC,WAAW,CAAC;IACzC,MAAM,aAAa,GAAG,QAAQ,CAAC,UAAU,CAAC;IAC1C,MA  
AM,cAAc,GAAG,QAAQ,CAAC,WAAW,CAAC;IAE5C,IAAI,QAAQ,CAAC,UAAU,KAAK,cAAc,EAAE;QAC1  
C,MAAM,IAAI,KAAK,CACX,4CAA4C;YAC5C,GAAG,QAAQ,CAAC,UAAU,+BAA+B,CAAC,CAAC;KAC5D;  
IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;I  
AC7D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC;IAEnD,WAAW,CACP,GAAG,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,C  
AAC,KAAK,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,EAAE,YAAY,EAAE,WA  
AW,EACIE,MAAM,EAAE,QAAQ,EAAE,SAAS,EAAE,OAAO,EAAE,cAAc,EAAE,aAAa,EACnE,YAAY,EAAE,  
WAAW,EAAE,aAAa,EAAE,cAAc,EAAE,KAAK,CAAC,CAAC;IACrE,OAAO,GAAG,CAAC;AACb,CAAC;AA  
EM,MAAM,aAAa,GAAiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,  
OAAK;IACbB,UAAU,EAAE,OAA2B;CACxC;;AC5GD;;;;;;AAwBA,IAAI,QAaKE,CAAC;AAEvE,SAAS  
A,OAAK,CAAC,OAAoB;IACjC,QAAQ;QACJ,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,WA  
AW,CAAC,wBAAwB,CAAC,CAAC,CAAC;AACIE,CAAC;SAEe,IAAI,CACbB,IAaKE;IAEpE,MAAM,EAAC,  
OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EA  
AC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,G  
AAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IA  
AI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,I  
AAI,EAAE,YAAY,EAAE,kBAaKB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,C  
AAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAaKB,EAAE;QACtB,MAAM,YAAY,GAAG,OA  
AO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,  
KAAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aA  
Aa,GAAG,YAAY,CAAC,gBAAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,C  
AAC,CAAC;SAC/C;KACF;IAED,YAAY,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,K  
AAK,CAAC,MAAM,CAAC,CAAC;IAC/C,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,  
yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAAC;IACvE,MAAM,UAAU,GAAG,IAAI,CAAC,a  
AAa,CAAC,WAAW,CAAC,CAAC;IACnD,IAAI,WAAW,GAAG,KAAK,CAAC;IACxB,IAAI,KAAK,CAAC,KA  
AK,KAAK,SAAS,EAAE;QAC7B,WAAW;YACP,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAA  
C,EAAE,KAAK,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QACnE,  
OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;  
KACxD;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,  
IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GA

AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,QA  
AQ,CAAC,OAAO,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACtC;IAED,IAAI,kBAaKB,EAAE;;QAEtB,OA  
AO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,MA  
AM,QAAQ,GAAG,YAA,Y,CAAC,oBAaOB,CAAC,GAAG,CAAC,KAAK,EAAE,YAA,Y,CAAC,CAAC;QAC5E,  
GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,IAAI,KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QA  
C7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC;KACzC;IAED,OAAO,GAAG,CAAC;  
AACb,CAAC;AAEM,MAAM,UAAU,GAAiB;IACtC,UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,  
SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACIGD;;;;;;;AAwBA,IAAI,OACI,CAAC;AA  
ET,SAASA,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,EA  
AE,IAAI,WAAW;QAC/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAA  
C;AAED,SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAA  
G,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,C  
AAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,C  
AAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAA  
K,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAA,Y,EAAE,kBAaKB,EAAC,GACtD,  
uBAaUB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,kBAaKB,EAAE;QACtB,MAAM,  
YAA,Y,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;  
QACjE,IAAI,YAA,Y,KAAK,GAAG,EAAE;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAA  
Y,CAAC;SACxB;KACf;IAED,MAAM,SAAS,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IAErC,YAA  
Y,CAAC,0BAA0B,CAAC,KAAK,EAAE,IAAI,EAAE,SAAS,CAAC,CAAC;IACbE,MAAM,CAAC,QAAQ,EAAE  
,WAAW,CAAC,GACzB,YAA,Y,CAAC,yBAaYB,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,CAAC,CAAC;IAC9  
D,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAA  
O,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAI,IAAI,CAAC,aAAa,CA  
AC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CA  
AC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAAO,EAAE,QA  
AQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;KACxD;IAED,IAAI,kBAA  
kB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QA  
AQ,EAAE;;QAEZ,MAAM,QAAQ,GAAG,YAA,Y,CAAC,oBAaOB,CAAC,GAAG,CAAC,KAAK,EAAE,YAA,Y,  
CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,  
CAAC;AAEM,MAAM,SAAS,GAAiB;IACrC,UAAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IACnB,SAAS,  
EAAEA,OAAK;IACbB,UAAU,EAAE,GAAuB;CACpC;;AC1FD;;;;;;;AAmBA,MAAMI,uBAaQB,GAAG,K  
AAK,CAAC;AAC7B,MAAM,aAAa,GACtB,wBAaWB,CAAC,OAAO,EAAEA,uBAaQB,CAAC;;ACrB5D;;;;;;;  
;;;AAuBA;AACa,IAAK,iBAGJ;AAHD,WAAK,iBAaBiB;IACpB,+DAAW,CAAA;IACX,mEAAa,CAAA;AACf,  
CAAC,EAHI,iBAaBiB,KAAjB,iBAaBiB,QAGrB;AAED,IAAI,aAGsB,CAAC;AAE3B,SAASJ,OAAK,CAAC,OAAo  
B;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,SAAS,EAAE,IAAI,aAAa;QAC7D,QAAQ;QA  
CR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAA  
C,CAAC;AACL,CAAC;AAED,SAAS,SAAS,CAAC,IAIIB;IACC,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,E  
AAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,QAAQ,EAAE,IAAI,EAAC,EAAC,GAAG,IAAI,CAAC;IAE7D,  
MAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACzB,CAAC,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,  
CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,gBAAgB,CA  
AC;IACvE,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CA  
AC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,CAAC,CAAC,KA  
AK,CAAC,CAAC;IACID,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IACnD,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAA  
C,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAEnE,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAA  
C,QAAQ,IAAI,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC;IAC9D,MAAM,gBAAgB,GAAG,QAAQ,CAAC,GA  
AG,CAAC,QAAQ,IAAI,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC;IAC/D,MAAM,gBAAgB,GACIB,IAAI,UA  
AU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,CAAC;IAC3D,MAAM,iBAaBiB,GACnB,IA

AI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,CAAC;IAE5D,aAAa,CACT,GAA  
G,EAAE,WAAW,EAAE,CAAC,CAAC,KAAC,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAC,CAA  
C,EAAE,gBAAgB,EACrE,iBAAiB,EAAE,iBAAiB,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,CAAC;IACvD,OA  
AO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAAW,EA  
AE,MAAM;IACnB,UAAU,EAAE,SAA6B;IACzC,SAAS,EAAEA,OAAK;CACjB;;AC/ED;;;;;;;;;;;;;AAqBA,MA  
AMI,uBAAqB,GAAG,IAAI,CAAC;AAC5B,MAAM,cAAc,GACvB,wBAAwB,CAAC,QAAQ,EAAEA,uBAAqB,  
CAAC;;ACvB7D;;;;;;;;;;;;;AAmBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC;;ACnBnE;;;;;;;;;;;;;  
AA0BA;;;SAIgB,iBAAiB,CAC7B,OAAoB,EAAE,SAAiB;IACzC,MAAM,MAAM,GAAG,IAAI,UAAU,CAAC,O  
AAO,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,EAAE,SAAS,EAAE,CAAC,CAAC,CAAC;IACxE,MAAM,gB  
AAgB,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IACnC,MAAM,YAAY,GAAG,MAAM,CAAC,CAAC,CAA  
C,CAAC;IAC/B,MAAM,eAAe,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC;IACiC,MAAM,aAAa,GAAG,MAA  
M,CAAC,CAAC,CAAC,CAAC;;IAEhC,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,SAAS,CAAC,CAAC;IAC9B,  
OAAO,EAAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,CAAC;AAC1E;;ACxCA;;;;;;;;;;;;;AAu  
BA,IAAIH,UAEuD,CAAC;AAE5D,SAASD,OAAK,CAAC,OAAoB;IACjCC,UAAQ,GAAG,OAAO,CAAC,IAAI,  
CAAC,KAAC,CACzB,mBAAmB,EACnB,QAAQ;IACR;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QA  
AQ;QACR,QAAQ;KACT,CAAC,CAAC;AACT,CAAC;AAED,SAAS,UAAU,CAAC,IAInB;IACC,MAAM,EAAC  
,OAAO,EAAE,MAAM,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EA  
AE,cAAc,EAAC,GAAG,KAAC,CAAC;IAC5D,MAAM,EAAC,KAAC,EAAE,MAAM,EAAC,GAAG,MAAM,CA  
AC;IAE/B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CA  
AC,EAAE,CAAC;IACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,M  
AAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAAM,SAAS,GACXA,UAAQ,CAAC,OAAO,EAAE,QAAQ,EAAE,a  
AAa,EAAE,YAAY,EAAE,cAAc,CAAC,CAAC;IAE7E,MAAM,EAAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EA  
AE,aAAa,EAAC,GACIE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;;IAG1C,OAAO,CAAC,IAAI,CAAC  
,KAAC,CAAC,eAAe,CAAC,CAAC;IACpC,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,aAAa,CAAC,CAAC;IAEI  
C,MAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,  
CAAC,CAAC;IAEIE,OAAO,qBAAqB,CAAC;AAC/B,CAAC;AAEM,MAAM,yBAAyB,GAAiB;IACrD,UAAU,E  
AAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAED,OAAK;IACbB,UAAU,EAAE,UAA8B;CA  
C3C;;ACzED;;;;;;;;;;;;;AAuBA,IAAIC,UAGsC,CAAC;AAE3C,SAASD,OAAK,CAAC,OAAoB;IACjCC,UAAQ,  
GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CACzB,mBAAmB,EACnB,QAAQ;IACR;QACE,QAAQ;QACR,QAA  
Q;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;KACP,CAAC,CAAC;AACT,CAAC;AAED,SAAS  
,mBAAmB,CAAC,IAI5B;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC  
;IACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EAAE,cAAc,EAAE,kBAaKB,EAAC,GACnE,KAAC,CAAC;IACV,  
MAAM,EAAC,KAAC,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;IAE/B,MAAM,OAAO,GAAG,OAAO,CAA  
C,SAAS,CAAC,GAAG,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,MAAM,QAAQ,GAA  
G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,MAA  
M,SAAS,GAAGA,UAAQ,CACtB,OAAO,EAAE,QAAQ,EAAE,aAAa,EAAE,YAAY,EAAE,cAAc,EAC9D,kBAA  
kB,CAAC,CAAC;IAExB,MAAM,EAAC,gBAAgB,EAAE,YAAY,EAAE,eAAe,EAAE,aAAa,EAAC,GACIE,iBAA  
iB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;;IAG1C,OAAO,CAAC,IAAI,CAAC,KAAC,CAAC,eAAe,CAAC,C  
AAC;IAEpC,MAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAAC,YAAY,CAAC,EAAE,OAAO,EAAE  
,gBAAgB,CAAC,CAAC;IAEIE,MAAM,kBAaKB,GAAG,OAAO,CAAC,UAAU,CAAC,EAAE,EAAE,OAAO,EA  
AE,aAAa,CAAC,CAAC;IAEIE,OAAO,CAAC,qBAAqB,EAAE,kBAaKB,CAAC,CAAC;AACrD,CAAC;AAEM,  
MAAM,yBAAyB,GAAiB;IACrD,UAAU,EAAE,mBAAmB;IAC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAE  
D,OAAK;IACbB,UAAU,EAAE,mBAAuC;CACpD;;AC9ED;;;;;;;;;;;;;AAuBA,IAAIC,UAGU,CAAC;AAEf,SA  
SD,OAAK,CAAC,OAAoB;IACjCC,UAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAC,CACzB,mBAAmB,EACn  
B,QAAQ;IACR;QACE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT  
,CAAC,CAAC;AACT,CAAC;AAED,SAASK,YAAU,CAAC,IAInB;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,  
EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,YAAY,EAAE,aAAa,EAAE,cAAc,EAAE,YAA  
Y,EAAC,GAAG,KAAC,CAAC;IAC1E,MAAM,EAAC,KAAC,EAAE,MAAM,EAAC,GAAG,MAAM,CAAC;IAE

/B,MAAM,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EA  
AE,CAAC;IACvD,MAAM,QAAQ,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;IAEzD,MAAM,SAAS,GAAGL,UAAQ,CACtB,OAAO,EAAE,QAAQ,EAAE,aAAa,E  
AAE,YAAY,EAAE,cAAc,EAC9D,YAAY,CAAC,CAAC;IAEIB,MAAM,EAAC,gBAAgB,EAAE,YAAY,EAAE,e  
AAe,EAAE,aAAa,EAAC,GACIE,iBAAiB,CAAC,OAAO,EAAE,SAAS,CAAC,CAAC;;;IAI1C,OAAO,CAAC,IAA  
I,CAAC,KAAK,CAAC,aAAa,CAAC,CAAC;IAEIC,MAAM,qBAAqB,GACvB,OAAO,CAAC,UAAU,CAAC,CAA  
C,YAAY,CAAC,EAAE,OAAO,EAAE,gBAAgB,CAAC,CAAC;IACIE,MAAM,oBAAoB,GACtB,OAAO,CAAC,U  
AAU,CAAC,CAAC,YAAY,CAAC,EAAE,SAAS,EAAE,eAAe,CAAC,CAAC;IAEnE,OAAO,CAAC,qBAAqB,EA  
AE,oBAAoB,CAAC,CAAC;AACvD,CAAC;AAEM,MAAM,yBAAyB,GAAiB;IACrD,UAAU,EAAE,mBAAmB;I  
AC/B,WAAW,EAAE,MAAM;IACnB,SAAS,EAAED,OAAK;IACbB,UAAU,EAAEM,YAA8B;CAC3C;;AC9ED;;  
;;;;;;;AAmBA,MAAMF,uBAAqB,GAAG,KAAK,CAAC;AAC7B,MAAM,cAAc,GACvB,wBAAwB,CAAC,Q  
AAQ,EAAEA,uBAAqB,EAAE,MAAM,CAAC;;ACrBrE;;;;;;;AAqBA,IAAI,UAESB,CAAC;AAE3B,SAASJ,  
OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,aA  
Aa;QACvD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,CA  
AC;AAED,SAAS,MAAM,CACX,IAAsE;IACxE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GA  
AG,IAAI,CAAC;IACtC,MAAM,EAAC,OAAO,EAAC,GAAG,MAAM,CAAC;IACzB,MAAM,EAAC,KAAK,EA  
AE,OAAO,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAEzC,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CA  
AC,CAAC,GAAG,OAAO,CAAC,KAAK,EAAE,KAAK,CAAC,EAAE,OAAO,CAAC,CAAC;IACnE,MAAM,KA  
AK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAE  
nD,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IA  
CID,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,UAAU,CAAC,SAAS,EAAE,KAAK,EAAE,OA  
AO,EAAE,QAAQ,EAAE,KAAK,CAAC,CAAC;IAEvD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,YA  
AY,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,  
UAAU,EAAE,MAA0B;CACvC;;ACzDD;;;;;;;AAqBA,SAAS,QAAQ,CAAC,IAAoD;IACpE,MAAM,EAAC,  
MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACpC,MAAM,GAAG,GAAG,O  
AAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,O  
AAO,GAAG,OAAO,CAAC,kBAAkB,CAAC,GAAG,CAAC,CAAC;IACbD,OAAO,CAAC,IAAI,CAAC,CAAC,C  
AAC,CAAC;IACbB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,cAAc,GAAiB;IAC1C,UAAU,EAAE,Q  
AAQ;IACpB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,QAA4B;CACzC;;ACjCD;;;;;;;SAuBgB,IAAI,C  
AChB,IAAkE;IAEpE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,M  
AAM,EAAC,IAAI,EAAC,GAAG,KAAK,CAAC;IAErB,IAAI,MAAM,CAAC,MAAM,KAAK,CAAC,EAAE;QAC  
vB,OAAO,UAAU,CACb,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,MAAM,CAAC,CAAC,CAAC,EAAC,EA  
E,OAAO,EAAE,KAAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;KACHe;IAED,MAAM,K  
AAK,GAAG,MAAM,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC;IAC9B,MAAM,KAAK,GAAG,MAAM,CAAC,  
CAAC,CAAC,CAAC,KAAK,CAAC;IAE9B,MAAM,CAAC,OAAO,CAAC,CAAC;QACd,IAAI,CAAC,iBAAiB,C  
ACIB,KAAK,EAAE,CAAC,CAAC,KAAK,EACd,uDAAuD,CAAC,CAAC;QAC7D,IAAI,CAAC,MAAM,CACP,  
KAAK,KAAK,CAAC,CAAC,KAAK,EACjB,MAAM,uDAAuD,CAAC,CAAC;KACpE,CAAC,CAAC;IAEH,MA  
AM,uBAAuB,GAAiB,EAAE,CAAC;IACjD,MAAM,eAAe,GAAG,MAAM,CAAC,GAAG,CAAC,CAAC;QACIC,  
MAAM,SAAS,GACX,UAAU,CAAC,EAAC,MAAM,EAAE,EAAC,KAAK,EAAE,CAAC,EAAC,EAAE,OAAO,E  
AAE,KAAK,EAAE,EAAC,GAAG,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;QACIE,uBAAuB,CAAC,IAAI,CAA  
C,SAAS,CAAC,CAAC;QACxC,OAAO,SAAS,CAAC;KACIB,CAAC,CAAC;IAEH,MAAM,MAAM,GAAG,MAA  
M,CAAC,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,IAAI,EAAC,EAAC,CAAC,C  
AAC;IAEzE,uBAAuB,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,  
CAAC,CAAC,CAAC;IAEpE,OAAO,MAAM,CAAC;AACbB,CAAC;AAEM,MAAM,UAAU,GAAiB;IACtC,UAA  
U,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,IAAwB;CACrC;;ACjED;;;;;;;AAyBA,  
IAAI,SAG6C,CAAC;AAEID,SAASA,OAAK,CAAC,OAAoB;IACjC,SAAS,GAAG,OAAO,CAAC,IAAI,CAAC,K  
AAK,CAAC,KAAK,EAAE,IAAI,aAAa;QACrD,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,OAA  
O;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,GAAG,CACR,I

AAoE;IACtE,MAAM,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,Q  
AAQ,EAAE,aAAa,EAAC,EAAC,GAAG,IAAI,CAAC;IAEtE,MAAM,QAAQ,GAAG,QAAQ,CAAC,GAAG,CACz  
B,CAAC,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,CAAC,KAAK,CAAC,CA  
AC,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,gBAAgB,CAAC;IAEvE,IAAI,IAAI,CAAC,aAAa,CAAC,CAAC,  
CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;;;QAGrC,OAAO,IAAI,CAAC;YACV,OAAO;YACP,KAAK,EAAE,E  
AAC,KAAK,EAAE,QAAQ,EAAE,KAAK,EAAE,aAAa,EAAE,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC;SAC/  
D,CAAC,CAAC;KACJ;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,  
MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,  
CAAC,CAAC,KAAK,CAAC,CAAC;IACID,MAAM,aAAa,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,G  
AAG,CAAC,MAAM,CAAC,CAAC;IACxD,MAAM,KAAK,GAAG,aAAa,CAAC,EAAE,CAAC;IAE/B,MAAM,  
WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,C  
AAC;IAEnE,MAAM,eAAe,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,IAAI,QAAQ,CAAC,CAAC,CAAC,CAA  
C,CAAC;IAC9D,MAAM,gBAAgB,GAAG,QAAQ,CAAC,GAAG,CAAC,QAAQ,IAAI,QAAQ,CAAC,CAAC,CA  
AC,CAAC,CAAC;IAC/D,MAAM,gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,eAAe,CAAC,CAA  
C,MAAM,CAAC,CAAC;IAC3D,MAAM,iBAAiB,GACnB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CA  
AC,CAAC,MAAM,CAAC,CAAC;IAE5D,SAAS,CACL,GAAG,EAAE,WAAW,EAAE,CAAC,CAAC,KAAK,CA  
AC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,gBAAgB,EACrE,iBAAiB,EAAE,aAAa,E  
AAE,KAAK,CAAC,CAAC;IAC7C,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,WAAW,GAAiB;IACvC,  
UAAU,EAAE,KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,GAAuB;IACnC,SAAS,EAAEA,OAA  
K;CACjB;;ACpFD;::::::::::;AAmBA,MAAMI,uBAAqB,GAAG,KAAK,CAAC;AAC7B,MAAM,SAAS,GACIB,  
wBAAwB,CAAC,GAAG,EAAEA,uBAAqB,CAAC;;ACrBxD;::::::::::;AAuBA,IAAI,SAaKE,CAAC;AAEvE,SA  
ASJ,OAAK,CAAC,OAAoB;IACjC,SAAS,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,KAAK,EAAE,IAAI,  
aAAa;QACrD,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,KAAK,C  
AAC,IAAiD;IAC9D,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IAC/B,MAAM,EAAC,C  
AAC,EAAE,KAAK,EAAC,GAAG,MAAM,CAAC;IAC1B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,G  
AAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,SAAS,GAAG,OAAO,CAAC,SA  
AS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEzD,IAAI,OAAO,GAAG,GAA  
G,CAAC;IACIB,MAAM,KAAK,GAAG,CAAC,CAAC;IAChB,IAAI,WAAW,GAAG,KAAK,CAAC;IACxB,IAAI,  
KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,WAAW,GAAG,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,  
EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC;QA  
CtE,OAAO,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,WAAW,CAAC,MAAM,CAAC,CAAC,EAAE,CA  
AC;KACxD;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KAAK,EAAE,SAAS,CA  
AC,CAAC;IACnD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,C  
AAC,CAAC,EAAE,CAAC;IACnD,SAAS,CAAC,OAAO,EAAE,SAAS,EAAE,KAAK,CAAC,CAAC;IAErC,IAAI,  
KAAK,CAAC,KAAK,KAAK,SAAS,EAAE;QAC7B,OAAO,CAAC,WAAW,CAAC,WAAW,CAAC,MAAM,CAA  
C,CAAC;KACzC;IACD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,WAAW,GAAiB;IACvC,UAAU,EA  
AE,KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACnB,UAAU,EAAE,KAAyB;CACtC;;  
AC9DD;::::::::::;AAyBA,IAAI,QAeqC,CAAC;AAEIC,SAASA,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,  
OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,WAAW;QACjD,QAAQ;QACR,QAAQ;QACR,QA  
AQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAAI,CAAC,IAIb;IACC,MAAM,EAAC,O  
AAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAA  
C,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GA  
AG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,  
OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAA  
I,EAAE,YAAY,EAAE,kBAaKB,EAAC,GACtD,uBAAuB,CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAA  
C;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kBAaKB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,C  
AAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KA  
AK,GAAG,EAAE;;;YAGxB,KAAK,GAAG,UAAU,CAAC;YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aAAa,

GAAG,YAAY,CAAC,gBAAgB,CACzC,aAAa,CAAC,MAAM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAA  
C,CAAC;SAC/C;KACF;IAED,YAAY,CAAC,0BAA0B,CACnC,MAAM,EAAE,aAAa,EAAE,KAAK,CAAC,KAA  
K,CAAC,MAAM,CAAC,CAAC;IAC/C,MAAM,CAAC,QAAQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,yB  
AAyB,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,CAAC;IACvE,MAAM,UAAU,GAAG,IAAI,CAAC,aA  
Aa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,K  
AAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,  
CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM  
,CAAC,CAAC,EAAE,CAAC;QACnD,QAAQ,CAAC,OAAO,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,  
KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KAC3D;IAED,IAAI,kBAakB,EAAE;;QAEtB,OAAO,CAAC,WAA  
W,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAED,IAAI,QAAQ,EAAE;;QAEZ,MAAM,QAAQ,GAA  
G,YAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,EAAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KA  
AK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,UAAU,GAAiB;IA  
CtC,UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,IA  
AwB;CACrC;;ACjGD;::::::::::;AABo,MAAM,KAAK,GACd,CAAC,IAA+C;IAC9C,MAAM,EAAC,OAAO,E  
AAE,KAAK,EAAC,GAAG,IAAI,CAAC;IAC9B,MAAM,EAAC,KAAK,EAAE,IAAI,EAAE,IAAI,EAAE,KAAK,  
EAAC,GAAG,KAAK,CAAC;IACzC,MAAM,MAAM,GAAGO,SAAY,CAAC,KAAK,EAAE,IAAI,EAAE,IAAI,E  
AAE,KAAK,CAAC,CAAC;IAEtD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,  
MAAM,CAAC,EAAE,KAAK,CAAC,CAAC;IACvD,MAAM,OAAO,GAAG,OAAO,CAAC,kBAakB,CAAC,GA  
AG,CAAC,CAAC;IACbD,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACpB,OAAO,GAAG,CAAC;AA  
Cb,CAAC,CAAC;AAEC,MAAM,WAAW,GAAiB;IACvC,UAAU,EAAE,KAAK;IACjB,WAAW,EAAE,MAAM;I  
ACnB,UAAU,EAAE,KAAyB;CACtC;;ACtCD;::::::::::;AAqBA,MAAMH,uBAAqB,GAAG,IAAI,CAAC;AAC5  
B,MAAM,aAAa,GACtB,wBAAwB,CAAC,OAAO,EAAEA,uBAAqB,CAAC;;ACvB5D;::::::::::;AAmBO,MAA  
M,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC;;ACnBrE;::::::::::;AAmBO,MAAM,WAAW,GAAiB,uBAAuB,  
CAAC,KAAK,CAAC;;ACnBvE;::::::::::;AAuBA,IAAI,kBAGsE,CAAC;AAE3E,SAASJ,OAAK,CAAC,OAAoB  
;IACjC,kBAakB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,cAAc,EAAE,IAAI,WAAW;QACrE,QAAQ;Q  
ACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,Q  
AAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,cAAc,CAAC,IAIvB;IACC,MAAM,EAA  
C,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IAEtC,MAAM,EAAC,MAAM,EAAC,GAAG  
,MAAM,CAAC;IACxB,MAAM,EAAC,YAAY,EAAE,gBAAgB,EAAE,IAAI,EAAC,GAAG,KAAK,CAAC;IACrD  
,MAAM,CAAC,SAAS,EAAE,QAAQ,CAAC,GAAG,IAAI,CAAC;IAEnC,MAAM,CAAC,KAAK,EAAE,SAAS,E  
AAE,QAAQ,EAAE,WAAW,CAAC,GAAG,MAAM,CAAC,KAAK,CAAC;IAC/D,MAAM,QAAQ,GAAG,CAAC,  
KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,CAAC,CAAC;IAE3D,IAAI,KAAK,GAAG,OAAO,CAAC,SA  
AS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;IACjD,IAAI,UAAU,CAAC;IACf,IAAI,KAAK,C  
AAC,KAAK,KAAK,SAAS,EAAE;QAC7B,UAAU;YACN,IAAI,CAAC,EAAC,OAAO,EAAE,MAAM,EAAE,EA  
AC,CAAC,EAAE,MAAM,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,SAAS,EAAC,EAAC,CAAC,CAAC  
;QACpE,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACl  
D;IACD,MAAM,GAAG,GAAG,KAAK,CAAC,EAAE,CAAC;IAErB,MAAM,GAAG,GAAG,OAAO,CAAC,UAA  
U,CAAC,QAAQ,EAAE,SAAS,CAAC,CAAC;IACpD,IAAI,IAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,CA  
AC,KAAK,CAAC,EAAE;QAC1C,OAAO,GAAG,CAAC;KACZ;IACD,MAAM,KAAK,GAAG,OAAO,CAAC,SA  
AS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,kBAakB,CACd,GAAG,E  
AAE,KAAK,EAAE,SAAS,EAAE,QAAQ,EAAE,WAAW,EAAE,SAAS,EAAE,QAAQ,EACjE,YAAY,GAAG,CA  
AC,GAAG,CAAC,EAAE,gBAAgB,GAAG,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC;IAE3D,IAAI,UA  
AU,IAAI,IAAI,EAAE;QACtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IAE  
D,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,oBAAoB,GAAiB;IACbD,UAAU,EAAE,cAAc;IAC1B,W  
AAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,cAAc;CAC/C;;ACxFD;::::::::::;A  
AwBA,IAAI,WAE8C,CAAC;AAEnD,SAASA,OAAK,CAAC,OAAoB;IACjC,WAAW,GAAG,OAAO,CAAC,IAA  
I,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,EAAE;QAC9C,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;  
QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,OAAO,CACnB,IAAwE;IAE1E,MAAM,



EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,G  
AAG,MAAM,CAAC;IACnB,MAAM,EAAC,IAAI,EAAC,GAAG,KAAK,CAAC;IAErB,MAAM,IAAI,GAAG,IA  
AI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IAEhD,IAAI,CAAC,CAAC,KAAK,CA  
AC,MAAM,KAAK,CAAC,EAAE;QACxB,OAAO,QAAQ,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EA  
AE,OAAO,EAAC,CAAC,CAAC;KACzC;IAED,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CA  
AC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAA  
C,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,KAAK,GAAG,OAAO,CAA  
C,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,SAAS,GAA  
G,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC;IAC9D,MAAM,aAAa,GA  
AG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IAErE,  
WAAW,CACP,GAAG,EAAE,SAAS,EAAE,IAAI,CAAC,MAAM,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAA  
C,MAAM,EAAE,KAAK,CAAC,CAAC;IAEvE,MAAM,QAAQ,GACV,OAAO,CAAC,EAAC,MAAM,EAAE,EA  
AC,CAAC,EAAE,GAAG,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,CAAC,CAAC,KAAK,EAAC,EAAE,  
OAAO,EAAC,CAAC,CAAC;IAEIE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IAChC,  
OAAO,QAAQ,CAAC;AACIB,CAAC;AAEM,MAAM,aAAa,GAaiB;IACzC,UAAU,EAAE,OAAO;IACnB,WAA  
W,EAAE,MAAM;IACnB,UAAU,EAAE,OAA2B;IACvC,SAAS,EAAEA,OAAK;CACjB;;AC1ED;:::;AAs  
BA,IAAI,UAGiE,CAAC;AAEtE,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAA  
C,KAAK,CAAC,gBAAgB,EAAE,IAAI,aAAa;QACjE,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR  
,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
CAAC;AACL,CAAC;SAEe,gBAAgB,CAAC,IAIhC;IACC,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,  
EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,CAAC;IACvB,MAAM,EAAC,  
OAAO,EAAE,SAAS,EAAE,MAAM,EAAC,GAAG,KAAK,CAAC;IAE3C,MAAM,GAAG,GAAG,OAAO,CAAC,  
UAAU,CAAC,KAAK,CAAC,KAAK,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACzD,MAAM,OAAO,GAAG,  
OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACvD,MAAM,  
KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;I  
AEnD,MAAM,CAAC,KAAK,EAAE,WAAW,EAAE,UAAU,EAAE,WAAW,CAAC,GAAG,KAAK,CAAC,KAAK  
,CAAC;IAEIE,MAAM,CAAC,OAAO,EAAE,OAAO,CAAC,GACpB,YAA Y,CAAC,cAAc,CAAC,MAAM,EAAE,  
WAAW,EAAE,UAAU,CAAC,CAAC;IAEjE,MAAM,WAAW,GAAG,SAAS,KAAK,CAAC,CAAC;IACpC,MAA  
M,gBAAgB,GAAG,GAAG,CAAC;IAE7B,MAAM,UAAU,GAAG,OAAO,SAAS,KAAK,QAAQ;QAC5C,CAAC,S  
AAS,EAAE,SAAS,EAAE,SAAS,EAAE,WAAW,GAAG,CAAC,GAAG,gBAAgB,CAAC;QACrE,CAAC,GAAG,S  
AAS,EAAE,gBAAgB,CAAC,CAAC;IACrC,MAAM,SAAS,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,UA  
AU,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,UAAU,CACN,OAAO,EAAE,KAAK,EAAE,WAAW,EAAE,UA  
AU,EAAE,WAAW,EAAE,OAAO,EAAE,OAAO,EACtE,OAAO,EAAE,SAAS,EAAE,UAAU,CAAC,MAAM,EA  
AE,KAAK,CAAC,CAAC;IACID,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,sBAAsB,GAaiB;IACID,U  
AAU,EAAE,gBAAgB;IAC5B,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,gBAAoC;IAChD,SAAS,EAAEA,O  
AAK;CACjB;;AChFD;:::;AAoBO,MAAM,WAAW,GAaiB,uBAAuB,CAAC,KAAK,CAAC;;ACpBvE;:::;  
:::;AAmBO,MAAM,WAAW,GAaiB,uBAAuB,CAAC,KAAK,CAAC;;ACnBvE;:::;AAuBA,IAAI,aAG0  
C,CAAC;AAE/C,SAASA,OAAK,CAAC,OAAoB;IACjC,aAAa,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC  
,SAAS,EAAE,IAAI,WAAW;QAC3D,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,  
QAAQ;QACR,QAAQ;QACR,QAAQ;QACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,SAAS,CA  
Cd,IAC0E;IAE5E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAA  
M,EAAC,OAAO,EAAE,OAAO,EAAC,GAAG,MAAM,CAAC;IACIC,MAAM,EAAC,KAAK,EAAC,GAAG,KAA  
K,CAAC;IAEtB,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,KAAK,EAAE,OAAO,CAAC,KAAK,CAA  
C,CAAC;IACrD,IAAI,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACnC,OAAO,GAAG,C  
AAC;KACZ;IAED,MAAM,EAAC,SAAS,EAAE,UAAU,EAAE,SAAS,EAAE,OAAO,EAAE,UAAU,EAAC,GACz  
D,YAA Y,CAAC,eAAe,CAAC,OAAO,EAAE,OAAO,EAAE,KAAK,CAAC,CAAC;IAE1D,MAAM,WAAW,GAA  
G,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IAC1D,MAAM,SAAS,GAA  
G,WAAW,CAAC,EAAE,CAAC;IAEjC,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,OA

AO,CAAC,MAAM,CAAC,CAAC;IAC1D,MAAM,SAAS,GAAG,WAAW,CAAC,EAAE,CAAC;IAEjC,MAAM,Y  
AA Y,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC;IAEpE,MAA  
M,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAA  
C;IACnD,aAAa,CACT,SAAS,EAAE,SAAS,EAAE,QAAQ,CAAC,OAAO,CAAC,KAAK,CAAC,EAAE,SAAS,EA  
AE,UAAU,EACpE,SAAS,EAAE,YAA Y,EAAE,UAAU,EAAE,KAAK,CAAC,CAAC;IAEhD,OAAO,GAAG,CAA  
C;AACb,CAAC;AAEM,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACn  
B,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,SAA6B;CAC1C;;AC/ED;;;;;;;;;;;;;;;;AAqBA,IAAI,UAESB,CAAC;  
AAE3B,SAASA,OAAK,CAAC,OAAoB;IACjC,UAAU,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,UAAU  
,EAAE,IAAI,EAAE;QACbD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,C  
AAC;AACL,CAAC;AAED,SAAS,MAAM,CAAC,IAAkD;IACHe,MAAM,EAAC,MAAM,EAAE,OAAO,EAAC,G  
AAG,IAAI,CAAC;IAC/B,MAAM,EAAC,SAAS,EAAE,CAAC,EAAE,CAAC,EAAC,GAAG,MAAM,CAAC;IAEj  
C,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,SAAS,CAAC,MAAM,CAAC,CAAC,EA  
E,CAAC;IAC/D,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAA  
C,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC  
,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC  
,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,  
GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,KAAK,GAAG,SAAS,CAAC,  
KAAK,CAAC,MAAM,CAAC;IACrC,MAAM,KAAK,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC;IAE7  
B,MAAM,MAAM,GAAG,KAAK,KAAK,CAAC,IAAI,KAAK,GAAG,CAAC,IAAI,KAAK,KAAK,CAAC;QACID  
,CAAC;QACD,IAAI,CAAC,aAAa,CAAC,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CA  
AC;IAEzC,UAAU,CAAC,WAAW,EAAE,GAAG,EAAE,GAAG,EAAE,MAAM,EAAE,KAAK,CAAC,CAAC;IAC  
jD,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,YAA Y,GAAiB;IACxC,UAAU,EAAE,MAAM;IACIB,W  
AAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;IACtC,SAAS,EAAEA,OAAK;CACjB;;AC7DD;;;;;;;;;;;;;;A  
AqBA,IAAIC,UAA8C,CAAC;AAEnD,SAASD,OAAK,CAAC,OAAoB;IACjCC,UAAQ,GAAG,OAAO,CAAC,IA  
AI,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,aAAa,CAAC,QAAQ,EAAE,QAAQ,CAAC,CAAC,CAAC;AACbF,  
CAAC;AAED,SAAS,OAAO,CAAC,IAAmD;IAEIE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,EAAC,CAAC,  
EAAC,EAAC,GAAG,IAAI,CAAC;IACpC,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,C  
AAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,C  
AAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,KAAK,GAAG,OAAO,CAAC,S  
AAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;;IAGnD,IAAI,IAAI,CAAC,aAAa  
,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAEDA,UA  
AQ,CAAC,GAAG,EAAE,KAAK,CAAC,CAAC;IACrB,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,aAAa,  
GAAiB;IACzC,UAAU,EAAE,SAAS;IACrB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAED,OAAK;IACbB,UA  
U,EAAE,OAA2B;CACxC;;ACbDD;;;;;;;;;;;;;;AAmBO,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC;;  
ACnBnE;;;;;;;;;;;;;;AAqBA,IAAIC,UACI,CAAC;AAET,SAASD,OAAK,CAAC,OAAoB;IACjCC,UAAQ,GAAG,  
OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,OAAO,EAAE,IAAI,aAAa;QACtD,QAAQ;QACR,QAAQ;QACR,QAA  
Q;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,OAAO,CACZ,IAAwE;IAEIE,MAAM,EAAC  
,OAAO,EAAE,MAAM,EAAE,EAAC,MAAM,EAAC,EAAE,KAAK,EAAE,EAAC,GAAG,EAAC,EAAC,GAAG,I  
AAI,CAAC;IACvD,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,  
CAAC,CAAC,EAAE,CAAC;IACpD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAAK  
,EAAE,MAAM,CAAC,KAAK,CAAC,CAAC;IAC3D,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG  
,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEnD,MAAM,QAAQ,GAAG,MAAM,CAAC,KAA  
K,CAAC,GAAG,CAAC,CAAC;IACnC,MAAM,KAAK,GAAG,IAAI,CAAC,aAAa,CAAC,MAAM,CAAC,KAAK,  
CAAC,GAAG,QAAQ,CAAC;;IAGID,IAAI,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,KAAK,CAAC,KAAK,CA  
AC,EAAE;QACvC,OAAO,GAAG,CAAC;KACZ;IAEDA,UA AQ,CAAC,GAAG,EAAE,KAAK,EAAE,QAAQ,EA  
AE,KAAK,CAAC,CAAC;IACtC,OAAO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,aAAa,GAAiB;IACzC,UA  
AU,EAAE,OAAO;IACnB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAED,OAAK;IACbB,UAAU,EAAE,OAA2B;  
CACxC;;ACIDD;;;;;;;;;;;;;;AAyBA,SAAS,cAAc,CAAC,IAIvB;IACC,MAAM,EAAC,MAAM,EAAE,OAAO,EA

AE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAA  
M,EAAC,UAAU,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAErC,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,C  
AAC,UAAU,CAAC,CAAC;IAE5C,MAAM,gBAAgB,GAA4B,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC  
,CAAC;IAC3D,gBAAgB,CAAC,IAAI,CAAC,GAAG,QAAoC,CAAC,CAAC;IAEhE,KAAK,IAAI,CAAC,GAAG,C  
AAC,GAAG,UAAU,CAAC,MAAM,EAAE,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,EAAE,C  
AAC,EAAE;QAC3D,gBAAgB,CAAC,IAAI,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC;KAC/B;I  
AED,MAAM,OAAO,GAAG,WAAW,CAAC,UAAU,CAAC;QACrC,MAAM,EAAE,EAAC,CAAC,EAAC;QACX,  
OAAO;QACP,KAAK,EAAE,EAAC,QAAQ,EAAE,gBAAgB,EAAE,aAAa,EAAE,CAAC,EAAC;KACtD,CAAc,C  
AAC;IAEjB,MAAM,mBAAmB,GACrB,YAAY,CAAC,WAAW,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EA  
AE,IAAI,EAAE,KAAK,CAAC,CAAC;IAErE,MAAM,iCAAiC,GAAG,YAAY,CAAC,WAAW,CAC9D,mBAAmB  
,CAAC,MAAM,EAAE,UAAU,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;IAEID,MAAM,YAAY,GACd,YAA  
Y,CAAC,mBAAmB,CAAC,OAAO,CAAC,KAAK,EAAE,UAAU,EAAE,IAAI,EAAE,KAAK,CAAC,CAAC;IAE7  
E,MAAM,aAAa,GAakB,EAAC,CAAC,EAAE,OAAO,EAAC,CAAC;IACID,MAAM,YAAY,GAAiB,EAAC,KAA  
K,EAAE,mBAAmB,EAAC,CAAC;IACHe,MAAM,eAAe,GACjB,OAAO,CAAC,EAAC,MAAM,EAAE,aAAa,EA  
AE,OAAO,EAAE,KAAK,EAAE,YAAY,EAAC,CAAC,CAAC;IAEnE,MAAM,eAAe,GAAoB,EAAC,CAAC,EA  
E,eAAe,EAAC,CAAC;IAC9D,MAAM,cAAc,GACC,EAAC,IAAI,EAAE,iCAAiC,EAAC,CAAC;IAC/D,MAAM,Q  
AAQ,GACV,SAAS,CAAC,EAAC,MAAM,EAAE,eAAe,EAAE,OAAO,EAAE,KAAK,EAAE,cAAc,EAAC,CAAC  
,CAAC;IAEzE,MAAM,mBAAmB,GAakB,EAAC,CAAC,EAAE,QAAQ,EAAC,CAAC;IACzD,MAAM,kBAakB,  
GAAiB,EAAC,KAAK,EAAE,YAAY,EAAC,CAAC;IAC/D,MAAM,MAAM,GAAG,OAAO,CACIB,EAAC,MAA  
M,EAAE,mBAAmB,EAAE,OAAO,EAAE,KAAK,EAAE,kBAakB,EAAC,CAAC,CAAC;IAEvE,OAAO,CAAC,  
WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC;IACpC,OAAO,CAAC,WAAW,CAAC,eAAe,CAAC,MAA  
M,CAAC,CAAC;IAC5C,OAAO,CAAC,WAAW,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;IAErC,OAAO,MA  
AM,CAAC;AACbB,CAAC;AAEM,MAAM,oBAAoB,GAAiB;IACbD,UAAU,EAAE,cAAc;IAC1B,WAAW,EA  
E,MAAM;IACnB,UAAU,EAAE,cAAc;CAC/C;;ACrFD;;;;;;SAwBgB,MAAM,CACIB,IAAsE;IACxE,MA  
AM,EAAC,MAAM,EAAE,KAAK,EAAE,OAAO,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,CAAC,EA  
C,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,eAAe,EAAE,IAAI,EAAC,GAAG,KAAK,CAAC;IAEtC,MAAM,  
KAAK,GAAG,IAAI,CAAC,cAAc,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC  
;IAEpD,MAAM,UAAU,GAAG,YAAY,CAAC,gBAAgB,CAAC,CAAC,EAAE,eAAe,EAAE,KAAK,CAAC,CAAC  
;IAC5E,MAAM,KAAK,GAAG,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,IAAI,C  
AAC,CAAC,CAAC,CAAC;IACbD,MAAM,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IAC  
7B,OAAO,UAAU,CAAC,GAAG,CAAC,CAAC;QACrB,MAAM,UAAU,GAAG,CAAC,GAAG,IAAI,CAAC,CAA  
C;QAC7B,UAAU,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC;QACtB,MAAM,MAAM,GACR,KAAK,CAAC,E  
AAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,IAAI,EAAE,UAAU,EA  
C,EAAE,OAAO,EAAC,CAAC,CAAC;QACpE,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;QACIB,OAAO,  
MAAM,CAAC;KACf,CAAC,CAAC;AACL,CAAC;AAEM,MAAM,YAAY,GAAiB;IACxC,UAAU,EAAE,MAA  
M;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;CACvC;;ACjDD;;;;;;AAoBO,MAAM,U  
AAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC;;ACpBrE;;;;;;AAmBO,MAAM,YAAY,GAAiB,uBAAuB,CAA  
C,MAAM,CAAC;;ACnBzE;;;;;;AAkBA,MAAMI,uBAaqB,GAAG,IAAI,CAAC;AAC5B,MAAM,uBAAuB,  
GACbC,wBAAwB,CAAC,iBAAiB,EAAEA,uBAaqB,CAAC;;ACpBtE;;;;;;AAuBA,IAAI,QACI,CAAC;AA  
ET,SAASJ,OAAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,  
IAAI,WAAW;QACjD,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;  
AAED,SAAS,IAAI,CACT,IAAkE;IAEpE,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IA  
AI,CAAC;IACtC,MAAM,EAAC,KAAK,EAAC,GAAG,KAAK,CAAC;IACtB,MAAM,EAAC,CAAC,EAAC,GAA  
G,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC;IAE/C,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CAAC,CAAC,CAAC,KA  
AK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,CAAC,GAA  
G,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CAAC,GAAG,EAAE,KAAK,EA  
E,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IAC/C,OAAO,GAAG,CAAC;AACb,

CAAC;AAEM,MAAM,UAAU,GAAiB;IACtC,UAAU,EAAE,IAAI;IAChB,WAAW,EAAE,MAAM;IACnB,SAAS,  
EAAEA,OAAK;IACb,UAAU,EAAE,IAAwB;CACrC;;ACtDD;,,,,,;AAuBA,IAAI,gBAI8C,CAAC;AAEnD,  
SAASA,OAAK,CAAC,OAAoB;IACjC,gBAAgB,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,YAAY,EAA  
E,IAAI,WAAW;QACjE,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,OAAO;QACP,OAAO;QACP,OAAO;QACP  
,OAAO;QACP,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;SAEe,YAAY,CAAC,IA  
I5B;IACC,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAA  
C,CAAC,EAAC,GAAG,MAAM,CAAC;IAEnB,MAAM,EACJ,KAAK,EACL,GAAG,EACH,OAAO,EACP,SAAS,  
EACT,OAAO,EACP,YAAY,EACZ,WAAW,EACX,cAAc,EACf,GAAG,KAAK,CAAC;IAEV,MAAM,EACJ,gBA  
AgB,EACb,UAAU,EACV,UAAU,EACV,SAAS,EACT,aAAa,EACb,KAAK,EAAE,MAAM,EACb,GAAG,EAA  
E,IAAI,EACT,OAAO,EAAE,QAAQ,EACIB,GACG,UAAU,CAAC,SAAS,CACb,CAAC,CAAC,KAAK,EAAE,  
KAAK,EAAE,GAAG,EAAE,OAAO,EAAE,SAAS,EAAE,OAAO,EAAE,YAAY,EAC9D,WAAW,EAAE,cAAc,C  
AAC,CAAC;IAErC,IAAI,MAAM,CAAC;IAEX,IAAI,UAAU,EAAE;;QAEd,MAAM,GAAG,OAAO,CAAC,EAA  
C,MAAM,EAAE,EAAC,CAAC,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,  
EAAC,CAAC,CAAC;KACtE;SAAM,IAAI,SAAS,IAAI,aAAa,EAAE;;QAErC,IAAI,CAAC,MAAM,CACP,CAAC  
,CAAC,KAAK,CAAC,MAAM,IAAI,CAAC,EACnB,MAAM,yCAAyC,CAAC,CAAC,KAAK,CAAC,MAAM,EA  
AE,CAAC,CAAC;QAErE,MAAM,IAAI,GAAG,UAAU,CAAC,eAAe,CAAC,MAAM,EAAE,IAAI,EAAE,QAAQ,  
CAAC,CAAC;;QAEhE,MAAM,MAAM,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAC,EAA  
E,OAAO,EAAE,KAAK,EAAE,EAAC,KAAK,EAAE,MAAM,EAAE,IAAI,EAAC,EAAC,CAAC,CAAC;QAC3E,  
MAAM;YACF,OAAO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,MAAM,EAAC,EAAE,OAAO,EAAE,  
KAAK,EAAE,EAAC,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;QACxE,OAAO,CAAC,WAAW,CAAC,  
MAAM,CAAC,MAAM,CAAC,CAAC;KACpC;SAAM;QACL,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,CA  
AC,gBAAgB,EAAE,SAAS,CAAC,CAAC;QAE5D,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,C  
AAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAC/C,MAAM,aAAa,GACf,IAAI,UAAU,CAAC,IAAI  
,UAAU,CAAC,IAAI,CAAC,cAAc,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;QA  
CxE,MAAM,UAAU,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CA  
AC;QACjE,MAAM,QAAQ,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,  
CAAC;QAC7D,MAAM,YAAY,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,C  
AAC,CAAC;QAErE,MAAM,gBAAgB,GACIB,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,gBAAgB,CAAC,CAAC,  
MAAM,CAAC,CAAC;QAC5D,MAAM,eAAe,GAAG,IAAI,UAAU,CACIC,IAAI,UAAU,CAAC,IAAI,CAAC,cA  
Ac,CAAC,gBAAgB,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC;QACIE,MAAM,KAAK,GAAG,OAAO,CAAC,  
SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QAEEnD,gBAAgB,CACZ,GAA  
G,EAAE,aAAa,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,UAAU,EAAE,QAAQ,EAAE,YAAY,EACtE,  
gBAAgB,EAAE,eAAe,EAAE,gBAAgB,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;QAEvE,MAAM,GAAG,OA  
AO,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,GAAG,EAAC,EAAE,OAAO,EAAE,KAAK,EAAE,EAA  
C,KAAK,EAAE,UAAU,EAAC,EAAC,CAAC,CAAC;QAEIE,OAAO,CAAC,WAAW,CAAC,GAAG,CAAC,MA  
AM,CAAC,CAAC;KACjC;IAED,OAAO,MAAM,CAAC;AACbB,CAAC;AAEM,MAAM,kBAaKB,GAAiB;IAC9  
C,UAAU,EAAE,YAAY;IACxB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,OAAK;IACb,UAAU,EAAE,YA  
AgC;CAC7C;;AC/HD;,,,,,;AAkBA,MAAMI,uBAaQB,GAAG,IAAI,CAAC;AAC5B,MAAM,SAAS,GACIB,  
wBAAwB,CAAC,GAAG,EAAEA,uBAaQB,CAAC;;ACpBxD;,,,,,;AAwBA,IAAI,OACI,CAAC;AAET,SA  
SJ,OAAK,CAAC,OAAoB;IACjC,OAAO,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,EAAE,IAAI,  
WAAW;QAC/C,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,  
SAAS,GAAG,CAAC,IAAgE;IAE3E,MAAM,EAAC,OAAO,EAAE,MAAM,EAAE,KAAK,EAAC,GAAG,IAAI,C  
AAC;IACtC,MAAM,EAAC,IAAI,EAAE,QAAQ,EAAC,GAAG,KAAK,CAAC;IAC/B,MAAM,EAAC,CAAC,EA  
AC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,CAAC,CA  
AC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,IAAI,OAAO,GAAG,GAAG,CAAC;IACIB,IAAI,KAAK,GAAG,  
CAAC,CAAC;IAEd,MAAM,EAAC,UAAU,EAAE,IAAI,EAAE,YAAY,EAAE,kBAaKB,EAAC,GACtD,uBAaB,  
CAAC,CAAC,EAAE,IAAI,EAAE,OAAO,CAAC,CAAC;IAE9C,IAAI,aAAa,GAAG,IAAI,CAAC;IACzB,IAAI,kB  
AAkB,EAAE;QACtB,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,

CAAC,CAAC,EAAE,CAAC;QACjE,IAAI,YAAY,KAAK,GAAG,EAAE;;;YAGxB,KAAK,GAAG,UAAU,CAAC;  
YACnB,OAAO,GAAG,YAAY,CAAC;YACvB,aAAa,GAAG,YAAY,CAAC,gBAAgB,CACzC,aAAa,CAAC,MA  
AM,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;SAC/C;KACF;IAED,YAAY,CAAC,0BAA0B,C  
ACnC,KAAK,EAAE,aAAa,EAAE,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC;IAC9C,MAAM,CAAC,Q  
AAQ,EAAE,WAAW,CAAC,GACzB,YAAY,CAAC,yBAAyB,CAAC,KAAK,CAAC,KAAK,EAAE,aAAa,CAAC,  
CAAC;IACvE,MAAM,UAAU,GAAG,IAAI,CAAC,aAAa,CAAC,WAAW,CAAC,CAAC;IAEnD,MAAM,GAAG,  
GAAG,OAAO,CAAC,UAAU,CAAC,QAAQ,EAAE,KAAK,CAAC,KAAK,CAAC,CAAC;IACtD,IAAI,IAAI,CAA  
C,aAAa,CAAC,KAAK,CAAC,KAAK,CAAC,KAAK,CAAC,EAAE;QACzC,MAAM,KAAK,GAAG,OAAO,CAA  
C,SAAS,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;QACnD,OAAO,CAAC,OAA  
O,EAAE,UAAU,EAAE,QAAQ,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;KACID;IAED  
,IAAI,kBAAkB,EAAE;;QAEtB,OAAO,CAAC,WAAW,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC;KACxC;IA  
ED,IAAI,QAAQ,EAAE;;QAEZ,MAAM,QAAQ,GAAG,YAAY,CAAC,oBAAoB,CAAC,GAAG,CAAC,KAAK,E  
AAE,YAAY,CAAC,CAAC;QAC5E,GAAG,CAAC,KAAK,GAAG,QAAQ,CAAC;KACtB;IAED,OAAO,GAAG,C  
AAC;AACb,CAAC;AAEM,MAAM,SAAS,GAaiB;IACrC,UAAU,EAAE,GAAG;IACf,WAAW,EAAE,MAAM;IA  
CnB,SAAS,EAAEA,OAAK;IACbB,UAAU,EAAE,GAauB;CACpC;;AC5FD;;;;;;;AAMBO,MAAM,SAAS,G  
AAiB,uBAAuB,CAAC,GAAG,CAAC;;ACnBnE;;;;;;;AAMBO,MAAM,UAAU,GAaiB,uBAAuB,CAAC,IA  
AI,CAAC;;ACnBrE;;;;;;;AAuBA,IAAI,QAE2D,CAAC;AAEhE,SAASA,OAAK,CAAC,OAAoB;IACjC,QA  
AQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,aAAa;QACnD,QAAQ;QACR,OAAO;Q  
ACP,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAED,SAAS,IAA  
I,CACT,IAAkE;IACpE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,  
MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC  
,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,EAAC,IAAI,EAAC,GAAG,K  
AAK,CAAC;IAErB,MAAM,QAAQ,GAaA,IAAI,KAAK,CAAC,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CA  
AC;IACrD,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,QAAQ,CAAC,MAAM,EAAE,CAAC,EAAE  
,EAAE;QACxC,QAAQ,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,C  
AAC,CAAC,CAAC,CAAC;KACpC;IACD,MAAM,WAAW,GAAG,IAAI,UAAU,CAAC,IAAI,UAAU,CAAC,CA  
AC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,MAAM,aAAa,GAAG,IAAI,UAAU,CAAC,IAAI,  
UAAU,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC;IAEtE,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,  
CAAC,QAAQ,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACID,MAAM,KAAK,GAAG,OAAO,CAAC,SAAS,C  
AAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IACnD,QAAQ,CACJ,GAAG,EAAE,W  
AAW,EAAE,CAAC,CAAC,KAAK,CAAC,MAAM,EAAE,aAAa,EAAE,QAAQ,CAAC,MAAM,EACHE,QAAQ,C  
AAC,GAAG,CAAC,KAAK,CAAC,EAAE,KAAK,CAAC,CAAC;IAChC,OAAO,GAAG,CAAC;AACb,CAAC;AA  
EM,MAAM,UAAU,GAaiB;IACtC,UAAU,EAAE,IAAI;IACbB,WAAW,EAAE,MAAM;IACnB,SAAS,EAAEA,O  
AAK;IACbB,UAAU,EAAE,IAAwB;CACrC;;ACjED;;;;;;;AAsBA,IAAI,QAG6B,CAAC;AAEIC,SAASA,O  
AAK,CAAC,OAAoB;IACjC,QAAQ,GAAG,OAAO,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,EAAE,IAAI,aAAa;  
QACnD,QAAQ;QACR,OAAO;QACP,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,QAAQ;QACR,MAAM;QACN,QAAQ;QAC  
R,QAAQ;KACT,CAAC,CAAC;AACL,CAAC;AAEM,MAAM,IAAI,GAEmB,CAAC,EAAC,MAAM,EAAE,OAA  
O,EAAE,KAAK,EAAC;IACnD,MAAM,EAAC,CAAC,EAAC,GAAG,MAAM,CAAC;IACnB,MAAM,EAAC,CA  
AC,EAAE,MAAM,EAAC,GAAG,KAAK,CAAC;IAE1B,MAAM,GAAG,GAAG,OAAO,CAAC,SAAS,CAAC,GA  
AG,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/C,MAAM,WAAW,GAAG,IAAI,UAAU,CA  
AC,IAAI,UAAU,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,CAAC;IACnE,MAAM,WAAW,GA  
AG,CAAC,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IACpC,WAAW,CAAC,WAAW,CAAC,MAAM,GAAG,C  
AAC,CAAC,GAAG,CAAC,CAAC;IACxC,MAAM,SAAS,GAAG,OAAO,CAAC,UAAU,CAAC,WAAW,EAAE,C  
AAC,CAAC,KAAK,CAAC,CAAC;IAC3D,MAAM,WAAW,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,S  
AAS,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAC/D,MAAM,UAAU,GAAG,OAAO,CAAC,UAAU,CAAC,W  
AAW,EAAE,OAAO,CAAC,CAAC;IAC5D,MAAM,YAAY,GAAG,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,U  
AAU,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC;IAEjE,QAAQ,CACJ,GAAG,EAAE,WAAW,EAAE,CAAC,CA  
AC,KAAK,CAAC,MAAM,EAAE,QAAQ,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,EAAE,MAAM,EA



AC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC;IACjD,MAAM,OAAO,GAAG,OAAO,CA  
AC,kBAAkB,CAAC,GAAG,CAAC,CAAC;IACHd,OAAO,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC;IACHb,OA  
AO,GAAG,CAAC;AACb,CAAC;AAEM,MAAM,eAAe,GAAiB;IAC3C,UAAU,EAAE,SAAS;IACrB,WAAW,EA  
AE,MAAM;IACnB,UAAU,EAAE,SAA6B;CAC1C;;ACjCD;;;;;;;AAsHA;AACA,MAAM,aAAa,GAAM;IA  
CpC,SAAS;IACT,SAAS;IACT,UAAU;IACV,SAAS;IACT,SAAS;IACT,YAAY;IACZ,aAAa;IACb,iBAAiB;IACjB  
,oBAAoB;IACpB,UAAU;IACV,UAAU;IACV,iBAAiB;IACjB,YAAY;IACZ,YAAY;IACZ,yBAAyB;IACzB,SAA  
S;IACT,UAAU;IACV,mBAAmB;IACnB,YAAY;IACZ,kBAAkB;IACIB,2BAA2B;IAC3B,SAAS;IACT,WAAW;I  
ACX,SAAS;IACT,gBAAgB;IACHb,UAAU;IACV,mBAAmB;IACnB,WAAW;IACX,cAAc;IACd,iBAAiB;IACjB,  
oBAAoB;IACpB,iBAAiB;IACjB,0BAA0B;IAC1B,cAAc;IACd,cAAc;IACd,aAAa;IACb,kBAAkB;IACIB,cAAc;I  
ACd,eAAe;IACf,UAAU;IACV,eAAe;IACf,SAAS;IACT,gBAAgB;IACHb,SAAS;IACT,aAAa;IACb,aAAa;IACb,U  
AAU;IACV,SAAS;IACT,aAAa;IACb,eAAe;IACf,cAAc;IACd,SAAS;IACT,yBAAyB;IACzB,yBAAyB;IACzB,yB  
AAyB;IACzB,cAAc;IACd,YAAY;IACZ,cAAc;IACd,UAAU;IACV,WAAW;IACX,SAAS;IACT,WAAW;IACX,U  
AAU;IACV,WAAW;IACX,aAAa;IACb,UAAU;IACV,WAAW;IACX,aAAa;IACb,oBAAoB;IACpB,aAAa;IACb,s  
BAAsB;IACtB,WAAW;IACX,WAAW;IACX,eAAe;IACf,YAAY;IACZ,aAAa;IACb,SAAS;IACT,WAAW;IACX,  
aAAa;IACb,oBAAoB;IACpB,YAAY;IACZ,UAAU;IACV,YAAY;IACZ,uBAAuB;IACvB,UAAU;IACV,kBAAkB;  
IACIB,SAAS;IACT,SAAS;IACT,SAAS;IACT,UAAU;IACV,UAAU;IACV,UAAU;IACV,eAAe;IACf,eAAe;IACf,  
YAAY;IACZ,eAAe;CACHb,CAAC;AAEF,KAAK,MAAM,YAAY,IAAI,aAAa,EAAE;IACxC,cAAc,CAAC,YAA  
Y,CAAC,CAAC;;AC3N/B;;;;;;;AAMBA,MAAM,GAAG,GAAG,GAAG,EAAE,CAAC;AAEIB;;;AAGA;AA  
CA,GAAG,CAAC,YAAY;AACZ;AACa;AACa;AACa,uBAAuB,EAAE,YAAY,WAAW,CAAC,QAAQ,CAAC,IA  
AAI,UAAU,CAAC;IACvE,CAAC,EAAE,EAAE,EAAE,GAAG,EAAE,GAAG,EAAE,CAAC,EAAE,CAAC,EAA  
E,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC,EAAL,EAAE,EAAE,CAAC,EAAG,CAAC,EA  
AE,CAAC;IACrD,CAAC,EAAE,CAAC,EAAG,CAAC,EAAL,EAAE,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,  
EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAE,GAAG,EAAE,EAAE,EAAE,EAAE,EAAE,EAAE;CACpD,CA  
AC,CAAC,CAAC,CAAC;AAET;;;AAGA;AACa,GAAG,CAAC,YAAY,CAAC,8BAA8B,EAAE;;;IAG/C,IAAI,G  
AAG,CAAC,GAAG,CAAC,SAAS,CAAC,EAAE;QACtB,OAAO,KAAK,CAAC;KACd;IAED,IAAI;;QAGF,IAAI  
,cAAc,EAAE,CAAC,KAAK,CAAC,WAAW,CAAC,IAAI,iBAAiB,CAAC,CAAC,CAAC,CAAC;QAGjE,  
OAAO,WAAW,CAAC,QAAQ,CAAC,IAAI,UAAU,CAAC;YACzC,CAAC,EAAE,EAAE,EAAE,GAAG,EAAE,G  
AAG,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EA  
G,EAAE,EAAE,CAAC,EAAL,CAAC,EAAG,CAAC,EAAE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAE,CAAC;Y  
ACpE,CAAC,EAAE,CAAC,EAAG,CAAC,EAAL,CAAC,EAAL,CAAC,EAAE,EAAE,EAAE,EAAE,CAAC,  
EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,EAAE,CAAC,EAAG,GAAG,EAAE,EAAE,EAAE,CAAC,EAAE,CAA  
C,EAAE,EAAE,EAAE,EAAE;SACnE,CAAC,CAAC,CAAC;KACL;IAAC,OAAO,CAAC,EAAE;QACV,OAAO,K  
AAK,CAAC;KACd;AACH,CAAC,CAAC;;;;;;;ACzDF,IAAI,6BAA6B,GAAG,CAAC,WAAW;AACHd,EAAE,IA  
AAI,UAAU,GAAG,OAAO,QAAQ,KAAK,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,CAA  
C,GAAG,GAAG,SAAS,CAAC;AACtH,EAAE,IAAI,OAAO,UAAU,KAAK,WAAW,EAAE,UAAU,GAAG,UAAU  
,IAAI,UAAU,CAAC;AAC/E,EAAE;AACF,SAAS,6BAA6B,EAAE;AACxC,EAAE,6BAA6B,GAAG,6BAA6B,IA  
AI,EAAE,CAAC;AACtE;AACa,SAAS,gBAAgB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,C  
AAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,KAAK,CAAC,SAAS,gBAAgB,EAA  
E,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,E  
AAC,CAAC,OAAO,MAAM,CAAC,SAAS,iBAAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,  
CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,MAAM,CAAC,SAAS,iBAAiB,EA  
AE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,  
EAAC,CAAC,OAAO,OAAO,CAAC,SAAS,iBAAiB,EAAE,CAAC,GAAG,UAAU,CAAC,MAAM,EAAE,MAAM  
,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,EAAC,CAAC,OAAO,OAAO,CAAC,IAAI,MAAM,CAA  
C,OAAO,6BAA6B,GAAG,WAAW,CAAC,6BAA6B,CAAC,EAAE,CAAC,IAAI,mBAAmB,CAAC,kBAAkB,CA  
AC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,mBA  
AmB,CAAC,OAAO,CAAC,kBAAkB,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,IAA  
I,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAAc,CAAC,GAAG,CAAC,C

AAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,CAAC,IAAI,UAAU,CAA  
C,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAgB,CAAC,IAAI,KAAK,CAAC,SAAS,MAAM,CAAC,OAAO,CAAC  
,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAAkB,CAAC,KAAK,CAAC,IAAI,qBAaqB,CAAC,KAAK,CAA  
C,IAAI,mBAAmB,CAAC,KAAK,CAAC,IAAI,oBAoB,CAAC,KAAK,CAAC,kBAAkB,CAAC,OAAO,MAAM,  
GAAG,QAAQ,CAAC,qBAaqB,CAAC,OAAO,aAAa,GAAG,UAAU,CAAC,mBAAmB,CAAC,OAAO,OAAO,GA  
AG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,CAAC,IAA  
I,GAAG,QAAQ,CAAC,oBAoB,CAAC,CAAC,kBAAkB,EAAE,CAAC,mBAAmB,EAAE,CAAC,qBAaqB,CAA  
C,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,EAAE,KAAK,CAAC,GAAG,sBAAsB,CAAC,CAAC,  
MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IA  
AI,CAAC,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAY,CAAC,CA  
AC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,eAAe,CAAC,IAAI,KAAK,KAAK,CAAC,SAAS,CAAC,UAAU,CA  
AgB,IAAI,MAAM,CAAC,IAAI,QAAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAaqB,CAAC,CAAC,  
eAAe,CAACQ,IAAe,CAAC,OAAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAI,CAAC,eAAe,CAAC,SAAS,  
CAAC,IAAG,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,M  
AAM,CAAC,MAAM,CAACC,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,  
CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,  
QAAQ,CAAC,MAAM,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,Q  
AAQ,CAAC,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAA  
G,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG  
,CAAC,MAAM,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAA  
M,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OA  
AO,CAAC,KAAK,CAAC,GAAG,EAAC,CAAC,UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,KAAK,CA  
AC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GA  
AG,EAAE,EAAE,YAAY,UAAU,CAAC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAA  
C,IAAI,CAAC,CAAC,oBAoB,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,OAA  
O,CAAC,MAAM,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAA  
C,OAAM,4BAA4B,CAAC,CAAC,IAAI,iBAaiB,CAAC,GAAG,CAAC,iBAaiB,CAACE,eAAyB,CAAC,MAAM,  
CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,yGAyG,CAAC,CAAC,MAAM,CAAC,CAACC,cAAM,CA  
AC,MAAM,CAAC,iBAaiB,CAAC,OAAM,CAAC,KAAK,GAAG,oBAoB,CAAC,CAAC,GAAG,OAAO,IAAI,E  
AAE,WAAW,CAAC,CAAC,KAAK,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,CA  
AC,CAAC,EAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,O  
AAO,UAAU,GAAG,UAAU,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,CA  
AC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,QAAQ,C  
AAC,CAAC,OAAO,IAAI,CAAC,CAAC,GAAG,OAAO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WA  
AU,CAAC,KAAK,GAAG,OAAO,SAAS,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,UAAS,CAAC,GAAG,OA  
AO,IAAI,GAAG,UAAU,CAAC,CAAC,KAAK,CAAC,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,  
EAAC,CAAC,GAAG,OAAO,KAAK,GAAG,WAAW,CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAAW,CAA  
C,OAAO,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,KAAK,CAAC,OAAO,CAAC,IAAI,CAAC,OAAO,  
CAAC,KAAK,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAAK,GAAG  
,kBAAkB,EAAE,qBAaqB,CAAC,CAAC,GAAG,qBAaqB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAA  
C,KAAI,CAAC,KAAK,GAAG,OAAO,QAAQ,GAAG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,  
CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,CAAC,GAAG,OAAO,UAAU,KAAK,WAAW,IAAI,UAAU,CAAC,CA  
AC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC  
,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW,CAAC,GAAG,CAAC,CAAC,C  
AAC,EAAC,CAAC,KAAI,CAAC,eAAe,CAAC,GAAE,CAAC,GAAG,mBAAmB,CAAC,CAAC,KAAK,CAAC,S  
AAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,CAACF,EAAa,  
CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,WAAW,CAAC,  
CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,IAAI,C



AAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAA G,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO ,GAAG,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc, CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,IAAI,CAA C,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,YAAY,CAAC,CAAC,GAAG,qBAqB,CAAC,CAAC,UAAU,CAA C,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAA C,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CAAC,I AAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,SAAS, GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI ,CAAC,KAAK,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CA AC,MAAM,CAAC,UAAU,CAAC,GAAG,GAAG,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,MAAM,E AAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,M AAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,IAAI,CA AC,IAAI,EAAC,EAAC,CAAqD,CAAO,GAAG,mBAAmB,CAAC,CAAC,GAAG,OAAO,WAAW,GAAG,WAAW ,CAAC,CAACG,cAAM,CAAC,WAAW,CAACC,UAAqB,CAAC,YAAW,CAAC,CAAC,IAAI,GAAG,CAAC,MA AM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAAI,GAAG, CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,CAAC,IAA I,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CA AC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,GAAG,MAAM, CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MAAM,CAAC,aAA a,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAA C,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC, QAAQ,CAAC,KAAK,CAAC,QAAQ,CAAC,KAAK,CAAC,EAAE,CAAC,GAAG,CAAC,QAAQ,CAAC,KAAK,C AAC,IAAI,CAAC,CAAC,CAAC,QAAQ,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC, IAAI,EAAC,CAAC,CAAmH,IAAI,UAAU,CAAC,GAAG,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,M AAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG, OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAAiC,EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,U AAU,CAAC,IAAI,KAAK,CAAC,KAAK,CAAgB,SAAS,MAAM,CAAC,SAAS,CAAC,IAAI,CAAC,CAAC,GAA G,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,oBAaOB,CAAC,IAAI,EAAC,CAAC,CAAC,SAAS,QAAQ,CAAC, KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,IA AI,CAAC,+BAA+B,CAAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SAAS,KAAK,CAAC,KA AK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,QAAQ,C AAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAAG,IAAI,EAAE,GAAG, GAAG,SAAS,EAAE,GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GAAG,CAAC,MAAM,EA AE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YAAY,CAAC,GAAG,CAA C,GAAG,CAAC,GAAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC, IAAI,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAaKB,CAAC,GAAG,CAAC,GAAG, CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU, GAAG,QAAQ,CAAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAAG,SAAS,CAAC,OAAO, OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,KAAK,CAAC,CA AC,IAAI,KAAK,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,IAAI,IAAI ,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC,CAAC,GAAG,KAAK, GAAG,CAAC,CAAC,KAAK,CAAC,SAAS,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,IA AI,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,E AAC,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC, GAAG,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAK,GAAG,CAAC,CAAC,YAAY,CAAC,KAA

K,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAAC,KAAK,CAAC,SAA S,IAAI,CAAC,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,UAAU,GAAG,QAAQ,CAAC,GAAG,UAAU,EAAE,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,CAAC,KAAK,C AAC,CAAC,OAAO,UAAU,CAAC,OAAO,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,SAAc,CA AC,CAAC,CAAC,SAAS,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,IAAI,MAAM,CAAC, GAAG,CAAC,cAAc,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,MAAM,EAAE,GAAG,EAAE,MAAM,CAAC,CA AC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,OAAO,G AAG,CAAC,GAAG,EAAE,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CA AC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,C AAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,C AAC,CAAC,EAAE,CAAC,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC ,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CA AC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,GAAE, CAAC,KAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,GAAG,EAAE,CAAC,EAAE,EAAE,EAAE,CAA C,EAAE,EAAE,CAAC,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAE,CAAC,GAAG,EAAE,CAAC,K AAK,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,EAAC,CAAC,KAAI,CAAC,IAAI,EAA E,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,KAAK,CAAC,EAAE,EAAE, EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,EAAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,YAAY,CA AC,GAAG,CAAC,cAAc,CAAC,CAAC,OAAO,GAAG,CAAC,iBAAiB,CAAC,gBAAgB,EAAE,CAAC,GAAG,C AAC,cAAc,CAAC,CAAC,EAAE,CAAC,SAAS,iBAAiB,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,eAAe ,CAAC,CAAC,GAAG,EAAE,eAAe,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,QAAQ,CAAC,MA AM,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,C AAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAA C,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,I AAI,EAAE,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,EAAE,CAA C,CAAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,KAAI,CAAC,GAAG,CAAC,EAAE,GAAG,CA AC,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,EAAC,CA AC,KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAA M,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,MAAM,E AAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,KAAK,GAAG,CAAC,EAAE,KAAK,CAAC,CA AC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GA AG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE, CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CA AC,KAAI,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CA AC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC, CAAC,EAAE,EAAE,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EA AE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE, CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,QAAQ,CAAC,SAAS,Y AAY,CAAC,GAAG,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,OAAO,iBAAiB,CAAC,GAAG,CAAC,gBAAgB, EAAE,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,SAAS,eAAe,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAA C,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,C AAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAA E,KAAK,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,E AAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,EAA E,GAAG,CAAC,EAAE,GAAG,CAAC,KAAK,GAAG,CAAC,EAAE,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,K AAK,GAAG,CAAC,EAAE,KAAK,CAAC,GAAG,EAAE,CAAC,CAAC,KAAK,GAAG,EAAE,EAAC,CAAC,OA AO,GAAG,CAAC,SAAS,kBAaKB,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,gBAAgB,EAAE,CAAC,GAAG,

CAAC,KAAK,CAAC,MAAM,EAAC,CAAC,SAAS,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,CAAC,GAAG,C  
AAC,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,CAAC,SAAQ,CAAC,OA  
AO,CAAC,CAAC,IAAI,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,OAAO,CAAC,MAAM,C  
AAC,OAAO,CAAC,OAAO,CAAC,OAAO,CAAC,SAAS,0BAA0B,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,  
GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAK,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,CAAC,M  
AAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,Q  
AAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CA  
AC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAA  
C,IAAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,WAAW,  
CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,C  
AAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAAG,EAAC,CAAC,IAAI  
,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,EAAE,QAAQ,CAAC,GAAG,sBAAsB,CAAC,CAAC,UAAU,CAA  
C,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,EAAC,CAAC,KAAI,CAAC,GAA  
G,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,EAAC,CAAC,KAAI,CAA  
C,UAAU,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,KAAK,CAAC,SAAS,C  
AAC,UAAU,CAAC,KAAK,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,GAAG,EAAE,UAAU,CAAC,MA  
AM,YAAY,iBAAiB,CAAC,CAAC,CAAC,GAAG,CAAC,6NAA6N,CAAC,CAAC,GAAG,mBAAmB,CAAC,CA  
AC,OAAO,CAAC,GAAG,CAAC,mHAaH,EAAC,CAAC,MAAM,KAAK,CAAC,YAAY,CAAC,CAAC,CAAC,  
CAAC,GAAG,UAAU,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,  
UAAU,CAAC,0BAA0B,CAAC,MAAM,CAAC,CAAC,IAAI,SAAS,CAAC,IAAI,YAAY,CAAC,EAAE,CAAC,IA  
AI,UAAU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAmB,IAAI,aAAa,CAAC,EAAE,CAAsD,GAAG,  
CAAC,sBAAsB,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,kBAaKB,GAAE,CAAC,C  
AAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,QAAQ,  
CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,QAAQ,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,QAAQ,  
CAAC,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,QAAQ,CAAC,CAAC  
,MAAM,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,CAA  
C,oBAAoB,CAAC,YAAY,EAAC,CAAC,SAAS,WAAW,EAAE,CAAYB,GAAG,sBAAsB,CAAC,OAAO,oBAAo  
B,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,oBAAoB,CAAC,UA  
AU,EAAC,CAA4E,SAAS,OAAO,EAAE,CAAC,GAAG,sBAAsB,CAAC,OAAO,GAAG,MAAM,CAAC,SAAS,C  
AAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,C  
AAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,M  
AAM,CAAC,CAAC,YAAY,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,KAAK,EAAE,EAAC,CAAC,CAAC,oB  
AAoB,CAAC,aAAa,EAAC,CAAC,SAAS,WAAW,CAAC,EAAE,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,EA  
AE,EAAC,CAAC,SAAS,YAAY,CAAC,EAAE,CAAC,CAAC,aAAa,CAAC,OAAO,CAAC,EAAE,EAAC,CAAC,I  
AAI,eAAe,CAAC,CAAC,CAA+B,IAAI,qBAaQB,CAAC,IAAI,CAAC,SAAS,gBAAgB,CAAC,EAAE,CAAC,CA  
AC,MAAM,CAAC,CAAC,sBAAsB,CAAC,qDAaQD,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,  
wBAAwB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,CAAC,SAAS,mB  
AAmB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,wBAAwB,CAAC,CAAC,CAAC  
,MAAM,CAAC,wBAAwB,CAAC,CAAC,eAAe,EAAC,CAAC,GAAG,eAAe,EAAE,CAAC,CAAC,CAA+F,GAA  
G,qBAaQB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBAaQB,CAAC,qBAaQB,CAAC,IAAI,CAAC,QAAQ,GAAE,CA  
AC,CAAC,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,EAAE,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,E  
AAE,CAAC,SAAS,KAAK,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAA  
M,CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,CAAC,KAAK,CAAC,sBAAs  
B,CAAC,CAAC,IAAI,KAAK,EAAE,KAAK,CAAC,CAAC,IAAI,EAAE,EAAE,CAAC,GAAG,CAAC,IAAI,CAA  
C,CAAC,KAAK,CAAC,IAAI,CAAc,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C,CAAC,IAAI,CAAC,CAA  
C,IAAI,WAAW,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,MAAM,CAA  
C,CAAC,SAAS,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,MAAM,CAAC,SAAS,CAAC,UAAU  
,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,GAA

G,CAAC,CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,C  
AAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,QAAQ,CAAC,C  
AAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,sCAAsC,CAAC,GAAG,CAA  
C,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EAAC,CAAC,SAAS,SAAS,CAA  
C,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAAC,CAAC,OAAO,IAAI,UAA  
U,CAAC,UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,IAAI,CAAC,CAAC,KAAL,C  
AAC,MAAK,iDAAiD,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,KAAC,CAAC,GAAG,EAAC,CAAC,CAAC,  
SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,GAAG,kBAaKB,EAAE,qBAaQB,CAAC,CAAC,CAAC,GA  
AG,OAAO,KAAC,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,OAAO,KAAC,CAAC  
,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,GAA  
G,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,CAAC,OAAO,  
QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,CAAC,KAAC,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cA  
Ac,CAAC,CAAC,CAAC,KAAL,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CAAC,SAAS,O  
AAO,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,CAAC,IAAI  
,UAAU,CAAC,QAAQ,CAAC,EAAC,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,  
OAAO,CAAC,OAAO,EAAE,CAAC,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAA  
C,CAAC,SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,eAAe  
,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,  
KAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,CAAC,  
UAAU,CAAC,MAAM,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,IAAI,gBAAgB,CAAC,OAAO,CAAC,aAAa  
,CAAC,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CAAC,OAAO,CAAC,s  
BAAsB,CAAC,CAAC,CAAC,UAAU,CAAC,GAAG,CAAC,EAAE,gBAAgB,CAAC,mBAaMB,CAAmB,EAAC,  
CAAC,EAAC,CAAC,EAAC,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,gBAAgB,CAAmB,EAAC,CA  
AC,SAAS,yBAaYB,CAAC,MAAM,CAAC,CAAC,eAAe,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,C  
AAC,QAAQ,CAAC,EAAC,CAAC,SAAS,sBAAsB,CAAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAAE,CAAC,  
IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI,CAAC,C  
AAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAaYc,CAAC,M  
AAM,CAAC,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,  
CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAaOB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,  
EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,OAAO,KAAC,GAAG,UAAU,CAAC,CAAC,OAAO,KAAC,CA  
AC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,I  
AAI,MAAM,CAAC,WAAW,CAAC,oBAaOB,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,CAAC,I  
AAI,CAAC,yBAaYB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,iCAaiC,CAAC,MAAM,CAAC,CAAC,  
GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBAAsB,CAAC,yBAaYB,CAAC,CAAC,CAAC,CAAC,CAAC,CA  
AC,KAAL,CAAC,OAAO,sBAAsB,CAAC,yBAaYB,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAaiB,CAAC,  
CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,IAAI,CAAC,eAAe,CA  
AC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,qDAaQD,CAAC,CAAC,CAAC,C  
AAC,OAAO,KAAC,CAAC,CAAC,gBAAgB,EAAE,CAAC,KAAC,CAAC,kBAaKB,CAAC,CAAC,OAAM,EAA  
E,CAAC,IAAI,UAAU,CAAC,CAAC,KAAC,CAAC,UAAU,CAAC,MAAK,WAAW,CAAC,CAAC,KAAC,CAAC  
,SAAS,EAAE,CAAC,EAAE,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,kCAaKc,CAAC,EAAE,CAAC,EAAE,  
EAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,SAAS,cAAc,EAAE,CAAC,OAAO,CAAC,WAAW,GA  
AE,CAAC,SAAS,oBAaOB,CAAC,SAAS,CAAC,CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,CA  
AC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAAC,EAAE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CAAC,CAAC,  
QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,GAAG,OAA  
O,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAAS,CAAC,G  
AAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAAL,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,QAAQ,  
CAAC,GAAG,EAAC,CAAC,CAAC,KAAL,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,IAAI  
,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,CAAC,KAAC,CAAC,EAAE,C

AAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,GAAG,CAAC,EA  
AE,CAAC,KAAK,CAAC,EAAE,CAAC,KAAK,CAAC,CAAC,CAAC,OAAO,CAAC,EAAE,CAAC,KAAK,CAA  
C,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,MA  
AM,CAAC,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CA  
AC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,EA  
AE,CAAC,OAAO,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CA  
AC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,KAA  
K,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC  
,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,C  
AAC,MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,G  
AAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,  
CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,EAAE,CAAC,  
MAAM,CAAC,EAAE,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,  
CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CAAC,  
EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,KAAK,  
CAAC,GAAG,CAAC,KAAK,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC  
,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,EAAE,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,C  
AAC,KAAK,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,OAAO,CAAC,GA  
AG,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,OAAO,CA  
AC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OAAO,CAAC,GAAG,CAAC,OA  
AO,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAA  
C,YAAY,CAAC,EAAE,CAAC,KAAK,CAAC,EAAE,CAAC,UAAU,CAAC,GAAG,CAAC,YAAY,CAAC,GAAG,  
CAAC,UAAU,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,YAAY,CAAC,CAAC,CAAC,UAAU,CAAC,E  
AAE,CAAC,QAAQ,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CAAC,YAAY,CA  
AC,EAAE,CAAC,UAAU,CAAC,CAAC,CAAC,YAAY,CAAC,EAAE,CAAC,WAAW,CAAC,EAAE,CAAC,QAA  
Q,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,GAAG,CAAC,YAAY,CAAC,EAAE,CAAC,W  
AAW,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,CAAC,YAAY,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CA  
AC,eAAe,CAAC,EAAE,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,CAAC,SAAS,CAAC,EAAE,CA  
AC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,YAAY,CAAC,GAAG,CAAC,MAAM,CAAC,GA  
AG,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,SAAS,CA  
AC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,CAAC,EAAE,CAAC,eAAe,  
CAAC,EAAE,CAAC,UAAU,CAAC,EAAE,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,SAAS,sBAAsB,CAAC,I  
AAI,CAAC,KAAK,CAAC,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,IAAI,CAAC,gBAAgB,EAAE,CAAC,MAA  
M,EAAE,IAAI,CAAC,CAAC,EAAE,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,G  
AAG,KAAK,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,KAAK,EAAE,UAAU,CAAC,KAAK,CAAC,QA  
AQ,CAAC,IAAI,qBAaQB,CAAC,OAAO,CAAC,IAAI,CAAC,iBAaIB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CA  
AC,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,GAAG,qBAaQB,EAAE,IAAI,CAAC,CAAC,IAAI,UAAU,CAAC,O  
AAO,CAAC,eAAe,CAAC,iBAaIB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,qBAaQB,CAAC,CAAC,CAAC,  
CAAC,GAAG,UAAU,EAAE,qBAaQB,CAAC,CAAC,EAAE,KAAK,CAAC,eAAe,CAAC,CAAC,CAAC,GAAG,  
KAAK,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,MAAM,CAAC,iB  
AAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,GAAG,EAAE,CAAC,CAAC,OAA  
O,GAAG,CAAC,eAAe,CAAC,MAAK,8CAA8C,CAAC,GAAG,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,s  
BAAsB,CAAC,SAAS,UAAU,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,oFAAoF,CAAC,GA  
AG,CAAC,WAAW,CAAC,MAAK,iDAaiD,CAAC,iBAaIB,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,  
CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,C  
AAC,MAAM,CAAC,SAAS,EAAE,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,CAAC,OAAO,CAAC,cAA  
c,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC  
,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,UAAU,CAAC,SAAS,YAAY,CAAC,WAAW,CAAC,

CAAC,GAAG,sBAAsB,CAAC,MAAK,sFAAsF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,mDAAmD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,aAAa,CAAC,WAAW,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,uFAAuF,CAAC,GAAG,CAAC,WAAW,CAAC,MAAK,oDAAoD,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,WAAW,CAAC,CAAC,GAAG,OAAO,CAAC,CAAC,iBAAiB,EAAE,CAAC,WAAW,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,kBAaKB,CAAC,MAAM,EAAC,CAAC,CAAC,IAAI,OAAO,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,oBAAoB,GAAE,CAAC,CAAC,CAAC,WAAW,CAAC,UAAU,CAAC,IAAI,EAAE,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,IAAI,OAAO,CAAC,EAAE,CAAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,SAAS,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,wBAAwB,CAAC,EAAE,CAAC,CAAC,qBAAqB,CAAC,CAAC,CAAC,CAAC,2CAA2C,CAAC,EAAE,EAAC,CAAC,CAAC,UAAU,CAAC,UAAU,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,kBAaKB,CAAC,EAAE,CAAC,eAAe,CAAC,UAAU,EAAE,CAAC,eAAe,CAAC,UAAU,CAAC,MAAM,OAAO,CAAC,kBAaKB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,GAAG,EAAE,GAAE,CAAC,GAAG,sBAAsB,EAAE,aAAa,EAAE,CAAC,wBAAwB,GAAE,CAAC,CAAC,8BAA8B,CAAC,SAAS,EAAE,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,eAAe,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,sBAAsB,CAAC,EAAE,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,wBAAwB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,UAAU,CAAC,SAAS,QAAQ,CAAC,CAAC,IAAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,OAAO,CAAC,8BAA8B,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,EAAC,CAAC,CAAC,CAAC,CAAC,YAA Y,CAAC,UAAU,CAAC,OAAO,CAAC,8BAA8B,CAAC,aAAa,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,YAA Y,CAAC,EAAC,CAAC,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,IAAI,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,GAAG,OAAO,EAAE,OAAO,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,OAAO,CAAC,MAAM,EAAC,CAAC,CAAC,OAAO,CAAC,QAAQ,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,aAAa,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,GAAE,CAAC,OAAO,CAAC,cAAc,CAAC,GAAE,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,GAAG,OAAO,CAAC,gBAAgB,CAAC,CAAC,IAAI,SAAS,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,OAAO,CAAC,gBAAgB,EAAC,CAAC,OAAO,CAAC,gBAAgB,CAAC,CAAC,CAAC,GAAG,OAAO,CAAC,iBAAiB,EAAE,OAAO,CAAC,SAAS,CAAC,KAAK,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,GAAG,OA

AO,CAAC,MAAM,CAAC,OAAO,CAAC,MAAM,CAAC,OAAO,CAAC,KAAI,CAAC,CAAC,kBAakB,CAAC,S  
AAS,MAAM,CAAC,CAAC,OAAO,CAAC,+BAA+B,CAAC,UAAU,CAAC,OAAO,OAAO,CAAC,QAAQ,CAAC,  
MAAM,CAAC,OAAO,CAAC,gBAAgB,CAAC,CAAC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC,MAAM,CAAC,  
CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,cAAc,CAAC,OAAO,CAAC,MAAM,CAAC,C  
AAC,CAAC,CAAC,CAAC,OAAO,CAAC,cAAc,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,O  
AAO,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,+BAA+B,CAAC,SAAS,IAAI,CAAC,CAAC,iBAaiB,EAAE,CA  
AC,4CAA4C,EAAE,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,GAAE,CAAC,OAAO,CAAC,iBA  
AiB,EAAE,CAAC,4CAA4C,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,qBAaqB,CAAC,SAAS,I  
AAI,CAAC,EAAE,CAAC,sBAAsB,CAAC,SAAS,MAAM,CAAC,iBAaiB,CAAC,CAAC,MAAM,CAAC,SAAS,C  
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,IAAI,GAAG,CAAC,  
CAAC,CAAC,KAAK,CAAC,CAAC,GAAG,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,mCAAmC,CAAC,MA  
AM,CAAC,OAAO,CAAC,gBAAgB,CAAC,GAAG,CAAC,CAAC,cAAc,CAAC,EAAE,CAAC,CAAC,cAAc,CAA  
C,EAAE,aAAa,EAAE,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC,CAAC,YAA Y,C  
AAC,CAAC,GAAG,MAAM,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,C  
AAC,CAAC,CAAC,cAAc,CAAC,EAAC,CAAC,KAAI,CAAC,OAAO,CAAC,KAAK,CAAC,yCAayC,CAAC,GA  
AG,CAAC,sBAAsB,CAAC,CAAC,CAAC,cAAc,CAAC,CAAC,qCAaqC,EAAC,CAAC,OAAO,CAAC,mCAAmC  
,CAAC,SAAS,CAAC,MAAM,CAAC,GAAG,GAAG,GAAG,6BAA6B,CAAC,CAAC,4CAA4C,GAAE,CAAC,KA  
AK,GAAG,GAAG,GAAG,aAAa,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAK,GAAG  
,GAAG,GAAG,eAAe,CAAC,CAAC,aAAa,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAK,GAAG,GA  
AG,GAAG,YAA Y,CAAC,CAAC,UAAU,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAK,GAAG,GA  
AG,GAAG,cAAc,CAAC,CAAC,YAA Y,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAC,CAAC,KAAK,GAAG,GAA  
G,GAAG,QAAQ,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,IAAI,CAAC,GAAG,iBAaiB,CAAC,iBAaiB,CA  
AC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,UAAU,EAAE,CAAC,O  
AAO,MAAM,CAAC,WAAU,CAAC,CAAC,KAAK,GAAG,GAAG,GAAG,OAAO,CAAC,CAAC,GAAG,CAAC,  
SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KA  
AK,GAAG,GAAG,GAAG,UAAU,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAA  
C,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EAAC,CAAC,KAAK,GAAG,GAAG,GAAG,OAAO,CAAC,CAAC,  
KAAK,CAAC,SAAS,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC,MAAM,CAAC,EA  
AC,CAAC,KAAK,GAAG,GAAG,GAAG,MAAM,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,OAAO,EA  
AE,OAAO,CAAC,IAAI,CAAC,iBAaiB,EAAE,CAAC,MAAM,CAAC,OAAO,CAAC,gBAAgB,CAAC,EAAE,EA  
AE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,MAAM,EAAC,CAAC,C  
AAC,KAAK,GAAG,GAAG,GAAG,aAAa,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,CAAC,YAA Y,CAA  
C,EAAC,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,YAA Y,UAAU,CAAC,OAAO,MAAM,CAAC,CAA  
C,CAAC,KAAK,GAAG,GAAG,GAAG,YAA Y,CAAC,CAAC,OAAO,CAAC,kBAakB,CAAC,MAAM,EAAC,CA  
AC,KAAK,GAAG,GAAG,GAAG,gBAAgB,CAAC,CAAC,OAAO,CAAC,qBAaqB,CAAC,CAAC,CAAC,IAAI,E  
AAC,CAAC,KAAK,GAAG,CAAC,CAAC,IAAI,CAAC,MAAM,GAAG,cAAc,CAAC,CAAC,MAAM,CAAC,WA  
AW,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,KAAI,CAAC,GAAG,CAAC,iCAAiC,CAAC,GAAG,EAAC,CAA  
C,OAAO,CAAC,mCAAmC,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,SAAS,CAAC,CAAC,CA  
AC,GAAG,CAAC,yBAayB,CAAC,CAAC,CAAC,QAAQ,CAAC,GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,I  
AAI,CAAC,CAAC,CAAC,OAAO,EAAC,CAAC,CAAC,GAAG,mBAAmB,CAAC,CAAC,MAAM,CAAC,EAAE,  
CAAC,SAAS,CAAC,SAAS,IAAI,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,  
EAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,OAAO,CAAC,SAAS,IAAI,CAAC,CAAC,MAAM,CA  
AC,OAAO,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,MAAM,CAAC,EAAE,CAAC,MAAM,CAAC,SAAS,IAAI,  
CAAC,EAAE,EAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,WAAW,CAA  
C,MAAM,CAAC,qBAaqB,CAAC,EAAE,UAAU,CAAC,YAA Y,CAAC,UAAU,CAAC,YAA Y,CAAC,UAAU,CA  
AC,EAAC,CAAC,CAAC,oBAaoB,CAAC,UAAU,CAAC,IAAI,aAAa,CAAC,UAAU,CAAC,2CAA2C,CAAC,CA  
AC,OAAO,CAAC,aAAa,CAAC,IAAI,CAAC,IAAI,MAAM,CAAC,aAAa,CAAC,EAAC,CAAC,CAAC,YAA Y,C  
AAC,UAAU,CAAC,GAAG,OAAO,CAAC,aAAa,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,oB

AAoB,EAAE,CAAC,OAAO,CAAC,sBAAsB,CAAC,OAAO,CAAC,aAAa,CAAC,CAAC,CAAC,EAAC,CAAC,G  
AAG,OAAO,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,aAAa,CAAC,GAAG,EA  
AE,CAAC,KAAK,OAAO,IAAI,CAAC,CAAC,YAAY,CAAC,SAAS,KAAK,CAAC,CAAC,IAAI,CAAC,CAAC,  
WAAW,CAAC,GAAG,EAAE,CAAC,KAAK,CAAC,MAAM,WAAW,CAAC,GAAG,EAAE,CAAC,CAAC,CAA  
C,EAAE,CAAC,CAAC,CAAC,SAAS,mBAAmB,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,4BAA4B,CAAC,Q  
AAQ,CAAC,QAAQ,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,MAAM,CAAC,qBAAqB,CAAC,CAAC,  
mBAAmB,CAAC,SAAS,gBAAgB,EAAE,CAAC,OAAO,aAAa,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,g  
BAAgB,CAAC,SAAS,gBAAgB,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,SAAS,CAAC,GAAG,CAAC  
,GAAG,CAAC,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,gBAAgB,CAAC,SAAS,cA  
Ac,CAAC,SAAS,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,YAAY,  
CAAC,SAAS,CAAC,CAAC,QAAQ,CAAC,CAAC,QAAQ,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,kBAakB,  
CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,EAAC,CAAC,SAAS,YAA  
Y,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,UAAU,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,I  
AAI,mBAAmB,CAAC,GAAG,mBAAmB,CAAC,CAAC,mBAAmB,CAAC,UAAU,CAAC,IAAI,CAAC,CAAC,O  
AAO,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CA  
AC,CAAC,CAAC,CAAC,GAAG,EAAC,CAAC,KAAK,GAAG,sBAAsB,CAAC,CAAC,mBAAmB,CAAC,UAAU,  
CAAC,OAAO,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,+BAA+B,CAAC,EAAC,CAAC,KAAK,GA  
AG,OAAO,OAAO,GAAG,WAAW,CAAC,CAAC,mBAAmB,CAAC,QAAO,CAAC,KAAK,mBAAmB,CAAC,UA  
AU,CAAC,OAAO,WAAW,CAAC,GAAG,EAAE,CAAC,CAAC,SAAS,QAAQ,CAAC,KAAK,CAAC,CAAC,iBA  
AiB,EAAE,CAAC,iBAAiB,EAAE,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,OAAO,KAAK,CAAC,SAAS,OA  
AO,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,C  
AAC,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,SAAS,gCAAgC,CAAC,cAAc,CAAC,YAAY,CAAC,CAAC,GA  
AG,cAAc,EAAE,YAAY,CAAC,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,6BAA6B,CAAC,EAAC,CAAC,KA  
AK,GAAG,sBAAsB,CAAC,CAAC,WAAW,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,KAAK,CAAC,oBAAoB,C  
AAC,EAAC,CAAC,KAAI,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,IAAI,  
MAAM,CAAC,OAAO,EAAE,OAAO,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,MAAM,CAA  
C,MAAM,CAAC,WAAW,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,EAAC,CAAC,OAAO,CAAC,CAAC,SA  
AS,MAAM,EAAE,CAAC,KAAK,GAAG,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CA  
AC,CAAC,IAAI,IAAI,CAAC,gBAAgB,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,OAAO,UAAU,CAAC,IAA  
I,CAAC,CAAC,KAAK,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,SAAS,iDAaiD,CAAC,cAAc,CAAC,SAAS,CAA  
C,EAAE,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,IAAI,EAAE,CAAC,E  
AAE,IAAI,CAAC,gBAAgB,EAAE,CAAC,MAAM,EAAE,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,OAAM,CA  
AC,EAAE,CAAC,GAAG,CAAC,kBAakB,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,IAAI,CAAC,iBAai  
B,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,GAAG,GAAG,GAAG,WAAW,  
CAAC,OAAM,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,WAAW,CAAC,OAAM,CAAC,CAAC,CAAC,GAAG  
,GAAG,GAAG,IAAI,CAAC,OAAO,CAAC,CAAC,MAAK,4CAA4C,CAAC,GAAG,CAAC,KAAI,CAAC,GAAG,  
OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,OA  
AM,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,IAAI,IAAI,CAAC,IAAI,CAAC,  
OAAO,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,  
CAAC,IAAI,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,GA  
AG,IAAI,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8  
B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,OAAM,CAAC,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,QAAQ,  
CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,QAAQ,EAAE,CAAC  
,CAAC,CAAC,KAAK,CAAC,4CAA4C,EAAE,CAAC,GAAG,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,  
IAAI,EAAE,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,QAAQ,CAAC,OAAO,CA  
AC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,8BAA8B,EAAE,CAAC,CAAC,IAAI,EAAC,CAAC,OAAO,CAAC,CA  
AC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,gBAAgB,EAAE,CAAC,UA  
AU,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,6BAA6B,EAAE,CAAC,GAA



G,mBAAmB,CAAC,OAAOC,EAAa,CAAC,IAAI,EAAE,CAAC,MAAM,CAAC,OAAO,SAAS,CAAC,qBAAqB,C  
AAC,CAAC,SAAS,mCAAmC,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC,IAAI,WAAW,CAAC,SAAS,CAAC,M  
AAM,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,SAAS,EAAE,CAAC,IAAI,qBAAqB,CAAC,WAAW,CAAC,IAA  
I,IAAI,CAAC,UAAU,CAAC,qBAAqB,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,IAAI,EAAE,CAAC,CA  
AC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,G  
AAG,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,CAAC,CAAC,CA  
AC,CAAC,IAAG,CAAC,IAAI,GAAG,CAAC,yCAAyC,CAAC,KAAK,CAAC,qBAAqB,CAAC,IAAI,CAAC,IAAI  
,CAAC,CAAC,YAAy,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,8CAA8C,CAAC,EAAE,CAAC,I  
AAI,qBAAqB,CAAC,EAAE,CAAC,SAAS,gBAAgB,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,qBAAqB,CAA  
C,MAAM,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,GAAG,GAAG,CAAC,CAAC,MAAM,EAAE,CAAC,gBAAg  
B,EAAE,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,GAAG,CAAC,GAAG,  
MAAM,EAAE,GAAG,CAAC,CAAC,CAAC,GAAG,EAAE,CAAC,qBAAqB,CAAC,IAAI,CAAC,MAAM,CAAC,  
iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,GAAG,CAAC,CAAC,  
CAAC,EAAE,IAAG,CAAC,OAAO,qBAAqB,CAAC,SAAS,qCAAqC,CAAC,KAAK,CAAC,WAAW,CAAC,IAAI  
,CAAC,CAAC,8CAA8C,CAAC,MAAM,CAAC,WAAW,CAAC,IAAI,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,I  
AAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,EAAE,CAAC,CAAC,8CAA8C,CA  
AC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,YAAy,CAAC,KAAK  
,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,YAAy,CAAC,oBAa0B,CAAC,KAAK,CAAC,CAAC,UAAU,C  
AAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,8CAA8C,CA  
AC,CAAC,SAAS,yBAyB,EAAE,CAAC,OAAO,gBAAgB,EAAE,CAAC,MAAM,CAAC,SAAS,yBAyB,CAAC  
,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,UAAU,CAAC,KAA  
K,GAAG,EAAE,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,MA  
AM,CAAC,CAAC,EAAE,CAAC,SAAS,uBAuB,CAAC,aAAa,CAAC,CAAC,IAAI,OAAO,CAAC,yBAyB,EA  
AE,CAAC,GAAG,aAAa,EAAE,OAAO,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC  
,GAAG,aAAa,CAAC,WAAW,CAAC,CAAC,OAAO,KAAK,CAAC,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,OA  
AO,EAAE,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,OAAO,EAAE,CAAC,CAAC  
,EAAE,CAAC,OAAO,CAAC,CAAC,iBAAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iBAAiB,CAAC,aAAa,CAAC,S  
AAS,CAAC,CAAC,IAAI,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC,OAAO,CAAC,IAAI,CAAC,  
GAAG,CAAC,aAAa,CAAC,iBAAiB,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,yBAyB,  
CAAC,OAAO,CAAC,CAAC,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,OAAO,KAAK,CAAC,I  
AAI,QAAQ,CAAC,CAAC,cAAc,CAAC,CAAC,CAAC,uBAuB,CAAC,UAAU,CAAC,IAAI,IAAI,CAAC,CAAC  
,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,C  
AAC,QAAQ,CAAC,cAAc,CAAC,CAAC,EAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,QAAQ,CAA  
C,aAAa,CAAC,GAAE,CAAC,CAAC,4BAA4B,CAAC,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,8BAA8B,CA  
AC,CAAmD,QAAQ,CAAC,8BAA8B,CAAC,KAAI,CAAC,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,SAAS,CA  
AC,SAAS,cAAc,CAAC,UAAU,CAAC,QAAQ,CAAC,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,IAAI,CAAC,C  
AAC,GAAG,IAAI,CAAC,MAAM,EAAE,IAAI,CAAC,MAAM,CAAC,OAAO,KAAK,CAAC,IAAI,IAAI,CAAC,I  
AAI,IAAI,CAAC,CAAC,GAAG,IAAI,CAAC,CAAC,CAAC,EAAE,IAAI,CAAC,CAAC,CAAC,CAAC,OAAO,K  
AAK,CAAC,OAAO,IAAI,CAAC,IAAI,IAAI,CAAC,IAAI,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,IAAI,CAAC,  
QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,cAAc,EAAE,cAAc,EAAE,sBAAsB,CAA  
C,IAAI,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,I  
AAI,CAAC,CAAC,cAAc,CAAC,cAAc,CAAC,UAAU,CAAC,UAAU,CAAC,QAAQ,CAAC,QAAQ,CAAC,CAAC  
,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAA  
C,UAAU,CAAC,CAAC,CAAC,UAAU,CAAC,EAAC,CAAC,CAAC,mBAAmB,CAAC,SAAS,cAAc,CAAC,CAA  
C,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CA  
AC,CAAC,CAAC,GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,cAAc,EAAE,cAAc,CAAC,CAAC,Q  
AAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAA  
C,CAAC,8BAA8B,CAAC,UAAU,CAAC,OAAO,QAAQ,CAAC,cAAc,EAAE,QAAQ,CAAC,mBAAmB,CAAC,m

BAAmB,CAAC,CAAC,gBAAgB,CAAC,UAAU,CAAC,GAAG,CAAC,QAAQ,CAAC,8BAA8B,EAAE,CAAC,CAAC,MAAM,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,cAAc,CAAC,KAAC,CAAC,IAAI,CAAC,IAAI,CAAC,QAAQ,EAAC,CAAC,CAAC,CAAC,aAAa,CAAC,EAAE,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,MAAM,EAAE,MAAM,GAAG,CAAC,eAAe,EAAE,eAAe,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,eAAe,CAAC,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,cAAc,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,CAAC,eAAe,CAAC,CAAC,CAAC,iBAAiB,CAAC,CAAC,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAC,CAAC,CAAC,uBAAuB,CAAC,SAAS,YAAY,CAAC,CAAC,IAAI,cAAc,CAAC,SAAS,cAAc,CAAC,KAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,cAAc,CAAC,QAAQ,CAAC,mBAAmB,CAAC,YAAY,CAAC,QAAQ,CAAC,gBAAgB,EAAE,CAAC,YAAY,CAAC,WAAW,CAAC,KAAC,CAAC,CAAC,QAAQ,CAAC,gBAAgB,EAAE,CAAC,EAAE,QAAQ,CAAC,eAAc,CAAC,CAAC,GAAG,YAAY,CAAC,YAAY,CAAC,CAAC,YAAY,CAAC,iBAAiB,CAAC,cAAc,CAAC,YAAY,CAAC,MAAM,CAAC,gBAAgB,CAAC,YAAY,CAAC,eAAe,CAAC,cAAc,CAAC,YAAY,CAAC,UAAU,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAI,CAAC,YAAY,CAAC,CAAC,QAAQ,CAAC,4BAA4B,GAAE,CAAC,KAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,MAAM,EAAE,YAAY,CAAC,MAAM,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,CAAC,eAAe,EAAE,YAAY,CAAC,eAAe,CAAC,CAAC,QAAQ,CAAC,cAAc,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,8BAA8B,CAAC,SAAS,YAAY,CAAC,gBAAgB,CAAC,WAAW,CAAC,SAAS,CAAC,QAAQ,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,EAAE,CAAC,IAAI,OAAO,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,WAAW,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,2BAA2B,CAAC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,gBAAgB,CAAC,SAAS,CAAC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,CAAC,+BAA+B,CAAC,SAAS,YAAY,CAAC,CAAC,OAAO,YAAY,EAAE,KAAC,CAAC,CAAC,OAAO,CAAC,CAAC,KAAC,CAAC,CAAC,OAAO,OAAO,CAAC,mCAAmC,CAAC,QAAQ,OAAO,YAAY,CAAC,CAAC,CAAC,oBAAoB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,EAAE,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,OAAM,SAAS,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,OAAM,SAAS,CAAC,OAAO,MAAM,EAAE,MAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,iBAAiB,CAAC,UAAU,CAAC,OAAO,QAAQ,CAAC,iBAAiB,EAAE,QAAQ,CAAC,uBAAuB,CAAC,CAAC,CAAC,SAAS,eAAe,CAAC,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,eAAe,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,OAAO,OAAO,CAAC,SAAS,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,EAAE,CAAC,IAAI,OAAO,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,IAAI,eAAe,CAAC,CAAC,CAAC,GAAG,YAAY,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,YAAY,EAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,eAAe,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,KAAC,CAAC,iBAAiB,EAAE,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,CAAC,eAAe,CAAC,OAAO,CAAC,CAAC,YAAY,CAAC,QAAQ,EAAC,CAAC,SAAS,qDAAdD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,EAAE,CAAC,wDAAwD,CAAC,YAAY,CAAC,YAAY,CAAC,KAAC,CAAC,MAAM,EAAC,CAAC,SAAS,sBAAsB,CAAC,OAAO,CAAC,CAAC,OAAO,OAAO,CAAC,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,CAAC,OAAO,CAAC,IAAI,kBAakB,CAAC,CAAC,CAAC,CAAC,OAAO,QAAQ,GAAG,WAAW,CAAC,QAAQ,CAAC,CAAC,CAAC,OAAO,MAAM,GAAG,WAAW,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,SAAS,eAAe,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,sBAA

sB,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,kBAakB,CAAC,MAAM,CAAC,GAAG,OAAO,QAAQ,G  
AAG,WAAW,CAAC,QAAQ,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,UAAU,C  
AAC,SAAS,qBAAqB,CAAC,MAAM,CAAC,CAAC,OAAO,eAAe,CAAC,MAAM,CAAC,CAAC,SAAS,kDAakD  
,CAAC,MAAM,CAAC,KAak,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,qBAAqB,CAAC,MAAM,CA  
AC,CAAC,GAAG,CAAC,MAAM,CAAC,OAAM,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,eAAe,CAAC,CA  
AC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,EAAE,CAAC,CAAC,CAAC,KAak,CAAC,iBAAiB,EAAE,CA  
AC,MAAM,CAAC,eAAe,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAM,CAAC,GAAG,MAAM,CAAC,eAA  
e,EAAE,CAAC,MAAM,CAAC,2BAA2B,CAAC,CAAC,GAAG,MAAM,CAAC,eAAe,CAAC,MAAM,CAAC,MA  
AM,CAAC,eAAe,CAAC,IAAI,kBAakB,CAAC,KAak,CAAC,GAAG,MAAM,CAAC,WAAW,EAAE,MAAM,C  
AAC,WAAW,CAAC,KAak,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,WAAW,CAAC,KAak,CAAC,Y  
AAY,CAAC,IAAI,CAAC,CAAC,kBAakB,CAAC,YAAY,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,YAAY,CA  
AC,CAAC,CAAC,GAAG,CAAC,EAAE,YAAY,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,KAak,EAAE,YA  
AY,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,OAAM,CAAC,MAAM,CAAC,KAak,CAAC,KAak,CAAC,M  
AAM,CAAC,MAAM,CAAC,MAAM,CAAC,GAAG,kBAakB,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,KA  
AK,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,KAak,CAAC,MAAM,EAAC,CAAC,CAAC,KAak,GA  
AG,MAAM,CAAC,eAAe,CAAC,CAAC,IAAI,YAAY,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,eAAe,CAAC  
,CAAC,EAAE,CAAC,CAAC,CAAC,qDAAqD,CAAC,YAAY,CAAC,MAAM,CAAC,KAak,CAAC,MAAM,CA  
AC,CAAC,OAAO,CAAC,CAAC,KAai,CAAC,OAAM,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,+CAA  
+C,CAAC,MAAM,CAAC,KAak,CAAC,MAAM,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAA  
C,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,KAak,CAAC,MAAM,CAAC,CAAC,OAAO,kDAakD,CAAC,M  
AAM,CAAC,KAak,CAAC,MAAM,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,KAak,CAAC,MAA  
M,CAAC,CAAC,IAAI,MAAM,CAAC,qBAAqB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,OA  
AO,kDAakD,CAAC,MAAM,CAAC,KAak,CAAC,MAAM,CAAC,CAAC,KAai,CAAC,OAAO,+CAA+C,CAA  
C,MAAM,CAAC,KAak,CAAC,MAAM,CAAC,CAAC,CAAC,SAAS,qCAAqC,CAAC,SAAS,CAAC,EAAE,SA  
S,2BAA2B,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE,SAAS,qCAAqC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG  
,CAAC,GAAG,CAAC,YAAY,CAAC,wBAwB,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,qBA  
AqB,CAAC,CAAC,SAAS,KAak,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,KAak,C  
AAC,OAAO,EAAC,CAAC,CAAC,GAAG,CAAC,qBAAqB,CAAC,CAAC,SAAS,IAAI,CAAC,KAak,CAAC,KA  
AK,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,0BAA0B,CAAC,CAAC,IAAI,CAAC,KAak,CAAC,KAak,CAA  
C,SAAS,EAAC,CAAC,CAAC,GAAG,CAAC,uBAuB,CAAC,CAAC,SAAS,IAAI,CAAC,KAak,CAAC,IAAI,C  
AAC,OAAO,CAAC,SAAS,CAAC,CAAC,GAAG,CAAC,4BAA4B,CAAC,CAAC,IAAI,CAAC,KAak,CAAC,IA  
AI,CAAC,OAAO,CAAC,SAAS,EAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,SAAS,sCAAsC,CAAC,GAA  
G,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,yBAyB,CAAC,CAAC,GAAG,GAAG,CAA  
C,CAAC,GAAG,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAAO,GAAG,CAAC,sBAAsB,CAAC,EAAE,C  
AAC,CAAC,GAAG,CAAC,mBAAmB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,CAAC,sBAAsB,CAA  
C,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,iBAAiB,CAAC,CAAC,SAAS,GAAG,CAAC,CAAC,GAA  
G,CAAC,oBAAoB,CAAC,CAAC,GAAG,EAAC,CAAC,CAAC,GAAG,CAAC,eAAe,CAAC,CAAC,SAAS,GAAG  
,CAAC,CAAC,OAAO,GAAG,CAAC,kBAakB,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,OAAO,CAAC,CAA  
C,CAAC,SAAS,iCAaiC,CAAC,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,oBAAo  
B,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,CAAC,CAAC,IAAI,CA  
AC,CAAC,GAAG,CAAC,kBAakB,CAAC,CAAC,CAAC,CAAC,IAAI,EAAC,CAAC,CAAC,OAAO,CAAC,CAA  
C,CAAC,SAAS,+BAA+B,CAAC,GAAG,CAAC,CAAC,OAAM,CAAC,EAAE,GAAG,CAAC,cAAc,CAAC,GAA  
G,CAAC,YAAY,CAAC,kBAakB,CAAC,CAAC,CAAC,IAAI,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC  
,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,YAAY,CAAC,EAAE,CAAC,aAAa,CAAC,EAAE,CA  
AC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,EAAE,CAAC,IAAI,CAAC,EAAE,  
CAAC,QAAQ,CAAC,EAAE,CAAC,iBAAiB,CAAC,EAAE,CAAC,eAAe,CAAC,EAAE,CAAC,YAAY,CAAC,EA  
AE,CAAC,WAAW,CAAC,EAAE,CAAC,eAAe,CAAC,CAAC,CAAC,WAAW,CAAC,SAAS,WAAW,CAAC,SA  
AS,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,SAAS,CAAC,CAAC,EAAE,CAAC,SAAS,CAAC,UAAU,CAAC,

CAAC,CAAC,QAAQ,CAAC,SAAS,KAAK,CAAC,CAAC,IAAI,GAAG,CAAC,EAAE,CAAC,OAAO,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,OAAO,GAAG,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,EAAE,YAA Y,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,SAAS,CAAC,GAAG,EAAE,CAAC,OAAO,MAAM,CAAC,CAAC,aAAa,CAAC,SAAS,MAAM,CAAC,sBAAsB,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,OAAO,CAAC,sBAAsB,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,eAAe,CAAC,GAAG,CAAC,sBAAsB,CAAC,CAAC,OAAO,MAAM,CAAC,CAAC,eAAe,CAAC,SAAS,GAAG,CAAC,sBAAsB,CAAC,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,aAAa,EAAE,CAAC,IAAI,OAAO,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,UAAU,CAAC,sBAAsB,CAAC,OAAO,CAAC,sBAAsB,CAAC,YAA Y,CAAC,KAAK,CAAC,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,WA W,CAAC,OAAO,CAAC,EAAE,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,GAAG,OAAO,sBAAsB,CAAC,yBAAyB,GAAG,WA W,EAAE,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,OAAO,EAAE,CAAC,OAAO,MAAM,CAAC,CAAC,kBAaKB,CAAC,SAAS,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,EAAE,CAAC,cAAc,EAAE,EAAE,CAAC,cAAc,CAAC,KAAK,CAAC,OAAM,EAAE,aAAa,EAAE,CAAC,KAAK,CAAC,CAAC,UAAU,CAAC,SAAS,aAAa,CAAC,CAAC,OAAO,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,CAAC,aAAa,CAAC,SAAS,aAAa,CAAC,CAAC,GAAG,EAAE,CAAC,cAAc,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,EAAE,CAAC,cAAc,CAAC,IAAI,CAAC,GAAG,OAAO,QAAQ,GAAG,QAAQ,CAAC,QAAQ,CAAC,yBAAyB,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,CAAC,GAAG,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,EAAE,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,WA W,CAAC,SAAS,CAAC,KAAK,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,KAAI,CAAC,CAAC,cAAc,CAAC,SAAS,OAAO,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,EAAE,CAAC,cAAc,CAAC,GAAG,OAAO,CAAC,kBAaKB,CAAC,OAAO,OAAO,CAAC,kBAaKB,CAAC,IAAI,CAAC,IAAI,KAAK,CAAC,OAAO,CAAC,KAAK,CAAC,qCAAqC,CAAC,KAAK,CAAC,CAAC,sCAAsC,CAAC,KAAK,CAAC,CAAC,iCAAiC,CAAC,KAAK,CAAC,CAAC,KAAK,CAAC,qBAaqB,CAAC,KAAK,CAAC,YAA Y,CAAC,0BAA0B,CAAC,CAAC,+BAA+B,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,KAAK,CAAC,sBAAsB,EAAE,EAAE,EAAE,CAAC,IAAI,CAAC,OAAO,CAAC,SAAS,GAAG,CAAC,CAAC,GAAG,GAAG,CAAC,OAAO,CAAC,cAAc,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,OAAO,CAAC,OAAO,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,CAAC,YAA Y,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,oBAAoB,CAAC,SAAS,OAAO,CAAC,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,EAAE,CAAC,YAA Y,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,gBAAgB,CAAC,CAAC,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,IAAI,WA W,CAAC,KAAK,CAAC,mBAAmB,CAAC,CAAC,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,WA W,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,KAAK,CAAC,gBAAgB,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,GAAG,CAAC,MAAM,CAAC,gBAAgB,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,GAAG,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,CAAC,EAAE,GAAG,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,CAAC,CAAC,IAAI,CAAC,WA W,CAAC,GAAG,CAAC,EAAE,CAAC,IAAI,GAAG,CAAC,KAAK,CAAC,kBAaKB,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,GAAG,CAAC,CAAC,IAAI,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,GAAG

,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,KAAC,CAAC,kBAaKB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,QAAQ,CAAC,CAAC,EAAE,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,IAAG,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,oCAAoC,CAAC,CAAC,SAAS,CAAC,WAAW,CAAC,kBAaKB,CAAC,CAAC,SAAS,mCAAmC,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,IAAI,CAAC,CAAC,UAAU,EAAE,CAAC,CAAC,IAAI,eAAe,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,IAAI,iBAaiB,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,WAAW,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,oBAAoB,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,uBAuB,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,iBAaiB,CAAC,oCAAoC,CAAC,eAAe,CAAC,CAAC,8BAA8B,CAAC,CAAC,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,YAA Y,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,YAA Y,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,yBAayB,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,mBAAmB,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,wBAAwB,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,4BAA4B,CAAC,iBAaiB,EAAE,CAAC,CAAC,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,qBAaqB,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,iBAaiB,CAAC,mBAAmB,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,aAAa,CAAC,EAAE,CAAC,aAAa,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,OAAO,aAAa,CAAC,SAAS,gCAAgC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,OAAO,mCAAmC,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,EAAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBAaiB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAE,CAAC,KAaI,CAAC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,iBAaiB,EAAE,CAAC,QAAQ,CAAC,OAAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,YAA Y,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CAAC,SAAS,CAAC,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,GAAG,sBAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,iBAaiB,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,iBAaiB,EAAE,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,SAAS,CAAC,EAAE,CAAC,gBAAgB,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,EAAE,CAAC,GAAG,EAAE,IAAG,CAAC,iBAaiB,EAAE,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CAAC,SAAS,oBAAoB,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,kBAaKB,CAAC,GAAG,EAAE,CAAC,GAAG,OAAO,CAAC,OAAO,GAAE,CAAC,SAAS,qBAaqB,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,CAAC,kBAaKB,CAAC,IAAI,CAAC,UAAU,CAAC,SAAS,CAAC,GAAG,CAAC,OAAO,CAAC,

CAAC,GAAG,EAAC,CAAC,EAAC,CAAC,SAAS,WAAW,CAAC,YAAY,CAAC,CAAC,GAAG,sBAAsB,CAAC,MAAK,qFAAqF,CAAC,IAAI,MAAM,CAAC,OAAO,CAAC,YAAY,EAAE,CAAC,GAAG,MAAM,CAAC,OAAO,GAAG,SAAS,CAAC,MAAK,iBAAiB,CAAC,GAAG,CAAC,YAAY,CAAC,WAAW,CAAC,MAAK,iCAAiC,CAAC,OAAO,CAAC,cAAc,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,IAAI,SAAS,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,SAAS,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,EAAC,CAAC,IAAI,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,IAAI,OAAO,CAAC,OAAO,CAAC,QAAQ,CAAC,YAAY,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,SAAS,CAAC,YAAY,CAAC,SAAS,CAAC,iBAAiB,CAAC,YAAY,CAAC,iBAAiB,CAAC,gBAAgB,CAAC,YAAY,CAAC,WAAW,CAAC,CAAC,IAAI,GAAG,CAAC,OAAO,CAAC,gBAAgB,EAAE,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAg,EAAE,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,gBAAgB,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,EAAE,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,SAAS,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,YAAY,CAAC,QAAQ,CAAC,CAAC,IAAI,WAAW,CAAC,2BAA2B,EAAE,CAAC,IAAI,aAAa,CAAC,WAAW,CAAC,EAAE,CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,GAAG,EAAE,GAAG,EAAE,CAAC,CAAC,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,IAAI,GAAG,CAAC,CAAC,KAAK,CAAC,KAAK,CAAC,eAAe,CAAC,YAAY,CAAC,YAAY,CAAC,KAAK,CAAC,YAAY,CAAC,GAAG,CAAC,kBAaKB,CAAC,YAAY,CAAC,WAAW,CAAC,WAAW,CAAC,YAAY,CAAC,SAAS,CAAC,WAAW,CAAC,YAAY,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,CAAC,IAAI,CAAC,WAAW,CAAC,GAAG,EAAE,CAAC,MAAM,CAAC,WAAW,CAAC,GAAG,CAAC,YAAY,CAAC,YAAY,EAAC,CAAC,CAAC,GAAG,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,UAAU,EAAE,CAAC,OAAO,MAAM,CAAC,WAAU,CAAC,CAAC,SAAS,eAAe,CAAC,WAAW,CAAC,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,CAAC,GAAG,OAAO,iBAAiB,GAAG,WAAW,CAAC,CAAC,GAAG,CAAC,qFAAqF,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,WAAW,CAAC,CAAC,GAAG,CAAC,mDAAmD,CAAC,CAAC,OAAO,EAAE,CAAC,IAAI,YAAY,CAAC,EAAE,CAAC,IAAI,KAAK,CAAC,CAAC,CAAC,GAAG,sBAAsB,GAAG,YAAY,CAAC,MAAM,GAAG,CAAC,EAAE,KAAK,CAAC,CAAC,CAAC,OAAO,qCAAqC,CAAC,SAAS,CAAC,WAAW,CAAC,IAAI,CAAC,aAAa,CAAC,GAAG,CAAC,CAAuB,IAAI,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,CAAC,CAAC,GAAG,IAAI,EAAE,IAAI,EAAE,CAAC,CAAC,CAAC,CAAC,SAAS,CAAC,iBAAiB,EAAE,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,SAAS,EAAE,KAAK,CAAC,SAAS,CAAC,iBAAiB,EAAE,CAAC,IAAI,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,QAAQ,CAAC,iBAAiB,EAAE,CAAC,IAAI,CAAC,EAAE,EAAE,CAAC,CAAC,GAAG,EAAC,CAAC,KAAI,CAAC,SAAS,CAAC,QAAO,CAAC,IAAI,iBAAiB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,iBAAiB,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,EAAE,CAAC,SAAS,EAAC,CAAC,KAAI,CAAC,SAAS,EAAE,SAAS,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,EAAC,CAAC,IAAI,gBAAgB,CAAC,OAAO,CAAC,GAAG,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,EAAE,CAAC,CAAC,EAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,CAAC,gBAAgB,EAAE,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,iBAAiB,EAAE,CAAC,WAAW,EAAE,CAAC,CAAC,CAAC,gBAAgB,CAAC,iBAAiB,EAAE,CAAC,gBAAgB,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,gBAAgB,CAAC,IAAI,OAAO,CAAC,gBAAgB,CAAC,GAAG,CAAC,iBAAiB,EAAE,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,CAAC,SAAS,CAAC,SAAS,CAAC,SAAS,CAAC,SAAS,CAAC,iBAAiB,CAAC,iBAAiB,CAAC,QAAQ,CAAC,QAAQ,CAAC,YAAY,CAAC,aAAa,CAAC,WAAW,CAAC,gBAAgB,CAAC,GAAG,CAAC,GAAG,CAAC,YAAY,CAAC,YAAY,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,YAAY,CAAC,GAAG,CAAC,aAAa,CAAC,WAAW,CAAC,YAAY,

CAAC,YAAY,EAAC,CAAC,KAAI,CAAC,WAAW,CAAC,YAAY,EAAC,CAAC,OAAO,CAAC,CAAC,SAAS,u  
BAAuB,EAAE,CAAC,GAAG,CAAC,sBAAsB,CAAC,OAAO,IAAI,EAAE,CAAC,aAAa,EAAE,CAAC,GAAG,C  
AAC,EAAE,CAAC,OAAO,IAAI,cAAc,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,EAAE,CAAC,  
EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,cAAc,CAAC,OAAO,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,CAAC  
,iBAAiB,EAAE,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,EAAE,CAAC,CAAC,  
MAAK,WAAW,CAAC,SAAS,kCAAkC,EAAE,CAAC,GAAG,mBAAmB,CAAC,OAAO,GAAG,qBAaQb,CAAC,  
OAAO,QAAQ,CAAC,0IAA0I,EAAC,CAAC,SAAS,4BAA4B,CAAC,MAAM,CAAC,MAAM,CAAC,KAAK,CAA  
C,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,kDAaD,CAAC,CAAC,OAAO,WAAW,CAAC,K  
AAK,CAAC,GAAG,sBAAsB,EAAE,aAAa,EAAE,EAAE,MAAM,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,M  
AAM,CAAC,mCAAmC,CAAC,CAAC,OAAO,WAAW,CAAC,OAAO,CAAC,KAAK,GAAG,CAAC,sBAAsB,EA  
AE,kCAAkC,EAAE,EAAE,MAAM,CAAC,CAAC,GAAG,CAAC,cAAc,CAAC,MAAM,CAAC,mCAAmC,CAAC  
,CAAC,OAAO,WAAW,CAAC,OAAO,CAAC,IAAI,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,E  
AAE,CAAC,CAAC,CAAC,GAAG,IAAI,GAAG,MAAM,CAAC,CAAC,GAAG,CAAC,mCAAmC,CAAC,MAAM  
,CAAC,sEAAe,CAAC,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,IAAI,QAAQ,CAAC,OAAO,CAAC,IAAI,C  
AAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,GAAG,QAAQ,CAAC,CAAC,G  
AAG,CAAC,2BAA2B,CAAC,MAAM,CAAC,+BAA+B,CAAC,CAAC,OAAO,WAAW,CAAC,MAAM,CAAC,G  
AAG,KAAK,CAAC,CAAC,kCAAkC,GAAE,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,OAAO,CAAC,IAAI,CA  
AC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,GAAG,YAAY,EAAE,CAAC,CA  
AC,CAAC,IAAI,cAAc,CAAC,OAAO,CAAC,IAAI,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,CAAC,EAAE,  
CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAAiB,EAAE,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,cAAc,  
CAAC,OAAO,CAAC,KAAK,CAAC,iBAAiB,EAAE,CAAC,MAAM,CAAC,EAAE,EAAE,CAAC,CAAC,CAAC,  
CAAC,CAAC,GAAG,CAAC,sBAAsB,CAAC,aAAa,CAAC,MAAM,CAAC,CAAC,KAAK,WAAW,CAAC,CAAC  
,KAAK,CAAC,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,GAAG,CAAC,  
KAAK,CAAC,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,uBAuB,EAAE,CAAC,GAAG,CAAC,sBAAsB,CA  
AC,4CAA4C,EAAE,CAAC,sBAAsB,CAAC,MAAM,CAAC,CAAC,CAAC,YAAY,CAAC,sBAAsB,CAAC,GAA  
G,CAAC,CAAC,EAAC,CAAC,CAAC,SAAS,aAAa,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,OAAO,4BAA4  
B,CAAC,MAAM,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,s  
BAAsB,CAAC,OAAO,mCAAmC,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,EAAE,  
KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,OAAO,W  
AAW,CAAC,KAAK,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,C  
AAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CA  
AC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAA  
C,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,EAAE,CAAC  
,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,  
KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,K  
AAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KA  
AK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,MAAM,CAAC,KAA  
K,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK  
,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,  
GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,  
EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,  
GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,G  
AAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAM,CA  
AC,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,CAAC,KA  
AK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KA  
AK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAA  
K,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,

EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,IAAI,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EA  
AE,CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,UAA  
U,CAAC,KAAK,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,  
CAAC,OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,IAAI,CAAC,KAAK,CAAC,CA  
AC,OAAO,OAAO,CAAC,KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CA  
AC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAA  
C,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC  
,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,KAAK,GAAG,CAAC,  
OAAO,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,EAAE,CAAC,K  
AAK,CAAC,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,CA  
AC,GAAG,OAAO,SAAS,GAAG,QAAQ,CAAC,OAAO,SAAS,CAAC,qBAAqB,CAAC,EAAE,CAAC,CAAC,OA  
AO,CAAC,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,GAAG,CAAC,sBA  
AsB,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC,IAAI,KAAK,CAAC,IAAI,oBAAoB,CAAC,CAAC,IAAI,CA  
AC,OAAO,CAAC,+CAA+C,CAAC,SAAS,CAAC,QAAQ,CAAC,SAAS,CAAC,QAAQ,CAAC,CAAC,IAAI,aAAa  
,CAAC,CAAC,GAAG,CAAC,cAAc,CAAC,GAAG,CAAC,YAAY,CAAC,GAAG,CAAC,gCAAgC,CAAC,GAAG,  
CAAC,MAAM,CAAC,GAAG,CAAC,yBAyB,CAAC,GAAG,CAAC,iDAaiD,CAAC,GAAG,CAAC,sBAAsB,C  
AAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,mBAAmB,CAAC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CA  
AC,6BAA6B,CAAC,GAAG,CAAC,qCAAqC,CAAC,GAAG,CAAC,uBAuB,CAAC,GAAG,CAAC,mCAAmC,C  
AAC,GAAG,CAAC,qCAAqC,CAAC,GAAG,CAAC,2BAA2B,CAAC,GAAG,CAAC,gCAAgC,CAAC,GAAG,CA  
AC,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,cAAc,CAAC,GAAG,  
CAAC,UAAU,EAAE,MAAM,CAAC,YAAY,CAAC,CAAC,GAAG,CAAC,oBAAoB,CAAC,GAAG,CAAC,qBAA  
qB,CAAC,GAAG,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,IAAI,G  
AAG,CAAC,UAAU,EAAE,CAAC,IAAI,kBAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,kBAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,G  
AAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC  
,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAA  
M,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I  
AAI,wBAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,wBAwB,CAAC,  
MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAA  
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,kBAkB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,gBAAgB,CAAC,MA  
AM,CAAC,kBAkB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,gBAAgB,CAAC,MAAM,CAAC,kBAkB,CA  
AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC  
,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAA  
C,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC  
,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CA  
AC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,G  
AAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,  
MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM  
,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA  
I,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,  
MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S  
AAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CA  
AC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EA  
AE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,C  
AAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,C  
AAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,M



AAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,C  
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,  
MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GA  
AG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,c  
AAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,  
KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC  
,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S  
AAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAA  
C,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE  
,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAA  
C,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAA  
C,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,M  
AAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CA  
AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC  
,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CA  
AC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU  
,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CA  
AC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,  
MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAA  
M,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,  
CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,  
EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,  
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,I  
AAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,M  
AAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA  
AS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAA  
C,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA  
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CA  
AC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CA  
AC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,cAAc,CAAC,MAA  
M,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,C  
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,  
CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,  
MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA  
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBA  
AiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,Y

AA Y,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,c  
AAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,qBAAqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,UAAU,CAAC,OAAM,CAA  
C,qBAAqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,  
CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,  
MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAA  
C,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA  
AC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAA  
C,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,  
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CA  
AC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,  
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC  
,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,  
CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO  
,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU  
,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,  
CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,  
IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,MAAM,CAA  
C,aAAa,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,MAA  
M,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA  
AI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAA  
C,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,S  
AAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CA  
AC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA  
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,C  
AAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,  
MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,M  
AAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAA  
Y,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CA  
AC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SA  
AS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,W  
AAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAA  
S,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,I  
AAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KA  
AK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CA  
AC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAA  
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CA

AC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAA  
sB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,C  
AAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,  
oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA  
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,C  
AAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,  
MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,  
CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAA  
C,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,  
IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QA  
AQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,K  
AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,  
OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA  
S,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,  
QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC  
,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAA  
C,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MA  
AM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,C  
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,  
CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,M  
AAM,CAAC,iBAAiB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mB  
AAmB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,M  
AAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM  
,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAA  
C,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,C  
AAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,  
KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,C  
AAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW  
,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ  
,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,  
CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,  
IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,  
UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM  
,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,

KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,  
,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA  
AS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC  
,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,C  
AAC,UAAU,CAAC,OAAM,CAAC,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KA  
AK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CA  
AC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,C  
AAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,  
CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAA  
C,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC  
,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,C  
AAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,  
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,  
KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,C  
AAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,  
CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK  
,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU  
,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAA  
C,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MA  
AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I  
AAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,C  
AAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAA  
C,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,C  
AAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CA  
AC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MA  
AM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CA  
AC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,C  
AAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,M  
AAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAA  
I,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,iBAaIB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CA  
AC,OAAM,CAAC,iBAaIB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,2BAA2B,CAAC,MAAM,C  
AAC,6BAA6B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,C  
AAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,  
CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAA  
M,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAaWB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,wBAaWB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,I  
AAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM,CAA  
C,8CAA8C,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,4CAA4C,CAAC,MAAM,CAAC,8CAA8C,CAAC,CAA  
C,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA

AC,IAAI,+CAA+C,CAAC,MAAM,CAAC,iDAAiD,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,+CAA+C,CAA  
C,MAAM,CAAC,iDAAiD,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAA  
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,2CAA2C,CAAC,MAAM,CAAC,6CAA6C,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,2CAA2C,CAAC,MAAM,CAAC,6CAA6C,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kCAAkC,CAAC,MAA  
M,CAAC,oCAAoC,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAA  
C,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CA  
AC,CAAC,IAAI,kCAAkC,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kCAAk  
C,CAAC,MAAM,CAAC,oCAAoC,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAA  
K,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,qCAAqC,CAAC,MAAM,CAAC,uCAAuC,CAAC,CAA  
C,UAAU,CAAC,OAAM,CAAC,qCAAqC,CAAC,MAAM,CAAC,uCAAuC,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,yCAAyC,CAA  
C,MAAM,CAAC,2CAA2C,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,yCAAyC,CAAC,MAAM,CAAC,2CAA2  
C,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CA  
AC,CAAC,CAAC,IAAI,2BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,2  
BAA2B,CAAC,MAAM,CAAC,6BAA6B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAA  
E,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAA  
C,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,  
KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,wBAA  
wB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,wBAAwB,CAAC,MAAM,CA  
AC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAA  
C,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,  
CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,  
MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,4BAA4B,CAAC,MAAM,CAAC,8BAA8B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,4BAA4B,  
CAAC,MAAM,CAAC,8BAA8B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UA  
AU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,C  
AAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,4CAA4C,CAAC,MAAM  
,CAAC,8CAA8C,CAAC,CAAC,KAAK,CAAC,IAAI,8BAA8B,CAAC,MAAM,CAAC,gCAAgC,CAAC,CAAC,K  
AAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,C  
AAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,M  
AAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,MAAM,CAAC,CAA  
C,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,OAAO,CAAC,+BAA+B,CAAC,MAAM,CAAC,GAAG,  
CAAC,IAAI,CAAC,MAAM,CAAC,OAAM,CAAC,qBAAqB,CAAC,SAAS,SAAS,EAAE,CAAC,GAAG,CAAC,S  
AAS,CAAC,GAAG,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,qBAAqB,CAAC,UAAS,CAAC,CAAC,SAAS,GA  
AG,CAAC,IAAI,CAAC,CAAuB,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,sBAAsB,CA  
AC,CAAC,mBAAmB,CAAC,MAAM,CAAC,CAAC,WAAW,EAAE,CAAC,WAAW,CAAC,CAAC,KAAK,CAA  
C,QAAQ,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC  
,MAAM,CAAC,SAAS,KAAK,EAAE,CAAC,GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,C  
AAC,WAAW,CAAC,CAAC,IAAI,CAAC,GAAG,KAAK,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CA  
AC,mBAAmB,CAAC,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,sBA  
AsB,CAAC,EAAE,CAAC,OAAO,GAAE,CAAC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,C  
AAC,WAAW,CAAC,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,M

AAM,CAAC,WAAW,CAAC,CAAC,EAAE,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,CAAk,GAAE,CAAC,C  
AAC,CAAC,EAAC,CAAC,KAAI,CAAC,CAAk,GAAE,CAAC,CAAC,MAAM,CAAC,CAAk,CAAC,CAAC,GA  
AG,CAAC,SAAS,IAAI,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,GAAG,QAAQ,EAAE,aAAa,EAAE,MAAM,  
GAAG,CAAC,CAAC,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAA  
C,WAAW,CAAC,CAAC,CAAk,CAAC,aAAa,CAAC,YAAY,CAAC,MAAM,CAAC,CAAC,CAAC,MAAM,IAAI  
,UAAU,CAAC,MAAM,CAAC,CAAO,CAAC,GAAG,aAAa,CAAC,CAAe,KAAI,CAAC,OAAO,CAAC,mBAAm  
B,EAAE,CAAiC,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CA  
AC,CAAC,CAAk,CAAC,KAAI,CAAC,CAAk,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,EA  
C,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE  
,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,  
MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,  
GAAG,EAAE,GAAE,CAAC,CAAC,GAAG,sBAAsB,CAAC,CAAC,aAAa,CAAC,CAAk,CAAC,OAAO,CAAC,  
UAAU,GAAE,CAAC,GAAG,EAAE,CAAC;AACn5mE;ACA;ACA,EAAE,OAAO,6BAA6B,CAAC,CAAk;A  
AC5C,CAAC;AACD,EAAE;AACF,CAAC,GAAG,CAAC;AAEH,cAAc,GAAG,6BAA6B;;;AChBzC,MAAM,kBA  
AkB,GAAG,ikGAAikG;;;ACCnmG,IAAI,iBAAiB,GAAG,CAAC,WAAW;AACpC,EAAE,IAAI,UAAU,GAAG,O  
AAO,QAAQ,CAAk,WAAW,IAAI,QAAQ,CAAC,aAAa,GAAG,QAAQ,CAAC,aAAa,CAAC,GAAG,GAAG,SA  
S,CAAC;AACtH,EAAE,IAAI,OAAO,UAAU,CAAk,WAAW,EAAE,UAAU,GAAG,UAAU,IAAI,UAAU,CAAC;  
AAC/E,EAAE;AACF,SAAS,iBAAiB,EAAE;AAC5B,EAAE,iBAAiB,GAAG,iBAAiB,IAAI,EAAE,CAAC;AAC9  
C;ACA,IAAI,MAAM,CAAC,OAAO,iBAAiB,GAAG,WAAW,CAAC,iBAAiB,CAAC,EAAE,CAAC,IAAI,mBA  
AmB,CAAC,kBAAkB,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,M  
AAM,CAAC,CAAC,mBAAmB,CAAC,OAAO,CAAC,kBAAkB,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,eAAe  
,CAAC,EAAE,CAAC,IAAI,GAAG,CAAC,IAAI,GAAG,IAAI,MAAM,CAAC,CAAC,GAAG,MAAM,CAAC,cAA  
c,CAAC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,GAAG,EAAC,CAAC,  
CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,WAAW,CAAC,gBAAgB,CAAC,IAAI,CAAk,CAAC,SAAS,MA  
AM,CAAC,OAAO,CAAC,CAAC,MAAM,OAAO,CAAC,CAAC,IAAI,kBAAkB,CAAC,CAAk,CAAC,IAAI,qBA  
AqB,CAAC,CAAk,CAAC,IAAI,mBAAmB,CAAC,CAAk,CAAC,IAAI,oBAAoB,CAAC,CAAk,CAAC,kBAAk  
B,CAAC,OAAO,MAAM,GAAG,QAAQ,CAAC,qBAAqB,CAAC,OAAO,aAAa,GAAG,UAAU,CAAC,mBAAmB,  
CAAC,OAAO,OAAO,GAAG,QAAQ,EAAE,OAAO,OAAO,CAAC,QAAQ,GAAG,QAAQ,EAAE,OAAO,OAAO,  
CAAC,QAAQ,CAAC,IAAI,GAAG,QAAQ,CAAC,oBAAoB,CAAC,CAAC,kBAAkB,EAAE,CAAC,mBAAmB,E  
AAE,CAAC,qBAAqB,CAAC,IAAI,eAAe,CAAC,EAAE,CAAC,SAAS,UAAU,CAAC,IAAI,CAAC,CAAC,GAAG  
,MAAM,CAAC,YAAY,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,CAAC,eAAe,C  
AAC,CAAC,OAAO,eAAe,CAAC,IAAI,CAAk,CAAk,CAAC,SAAS,CAAC,UAAU,CAAgB,IAAI,MAAM,CAA  
C,IAAI,QAAQ,CAAC,GAAG,mBAAmB,CAAC,CAAC,GAAG,qBAAqB,CAAC,CAAC,eAAe,CAACL,IAAe,CA  
AC,OAAO,CAAC,eAAe,CAAC,CAAC,IAAG,CAAC,KAAI,CAAC,eAAe,CAAC,SAAS,CAAC,IAAG,CAAC,KA  
AK,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,MAAM,C  
AACc,EAAa,CAAC,GAAG,CAAC,QAAQ,CAAC,QAAQ,CAACD,IAAe,CAAC,QAAQ,CAAC,QAAQ,CAAC,  
WAAW,CAAC,CAAC,QAAQ,CAAC,CAAC,OAAO,MAAM,CAAC,cAAc,CAAC,CAAC,QAAQ,CAAC,MAAM,  
CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,UAAU,CAAC,SAAS,UAAU,CAAC,QAAQ,CAAC,CAAC,IA  
AI,GAAG,CAAC,CAAk,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,CAAC,MAAM,CAA  
C,CAAC,GAAG,CAAC,IAAI,UAAU,CAAC,GAAG,EAAC,CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC  
,CAAC,OAAO,GAAG,CAAC,CAAC,GAAG,OAAO,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,CAAC,CAAC  
,CAAC,WAAW,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAk,CAAC  
,GAAG,EAAC,CAAC,UAAU,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,CAAk,CAAC,CAAC,CAAC,CAAC,  
OAAO,CAAC,IAAI,CAAC,CAAC,mBAAmB,CAAC,SAAS,EAAE,CAAC,CAAC,GAAG,EAAE,EAAE,YAAY,  
UAAU,CAAC,CAAC,CAAC,MAAM,EAAE,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,IAAI,CAAC,CAAC,oB  
AAoB,CAAC,CAAk,CAAC,CAAC,CAAk,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,CAAC,MAAM,CAAC,  
CAAC,MAAM,EAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,4BAA4B,EA  
C,CAAC,CAAk,GAAG,oBAAoB,CAAC,CAAC,GAAG,OAAO,IAAI,EAAE,WAAW,CAAC,CAAC,CAAk,CAA

C,SAAS,UAAU,CAAC,CAAC,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,UAAU,CAAC,S  
AAS,UAAU,CAAC,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,GAAG,OAAO,UAAU,GAAG,UAAU,CAAC,CAAC  
,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,CAAC  
,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,GA  
AG,OAAO,UAAU,EAAE,WAAW,CAAC,CAAC,UAAU,CAAC,WAAU,CAAC,KAAK,GAAG,OAAO,SAAS,EA  
AE,WAAW,CAAC,CAAC,UAAU,CAAC,UAAU,CAAC,GAAG,OAAO,IAAI,GAAG,UAAU,CAAC,CAAC,KAA  
K,CAAC,SAAS,MAAM,CAAC,CAAC,IAAI,CAAC,MAAM,EAAC,EAAC,CAAC,GAAG,OAAO,KAAK,GAAG,  
WAAW,CAAC,CAAC,GAAG,OAAO,OAAO,GAAG,WAAW,CAAC,OAAO,CAAC,EAAE,CAAC,OAAO,CAA  
C,GAAG,CAAC,KAAK,CAAC,OAAO,CAAC,IAAI,CAAC,OAAO,CAAC,KAAK,CAAC,OAAO,QAAQ,GAAG,  
WAAW,CAAC,QAAQ,CAAC,MAAK,CAAC,CAAC,KAAK,GAAG,kBAaKB,EAAE,qBAaQB,CAAC,CAAC,G  
AAG,qBAaQB,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,QAAQ,CAAC,KAAI,CAAC,KAAK,GAAG,OAAO,QA  
AQ,GAAG,WAAW,EAAE,QAAQ,CAAC,aAAa,CAAC,CAAC,eAAe,CAAC,QAAQ,CAAC,aAAa,CAAC,IAAG,  
CAAC,GAAG,UAAU,CAAC,CAAC,eAAe,CAAC,WAAU,CAAC,GAAG,eAAe,CAAC,OAAO,CAAC,OAAO,CA  
AC,GAAG,CAAC,CAAC,CAAC,eAAe,CAAC,eAAe,CAAC,MAAM,CAAC,CAAC,CAAC,eAAe,CAAC,WAAW  
,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,eAAe,CAAC,GAAE,CAAC,CAAC,KAAK,CA  
AC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CA  
AC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,  
YAAY,CAAC,CAAC,GAAG,qBAaQB,CAAC,CAAC,UAAU,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,C  
AAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,KAAK,CAAC,CAAC,GAAG,  
CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,UAAU,CAAC,  
GAAG,CAAC,QAAQ,CAAC,EAAC,CAAC,SAAS,CAAC,SAAS,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,C  
AAC,IAAI,GAAG,CAAC,IAAI,cAAc,CAAC,GAAG,CAAC,IAAI,CAAC,KAAK,CAAC,GAAG,CAAC,IAAI,CA  
AC,CAAC,GAAG,CAAC,YAAY,CAAC,aAAa,CAAC,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,GAAG,GAA  
G,CAAC,MAAM,EAAE,GAAG,EAAE,GAAG,CAAC,MAAM,EAAE,CAAC,EAAE,GAAG,CAAC,QAAQ,CAA  
C,CAAC,MAAM,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,OAAO,GAAE,CAAC,CAAC,GAA  
G,CAAC,OAAO,CAAC,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,IAAI,EAAC,EAAC,CAAqD,CAAQ,IAAI,GA  
AG,CAAC,MAAM,CAAC,OAAO,CAAC,EAAE,OAAO,CAAC,GAAG,CAAC,IAAI,CAAC,OAAO,CAAC,CAA  
C,IAAI,GAAG,CAAC,MAAM,CAAC,UAAU,CAAC,EAAE,OAAO,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,CA  
AC,CAAC,IAAI,GAAG,IAAI,eAAe,CAAC,CAAC,GAAG,eAAe,CAAC,cAAc,CAAC,GAAG,CAAC,CAAC,CA  
AC,MAAM,CAAC,GAAG,CAAC,CAAC,eAAe,CAAC,GAAG,EAAC,CAAC,CAAC,eAAe,CAAC,IAAI,CAAC,  
GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,GAAG,MA  
AM,CAAC,aAAa,CAAC,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,GAAG,MAAM,CAAC,MA  
AM,CAAC,CAAC,KAAK,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,IAAI,UAAU,CAAC,GAAG,MAAM,CA  
AC,YAAY,CAAC,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAA  
C,eAAe,CAAC,EAAE,IAAI,CAAC,GAAG,OAAO,WAAW,GAAG,QAAQ,CAAC,CAAC,KAAK,CAAC,iCAaIC,  
EAAC,CAAC,IAAI,UAAU,CAAC,IAAI,KAAK,CAAC,KAAK,CAAgB,SAAS,MAAM,CAAC,SAAS,CAAC,IAA  
I,CAAC,CAAC,GAAG,CAAC,SAAS,CAAC,CAAC,KAAK,CAAC,oBAAoB,CAAC,IAAI,EAAC,CAAC,CAAC,  
SAAS,QAAQ,CAAC,KAAK,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,GAAG,CAAC,KAAK,CAAC,CA  
AC,MAAM,CAAC,IAAI,CAAC,+BAA+B,CAAC,KAAK,CAAC,4BAA4B,CAAC,CAAC,OAAO,IAAI,CAAC,SA  
AS,KAAK,CAAC,KAAK,CAAC,UAAU,CAAC,QAAQ,CAAC,IAAI,CAAC,IAAI,CAAC,CAAC,IAAI,GAAG,C  
AAC,CAAC,QAAQ,CAAC,SAAS,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC,GAAG,GAAG,GAA  
G,IAAI,EAAE,GAAG,GAAG,SAAS,EAAE,GAAG,GAAG,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,CAAC,GA  
AG,CAAC,MAAM,EAAE,CAAC,EAAE,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,CAAC,YA  
AY,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,OAAO,GAAG,CAAC,CAAC,OAAO,CAAC,SAAS  
S,GAAG,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,kBAaKB,CAA  
C,GAAG,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,kBAaKB,CAAC,GAAG,CAA  
C,CAAC,GAAG,UAAU,GAAG,QAAQ,CAAC,OAAO,YAAY,CAAC,GAAG,CAAC,CAAC,GAAG,UAAU,GAA  
G,SAAS,CAAC,OAAO,OAAO,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,IAAI,IAAI,CAAC,QAAQ,C

AAC,KAAC,CAAC,CAAC,IAAI,KAAC,CAAC,EAAE,CAAC,IAAI,KAAC,CAAC,CAAC,CAAC,GAAG,IAAI,C  
AAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,EAAE,C  
AAC,CAAC,IAAI,SAAS,CAAC,GAAG,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,SAAS,CAAC  
,CAAC,GAAG,KAAC,GAAG,CAAC,CAAC,KAAC,CAAC,SAAS,EAAE,CAAC,KAAC,CAAC,CAAC,CAAC,C  
AAC,SAAS,CAAC,IAAI,CAAC,CAAC,CAAC,EAAC,CAAC,KAAC,CAAC,CAAC,CAAC,CAAC,CAAC,  
IAAI,CAAC,CAAC,EAAC,CAAC,CAAC,CAAC,IAAI,GAAG,CAAC,IAAI,CAAC,KAAC,CAAC,IAAI,CAAC,K  
AAK,CAAC,CAAC,GAAG,CAAC,kBAaKB,CAAC,GAAG,CAAC,CAAC,GAAG,KAAC,GAAG,CAAC,CAAC,  
YAAY,CAAC,KAAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS,KAAC,CAAC,KAAC,CAAC,UAAU,CAAC,Q  
AAQ,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,QAAQ,EAAE,EAAE,CAAC,IAAI,WAAW,CAAC,QAAQ,CAA  
C,KAAC,CAAC,SAAS,IAAI,CAAC,CAAC,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,CAAC,IAAI,UAAU,CAA  
C,UAAU,GAAG,QAAQ,CAAC,GAAG,UAAU,EAAE,WAAW,EAAE,CAAC,IAAI,CAAC,CAAC,OAAO,QAAQ,  
CAAC,KAAC,CAAC,CAAC,OAAO,UAAU,CAAC,OAAO,KAAC,CAAC,KAAC,CAAC,UAAU,CAAC,QAAQ,  
CAAC,SAAC,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,OAAO,WAAW,GAAG,WAAW,CAAC,IAAI,WAAW,  
CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,SAAS,iBAaIB,CAAC,IAAI,CAAC,GAAG,CAAC,cAAc,CAAC,CA  
AC,IAAI,MAAM,CAAC,GAAG,CAAC,cAAc,CAAC,IAAI,MAAM,CAAC,GAAG,CAAC,MAAM,IAAI,CAAC,  
MAAM,CAAC,EAAE,EAAE,MAAM,EAAE,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,GAAG,MAAM,CAA  
C,GAAG,CAAC,EAAE,EAAE,IAAI,CAAC,QAAQ,EAAE,WAAW,CAAC,CAAC,OAAO,WAAW,CAAC,MAA  
M,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,CAAC,KAAC,CAAC,IAAI,GAAG,C  
AAC,EAAE,CAAC,MAAM,GAAG,CAAC,MAAM,CAAC,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAA  
E,CAAC,CAAC,GAAG,EAAE,EAAE,CAAC,GAAG,CAAC,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY  
,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAA  
E,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAAG,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAA  
Y,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,QAAQ,CAAC,IAAI,EAAE,C  
AAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,GAAG,GAA  
G,CAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,EAAE,GAAG,EAAE,CAAC,EAAE,EAAE,CAAC,CAAC,G  
AAE,CAAC,KAAC,CAAC,EAAE,CAAC,CAAC,EAAE,CAAC,CAAC,GAAG,EAAE,CAAC,EAAE,EAAE,EAAE  
,CAAC,EAAE,EAAE,CAAC,CAAC,IAAI,CAAC,GAAG,EAAE,CAAC,CAAC,GAAE,CAAC,GAAG,EAAE,CA  
AC,KAAC,CAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,EAAE,EAAC,CAAC,KAAC,IAAI,  
EAAE,CAAC,EAAE,CAAC,KAAC,CAAC,GAAG,EAAE,MAAM,CAAC,YAAY,CAAC,KAAC,CAAC,EAAE,E  
AAE,EAAE,CAAC,KAAC,CAAC,EAAE,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,SAAS  
,YAAY,CAAC,GAAG,CAAC,cAAc,CAAC,CAAC,OAAO,GAAG,CAAC,iBAaIB,CAAC,MAAM,CAAC,GAAG,  
CAAC,cAAc,CAAC,CAAC,EAAE,CAAC,SAAS,iBAaIB,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,eA  
Ae,CAAC,CAAC,GAAG,EAAE,eAAe,CAAC,CAAC,CAAC,CAAC,OAAO,CAAC,CAAC,IAAI,QAAQ,CAAC,  
MAAM,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAA  
C,CAAC,CAAC,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE,CAAC,CAAC,CAAC,IAAI,CAAC,CAAC,GAAG,  
CAAC,UAAU,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,EAAE,CAAC,EAAE,KAAC,CAAC,C  
AAC,IAAI,EAAE,CAAC,GAAG,CAAC,UAAU,CAAC,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,KAAC,EAA  
E,CAAC,CAAC,CAAC,IAAI,GAAG,EAAE,CAAC,CAAC,EAAE,CAAC,KAAC,CAAC,GAAG,CAAC,EAAE,GA  
AG,CAAC,CAAC,GAAG,MAAM,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,EA  
AC,CAAC,KAAC,GAAG,CAAC,EAAE,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAA  
C,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAAC,CAAC,IAAI,CAAC,M  
AAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,GAAE,CAAC,KAAC,GAAG,CAAC,EAAE,KAAC,CA  
AC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EAAE,CAAC,CA  
AC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,  
EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,GA  
AE,CAAC,KAAC,CAAC,GAAG,MAAM,CAAC,CAAC,EAAE,MAAM,CAAC,MAAM,IAAI,CAAC,MAAM,EA  
AE,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,  
CAAC,CAAC,EAAE,EAAE,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CA



AC,EAAE,CAAC,CAAC,EAAE,CAAC,IAAI,CAAC,MAAM,EAAE,CAAC,CAAC,GAAG,CAAC,CAAC,CAAC,  
GAAE,CAAC,CAAC,IAAI,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,OAAO,MAAM,CAAC,QAAQ,CAAC,S  
AAS,YAAY,CAAC,GAAG,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,OAAO,iBAaIB,CAAC,GAAG,CAAC,M  
AAM,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,SAAS,kBAaKB,CAAC,KAaK,CAAC,MAAM,CAAC,CAAC,  
KAaK,CAAC,GAAG,CAAC,KAaK,CAAC,MAAM,EAAC,CAAC,SAAS,OAAO,CAAC,CAAC,CAAC,QAAQ,  
CAAC,CAAC,GAAG,CAAC,CAAC,QAAQ,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE,QAAQ,CAAC,CAAC,C  
AAC,SAAQ,CAAC,OAAO,CAAC,CAAC,IAAI,MAAM,CAAC,KAaK,CAAC,MAAM,CAAC,MAAM,CAAC,O  
AAO,CAAC,MAAM,CAAC,OAAO,CAAC,OAAO,CAAC,OAAO,CAAC,SAAS,0BAA0B,CAAC,GAAG,CAAC,  
CAAC,MAAM,CAAC,GAAG,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAaK,CAAC,IAAI,SAAS,CAAC,G  
AAG,CAAC,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CA  
AC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CA  
AC,QAAQ,CAAC,CAAC,MAAM,CAAC,IAAI,UAAU,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAA  
C,CAAC,OAAO,CAAC,IAAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,  
CAAC,IAAI,WAAW,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YA  
AY,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,OAAO,CAAC,IAAI,YAAY,CAAC,GAA  
G,EAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAaGB,CAAC,EAAE,QAAQ,CAAC,IAAI,SAAS,CAAC,I  
AAI,YAAY,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,UAAU,CAAC,EAAE,CAAC,IAAI,aA  
Aa,CAAC,EAAE,CAA8B,UAAU,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,UAAU,CAAC,kBAaKB,GAAE,CAA  
C,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,GAAG,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,GAA  
G,OAAO,MAAM,CAAC,QAAQ,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,CAAC,MA  
AM,CAAC,QAAQ,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,CAAC,W  
AAW,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,KAaK,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,YAAY,  
EAAC,CAAC,SAAS,WAAW,EAAE,CAAYB,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,CAAC  
,oBAAoB,CAAC,UAAU,EAAC,CAAC,SAAS,OAAO,EAAE,CAAC,GAAG,MAAM,CAAC,SAAS,CAAC,CAAC  
,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,  
CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,  
CAAC,YAAY,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,KAaK,EAAE,EAAC,CAAC,CAAC,oBAAoB,CAAC,  
aAAa,EAAC,CAAC,SAAS,WAAW,CAAC,EAAE,CAAC,CAAC,YAAY,CAAC,OAAO,CAAC,EAAE,EAAC,CA  
AC,SAAS,YAAY,CAAC,EAAE,CAAC,CAAC,aAAa,CAAC,OAAO,CAAC,EAAE,EAAC,CAAC,IAAI,eAAe,CA  
AC,CAAC,CAA+B,IAAI,qBAaQB,CAAC,IAAI,CAAC,SAAS,gBAaGB,CAAC,EAAE,CAAC,CAAC,eAAe,EA  
E,CAAC,GAAG,MAAM,CAAC,wBAaWB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAaWB,CAAC,CAAC,eAAe,  
EAAC,CAAC,CAAC,SAAS,mBAaMB,CAAC,EAAE,CAAC,CAAC,eAAe,EAAE,CAAC,GAAG,MAAM,CAAC,  
wBAaWB,CAAC,CAAC,CAAC,MAAM,CAAC,wBAaWB,CAAC,CAAC,eAAe,EAAC,CAAC,GAAG,eAAe,EA  
AE,CAAC,CAAC,CAA+F,GAAG,qBAaQB,CAAC,CAAC,IAAI,QAAQ,CAAC,qBAaQB,CAAC,qBAaQB,CAAC  
,IAAI,CAAC,QAAQ,GAAE,CAAC,CAAC,CAAC,MAAM,CAAC,iBAaIB,CAAC,CAAC,EAAE,CAAC,MAAM,  
CAAC,iBAaIB,CAAC,CAAC,EAAE,CAAC,SAAS,KAaK,CAAC,IAAI,CAAC,CAAC,GAAG,MAAM,CAAC,S  
AAS,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,IAAI,EAAC,CAAC,IAAI,EAAE,EAAE,CAAC,  
GAAG,CAAC,IAAI,CAAC,CAAC,KAaK,CAAC,IAAI,CAAc,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,8CAA8C  
,CAAC,IAAI,CAAC,CAAC,IAAI,WAAW,CAAC,YAAY,CAAC,IAAI,CAAC,CAAC,kBAaKB,CAAC,CAAC,CA  
AC,CAAC,MAAM,CAAC,CAAC,SAAS,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,OAAO,MAAM,CA  
AC,SAAS,CAAC,UAAU,CAAC,GAAG,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,OAAO,CA  
AC,MAAM,CAAC,GAAG,CAAC,CAAC,IAAI,aAAa,CAAC,uCAAuC,CAAC,SAAS,SAAS,CAAC,QAAQ,CAA  
C,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,aAAa,CAAC,SAAS,CAAC,SAAS,SAA  
S,CAAC,QAAQ,CAAC,CAAC,OAAO,SAAS,CAAC,QAAQ,CAAC,aAAa,CAAC,CAAC,IAAI,cAAc,CAAC,wB  
AAwB,CAAC,GAAG,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,cAAc,CAAC,UAAU,CAAC,cAAc,EA  
AC,CAAC,SAAS,SAAS,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,GAAG,IAAI,EAAE,cAAc,EAAE,UAAU,CAA  
C,CAAC,OAAO,IAAI,UAAU,CAAC,UAAU,CAAC,CAAC,GAAG,UAAU,CAAC,CAAC,OAAO,UAAU,CAAC,I  
AAI,CAAC,CAAC,KAaI,CAAC,MAaK,iDAaID,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,KAaK,CAAC,G

AAG,EAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,GAAG,kBAakB,EAAE,qBAAqB,CAAC,CAAC,CAAC,GAAG,OAAO,KAak,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,OAAO,KAak,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,CAAC,MAAK,sCAAsC,CAAC,cAAc,CAAC,GAAG,CAAC,OAAO,QAAQ,CAAC,aAAa,CAAC,EAAE,CAAC,CAAC,CAAC,KAak,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,KAak,CAAC,GAAG,SAAS,CAAC,CAAC,OAAO,IAAI,OAAO,CAAC,SAAS,OAAO,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,cAAc,CAAC,SAAS,QAAQ,CAAC,CAAC,OAAO,CAAC,IAAI,UAAU,CAAC,QAAQ,CAAC,EAAC,CAAC,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,OAAO,OAAO,CAAC,OAAO,EAAE,CAAC,IAAI,CAAC,UAAU,CAAC,OAAO,SAAS,CAAC,cAAc,CAAC,CAAC,CAAC,CAAC,SAAS,UAAU,EAAE,CAAC,IAAI,IAAI,CAAC,CAAC,GAAG,CAAC,aAAa,CAAC,CAAC,SAAS,eAAe,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,IAAI,OAAO,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,KAak,CAAC,CAAC,OAAO,CAAC,UAAU,CAAC,MAAM,CAAC,KAak,CAAC,CAAC,GAAG,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,SAAS,CAAC,MAAM,CAAC,KAak,CAAC,CAAC,GAAG,CAAC,CAAC,mBAAmB,CAAmB,EAAC,CAAC,gBAAgB,CAAmB,CAAC,CAAC,SAAS,yBAAyB,CAAC,MAAM,CAAC,CAAC,eAAe,CAAC,MAAM,CAAC,UAAU,CAAC,EAAC,CAAC,SAAS,sBAAsB,CAAC,QAAQ,CAAC,CAAC,OAAO,gBAAgB,EAAE,CAAC,IAAI,CAAC,SAAS,MAAM,CAAC,CAAC,OAAO,WAAW,CAAC,WAAW,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,CAAC,CAAC,IAAI,CAAC,QAAQ,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,yCAyC,CAAC,MAAM,CAAC,CAAC,KAak,CAAC,MAAM,EAAC,CAAC,CAAC,CAAC,SAAS,gBAAgB,EAAE,CAAC,GAAG,CAAC,UAAU,EAAE,OAAO,WAAW,CAAC,oBAAoB,GAAG,UAAU,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,CAAC,SAAS,CAAC,cAAc,CAAC,EAAE,OAAO,KAak,GAAG,UAAU,CAAC,CAAC,OAAO,KAak,CAAC,cAAc,CAAC,CAAC,WAAW,CAAC,aAAa,CAAC,CAAC,CAAC,IAAI,CAAC,SAAS,QAAQ,CAAC,CAAC,IAAI,MAAM,CAAC,WAAW,CAAC,oBAAoB,CAAC,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,MAAM,CAAC,IAAI,CAAC,yBAAyB,CAAC,SAAS,MAAM,CAAC,CAAC,GAAG,CAAC,iCAiC,CAAC,MAAM,CAAC,CAAC,GAAG,CAAC,2CAA2C,CAAC,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAak,CAAC,OAAO,sBAAsB,CAAC,yBAAyB,CAAC,CAAC,CAAC,GAAG,MAAM,CAAC,iBAiB,CAAC,CAAC,CAAC,GAAG,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,iBAiB,CAAC,CAAC,IAAI,CAAC,eAAe,CAAC,CAAC,OAAO,OAAO,CAAC,MAAM,CAAC,CAAC,CAAC,GAAG,CAAC,qDAaqD,CAAC,CAAC,CAAC,CAAC,OAAO,KAak,CAAC,CAAC,gBAAgB,EAAE,CAAC,KAak,CAAC,kBAakB,CAAC,CAAC,OAAM,EAAE,CAAC,SAAS,oBAAoB,CAAC,SAAS,CAAC,CAAC,MAAM,SAAS,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,SAAS,CAAC,KAak,EAAE,CAAC,GAAG,OAAO,QAAQ,EAAE,UAAU,CAAC,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC,QAAQ,CAAC,IAAI,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,GAAG,OAAO,IAAI,GAAG,QAAQ,CAAC,CAAC,GAAG,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,GAAE,CAAC,KAak,CAAC,SAAS,CAAC,GAAG,CAAC,IAAI,CAAC,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,KAak,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,GAAG,SAAS,CAAC,IAAI,CAAC,QAAQ,CAAC,GAAG,EAAC,CAAC,CAAC,CAAC,SAAS,MAAM,EAAE,CAAC,KAak,GAAE,CAAC,SAAS,sBAAsB,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,CAAC,MAAM,CAAC,UAAU,CAAC,IAAI,CAAC,GAAG,CAAC,GAAG,CAAC,GAAG,EAAC,CAAC,SAAS,yBAAyB,EAAE,CAAC,OAAO,MAAM,CAAC,MAAM,CAAC,SAAS,yBAAyB,CAAC,IAAI,CAAC,CAAC,GAAG,CAAC,UAAU,CAAC,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,UAAU,CAAC,KAak,GAAG,EAAE,CAAC,CAAC,0BAA0B,CAAC,UAAU,CAAC,MAAM,CAAC,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,CAAC,EAAE,CAAC,SAAS,uBAuB,CAAC,aAAa,CAAC,CAAC,IAAI,OAAO,CAAC,yBAAyB,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,GAAG,aAAa,CAAC,WAAW,CAAC,CAAC,OAAO,KAak,CAAC,IAAI,IAAI,OAAO,CAAC,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,OAAO,EAAE,CAAC,CAAC,CAAC,IAAI,iBAiB,CAAC,OAAO,EAAE,CAAC,CAAC,EAAE,CAAC,OAAO,CAAC,CAAC,iBAiB,CAAC,IAAI,CAAC,GAAG,CAAC,iBAiB,CAAC,aAAa,CAAC,SAAS,CAAC,CAAC,IAAI,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,WAAW,CAAC,OAAO,CAAC,IAAI,CAAC,GAAG,CAAC,aAAa,CAAC,iBAiB,CAAC,CAAC,KAak,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,yBAAyB,CAAC,OAAO,CAAC,CAAC,GAAG,WAAW,CAAC,CAAC,OAAO,IAAI,CAAC,CAAC,OAAO,KAak,CAAC,IAAI,QAAQ,CAAC,CAAC,QAAQ,CAAC,EAAE,CAAC,OAAO,

CAAC,CAAC,IAAI,CAAC,EAAE,CAAC,EAAE,CAAC,CAAC,SAAS,CAAC,SAAS,MAAM,CAAC,IAAI,CAAC  
,CAAC,IAAI,MAAM,CAAC,QAAQ,CAAC,OAAO,CAAC,MAAM,CAAC,CAAC,GAAG,IAAI,GAAG,CAAC,E  
AAE,IAAI,GAAG,EAAE,CAAC,CAAC,CAAC,MAAM,GAAG,CAAC,CAAC,GAAG,CAAC,GAAG,EAAE,iBA  
AiB,CAAC,MAAM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAC,CAAC,KAAI,CA  
AC,MAAM,CAAC,IAAI,CAAC,IAAI,EAAC,CAAC,CAAC,CAAC,OAAO,CAAC,SAAS,CAAC,GAAG,CAAC,  
UAAU,CAAC,QAAQ,CAAC,OAAO,EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,QAAQ,CAAC,O  
AAO,CAAC,CAAC,EAAE,CAAC,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,MAAM,CAAC,SAAS,GAAG,CA  
AC,CAAC,IAAI,GAAG,CAAC,YAAY,CAAC,GAAG,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,KAAK,CAA  
C,SAAS,GAAG,CAAC,IAAI,CAAC,CAAC,OAAO,GAAG,CAAC,CAAC,CAAC,SAAS,SAAS,CAAC,EAAE,CA  
AC,CAAC,OAAO,CAAC,CAAC,SAAS,QAAQ,CAAC,EAAE,CAAC,UAAU,CAAC,WAAW,CAAC,MAAM,CA  
AC,SAAS,CAAC,EAAE,SAAS,SAAS,CAAC,EAAE,CAAC,GAAG,CAAC,MAAM,CAAC,IAAI,CAAC,CAAC,I  
AAI,GAAG,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,CAAC,  
EAAE,CAAC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,CAAC,CAAC,EAAE,CAAC,CA  
AC,CAAC,IAAI,GAAG,CAAC,MAAM,CAAC,GAAG,EAAE,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,EAAE  
,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,CAAC,CAAC,CAAC,CAAC,CAAC,GAAG,CAAC,CAAC,EAAE,CAA  
C,CAAC,QAAQ,CAAC,SAAS,CAAC,EAAE,CAAC,MAAM,CAAC,GAAG,CAAC,CAAC,CAAC,EAAC,CAAC,  
GAAG,EAAE,IAAG,CAAC,MAAM,CAAC,IAAI,EAAE,CAAC,CAAC,CAAC,GAAG,CAAC,OAAO,CAAC,CA  
AC,SAAS,eAAe,EAAE,CAAC,OAAO,CAAC,CAAC,SAAS,aAAa,EAAE,CAAC,OAAO,EAAE,CAAC,SAAS,Q  
AAQ,CAAC,KAAK,CAAC,CAAC,MAAM,CAAC,iBAaiB,EAAE,EAAE,CAAC,CAAC,CAAC,KAAK,CAAC,O  
AAO,KAAK,CAAC,SAAS,QAAQ,CAAC,IAAI,CAAC,CAAC,OAAO,IAAI,EAAE,KAAK,EAAE,CAAC,OAAO,  
KAAK,CAAC,KAAK,EAAE,CAAC,IAAI,WAAW,CAAC,UAAU,CAAC,OAAO,WAAW,CAAC,KAAK,CAAC,  
KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,  
KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,K  
AAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KA  
AK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAA  
K,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK  
,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,E  
AAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EA  
AE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,MAAM,CAAC,KAAK,EAAE,CAAC,KAAK,GAA  
G,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG  
,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,  
CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,  
CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,C  
AAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,C  
AAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CA  
AC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAM,CAAC,CAAC,CAAC,KAAK,GAA  
G,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAAG,CAAC,KAAK,CAAC,CAAC,KAAK,GAA  
G,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,GAAG  
,CAAC,KAAK,GAAG,CAAC,KAAK,GAAG,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,  
CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,CAAC,C  
AAC,OAAO,IAAI,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAA  
C,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,UAAU,CAAC,KAAK,EAAE,CAAC,  
KAAK,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,EAAE,CAAC,K  
AAK,EAAE,CAAC,KAAK,EAAE,CAAC,OAAO,IAAI,CAAC,KAAK,CAAC,CAAC,OAAO,OAAO,CAAC,KAA  
K,CAAC,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO  
,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,KAAK,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,  
EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,GAAG,CAAC,KAAK,EAAE,CAAC,OAAO,G  
AAG,CAAC,KAAK,CAAC,CAAC,OAAO,GAAG,CAAC,KAAK,GAAG,CAAC,OAAO,EAAE,CAAC,KAAK,EA

AE,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,EAAE,CAAC,KAAK,CAAC,CAAC,OAAO,CAA  
C,CAAC,KAAK,EAAE,CAAC,OAAO,CAAC,CAAC,KAAK,EAAE,CAAC,CAAC,GAAG,OAAO,SAAS,GAAG,  
QAAQ,CAAC,OAAO,SAAS,CAAC,qBAAqB,CAAC,EAAE,CAAC,CAAC,OAAO,CAAC,CAAC,CAAC,QAAQ,  
CAAC,EAAE,CAAC,CAAC,OAAM,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,CAAC,GAAG,CAAC,MAAM,CA  
AC,GAAG,CAAC,sBAAsB,CAAC,GAAG,CAAC,uBAAuB,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,Q  
AAQ,CAAC,GAAG,CAAC,SAAS,CAAC,GAAG,CAAC,eAAe,CAAC,GAAG,CAAC,aAAa,CAAC,GAAG,CAA  
C,QAAQ,CAAC,CAAC,IAAI,GAAG,CAAC,UAAU,EAAE,CAAC,IAAI,kBAakB,CAAC,MAAM,CAAC,oBAAo  
B,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,  
CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAA  
I,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAA  
C,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,  
SAAS,CAAC,CAAC,CAAC,IAAI,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,wBAAwB,CAAC,MAAM,CAAC,0BAA0B,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAA  
G,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,kBAakB,CAAC,MAAM,CAAC,o  
BAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,kBAakB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,M  
AAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAA  
C,IAAI,gBAAgB,CAAC,MAAM,CAAC,kBAakB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,gBAAgB,CAAC,  
MAAM,CAAC,kBAakB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAA  
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG  
,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UA  
AU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,I  
AAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,M  
AAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SA  
AS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC  
,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,  
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAA  
C,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CA  
AC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MA  
AM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CA  
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC  
,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MA  
AM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAA  
U,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CA  
AC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,Y  
AAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,c  
AAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,  
CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,  
KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,  
KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAA  
C,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAA  
C,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MA  
AM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CA  
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC

,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,C  
AAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,C  
AAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,  
MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,CAAC,MAA  
M,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,  
CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,K  
AAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,sBAAs  
B,CAAC,MAAM,CAAC,wBAAwB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,sBAAsB,CAAC,MAAM,CAAC  
,wBAAwB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAA  
C,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,C  
AAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,E  
AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAA  
C,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KA  
AK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CA  
AC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,C  
AAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,cAAc,CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,cAAc,  
CAAC,MAAM,CAAC,gBAAgB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAA  
K,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,U  
AAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,  
CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAA  
M,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CA  
AC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC  
,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,iBAaiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,M  
AAM,CAAC,iBAaiB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,qBAaqB,CAAC,MAAM,CAAC,uB  
AAuB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,qBAaqB,CAAC,MAAM,CAAC,uBAAuB,CAAC,CAAC,MA  
AM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,C  
AAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAA  
C,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC  
,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CA  
AC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,K  
AAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,C  
AAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CA  
AC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC  
,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,  
CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,EAAE,KAAK,

CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CA  
AC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,  
CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,  
MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,  
CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CAAC,EAAE,KAAC,CAAC,IAAI,C  
AAC,SAAS,CAAC,CAAC,CAAC,IAAI,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,WAAW,CAAC,MAAM,CAAC,aAAa,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,GAAG,CA  
AC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,C  
AAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,K  
AAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,C  
AAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,  
CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ  
,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,C  
AAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU  
,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC  
,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAA  
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA  
AI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CA  
AC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,  
SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,C  
AAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EA  
AE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,  
CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAA  
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,  
MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC  
,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,  
CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,  
UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,CAAC,CAAC,MAAM,CAAC,KAAC,C  
AAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,oBAAoB,CAAC,  
MAAM,CAAC,sBAAsB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,oBAAoB,CAAC,MAAM,CAAC,sBAAsB,  
CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,SAAS,  
CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CA  
AC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,M  
AAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,  
IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CA  
AC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,  
SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,C  
AAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,E

AAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC  
,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAA  
K,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAA  
C,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CA  
AC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,C  
AAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CA  
AC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAA  
C,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,C  
AAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,  
IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,eAAe,CAAC,MAAM,CAAC,i  
BAAiB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,eAAe,CAAC,MAAM,CAAC,iBAAiB,CAAC,CAAC,MAA  
M,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IA  
AI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CA  
AC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,  
SAAS,CAAC,CAAC,CAAC,IAAI,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,UAAU,CAAC,OAA  
M,CAAC,iBAAiB,CAAC,MAAM,CAAC,mBAAmB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,C  
AAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MAAM,CAAC,MAAM,CAAC,QAA  
Q,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,MAAM,CA  
AC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,MA  
AM,CAAC,MAAM,CAAC,QAAQ,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,MAAM,CAAC,MAAM,CAAC,  
QAAQ,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAA  
S,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,  
UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,K  
AAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAA  
C,UAAU,CAAC,OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAC,CA  
AC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MA  
AM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,C  
AAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,  
CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MA  
AM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI  
,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,UAAU,CAAC,O  
AAM,CAAC,QAAQ,CAAC,MAAM,CAAC,UAAU,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,C  
AAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO  
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAA  
C,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAA  
O,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAA  
S,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CA  
AC,CAAC,CAAC,IAAI,kBAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,k  
BAaKB,CAAC,MAAM,CAAC,oBAAoB,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAA  
E,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,C  
AAC,UAAU,CAAC,OAAM,CAAC,KAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAC,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,M  
AAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAA  
C,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CA  
AC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,  
CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,EAAE,KAAC,CAAC,IAAI,CA  
AC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,UAAU,CAAC,OAAM,  
CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAC,CAAC,CAAC,IAAI,CAAC,E

AAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,  
CAAC,UAAU,CAAC,OAAM,CAAC,IAAI,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC,MAAM,CAAC,KAAK,  
CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,  
MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC  
,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAA  
C,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC  
,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,I  
AAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,UAAU,CAA  
C,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAA  
I,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,CAAC,MAAM,CAAC,YA  
AY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,MAAM,C  
AAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,U  
AAU,CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,  
YAAY,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAA  
S,CAAC,CAAC,CAAC,IAAI,aAAa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,aA  
Aa,CAAC,MAAM,CAAC,eAAe,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,  
CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,UAA  
U,CAAC,OAAM,CAAC,OAAO,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAA  
C,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,KAAK,CAAC,MAAM,CAA  
C,OAAO,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,KAAK,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,MA  
AM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,I  
AAI,iBAaIB,CAAC,MAAM,CAAC,mBAaMB,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,iBAaIB,CAAC,MA  
AM,CAAC,mBAaMB,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IA  
AI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,UAAU,CAAC,  
OAAM,CAAC,SAAS,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,  
CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,YAAY,CAAC,MAAM,CAAC,cAAc  
,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,YAAY,CAAC,MAAM,CAAC,cAAc,CAAC,CAAC,MAAM,CAAC,  
KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAAC,CAAC,CAAC,IAAI,UAAU,  
CAAC,MAAM,CAAC,YAAY,CAAC,CAAC,UAAU,CAAC,OAAM,CAAC,UAAU,CAAC,MAAM,CAAC,YAAY  
,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,IAAI,CAAC,EAAE,KAAK,CAAC,IAAI,CAAC,SAAS,CAA  
C,CAAC,CAAC,MAAM,CAAC,OAAO,CAAC,CAAC,KAAK,CAAC,IAAI,SAAS,CAAC,SAAS,UAAU,CAAC,  
MAAM,CAAC,CAAC,IAAI,CAAC,IAAI,CAAC,YAAY,CAAC,IAAI,CAAC,OAAO,CAAC,+BAA+B,CAAC,M  
AAM,CAAC,GAAG,CAAC,IAAI,CAAC,MAAM,CAAC,OAAM,CAAC,qBAaqB,CAAC,SAAS,SAAS,EAAE,C  
AAC,GAAG,CAAC,SAAS,CAAC,GAAG,EAAE,CAAC,GAAG,CAAC,SAAS,CAAC,qBAaqB,CAAC,UAAU,C  
AAC,CAAC,SAAS,GAAG,CAAC,IAAI,CAAC,CAaUb,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAA  
C,MAAM,EAAE,CAAC,GAAG,eAAe,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,KAAK,EAAE,CAAC,  
GAAG,SAAS,CAAC,OAAO,SAAS,CAAC,IAAI,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,IAAI,CAAC,GA  
AG,KAAK,CAAC,OAAO,WAAW,EAAE,CAAC,OAAO,EAAE,CAAC,mBAaMB,CAAC,MAAM,CAAC,CAAC,  
GAAG,MAAM,CAAC,sBAaSB,CAAC,CAAC,MAAM,CAAC,sBAaSB,CAAC,EAAE,CAAC,OAAO,GAAE,CA  
AC,GAAG,MAAM,CAAC,WAAW,CAAC,CAAC,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,YAAY,CAAC,  
CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,UAAU,CAAC,MAAM,CAAC,WAAW,CAAC,CAAC,EAAE,  
EAAC,CAAC,CAAC,CAAC,CAAC,CAAC,KAAK,GAAE,CAAC,CAAC,CAAC,EAAC,CAAC,KAAI,CAAC,KA  
AK,GAAE,CAAC,CAAC,MAAM,CAAC,KAAK,CAAC,CAAC,GAAG,CAAC,GAAG,MAAM,CAAC,SAAS,CA  
AC,CAAC,CAAC,GAAG,OAAO,MAAM,CAAC,SAAS,CAAC,EAAE,UAAU,CAAC,MAAM,CAAC,SAAS,CA  
AC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,CAAC,MAAM,MAAM,CAAC,SAAS,CAAC,CAAC,MA  
AM,CAAC,CAAC,CAAC,CAAC,MAAM,CAAC,SAAS,CAAC,CAAC,GAAG,EAAE,GAAE,CAAC,CAAC,GAA  
G,EAAE,CAAC;AAC334B;AACa;AACa,EAAE,OAAO,iBAaIB,CAAC,KAAK;AAChC,CAAC;AACD,EAAE;  
AACF,CAAC,GAAG,CAAC;AAEH,cAAc,GAAG,iBAaIB;;;AChBpC;::::::::::;MAuCa,WAAW,SAAQ,aAAa;IA



K5C,YAAmB,IAAqD;QACtE,KAAK,EAAE,CAAC;QADS,SAAI,GA AJ,IAAI,CAAiD;;QAHhE,qBAAgB,GAAG,CAAC,CAAC;QAK3B,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,oBAAoB,CAAC,YAAY,CAAC,CAAC;QACID,kBAAkB,GAAG,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,eAAe,EAAE,CAAC;QACtD,IAAI,CAAC,SAAS,GAAG,IAAI,WAAW,CAAC,IAAI,EAAE,MAAM,EAAE,CAAC,CAAC;KACID;IAED,KAAK,CAAC,MAAkC,EAAE,KAAe,EAAE,KAAe;QAExE,MAAM,MAAM,GAAG,EAAC,EAAE,EAAE,IAAI,CAAC,gBAAgB,EAAE,EAAC,CAAC;QAC7C,IAAI,CAAC,IAAI,CAAC,MAAM,EAAE,MAAM,EAAE,KAAK,EAAE,KAAK,EAAE,CAAC,CAAC,CAAC;QAC3C,OAAO,MAAM,CAAC;KACf;IAED,UAAU;QACR,OAAO,IAAI,CAAC,SAAS,CAAC,UAAU,EA AE,CAAC;KACpC;IAED,MAAM,IAAI,CAAC,CAAa;QACtB,MAAM,KAAK,GAAG,IAAI,CAAC,GAAG,EAAE,CAAC;QACzB,CAAC,EAAE,CAAC;QACJ,MAAM,QAAQ,GAAG,IAAI,CAAC,GAAG,EAAE,GAAG,KAAK,CAAC;QACpC,OAAO,EAAC,QAAQ,EAAC,CAAC;KACnB;IAED,IAAI,CACA,MAAc,EAAE,MAAkC,EAAE,KAAe,EACnE,KAAe,EAAE,QAAgB;QACnC,MAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;QACnC,IAAI,KAAK,KAAK,QAAQ,EAAE;YACtB,MAAM,WAAW,GAAG,MAAsB,CAAC;YAC3C,IAAI,CAAC,SAAS,CAAC,GAAG,CACd,MAAM,EACN,EAAC,EAAE,EAAE,WAAW,EAAE,KAAK,EAAE,KAAK,EAAE,YAAY,EAAE,IAAI,EAAE,QAAQ,EAAC,CAAC,CAAC;YACnE,OAAO;SACR;QAED,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QACvC,MAAM,QAAQ,GAAG,IAAI,GAAG,IAAI,CAAC,eAAe,CAAC,KAAK,CAAC,CAAC;QACpD,MAAM,YAAY,GAAG,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,QAAQ,CAAC,CAAC;QAEjD,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,EAAE,YAAY,EAAE,KAAK,EAAE,KAAK,EAAE,QAAQ,EAAC,CAAC,CAAC;QAEvE,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAY,CAAC,CAAC;QAEtD,IAAI,MAAM,IAAI,IAAI,EAAE;YACtB,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,GAAG,CACb,IAAI,UAAU,CACT,MAAkC,CAAC,MAAM,EACzC,MAAkC,CAAC,UAAU,EAAE,QAAQ,CAAC,EAC7D,YAAY,CAAC,CAAC;SACnB;KACF;IAED,MAAM,IAAI,CAAC,MAAc;QACvB,OAAO,IAAI,CAAC,QAAQ,CAAC,MAAM,CAAC,CAAC;KAC9B;IAED,QAAQ,CAAC,MAAc;QACrB,MAAM,EAAC,YAAY,EAAE,KAAK,EAAE,KAAK,EAAE,WAAW,EAAC,GAC3C,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;QAC/B,IAAI,KAAK,KAAK,QAAQ,EAAE;YACtB,OAAO,WAAW,CAAC;SACpB;QACD,MAAM,KAAK,GAAG,IAAI,CAAC,IAAI,CAAC,MAAM,CAAC,KAAK,CACc,YAAY,EACZ,YAAY,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,GAAG,IAAI,CAAC,eAAe,CAAC,KAAK,CAAC,CAAC,CAAC;QAC5E,OAAO,oBAAoB,CAAC,KAAK,CAAC,MAAM,EAAE,KAAK,CAAC,CAAC;KACID;;;;;;IAQD,WAAW,CAAC,MAAc,EAAE,KAAK,GAAG,KAAK;QACvC,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE;YAC9B,MAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;YACxC,IAAI,CAAC,QAAQ,EAAE,CAAC;YACb,IAAI,CAAC,KAAK,IAAI,IAAI,CAAC,QAAQ,GAAG,CAAC,EAAE;gBAC/B,OAAO,KAAK,CAAC;aAcD;YAED,IAAI,CAAC,IAAI,CAAC,KAAK,CAAC,IAAI,CAAC,YAAY,CAAC,CAAC;YACnC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,WAAW,CAAC,IAAI,CAAC,EAAE,CAAC,CAAC;YACpC,IAAI,CAAC,SAAS,CAAC,MAAM,CAAC,MAAM,CAAC,CAAC;SAC/B;QACD,OAAO,IAAI,CAAC;KACb;;IAGD,QAAQ,CAAC,MAAc;QACrB,IAAI,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,EAAE;YAC9B,MAAM,UAAU,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;YAC9C,OAAO,UAAU,CAAC,QAAQ,CAAC;SAC5B;QACD,OAAO,CAAC,CAAC;KACV;IAED,MAAM,CAAC,MAAc;QACnB,MAAM,IAAI,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;QACxC,IAAI,IAAI,IAAI,IAAI,EAAE;YACb,IAAI,CAAC,QAAQ,EAAE,CAAC;SACjB;KACF;IAED,cAAc;QACZ,OAAO,EAAE,CAAC;KACX;;;IAID,eAAe,CAAC,MAAc;QAC5B,OAAO,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC,YAAY,CAAC;KACd;IAED,OAAO;QACL,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,OAAO,EAAE,CAAC;QACzB,IAAI,SAAS,IAAI,IAAI,CAAC,IAAI,EAAE;YACtB,IAAI,CAAC,IAAI,CAAC,OAAO,CAAC,mBAAmB,EAAE,CAAC;SACzC;QACD,IAAI,CAAC,IAAI,GAAG,IAAI,CAAC;KACIB;IAED,MAAM;QACJ,OAAO,EAAC,UAAU,EAAE,KAAK,EAAC,CAAC;KAC5B;;;;;;IAQD,UAAU,CAAC,KAAe,EAAE,KAAe,EAAE,YAAqB;QAEhE,IAAI,MAAU,CAAC;QACf,IAAI,YAAY,IAAI,IAAI,EAAE;YACxB,MAAM,GAAG,IAAI,CAAC,KAAK,CAAC,IAAI,eAAe,KAAK,EAAE,KAAK,CAAC,CAAC;SACtD;aAAM;YA CL,MAAM,EAAE,GAAG,IAAI,CAAC,gBAAgB,EAAE,CAAC;YACnC,MAAM,GAAG,EAAC,EAAE,EAAC,CAAC;YACd,IAAI,CAAC,SAAS,CAAC,GAAG,CAAC,MAAM,EAAE,EAAC,EAAE,EAAE,YAAY,EAAE,KAAK,EAAE,KAAK,EAAE,QAAQ,EAAE,CAAC,EAAC,CAAC,CAAC;YACtE,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAA

C;YACvC,IAAI,CAAC,IAAI,CAAC,IAAI,CAAC,cAAc,CAAC,EAAE,EAAE,IAAI,EAAE,YAAy,CAAC,CAAC;  
SACvD;QACD,OAAO,EAAE,MAAM,EAAE,KAAK,EAAE,KAAK,EAAC,CAAC;KAC/B;IAED,kBAaKB,CAA  
C,EAAE,KAAK,EAAE,KAAK,EAAE,MAAM,EAAa;QAEhD,MAAM,MAAM,GAAG,IAAI,CAAC,IAAI,CAAC,  
MAAM,CAAC,MAAM,CAAC;QACvC,MAAM,EAAE,YAAy,EAAC,GAAG,IAAI,CAAC,SAAS,CAAC,GAAG,  
CAAC,MAAM,CAAC,CAAC;QACID,MAAM,IAAI,GAAG,IAAI,CAAC,aAAa,CAAC,KAAK,CAAC,CAAC;QA  
CvC,QAAQ,KAAK;YACX,KAAK,SAAS;gBACZ,OAAO,IAAI,YAAy,CAAC,MAAM,EAAE,YAAy,EAAE,IAA  
I,CAAC,CAAC;YACtD,KAAK,OAAO;gBACV,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAy,EAAE,IAAI,  
CAAC,CAAC;YACpD,KAAK,MAAM;gBACT,OAAO,IAAI,UAAU,CAAC,MAAM,EAAE,YAAy,EAAE,IAAI,  
CAAC,CAAC;YACpD;gBACE,MAAM,IAAI,KAAK,CAAC,iBAaiB,KAAK,EAAE,CAAC,CAAC;SAC7C;KAC  
F;CACF;AAED,SAAS,yBAaYB,CAAC,IAAY;;;IAI7C,OAAO,CAAC,OAAy,EAAE,QAAa;QACjC,IAAI,CAAC  
,KAAK,CAAC,IAAI,EAAE,EAAC,WAAW,EAAE,aAAa,EAAC,CAAC,CAAC,IAAI,CAAC,CAAC,QAAQ;YAC  
3D,IAAI,CAAC,QAAQ,CAAC,IAAI,CAAC,EAAE;gBACnB,OAAO,CAAC,GAAG,CAAC,CAAC,CAAC,uCAA  
uC,IAAI,GAAG,CAAC,CAAC;aAC/D;YACD,QAAQ,CAAC,WAAW,EAAE,CAAC,IAAI,CAAC,MAAM;gBAC  
hC,WAAW,CAAC,WAAW,CAAC,MAAM,EAAE,OAAO,CAAC,CAAC,IAAI,CAAC,MAAM;oBACID,QAAQ,C  
AAC,MAAM,CAAC,QAAQ,EAAE,MAAM,CAAC,MAAM,CAAC,CAAC;iBAC1C,CAAC,CAAC;aACJ,CAAC,  
CAAC;SACJ,CAAC,CAAC;QACH,OAAO,EAAE,CAAC;KACX,CAAC;AACJ,CAAC;AAED;;;;;AAMA,SAAS,  
mBAaMB,CACxB,aAAsB,EAAE,gBAaYB,EACjD,gBAaWB;IAC1B,IAAI,QAAQ,IAAI,IAAI,EAAE;;QAGpB,  
OAAO,QAAQ,CAAC;KACjB;IAED,IAAI,IAAI,GAaMB,wBAaWB,CAAC;IACpD,IAAI,aAAa,IAAI,gBAaGB,E  
AAE;QACrC,IAAI,GAAG,sCAAsC,CAAC;KAC/C;SAAM,IAAI,aAAa,EAAE;QACxB,IAAI,GAAG,6BAa6B,C  
AAC;KACtC;IAED,IAAI,WAAW,IAAI,IAAI,EAAE;QACvB,IAAI,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,EAA  
E;YAC7B,OAAO,WAAW,CAAC,IAAI,CAAC,CAAC;SAC1B;KACF;IAED,OAAO,gBAaGB,GAAG,IAAI,CAA  
C;AACjC,CAAC;AAED;;;;;AAOo,eAAe,IAAI;IACxB,MAAM,CAAC,aAAa,EAAE,gBAaGB,CAAC,GAAG,M  
AAM,OAAO,CAAC,GAAG,CAAC;QAC1D,GAAG,EAAE,CAAC,QAAQ,CAAC,uBAaUB,CAAC;QACvC,GAA  
G,EAAE,CAAC,QAAQ,CAAC,8BAa8B,CAAC;KAC/C,CAAC,CAAC;IAEH,OAAO,IAAI,OAAO,CAAC,CAAC  
,OAAO,EAAE,MAAM;QACjC,MAAM,aAAa,GAAsB,EAAE,CAAC;;;;;QA05C,aAAa,CAAC,UAAU,GAAG,C  
AAC,IAAI,EAAE,MAAM;YACtC,IAAI,IAAI,CAAC,QAAQ,CAAC,YAAy,CAAC,EAAE;gBAC/B,MAAM,QA  
AQ,GAAG,kBAaKB,CAAC;gBACpC,MAAM,IAAI,GAAG,IAAI,IAAI,CAAC,CAAC,QAAQ,CAAC,EAAE,EAA  
C,IAAI,EAAE,wBAaWB,EAAC,CAAC,CAAC;gBACpE,OAAO,GAAG,CAAC,eAAe,CAAC,IAAI,CAAC,CAAC  
;aACIC;YAED,IAAI,IAAI,CAAC,QAAQ,CAAC,OAAO,CAAC,EAAE;gBAC1B,OAAO,mBAaMB,CACtB,aAA  
wB,EAAE,gBAa2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,MAAM,CAAC,CAAC;aACvD;YACD,OAA  
O,MAAM,GAAG,IAAI,CAAC;SACtB,CAAC;;;QAKF,IAAI,WAAW,EAAE;YACf,aAAa,CAAC,eAAe;gBACzB,  
yBAaYB,CAAC,mBAaMB,CACzC,aAAwB,EAAE,gBAa2B,EACrD,cAAc,IAAI,IAAI,GAAG,cAAc,GAAG,EA  
AE,CAAC,CAAC,CAAC;SACxD;QAED,IAAI,WAAW,GAAG,KAAK,CAAC;QACxB,aAAa,CAAC,OAAO,GA  
AG;YACtB,IAAI,WAAW,EAAE;;gBAEf,OAAO;aACR;YACD,IAAI,WAAW,EAAE;;gBAGf,OAAO;aACR;YA  
CD,WAAW,GAAG,IAAI,CAAC;YACnB,MAAM,SAAS,GACX,kEAAkE;gBACIE,iIAAi,CAAC;YACti,MAAM,  
CAAC,EAAC,OAAO,EAAE,SAAS,EAAC,CAAC,CAAC;SAC9B,CAAC;QAEF,IAAI,IAAgC,CAAC;;QAErC,IA  
AI,gBAaGB,IAAI,aAAa,IAAI,QAAQ,IAAI,IAAI,EAAE;YACzD,aAAa,CAAC,mBAaMB,GAAG,IAAI,IAAI,CA  
CxC,CAAC,sCAAsC;oBACtCM,2BAaUB,CAAC,QAAQ,EAAE,CAAC,EACpC,EAAC,IAAI,EAAE,iBAaiB,EA  
AC,CAAC,CAAC;YAC/B,IAAI,GAAGA,2BAaUB,CAAC,aAAa,CAAC,CAAC;SAC/C;aAAM;;YAEI,IAAI,GA  
AGC,eAAW,CAAC,aAAa,CAAC,CAAC;SACnC;;;QAID,IAAI,CAAC,IAAI,CAAC,CAAC,MAAM;YACf,WAA  
W,GAAG,IAAI,CAAC;YACnB,WAAW,GAAG,KAAK,CAAC;YAEpB,MAAM,cAAc,GAAW,IAAI,CAAC;;YA  
EpC,MAAM,CAAC,IAAI,GAAG;gBACZ,IAAI,EAAE,MAAM,CAAC,KAAK,CAAC,MAAM,EAAE,IAAI,EAA  
E,EAAE,CAAC;gBACpC,oBAaOB,EACbB,MAAM,CAAC,KAAK,CAAC,yBAaYB,EAAE,IAAI,EAAE,CAAC,  
QAAQ,CAAC,CAAC;gBAC7D,eAAe,EAAE,MAAM,CAAC,KAAK,CAAC,mBAaMB,EAAE,QAAQ,EAAE,EA  
AE,CAAC;gBACHE,cAAc,EAAE,MAAM,CAAC,KAAK,CACxB,iBAaiB,EAAE,IAAI,EACvB;oBACE,QAAQ;o  
BACR,QAAQ;oBACR,QAAQ;iBACT,CAAC;gBACN,WAAW,EAAE,MAAM,CAAC,KAAK,CAAC,cAAc,EAA  
E,cAAc,EAAE,CAAC,QAAQ,CAAC,CAAC;gBACrE,OAAO,EAAE,MAAM,CAAC,KAAK,CAAC,SAAS,EAAE  
,cAAc,EAAE,EAAE,CAAC;aACrD,CAAC;YAEF,OAAO,CAAC,EAAC,IAAI,EAAE,MAAM,EAAC,CAAC,CAA

C;SACzB,CAAC,CAAC;KACJ,CAAC,CAAC;AACL,CAAC;AAED,SAAS,oBAAoB,CACzB,MAAmB,EAAE,KAAe;IACtC,QAAQ,KAAK;QACX,KAAK,SAAS;YACZ,OAAO,IAAI,YAAY,CAAC,MAAM,CAAC,CAAC;QACIC,KAAK,OAAO;YACV,OAAO,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;QACHc,KAAK,MAAM;YACT,OAAO,IAAI,UAAU,CAAC,MAAM,CAAC,CAAC;QACHc;YACE,MAAM,IAAI,KAAK,CAAC,iBAAiB,KAAK,EAAE,CAAC,CAAC;KAC7C;AACH,CAAC;AAED,MAAM,eAAe,GAAG;IACtB,wBAAwB,EAAE,6BAA6B;IACvD,sCAAsC;CAC9B,CAAE;AAGZ,IAAI,QAAQ,GAAW,IAAI,CAAC;AAC5B,IAAI,cAAc,GAAW,IAAI,CAAC;AACIC,IAAI,WAAW,GAAuC,EAAE,CAAC;AACzD,IAAI,WAAW,GAAG,KAAK,CAAC;AACxB,IAAI,WAAW,GAAG,KAAK,CAAC;AAExB;;;;;;;SAYgB,WAAW,CAAC,IAAY,EAAE,gBAAgB,GAAG,KAAK;IACHe,eAAe,CACX,8DAA8D;QAC9D,uCAAuC,CAAC,CAAC;IAC7C,IAAI,WAAW,EAAE;QACf,MAAM,IAAI,KAAK,CACX,+DAA+D;YAC/D,mEAAmE,CAAC,CAAC;KACIE;IACD,QAAQ,GAAG,IAAI,CAAC;IACHB,WAAW,GAAG,gBAAgB,CAAC;AACjC,CAAC;AAED;;;;;;;SAYBgB,YAAY,CACxB,eAA0D,EAC1D,gBAAgB,GAAG,KAAK;IAC1B,IAAI,WAAW,EAAE;QACf,MAAM,IAAI,KAAK,CACX,+DAA+D;YAC/D,wDAAwD;YACxD,cAAc,CAAC,CAAC;KACrB;IAED,IAAI,OAAO,eAAe,KAAK,QAAQ,EAAE;QACvC,cAAc,GAAG,eAAe,CAAC;KACIC;SAAM;QACL,WAAW,GAAG,eAAe,CAAC;QAC9B,MAAM,YAAY,GACd,eAAe,CAAC,MAAM,CAAC,IAAI,IAAI,WAAW,CAAC,IAAI,CAAC,IAAI,IAAI,CAAC,CAAC;QAC9D,IAAI,YAAY,CAAC,MAAM,GAAG,CAAC,EAAE;YAC3B,MAAM,IAAI,KAAK,CACX,0DAA0D;gBAC1D,GAAG,YAAY,CAAC,IAAI,CAAC,GAAG,CAAC,2CAA2C;gBACpE,oEAAoE;gBACpE,oDAAoD,CAAC,CAAC;SAC3D;KACF;IAED,WAAW,GAAG,gBAAgB,CAAC;AACjC,CAAC;AAWD,IAAI,YAAY,GAAG,CAAC,CAAC,CAAC;AACtB,IAAI,kBAaKB,GAAG,CAAC,CAAC,CAAC;AAE5B;;;;;SAmgB,eAAe,CAAC,UAAkB;IACHD,YAAY,GAAG,UAAU,CAAC;AAC5B,CAAC;AAED;;;;;SAKgB,eAAe;IAC7B,IAAI,kBAaKB,KAAK,CAAC,CAAC,EAAE;QAC7B,MAAM,IAAI,KAAK,CAAC,+BAA+B,CAAC,CAAC;KACID;IACD,OAAO,kBAaKB,CAAC;AAC5B;;ACxfA;AAEA;MACM,OAAO,GAAG;;ACHhB;;;;;;;AA0BA,MAAM,aAAa,GAAG,CAAC,CAAC;AACxB,eAAe,CAAC,MAAM,EAAE;IACtB,MAAM,EAAC,IAAI,EAAC,GAAG,MAAM,IAAI,EAAE,CAAC;IAC5B,OAAO,IAAI,WAAW,CAAC,IAAI,CAAC,CAAC;AAC/B,CAAC,EAAE,aAAa,CAAC;;;;; }

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/tf-backend-wasm.fesm.js.map

No license file was found, but licenses were detected in source scan.

```
{ "version": 3, "file": "Unpack.js", "sourceRoot": "", "sources": ["../src/kernels/Unpack.ts"], "names": [], "mappings": "AAA;;;;;;;GAeG;AAEH,OAAO,EAAuC,MAAM,EAA4B,MAAM,uBAAuB,CAAC;AAI9G,OAAO,EAAC,KAAK,EAAC,MAAM,SAAS,CAAC;AAE9B,SAAS,MAAM,CACX,IAAsE;IAExE,MAAM,EAAC,MAAM,EAAE,OAAO,EAAE,KAAK,EAAC,GAAG,IAAI,CAAC;IACtC,MAAM,EAAC,KAAK,EAAC,GAAG,MAAM,CAAC;IACvB,IAAI,EAAC,IAAI,EAAC,GAAG,KAAK,CAAC;IAEnB,IAAI,IAAI,GAAG,CAAC,EAAE;QACZ,IAAI,IAAI,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;KAC5B;IAED,MAAM,UAAU,GAAG,KAAK,CAAC,KAAK,CAAC,IAAI,CAAC,CAAC;IACrC,MAAM,IAAI,GAAG,KAAK,CAAC,KAAK,CAAC,MAAM,CAAC;IACHc,MAAM,QAAQ,GAAa,IAAI,KAAK,CAAC,IAAI,GAAG,CAAC,CAAC,CAAC;IAC/C,IAAI,QAAQ,GAAG,CAAC,CAAC;IACjB,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,EAAE,CAAC,EAAE,EAAE;QAC7B,IAAI,CAAC,KAAK,IAAI,EAAE;YACd,QAAQ,CAAC,QAAQ,EAAE,CAAC,GAAG,KAAK,CAAC,KAAK,CAAC,CAAC,CAAC;SACvC;KACF;IACD,MAAM,IAAI,GAAiB,IAAI,KAAK,CAAC,UAAU,CAAC,CAAC;IACjD,MAAM,KAAK,GAAG,IAAI,KAAK,CAAC,IAAI,CAAC,CAAC,IAAI,CAAC,CAAC,CAAC;IACiC,MAAM,IAAI,GAAG,KAAK,CAAC,KAAK,CAAC,KAAK,EAAE,CAAC;IACjC,IAAI,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC;IACf,KAAK,IAAI,CAAC,GAAG,CAAC,EAAE,CAAC,GAAG,IAAI,CAAC,MAAM,EAAE,CAAC,EAAE,EAAE;QACpC,KAAK,CAAC,IAAI,CAAC,GAAG,CAAC,CAAC;QACHb,IAAI,CAAC,CAAC,CAAC,GAAG,KAAK,CAAC,EAAC,MAAM,EAAE,EAAC,CAAC,EAAE,KAAK,EAAC,EAAE,KAAK,EAAC,KAAK,EAAC,IAAI,EAAC,EAAE,OAAO,EAAC,CAAC,CAAC;KACtE;IACD,OAAO,IAAI,CAAC,GAAG,CAAC,CAAC,EAAC,MAAM,EAAE,KAAK,EAAC,EAAE,EAAE,CAAC,CAAC,EAAC,MAAM,EAAE,KAAK,EAAC,EAAE,K
```

AAK,EAAE,QAAQ,EAAC,CAAC,CAAC,CAAC;AAC3E,CAAC;AAED,MAAM,CAAC,MAAM,YAAAY,GAAiB;  
IACxC,UAAU,EAAE,MAAM;IACIB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,MAA0B;CACvC,CAAC", "so  
urcesContent":["/\*\n \* @license\n \* Copyright 2019 Google LLC. All Rights Reserved.\n \* Licensed under the  
Apache License, Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the  
License.\n \* You may obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by applicable law or agreed to in writing, software\n \* distributed under the License is distributed  
on an \"AS IS\" BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
implied.\n \* See the License for the specific language governing permissions and\n \* limitations under the  
License.\n \*

```
=====\n*\n\nimport { KernelConfig, KernelFunc, TensorInfo, Unpack, UnpackAttrs, UnpackInputs } from
'@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { slice } from
 './Slice';\nfunction unpack(\n args: { inputs: UnpackInputs, backend: BackendWasm, attrs: UnpackAttrs }):\n TensorInfo[] {\n const { inputs, backend, attrs } = args;\n const { value } = inputs;\n let { axis } = attrs;\n if (axis <
 0) {\n axis += value.shape.length;\n }\n const numOutputs = value.shape[axis];\n const rank =
 value.shape.length;\n const outShape: number[] = new Array(rank - 1);\n let outIndex = 0;\n for (let i = 0; i < rank;
 i++) {\n if (i !== axis) {\n outShape[outIndex++] = value.shape[i];\n }\n const outs: TensorInfo[] = new
 Array(numOutputs);\n const begin = new Array(rank).fill(0);\n const size = value.shape.slice();\n size[axis] = 1;\n for (let i = 0; i < outs.length; i++) {\n begin[axis] = i;\n outs[i] = slice({ inputs: { x: value }, attrs: { begin, size },
 backend});\n }\n return outs.map(({ dataId, dtype }) => ({ dataId, dtype, shape: outShape }));\n }\n \n export const
 unpackConfig: KernelConfig = {\n kernelName: Unpack,\n backendName: 'wasm',\n kernelFunc: unpack as { } as
 KernelFunc,\n };\n}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Unpack.js.map

No license file was found, but licenses were detected in source scan.

/\* Copyright 2020 Google LLC. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\* =====\*/

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Floor.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/unary.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/PadV2.h

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/BatchMatMul.h

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Equal.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/SquaredDifference.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/\_FusedMatMul\_test.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/BatchMatMul\_test.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/OneHot.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/RotateWithOffset.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Round.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/SelectV2.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/DepthToSpace.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/batch\_mat\_mul\_impl.h

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Softmax.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Prod.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/TopK.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Sqrt.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Conv2DBackpropInput.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Step.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/BatchMatMul.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/FlipLeftRight.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/StridedSlice.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Softmax.h

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/NotEqual.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/NonMaxSuppressionV4.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/Neg.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/batch\_mat\_mul\_impl.cc

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/src/cc/kernels/PadV2\_test.cc

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Cos.js","sourceRoot":"","sources":["../../src/kernels/Cos.ts"],"names":[],"mappings":"AAAA;,,,,;
;GAG;AAEH,OAAO,EAAC,GAAG,EAAe,MAAM,uBAAuB,CAAC;AAExD,OAAO,EAAC,uBAAuB,EA
AC,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,SAAS,GAAiB,uBAAuB,CAAC,GAAG,CAAC,CA
AC","sourcesContent":["/**\n * @license\n * Copyright 2019 Google LLC. All Rights Reserved.\n * Licensed
under the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport { Cos, KernelConfig } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const cosConfig: KernelConfig = createUnaryKernelConfig(Cos);\n\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cos.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Cosh.js","sourceRoot":"","sources":["../../src/kernels/Cosh.ts"],"names":[],"mappings":"AAAA;
;GAG;AACH,OAAO,EAAC,IAAI,EAAe,MAAM,uBAAuB,CAAC;AAEzD,OAAO,EAAC,uBAAuB,EA
AC,MAAM,gBAAgB,CAAC;AAEvD,MAAM,CAAC,MAAM,UAAU,GAAiB,uBAAuB,CAAC,IAAI,CAAC,CAA
C","sourcesContent":["/**\n * @license\n * Copyright 2021 Google LLC. All Rights Reserved.\n * Licensed under
the Apache License, Version 2.0 (the \"License\");\n * you may not use this file except in compliance with the
License.\n * You may obtain a copy of the License at\n * http://www.apache.org/licenses/LICENSE-2.0\n *\n *
Unless required by applicable law or agreed to in writing, software\n * distributed under the License is distributed
on an \"AS IS\" BASIS,\n * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied.\n * See the License for the specific language governing permissions and\n * limitations under the
License.\n *
=====
*\n\nimport { Cosh, KernelConfig } from '@tensorflow/tfjs-core';\n\nimport { createUnaryKernelConfig } from
'/unary_kernel';\n\nexport const coshConfig: KernelConfig = createUnaryKernelConfig(Cosh);\n\n"]}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Cosh.js.map

No license file was found, but licenses were detected in source scan.

```
{"version":3,"file":"Range.js","sourceRoot":"","sources":["../../src/kernels/Range.ts"],"names":[],"mappings":"AAA
A;GAG;AAEH,OAAO,EAA2B,KAAC,EAAyB,MAAM,uBAAuB,CAAC;AAG9F,OAAO,EAAC,YAA
Y,EAAC,MAAM,wBAAwB,CAAC;AAEpD,MAAM,CAAC,MAAM,KAAC,GACd,CAAC,IAA+C,EAAc,EAAE;I
AC9D,MAAM,EAAC,OAAO,EAAE,KAAC,EAAC,GAAG,IAAI,CAAC;IAC9B,MAAM,EAAC,KAAC,EAAE,IA
AI,EAAE,IAAI,EAAE,KAAC,EAAC,GAAG,KAAC,CAAC;IACzC,MAAM,MAAM,GAAG,YAAY,CAAC,KAA
K,EAAE,IAAI,EAAE,IAAI,EAAE,KAAC,CAAC,CAAC;IAEtD,MAAM,GAAG,GAAG,OAAO,CAAC,UAAU,C
AAC,CAAC,MAAM,CAAC,MAAM,CAAC,EAAE,KAAC,CAAC,CAAC;IACvD,MAAM,OAAO,GAAG,OAAO,
CAAC,kBAakB,CAAC,GAAG,CAAC,CAAC;IAC9D,OAAO,CAAC,GAAG,CAAC,MAAM,CAAC,CAAC;IACp
```

B,OAAO,GAAG,CAAC;AACb,CAAC,CAAC;AAEN,MAAM,CAAC,MAAM,WAAW,GAAiB;IACvC,UAAU,EA  
AE,KAAK;IACjB,WAAW,EAAE,MAAM;IACnB,UAAU,EAAE,KAAyB;CACtC,CAAC", "sourcesContent": ["/\*\*\n \* @license\n \* Copyright 2020 Google LLC. All Rights Reserved.\n \* Licensed under the Apache License,  
Version 2.0 (the \"License\");\n \* you may not use this file except in compliance with the License.\n \* You may  
obtain a copy of the License at\n \* http://www.apache.org/licenses/LICENSE-2.0\n \* Unless required by  
applicable law or agreed to in writing, software\n \* distributed under the License is distributed on an \"AS IS\"\n BASIS,\n \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.\n \* See the  
License for the specific language governing permissions and\n \* limitations under the License.\n \*

```
=====\n *\n\nimport { KernelConfig, KernelFunc, Range, RangeAttrs, TensorInfo } from '@tensorflow/tfjs-core';\nimport { BackendWasm } from '../backend_wasm';\nimport { rangeImplCPU } from '../kernel_utils/shared';\n\nexport const range =\n (args: { backend: BackendWasm, attrs: RangeAttrs }): TensorInfo => {\n const { backend, attrs } = args;\n const { start, stop, step, dtype } = attrs;\n const values = rangeImplCPU(start, stop, step, dtype);\n\n const out = backend.makeOutput([values.length], dtype);\n const outVals = backend.toArrayFromHeap(out);\n outVals.set(values);\n return out;\n };\n\nexport const rangeConfig: KernelConfig = {\n kernelName: Range,\n backendName: 'wasm',\n kernelFunc: range as { } as KernelFunc\n};\n\n}}
```

Found in path(s):

\* /opt/cola/permits/1234600203\_1638277742.68/0/tfjs-backend-wasm-zip/tfjs-backend-wasm/dist/kernels/Range.js.map

# 1.181 libjpeg 6b

## 1.181.1 Notifications :

This software is based in part on the work of the Independent JPEG Group.

## 1.181.2 Available under license :

The Independent JPEG Group's JPEG software

=====  
README for release 6b of 27-Mar-1998  
=====

This distribution contains the sixth public release of the Independent JPEG Group's free JPEG software. You are welcome to redistribute this software and to use it for any purpose, subject to the conditions under LEGAL ISSUES, below.

Serious users of this software (particularly those incorporating it into larger programs) should contact IJG at jpeg-info@uunet.uu.net to be added to our electronic mailing list. Mailing list members are notified of updates and have a chance to participate in technical discussions, etc.

This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

IJG is not affiliated with the official ISO JPEG standards committee.

## DOCUMENTATION ROADMAP

=====

This file contains the following sections:

OVERVIEW        General description of JPEG and the IJG software.  
LEGAL ISSUES    Copyright, lack of warranty, terms of distribution.  
REFERENCES     Where to learn more about JPEG.  
ARCHIVE LOCATIONS Where to find newer versions of this software.  
RELATED SOFTWARE Other stuff you should get.  
FILE FORMAT WARS Software \*not\* to get.  
TO DO           Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

install.doc    How to configure and install the IJG software.  
usage.doc     Usage instructions for cjpeg, djpeg, jpegtran,  
              rdjpgcom, and wrjpgcom.  
\*.1            Unix-style man pages for programs (same info as usage.doc).  
wizard.doc    Advanced usage instructions for JPEG wizards only.  
change.log    Version-to-version change highlights.

Programmer and internal documentation:

libjpeg.doc   How to use the JPEG library in your own programs.  
example.c     Sample code for calling the JPEG library.  
structure.doc  Overview of the JPEG library's internal structure.  
filelist.doc   Road map of IJG files.  
coderules.doc Coding style rules --- please read if you contribute code.

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

## OVERVIEW

=====

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images. JPEG is intended for compressing "real-world" scenes; line drawings, cartoons and other non-realistic images



are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

We welcome the use of this software as a component of commercial products. No royalty is required, but we do ask for an acknowledgement in product documentation, as described under LEGAL ISSUES.

## LEGAL ISSUES

=====

In plain English:

1. We don't promise that this software works. (But if you find any bugs,

please let us know!)

2. You can use this software for whatever you want. You don't have to pay us.
3. You may not pretend that you wrote this software. If you use it in a program, you must acknowledge somewhere in your documentation that you've used the IJG code.

In legalese:

The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy.

This software is copyright (C) 1991-1998, Thomas G. Lane.  
All Rights Reserved except as specified below.

Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:

- (1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.
- (2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".
- (3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us.

Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software".

We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

ansi2knr.c is included in this distribution by permission of L. Peter Deutsch, sole proprietor of its copyright holder, Aladdin Enterprises of Menlo Park, CA. ansi2knr.c is NOT covered by the above copyright and conditions, but instead by the usual distribution terms of the Free Software Foundation; principally,

that you must include source code if you redistribute it. (See the file ansi2knr.c for full details.) However, since ansi2knr.c is not needed as part of any program generated from the IJG code, this does not limit you more than the foregoing paragraphs do.

The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

"The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

## REFERENCES

=====

We highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44. (Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at <ftp://ftp.uu.net/graphics/jpeg/wallace.ps.gz>. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections

and some added material. Note: the Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2). This is by far the most complete exposition of JPEG in existence, and we highly recommend it.

The JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.) In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging \$95 for Part 1 and \$47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department  
C-Cube Microsystems, Inc.  
1778 McCarthy Blvd.  
Milpitas, CA 95035  
phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at

<ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz>. There is also a plain text version at <ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz>, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from <ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz>. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from [ftp.sgi.com](ftp://ftp.sgi.com) or from <ftp://ftp.uu.net/graphics/jpeg/>. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from <ftp://ftp.sgi.com/graphics/tiff/>.

## ARCHIVE LOCATIONS

=====

The "official" archive site for this software is [ftp.uu.net](ftp://ftp.uu.net) (Internet address 192.48.96.9). The most recent released version can always be found there in directory [graphics/jpeg](ftp://ftp.uu.net/graphics/jpeg). This particular version will be archived as <ftp://ftp.uu.net/graphics/jpeg/jpegsrc.v6b.tar.gz>. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact [help@uunet.uu.net](mailto:help@uunet.uu.net) for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only [ftp.uu.net](ftp://ftp.uu.net) is guaranteed to have the latest official version.

You can also obtain this software in DOS-compatible "zip" archive format from the SimTel archives (<ftp://ftp.simtel.net/pub/simtelnet/msdos/graphics/>), or on CompuServe in the Graphics Support forum (GO CIS:GRAPHSUP), library 12 "JPEG Tools". Again, these versions may sometimes lag behind the [ftp.uu.net](ftp://ftp.uu.net) release.

The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups [comp.graphics.misc](mailto:comp.graphics.misc), [news.answers](mailto:news.answers), and other groups. It is available on the World Wide Web at <http://www.faqs.org/faqs/jpeg-faq/> and other [news.answers](mailto:news.answers) archive sites, including the official [news.answers](mailto:news.answers) archive at [rtfm.mit.edu](http://rtfm.mit.edu): <ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/>. If you don't have Web or FTP access, send e-mail to [mail-server@rtfm.mit.edu](mailto:mail-server@rtfm.mit.edu) with body

send usenet/news.answers/jpeg-faq/part1

send usenet/news.answers/jpeg-faq/part2

## RELATED SOFTWARE

=====

Numerous viewing and image manipulation programs now support JPEG. (Quite a few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet.

If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites, notably <ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/>. Unfortunately PBPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from <ftp://havefun.stanford.edu/pub/jpeg/>. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

## FILE FORMAT WARS

=====

Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read. (For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)

The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation. We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.

The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an

official standard rather than an informal one. At this point it is unclear whether SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)

Various proprietary file formats incorporating JPEG compression also exist. We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format!

TO DO

=====

The major thrust for v7 will probably be improvement of visual quality. The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.

In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions --- principally, variable quantization and the SPIFF file format.

As always, speeding things up is of great interest.

Please send bug reports, offers of help, etc. to [jpeg-info@uunet.uu.net](mailto:jpeg-info@uunet.uu.net).

## 1.182 jansi 1.8

### 1.182.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*\*

- \* Copyright (C) 2009, Progress Software Corporation and/or its
- \* subsidiaries or affiliates. All rights reserved.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/AnsiOutputStream.java
  - \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/WindowsAnsiOutputStream.java
  - \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/Ansi.java
  - \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/AnsiConsole.java
- No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright (C) 2009 the original author(s).
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/AnsiString.java
- \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/AnsiRenderWriter.java
- \* /opt/cola/permits/1257860190\_1643019494.64/0/jansi-1-8-sources-jar/org/fusesource/jansi/AnsiRenderer.java

# 1.183 apache-http-server 2.4.53

## 1.183.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,



and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## APACHE HTTP SERVER SUBCOMPONENTS:

The Apache HTTP Server includes a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

For the mod\_mime\_magic component:

```
/*
 * mod_mime_magic: MIME type lookup via file magic numbers
 * Copyright (c) 1996-1997 Cisco Systems, Inc.
 *
 * This software was submitted by Cisco Systems to the Apache Group in July
 * 1997. Future revisions and derivatives of this source code must
 * acknowledge Cisco Systems as the original contributor of this module.
 * All other licensing and usage conditions are those of the Apache Group.
 *
 * Some of this code is derived from the free version of the file command
 * originally posted to comp.sources.unix. Copyright info for that program
 * is included below as required.
 * -----
 * - Copyright (c) Ian F. Darwin, 1987. Written by Ian F. Darwin.
 *
 * This software is not subject to any license of the American Telephone and
 * Telegraph Company or of the Regents of the University of California.
 *
 * Permission is granted to anyone to use this software for any purpose on any
 * computer system, and to alter it and redistribute it freely, subject to
 * the following restrictions:
 *
 * 1. The author is not responsible for the consequences of use of this
 * software, no matter how awful, even if they arise from flaws in it.
 *
 * 2. The origin of this software must not be misrepresented, either by
 * explicit claim or by omission. Since few users ever read sources, credits
 * must appear in the documentation.
 *
 * 3. Altered versions must be plainly marked as such, and must not be
 * misrepresented as being the original software. Since few users ever read
 * sources, credits must appear in the documentation.
 *
 * 4. This notice may not be removed or altered.
 * -----
 */
```

\*/

For the modules\mappers\mod\_imagemap.c component:

"macmartinized" polygon code copyright 1992 by Eric Haines, erich@eye.com

For the server\util\_md5.c component:

/\*\*\*\*\*\*

\* NCSA HTTPd Server

\* Software Development Group

\* National Center for Supercomputing Applications

\* University of Illinois at Urbana-Champaign

\* 605 E. Springfield, Champaign, IL 61820

\* httpd@ncsa.uiuc.edu

\*

\* Copyright (C) 1995, Board of Trustees of the University of Illinois

\*

\*\*\*\*\*

\*

\* md5.c: NCSA HTTPd code which uses the md5c.c RSA Code

\*

\* Original Code Copyright (C) 1994, Jeff Hostetler, Spyglass, Inc.

\* Portions of Content-MD5 code Copyright (C) 1993, 1994 by Carnegie Mellon

\* University (see Copyright below).

\* Portions of Content-MD5 code Copyright (C) 1991 Bell Communications

\* Research, Inc. (Bellcore) (see Copyright below).

\* Portions extracted from mpack, John G. Myers - jgm+@cmu.edu

\* Content-MD5 Code contributed by Martin Hamilton (martin@net.lut.ac.uk)

\*

\*/

/\* these portions extracted from mpack, John G. Myers - jgm+@cmu.edu \*/

/\* (C) Copyright 1993,1994 by Carnegie Mellon University

\* All Rights Reserved.

\*

\* Permission to use, copy, modify, distribute, and sell this software

\* and its documentation for any purpose is hereby granted without

\* fee, provided that the above copyright notice appear in all copies

\* and that both that copyright notice and this permission notice

\* appear in supporting documentation, and that the name of Carnegie

\* Mellon University not be used in advertising or publicity

\* pertaining to distribution of the software without specific,

\* written prior permission. Carnegie Mellon University makes no

\* representations about the suitability of this software for any

\* purpose. It is provided "as is" without express or implied

\* warranty.  
\*  
\* CARNEGIE MELLON UNIVERSITY DISCLAIMS ALL WARRANTIES WITH REGARD TO  
\* THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY  
\* AND FITNESS, IN NO EVENT SHALL CARNEGIE MELLON UNIVERSITY BE LIABLE  
\* FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES  
\* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN  
\* AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING  
\* OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS  
\* SOFTWARE.  
\*/

/\*  
\* Copyright (c) 1991 Bell Communications Research, Inc. (Bellcore)  
\*

\* Permission to use, copy, modify, and distribute this material  
\* for any purpose and without fee is hereby granted, provided  
\* that the above copyright notice and this permission notice  
\* appear in all copies, and that the name of Bellcore not be  
\* used in advertising or publicity pertaining to this  
\* material without the specific, prior written permission  
\* of an authorized representative of Bellcore. BELLCORE  
\* MAKES NO REPRESENTATIONS ABOUT THE ACCURACY OR SUITABILITY  
\* OF THIS MATERIAL FOR ANY PURPOSE. IT IS PROVIDED "AS IS",  
\* WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES.  
\*/

For the util\_pcre.c and ap\_regex.h components:

Copyright (c) 1997-2004 University of Cambridge

-----  
Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----

For the `srclib\apr\include\apr_md5.h` component:

/\*

\* This work is derived from material Copyright RSA Data Security, Inc.

\*

\* The RSA copyright statement and Licence for that original material is

\* included below. This is followed by the Apache copyright statement and

\* licence for the modifications made to that material.

\*/

/\* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All rights reserved.

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

\*/

For the `srclib\apr\passwd\apr_md5.c` component:

/\*

\* This work is derived from material Copyright RSA Data Security, Inc.



\*  
\* The RSA copyright statement and Licence for that original material is  
\* included below. This is followed by the Apache copyright statement and  
\* licence for the modifications made to that material.  
\*/

/\* MD5C.C - RSA Data Security, Inc., MD5 message-digest algorithm  
\*/

/\* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All  
rights reserved.

License to copy and use this software is granted provided that it  
is identified as the "RSA Data Security, Inc. MD5 Message-Digest  
Algorithm" in all material mentioning or referencing this software  
or this function.

License is also granted to make and use derivative works provided  
that such works are identified as "derived from the RSA Data  
Security, Inc. MD5 Message-Digest Algorithm" in all material  
mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either  
the merchantability of this software or the suitability of this  
software for any particular purpose. It is provided "as is"  
without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this  
documentation and/or software.

\*/  
/\*  
\* The apr\_md5\_encode() routine uses much code obtained from the FreeBSD 3.0  
\* MD5 crypt() function, which is licenced as follows:  
\* -----  
\* "THE BEER-WARE LICENSE" (Revision 42):  
\* <phk@login.dknet.dk> wrote this file. As long as you retain this notice you  
\* can do whatever you want with this stuff. If we meet some day, and you think  
\* this stuff is worth it, you can buy me a beer in return. Poul-Henning Kamp  
\* -----  
\*/

For the srclib\apr-util\crypto\apr\_md4.c component:

\* This is derived from material copyright RSA Data Security, Inc.  
\* Their notice is reproduced below in its entirety.  
\*  
\* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All  
\* rights reserved.

\*  
\* License to copy and use this software is granted provided that it  
\* is identified as the "RSA Data Security, Inc. MD4 Message-Digest  
\* Algorithm" in all material mentioning or referencing this software  
\* or this function.  
\*  
\* License is also granted to make and use derivative works provided  
\* that such works are identified as "derived from the RSA Data  
\* Security, Inc. MD4 Message-Digest Algorithm" in all material  
\* mentioning or referencing the derived work.  
\*  
\* RSA Data Security, Inc. makes no representations concerning either  
\* the merchantability of this software or the suitability of this  
\* software for any particular purpose. It is provided "as is"  
\* without express or implied warranty of any kind.  
\*  
\* These notices must be retained in any copies of any part of this  
\* documentation and/or software.  
\*/

For the srclib\apr-util\include\apr\_md4.h component:

\*  
\* This is derived from material copyright RSA Data Security, Inc.  
\* Their notice is reproduced below in its entirety.  
\*  
\* Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All  
\* rights reserved.  
\*  
\* License to copy and use this software is granted provided that it  
\* is identified as the "RSA Data Security, Inc. MD4 Message-Digest  
\* Algorithm" in all material mentioning or referencing this software  
\* or this function.  
\*  
\* License is also granted to make and use derivative works provided  
\* that such works are identified as "derived from the RSA Data  
\* Security, Inc. MD4 Message-Digest Algorithm" in all material  
\* mentioning or referencing the derived work.  
\*  
\* RSA Data Security, Inc. makes no representations concerning either  
\* the merchantability of this software or the suitability of this  
\* software for any particular purpose. It is provided "as is"  
\* without express or implied warranty of any kind.  
\*  
\* These notices must be retained in any copies of any part of this  
\* documentation and/or software.  
\*/

For the srclib\apr-util\test\testmd4.c component:

```
*
* This is derived from material copyright RSA Data Security, Inc.
* Their notice is reproduced below in its entirety.
*
* Copyright (C) 1990-2, RSA Data Security, Inc. Created 1990. All
* rights reserved.
*
* RSA Data Security, Inc. makes no representations concerning either
* the merchantability of this software or the suitability of this
* software for any particular purpose. It is provided "as is"
* without express or implied warranty of any kind.
*
* These notices must be retained in any copies of any part of this
* documentation and/or software.
*/
```

For the test\zb.c component:

```
/* ZeusBench V1.01
=====
```

This program is Copyright (C) Zeus Technology Limited 1996.

This program may be used and copied freely providing this copyright notice is not removed.

This software is provided "as is" and any express or implied warranties, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall Zeus Technology Ltd. be liable for any direct, indirect, incidental, special, exemplary, or consequential damaged (including, but not limited to, procurement of substitute good or services; loss of use, data, or profits; or business interruption) however caused and on theory of liability. Whether in contract, strict liability or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

Written by Adam Twiss (adam@zeus.co.uk). March 1996

Thanks to the following people for their input:

Mike Belshe (mbelshe@netscape.com)

Michael Campanella (campanella@stevms.enet.dec.com)

```
*/
```

Apache HTTP Server  
Copyright 2022 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

Portions of this software were developed at the National Center  
for Supercomputing Applications (NCSA) at the University of  
Illinois at Urbana-Champaign.

This software contains code derived from the RSA Data Security  
Inc. MD5 Message-Digest Algorithm, including various  
modifications by Spyglass Inc., Carnegie Mellon University, and  
Bell Communications Research, Inc (Bellcore).

This software contains code derived from the PCRE library pcreposix.c  
source code, written by Philip Hazel, Copyright 1997-2004  
by the University of Cambridge, England.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en"><head>
<meta content="text/html; charset=UTF-8" http-equiv="Content-Type" />
<!--
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X
 This file is generated from xml source: DO NOT EDIT
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X
-->
<title>The Apache License, Version 2.0 - Apache HTTP Server Version 2.4</title>
<link href="/style/css/manual.css" rel="stylesheet" media="all" type="text/css" title="Main stylesheet" />
<link href="/style/css/manual-loose-100pc.css" rel="alternate stylesheet" media="all" type="text/css" title="No
Sidebar - Default font size" />
<link href="/style/css/manual-print.css" rel="stylesheet" media="print" type="text/css" /><link rel="stylesheet"
type="text/css" href="/style/css/prettify.css" />
<script src="/style/scripts/prettify.min.js" type="text/javascript">
</script>

<link href="/images/favicon.ico" rel="shortcut icon" /></head>
<body id="manual-page" class="no-sidebar"><div id="page-header">
<p class="menu">Modules | Directives | FAQ | Glossary | Sitemap</p>
<p class="apache">Apache HTTP Server Version 2.4</p>
</div>
<div class="up"></div>
<div id="path">
```

[Apache](http://www.apache.org/) &gt; [HTTP Server](http://httpd.apache.org/) &gt; [Documentation](http://httpd.apache.org/docs/) &gt; [Version 2.4](#)

# The Apache License, Version 2.0

Available Languages: [English](/en/license.html "English")

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

- Definitions**

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

**Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

**Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

<li><strong>Redistribution.</strong> You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

<ol class="lo-A">

<li>You must give any other recipients of the Work or Derivative Works a copy of this License; and</li>

<li>You must cause any modified files to carry prominent notices stating that You changed the files; and</li>

<li>You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and</li>

<li>If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.</li>

</ol>

<p>You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.</p></li>

<li><strong>Submission of Contributions.</strong> Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.</li>

<li><strong>Trademarks.</strong> This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.</li>

<li><strong>Disclaimer of Warranty.</strong> Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.</li>

<li><strong>Limitation of Liability.</strong> In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.</li>

<li><strong>Accepting Warranty or Additional Liability.</strong> While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.</li></ol>

<p class="centered">END OF TERMS AND CONDITIONS</p>

<p class="centered">APPENDIX: How to apply the Apache License to your work.</p>



<p>To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.</p>

```
<div class="example"><pre>Copyright [yyyy] [name of copyright owner]
```

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.</pre></div>

</div>

</div>

<div class="bottomlang">

<p><span>Available Languages: </span><a href="/en/license.html" title="English">&nbsp;en&nbsp;</a></p>

</div><div class="top"><a href="#page-header"></a></div><div

class="section"><h2><a id="comments\_section" name="comments\_section">Comments</a></h2><div

class="warning"><strong>Notice:</strong><br />This is not a Q&A section. Comments placed here should be pointed towards suggestions on improving the documentation or server, and may be removed by our moderators if they are either implemented or considered invalid/off-topic. Questions on how to manage the Apache HTTP Server should be directed at either our IRC channel, #httpd, on Libera.chat, or sent to our <a href="https://httpd.apache.org/lists.html">mailing lists</a>.</div>

<script type="text/javascript"><!--><![CDATA[</script></p>

var comments\_shortcode = 'httpd';

var comments\_identifier = 'http://httpd.apache.org/docs/2.4/license.html';

(function(w, d) {

if (w.location.hostname.toLowerCase() == "httpd.apache.org") {

d.write('<div id="comments\_thread"></div>');

var s = d.createElement('script');

s.type = 'text/javascript';

s.async = true;

s.src = 'https://comments.apache.org/show\_comments.lua?site=' + comments\_shortcode + '&page=' +

comments\_identifier;

(d.getElementsByTagName('head')[0] || d.getElementsByTagName('body')[0]).appendChild(s);

}

else {

d.write('<div id="comments\_thread">Comments are disabled for this page at the moment.</div>');

```
}
})(window, document);

```

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.184 jackson-databind 2.11.2

### 1.184.1 Available under license :

This copy of Jackson JSON processor databind module is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007.

It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

## Licensing

Jackson core and extension components may be licensed under different licenses. To find the details that apply to this artifact see the accompanying LICENSE file. For more information, including possible other licensing options, contact

FasterXML.com (<http://fasterxml.com>).

## ## Credits

A list of contributors may be found from CREDITS file, which is included in some artifacts (usually source distributions); but is always available from the source code management (SCM) system project uses.

# 1.185 libjpeg-turbo 2.0.3

## 1.185.1 Available under license :

libjpeg-turbo Licenses

=====

libjpeg-turbo is covered by three compatible BSD-style open source licenses:

- The IJG (Independent JPEG Group) License, which is listed in [README.ijg](README.ijg)

This license applies to the libjpeg API library and associated programs (any code inherited from libjpeg, and any modifications to that code.)

- The Modified (3-clause) BSD License, which is listed below

This license covers the TurboJPEG API library and associated programs, as well as the build system.

- The [zlib License](<https://opensource.org/licenses/Zlib>)

This license is a subset of the other two, and it covers the libjpeg-turbo SIMD extensions.

Complying with the libjpeg-turbo Licenses

=====

This section provides a roll-up of the libjpeg-turbo licensing terms, to the best of our understanding.

1. If you are distributing a modified version of the libjpeg-turbo source, then:
  1. You cannot alter or remove any existing copyright or license notices from the source.

**\*\*Origin\*\***

- Clause 1 of the IJG License

- Clause 1 of the Modified BSD License
- Clauses 1 and 3 of the zlib License

2. You must add your own copyright notice to the header of each source file you modified, so others can tell that you modified that file (if there is not an existing copyright header in that file, then you can simply add a notice stating that you modified the file.)

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 2 of the zlib License

3. You must include the IJG README file, and you must not alter any of the copyright or license text in that file.

**\*\*Origin\*\***

- Clause 1 of the IJG License

2. If you are distributing only libjpeg-turbo binaries without the source, or if you are distributing an application that statically links with libjpeg-turbo, then:

1. Your product documentation must include a message stating:

This software is based in part on the work of the Independent JPEG Group.

**\*\*Origin\*\***

- Clause 2 of the IJG license

2. If your binary distribution includes or uses the TurboJPEG API, then your product documentation must include the text of the Modified BSD License (see below.)

**\*\*Origin\*\***

- Clause 2 of the Modified BSD License

3. You cannot use the name of the IJG or The libjpeg-turbo Project or the contributors thereof in advertising, publicity, etc.

**\*\*Origin\*\***

- IJG License
- Clause 3 of the Modified BSD License

4. The IJG and The libjpeg-turbo Project do not warrant libjpeg-turbo to be free of defects, nor do we accept any liability for undesirable consequences resulting from your use of the software.



**\*\*Origin\*\***

- IJG License
- Modified BSD License
- zlib License

The Modified (3-clause) BSD License

=====

Copyright (C)2009-2019 D. R. Commander. All Rights Reserved.

Copyright (C)2015 Viktor Szathmry. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the libjpeg-turbo Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS", AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Why Three Licenses?

=====

The zlib License could have been used instead of the Modified (3-clause) BSD License, and since the IJG License effectively subsumes the distribution conditions of the zlib License, this would have effectively placed libjpeg-turbo binary distributions under the IJG License. However, the IJG License specifically refers to the Independent JPEG Group and does not extend attribution and endorsement protections to other entities. Thus, it was desirable to choose a license that granted us the same protections for new code that were granted to the IJG for code derived from their software.

# 1.186 swagger-annotations 1.5.22

## 1.186.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously

marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

/\*\*

\* Copyright 2016 SmartBear Software

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\* <p>

\* <http://www.apache.org/licenses/LICENSE-2.0>

\* <p>

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

package io.swagger.annotations;

import java.lang.annotation.ElementType;

import java.lang.annotation.Retention;

import java.lang.annotation.RetentionPolicy;

```

import java.lang.annotation.Target;

/**
 * License metadata available within the info section of a Swagger definition, see
 * https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md#licenseObject
 *
 * @since 1.5.0
 */

@Target(ElementType.ANNOTATION_TYPE)
@Retention(RetentionPolicy.RUNTIME)
public @interface License {

 /**
 * The name of the license.
 *
 * @return the name of the license
 */
 String name();

 /**
 * An optional URL for the license.
 *
 * @return an optional URL for the license.
 */
 String url() default "";
}

```

# 1.187 pytz 2022.1

## 1.187.1 Available under license :

Copyright (c) 2003-2019 Stuart Bishop <stuart@stuartbishop.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.188 jakarta-validation-api 2.0.2

## 1.188.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
* Jakarta Bean Validation API
*
* License: Apache License, Version 2.0
* See the license.txt file in the root directory or <http://www.apache.org/licenses/LICENSE-2.0>.
*/
```

Found in path(s):

```
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Validator.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/CascadableDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintTarget.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/FutureOrPresent.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Null.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintValidatorContext.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ExecutableDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/groups/Default.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/MessageInterpolator.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/package-info.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/Unwrapping.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/ValueExtractor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraintvalidation/ValidationTarget.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/MethodDescriptor.java
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/package-info.java
```

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/UnexpectedTypeException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/BeanDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Digits.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/bootstrap/ProviderSpecificBootstrap.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/UnwrapByDefault.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/NegativeOrZero.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintViolation.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintDefinitionException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ValidateUnwrappedValue.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraintvalidation/SupportedValidationTarget.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/groups/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/spi/ValidationProvider.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ElementKind.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/GroupConversionDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/ExtractedValue.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/bootstrap/GenericBootstrap.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/MethodType.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/ValueExtractorDeclarationException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ConstructorDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraintvalidation/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/AssertTrue.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Path.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/executable/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/PositiveOrZero.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/valueextraction/ValueExtractorDefinitionException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/BootstrapConfiguration.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ElementDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ContainerElementTypeDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/GroupDefinitionException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Min.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/groups/ConvertGroup.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/Scope.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Max.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ReportAsSingleViolation.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ReturnValueDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ParameterNameProvider.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Pattern.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/NoProviderFoundException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Validation.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ValidatorContext.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/NotBlank.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/spi/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Constraint.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Valid.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/CrossParameterDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ClockProvider.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Configuration.java



\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/executable/ValidateOnExecution.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Size.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/PastOrPresent.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintViolationException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/bootstrap/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/TraversableResolver.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/executable/ExecutableValidator.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ValidationProviderResolver.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ValidatorFactory.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ContainerDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ConstraintDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ParameterDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/NotNull.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/package-info.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/GroupSequence.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Negative.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintValidatorFactory.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ValidationException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/OverridesAttribute.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/spi/BootstrapState.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Email.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintDeclarationException.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/PropertyDescriptor.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintValidator.java

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/executable/ExecutableType.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/AssertFalse.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Future.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/DecimalMax.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Positive.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/NotEmpty.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/spi/ConfigurationState.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Payload.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/DecimalMin.java  
\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Past.java

No license file was found, but licenses were detected in source scan.

~ Jakarta Bean Validation API

~

~ License: Apache License, Version 2.0

~ See the license.txt file in the root directory or <<http://www.apache.org/licenses/LICENSE>

<![CDATA[

Comments to: <<mailto:bean-validation-dev@eclipse.org>>bean-validation-dev@eclipse.org</a>.<br>

Copyright © 2019 Eclipse Foundation.<br>

Use is subject to <[EFSL]({@docRoot}/doc-files/speclicense.html)>; this spec is based on material that is licensed under the Apache License, version 2.0.]]>

Found in path(s):

\* /opt/cola/permits/1135880235\_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/META-INF/maven/jakarta.validation/jakarta.validation-api/pom.xml

## 1.189 ehcache-107 3.8.1

### 1.189.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright Terracotta, Inc.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/internal/Js107ServiceConfigurationParser.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/ConfigurationMerger.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/config/Js107Configuration.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/config/package-info.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/internal/Js107CacheConfigurationParser.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107CacheLoaderWriterProvider.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107IdentityCopier.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/config/Js107CacheConfiguration.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Js107Service.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/EhcacheCachingProvider.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107Configuration.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107CacheLoaderWriter.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/EventListenerAdaptors.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107CacheManager.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/DefaultConfigurationResolver.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107CacheMXBean.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Eh107ReverseConfiguration.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/package-info.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-

jar/org/ehcache/jsr107/Eh107Expiry.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/Eh107CompleteConfiguration.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/EhcacheExpiryWrapper.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/internal/Js107CacheLoaderWriter.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/Eh107CacheEntryEvent.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/CacheResources.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/Eh107MXBean.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/CloseUtil.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/config/ConfigurationElementState.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/Eh107CacheStatisticsMXBean.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/ExpiryPolicyToEhcacheExpiry.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-jar/org/ehcache/jsr107/Unwrap.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/NullCompletionListener.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/internal/tck/Eh107MBeanServerBuilder.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/internal/DefaultJs107Service.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/Eh107Cache.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/internal/WrappedCacheLoaderWriter.java  
\* /opt/cola/permits/1258059359\_1643027217.37/0/ehcache-107-3-8-1-sources-  
jar/org/ehcache/jsr107/ListenerResources.java

# 1.190 openssl 1.1.1m

## 1.190.1 Available under license :

### LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts.

### OpenSSL License

-----

```
/* =====
* Copyright (c) 1998-2019 The OpenSSL Project. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
*
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
*
* 3. All advertising materials mentioning features or use of this
* software must display the following acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
*
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
* endorse or promote products derived from this software without
* prior written permission. For written permission, please contact
* openssl-core@openssl.org.
*
* 5. Products derived from this software may not be called "OpenSSL"
* nor may "OpenSSL" appear in their names without prior written
* permission of the OpenSSL Project.
*
* 6. Redistributions of any form whatsoever must retain the following
* acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* =====
```

\*  
\* This product includes cryptographic software written by Eric Young  
\* (eay@cryptsoft.com). This product includes software written by Tim  
\* Hudson (tjh@cryptsoft.com).  
\*  
\*/

Original SSLeay License  
-----

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)  
\* All rights reserved.  
\*  
\* This package is an SSL implementation written  
\* by Eric Young (eay@cryptsoft.com).  
\* The implementation was written so as to conform with Netscapes SSL.  
\*  
\* This library is free for commercial and non-commercial use as long as  
\* the following conditions are aheared to. The following conditions  
\* apply to all code found in this distribution, be it the RC4, RSA,  
\* lhash, DES, etc., code; not just the SSL code. The SSL documentation  
\* included with this distribution is covered by the same copyright terms  
\* except that the holder is Tim Hudson (tjh@cryptsoft.com).  
\*  
\* Copyright remains Eric Young's, and as such any Copyright notices in  
\* the code are not to be removed.  
\* If this package is used in a product, Eric Young should be given attribution  
\* as the author of the parts of the library used.  
\* This can be in the form of a textual message at program startup or  
\* in documentation (online or textual) provided with the package.  
\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:  
\* 1. Redistributions of source code must retain the copyright  
\* notice, this list of conditions and the following disclaimer.  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.  
\* 3. All advertising materials mentioning features or use of this software  
\* must display the following acknowledgement:  
\* "This product includes cryptographic software written by  
\* Eric Young (eay@cryptsoft.com)"  
\* The word 'cryptographic' can be left out if the rouines from the library  
\* being used are not cryptographic related :-).  
\* 4. If you include any Windows specific code (or a derivative thereof) from  
\* the apps directory (application code) you must include an acknowledgement:  
\* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

\*  
\* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*  
\* The licence and distribution terms for any publically available version or  
\* derivative of this code cannot be changed. i.e. this code cannot simply be  
\* copied and put under another distribution licence  
\* [including the GNU Public Licence.]  
\*/

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place - Suite 330, Boston, MA

02111-1307, USA.

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights.

These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.



1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to

exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt

otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that

system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
```

under certain conditions; type ``show c'` for details.

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
``Gnomovision'` (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## The "Artistic License"

### Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

### Definitions:

"Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder as specified below.

"Copyright Holder" is whoever is named in the copyright or

copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
  - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
  - b) use the modified Package only within your corporation or organization.
  - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.
  - d) make other distribution arrangements with the Copyright Holder.
4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
  - a) distribute a Standard Version of the executables and library files,

together with instructions (in the manual page or equivalent) on where to get the Standard Version.

b) accompany the distribution with the machine-readable source of the Package with your modifications.

c) give non-standard executables non-standard names, and clearly document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the interpreter is so embedded.

6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.

7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the regression tests for the language.

8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.



9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

# 1.191 luuid 1.0

## 1.191.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * wuuid.c
 *
 * Emulation of libuuid.so API functions based on the native Windows
 * API. Only those functions actually used by luuid are provided.
 * Extending this work to a complete emulation of libuuid would be
 * possible, but of unknown value.
 *
 * Implemented by Ross Berteig <Ross@cheshireeng.com>
 * Released 2007-09-24.
 * This code is hereby placed in the public domain.
 */
```

Found in path(s):

```
*/opt/cola/permits/1547567072_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/wuuid.c
```

No license file was found, but licenses were detected in source scan.

```
--- This dist file is part of LuaDist project
```

```
-- status:
```

```
name="luuid"
```

```
version="5.1.0.20101118"
```

```
desc = "A library for UUID generation"
```

```
author = "Luiz Henrique de Figueiredo"
```

```
url = "http://www.tecgraf.puc-rio.br/~lhf/ftp/lua/#luuid"
```

```
license = "Public domain"
```

```
maintainer = "Peter Kapec"
```

```
dependencies = {
```

```
 "lua ~> 5.1",
```

```
Linux = {
 "uuid-dev >- 2.16"
}
}
```

Found in path(s):

```
* /opt/cola/permits/1547567072_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/dist.info
No license file was found, but licenses were detected in source scan.
```

```
/*
* luuid.c
* uuid interface for Lua 5.1
* Luiz Henrique de Figueiredo <lhf@tecgraf.puc-rio.br>
* 18 Nov 2010 19:16:20
* This code is hereby placed in the public domain.
*/
```

Found in path(s):

```
* /opt/cola/permits/1547567072_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/luuid.c
No license file was found, but licenses were detected in source scan.
```

This is a uuid library for Lua 5.1. It generates Universally Unique Identifiers using libuuid, which is part of the e2fsprogs package and is available at <http://e2fsprogs.sourceforge.net/>  
If you're running Linux, libuuid is probably already installed.

To try the library, just edit Makefile to reflect your installation of Lua and possibly of libuuid. Then run make. This will build the library and run a simple test. For detailed installation instructions, see <http://www.tecgraf.puc-rio.br/~lhf/ftp/lua/install.html>

There is no manual but the library is simple and intuitive; see the summary below. Read also test.lua, which shows the library in action.

This code is hereby placed in the public domain.  
Please send comments, suggestions, and bug reports to [lhf@tecgraf.puc-rio.br](mailto:lhf@tecgraf.puc-rio.br) .

```

uuid library:
isvalid(s) new([s]) time(s) version

```

Found in path(s):

```
* /opt/cola/permits/1547567072_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/README
No license file was found, but licenses were detected in source scan.
```

# BSD license.

Found in path(s):

\* /opt/cola/permits/1547567072\_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/cmake/FindUUID.cmake  
No license file was found, but licenses were detected in source scan.

/\*

\* wuuid.h

\*

\* Emulation of libuuid.so API functions based on the native Windows

\* API. Only those functions actually used by luuid are provided.

\* Extending this work to a complete emulation of libuuid would be

\* possible, but of unknown value.

\*

\* Implemented by Ross Berteig <Ross@cheshireeng.com>

\* Released 2007-09-24.

\* This code is hereby placed in the public domain.

\*/

Found in path(s):

\* /opt/cola/permits/1547567072\_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/wuuid.h  
No license file was found, but licenses were detected in source scan.

# Redistribution and use of this file is allowed according to the terms of the MIT license.

# Please note that the package source code is licensed under its own license.

Found in path(s):

\* /opt/cola/permits/1547567072\_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/CMakeLists.txt

\* /opt/cola/permits/1547567072\_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/cmake/luu.cmake

\* /opt/cola/permits/1547567072\_1675150749.62692/0/tp-luuid-1-051b6bb2c564-zip/cmake/dist.cmake

# 1.192 libpng 1.6.37

## 1.192.1 Available under license :

-----  
Copyright (c) 1998-2008 Greg Roelofs. All rights reserved.

This software is provided "as is," without warranty of any kind, express or implied. In no event shall the author or contributors be held liable for any damages arising in any way from the use of this software.

The contents of this file are DUAL-LICENSED. You may modify and/or redistribute this software according to the terms of one of the following two licenses (at your option):

LICENSE 1 ("BSD-like with advertising clause"):

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. Redistributions of source code must retain the above copyright notice, disclaimer, and this list of conditions.
2. Redistributions in binary form must reproduce the above copyright notice, disclaimer, and this list of conditions in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment:

This product includes software developed by Greg Roelofs and contributors for the book, "PNG: The Definitive Guide," published by O'Reilly and Associates.

LICENSE 2 (GNU GPL v2 or later):

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

-----  
pnm2png / png2pnm --- conversion from PBM/PGM/PPM-file to PNG-file

copyright (C) 1999-2019 by Willem van Schaik <willem at schaik dot com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

The software is provided "as is", without warranty of any kind, express or implied, including but not limited to the warranties of merchantability, fitness for a particular purpose and noninfringement. In no event shall the authors or copyright holders be liable for any claim, damages or other liability, whether in an action of contract, tort or otherwise, arising from, out of or in connection with the software or the use or other dealings in the software.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE

=====

PNG Reference Library License version 2

-----

- \* Copyright (c) 1995-2019 The PNG Reference Library Authors.
- \* Copyright (c) 2018-2019 Cosmin Truta.
- \* Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- \* Copyright (c) 1996-1997 Andreas Dilger.
- \* Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind, express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

-----

libpng versions 1.0.7, July 1, 2000, through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux  
Eric S. Raymond  
Mans Rullgard  
Cosmin Truta  
Gilles Vollant  
James Yu  
Mandar Sahastrabudde  
Google Inc.  
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

Some files in the "scripts" directory have other copyright owners, but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are  
Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would

be appreciated.

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original



authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.193 e2fsprogs 1.43.7

## 1.193.1 Available under license :

This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2001 by Andries Brouwer  
Copyright (C) 1999, 2000, 2003 by Theodore Ts'o

You are free to distribute this software under the terms of the GNU Lesser (Library) General Public License.

On Debian systems, the complete text of the GNU Lesser (Library) General Public License can be found in /usr/share/common-licenses/LGPL-2. This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Fri Dec 14 22:24:35 EST 2007

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 by Theodore Ts'o

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety,

including the disclaimer of warranties.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

/\*

Copyright 1987 by the Student Information Processing Board



of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

\*/

Index: tdbsa/tdb.c

-----  
--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

\*/

/\*

- Unix SMB/CIFS implementation.
- + trivial database library - standalone version
  
- trivial database library - private includes
- 
- Copyright (C) Andrew Tridgell           2005
- + Copyright (C) Andrew Tridgell           1999-2005
- + Copyright (C) Jeremy Allison           2000-2006
- + Copyright (C) Paul `Rusty' Russell      2000

\*\* NOTE! The following LGPL license applies to the tdb  
\*\* library. This does NOT imply that all of Samba is released  
This is the Debian GNU/Linux prepackaged version of the EXT2 file  
system utilities (e2fsck, mke2fs, etc.). The EXT2 utilities were  
written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2007 Theodore Ts'o <tytso@mit.edu>

Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>

Copyright (c) 2001 Alcové <<http://www.alcove.com/>>

Copyright (c) 1997 Klee Dienes

Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, are made available under the GNU General Public License version 2, with the exception of the lib/ext2fs and lib/e2p libraries, which are made available under the GNU Library General Public License Version 2, the lib/uuid library which is made available under a BSD-style license and the lib/et and lib/ss libraries which are made available under an MIT-style license.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in ``/usr/share/common-licenses/GPL-2'`. The complete text of the GNU Library General Public License can be found in `'/usr/share/common-licenses/LGPL-2'`.

The license used for lib/et and lib/ss libraries is:

Copyright 1987 by the Student Information Processing Board  
of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose is hereby granted, provided that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

The license used for lib/uuid is:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2000, 2003, 2004 by Theodore Ts'o

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE

USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This is the Debian GNU/Linux prepackaged version of the static EXT2 file system consistency checker (e2fsck.static). The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2006 Theodore Ts'o <tytso@mit.edu>  
Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>  
Copyright (c) 2001 Alcove <<http://www.alcove.com/>>  
Copyright (c) 1997 Klee Dienes  
Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, is protected by the GNU Public License.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in `~/usr/share/common-licenses/GPL-2`. This is the Debian GNU/Linux prepackaged version of the `ss` command-line interface parsing library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:  
[tsx-11.mit.edu/pub/linux/packages/ext2fs/](http://tsx-11.mit.edu/pub/linux/packages/ext2fs/)

From the original distribution:

Copyright 1987, 1988 by the Student Information Processing Board of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution

of the software without specific, written prior permission.  
M.I.T. and the M.I.T. S.I.P.B. make no representations about  
the suitability of this software for any purpose. It is  
provided "as is" without express or implied warranty.

```

This is a Makefile stub which handles the creation of BSD shared
libraries.

In order to use this stub, the following makefile variables must be defined.

BSDLIB_VERSION = 1.0
BSDLIB_IMAGE = libce
BSDLIB_MYDIR = et
BSDLIB_INSTALL_DIR = $(SHLIBDIR)
#
```

```
all:: image
```

```
real-subdirs:: Makefile
@echo " MKDIR pic"
@mkdir -p pic
```

```
BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)
BSDLIB_PIC_FLAG = -fpic
```

```
image: $(BSD_LIB)
```

```
$(BSD_LIB): $(OBJS)
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LDFLAGS_SHLIB) $(OBJS))
$(MV) pic/$(BSD_LIB) .
$(RM) -f ../$(BSD_LIB)
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \
`echo $(my_dir) | sed -e 's;lib/;;' /$(BSD_LIB) $(BSD_LIB))
```

```
install-shlibs install:: $(BSD_LIB)
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
@$(INSTALL_PROGRAM) $(BSD_LIB) \
$(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)
@-$(LDCONFIG)
```

```
install-strip: install
```

```
install-shlibs-strip: install-shlibs
```

```
uninstall-shlibs uninstall::
$(RM) -f $(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)
```

```
clean::
```

```
$(RM) -rf pic
$(RM) -f $(BSD_LIB)
$(RM) -f ../$(BSD_LIB)
```

This is the Debian GNU/Linux prepackaged version of the Common Error Description library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:  
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

From the original distribution:

Copyright 1987, 1988 by the Student Information Processing Board of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty. This package, the EXT2 filesystem utilities, are made available under the GNU Public License version 2, with the exception of the lib/ext2fs and lib/e2p libraries, which are made available under the GNU Library General Public License Version 2, the lib/uuid library which is made available under a BSD-style license and the lib/et and lib/ss libraries which are made available under an MIT-style license. Please see lib/uuid/COPYING for more details for the license for the files comprising the libuuid library, and the source file headers of the libet and libss libraries for more information.

The most recent officially distributed version can be found at <http://e2fsprogs.sourceforge.net>. If you need to make a distribution, that's the one you should use. If there is some reason why you'd like a more recent version that is still in ALPHA testing (i.e., either using the "WIP" test distributions or one from the hg or git repository from the development branch, please contact me (tytso@mit.edu) before you ship. The release schedules for this package are flexible, if you give me enough lead time.

Theodore Ts'o

23-June-2007

---

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free

software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1



above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

-----

## GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to

permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for



writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you

distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a

work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that

uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining

where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is

implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
EXT2ED is hereby placed under the terms of the GNU General Public License.  
Follows the GNU license.

Gadi Oxman, August 1995

-----  
  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
675 Mass Ave, Cambridge, MA 02139, USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights.



These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to

exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt

otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that

system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
```

under certain conditions; type ``show c'` for details.

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.194 tzdata 2022.1

## 1.194.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,



publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Software License 2.0

Copyright (c) 2020, Paul Ganssle (Google)

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.195 classmate 1.5.1

### 1.195.1 Available under license :

Java ClassMate library was originally written by Tatu Saloranta (tatu.saloranta@iki.fi)

Other developers who have contributed code are:

\* Brian Langel

This copy of Java ClassMate library is licensed under Apache (Software) License,  
version 2.0 ("the License").

See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.196 iostat 2.2

### 1.196.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
License is intended to guarantee your freedom to share and change free  
software--to make sure the software is free for all its users. This  
General Public License applies to most of the Free Software  
Foundation's software and to any other program whose authors commit to  
using it. (Some other Free Software Foundation software is covered by  
the GNU Library General Public License instead.) You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for

this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any



patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED

OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.197 systemd 231

### 1.197.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals



of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.198 acpid 2.0.27

## 1.198.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
675 Mass Ave, Cambridge, MA 02139, USA  
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>



This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.199 log4j-api 2.13.3

## 1.199.1 Available under license :

Apache Log4j 1.x Compatibility API  
Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work

(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses

granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]"

replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.200 gmp 5.0.2

## 1.200.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

## 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of



interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so



available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

#### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

#### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

#### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

#### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates

(ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

#### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the

GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

#### 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{http://fsf.org/}

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other  
functional and useful document @dfn{free} in the sense of freedom: to  
assure everyone the effective freedom to copy and redistribute it,  
with or without modifying it, either commercially or noncommercially.  
Secondarily, this License preserves for the author and publisher a way  
to get credit for their work, while not being considered responsible  
for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative  
works of the document must themselves be free in the same sense. It  
complements the GNU General Public License, which is a copyleft  
license designed for free software.

We have designed this License in order to use it for manuals for free  
software, because free software needs free documentation: a free  
program should come with manuals providing the same freedoms that the  
software does. But this License is not limited to software manuals;  
it can be used for any textual work, regardless of subject matter or  
whether it is published as a printed book. We recommend this License  
principally for works whose purpose is instruction or reference.

@item

APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that  
contains a notice placed by the copyright holder saying it can be  
distributed under the terms of this License. Such a notice grants a  
world-wide, royalty-free license, unlimited in duration, to use that  
work under the conditions stated herein. The ``Document'', below,  
refers to any such manual or work. Any member of the public is a



licensee, and is addressed as ``you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain `@sc{ascii}` without markup, Texinfo input format, `La@TeX{}` input format, `@acronym{SGML}` or `@acronym{XML}` using a publicly available

@acronym{DTD}, and standard-conforming simple @acronym{HTML}, PostScript or @acronym{PDF} designed for human modification. Examples of transparent image formats include @acronym{PNG}, @acronym{XCF} and @acronym{JPG}. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, @acronym{SGML} or @acronym{XML} for which the @acronym{DTD} and/or processing tools are not generally available, and the machine-generated @acronym{HTML}, PostScript or @acronym{PDF} produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

## COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution

and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified

Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements" or ``Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements". Such a section may not be included in the Modified Version.

@item

Do not retile any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a

passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements''.

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute

it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements", ``Dedications", or ``History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item



## RELICENSING

``Massive Multiauthor Collaboration Site" (or ``MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A ``Massive Multiauthor Collaboration" (or ``MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts." line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

## 1.201 linux-kernel 4.4.245

### 1.201.1 Available under license :

FlashPoint Driver Developer's Kit  
Version 1.0

Copyright 1995-1996 by Mylex Corporation  
All Rights Reserved

This program is free software; you may redistribute and/or modify it under the terms of either:

a) the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version,

or

b) the "BSD-style License" included below.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY

or FITNESS FOR A PARTICULAR PURPOSE. See either the GNU General Public License or the BSD-style License below for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

The BSD-style License is as follows:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain this LICENSE.FlashPoint file, without modification, this list of conditions, and the following disclaimer. The following copyright notice must appear immediately at the beginning of all source files:

Copyright 1995-1996 by Mylex Corporation. All Rights Reserved

This file is available under both the GNU General Public License and a BSD-style copyright; see LICENSE.FlashPoint for details.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of Mylex Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY MYLEX CORP. ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of



this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2009-2013 QLogic Corporation  
QLogic Linux qlenic NIC Driver

You may modify and redistribute the device driver code under the GNU General Public License (a copy of which is attached hereto as Exhibit A) published by the Free Software Foundation (version 2).

## EXHIBIT A

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy,

distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the

Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding

those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Contributors to bttv:



Michael Chu <mmchu@pobox.com>  
AverMedia fix and more flexible card recognition

Alan Cox <alan@lxorguk.ukuu.org.uk>  
Video4Linux interface and 2.1.x kernel adaptation

Chris Kleitsch  
Hardware I2C

Gerd Knorr <kraxel@cs.tu-berlin.de>  
Radio card (ITT sound processor)

bigfoot <bigfoot@net-way.net>  
Ragnar Hojland Espinosa <ragnar@macula.net>  
ConferenceTV card

+ many more (please mail me if you are missing in this list and would  
like to be mentioned)

GNU LIBRARY GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is  
numbered 2 because it goes with version 2 of the ordinary GPL.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some  
specially designated Free Software Foundation software, and to any  
other libraries whose authors decide to use it. You can use it for  
your libraries, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
this service if you wish), that you receive source code or can get it  
if you want it, that you can change the software or use pieces of it  
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

#### GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated

interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must

be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy

from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference

directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.



If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid

anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program

except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.



12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
```

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than `show w' and `show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Library General  
Public License instead of this License.

Copyright (c) 2003-2013 QLogic Corporation  
QLogic Linux iSCSI Driver

This program includes a device driver for Linux 3.x.  
You may modify and redistribute the device driver code under the  
GNU General Public License (a copy of which is attached hereto as  
Exhibit A) published by the Free Software Foundation (version 2).

## EXHIBIT A

### GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
License is intended to guarantee your freedom to share and change free

software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any

associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by

all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes

make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

```
/* nicstar.c v0.22 Jawaid Bazyar (bazyar@hypermall.com)
* nicstar.c, M. Welsh (matt.welsh@cl.cam.ac.uk)
*
* Hacked October, 1997 by Jawaid Bazyar, Interlink Advertising Services Inc.
* http://www.hypermall.com/
* 10/1/97 - commented out CFG_PHYIE bit - we don't care when the PHY
* interrupts us (except possibly for removal/insertion of the cable?)
* 10/4/97 - began heavy inline documentation of the code. Corrected typos
* and spelling mistakes.
* 10/5/97 - added code to handle PHY interrupts, disable PHY on
* loss of link, and correctly re-enable PHY when link is
* re-established. (put back CFG_PHYIE)
*
* Modified to work with the IDT7721 nicstar -- AAL5 (tested) only.
*
* R. D. Rechenmacher <ron@fnal.gov>, Aug. 6, 1997
*
* Linux driver for the IDT77201 NICStAR PCI ATM controller.
* PHY component is expected to be 155 Mbps S/UNI-Lite or IDT 77155;
* see init_nicstar() for PHY initialization to change this. This driver
* expects the Linux ATM stack to support scatter-gather lists
* (skb->atm.iovcnt != 0) for Rx skb's passed to vcc->push.
*
```



```

* Implementing minimal-copy of received data:
* IDT always receives data into a small buffer, then large buffers
* as needed. This means that data must always be copied to create
* the linear buffer needed by most non-ATM protocol stacks (e.g. IP)
* Fix is simple: make large buffers large enough to hold entire
* SDU, and leave <small_buffer_data> bytes empty at the start. Then
* copy small buffer contents to head of large buffer.
* Trick is to avoid fragmenting Linux, due to need for a lot of large
* buffers. This is done by 2 things:
* 1) skb->destructor / skb->atm.recycle_buffer
* combined, allow nicstar_free_rx_skb to be called to
* recycle large data buffers
* 2) skb_clone of received buffers
* See nicstar_free_rx_skb and linearize_buffer for implementation
* details.
*
*
*
* Copyright (c) 1996 University of Cambridge Computer Laboratory
*
* This program is free software; you can redistribute it and/or modify
* it under the terms of the GNU General Public License as published by
* the Free Software Foundation; either version 2 of the License, or
* (at your option) any later version.
*
* This program is distributed in the hope that it will be useful,
* but WITHOUT ANY WARRANTY; without even the implied warranty of
* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
* GNU General Public License for more details.
*
* You should have received a copy of the GNU General Public License
* along with this program; if not, write to the Free Software
* Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.
*
* M. Welsh, 6 July 1996
*
*
*/

```

Code in this directory written at the IDA Supercomputing Research Center carries the following copyright and license.

Copyright 1993 United States Government as represented by the Director, National Security Agency. This software may be used and distributed according to the terms of the GNU General Public License, incorporated herein by reference.

In addition to the disclaimers in the GPL, SRC expressly disclaims any and all warranties, expressed or implied, concerning the enclosed software.

This software was developed at SRC for use in internal research, and the intent in sharing this software is to promote the productive interchange of ideas throughout the research community. All software is furnished on an "as-is" basis. No further updates to this software should be expected. Although updates may occur, no commitment exists.

Copyright (c) 2003-2006, Marvell International Ltd.

All Rights Reserved

This program is free software; you can redistribute it and/or modify it under the terms of version 2 of the GNU General Public License as published by the Free Software Foundation.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

"This software program is licensed subject to the GNU General Public License (GPL). Version 2, June 1991, available at <<http://www.gnu.org/licenses/gpl.html>>

GNU General Public License

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place - Suite 330, Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom

to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not

covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- \* a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- \* b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- \* c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to

each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- \* a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- \* b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- \* c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source

along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions

to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the program's name and an idea of what it does.

Copyright (C) yyyy name of author

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free



software, and you are welcome to redistribute it under certain conditions;  
type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2003-2006 QLogic Corporation

QLogic Linux Networking HBA Driver

This program includes a device driver for Linux 2.6 that may be distributed with QLogic hardware specific firmware binary file. You may modify and redistribute the device driver code under the GNU General Public License as published by the Free Software Foundation (version 2 or a later version).

You may redistribute the hardware specific firmware binary file under the following terms:

1. Redistribution of source code (only if applicable), must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of QLogic Corporation may not be used to endorse or promote products derived from this software without specific prior written permission

REGARDLESS OF WHAT LICENSING MECHANISM IS USED OR APPLICABLE, THIS PROGRAM IS PROVIDED BY QLOGIC CORPORATION "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

USER ACKNOWLEDGES AND AGREES THAT USE OF THIS PROGRAM WILL NOT CREATE OR GIVE GROUNDS FOR A LICENSE BY IMPLICATION, ESTOPPEL, OR OTHERWISE IN ANY INTELLECTUAL PROPERTY RIGHTS (PATENT, COPYRIGHT, TRADE SECRET, MASK WORK, OR OTHER PROPRIETARY RIGHT) EMBODIED IN ANY OTHER QLOGIC HARDWARE OR SOFTWARE EITHER SOLELY OR IN COMBINATION WITH THIS PROGRAM.

The files in this directory and elsewhere which refer to this LICENCE file are part of JFFS2, the Journalling Flash File System v2.

Copyright 2001-2007 Red Hat, Inc. and others

JFFS2 is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 or (at your option) any later version.

JFFS2 is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with JFFS2; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.

As a special exception, if other files instantiate templates or use macros or inline functions from these files, or you compile these files and link them with other works to produce a work based on these files, these files do not by themselves cause the resulting work to be covered by the GNU General Public License. However the source code for these files must still be made available in accordance with section (3) of the GNU General Public License.

This exception does not invalidate any other reasons why a work based on

this file might be covered by the GNU General Public License.

NOTE! This copyright does *\*not\** cover user programs that use kernel services by normal system calls - this is merely considered normal use of the kernel, and does *\*not\** fall under the heading of "derived work". Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the Linux kernel) is copyrighted by me and others who actually wrote it.

Also note that the only valid version of the GPL as far as the kernel is concerned is `_this_` particular version of the license (ie v2, not v2.2 or v3.x or whatever), unless explicitly otherwise stated.

Linus Torvalds

-----  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's

source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR



REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w` and `show c` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Thanks go to the following people for patches and contributions:

Michael Hunold <m.hunold@gmx.de>  
for the initial saa7146 driver and its recent overhaul

Christian Theiss  
for his work on the initial Linux DVB driver

Marcus Metzler <mocm@metzlerbros.de>  
Ralph Metzler <rjkm@metzlerbros.de>  
for their continuing work on the DVB driver

Michael Holzt <kju@debian.org>  
for his contributions to the dvb-net driver

Diego Picciani <d.picciani@novacomp.it>  
for CyberLogin for Linux which allows logging onto EON  
(in case you are wondering where CyberLogin is, EON changed its login procedure and CyberLogin is no longer used.)

Martin Schaller <martin@smurf.franken.de>  
for patching the cable card decoder driver

Klaus Schmidinger <Klaus.Schmidinger@cadsoft.de>  
for various fixes regarding tuning, OSD and CI stuff and his work on VDR

Steve Brown <sbrown@cortland.com>

for his AFC kernel thread

Christoph Martin <martin@uni-mainz.de>  
for his LIRC infrared handler

Andreas Oberritter <obi@linuxtv.org>  
Dennis Noermann <dennis.noermann@noernet.de>  
Felix Domke <tmbinc@elitedvb.net>  
Florian Schirmer <jolt@tuxbox.org>  
Ronny Strutz <3des@elitedvb.de>  
Wolfram Joost <dbox2@frokaschwei.de>  
...and all the other dbox2 people  
for many bugfixes in the generic DVB Core, frontend drivers and  
their work on the dbox2 port of the DVB driver

Oliver Endriss <o.endriss@gmx.de>  
for many bugfixes

Andrew de Quincey <adq\_dvb@lidskialf.net>  
for the tda1004x frontend driver, and various bugfixes

Peter Schildmann <peter.schildmann@web.de>  
for the driver for the Technisat SkyStar2 PCI DVB card

Vadim Catana <skystar@moldova.cc>  
Roberto Ragusa <r.ragusa@libero.it>  
Augusto Cardoso <augusto@carhil.net>  
for all the work for the FlexCopII chipset by B2C2,Inc.

Davor Emard <emard@softhome.net>  
for his work on the budget drivers, the demux code,  
the module unloading problems, ...

Hans-Frieder Vogt <hfvogt@arcor.de>  
for his work on calculating and checking the crc's for the  
TechnoTrend/Hauppage DEC driver firmware

Michael Dreher <michael@5dot1.de>  
Andreas 'randy' Weinberger  
for the support of the Fujitsu-Siemens Activy budget DVB-S

Kenneth Aafly <ke-aa@frisurf.no>  
for adding support for Typhoon DVB-S budget card

Ernst Peinlich <e.peinlich@inode.at>  
for tuning/DiSEqC support for the DEC 3000-s

Peter Beutner <p.beutner@gmx.net>

for the IR code for the ttusb-dec driver

Wilson Michaels <wilsonmichaels@earthlink.net>  
for the lgdt330x frontend driver, and various bugfixes

Michael Krufky <mkrufky@linuxtv.org>  
for maintaining v4l/dvb inter-tree dependencies

Taylor Jacob <rtjacob@earthlink.net>  
for the nxt2002 frontend driver

Jean-Francois Thibert <jeanfrancois@sagetv.com>  
for the nxt2004 frontend driver

Kirk Lapray <kirk.lapray@gmail.com>  
for the or51211 and or51132 frontend drivers, and  
for merging the nxt2002 and nxt2004 modules into a  
single nxt200x frontend driver.

(If you think you should be in this list, but you are not, drop a  
line to the DVB mailing list)

Copyright (c) 2003-2014 QLogic Corporation  
QLogic Linux FC-FCoE Driver

This program includes a device driver for Linux 3.x.  
You may modify and redistribute the device driver code under the  
GNU General Public License (a copy of which is attached hereto as  
Exhibit A) published by the Free Software Foundation (version 2).

## EXHIBIT A

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
License is intended to guarantee your freedom to share and change free  
software--to make sure the software is free for all its users. This  
General Public License applies to most of the Free Software

Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed

under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on

the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a

special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to



refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and

of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Copyright (c) 2003-2011 QLogic Corporation

QLogic Linux qlge NIC Driver

You may modify and redistribute the device driver code under the GNU General Public License (a copy of which is attached hereto as Exhibit A) published by the Free Software Foundation (version 2).

## EXHIBIT A

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software

Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed

under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on

the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a

special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to

refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and

of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

# 1.202 offheap-store 2.4.3

## 1.202.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015 Terracotta, Inc., a Software AG company.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-



jar/org/terracotta/offheapstore/concurrent/WriteLockedOffHeapHashMapFactory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/AbstractOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/AbstractConcurrentOffHeapCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/storage/FileBackedStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/eviction/EvictionListeningReadWriteLockedOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/ConcurrentOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentReadWriteLockedOffHeapClockCacheFactory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/SplitStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/Segment.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/OffHeapBufferHalfStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/paging/PowerOfTwoFileAllocator.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/ReadWriteLockedOffHeapHashMapFactory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/PointerSize.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/portability/SerializablePortability.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/allocator/LongBestFitAllocator.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/StorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/PhysicalMemory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/buffersource/TimingBufferSource.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/paging/MappedPageSource.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/paging/PhantomReferenceLimitedPageSource.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/IntegerStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/HashingMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/AATreeSet.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/LongStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-

jar/org/terracotta/offheapstore/disk/storage/PersistentSplitStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/ConcurrentWriteLockedOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/listener/AbstractListenableStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/WeakIdentityHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentReadWriteLockedOffHeapHashMapFactory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/paging/UpfrontAllocatingPageSource.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/HalfStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/ConcurrentWriteLockedOffHeapHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/allocator/PowerOfTwoAllocator.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/Retryer.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/ReadWriteLockedOffHeapClockCacheFactory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/OffHeapBufferStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/storage/PersistentIntegerStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/FindbugsSuppressWarnings.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/AbstractConcurrentOffHeapMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/set/OffHeapHashSet.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/SerializableStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/MetadataTuple.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/PortabilityBasedHalfStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/StringStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/storage/AATreeFileAllocator.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/OffHeapHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/PortabilityBasedStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/paging/OffHeapStorageArea.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-

jar/org/terracotta/offheapstore/util/ByteBufferUtils.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/ConcurrentOffHeapHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/AbstractLockedOffHeapHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/concurrent/WriteLockedOffHeapClockCacheFactory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentConcurrentOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/BooleanHalfStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/eviction/EvictionListeningWriteLockedOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentConcurrentOffHeapHashMap.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2015 cdennis.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/AbstractPersistentConcurrentOffHeapCache.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2015 Terracotta, Inc., a Software AG company.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
```

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/eviction/EvictionListener.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/util/DebuggingUtils.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/storage/allocator/Allocator.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/storage/BinaryStorageEngine.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/ReadWriteLockedOffHeapHashMap.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/storage/portability/Portability.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/disk/persistent/PersistentPortability.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/pinning/PinnableSegment.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/exceptions/OversizeMappingException.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/WriteLockedOffHeapHashMap.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/util/Validation.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/pinning/PinnableCache.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/buffersource/HeapBufferSource.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/buffersource/OffHeapBufferSource.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/paging/Page.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/disk/persistent/Persistent.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/disk/persistent/PersistentStorageEngine.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/paging/PageSource.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/storage/listener/RuntimeStorageEngineListener.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-jar/org/terracotta/offheapstore/storage/portability/ByteArrayPortability.java
- \* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-

jar/org/terracotta/offheapstore/storage/portability/BooleanPortability.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/Metadata.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/WriteLockedOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/storage/portability/PersistentSerializablePortability.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/AbstractPersistentOffHeapCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/listener/RecoveryStorageEngineListener.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/storage/Region.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/ByteBufferInputStream.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentHalfStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/storage/portability/PersistentByteArrayPortability.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/Factory.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentReadWriteLockedOffHeapHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/listener/StorageEngineListener.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/paging/MappedPage.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/buffersource/BufferSource.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/util/NoOpLock.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/portability/WriteContext.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/portability/WriteBackPortability.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/portability/StringPortability.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/AbstractPersistentLockedOffHeapHashMap.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/storage/listener/ListenableStorageEngine.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/MapInternals.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/disk/persistent/PersistentReadWriteLockedOffHeapClockCache.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-  
jar/org/terracotta/offheapstore/paging/UnlimitedPageSource.java  
\* /opt/cola/permits/1258059374\_1643027386.0/0/offheap-store-2-4-3-sources-

```
jar/org/terracotta/offheapstore/storage/allocator/IntegerBestFitAllocator.java
* /opt/cola/permits/1258059374_1643027386.0/0/offheap-store-2-4-3-sources-
jar/org/terracotta/offheapstore/util/MemoryUnit.java
* /opt/cola/permits/1258059374_1643027386.0/0/offheap-store-2-4-3-sources-
jar/org/terracotta/offheapstore/ReadWriteLockedOffHeapClockCache.java
* /opt/cola/permits/1258059374_1643027386.0/0/offheap-store-2-4-3-sources-
jar/org/terracotta/offheapstore/disk/persistent/AbstractPersistentConcurrentOffHeapMap.java
* /opt/cola/permits/1258059374_1643027386.0/0/offheap-store-2-4-3-sources-
jar/org/terracotta/offheapstore/storage/allocator/Region.java
* /opt/cola/permits/1258059374_1643027386.0/0/offheap-store-2-4-3-sources-
jar/org/terracotta/offheapstore/concurrent/ConcurrentMapInternals.java
No license file was found, but licenses were detected in source scan.
```

Copyright 2015 Terracotta, Inc., a Software AG company.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>  
2.0

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Found in path(s):

```
* /opt/cola/permits/1258059374_1643027386.0/0/offheap-store-2-4-3-sources-jar/META-
INF/maven/org.terracotta/offheap-store/pom.xml
```

## 1.203 icu 66.1 2ubuntu2.1

### 1.203.1 Available under license :

```
-*-makefile-*-
Copyright (C) 2016 and later: Unicode, Inc. and others.
License & terms of use: http://www.unicode.org/copyright.html
BSD-specific setup (FreeBSD, OpenBSD, NetBSD, *BSD)
Copyright (c) 1999-2013, International Business Machines Corporation and
others. All Rights Reserved.

Commands to generate dependency files
GEN_DEPS.c= $(CC) -E -MM $(DEFS) $(CPPFLAGS)
GEN_DEPS.cc= $(CXX) -E -MM $(DEFS) $(CPPFLAGS)

Flags for position independent code
```

```

SHAREDLIBCFLAGS = -fPIC
SHAREDLIBCXXFLAGS = -fPIC
SHAREDLIBCPPFLAGS = -DPIC

Additional flags when building libraries and with threads
THREADSCPPFLAGS = -D_REENTRANT
LIBCPPFLAGS =

Compiler switch to embed a runtime search path
LD_RPATH=
LD_RPATH_PRE= -Wl,-rpath,

Compiler switch to embed a library name
LD_SONAME = -Wl,-soname -Wl,$(notdir $(MIDDLE_SO_TARGET))

Shared library options
LD_SOOPTIONS= -Wl,-Bsymbolic

Shared object suffix
SO = so
Non-shared intermediate object suffix
STATIC_O = ao

Compilation rules
%.${STATIC_O}: $(srcdir)/%.c
$(COMPILE.c) $(STATICCPPFLAGS) $(STATICCFLAGS) -o $@ $<
%.o: $(srcdir)/%.c
$(COMPILE.c) $(DYNAMICCPPFLAGS) $(DYNAMICCFLAGS) -o $@ $<

%.${STATIC_O}: $(srcdir)/%.cpp
$(COMPILE.cc) $(STATICCPPFLAGS) $(STATICCXXFLAGS) -o $@ $<
%.o: $(srcdir)/%.cpp
$(COMPILE.cc) $(DYNAMICCPPFLAGS) $(DYNAMICCXXFLAGS) -o $@ $<

Dependency rules
%.d: $(srcdir)/%.c
@echo "generating dependency information for $<"
@$(SHELL) -ec '$(GEN_DEPS.c) $< \
| sed "s^\($*\)\.o[:]*^1.o $@ : /g\" > $@; \
[-s $@] || rm -f $@'

%.d: $(srcdir)/%.cpp
@echo "generating dependency information for $<"
@$(SHELL) -ec '$(GEN_DEPS.cc) $< \
| sed "s^\($*\)\.o[:]*^1.o $@ : /g\" > $@; \
[-s $@] || rm -f $@'

```

## Versioned libraries rules

```
%. $(SO).$(SO_TARGET_VERSION_MAJOR): %. $(SO).$(SO_TARGET_VERSION)
$(RM) $@ && ln -s ${<F} $@
%. $(SO): %. $(SO).$(SO_TARGET_VERSION_MAJOR)
$(RM) $@ && ln -s ${*F}. $(SO).$(SO_TARGET_VERSION) $@
```

## Bind internal references

```
LDflags that pkgdata will use
BIR_LDFLAGS= -Wl,-Bsymbolic
```

```
Dependencies [i.e. map files] for the final library
BIR_DEPS=
```

```
Remove shared library 's'
STATIC_PREFIX_WHEN_USED =
STATIC_PREFIX =
```

## End BSD-specific setup

This package was debianized by Jay Berkenbilt <qjb@debian.org> on August 5, 2005.

The packaging was taken over by Laszlo Boszormenyi (GCS) <gcs@debian.org> on Tue, 17 Mar 2015.

The original source was downloaded from <http://site.icu-project.org/download>

The main web site for ICU is <http://www.icu-project.org/>

ICU contains components with different licensing terms.

ICU License  
=====

COPYRIGHT AND PERMISSION NOTICE (ICU 58 and later)

Copyright 1991-2019 Unicode, Inc. All rights reserved.  
Distributed under the Terms of Use in <https://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files



or Software are furnished to do so, provided that either  
(a) this copyright and permission notice appear with all copies  
of the Data Files or Software, or  
(b) this copyright and permission notice appear in associated  
Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF  
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE  
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS  
NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL  
DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE,  
DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER  
TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR  
PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder  
shall not be used in advertising or otherwise to promote the sale,  
use or other dealings in these Data Files or Software without prior  
written authorization of the copyright holder.

-----

#### Third-Party Software Licenses

This section contains third-party software notices and/or additional  
terms for licensed third-party software components included within ICU  
libraries.

#### Unicode Data License

=====

#### UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories  
<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and  
<http://www.unicode.org/cldr/data/> . Unicode Software includes any source code  
published in the Unicode Standard or under the directories  
<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and  
<http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY  
DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES  
("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND  
AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU  
DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES  
OR SOFTWARE.

## COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2008 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

### Additional Copyrights

=====

Some files are copyright by the following additional copyright holders, though in all cases, the copyright is held jointly with IBM and is subject ICU license above:

- \* Google Inc.
- \* Yahoo! Inc.

Some files in source/data/sprep contain data that was programmatically extracted from RFC 3454, but this programmatic extraction was done as a one-time activity and is not part of ICU's build process. The non-free RFC 3454 document is not part of the sources. The files

generated from RFC 3454 could be considered derived works, so the RFC 3454 copyright requires the inclusion of the original RFC 3454 copyright notice:

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are included on all such copies and derivative works. However, this document itself may not be modified in any way, such as by removing the copyright notice or references to the Internet Society or other Internet organizations, except as needed for the purpose of developing Internet standards in which case the procedures for copyrights defined in the Internet Standards process must be followed, or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.  
COPYRIGHT AND PERMISSION NOTICE (ICU 58 and later)

Copyright 1991-2020 Unicode, Inc. All rights reserved.  
Distributed under the Terms of Use in <https://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either

- (a) this copyright and permission notice appear with all copies of the Data Files or Software, or
- (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND

NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

-----

Third-Party Software Licenses

This section contains third-party software notices and/or additional terms for licensed third-party software components included within ICU libraries.

1. ICU License - ICU 1.8.1 to ICU 57.1

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1995-2016 International Business Machines Corporation and others  
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

## 2. Chinese/Japanese Word Break Dictionary Data (cjdict.txt)

```
The Google Chrome software developed by Google is licensed under
the BSD license. Other software included in this distribution is
provided under other licenses, as set forth below.
#
The BSD License
http://opensource.org/licenses/bsd-license.php
Copyright (C) 2006-2008, Google Inc.
#
All rights reserved.
#
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
#
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided with
the distribution.
Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
#
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
#
#
```

```

The word list in cjdict.txt are generated by combining three word lists
listed below with further processing for compound word breaking. The
frequency is generated with an iterative training against Google web
corpora.
#
* Libtabe (Chinese)
- https://sourceforge.net/project/?group_id=1519
- Its license terms and conditions are shown below.
#
* IPADIC (Japanese)
- http://chasen.aist-nara.ac.jp/chasen/distribution.html
- Its license terms and conditions are shown below.
#
-----COPYING.libtabe ---- BEGIN-----
#
/*
* Copyright (c) 1999 TaBE Project.
* Copyright (c) 1999 Pai-Hsiang Hsiao.
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* . Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* . Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
* . Neither the name of the TaBE Project nor the names of its
* contributors may be used to endorse or promote products derived
* from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
* REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
*/
#

```

```

/*
* Copyright (c) 1999 Computer Systems and Communication Lab,
* Institute of Information Science, Academia
* Sinica. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* . Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* . Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
* . Neither the name of the Computer Systems and Communication Lab
* nor the names of its contributors may be used to endorse or
* promote products derived from this software without specific
* prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
* REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
*/
#
Copyright 1996 Chih-Hao Tsai @ Beckman Institute,
University of Illinois
c-tsai4@uiuc.edu http://casper.beckman.uiuc.edu/~c-tsai4
#
-----COPYING.libtabe-----END-----
#
#
-----COPYING.ipadic-----BEGIN-----
#
Copyright 2000, 2001, 2002, 2003 Nara Institute of Science
and Technology. All Rights Reserved.
#
Use, reproduction, and distribution of this software is permitted.
Any copy of this software, whether in its original form or modified,

```

# must include both the above copyright notice and the following  
# paragraphs.  
#  
# Nara Institute of Science and Technology (NAIST),  
# the copyright holders, disclaims all warranties with regard to this  
# software, including all implied warranties of merchantability and  
# fitness, in no event shall NAIST be liable for  
# any special, indirect or consequential damages or any damages  
# whatsoever resulting from loss of use, data or profits, whether in an  
# action of contract, negligence or other tortious action, arising out  
# of or in connection with the use or performance of this software.  
#  
# A large portion of the dictionary entries  
# originate from ICOT Free Software. The following conditions for ICOT  
# Free Software applies to the current dictionary as well.  
#  
# Each User may also freely distribute the Program, whether in its  
# original form or modified, to any third party or parties, PROVIDED  
# that the provisions of Section 3 ("NO WARRANTY") will ALWAYS appear  
# on, or be attached to, the Program, which is distributed substantially  
# in the same form as set out herein and that such intended  
# distribution, if actually made, will neither violate or otherwise  
# contravene any of the laws and regulations of the countries having  
# jurisdiction over the User or the intended distribution itself.  
#  
# NO WARRANTY  
#  
# The program was produced on an experimental basis in the course of the  
# research and development conducted during the project and is provided  
# to users as so produced on an experimental basis. Accordingly, the  
# program is provided without any warranty whatsoever, whether express,  
# implied, statutory or otherwise. The term "warranty" used herein  
# includes, but is not limited to, any warranty of the quality,  
# performance, merchantability and fitness for a particular purpose of  
# the program and the nonexistence of any infringement or violation of  
# any right of any third party.  
#  
# Each user of the program will agree and understand, and be deemed to  
# have agreed and understood, that there is no warranty whatsoever for  
# the program and, accordingly, the entire risk arising from or  
# otherwise connected with the program is assumed by the user.  
#  
# Therefore, neither ICOT, the copyright holder, or any other  
# organization that participated in or was otherwise related to the  
# development of the program and their respective officials, directors,  
# officers and other employees shall be held liable for any and all  
# damages, including, without limitation, general, special, incidental  
# and consequential damages, arising out of or otherwise in connection



```
with the use or inability to use the program or any product, material
or result produced or otherwise obtained by using the program,
regardless of whether they have been advised of, or otherwise had
knowledge of, the possibility of such damages at any time during the
project or thereafter. Each user will be deemed to have agreed to the
foregoing by his or her commencement of use of the program. The term
"use" as used herein includes, but is not limited to, the use,
modification, copying and distribution of the program and the
production of secondary products from the program.
#
In the case where the program, whether in its original form or
modified, was distributed or delivered to or received by a user from
any person, organization or entity other than ICOT, unless it makes or
grants independently of ICOT any specific warranty to the user in
writing, such person, organization or entity, will also be exempted
from and not be held liable to the user for any such damages as noted
above as far as the program is concerned.
#
-----COPYING.ipadic-----END-----
```

### 3. Lao Word Break Dictionary Data (laodict.txt)

```
Copyright (c) 2013 International Business Machines Corporation
and others. All Rights Reserved.
#
Project: http://code.google.com/p/lao-dictionary/
Dictionary: http://lao-dictionary.googlecode.com/git/Lao-Dictionary.txt
License: http://lao-dictionary.googlecode.com/git/Lao-Dictionary-LICENSE.txt
(copied below)
#
This file is derived from the above dictionary, with slight
modifications.

Copyright (C) 2013 Brian Eugene Wilson, Robert Martin Campbell.
All rights reserved.
#
Redistribution and use in source and binary forms, with or without
modification,
are permitted provided that the following conditions are met:
#
#
Redistributions of source code must retain the above copyright notice, this
list of conditions and the following disclaimer. Redistributions in
binary form must reproduce the above copyright notice, this list of
conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
#
#
```

# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
# "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
# LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS  
# FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE  
# COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,  
# INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES  
# (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR  
# SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
# HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
# STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
# ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
# OF THE POSSIBILITY OF SUCH DAMAGE.  
# -----

#### 4. Burmese Word Break Dictionary Data (burmesedict.txt)

# Copyright (c) 2014 International Business Machines Corporation  
# and others. All Rights Reserved.

#

# This list is part of a project hosted at:

# [github.com/kanyawtech/myanmar-karen-word-lists](https://github.com/kanyawtech/myanmar-karen-word-lists)

#

# -----

# Copyright (c) 2013, LeRoy Benjamin Sharon

# All rights reserved.

#

# Redistribution and use in source and binary forms, with or without  
# modification, are permitted provided that the following conditions  
# are met: Redistributions of source code must retain the above  
# copyright notice, this list of conditions and the following  
# disclaimer. Redistributions in binary form must reproduce the  
# above copyright notice, this list of conditions and the following  
# disclaimer in the documentation and/or other materials provided  
# with the distribution.

#

# Neither the name Myanmar Karen Word Lists, nor the names of its  
# contributors may be used to endorse or promote products derived  
# from this software without specific prior written permission.

#

# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND  
# CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,  
# INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF  
# MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
# DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS  
# BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,  
# EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED  
# TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
# DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON

# ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR  
# TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF  
# THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
# SUCH DAMAGE.  
# -----

## 5. Time Zone Database

ICU uses the public domain data and code derived from Time Zone Database for its time zone support. The ownership of the TZ database is explained in BCP 175: Procedure for Maintaining the Time Zone Database section 7.

### # 7. Database Ownership

#  
# The TZ database itself is not an IETF Contribution or an IETF  
# document. Rather it is a pre-existing and regularly updated work  
# that is in the public domain, and is intended to remain in the  
# public domain. Therefore, BCPs 78 [RFC5378] and 79 [RFC3979] do  
# not apply to the TZ Database or contributions that individuals make  
# to it. Should any claims be made and substantiated against the TZ  
# Database, the organization that is providing the IANA  
# Considerations defined in this RFC, under the memorandum of  
# understanding with the IETF, currently ICANN, may act in accordance  
# with all competent court orders. No ownership claims will be made  
# by ICANN or the IETF Trust on the database or the code. Any person  
# making a contribution to the database or code waives all rights to  
# future claims in that contribution or in the TZ Database.

## 6. Google double-conversion

Copyright 2006-2011, the V8 project authors. All rights reserved.  
Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.204 Isot 4.89

### 1.204.1 Available under license :

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.

This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

## 1.205 spring-security 2.3.3.RELEASE

### 1.205.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section)

patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or

otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## 1.206 jackson-datatype-jsr310 2.11.2

### 1.206.1 Available under license :

This copy of Jackson JSON processor streaming parser/generator is licensed under the Apache (Software) License, version 2.0 ("the License").

See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.207 libvmtools 9.4.0.25793

### 1.207.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your

freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be



consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The

former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a

fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be

linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is

interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN



WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.208 ffmpeg 4.3.1

## 1.208.1 Available under license :

# License

Most files in FFmpeg are under the GNU Lesser General Public License version 2.1 or later (LGPL v2.1+). Read the file `COPYING.LGPLv2.1` for details. Some other files have MIT/X11/BSD-style licenses. In combination the LGPL v2.1+ applies to FFmpeg.

Some optional parts of FFmpeg are licensed under the GNU General Public License version 2 or later (GPL v2+). See the file `COPYING.GPLv2` for details. None of these parts are used by default, you have to explicitly pass `--enable-gpl` to configure to activate them. In this case, FFmpeg's license changes to GPL v2+.

Specifically, the GPL parts of FFmpeg are:

- libpostproc
- optional x86 optimization in the files
  - `libavcodec/x86/flac\_dsp\_gpl.asm`
  - `libavcodec/x86/idct\_mmx.c`
  - `libavfilter/x86/vf\_removegrain.asm`
- the following building and testing tools
  - `compat/solaris/make\_sunver.pl`
  - `doc/t2h.pm`
  - `doc/texi2pod.pl`
  - `libswresample/tests/swresample.c`
  - `tests/checkasm/\*`
  - `tests/tiny\_ssim.c`
- the following filters in libavfilter:
  - `signature\_lookup.c`
  - `vf\_blackframe.c`
  - `vf\_boxblur.c`
  - `vf\_colormatrix.c`
  - `vf\_cover\_rect.c`
  - `vf\_croptdetect.c`
  - `vf\_delogo.c`
  - `vf\_eq.c`
  - `vf\_find\_rect.c`

```
- `vf_fspp.c`
- `vf_histeq.c`
- `vf_hqdn3d.c`
- `vf_kerndeint.c`
- `vf_lensfun.c` (GPL version 3 or later)
- `vf_mcdeint.c`
- `vf_mpdecimate.c`
- `vf_nnedi.c`
- `vf_owdenoise.c`
- `vf_perspective.c`
- `vf_phase.c`
- `vf_pp.c`
- `vf_pp7.c`
- `vf_pullup.c`
- `vf_repeatfields.c`
- `vf_sab.c`
- `vf_signature.c`
- `vf_smartblur.c`
- `vf_spp.c`
- `vf_stereo3d.c`
- `vf_super2xsai.c`
- `vf_tinterlace.c`
- `vf_uspp.c`
- `vf_vaguedenoiser.c`
- `vsrc_mptestsrc.c`
```

Should you, for whatever reason, prefer to use version 3 of the (L)GPL, then the configure parameter `--enable-version3` will activate this licensing option for you. Read the file ``COPYING.LGPLv3`` or, if you have enabled GPL parts, ``COPYING.GPLv3`` to learn the exact legal terms that apply in this case.

There are a handful of files under other licensing terms, namely:

- \* The files ``libavcodec/jfdctfst.c``, ``libavcodec/jfdctint_template.c`` and ``libavcodec/jrevdct.c`` are taken from libjpeg, see the top of the files for licensing details. Specifically note that you must credit the IJG in the documentation accompanying your program if you only distribute executables. You must also indicate any changes including additions and deletions to those three files in the documentation.
- \* ``tests/reference.pnm`` is under the expat license.

## External libraries

FFmpeg can be combined with a number of external libraries, which sometimes affect the licensing of binaries resulting from the combination.

### Compatible libraries

The following libraries are under GPL version 2:

- avisynth
- frei0r
- libcdio
- libdavs2
- librubberband
- libvidstab
- libx264
- libx265
- libxavs
- libxavs2
- libxvid

When combining them with FFmpeg, FFmpeg needs to be licensed as GPL as well by passing `--enable-gpl` to configure.

The following libraries are under LGPL version 3:

- gmp
- libaribb24
- liblensfun

When combining them with FFmpeg, use the configure option `--enable-version3` to upgrade FFmpeg to the LGPL v3.

The VMAF, mbedTLS, RK MPI, OpenCORE and VisualOn libraries are under the Apache License 2.0. That license is incompatible with the LGPL v2.1 and the GPL v2, but not with version 3 of those licenses. So to combine these libraries with FFmpeg, the license version needs to be upgraded by passing `--enable-version3` to configure.

The smbclient library is under the GPL v3, to combine it with FFmpeg, the options `--enable-gpl` and `--enable-version3` have to be passed to configure to upgrade FFmpeg to the GPL v3.

### ### Incompatible libraries

There are certain libraries you can combine with FFmpeg whose licenses are not compatible with the GPL and/or the LGPL. If you wish to enable these libraries, even in circumstances that their license may be incompatible, pass `--enable-nonfree` to configure. This will cause the resulting binary to be unredistributable.

The Fraunhofer FDK AAC and OpenSSL libraries are under licenses which are incompatible with the GPLv2 and v3. To the best of our knowledge, they are compatible with the LGPL.

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any

part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.



7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any

later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the

public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those

subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of

technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users



beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

#### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for

any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same

material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version,

but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the

parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published

by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs



If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General

Public License instead of this License. But first, please read  
<<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates  
the terms and conditions of version 3 of the GNU General Public  
License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser  
General Public License, and the "GNU GPL" refers to version 3 of the GNU  
General Public License.

"The Library" refers to a covered work governed by this License,  
other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided  
by the Library, but which is not otherwise based on the Library.  
Defining a subclass of a class defined by the Library is deemed a mode  
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an  
Application with the Library. The particular version of the Library  
with which the Combined Work was made is also called the "Linked  
Version".

The "Minimal Corresponding Source" for a Combined Work means the  
Corresponding Source for the Combined Work, excluding any source code  
for portions of the Combined Work that, considered in isolation, are  
based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the  
object code and/or source code for the Application, including any data  
and utility programs needed for reproducing the Combined Work from the  
Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License  
without being bound by section 3 of the GNU GPL.

## 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

## 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

## 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during

execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

# 1.209 commons-lang3 3.10

## 1.209.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.



9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Commons Lang

Copyright 2001-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

## 1.210 libnetfilter-contrack 1.0.5

## 1.210.1 Available under license :

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original

authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into



proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.211 springdoc-openapi-webmvc-core 1.5.9

## 1.211.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate

comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.212 gvfs 1.28.2

### 1.212.1 Available under license :

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in

a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.



(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which

must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the

Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library

facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by

all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our

decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either

version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Library General Public License for more details.

You should have received a copy of the GNU Library General Public  
License along with this library; if not, write to the  
Free Software Foundation, Inc., 51 Franklin Street - Fifth Floor,  
Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the library, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS



## 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered



work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

## 1.213 slf4j 1.7.30

### 1.213.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN

# 1.214 springdoc-openapi-ui 1.5.9

## 1.214.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications

represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without

modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade



names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier

identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and

limitations under the License.

# 1.215 motor 2.5.1

## 1.215.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions

for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.216 glib 2.28.8

## 1.217 nghttp2 1.40.0-1build1

### 1.217.1 Available under license :

#### LEGAL NOTICE INFORMATION

-----

All the files in this distribution are covered under the MIT license (see the file LICENSE) except some files mentioned below:  
The MIT License

Copyright (c) 2012, 2014, 2015, 2016 Tatsuhiro Tsujikawa  
Copyright (c) 2012, 2014, 2015, 2016 nghttp2 contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

set yrange [0:]

set terminal pngcairo font 'Sans, 8' lw 1 size 1400,1024

set xtics rotate by -45

set style histogram errorbars gap 2 lw 1

set style fill solid border -1

Copyright (c) 2019 mruby developers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

If not otherwise noted, the extensions in this package are licensed under the following license.

Copyright (c) 2010 by the contributors (see AUTHORS file).

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.218 jul-to-slf4j 1.7.30

### 1.218.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright (c) 2004-2011 QOS.ch

\* All rights reserved.

\*

\* Permission is hereby granted, free of charge, to any person obtaining

\* a copy of this software and associated documentation files (the

\* "Software"), to deal in the Software without restriction, including

\* without limitation the rights to use, copy, modify, merge, publish,

\* distribute, sublicense, and/or sell copies of the Software, and to

\* permit persons to whom the Software is furnished to do so, subject to

\* the following conditions:

\*

\* The above copyright notice and this permission notice shall be

\* included in all copies or substantial portions of the Software.

\*

\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND

\* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE



- \* LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
- \* OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
- \* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
- \*
- \*/

Found in path(s):

\* /opt/cola/permits/1135864176\_1613618002.1/0/jul-to-slf4j-1-7-30-sources-1-jar/org/slf4j/bridge/SLF4JBridgeHandler.java

## 1.219 linenoise 1.0

### 1.219.1 Available under license :

Copyright (c) 2010-2014, Salvatore Sanfilippo <antirez at gmail dot com>

Copyright (c) 2010-2013, Pieter Noordhuis <pnoordhuis at gmail dot com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.220 protobuf 3.6.1.3-2ubuntu5

### 1.220.1 Available under license :

Copyright 2008 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

This file contains a list of people who have made large contributions to the public version of Protocol Buffers.

Original Protocol Buffers design and implementation:

Sanjay Ghemawat <sanjay@google.com>

Jeff Dean <jeff@google.com>

Daniel Dulitz <daniel@google.com>

Craig Silverstein

Paul Haahr <haahr@google.com>

Corey Anderson <corin@google.com>

(and many others)

Proto2 C++ and Java primary author:

Kenton Varda <kenton@google.com>

Proto2 Python primary authors:

Will Robinson <robinson@google.com>

Petar Petrov <petar@google.com>

Java Nano primary authors:

Brian Duff <bduff@google.com>  
Tom Chao <chaot@google.com>  
Max Cai <maxtroy@google.com>  
Ulas Kirazci <ulas@google.com>

Large code contributions:

Jason Hsueh <jasonh@google.com>  
Joseph Schorr <jschorr@google.com>  
Wenbo Zhu <wenboz@google.com>

Large quantity of code reviews:

Scott Bruce <sbruce@google.com>  
Frank Yellin  
Neal Norwitz <nnorwitz@google.com>  
Jeffrey Yasskin <jyasskin@google.com>  
Ambrose Feinstein <ambrose@google.com>

Documentation:

Lisa Carey <lcarey@google.com>

Maven packaging:

Gregory Kick <gak@google.com>

Patch contributors:

Kevin Ko <kevin.s.ko@gmail.com>  
\* Small patch to handle trailing slashes in --proto\_path flag.  
Johan Euphrosine <propy@aminche.com>  
\* Small patch to fix Python CallMethod().  
Ulrich Kunitz <kune@deine-taler.de>  
\* Small optimizations to Python serialization.  
Leandro Lucarella <llucax@gmail.com>  
\* VI syntax highlighting tweaks.  
\* Fix compiler to not make output executable.  
Dilip Joseph <dilip.antony.joseph@gmail.com>  
\* Heuristic detection of sub-messages when printing unknown fields in text format.  
Brian Atkinson <nairb774@gmail.com>  
\* Added @Override annotation to generated Java code where appropriate.  
Vincent Choiniere <Choiniere.Vincent@hydro.qc.ca>  
\* Tru64 support.  
Monty Taylor <monty.taylor@gmail.com>  
\* Solaris 10 + Sun Studio fixes.  
Alek Storm <alek.storm@gmail.com>  
\* Slicing support for repeated scalar fields for the Python API.  
Oleg Smolsky <oleg.smolsky@gmail.com>  
\* MS Visual Studio error format option.  
\* Detect unordered\_map in stl\_hash.m4.  
Brian Olson <brianolson@google.com>

- \* gzip/zlib I/O support.

Michael Poole <mdpoole@troilus.org>

- \* Fixed warnings about generated constructors not explicitly initializing all fields (only present with certain compiler settings).
- \* Added generation of field number constants.

Wink Saville <wink@google.com>

- \* Fixed initialization ordering problem in logging code.

Will Pierce <willp@nuclei.com>

- \* Small patch improving performance of in Python serialization.

Alexandre Vassalotti <alexandre@peadrop.com>

- \* Emacs mode for Protocol Buffers (editors/protobuf-mode.el).

Scott Stafford <scott.stafford@gmail.com>

- \* Added Swap(), SwapElements(), and RemoveLast() to Reflection interface.

Alexander Melnikov <alm@sibmail.ru>

- \* HPUX support.

Oliver Jowett <oliver.jowett@gmail.com>

- \* Detect whether zlib is new enough in configure script.
- \* Fixes for Solaris 10 32/64-bit confusion.

Evan Jones <evanj@mit.edu>

- \* Optimize Java serialization code when writing a small message to a stream.
- \* Optimize Java serialization of strings so that UTF-8 encoding happens only once per string per serialization call.
- \* Clean up some Java warnings.
- \* Fix bug with permanent callbacks that delete themselves when run.

Michael Kucharski <m.kucharski@gmail.com>

- \* Added CodedInputStream.getTotalBytesRead().

Kacper Kowalik <xarthisius.kk@gmail.com>

- \* Fixed m4/acx\_pthread.m4 problem for some Linux distributions.

William Orr <will@worrbase.com>

- \* Fixed detection of sched\_yield on Solaris.
- \* Added atomicops for Solaris

Andrew Paprocki <andrew@ishiboo.com>

- \* Fixed minor IBM xLC compiler build issues
- \* Added atomicops for AIX (POWER)

# 1.221 unbound 1.13.2

## 1.221.1 Available under license :

Copyright (c) 2009, Zdenek Vasicek (vasicek AT fit.vutbr.cz)  
Marek Vavrusa (xvavru00 AT stud.fit.vutbr.cz)

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,

this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the organization nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2007, NLnet Labs. All rights reserved.

This software is open source.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the NLNET LABS nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009, Dmitriy Demidov aka terminus. All rights reserved.

This software is open source.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Dmitriy Demidov nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.222 speex 1.2beta3

### 1.222.1 Available under license :

Copyright 2002-2008 Xiph.org Foundation

Copyright 2002-2008 Jean-Marc Valin

Copyright 2005-2007 Analog Devices Inc.

Copyright 2005-2008 Commonwealth Scientific and Industrial Research  
Organisation (CSIRO)

Copyright 1993, 2002, 2006 David Rowe

Copyright 2003 EpicGames

Copyright 1992-1994 Jutta Degener, Carsten Bormann

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- Neither the name of the Xiph.org Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.223 syslinux 6.03

### 1.223.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another



language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other

circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY

FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

```
GNU GENERAL PUBLIC LICENSE
Version 2, June 1991
```

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
675 Mass Ave, Cambridge, MA 02139, USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to

using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below,

refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)



These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include

anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The Syslinux logo is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.

/\*

\* Copyright (c) 2001, 2002 Swedish Institute of Computer Science.

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without modification,

\* are permitted provided that the following conditions are met:

\*

\* 1. Redistributions of source code must retain the above copyright notice,

\* this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright notice,  
 \* this list of conditions and the following disclaimer in the documentation  
 \* and/or other materials provided with the distribution.

\* 3. The name of the author may not be used to endorse or promote products  
 \* derived from this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED  
 \* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF  
 \* MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT

\* SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,  
 \* EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,  
 PROCUREMENT  
 \* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
 \* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
 \* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING  
 \* IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY  
 \* OF SUCH DAMAGE.

\*

\* This file is part of the lwIP TCP/IP stack.

\*

\* Author: Adam Dunkels <adam@sics.se>

\*

\*/

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

**COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:**

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license.

libpng versions 1.2.6, August 15, 2004, through 1.2.44, June 26, 2010, are Copyright (c) 2004, 2006-2009 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux  
Eric S. Raymond  
Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger  
Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors

and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

A "png\_get\_copyright" function is available, for convenient use in "about" boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31) and "pngnow.png" (98x31).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson  
glennrp at users.sourceforge.net  
June 26, 2010

libcom32 and libutil are licensed under the MIT license:

```

Copyright 2004-2009 H. Peter Anvin - All Rights Reserved
Portions Copyright 2009 Intel Corporation; author: H. Peter Anvin

Permission is hereby granted, free of charge, to any person
```



```

obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following
conditions:
##
The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.
##
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.
##

```

The files in the sample, modules and libgpl directories are mostly under the GNU GPL (see the file COPYING in the directory above.)

In general gPXE files are licensed under the GPL. GPLed files are in general either from Linux or have been explicitly put under GPL by the authors. The license for a file is usually documented at the top of the file.

A few files are inherited from FreeBSD netboot and therefore can be used under BSD or GPL. Documented in this file are some of the non-GPL'ed files. If the internal documentation for a file disagrees with what is documented in this file, the internal documentation for the file shall be override this file.

File Copyright status

```

src/core/misc.c BSD
src/drivers/net/3c509.c BSD
src/drivers/net/3c509.h BSD
src/drivers/net/3c595.c BSD
src/drivers/net/3c595.h BSD
src/drivers/net/3c90x.c Open Source
src/drivers/net/epic100.c None
src/drivers/net/epic100.h None
src/drivers/net/ns8390.c BSD
src/drivers/net/ns8390.h BSD

```

src/arch/i386/include/bits/string.h None

The EFI headers contained herein are copied from the EFI Development Kit, available from <http://www.tianocore.org> and published under the following licence:

BSD License from Intel  
Copyright (c) 2004, Intel Corporation  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This licence applies only to files that are part of the EFI Development Kit. Other files may contain their own licence terms, or may fall under the standard gPXE GPL licence.

## 1.224 selinux 3.0-1build2

## 1.224.1 Available under license :

This library (libselenium) is public domain software, i.e. not copyrighted.

### Warranty Exclusion

-----

You agree that this software is a non-commercially developed program that may contain "bugs" (as that term is used in the industry) and that it may not function as intended. The software is licensed "as is". NSA makes no, and hereby expressly disclaims all, warranties, express, implied, statutory, or otherwise with respect to the software, including noninfringement and the implied warranties of merchantability and fitness for a particular purpose.

### Limitation of Liability

-----

In no event will NSA be liable for any damages, including loss of data, lost profits, cost of cover, or other special, incidental, consequential, direct or indirect damages arising from the software or the use thereof, however caused and on any theory of liability. This limitation will apply even if NSA has been advised of the possibility of such damage. You acknowledge that this is a reasonable allocation of risk.

## 1.225 glib 2.48.1

### 1.225.1 Available under license :

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for

your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that

they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under

copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that,

in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit



modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you

distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free

programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307 USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

This work may be reproduced and distributed in whole or in part, in any medium, physical or electronic, so as long as this copyright notice remains intact and unchanged on all copies. Commercial redistribution is permitted and encouraged, but you may not redistribute, in whole or in part, under terms more restrictive than those under which you received it. If you redistribute a modified or translated version of this work, you must also make the source code to the modified or translated version available in electronic form without charge. However, mere aggregation as part of a larger work shall not count as a modification for this purpose.

All code examples in this work are placed into the public domain, and may be used, modified and redistributed without restriction.

BECAUSE THIS WORK IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE WORK, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE WORK "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SHOULD THE WORK PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE WORK AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE WORK, EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

/\* This is the public header file for the PCRE library, to be #included by applications that call the PCRE functions.

Copyright (c) 1997-2012 University of Cambridge

-----  
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
\*/

# 1.226 fribidi 1.0.11

## 1.226.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them

with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free



library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to

distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is

copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or



modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.227 fastapi 0.68.2

### 1.227.1 Available under license :

The MIT License (MIT)

Copyright (c) 2018 Sebastin Ramrez

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.228 busybox 1.30.1

### 1.228.1 Available under license :

bzip2 applet in busybox is based on lightly-modified source of bzip2 version 1.0.4. bzip2 source is distributed under the following conditions (copied verbatim from LICENSE file)

=====

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2006 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

jseward@bzip.org

bzip2/libbzip2 version 1.0.4 of 20 December 2006

--- A note on GPL versions

BusyBox is distributed under version 2 of the General Public License (included in its entirety, below). Version 2 is the only version of this license which this version of BusyBox (or modified versions derived from this one) may be distributed under.

-----  
GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the

source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY



YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be

mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.229 libestr 0.1.9

### 1.229.1 Available under license :

libestr is available under the terms of the GNU LGPL v2.1 or above (full text below).

-----  
GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether

this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or

other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the

ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy



from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add

an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH

DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

liblognorm, a fast samples-based log normalization library  
Copyright (C) 2010 Rainer Gerhards

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

## 1.230 popt 1.16

### 1.230.1 Available under license :

Copyright (c) 1998 Red Hat Software

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

## 1.231 berkeley-db 4.4.20

### 1.231.1 Available under license :

Copyright (c) 1996-2005

Sleepycat Software. All rights reserved.

See the file LICENSE for redistribution information.

/\*-

\* \$Id: LICENSE,v 12.1 2005/06/16 20:20:10 bostic Exp \$

\*/

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software, please contact Sleepycat Software by email at [info@sleepycat.com](mailto:info@sleepycat.com), or on the Web at <http://www.sleepycat.com>.

=====  
/\*

\* Copyright (c) 1990-2005

\* Sleepycat Software. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Redistributions in any form must be accompanied by information on

\* how to obtain complete source code for the DB software and any

\* accompanying software that uses the DB software. The source code

\* must either be included in the distribution or be available for no

\* more than the cost of distribution plus a nominal fee, and must be

\* freely redistributable under reasonable conditions. For an  
\* executable file, complete source code means the source code for all  
\* modules it contains. It does not include source code for modules or  
\* files that typically accompany the major components of the operating  
\* system on which the executable file runs.

\*

\* THIS SOFTWARE IS PROVIDED BY SLEEPYCAT SOFTWARE ``AS IS" AND ANY EXPRESS  
\* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
\* WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR  
\* NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL SLEEPYCAT SOFTWARE  
\* BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF  
\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1990, 1993, 1994, 1995  
\* The Regents of the University of California. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

- \* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the University nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1995, 1996

\* The President and Fellows of Harvard University. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the University nor the names of its contributors

\* may be used to endorse or promote products derived from this software

\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY HARVARD AND ITS CONTRIBUTORS "AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL HARVARD OR ITS CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*/

Copyright (c) 2005, 2006, Theo Schlossnagle

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name OmniTI nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN

IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.232 spring-tx 5.2.20.RELEASE

## 1.232.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/TransactionalProxy.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/TransactionDefinition.java



\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/AnnotationTransactionAttributeSource.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/TransactionManager.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/AbstractTransactionStatus.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/StaticTransactionDefinition.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionSynchronizationManager.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionContext.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/AbstractTransactionManagementConfiguration.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/TransactionAnnotationParser.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionSynchronization.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/WithoutTransactionOperations.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/ReactiveTransaction.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionCallback.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/TransactionExecution.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/config/JtaTransactionManagerFactoryBean.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionalOperatorImpl.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionContextManager.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/DefaultTransactionStatus.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/TransactionProxyFactoryBean.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionContextHolder.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/MethodMapTransactionAttributeSource.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/SpringTransactionAnnotationParser.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/CompositeTransactionAttributeSource.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/GenericReactiveTransaction.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/TransactionOperations.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/reactive/TransactionSynchronizationUtils.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/annotation/JtaTransactionAnnotationParser.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/reactive/ReactiveResourceSynchronization.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttributeEditor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/annotation/Ejb3TransactionAnnotationParser.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/TransactionStatus.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/event/ApplicationListenerMethodTransactionalAdapter.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttributeSource.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/annotation/Propagation.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttribute.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/connection/DelegatingConnectionFactory.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/OptimisticLockingFailureException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/context/BootstrapContextAwareProcessor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/UncategorizedDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-

jar/org/springframework/transaction/TransactionSystemException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/BeanFactoryTransactionAttributeSourceAdvisor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/object/EisOperation.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttributeSourceAdvisor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/DataAccessResourceFailureException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/connection/ConnectionSpecConnectionFactoryAdapter.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/support/SimpleBootstrapContext.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/DataRetrievalFailureException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/core/support/CommAreaRecord.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/ConcurrencyFailureException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/NonTransientDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/core/CciOperations.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/CallbackPreferringPlatformTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/TransientDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/TransactionCallbackWithoutResult.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/DataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/support/ResourceAdapterFactoryBean.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/context/ResourceAdapterApplicationContext.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/NonTransientDataAccessResourceException.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/SmartTransactionObject.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2021 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/annotation/Transactional.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/event/TransactionalEventListener.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/TransactionSynchronizationUtils.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/event/TransactionPhase.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/annotation/PersistenceExceptionTranslationPostProcessor.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2012 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/NestedTransactionNotSupportedException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/TransactionException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/jta/JtaAfterCompletionSynchronization.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/DuplicateKeyException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/TransactionSynchronizationAdapter.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/config/TxNamespaceHandler.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/connection/NotSupportedRecordFactory.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/work/DelegatingWork.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/TransactionUsageException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/DataIntegrityViolationException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/InvalidIsolationLevelException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/PessimisticLockingFailureException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/ResourceTransactionManager.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/IllegalTransactionStateException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/TransactionTimedOutException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/annotation/PersistenceExceptionTranslationAdvisor.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/DelegatingTransactionAttribute.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/TypeMismatchDataAccessException.java
- \* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/CannotAcquireLockException.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/InvalidDataAccessResourceUsageException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/DeadlockLoserDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/TransactionSuspensionNotSupportedException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/ManagedTransactionAdapter.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/InvalidDataAccessApiUsageException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/DelegatingTransactionDefinition.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/IncorrectUpdateSemanticsDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/TransactionFactory.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/PermissionDeniedDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/NoTransactionException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/TransientDataAccessResourceException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/CannotCreateTransactionException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/UnexpectedRollbackException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/QueryTimeoutException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/CleanupFailureDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttributeSourceEditor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/UserTransactionAdapter.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/CannotSerializeTransactionException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/RecoverableDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/InvalidResultSetAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/EmptyResultDataAccessException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/NoRollbackRuleAttribute.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/support/PersistenceExceptionTranslator.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/core/RecordCreator.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2020 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/WebSphereUowTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/ReactiveTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/RuleBasedTransactionAttribute.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/annotation/EnableTransactionManagement.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/work/WorkManagerTaskExecutor.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/PlatformTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/SimpleTransactionScope.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/TransactionalOperator.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/ProxyTransactionManagementConfiguration.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/TransactionAttributeSourcePointcut.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/support/PersistenceExceptionTranslationInterceptor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/reactive/AbstractReactiveTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/TransactionAspectSupport.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/TransactionInterceptor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/AbstractPlatformTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/config/TxAdviceBeanDefinitionParser.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/TransactionManagementConfigurer.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/TransactionSynchronizationManager.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2008 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/ResourceHolder.java



No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2014 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486313_1649248830.06/0/spring-tx-5-2-20-release-sources-
jar/org/springframework/transaction/config/JtaTransactionManagerBeanDefinitionParser.java
* /opt/cola/permits/1301486313_1649248830.06/0/spring-tx-5-2-20-release-sources-
jar/org/springframework/transaction/SavepointManager.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486313_1649248830.06/0/spring-tx-5-2-20-release-sources-
jar/org/springframework/jca/cci/core/InteractionCallback.java
* /opt/cola/permits/1301486313_1649248830.06/0/spring-tx-5-2-20-release-sources-
jar/org/springframework/jca/cci/object/MappingRecordOperation.java
* /opt/cola/permits/1301486313_1649248830.06/0/spring-tx-5-2-20-release-sources-
jar/org/springframework/dao/support/DaoSupport.java
```

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/context/BootstrapContextAware.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/endpoint/AbstractMessageEndpointFactory.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/endpoint/GenericMessageEndpointManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/core/support/CciDaoSupport.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/event/TransactionalEventListenerFactory.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/jta/WebLogicJtaTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/config/AnnotationDrivenBeanDefinitionParser.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/connection/CciLocalTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/annotation/TransactionManagementConfigurationSelector.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/TransactionSynchronization.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/ResourceTransactionDefinition.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/core/RecordExtractor.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/core/CciTemplate.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/AbstractFallbackTransactionAttributeSource.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/TransactionCallback.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/RollbackRuleAttribute.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/connection/TransactionAwareConnectionFactoryProxy.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/object/SimpleRecordOperation.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/InvalidTimeoutException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/interceptor/DefaultTransactionAttribute.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/CannotGetCciConnectionException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/SimpleTransactionStatus.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/support/TransactionTemplate.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/transaction/jta/SpringJtaSynchronizationAdapter.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/support/LocalConnectionFactoryBean.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/RecordTypeNotSupportedException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/endpoint/GenericMessageEndpointFactory.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/connection/SingleConnectionFactory.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/JtaTransactionManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/connection/ConnectionHolder.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/ResourceHolderSupport.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/HeuristicCompletionException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/ResourceHolderSynchronization.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/support/DataAccessUtils.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/annotation/Isolation.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/support/DefaultTransactionDefinition.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/CannotCreateRecordException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/CciOperationNotSupportedException.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/NameMatchTransactionAttributeSource.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/core/ConnectionCallback.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/dao/support/ChainedPersistenceExceptionTranslator.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/config/TransactionManagementConfigUtils.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/work/SimpleTaskWorkManager.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/interceptor/MatchAlwaysTransactionAttributeSource.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/cci/object/MappingCommAreaOperation.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/jca/context/SpringContextResourceAdapter.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/JtaTransactionObject.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-  
jar/org/springframework/transaction/jta/SimpleTransactionFactory.java

\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/jca/cci/connection/ConnectionFactoryUtils.java  
\* /opt/cola/permits/1301486313\_1649248830.06/0/spring-tx-5-2-20-release-sources-jar/org/springframework/dao/IncorrectResultSizeDataAccessException.java

## 1.233 spring-web-mvc 5.2.20.RELEASE

### 1.233.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ResponseBodyEmitter.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/AppCacheManifestTransformer.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/RouterFunctions.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/AnnotationDrivenBeanDefinitionParser.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/ResourceHandlerRegistry.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/ViewControllerRegistry.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/CorsRegistration.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/SseEmitter.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/DefaultServerRequest.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/ResourcesBeanDefinitionParser.java
```

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/AbstractMessageConverterMethodProcessor.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/DefaultServerRequestBuilder.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ResponseBodyEmitterReturnValueHandler.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/RouterFunctionBuilder.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/annotation/ResponseStatusExceptionHandlerResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/MessageTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestMappingHandlerAdapter.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/AbstractHandlerMapping.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/AbstractTemplateViewResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/RequestMethodsRequestCondition.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/AbstractMediaTypeExpression.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/UrlFilenameViewController.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/HandlerExecutionChain.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/PatternsRequestCondition.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/RequestPredicates.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/ServerRequest.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/ErrorsTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/ResourceHttpRequestHandler.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/ServletUriComponentsBuilder.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/CorsRegistry.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/RequestMappingInfo.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/PathMatchConfigurer.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/HttpEntityMethodProcessor.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/ConsumesRequestCondition.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletCookieValueMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/ProducesRequestCondition.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/i18n/CookieLocaleResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/ContentNegotiationConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/HeadersRequestCondition.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/ParamsRequestCondition.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurationSupport.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/DefaultEntityResponseBuilder.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/UrlTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/RedirectView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/AbstractFlashMapManager.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/DefaultServerResponseBuilder.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/OptionsTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/xml/MarshallingView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-

jar/org/springframework/web/servlet/tags/EscapeBodyTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/RadioButtonTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/AbstractView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/EvalTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/SelectedValueComparator.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/XmlViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/GzipResourceResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/ThemeTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/CheckboxTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/handler/MappedInterceptor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/SelectTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/View.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/document/AbstractPdfView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/HtmlEscapeTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/BindTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/script/RenderingContext.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/AbstractController.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ServletRequestMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/AbstractHtmlInputElementTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/AbstractSingleCheckedElementTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ServletResponseMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/InputTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/annotation/InterceptorRegistry.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/DefaultServletHttpRequestHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-

jar/org/springframework/web/servlet/config/TilesConfigurerBeanDefinitionParser.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/freemarker/FreeMarkerConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/ResourceResolverChain.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/ViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/ResourceTransformerSupport.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/support/WebContentGenerator.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/annotation/ViewResolverRegistry.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/OptionTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/TransformedResource.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/ScriptTemplateConfigurerBeanDefinitionParser.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/ModelAndView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/ViewResolversBeanDefinitionParser.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/BeanNameViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/NestedPathTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/CheckboxesTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/RequestResponseBodyAdviceChain.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/HandlerAdapter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/HandlerExceptionResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/theme/CookieThemeResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/groovy/GroovyMarkupConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/AbstractHtmlElementTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/TagWriter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/ValueFormatter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/ResourceBundleViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-



jar/org/springframework/web/servlet/mvc/method/AbstractHandlerMethodAdapter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/condition/NameValueExpression.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/ContentVersionStrategy.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/support/RequestContextUtils.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/ContentNegotiatingViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/condition/CompositeRequestCondition.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/AbstractVersionStrategy.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/RequestPartMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/json/MappingJackson2JsonView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ResponseBodyAdvice.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/DefaultResourceResolverChain.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/RequestContextAwareTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/xml/MappingJackson2XmlView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/AbstractMessageConverterMethodArgumentResolver.  
java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/TextareaTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/FixedVersionStrategy.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/form/AbstractHtmlElementBodyTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/RequestResponseBodyMethodProcessor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/ArgumentTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/condition/AbstractNameValueExpression.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/DefaultResourceTransformerChain.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/json/AbstractJackson2View.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/support/AbstractAnnotationConfigDispatcherServletInitializer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/tags/ParamTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/MatrixVariableMapMethodArgumentResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/SimpleMappingExceptionHandler.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/feed/AbstractAtomFeedView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/GroovyMarkupConfigurerBeanDefinitionParser.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/AbstractFormTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/BindStatus.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/BindErrorsTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/feed/AbstractFeedView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/document/AbstractPdfStamperView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/HandlerMapping.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/freemarker/FreeMarkerView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/SimpleSpringPreparerFactory.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/EditorAwareTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/AbstractCheckedElementTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/TransformTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/FormTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/AbstractDataBoundFormElementTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/LabelTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/ModelAndViewDefiningException.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/ResourceTransformerChain.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/ButtonTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/AbstractMultiCheckedElementTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/AbstractDispatcherServletInitializer.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/HttpServletBean.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/HandlerMethodMappingNamingStrategy.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/MatrixVariableMethodArgumentResolver.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/WebJarsResourceResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/ResourceUrlProviderExposingInterceptor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/RouterFunction.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/CssLinkResourceTransformer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/DispatcherServlet.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/CachingResourceResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/RouterFunctionDsl.kt  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/DeferredResultMethodReturnValueHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/support/HandlerFunctionAdapter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/RequestContext.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/MvcNamespaceUtils.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/script/ScriptTemplateView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-

jar/org/springframework/web/servlet/mvc/WebContentInterceptor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/ServletWrappingController.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/function/HandlerFunction.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/PathVariableMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/function/DefaultRenderingResponseBuilder.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ViewMethodReturnValueHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ExceptionHandlerExceptionHandlerResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/ResourceUrlEncodingFilter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ResponseEntityExceptionHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/UrlBasedViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/function/HandlerFilterFunction.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/script/ScriptTemplateConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/SessionAttributeMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/i18n/LocaleChangeInterceptor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/function/EntityResponse.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/handler/SimpleUrlHandlerMapping.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/RequestMappingInfoHandlerMethodMappingNamingStrategy.java  
a  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/ServletInvocableHandlerMethod.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/function/ServerRequestExtensions.kt  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/handler/AbstractUrlHandlerMapping.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/DefaultRequestToViewNameTranslator.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/CachingResourceTransformer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/PathResourceResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/ServerResponse.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/ResourceHandlerFunction.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/InterceptorRegistration.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/HandlerInterceptor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/DefaultServletHandlerConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/ToStringVisitor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/ServerResponseExtensions.kt  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/AsyncSupportConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/AbstractRequestCondition.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/DelegatingWebMvcConfiguration.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/BeanNameUrlHandlerMapping.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/HandlerExceptionResolverComposite.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ViewNameMethodReturnValueHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/AbstractCachingViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/function/RenderingResponse.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/VersionResourceResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/EncodedResourceResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/script/ScriptTemplateConfig.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/StreamingResponseBodyReturnValueHandler.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2010 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/handler/DispatcherServletWebRequest.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/  
/\*\*  
\* A contract for inspecting and potentially modifying request data values such  
\* as URL query parameters or form field values before they are rendered by a  
\* view or before a redirect.  
\*  
\* <p>Implementations may use this contract for example as part of a solution  
\* to provide data integrity, confidentiality, protection against cross-site  
\* request forgery (CSRF), and others or for other tasks such as automatically  
\* adding a hidden field to all forms and URLs.  
\*  
\* <p>View technologies that support this contract can obtain an instance to  
\* delegate to via { @link RequestContext#getRequestDataValueProcessor() }.  
\*  
\* @author Rossen Stoyanchev  
\* @since 3.1  
\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/support/RequestDataValueProcessor.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2021 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/i18n/AcceptHeaderLocaleResolver.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/function/PathResourceLookupFunction.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/ExtendedServletRequestDataBinder.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/handler/AbstractHandlerExceptionResolver.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/function/support/RouterFunctionMapping.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/RequestBodyAdviceAdapter.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/mvc/support/DefaultHandlerExceptionResolver.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/handler/HandlerMappingIntrospector.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/handler/MatchableHandlerMapping.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/RequestMappingHandlerMapping.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/MvcUriComponentsBuilder.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/config/FreeMarkerConfigurerBeanDefinitionParser.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/handler/AbstractHandlerMethodMapping.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/function/RequestPredicate.java
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
```

jar/org/springframework/web/servlet/mvc/method/annotation/ReactiveTypeHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/ResourceUrlProvider.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/FrameworkServlet.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/RequestBodyAdvice.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/RequestMappingInfoHandlerMapping.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2007 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/theme/AbstractThemeResolver.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2009 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```



Found in path(s):

```
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/view/freemarker/FreeMarkerViewResolver.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* XSLT-driven View that allows for response context to be rendered as the
* result of an XSLT transformation.
*
* <p>The XSLT Source object is supplied as a parameter in the model and then
* { @link #locateSource detected} during response rendering. Users can either specify
* a specific entry in the model via the { @link #setSourceKey sourceKey} property or
* have Spring locate the Source object. This class also provides basic conversion
* of objects into Source implementations. See { @link #getSourceTypes() here}
* for more details.
*
* <p>All model parameters are passed to the XSLT Transformer as parameters.
* In addition the user can configure { @link #setOutputProperties output properties}
* to be passed to the Transformer.
*
* @author Rob Harrop
* @author Juergen Hoeller
* @since 2.0
*/
```

Found in path(s):

```
* /opt/cola/permits/1301486303_1649248822.91/0/spring-webmvc-5-2-20-release-sources-
jar/org/springframework/web/servlet/view/xslt/XsltView.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2016 the original author or authors.
*
*/
```

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/handler/RequestMatchResult.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/MvcNamespaceHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/DefaultServletHandlerBeanDefinitionParser.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/Controller.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/AbstractTemplateView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/StreamingResponseBody.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/tiles3/SpringLocaleResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/mvc/condition/RequestCondition.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurerAdapter.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurerComposite.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/resource/ResourceTransformer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/view/ViewResolverComposite.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-  
jar/org/springframework/web/servlet/config/InterceptorsBeanDefinitionParser.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at

\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/HiddenInputTag.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/i18n/AbstractLocaleResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/theme/ThemeChangeInterceptor.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/annotation/ModelAndViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/document/AbstractXlsxView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/VersionPathStrategy.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/groovy/GroovyMarkupViewResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/ArgumentAware.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/HtmlEscapingAwareTag.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/VersionStrategy.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/document/AbstractXlsxStreamingView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/NoHandlerFoundException.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/groovy/GroovyMarkupConfig.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/AbstractMappingJacksonResponseBodyAdvice.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/UrlBasedViewResolverRegistration.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/FlashMapManager.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/SessionFlashMapManager.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/PasswordInputTag.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/xslt/XsltViewResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/TilesViewResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/PathVariableMapMethodArgumentResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/ServletForwardingController.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/InternalResourceViewResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/LocaleContextResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/support/RedirectAttributesModelMap.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/script/ScriptTemplateViewResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/FlashMap.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/ViewControllerRegistration.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/TilesView.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/ThemeResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/i18n/SessionLocaleResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestAttributeMethodArgumentResolver.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/RequestToViewNameTranslator.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/EnableWebMvc.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/CallableMethodReturnValueHandler.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletWebArgumentResolverAdapter.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/HttpResource.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/Param.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/RedirectViewControllerRegistration.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/UriComponentsBuilderMethodArgumentResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/ViewControllerBeanDefinitionParser.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/InternalResourceView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/theme/FixedThemeResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/HandlerInterceptorAdapter.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/document/AbstractXlsView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/ResourceResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/i18n/AbstractLocaleContextResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/freemarker/FreeMarkerConfig.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/JstlUtils.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/UserRoleAuthorizationInterceptor.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/WebRequestHandlerInterceptorAdapter.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/theme/SessionThemeResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/ResourceChainRegistration.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/JstlView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ModelAndViewResolverMethodReturnValueHandler.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/i18n/FixedLocaleResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/LocaleResolver.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/ParameterizableViewController.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/AsyncTaskMethodReturnValueHandler.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/groovy/GroovyMarkupView.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/support/JspAwareRequestContext.java

\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/annotation/ResourceHandlerRegistration.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletModelAttributeMethodProcessor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/HttpHeadersReturnValueHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/AsyncHandlerInterceptor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/TilesConfigurer.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/AbstractUrlBasedView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ModelAndViewMethodReturnValueHandler.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/resource/AbstractResourceResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletRequestDataBinderFactory.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/feed/AbstractRssFeedView.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/config/CorsBeanDefinitionParser.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/JsonViewRequestBodyAdvice.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/AbstractHandlerMethodExceptionResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/SimpleServletPostProcessor.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/RequestConditionHolder.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/JsonViewResponseBodyAdvice.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RedirectAttributesMethodArgumentResolver.java  
\* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/SpringWildcardServletTilesApplicationContext.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2012 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/HttpRequestHandlerAdapter.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/SmartView.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/SpringBeanPreparerFactory.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/AbstractDetectingUrlHandlerMapping.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/SimpleControllerHandlerAdapter.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/view/tiles3/AbstractSpringPreparerFactory.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/LastModified.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/ParamAware.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/RadioButtonsTag.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/support/RedirectAttributes.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/ConversionServiceExposingInterceptor.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/handler/SimpleServletHandlerAdapter.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/OptionWriter.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/condition/MediaTypeExpression.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/tags/form/TagIdGenerator.java
- \* /opt/cola/permits/1301486303\_1649248822.91/0/spring-webmvc-5-2-20-release-sources-jar/org/springframework/web/servlet/mvc/AbstractUrlViewController.java

## 1.234 ethtool 3.2

### 1.234.1 Available under license :

ethtool is available under the terms of the GNU Public License version 2.

See COPYING for details.



## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further

restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.235 bean-validation-api 2.0.1.Final

### 1.235.1 Available under license :

Bean Validation API

License: Apache License, Version 2.0

See the license.txt file in the root directory or <<http://www.apache.org/licenses/LICENSE-2.0>>.

## 1.236 heimdal 7.7.0

### 1.236.1 Available under license :

Copyright (c) 1995 - 2014 Kungliga Tekniska Hgskolan  
(Royal Institute of Technology, Stockholm, Sweden).

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



Please see info documentation for the complete list of licenses.  
Copyright (c) 1992, 1993  
The Regents of the University of California. All rights reserved.

This code is derived from software contributed to Berkeley by  
Christos Zoulas of Cornell University.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors  
may be used to endorse or promote products derived from this software  
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
SUCH DAMAGE.

```
@macro copynext{ }
@vskip 20pt plus 1fil
@end macro
```

```
@macro copyrightstart{ }
@end macro
```

```
@macro copyrightend{ }
@end macro
```

```
@node Copyrights and Licenses, , Acknowledgments, Top
@comment node-name, next, previous, up
@appendix Copyrights and Licenses
```

@heading Kungliga Tekniska Hgskolan

@copyrightstart

@verbatim

Copyright (c) 1997-2011 Kungliga Tekniska Hgskolan  
(Royal Institute of Technology, Stockholm, Sweden).  
All rights reserved.

Portions Copyright (c) 2009 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. Neither the name of the Institute nor the names of its contributors  
may be used to endorse or promote products derived from this software  
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS ``AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
ARE DISCLAIMED. IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS BE LIABLE  
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
SUCH DAMAGE.

@end verbatim

@copynext

@heading Massachusetts Institute of Technology

The parts of the libtelnet that handle Kerberos.

@verbatim

Copyright (C) 1990 by the Massachusetts Institute of Technology

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

@end verbatim

@copynext

@heading The Regents of the University of California

The parts of the libroken, most of libtelnet, telnet, ftp, and popper.

@verbatim

Copyright (c) 1988, 1990, 1993

The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading The Regents of the University of California.

libedit

@verbatim

Copyright (c) 1992, 1993

The Regents of the University of California. All rights reserved.

This code is derived from software contributed to Berkeley by  
Christos Zoulas of Cornell University.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading TomsFastMath / LibTomMath

Tom's fast math (bignum support) and LibTomMath

@verbatim

LibTomMath is hereby released into the Public Domain.

@end verbatim

@copynext

@heading Doug Rabson

GSS-API mechlue layer.

@verbatim

Copyright (c) 2005 Doug Rabson

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading PADL Software Pty Ltd

@table @asis

@item GSS-API CFX, SPNEGO, naming extensions, API extensions.

@item KCM credential cache.

@item HDB LDAP backend.

@end table

@verbatim

Copyright (c) 2003-2011, PADL Software Pty Ltd.

Copyright (c) 2004, Andrew Bartlett.

Copyright (c) 2003 - 2008, Kungliga Tekniska Hgskolan

Copyright (c) 2015, Timothy Pearson.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of PADL Software nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY PADL SOFTWARE AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL PADL SOFTWARE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading Marko Kreen

Fortuna in libhcrypto

@verbatim

Copyright (c) 2005 Marko Kreen

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading NTT (Nippon Telegraph and Telephone Corporation)

Camellia in libhcrypto

@verbatim

Copyright (c) 2006,2007

NTT (Nippon Telegraph and Telephone Corporation) . All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the

documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY NTT ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL NTT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading The NetBSD Foundation, Inc.

vis.c in libroken

@verbatim

Copyright (c) 1999, 2005 The NetBSD Foundation, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext



@heading Vincent Rijmen, Antoon Bosselaers, Paulo Barreto

AES in libcrypto

@verbatim

rijndael-alg-fst.c

@version 3.0 (December 2000)

Optimised ANSI C code for the Rijndael cipher (now AES)

@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>

@author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>

@author Paulo Barreto <paulo.barreto@terra.com.br>

This code is hereby placed in the public domain.

THIS SOFTWARE IS PROVIDED BY THE AUTHORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading Apple, Inc

kdc/announce.c

@verbatim

Copyright (c) 2008 Apple Inc. All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and

distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Apple Inc. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Apple Inc. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

@end verbatim

@copynext

@heading Richard Outerbridge

DES core in libcrypto

@verbatim

D3DES (V5.09) -

A portable, public domain, version of the Data Encryption Standard.

Written with Symantec's THINK (Lightspeed) C by Richard Outerbridge. Thanks to: Dan Hoey for his excellent Initial and Inverse permutation code; Jim Gillogly & Phil Karn for the DES key schedule code; Dennis Ferguson, Eric Young and Dana How for comparing notes; and Ray Lau, for humouring me on.

Copyright (c) 1988,1989,1990,1991,1992 by Richard Outerbridge.  
(GENie : OUTER; CIS : [71755,204]) Graven Imagery, 1992.

@end verbatim

@copynext

@heading Secure Endpoints Inc

Windows support

@verbatim

Copyright (c) 2009-2015, Secure Endpoints Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copynext

@heading Novell, Inc

lib/hcrypto/test\_dh.c

@verbatim

Copyright (c) 2007, Novell, Inc.  
Author: Matthias Koenig <mkoenig@suse.de>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the Novell nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

@end verbatim

@copyrightend

## 1.237 xz 5.2.2

### 1.237.1 Available under license :

XZ Utils Licensing

=====

Different licenses apply to different files in this package. Here is a rough summary of which licenses apply to which parts of this package (but check the individual files to be sure!):

- liblzma is in the public domain.
- xz, xzdec, and lzmadec command line tools are in the public domain unless GNU getopt\_long had to be compiled and linked in from the lib directory. The getopt\_long code is under GNU LGPLv2.1+.
- The scripts to grep, diff, and view compressed files have been adapted from gzip. These scripts and their documentation are under GNU GPLv2+.

- All the documentation in the doc directory and most of the XZ Utils specific documentation files in other directories are in the public domain.
- Translated messages are in the public domain.
- The build system contains public domain files, and files that are under GNU GPLv2+ or GNU GPLv3+. None of these files end up in the binaries being built.
- Test files and test code in the tests directory, and debugging utilities in the debug directory are in the public domain.
- The extra directory may contain public domain files, and files that are under various free software licenses.

You can do whatever you want with the files that have been put into the public domain. If you find public domain legally problematic, take the previous sentence as a license grant. If you still find the lack of copyright legally problematic, you have too many lawyers.

As usual, this software is provided "as is", without any warranty.

If you copy significant amounts of public domain code from XZ Utils into your project, acknowledging this somewhere in your software is polite (especially if it is proprietary, non-free software), but naturally it is not legally required. Here is an example of a good notice to put into "about box" or into documentation:

This software includes code from XZ Utils <<https://tukaani.org/xz/>>.

The following license texts are included in the following files:

- COPYING.LGPLv2.1: GNU Lesser General Public License version 2.1
- COPYING.GPLv2: GNU General Public License version 2
- COPYING.GPLv3: GNU General Public License version 3

Note that the toolchain (compiler, linker etc.) may add some code pieces that are copyrighted. Thus, it is possible that e.g. liblzma binary wouldn't actually be in the public domain in its entirety even though it contains no copyrighted code from the XZ Utils source package.

If you have questions, don't hesitate to ask the author(s) for more information.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software

patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in

whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium



customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to

this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program

specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General

Public License instead of this License.

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to

authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying,

distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require,

such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's



users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not

used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of

it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently

reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted

by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying

the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the



GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with

the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

# 1.238 opencv 4.1.1

## 1.238.1 Available under license :

Copyright (C) 2016 The Android Open Source Project

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2011-2014 Idiap Research Institute (Ronan Collobert)

Copyright (c) 2012-2014 Deepmind Technologies (Koray Kavukcuoglu)

Copyright (c) 2011-2012 NEC Laboratories America (Koray Kavukcuoglu)

Copyright (c) 2011-2013 NYU (Clement Farabet)

Copyright (c) 2006-2010 NEC Laboratories America (Ronan Collobert, Leon Bottou, Iain Melvin, Jason Weston)

Copyright (c) 2006 Idiap Research Institute (Samy Bengio)

Copyright (c) 2001-2004 Idiap Research Institute (Ronan Collobert, Samy Bengio, Johnny Mariethoz)

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the names of Deepmind Technologies, NYU, NEC Laboratories America and IDIAP Research Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

BSD License

Copyright (c) 2000-2006, www.hamcrest.org  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Hamcrest nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2008-2015 The Khronos Group Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and/or associated documentation files (the "Materials"), to deal in the Materials without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Materials, and to

permit persons to whom the Materials are furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Materials.

MODIFICATIONS TO THIS FILE MAY MEAN IT NO LONGER ACCURATELY REFLECTS KHRONOS STANDARDS. THE UNMODIFIED, NORMATIVE VERSIONS OF KHRONOS SPECIFICATIONS AND HEADER INFORMATION ARE LOCATED AT <https://www.khronos.org/registry/>

THE MATERIALS ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE MATERIALS OR THE USE OR OTHER DEALINGS IN THE MATERIALS.

Copyright (c) 1988-1997 Sam Leffler

Copyright (c) 1991-1997 Silicon Graphics, Inc.

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that (i) the above copyright notices and this permission notice appear in all copies of the software and related documentation, and (ii) the names of Sam Leffler and Silicon Graphics may not be used in any advertising or publicity relating to the software without the specific, prior written permission of Sam Leffler and Silicon Graphics.

THE SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (C) 2001 Fabrice Bellard

FFmpeg is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

FFmpeg is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with FFmpeg; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

---

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)



"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has

a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a

medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by

this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license

restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by

the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

SCALA LICENSE

Copyright (c) 2002-2008 EPFL, Lausanne, unless otherwise specified.  
All rights reserved.

This software was developed by the Programming Methods Laboratory of the Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland.

Permission to use, copy, modify, and distribute this software in source or binary form for any purpose with or without fee is hereby granted, provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the



documentation and/or other materials provided with the distribution.

3. Neither the name of the EPFL nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2008, 2009, 2010 Steven Blundy, Josh Cough, Mark Harrah, Stuart Roebuck, Tony Sloane, Vesa Vilhonen, Jason Zaugg  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

quire -- QR-code recognition library

Copyright (C) 2010-2012 Daniel Beer <dlbeer@gmail.com>

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the

above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Simple Build Tool Launcher

Copyright 2008, 2009, 2010 Mark Harrah, David MacIver

Licensed under BSD-style license (see LICENSE)

Classes from the Scala library are distributed with the launcher.

Copyright 2002-2008 EPFL, Lausanne

Licensed under BSD-style license (see licenses/LICENSE\_Scala)

JLine is distributed with the launcher.

It is licensed under a BSD-style license (see licenses/LICENSE\_JLine)

Classes from Apache Ivy, licensed under the Apache License, Version 2.0

(see licenses/LICENSE\_Apache) are distributed with the launcher.

It requires the following notice:

This product includes software developed by

The Apache Software Foundation (<http://www.apache.org/>).

Portions of Ivy were originally developed by

Jayasoft SARL (<http://www.jayasoft.fr/>)

and are licensed to the Apache Software Foundation under the

"Software Grant License Agreement"

THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too. When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all. The precise terms and conditions for copying, distribution and modification follow.

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the

Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program. In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2006, Industrial Light & Magic, a division of Lucasfilm

Entertainment Company Ltd. Portions contributed and copyright held by

others as indicated. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Industrial Light & Magic nor the names of any other contributors to this software may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This license applies to all parts of Protocol Buffers except the following:

- Atomicops support for generic gcc, located in `src/google/protobuf/stubs/atomicops_internals_generic_gcc.h`.  
This file is copyrighted by Red Hat Inc.
- Atomicops support for AIX/POWER, located in `src/google/protobuf/stubs/atomicops_internals_power.h`.  
This file is copyrighted by Bloomberg Finance LP.

Copyright 2014, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

libjpeg-turbo Licenses

=====

libjpeg-turbo is covered by three compatible BSD-style open source licenses:

- The IJG (Independent JPEG Group) License, which is listed in [README.ijg](README.ijg)

This license applies to the libjpeg API library and associated programs (any code inherited from libjpeg, and any modifications to that code.)

- The Modified (3-clause) BSD License, which is listed below

This license covers the TurboJPEG API library and associated programs, as well as the build system.

- The [zlib License](<https://opensource.org/licenses/Zlib>)

This license is a subset of the other two, and it covers the libjpeg-turbo SIMD extensions.

Complying with the libjpeg-turbo Licenses

=====



This section provides a roll-up of the libjpeg-turbo licensing terms, to the best of our understanding.

1. If you are distributing a modified version of the libjpeg-turbo source, then:

1. You cannot alter or remove any existing copyright or license notices from the source.

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 1 of the Modified BSD License
- Clauses 1 and 3 of the zlib License

2. You must add your own copyright notice to the header of each source file you modified, so others can tell that you modified that file (if there is not an existing copyright header in that file, then you can simply add a notice stating that you modified the file.)

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 2 of the zlib License

3. You must include the IJG README file, and you must not alter any of the copyright or license text in that file.

**\*\*Origin\*\***

- Clause 1 of the IJG License

2. If you are distributing only libjpeg-turbo binaries without the source, or if you are distributing an application that statically links with libjpeg-turbo, then:

1. Your product documentation must include a message stating:

This software is based in part on the work of the Independent JPEG Group.

**\*\*Origin\*\***

- Clause 2 of the IJG license

2. If your binary distribution includes or uses the TurboJPEG API, then your product documentation must include the text of the Modified BSD License (see below.)

**\*\*Origin\*\***

- Clause 2 of the Modified BSD License

3. You cannot use the name of the IJG or The libjpeg-turbo Project or the contributors thereof in advertising, publicity, etc.

**\*\*Origin\*\***

- IJG License
- Clause 3 of the Modified BSD License

4. The IJG and The libjpeg-turbo Project do not warrant libjpeg-turbo to be free of defects, nor do we accept any liability for undesirable consequences resulting from your use of the software.

**\*\*Origin\*\***

- IJG License
- Modified BSD License
- zlib License

The Modified (3-clause) BSD License

=====

Copyright (C)2009-2019 D. R. Commander. All Rights Reserved.

Copyright (C)2015 Viktor Szathmry. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the libjpeg-turbo Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS", AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## Why Three Licenses?

=====

The zlib License could have been used instead of the Modified (3-clause) BSD License, and since the IJG License effectively subsumes the distribution conditions of the zlib License, this would have effectively placed libjpeg-turbo binary distributions under the IJG License. However, the IJG License specifically refers to the Independent JPEG Group and does not extend attribution and endorsement protections to other entities. Thus, it was desirable to choose a license that granted us the same protections for new code that were granted to the IJG for code derived from their software.

```
<?xml version="1.0"?>
<opencv_storage>
<!-- Automatically converted from haarcascade2, window size = 64x16 -->
<haarcascade_pltzzz64x16_16STG type_id="opencv-haar-classifier">
 <size>
 64 16</size>
 <stages>
 <_>
 <!-- stage 0 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 32 2 8 6 -1.</_>
 <_>
 32 4 8 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.6915600746870041e-002</threshold>
 <left_val>-9.5547717809677124e-001</left_val>
 <right_val>8.9129137992858887e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 4 6 10 -1.</_>
 <_>
 3 4 3 10 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.4228349328041077e-002</threshold>
 <_>
 </_>
 </_>
 </trees>
 </_>
 </stages>
</haarcascade_pltzzz64x16_16STG>
</opencv_storage>
```

```

<left_val>-9.2089319229125977e-001</left_val>
<right_val>8.8723921775817871e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 55 0 8 6 -1.</_>
 <_>
 55 0 4 3 2.</_>
 <_>
 59 3 4 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.0168660432100296e-002</threshold>
 <left_val>8.8940089941024780e-001</left_val>
 <right_val>-7.7847331762313843e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 44 7 4 9 -1.</_>
 <_>
 44 10 4 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.0863260142505169e-003</threshold>
 <left_val>-8.7998157739639282e-001</left_val>
 <right_val>5.8651781082153320e-001</right_val></_></_></trees>
<stage_threshold>-2.0683259963989258e+000</stage_threshold>
<parent>-1</parent>
<next>-1</next></_>
<_>
<!-- stage 1 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 29 1 16 4 -1.</_>
 <_>
 29 3 16 2 2.</_></rects>

```

```

 <tilted>0</tilted></feature>
 <threshold>2.9062159359455109e-002</threshold>
 <left_val>-8.7765061855316162e-001</left_val>
 <right_val>8.5373121500015259e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 5 9 8 -1.</_>
 <_>
 3 5 3 8 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3903399705886841e-002</threshold>
 <left_val>-9.2079448699951172e-001</left_val>
 <right_val>7.5155001878738403e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 44 0 20 14 -1.</_>
 <_>
 44 0 10 7 2.</_>
 <_>
 54 7 10 7 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-3.5404648631811142e-002</threshold>
 <left_val>6.7834627628326416e-001</left_val>
 <right_val>-9.0937072038650513e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 41 7 6 9 -1.</_>
 <_>
 43 7 2 9 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.2988721765577793e-003</threshold>
 <left_val>-8.1054258346557617e-001</left_val>
 <right_val>5.8985030651092529e-001</right_val></_></_>

```

```

<_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 4 21 4 -1.</_>
 <_>
 7 4 7 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.4959490876644850e-003</threshold>
 <left_val>-9.7632282972335815e-001</left_val>
 <right_val>4.5473039150238037e-001</right_val></_></_></trees>
 <stage_threshold>-1.6632349491119385e+000</stage_threshold>
 <parent>0</parent>
 <next>-1</next></_>
 <_>
 <!-- stage 2 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 31 2 11 6 -1.</_>
 <_>
 31 4 11 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3864099755883217e-002</threshold>
 <left_val>-9.3137168884277344e-001</left_val>
 <right_val>8.2478952407836914e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 3 6 11 -1.</_>
 <_>
 59 3 3 11 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.5775209069252014e-002</threshold>
 <left_val>8.5526448488235474e-001</left_val>
 <right_val>8.7574672698974609e-001</right_val></_></_>

```

```

<_>
<!-- tree 2 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 32 14 32 2 -1.</_>
 <_>
 32 15 32 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.0646049864590168e-002</threshold>
 <left_val>8.5167151689529419e-001</left_val>
 <right_val>-6.7789041996002197e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 2 8 14 -1.</_>
 <_>
 4 2 4 14 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.7000989764928818e-002</threshold>
 <left_val>-8.0041092634201050e-001</left_val>
 <right_val>6.4893317222595215e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 19 0 22 6 -1.</_>
 <_>
 19 0 11 3 2.</_>
 <_>
 30 3 11 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>5.2989721298217773e-003</threshold>
 <left_val>-9.5342522859573364e-001</left_val>
 <right_val>5.0140267610549927e-001</right_val></_></_></trees>
<stage_threshold>-1.3346730470657349e+000</stage_threshold>
<parent>1</parent>
<next>-1</next></_>
<_>

```

```

<!-- stage 3 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 0 6 6 -1.</_>
 <_>
 56 0 3 3 2.</_>
 <_>
 59 3 3 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-6.9233630783855915e-003</threshold>
 <left_val>8.2654470205307007e-001</left_val>
 <right_val>-8.5396027565002441e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 32 0 14 12 -1.</_>
 <_>
 32 0 7 6 2.</_>
 <_>
 39 6 7 6 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.2539249658584595e-001</threshold>
 <left_val>-1.2996139936149120e-002</left_val>
 <right_val>-3.2377028808593750e+003</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 2 1 43 4 -1.</_>
 <_>
 2 3 43 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.3474893569946289e-002</threshold>
 <left_val>-6.4648061990737915e-001</left_val>
 <right_val>8.2302427291870117e-001</right_val></_></_>
 <_>
 </_>
 </_>
 </_>
 </_>
 </_>
 </_>
 </_>
 </_>
</trees>

```



```

<_>
<!-- tree 3 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 34 10 30 5 -1.</_>
 <_>
 44 10 10 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.2217150330543518e-002</threshold>
 <left_val>-7.5190877914428711e-001</left_val>
 <right_val>6.3705182075500488e-001</right_val></_></_>
 <_>
<!-- tree 4 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 9 9 5 -1.</_>
 <_>
 3 9 3 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.0000640302896500e-002</threshold>
 <left_val>-6.2077498435974121e-001</left_val>
 <right_val>6.1317932605743408e-001</right_val></_></_></trees>
<stage_threshold>-1.6521669626235962e+000</stage_threshold>
<parent>2</parent>
<next>-1</next></_>
<_>
<!-- stage 4 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 2 1 43 6 -1.</_>
 <_>
 2 3 43 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>9.2297486960887909e-002</threshold>
 <left_val>-7.2764229774475098e-001</left_val>
 <right_val>8.0554759502410889e-001</right_val></_></_>
 <_>
 </_>
 </_>
</trees>

```

```

<>
<!-- tree 1 -->
<>
<!-- root node -->
<feature>
<rects>
<>
53 4 9 8 -1.</_>
<>
56 4 3 8 3.</_></rects>
<tilted>0</tilted></feature>
<threshold>2.7613969519734383e-002</threshold>
<left_val>-7.0769268274307251e-001</left_val>
<right_val>7.3315787315368652e-001</right_val></_></_>
<>
<!-- tree 2 -->
<>
<!-- root node -->
<feature>
<rects>
<>
36 4 14 8 -1.</_>
<>
36 4 7 4 2.</_>
<>
43 8 7 4 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>1.2465449981391430e-002</threshold>
<left_val>-8.4359270334243774e-001</left_val>
<right_val>5.7046437263488770e-001</right_val></_></_>
<>
<!-- tree 3 -->
<>
<!-- root node -->
<feature>
<rects>
<>
14 14 49 2 -1.</_>
<>
14 15 49 1 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>-2.3886829614639282e-002</threshold>
<left_val>8.2656508684158325e-001</left_val>
<right_val>-5.2783298492431641e-001</right_val></_></_></trees>
<stage_threshold>-1.4523630142211914e+000</stage_threshold>
<parent>3</parent>
<next>-1</next></_>
<>

```

```

<!-- stage 5 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 5 4 9 -1.</_>
 <_>
 2 5 2 9 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.8821349367499352e-002</threshold>
 <left_val>-8.1122857332229614e-001</left_val>
 <right_val>6.9127470254898071e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 21 1 38 4 -1.</_>
 <_>
 21 3 38 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.1703320592641830e-002</threshold>
 <left_val>-7.6482647657394409e-001</left_val>
 <right_val>6.4212161302566528e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 44 12 18 3 -1.</_>
 <_>
 53 12 9 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.6298670321702957e-002</threshold>
 <left_val>5.0207728147506714e-001</left_val>
 <right_val>8.4020161628723145e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->

```

```

<feature>
 <rects>
 <_>
 10 4 9 3 -1.</_>
 <_>
 13 4 3 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-4.9458951689302921e-003</threshold>
 <left_val>6.1991941928863525e-001</left_val>
 <right_val>-6.1633539199829102e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 40 4 10 4 -1.</_>
 <_>
 45 4 5 4 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-5.1894597709178925e-003</threshold>
 <left_val>4.4975179433822632e-001</left_val>
 <right_val>-8.0651968717575073e-001</right_val></_></_>
<_>
<!-- tree 5 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 17 14 47 2 -1.</_>
 <_>
 17 15 47 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.8824130296707153e-002</threshold>
 <left_val>6.1992841958999634e-001</left_val>
 <right_val>-5.5643159151077271e-001</right_val></_></_>
<_>
<!-- tree 6 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 8 5 4 7 -1.</_>
 <_>
 10 5 2 7 2.</_></rects>

```

```

 <tilted>0</tilted></feature>
 <threshold>5.6571601890027523e-003</threshold>
 <left_val>-4.8346561193466187e-001</left_val>
 <right_val>6.8647360801696777e-001</right_val></_></_></trees>
<stage_threshold>-2.2358059883117676e+000</stage_threshold>
<parent>4</parent>
<next>-1</next></_>
<_>
<!-- stage 6 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 0 6 6 -1.</_>
 <_>
 56 0 3 3 2.</_>
 <_>
 59 3 3 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-9.1503243893384933e-003</threshold>
 <left_val>6.8174481391906738e-001</left_val>
 <right_val>-7.7866071462631226e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 0 6 6 -1.</_>
 <_>
 0 0 3 3 2.</_>
 <_>
 3 3 3 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>7.4933180585503578e-003</threshold>
 <left_val>-6.8696027994155884e-001</left_val>
 <right_val>6.6913938522338867e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>

```

```

 <_>
 13 4 48 2 -1.</_>
 <_>
 29 4 16 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.5296419411897659e-002</threshold>
 <left_val>-7.3576509952545166e-001</left_val>
 <right_val>5.9453499317169189e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 42 1 6 15 -1.</_>
 <_>
 42 6 6 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.1669679544866085e-002</threshold>
 <left_val>-8.4733831882476807e-001</left_val>
 <right_val>4.5461329817771912e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 30 8 3 5 -1.</_>
 <_>
 31 8 1 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.5769430212676525e-003</threshold>
 <left_val>-5.8270388841629028e-001</left_val>
 <right_val>7.7900522947311401e-001</right_val></_></_>
 <_>
 <!-- tree 5 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 55 10 8 6 -1.</_>
 <_>
 55 13 8 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.4139170525595546e-003</threshold>

```

```

<left_val>4.5126929879188538e-001</left_val>
<right_val>-9.0696328878402710e-001</right_val></_></_></trees>
<stage_threshold>-1.8782069683074951e+000</stage_threshold>
<parent>5</parent>
<next>-1</next></_>
<_>
<!-- stage 7 -->
<trees>
<_>
<!-- tree 0 -->
<_>
<!-- root node -->
<feature>
<rects>
<_>
4 6 4 7 -1.</_>
<_>
6 6 2 7 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>-5.3149578161537647e-003</threshold>
<left_val>6.5218788385391235e-001</left_val>
<right_val>-7.9464268684387207e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
<rects>
<_>
56 3 6 8 -1.</_>
<_>
59 3 3 8 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>-2.2906960919499397e-002</threshold>
<left_val>6.6433382034301758e-001</left_val>
<right_val>-7.3633247613906860e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
<rects>
<_>
37 2 4 6 -1.</_>
<_>
37 4 4 2 3.</_></rects>
<tilted>0</tilted></feature>
<threshold>9.4887977465987206e-003</threshold>

```

```

<left_val>-8.2612031698226929e-001</left_val>
<right_val>4.9333500862121582e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 10 30 6 -1.</_>
 <_>
 0 12 30 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.5138411223888397e-002</threshold>
 <left_val>-5.4704028367996216e-001</left_val>
 <right_val>7.6927912235260010e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 4 21 12 -1.</_>
 <_>
 7 4 7 12 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.5049019604921341e-002</threshold>
 <left_val>-8.6739641427993774e-001</left_val>
 <right_val>5.2807968854904175e-001</right_val></_></_></trees>
<stage_threshold>-1.0597369670867920e+000</stage_threshold>
<parent>6</parent>
<next>-1</next></_>
<_>
<!-- stage 8 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 44 0 1 14 -1.</_>
 <_>
 44 7 1 7 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.6414438188076019e-003</threshold>

```



```

<left_val>-7.7290147542953491e-001</left_val>
<right_val>6.9723731279373169e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 54 3 4 3 -1.</_>
 <_>
 56 3 2 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.4703629314899445e-003</threshold>
 <left_val>-7.4289917945861816e-001</left_val>
 <right_val>6.6825848817825317e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 32 0 30 6 -1.</_>
 <_>
 32 0 15 3 2.</_>
 <_>
 47 3 15 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.2910499945282936e-002</threshold>
 <left_val>4.3986389040946960e-001</left_val>
 <right_val>-9.0588808059692383e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 8 9 7 -1.</_>
 <_>
 3 8 3 7 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.4193221479654312e-002</threshold>
 <left_val>-6.9507479667663574e-001</left_val>
 <right_val>6.2501090764999390e-001</right_val></_></_>
<_>
<!-- tree 4 -->

```

```

<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 30 10 3 3 -1.</_>
 <_>
 31 10 1 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.5060020377859473e-003</threshold>
 <left_val>-6.8670761585235596e-001</left_val>
 <right_val>8.2241541147232056e-001</right_val></_></_>
<_>
<!-- tree 5 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 21 3 24 4 -1.</_>
 <_>
 29 3 8 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.9838380467263050e-005</threshold>
 <left_val>-9.2727631330490112e-001</left_val>
 <right_val>6.4723730087280273e-001</right_val></_></_>
<_>
<!-- tree 6 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 42 3 12 6 -1.</_>
 <_>
 46 3 4 6 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.2170299416757189e-005</threshold>
 <left_val>5.6555831432342529e-001</left_val>
 <right_val>-9.6788132190704346e-001</right_val></_></_></trees>
<stage_threshold>-1.4993519783020020e+000</stage_threshold>
<parent>7</parent>
<next>-1</next></_>
<_>
<!-- stage 9 -->
<trees>
 <_>
 <!-- tree 0 -->

```

```

<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 9 6 6 -1.</_>
 <_>
 59 9 3 6 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.1395259760320187e-002</threshold>
 <left_val>7.1383631229400635e-001</left_val>
 <right_val>-8.7429678440093994e-001</right_val></_></_>
<_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 6 4 1 6 -1.</_>
 <_>
 6 7 1 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.1864590235054493e-003</threshold>
 <left_val>8.5311782360076904e-001</left_val>
 <right_val>-6.4777731895446777e-001</right_val></_></_>
<_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 0 12 4 -1.</_>
 <_>
 0 0 6 2 2.</_>
 <_>
 6 2 6 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3193720262497663e-003</threshold>
 <left_val>-7.6411879062652588e-001</left_val>
 <right_val>7.1867972612380981e-001</right_val></_></_>
<_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>

```

```

 <_>
 43 12 18 2 -1.</_>
 <_>
 52 12 9 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-7.9916073009371758e-003</threshold>
 <left_val>6.6442942619323730e-001</left_val>
 <right_val>-7.9540950059890747e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 9 5 2 8 -1.</_>
 <_>
 10 5 1 8 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.4212740352377295e-003</threshold>
 <left_val>-6.3904231786727905e-001</left_val>
 <right_val>7.5050598382949829e-001</right_val></_></_></trees>
 <stage_threshold>-8.4829801321029663e-001</stage_threshold>
 <parent>8</parent>
 <next>-1</next></_>
 <_>
 <!-- stage 10 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 1 9 6 3 -1.</_>
 <_>
 3 9 2 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.4091659151017666e-003</threshold>
 <left_val>-8.8425230979919434e-001</left_val>
 <right_val>9.9953681230545044e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>

```

```

 <_>
 56 8 2 8 -1.</_>
 <_>
 56 12 2 4 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-6.3316390151157975e-004</threshold>
 <left_val>8.3822172880172729e-001</left_val>
 <right_val>-9.8322170972824097e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 24 2 6 13 -1.</_>
 <_>
 26 2 2 13 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-6.4947169448714703e-005</threshold>
 <left_val>1.</left_val>
 <right_val>-9.1822808980941772e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 33 7 24 4 -1.</_>
 <_>
 41 7 8 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>5.3404141217470169e-003</threshold>
 <left_val>-9.4317251443862915e-001</left_val>
 <right_val>9.0425151586532593e-001</right_val></_></_></trees>
 <stage_threshold>-6.0007210820913315e-002</stage_threshold>
 <parent>9</parent>
 <next>-1</next></_>
 <_>
 <!-- stage 11 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>

```

```

<_>
 1 1 57 4 -1.</_>
<_>
 1 3 57 2 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>1.0755469650030136e-001</threshold>
<left_val>-7.1647202968597412e-001</left_val>
<right_val>8.7827038764953613e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
<rects>
<_>
 0 2 6 14 -1.</_>
<_>
 3 2 3 14 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>3.1668949872255325e-002</threshold>
<left_val>-8.7051069736480713e-001</left_val>
<right_val>5.8807212114334106e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
<rects>
<_>
 52 3 6 10 -1.</_>
<_>
 54 3 2 10 3.</_></rects>
<tilted>0</tilted></feature>
<threshold>-1.0572380386292934e-002</threshold>
<left_val>6.2438100576400757e-001</left_val>
<right_val>-7.4027371406555176e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
<rects>
<_>
 1 14 61 2 -1.</_>
<_>
 1 15 61 1 2.</_></rects>
<tilted>0</tilted></feature>
<threshold>-2.7396259829401970e-002</threshold>

```

```

<left_val>8.9776748418807983e-001</left_val>
<right_val>-5.2986758947372437e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 28 0 11 12 -1.</_>
 <_>
 28 4 11 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.5918649509549141e-002</threshold>
 <left_val>-8.6482518911361694e-001</left_val>
 <right_val>5.3121817111968994e-001</right_val></_></_></trees>
<stage_threshold>-9.6125108003616333e-001</stage_threshold>
<parent>10</parent>
<next>-1</next></_>
<_>
<!-- stage 12 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 22 1 41 4 -1.</_>
 <_>
 22 3 41 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>7.1039132773876190e-002</threshold>
 <left_val>-7.5719678401947021e-001</left_val>
 <right_val>7.5645631551742554e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 41 6 6 8 -1.</_>
 <_>
 43 6 2 8 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>7.6241148635745049e-003</threshold>

```

```

<left_val>-7.9783838987350464e-001</left_val>
<right_val>7.1733069419860840e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 50 9 14 5 -1.</_>
 <_>
 57 9 7 5 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.7092639356851578e-002</threshold>
 <left_val>6.0071170330047607e-001</left_val>
 <right_val>8.4794402122497559e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 4 1 12 5 -1.</_>
 <_>
 10 1 6 5 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-8.1267888890579343e-004</threshold>
 <left_val>5.9364068508148193e-001</left_val>
 <right_val>8.9295238256454468e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 37 9 3 3 -1.</_>
 <_>
 38 9 1 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>8.3705072756856680e-004</threshold>
 <left_val>-6.4887362718582153e-001</left_val>
 <right_val>7.8537952899932861e-001</right_val></_></_></trees>
<stage_threshold>-1.0618970394134521e+000</stage_threshold>
<parent>11</parent>
<next>-1</next></_>
<_>

```



```

<!-- stage 13 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 54 0 10 6 -1.</_>
 <_>
 54 0 5 3 2.</_>
 <_>
 59 3 5 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-9.7556859254837036e-003</threshold>
 <left_val>7.6982218027114868e-001</left_val>
 <right_val>-8.5293501615524292e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 47 0 6 11 -1.</_>
 <_>
 49 0 2 11 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-8.6617246270179749e-003</threshold>
 <left_val>8.4029090404510498e-001</left_val>
 <right_val>-7.1949690580368042e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 19 2 20 2 -1.</_>
 <_>
 19 3 20 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.6897840425372124e-002</threshold>
 <left_val>-5.3601992130279541e-001</left_val>
 <right_val>9.5484441518783569e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->

```

```

<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 14 4 6 11 -1.</_>
 <_>
 17 4 3 11 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.7526158596156165e-005</threshold>
 <left_val>-7.6412862539291382e-001</left_val>
 <right_val>7.5398761034011841e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 31 9 33 2 -1.</_>
 <_>
 42 9 11 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.5607670694589615e-003</threshold>
 <left_val>-9.9346441030502319e-001</left_val>
 <right_val>6.4864277839660645e-001</right_val></_></_></trees>
<stage_threshold>-7.3307347297668457e-001</stage_threshold>
<parent>12</parent>
<next>-1</next></_>
<_>
<!-- stage 14 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 6 1 53 6 -1.</_>
 <_>
 6 3 53 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.0103269666433334e-001</threshold>
 <left_val>-7.3275578022003174e-001</left_val>
 <right_val>8.4619927406311035e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->

```

```

<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 49 9 4 6 -1.</_>
 <_>
 49 9 2 3 2.</_>
 <_>
 51 12 2 3 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-2.8920811018906534e-004</threshold>
<left_val>7.1564781665802002e-001</left_val>
<right_val>-8.8221758604049683e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 9 30 7 -1.</_>
 <_>
 10 9 10 7 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>1.0838840156793594e-002</threshold>
<left_val>-8.7420248985290527e-001</left_val>
<right_val>6.0648679733276367e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 40 4 6 2 -1.</_>
 <_>
 42 4 2 2 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>5.0803890917450190e-004</threshold>
<left_val>-9.0554022789001465e-001</left_val>
<right_val>6.4213967323303223e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>

```

```

 <_>
 1 9 6 1 -1.</_>
 <_>
 3 9 2 1 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3357039317488670e-003</threshold>
 <left_val>-9.2574918270111084e-001</left_val>
 <right_val>8.6384928226470947e-001</right_val></_></_>
 <_>
 <!-- tree 5 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 47 3 4 10 -1.</_>
 <_>
 47 8 4 5 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>8.0239427916239947e-005</threshold>
 <left_val>-9.9618428945541382e-001</left_val>
 <right_val>9.5355111360549927e-001</right_val></_></_>
 <_>
 <!-- tree 6 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 31 5 30 11 -1.</_>
 <_>
 41 5 10 11 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.2030208967626095e-003</threshold>
 <left_val>-1.</left_val>
 <right_val>1.0001050233840942e+000</right_val></_></_>
 <_>
 <!-- tree 7 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 0 2 1 -1.</_>
 <_>
 1 0 1 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>0.</threshold>

```

```

<left_val>0.</left_val>
<right_val>-1.</right_val></_></_>
<_>
<!-- tree 8 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 21 3 42 5 -1.</_>
 <_>
 35 3 14 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.6143440045416355e-003</threshold>
 <left_val>-1.</left_val>
 <right_val>1.0002139806747437e+000</right_val></_></_>
<_>
<!-- tree 9 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 0 2 1 -1.</_>
 <_>
 1 0 1 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>0.</threshold>
 <left_val>0.</left_val>
 <right_val>-1.</right_val></_></_>
<_>
<!-- tree 10 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 8 5 30 9 -1.</_>
 <_>
 8 8 30 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-7.0475979009643197e-004</threshold>
 <left_val>1.</left_val>
 <right_val>-9.9976968765258789e-001</right_val></_></_>
<_>
<!-- tree 11 -->
<_>
<!-- root node -->

```

```

<feature>
 <rects>
 <_>
 3 12 33 3 -1.</_>
 <_>
 14 12 11 3 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.1271279547363520e-003</threshold>
<left_val>-9.9694627523422241e-001</left_val>
<right_val>1.0002720355987549e+000</right_val></_></_>
<_>
<!-- tree 12 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 0 3 2 -1.</_>
 <_>
 1 0 1 2 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-2.4224430671893060e-004</threshold>
<left_val>1.</left_val>
<right_val>-1.</right_val></_></_>
<_>
<!-- tree 13 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 46 4 3 8 -1.</_>
 <_>
 47 4 1 8 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>7.4700301047414541e-004</threshold>
<left_val>-9.9108231067657471e-001</left_val>
<right_val>9.9941182136535645e-001</right_val></_></_></trees>
<stage_threshold>-1.0991690158843994e+000</stage_threshold>
<parent>13</parent>
<next>-1</next></_>
<_>
<!-- stage 15 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->

```

```

<feature>
 <rects>
 <_>
 1 2 6 5 -1.</_>
 <_>
 3 2 2 5 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>1.7227890202775598e-003</threshold>
<left_val>-9.3608891963958740e-001</left_val>
<right_val>8.7251222133636475e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 3 18 5 -1.</_>
 <_>
 6 3 6 5 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.7599320746958256e-003</threshold>
<left_val>-9.9757021665573120e-001</left_val>
<right_val>1.0000289678573608e+000</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 3 1 6 14 -1.</_>
 <_>
 6 1 3 14 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-8.9444358309265226e-005</threshold>
<left_val>1.</left_val>
<right_val>-9.9264812469482422e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 3 6 2 10 -1.</_>
 <_>
 3 11 2 5 2.</_></rects>

```

```

 <tilted>0</tilted></feature>
 <threshold>-2.7962020249105990e-004</threshold>
 <left_val>8.2833290100097656e-001</left_val>
 <right_val>-9.8444151878356934e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 42 0 4 6 -1.</_>
 <_>
 42 0 2 3 2.</_>
 <_>
 44 3 2 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.7560539820115082e-005</threshold>
 <left_val>1.</left_val>
 <right_val>-9.9543339014053345e-001</right_val></_></_></trees>
 <stage_threshold>-9.1314977407455444e-001</stage_threshold>
 <parent>14</parent>
 <next>-1</next></_></stages></haarcascade_pltzzz64x16_16STG>
</opencv_storage>

```

JasPer License Version 2.0

Copyright (c) 2001-2006 Michael David Adams

Copyright (c) 1999-2000 Image Power, Inc.

Copyright (c) 1999-2000 The University of British Columbia

All rights reserved.

Permission is hereby granted, free of charge, to any person (the "User") obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

1. The above copyright notices and this permission notice (which includes the disclaimer below) shall be included in all copies or substantial portions of the Software.
2. The name of a copyright holder shall not be used to endorse or promote products derived from the Software without specific prior written permission.



THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF THE SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER. THE SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. NO ASSURANCES ARE PROVIDED BY THE COPYRIGHT HOLDERS THAT THE SOFTWARE DOES NOT INFRINGE THE PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY OTHER ENTITY. EACH COPYRIGHT HOLDER DISCLAIMS ANY LIABILITY TO THE USER FOR CLAIMS BROUGHT BY ANY OTHER ENTITY BASED ON INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OR OTHERWISE. AS A CONDITION TO EXERCISING THE RIGHTS GRANTED HEREUNDER, EACH USER HEREBY ASSUMES SOLE RESPONSIBILITY TO SECURE ANY OTHER INTELLECTUAL PROPERTY RIGHTS NEEDED, IF ANY. THE SOFTWARE IS NOT FAULT-TOLERANT AND IS NOT INTENDED FOR USE IN MISSION-CRITICAL SYSTEMS, SUCH AS THOSE USED IN THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL SYSTEMS, DIRECT LIFE SUPPORT MACHINES, OR WEAPONS SYSTEMS, IN WHICH THE FAILURE OF THE SOFTWARE OR SYSTEM COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE ("HIGH RISK ACTIVITIES"). THE COPYRIGHT HOLDERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR HIGH RISK ACTIVITIES.

Copyright (c) 2011, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License for Berkeley SoftFloat Release 3c

John R. Hauser  
2017 February 10

The following applies to the whole of SoftFloat Release 3c as well as to each source file individually.

Copyright 2011, 2012, 2013, 2014, 2015, 2016, 2017 The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS", AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

By downloading, copying, installing or using the software you agree to this license.

If you do not agree to this license, do not download, install, copy or use the software.

License Agreement  
For Open Source Computer Vision Library  
(3-clause BSD License)

Copyright (C) 2000-2019, Intel Corporation, all rights reserved.  
Copyright (C) 2009-2011, Willow Garage Inc., all rights reserved.  
Copyright (C) 2009-2016, NVIDIA Corporation, all rights reserved.  
Copyright (C) 2010-2013, Advanced Micro Devices, Inc., all rights reserved.  
Copyright (C) 2015-2016, OpenCV Foundation, all rights reserved.



Copyright (c) 1999-2000 Image Power, Inc.  
Copyright (c) 1999-2000 The University of British Columbia  
Copyright (c) 2001-2003 Michael David Adams

All rights reserved.

Permission is hereby granted, free of charge, to any person (the "User") obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

1. The above copyright notices and this permission notice (which includes the disclaimer below) shall be included in all copies or substantial portions of the Software.
2. The name of a copyright holder shall not be used to endorse or promote products derived from the Software without specific prior written permission.

THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF THE SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER. THE SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. NO ASSURANCES ARE PROVIDED BY THE COPYRIGHT HOLDERS THAT THE SOFTWARE DOES NOT INFRINGE THE PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY OTHER ENTITY. EACH COPYRIGHT HOLDER DISCLAIMS ANY LIABILITY TO THE USER FOR CLAIMS BROUGHT BY ANY OTHER ENTITY BASED ON INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OR OTHERWISE. AS A CONDITION TO EXERCISING THE RIGHTS GRANTED HEREUNDER, EACH USER HEREBY ASSUMES SOLE RESPONSIBILITY TO SECURE ANY OTHER INTELLECTUAL PROPERTY RIGHTS NEEDED, IF ANY. THE SOFTWARE IS NOT FAULT-TOLERANT AND IS NOT INTENDED FOR USE IN MISSION-CRITICAL SYSTEMS, SUCH AS THOSE USED IN THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL SYSTEMS, DIRECT LIFE SUPPORT MACHINES, OR WEAPONS SYSTEMS, IN WHICH THE FAILURE OF THE SOFTWARE OR SYSTEM COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE ("HIGH RISK ACTIVITIES"). THE COPYRIGHT HOLDERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR HIGH RISK ACTIVITIES.

Copyright (c) 2002-2006, Marc Prud'hommeaux <mwp1@cornell.edu>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of JLine nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

04 ,-. /1

```
!((0%23%()Ljava/lang/String;()V,(Ljava/lang/Object;)Ljava/lang/StringBuffer;(Ljava/lang/Object;)Z,(Ljava/lang/St
ring;)Ljava/lang/StringBuffer;(Ljava/lang/String;Ljava/lang/String;)VE([Lorg/apache/ivy/core/module/id/ModuleR
evisionId;)Ljava/lang/String;->...<init>CircularDependencyHelper.javaCodeLineNumberTableLjava/lang/String;
SourceFileaddappend
formatMessagegetNamegetUrljava/lang/Objectjava/lang/StringBufferjava/util/HashSet
java/util/Setname-org/apache/ivy/core/module/descriptor/LicensetoStringurl0%3% !#3*
+, $ *##$+## $#!#!*
$
!)#]YLYYM*2W+*2W>*1,
W+*2,*2W
```

W , \$2+,-."/ \*011=2H4O5R/X8&"  
COPYRIGHT NOTICE, DISCLAIMER, and LICENSE

=====

PNG Reference Library License version 2

-----

- \* Copyright (c) 1995-2018 The PNG Reference Library Authors.
- \* Copyright (c) 2018 Cosmin Truta.
- \* Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- \* Copyright (c) 1996-1997 Andreas Dilger.
- \* Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind, express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

-----

libpng versions 1.0.7, July 1, 2000 through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux  
Eric S. Raymond  
Mans Rullgard  
Cosmin Truta  
Gilles Vollant  
James Yu  
Mandar Sahastrabuddhe  
Google Inc.  
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

Some files in the "scripts" directory have other copyright owners,

but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are  
Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors"  
is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing  
Authors and Group 42, Inc. disclaim all warranties, expressed or  
implied, including, without limitation, the warranties of  
merchantability and of fitness for any purpose. The Contributing  
Authors and Group 42, Inc. assume no liability for direct, indirect,  
incidental, special, exemplary, or consequential damages, which may  
result from the use of the PNG Reference Library, even if advised of  
the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this  
source code, or portions hereof, for any purpose, without fee, subject  
to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not  
be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any  
source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit,  
without fee, and encourage the use of this source code as a component  
to supporting the PNG file format in commercial products. If you use  
this source code in a product, acknowledgment is not required but would  
be appreciated.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.



"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

## 1.239 asm 5.0.4

### 1.239.1 Available under license :

No license file was found, but licenses were detected in source scan.

2011 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the copyright holders nor the names of its

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

Found in path(s):

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-

jar/org/objectweb/asm/commons/package.html

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/package.html

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/package.html

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-

jar/org/objectweb/asm/signature/package.html

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-

jar/org/objectweb/asm/tree/analysis/package.html

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/package.html

No license file was found, but licenses were detected in source scan.

/\*\*\*

\* ASM XML Adapter

\* Copyright (c) 2004-2011, Eugene Kuleshov

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the copyright holders nor the names of its

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

Found in path(s):

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/SAXClassAdapter.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/SAXAdapter.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/SAXAnnotationAdapter.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/Processor.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/SAXFieldAdapter.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/ASMContentHandler.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/SAXCodeAdapter.java

No license file was found, but licenses were detected in source scan.

/\*\*\*

\* ASM: a very small and fast Java bytecode manipulation framework

\* Copyright (c) 2000-2011 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the copyright holders nor the names of its

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

/\*\*

\* Creates a new JSRInliner. <i>Subclasses must not use this

\* constructor</i>. Instead, they must use the

\* { @link #JSRInlinerAdapter(int, MethodVisitor, int, String, String, String, String[])}  
 \* version.

\*

\* @param mv

\* the <code>MethodVisitor</code> to send the resulting inlined

\* method code to (use <code>>null</code> for none).

\* @param access

\* the method's access flags (see { @link Opcodes}). This

\* parameter also indicates if the method is synthetic and/or

\* deprecated.

\* @param name

\* the method's name.

\* @param desc

\* the method's descriptor (see { @link Type}).

\* @param signature

\* the method's signature. May be <tt>null</tt>.

\* @param exceptions

\* the internal names of the method's exception classes (see

```
* { @link Type#getInternalName() getInternalName }). May be
* <tt>null</tt>.
* @throws IllegalStateException
* If a subclass calls this constructor.
*/
```

Found in path(s):

```
* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-
jar/org/objectweb/asm/commons/JSRInlinerAdapter.java
```

No license file was found, but licenses were detected in source scan.

2011, Eugene Kuleshov

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Found in path(s):

```
* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/asm-xml.dtd
```

No license file was found, but licenses were detected in source scan.

```
/**
```

```
* ASM: a very small and fast Java bytecode manipulation framework
* Copyright (c) 2000-2011 INRIA, France Telecom
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
```



\* modification, are permitted provided that the following conditions  
\* are met:  
\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.  
\* 3. Neither the name of the copyright holders nor the names of its  
\* contributors may be used to endorse or promote products derived from  
\* this software without specific prior written permission.  
\*  
\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE  
\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF  
\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

/\*\*

\* Creates a new { @link GeneratorAdapter}. *<i>*Subclasses must not use this  
\* constructor*</i>*. Instead, they must use the  
\* { @link #GeneratorAdapter(int, MethodVisitor, int, String, String)}  
\* version.  
\*  
\* @param mv  
\* the method visitor to which this adapter delegates calls.  
\* @param access  
\* the method's access flags (see { @link Opcodes}).  
\* @param name  
\* the method's name.  
\* @param desc  
\* the method's descriptor (see { @link Type Type}).  
\* @throws IllegalStateException  
\* If a subclass calls this constructor.  
\*/

Found in path(s):

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/commons/GeneratorAdapter.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* ASM: a very small and fast Java bytecode manipulation framework

```

* Copyright (c) 2000-2011 INRIA, France Telecom
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
*/
/**
 * Constructs a new {@link Textifier}. Subclasses must not use this
 * constructor. Instead, they must use the {@link #Textifier(int)}
 * version.
 *
 * @throws IllegalStateException
 * If a subclass calls this constructor.
 */

```

Found in path(s):

```

* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/Textifier.java

```

No license file was found, but licenses were detected in source scan.

```

/****
* ASM: a very small and fast Java bytecode manipulation framework
* Copyright (c) 2000-2011 INRIA, France Telecom
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

```

```
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
```

```
*/
```

```
/**
```

```
 * Constructs a new { @link ClassNode}. <i>Subclasses must not use this
 * constructor</i>. Instead, they must use the { @link #ClassNode(int)}
 * version.
 *
 * @throws IllegalStateException
 * If a subclass calls this constructor.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/ClassNode.java
```

No license file was found, but licenses were detected in source scan.

```
/**
```

```
* ASM: a very small and fast Java bytecode manipulation framework
* Copyright (c) 2000-2011 INRIA, France Telecom
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the copyright holders nor the names of its
```

```

* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
*/
/**
 * Constructs a new {@link LocalVariableAnnotationNode}. <i>Subclasses must
 * not use this constructor</i>. Instead, they must use the
 * {@link #LocalVariableAnnotationNode(int, TypePath, LabelNode[], LabelNode[], int[], String)}
 * version.
 *
 * @param typeRef
 * a reference to the annotated type. See {@link TypeReference}.
 * @param typePath
 * the path to the annotated type argument, wildcard bound, array
 * element type, or static inner type within 'typeRef'. May be
 * <tt>null</tt> if the annotation targets 'typeRef' as a whole.
 * @param start
 * the first instructions corresponding to the continuous ranges
 * that make the scope of this local variable (inclusive).
 * @param end
 * the last instructions corresponding to the continuous ranges
 * that make the scope of this local variable (exclusive). This
 * array must have the same size as the 'start' array.
 * @param index
 * the local variable's index in each range. This array must have
 * the same size as the 'start' array.
 * @param desc
 * the class descriptor of the annotation class.
 */

```

Found in path(s):

```

* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-
jar/org/objectweb/asm/tree/LocalVariableAnnotationNode.java

```

No license file was found, but licenses were detected in source scan.

```

/****

```

```

* ASM: a very small and fast Java bytecode manipulation framework

```

\* Copyright (c) 2000-2011 INRIA, France Telecom  
\* All rights reserved.  
\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:  
\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.  
\* 3. Neither the name of the copyright holders nor the names of its  
\* contributors may be used to endorse or promote products derived from  
\* this software without specific prior written permission.  
\*  
\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE  
\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF  
\* THE POSSIBILITY OF SUCH DAMAGE.  
\*/

Found in path(s):

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Label.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Type.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/AnnotationWriter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/SimpleVerifier.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/NameMapping.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/Printer.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/Shrinker.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/Method.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/CheckAnnotationAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/RemappingSignatureAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/RemappingFieldAdapter.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/ClassWriter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Attribute.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/SourceInterpreter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/MethodInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/MethodVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/TraceFieldVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/SourceValue.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/AdviceAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/Remapper.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/BasicValue.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/FieldWriter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/ByteVector.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/AbstractInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/Interpreter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/JumpInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/TableSwitchGenerator.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/FieldNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/FieldInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/LabelNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/ClassConstantsCollector.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/CheckSignatureAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/BasicVerifier.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/CodeSizeEvaluator.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/InstructionAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/IntInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/RemappingClassAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/MultiANewArrayInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/ClassReader.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/VarInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/RemappingMethodAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/Value.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/StaticInitMerger.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/AnnotationConstantsCollector.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/AnnotationVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/InsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/signature/SignatureReader.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/LdcInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/LookupSwitchInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/LineNumberNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/JarOptimizer.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/commons/LocalVariablesSorter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/TraceAnnotationVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/Constant.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/TypeAnnotationNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Handle.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/TryCatchBlockNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/ClassOptimizer.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/ASMifier.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/TraceClassVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/TableSwitchInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/Frame.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/InvokeDynamicInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/analysis/AnalyzerException.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-

jar/org/objectweb/asm/tree/analysis/Subroutine.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/commons/SerialVersionUIDAdder.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/InnerClassNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/ParameterNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/LocalVariableNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/analysis/Analyzer.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/analysis/SmallSet.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/commons/RemappingAnnotationAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/TypeInsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/util/TraceSignatureVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/InsnNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/optimizer/MethodOptimizer.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/util/CheckFieldAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Frame.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/util/CheckMethodAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/commons/SimpleRemapper.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/AnnotationNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/FieldVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Context.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/util/TraceMethodVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/optimizer/MethodConstantsCollector.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Handler.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/MethodNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/tree/InsnList.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/optimizer/FieldConstantsCollector.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/MethodWriter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/analysis/BasicInterpreter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-



jar/org/objectweb/asm/signature/SignatureWriter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/commons/TryCatchBlockSorter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Item.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Edge.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/ClassVisitor.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/tree/FrameNode.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/optimizer/ConstantPool.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/Opcodes.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/util/CheckClassAdapter.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-  
jar/org/objectweb/asm/signature/SignatureVisitor.java  
No license file was found, but licenses were detected in source scan.

/\*\*

\* ASM: a very small and fast Java bytecode manipulation framework

\* Copyright (c) 2000-2011 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the copyright holders nor the names of its

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

Found in path(s):

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/Textifiable.java  
\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/util/ASMifiable.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* ASM: a very small and fast Java bytecode manipulation framework

\* Copyright (c) 2000-2011 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the copyright holders nor the names of its

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

/\*\*

\* Creates a new {@link AnalyzerAdapter}. *Subclasses must not use this*

\* constructor*.* Instead, they must use the

\* {@link #AnalyzerAdapter(int, String, int, String, String, MethodVisitor)}

\* version.

\*

\* @param owner

\* the owner's class name.

\* @param access

\* the method's access flags (see {@link Opcodes}).

\* @param name

\* the method's name.

\* @param desc

\* the method's descriptor (see {@link Type Type}).

\* @param mv

```
* the method visitor to which this adapter delegates calls. May
* be <tt>null</tt>.
* @throws IllegalStateException
* If a subclass calls this constructor.
*/
```

Found in path(s):

```
* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-
jar/org/objectweb/asm/commons/AnalyzerAdapter.java
```

No license file was found, but licenses were detected in source scan.

2011, Eugene Kuleshov

```
* All rights reserved.
```

```
*
```

```
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
```

- ```
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.
```

```
*
```

```
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
```

Found in path(s):

```
* /opt/cola/permits/1135863767_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/xml/package.html
```

No license file was found, but licenses were detected in source scan.

```
#All rights reserved.
```

```
#Redistribution and use in source and binary forms, with or without
#modification, are permitted provided that the following conditions
#are met:
```

- ```
#1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
```

- #2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- #3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

Found in path(s):

- \* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/shrink-annotations.properties
- \* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/shrink-frames.properties
- \* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/shrink-resize.properties
- \* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/shrink-signatures.properties
- \* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/shrink.properties
- \* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/optimizer/shrink-writer.properties

No license file was found, but licenses were detected in source scan.

/\*\*

- \* ASM: a very small and fast Java bytecode manipulation framework
- \* Copyright (c) 2000-2013 INRIA, France Telecom
- \* All rights reserved.
- \*
- \* Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
- \* 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

Found in path(s):

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/TypePath.java

\* /opt/cola/permits/1135863767\_1613617914.89/0/asm-5-0-4-sources-6-jar/org/objectweb/asm/TypeReference.java

# 1.240 spring-security-config 5.3.4.RELEASE

## 1.240.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2011 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/debug/SecurityDebugBeanFactoryPostProcessor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/X509Dsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/session/SessionConcurrencyDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/OAuth2ClientBeanDefinitionParser.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/server/ServerHttpSecurity.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/headers/FrameOptionsDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/headers/ReferrerPolicyDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/headers/XssProtectionConfigDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/PortMapperDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/FormLoginDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/AuthorizeRequestsDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/CsrfDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/oauth2/resourceserver/JwtDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/AuthenticationConfigBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/RequestCacheDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/OAuth2LoginBeanDefinitionParser.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/SecurityMarker.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/oauth2/resourceserver/OpaqueTokenDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/HttpSecurityDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/LogoutDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/Saml2Dsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/oauth2/login/RedirectionEndpointDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/oauth2/login/UserInfoEndpointDsl.kt
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-

jar/org/springframework/security/config/web/servlet/oauth2/login/TokenEndpointDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/session/SessionFixationDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/oauth2/client/AuthorizationCodeGrantDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/http/SecurityFilters.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/annotation/web/configuration/SecurityReactorContextConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/headers/HttpPublicKeyPinningDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/headers/HttpStrictTransportSecurityDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/headers/ContentTypeOptionsDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/Elements.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/headers/ContentSecurityPolicyDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/headers/CacheControlDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/oauth2/client/ClientRegistrationsBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/SessionManagementDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/http/HttpSecurityBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/annotation/web/configurers/oauth2/server/resource/OAuth2ResourceServer  
Configurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/AbstractRequestMatcherDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/annotation/web/builders/WebSecurity.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/OAuth2LoginDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/ExceptionHandlerDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/http/CsrfBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/http/HttpConfigurationBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/CorsDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/OAuth2ClientDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-  
jar/org/springframework/security/config/web/servlet/AnonymousDsl.kt

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/oauth2/login/AuthorizationEndpointDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/OAuth2ResourceServerDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/HttpBasicDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/OAuth2ResourceServerBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/RequiresChannelDsl.kt  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/servlet/HeadersDsl.kt  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/MethodSecurityMetadataSourceAdvisorRegistrar.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/websocket/WebSocketMessageBrokerSecurityBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecuritySelector.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2ClientConfigurerUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/ldap/LdapAuthenticationProviderConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/WebSecurityConfigurerAdapter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/EnableWebSecurity.java



\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ExpressionUrlAuthorizationConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/FormLoginBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/method/GlobalMethodSecurityBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ServletApiConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/oauth2/client/CommonOAuth2Provider.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/AuthenticationManagerBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/CorsBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/UrlAuthorizationConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/configuration/AutowireBeanFactoryObjectPostProcessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/core/userdetails/UserDetailsResourceFactoryBean.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/SecurityContextConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ExceptionHandlerConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/CorsConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/X509Configurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/AuthenticationManagerFactoryBean.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/GrantedAuthorityDefaultsParserUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/HandlerMappingIntrospectorFactoryBean.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/rsocket/RSocketSecurity.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/rsocket/RSocketSecurityConfiguration.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/rsocket/EnableRSocketSecurity.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/rsocket/SecuritySocketAcceptorInterceptorConfiguration.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/rsocket/PayloadInterceptorOrder.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2LoginConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/servlet/configuration/WebMvcSecurityConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/HeadersBeanDefinitionParser.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/WebMvcSecurityConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/Jsrf250MetadataSourceConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/AbstractRequestMatcherRegistry.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/openid/OpenIDLoginConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecurityConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/OAuth2ClientConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AbstractAuthenticationFilterConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/InitializeAuthenticationProviderBeanManagerConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2ClientConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/HeadersConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/WebSecurityConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/OAuth2ImportSelector.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/crypto/RsaKeyConversionServicePostProcessor.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/HttpBasicConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/LogoutConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/CsrfConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/saml2/Saml2LoginConfigurer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/reactive/ServerHttpSecurityConfiguration.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/reactive/ReactiveOAuth2ClientImportSelector.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/AuthenticationConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/socket/AbstractSecurityWebSocketMessageBrokerConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/builders/HttpSecurity.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/InitializeUserDetailsBeanManagerConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/ReactiveMethodSecurityConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/configuration/ObjectPostProcessorConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/SessionManagementConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/Customizer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/ldap/LdapServerBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/reactive/WebFluxSecurityConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/LogoutBeanDefinitionParser.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/ldap/LdapUserServiceBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/JdbcUserServiceBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/AuthenticationProviderBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/FilterChainBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/PasswordEncoderParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/HttpFirewallBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/ChannelAttributeFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/BeanIds.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/method/ProtectPointcutPostProcessor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/ldap/ContextSourceSettingPostProcessor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/MatcherType.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/method/InterceptMethodsBeanDefinitionDecorator.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/FilterChainMapBeanDefinitionDecorator.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/AbstractUserDetailsServiceBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/ldap/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/method/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/ldap/LdapProviderBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/FilterInvocationSecurityMetadataSourceParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/SessionCreationPolicy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/PortMappingsBeanDefinitionParser.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/UserDetailsServiceFactoryBean.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/messaging/MessageSecurityMetadataSourceRegistry.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/DebugBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/authentication/UserServiceBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/http/DefaultFilterChainValidator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/method/MethodSecurityMetadataSourceBeanDefinitionParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/core/GrantedAuthorityDefaults.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ChannelSecurityConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/PortMapperConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/DefaultLoginPageConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/HttpSecurityBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AnonymousConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/RequestCacheConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/AbstractSecurityBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/UserDetailsServiceConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configuration/SpringWebMvcImportSelector.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/InMemoryUserDetailsManagerConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/AbstractDaoAuthenticationConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/builders/AuthenticationManagerBuilder.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/JeeConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/FormLoginConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/servlet/configuration/EnableWebMvcSecurity.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/SecurityConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/EnableGlobalMethodSecurity.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/SecurityConfigurerAdapter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/AbstractConfiguredSecurityBuilder.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/ProviderManagerBuilder.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/EnableGlobalAuthentication.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/SecurityBuilder.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/JdbcUserDetailsManagerConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/PermitAllSupport.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AbstractHttpConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/UserDetailsAwareConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/AlreadyBuiltException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AbstractConfigAttributeRequestMatcherRegistry.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/DaoAuthenticationConfigurer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecurityAspectJAutoProxy

Registrar.java

```
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/ObjectPostProcessor.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/web/configuration/AutowiredWebSecurityConfigurersIgnorePar
ents.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/web/builders/FilterComparator.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/web/configurers/AbstractInterceptUrlConfigurer.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/UserDetailsManagerCo
nfigurer.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/web/WebSecurityConfigurer.java
```

No license file was found, but licenses were detected in source scan.

/\*

```
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/annotation/web/configurers/RememberMeConfigurer.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/http/RememberMeBeanDefinitionParser.java
```

No license file was found, but licenses were detected in source scan.

/\*

```
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
```



\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/ReactiveMethodSecuritySelector.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/GlobalAuthenticationConfigurerAdapter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/reactive/EnableWebFluxSecurity.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/core/userdetails/UserDetailsMapFactoryBean.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/method/configuration/EnableReactiveMethodSecurity.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/ImplicitGrantConfigurer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/server/SecurityWebFiltersOrder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/core/userdetails/ReactiveUserDetailsServiceResourceFactoryBean.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/provisioning/UserDetailsManagerResourceFactoryBean.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949386\_1599626452.65/0/spring-security-config-5-3-4-release-sources-jar/org/springframework/security/config/web/server/AbstractServerWebExchangeMatcherRegistry.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2012 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/method/MethodConfigUtils.java
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/http/WebConfigUtils.java
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* Copyright 2009-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949386_1599626452.65/0/spring-security-config-5-3-4-release-sources-
jar/org/springframework/security/config/SecurityNamespaceHandler.java
```

## 1.241 sequence-generator 5.7.3

### 1.241.1 Available under license :

No license file was found, but licenses were detected in source scan.

Manifest-Version: 1.0

Bnd-LastModified: 1563545580901

Build-Jdk: 1.8.0\_202

Built-By: jenkins-slave

Bundle-Description: A set of Java modules for management and monitoring,  
common to several Terracotta products

Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0.txt>

Bundle-ManifestVersion: 2

Bundle-Name: Terracotta Management :: Sequence Generator

Bundle-SymbolicName: org.terracotta.management.sequence-generator

Bundle-Version: 5.7.3

Created-By: Apache Maven Bundle Plugin

Export-Package: org.terracotta.management.sequence;version="5.7.3",org.t  
erracotta.management.sequence.perf;version="5.7.3"

Main-Class: org.terracotta.management.sequence.perf.PerfTest

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-2.4.1.201501161923

Found in path(s):

\* /opt/cola/permits/1258059180\_1643027223.49/0/sequence-generator-5-7-3-jar/META-INF/MANIFEST.MF

No license file was found, but licenses were detected in source scan.

Copyright Terracotta, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and

limitations under the License.

Found in path(s):

\* /opt/cola/permits/1258059180\_1643027223.49/0/sequence-generator-5-7-3-jar/META-

INF/maven/org.terracotta.management/sequence-generator/pom.xml

## 1.242 runc 1.0.0-rc9

### 1.242.1 Available under license :

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT

HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT

LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.



Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (C) 2014-2015 Docker Inc & Go Authors. All rights reserved.

Copyright (C) 2017 SUSE LLC. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.
- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its



distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation

and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity.

For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free,



irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

### 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

### 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or

distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However,

in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from

this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a

cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,

any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

MIT License

Copyright (c) 2016 Jeremy Saenz & Contributors

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.



"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

CoreOS Project

Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc. (<http://www.coreos.com/>).

## 1.243 grpc-go 1.9.1

### 1.243.1 Available under license :

Copyright (c) 2015 Lars Kanis

MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the

"Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 gRPC authors.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2011 Petteri Aimonen <jpa at nanopb.mail.kapsi.fi>

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source

distribution.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for any such Derivative Works as a whole, provided Your use, the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions



of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015-2017 gRPC authors.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.244 ical4j 3.0.19

### 1.244.1 Available under license :

BSD 3-Clause License

Copyright (c) 2012, Ben Fortuna  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.245 curl 7.68.0

### 1.245.1 Available under license :

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2020, Daniel Stenberg, <daniel@haxx.se>, and many contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

## 1.246 jakarta-el 3.0.3

### 1.246.1 Available under license :

# Notices for Jakarta Expression Language

This content is produced and maintained by the Jakarta Expression Language project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.el>

## Trademarks

Jakarta Expression Language is a trademark of the Eclipse Foundation.

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at <http://www.eclipse.org/legal/epl-2.0>. This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License v. 2.0 are satisfied: GNU General Public License, version 2 with the GNU Classpath Exception which is

available at <https://www.gnu.org/software/classpath/license.html>.

SPDX-License-Identifier: EPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/el-ri>

## Third-party Content

## Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

# Eclipse Public License - v 2.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial content Distributed under this Agreement, and

b) in the case of each subsequent Contributor:

- i) changes to the Program, and
- ii) additions to the Program;

where such changes and/or additions to the Program originate from and are Distributed by that particular Contributor. A Contribution "originates" from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include changes or additions to the Program that are not Modified Works.

"Contributor" means any person or entity that Distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.



"Program" means the Contributions Distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement or any Secondary License (as applicable), including Contributors.

"Derivative Works" shall mean any work, whether in Source Code or other form, that is based on (or derived from) the Program and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship.

"Modified Works" shall mean any work in Source Code or other form that results from an addition to, deletion from, or modification of the contents of the Program, including, for purposes of clarity any new file in Source Code form that contains any contents of the Program. Modified Works shall not include works that contain only declarations, interfaces, types, classes, structures, or files of the Program solely in each case in order to link to, bind by name, or subclass the Program or Modified Works thereof.

"Distribute" means the acts of a) distributing or b) making available in any manner that enables the transfer of a copy.

"Source Code" means the form of a Program preferred for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Secondary License" means either the GNU General Public License, Version 2.0, or any later versions of that license, including any exceptions or additional permissions as identified by the initial Contributor.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, Distribute and sublicense the Contribution of such Contributor, if any, and such Derivative Works.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in Source Code or other form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition

of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to Distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

e) Notwithstanding the terms of any Secondary License, no Contributor makes additional grants to any Recipient (other than those set forth in this Agreement) as a result of such Recipient's receipt of the Program under the terms of a Secondary License (if permitted under the terms of Section 3).

### 3. REQUIREMENTS

3.1 If a Contributor Distributes the Program in any form, then:

a) the Program must also be made available as Source Code, in accordance with section 3.2, and the Contributor must accompany the Program with a statement that the Source Code for the Program is available under this Agreement, and informs Recipients how to obtain it in a reasonable manner on or through a medium customarily used for software exchange; and

b) the Contributor may Distribute the Program under a license different than this Agreement, provided that such license:

- i) effectively disclaims on behalf of all other Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all other Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) does not attempt to limit or alter the recipients' rights in the Source Code under section 3.2; and

iv) requires any subsequent distribution of the Program by any party to be under a license that satisfies the requirements of this section 3.

### 3.2 When the Program is Distributed as Source Code:

a) it must be made available under this Agreement, or if the Program (i) is combined with other material in a separate file or files made available under a Secondary License, and (ii) the initial Contributor attached to the Source Code the notice described in Exhibit A of this Agreement, then the Program may be made available under the terms of such Secondary Licenses, and

b) a copy of this Agreement must be included with each copy of the Program.

3.3 Contributors may not remove or alter any copyright, patent, trademark, attribution notices, disclaimers of warranty, or limitations of liability ("notices") contained within the Program from any copy of the Program which they Distribute, provided that Contributors may add their own appropriate notices.

## 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in

writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the

minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be Distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to Distribute the Program (including its Contributions) under the new version.

Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved. Nothing in this Agreement is intended to be enforceable by any entity that is not a Contributor or Recipient. No third-party beneficiary rights are created under this Agreement.

Exhibit A - Form of Secondary Licenses Notice

"This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License, v. 2.0 are satisfied: {name license(s), version(s), and exceptions or additional permissions here}."

Simply including a copy of this Agreement, including this Exhibit A is not sufficient to license the Source Code under Secondary Licenses.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

---

## The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor  
Boston, MA 02110-1335  
USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code.

And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it,



under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those

countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1335 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type
`show w'. This is free software, and you are welcome to redistribute
it under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

---

#### ## CLASSPATH EXCEPTION

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

## 1.247 grpc 1.9.1

### 1.247.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was

submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing,

shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.



# 1.248 shared-mime-info 1.6

## 1.248.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or

distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE

POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

MSCFF,DYF6Zm COPYINGLG2#YFYF GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that



you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the

notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED

TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may

be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The RelaxNG schemas in this directory are available under under [the W3C Test Suite License](<http://www.w3.org/Consortium/Legal/2008/04-testsuite-license.html>).

See <https://github.com/w3c/its-2.0-testsuite#licensing-information>

## 1.249 docker-cli v19.03.5

### 1.249.1 Available under license :

Copyright (c) 2013 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014-2015, Philip Hofer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.



"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012-2018 The Gorilla Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution



notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed



with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

#### Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: [wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests,

such as asking that all changes be marked or described.

Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public:

[wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

=====

## Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

### Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](http://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar



Rights.

- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.
- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.
- m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

Section 2 -- Scope.

a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
  - a. reproduce and Share the Licensed Material, in whole or in part; and
  - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.
3. Term. The term of this Public License is specified in Section 6(a).
4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a) (4) never produces Adapted Material.
5. Downstream recipients.
  - a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.
  - b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.
  - c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or

apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.

3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive

attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.

2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.

3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological

Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

#### Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,  
  
including for purposes of Section 3(b); and
- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

#### Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.
- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR

IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.

- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

#### Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:
  - 1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or
  - 2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

- c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.
- d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

#### Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.
- b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

#### Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.
- d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent



to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2017 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell

copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.



8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

Mozilla Public License Version 2.0

=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

### 1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

### 1.8. "License"

means this document.

### 1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- (a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- (b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

-----

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available,

modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and

(b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights



to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

-----

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this

License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

#### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

#### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an



\* permitted above, be liable to You for any direct, indirect, \*  
\* special, incidental, or consequential damages of any character \*  
\* including, without limitation, damages for lost profits, loss of \*  
\* goodwill, work stoppage, computer failure or malfunction, or any \*  
\* and all other commercial damages or losses, even if such party \*  
\* shall have been informed of the possibility of such damages. This \*  
\* limitation of liability shall not apply to liability for death or \*  
\* personal injury resulting from such party's negligence to the \*  
\* extent applicable law prohibits such limitation. Some \*  
\* jurisdictions do not allow the exclusion or limitation of \*  
\* incidental or consequential damages, so this exclusion and \*  
\* limitation may not apply to You. \*

\*\*\*\*\*

## 8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version

of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

MIT License

Copyright (c) Microsoft Corporation. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.  
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed



as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2014-2018 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.
- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2015-Present CloudFoundry.org Foundation, Inc. All Rights Reserved.

This project contains software that is Copyright (c) 2015 Pivotal Software, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

This project may include a number of subcomponents with separate

copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of each subcomponent's license, as noted in the LICENSE file.

Docker

Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/creack/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.



"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally

submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016-2018 Docker Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at



<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Tim Heckman

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation

and/or other materials provided with the distribution.

\* Neither the name of linode-netint nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the

United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2017 Gal Ben-Haim

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

AWS SDK for Go

Copyright 2015 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Copyright 2014-2015 Stripe, Inc.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.



You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2016, opentracing-contrib  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of go-stdlib nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT



LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.
- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 Taihei Morikuni

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation

source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable



(except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and

may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify,

defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012, 2013 Ugorji Nwoke.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION



## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in  
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN  
THE SOFTWARE.

MIT

Copyright 2017 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining  
a copy of this software and associated documentation files (the  
"Software"), to deal in the Software without restriction, including  
without limitation the rights to use, copy, modify, merge, publish,  
distribute, sublicense, and/or sell copies of the Software, and to  
permit persons to whom the Software is furnished to do so, subject to  
the following conditions:

The above copyright notice and this permission notice shall be  
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE  
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION  
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION  
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Data model artifacts for Prometheus.  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).  
Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

## 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are



solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a  
copyright notice that is included in or attached to the work  
(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object  
form, that is based on (or derived from) the Work and for which the  
editorial revisions, annotations, elaborations, or other modifications  
represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2011 Keith Rarick

Permission is hereby granted, free of charge, to any person  
obtaining a copy of this software and associated  
documentation files (the "Software"), to deal in the  
Software without restriction, including without limitation  
the rights to use, copy, modify, merge, publish, distribute,  
sublicense, and/or sell copies of the Software, and to  
permit persons to whom the Software is furnished to do so,  
subject to the following conditions:

The above copyright notice and this permission notice shall  
be included in all copies or substantial portions of the  
Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY  
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE  
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR  
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS  
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR  
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR  
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>  
<https://github.com/beorn7/perks>  
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein  
See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format  
<http://github.com/golang/protobuf/>  
Copyright 2010 The Go Authors  
See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).  
[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)  
Copyright 2013 Matt T. Proud  
Licensed under the Apache License, Version 2.0  
CoreOS Project  
Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc.  
(<http://www.coreos.com/>).  
Copyright (c) 2013 Dario Casta. All rights reserved.  
Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

procds provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2015 Matthew Heon <[mheon@redhat.com](mailto:mheon@redhat.com)>

Copyright (c) 2015 Paul Moore <[pmoore@redhat.com](mailto:pmoore@redhat.com)>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions



### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. Contribution

means Covered Software of a particular Contributor.

### 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. Executable Form

means any form of the work other than Source Code Form.

### 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

### 1.8. License

means this document.

### 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the

time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. Source Code Form

means the form of the work preferred for making modifications.

#### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

### 2. License Grants and Conditions

#### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark)  
Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the

rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at

their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of

non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without

reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

## Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v.

2.0. If a copy of the MPL was not distributed with this file, You can

obtain one at  
<http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then  
You may include the notice in a location (such as a LICENSE file in a relevant  
directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible  
With Secondary Licenses, as defined by  
the Mozilla Public License, v. 2.0.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED  
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR  
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF  
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING  
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS  
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.



\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the  
creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a  
Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the  
notice in Exhibit A, the Executable Form of such Source Code Form, and  
Modifications of such Source Code Form, in each case including portions  
thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

a. that the initial Contributor has attached the notice described in  
Exhibit B to the Covered Software; or

b. that the Covered Software was made available under the terms of  
version 1.1 or earlier of the License, but not also under the terms of  
a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or

c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:



- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License

with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under

this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.  
Copyright (c) 2013, Patrick Mezard  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Common libraries shared by Prometheus Go components.

Copyright 2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH ([open-source@konsorten.de](mailto:open-source@konsorten.de))

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 The OpenTracing Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2016, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its

contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a



cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,

any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016, gRPC Ecosystem  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of grpc-opentracing nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER

CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Sean Chittenden

Copyright (c) 2016 Alex Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Bits of Go-lang's `once.Do()` were cribbed and reused here, too.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2012-2018 Mat Ryer and Tyler Bunnell

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.250 open-ldap 2.4.58

### 1.250.1 Available under license :

/\*\*\*\*\*

\*

\* Copyright (C) 2000 Pierangelo Masarati, <[ando@sys-net.it](mailto:ando@sys-net.it)>

\* All rights reserved.

\*

\* Permission is granted to anyone to use this software for any purpose

\* on any computer system, and to alter it and redistribute it, subject

\* to the following restrictions:

\*

\* 1. The author is not responsible for the consequences of use of this

\* software, no matter how awful, even if they arise from flaws in it.

\*

\* 2. The origin of this software must not be misrepresented, either by

\* explicit claim or by omission. Since few users ever read sources,

\* credits should appear in the documentation.

\*

\* 3. Altered versions must be plainly marked as such, and must not be  
\* misrepresented as being the original software. Since few users  
\* ever read sources, credits should appear in the documentation.

\*

\* 4. This notice may not be removed or altered.

\*

\*\*\*\*\*/

Copyright 2011-2020 Howard Chu, Symas Corp.

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted only as authorized by the OpenLDAP  
Public License.

A copy of this license is available in the file LICENSE in the  
top-level directory of the distribution or, alternatively, at  
<<http://www.OpenLDAP.org/license.html>>.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by  
other parties and/or subject to additional restrictions.

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at  
<<http://www.openldap.org/>>.

Copyright 1998-2021 The OpenLDAP Foundation. All rights reserved.

**COPYING RESTRICTIONS APPLY.**

See COPYRIGHT and LICENSE files in the top-level directory of this  
distribution (i.e., ../COPYRIGHT and ../LICENSE, respectively).

---

NeoSoft Tcl client extensions to Lightweight Directory Access Protocol.

Copyright (c) 1998-1999 NeoSoft, Inc.

All Rights Reserved.

This software may be used, modified, copied, distributed, and sold,  
in both source and binary form provided that these copyrights are  
retained and their terms are followed.

Under no circumstances are the authors or NeoSoft Inc. responsible  
for the proper functioning of this software, nor do the authors  
assume any liability for damages incurred with its use.



Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given to NeoSoft, Inc.

NeoSoft, Inc. may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided ``as is" without express or implied warranty.

Requests for permission may be sent to NeoSoft Inc, 1770 St. James Place, Suite 500, Houston, TX, 77056.

Copyright 1998-2021 The OpenLDAP Foundation. All rights reserved.

COPYING RESTRICTIONS APPLY.

See COPYRIGHT and LICENSE files in the top-level directory of this distribution (i.e., ../COPYRIGHT and ../LICENSE, respectively).

Copyright 1998-2021 The OpenLDAP Foundation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

A copy of this license is available in the file LICENSE in the top-level directory of the distribution or, alternatively, at <http://www.OpenLDAP.org/license.html>.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by other parties and/or subject to additional restrictions.

This work is derived from the University of Michigan LDAP v3.3 distribution. Information concerning this software is available at <http://www.umich.edu/~dirsvcs/ldap/ldap.html>.

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at <http://www.openldap.org/>.

---

Portions Copyright 1998-2012 Kurt D. Zeilenga.

Portions Copyright 1998-2006 Net Boolean Incorporated.

Portions Copyright 2001-2006 IBM Corporation.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

---

Portions Copyright 1999-2008 Howard Y.H. Chu.  
Portions Copyright 1999-2008 Symas Corporation.  
Portions Copyright 1998-2003 Hallvard B. Furuseth.  
Portions Copyright 2007-2011 Gavin Henry.  
Portions Copyright 2007-2011 Suretec Systems Ltd.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that this notice is preserved. The names of the copyright holders may not be used to endorse or promote products derived from this software without their specific prior written permission. This software is provided ``as is" without express or implied warranty.

---

Portions Copyright (c) 1992-1996 Regents of the University of Michigan.  
All rights reserved.

Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given to the University of Michigan at Ann Arbor. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided ``as is" without express or implied warranty.  
The OpenLDAP Public License  
Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,
2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and
3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distribute verbatim copies of this document is granted.

## 1.251 libjpeg 8d

### 1.251.1 Available under license :

This is Debian's prepackaged version of the 'jpeg library' by the Independent JPEG Group.

This package was created by Mark Mickan <mmickan@debian.org> from sources which can be found at <ftp://ftp.uu.net/graphics/jpeg/jpegsrc.v6b.tar.gz>

It is partly based on the libjpeg6a package originally put together by Andy Guy <awpguy@acs.ucalgary.ca> and later maintained by Mark Mickan.

Current Debian maintainer is Bill Allombert <ballombe@debian.org>.

LEGAL ISSUES [ from README supplied with source - MM ]

=====  
In plain English:

1. We don't promise that this software works. (But if you find any bugs, please let us know!)
2. You can use this software for whatever you want. You don't have to pay us.
3. You may not pretend that you wrote this software. If you use it in a program, you must acknowledge somewhere in your documentation that you've used the IJG code.

In legalese:

The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy.

This software is copyright (C) 1991-2010, Thomas G. Lane, Guido Vollbeding. All Rights Reserved except as specified below.

Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:

- (1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.
- (2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".
- (3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us.

Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software".

We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

ansi2knr.c is included in this distribution by permission of L. Peter Deutsch, sole proprietor of its copyright holder, Aladdin Enterprises of Menlo Park, CA. ansi2knr.c is NOT covered by the above copyright and conditions, but instead by the usual distribution terms of the Free Software Foundation; principally, that you must include source code if you redistribute it. (See the file ansi2knr.c for full details.) However, since ansi2knr.c is not needed as part of any program generated from the IJG code, this does not limit you more than the foregoing paragraphs do.

The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltmain.sh). Another support script, install-sh, is copyright by X Consortium but is also freely distributable.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

"The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

# 1.252 libgpg-error 1.37 1

## 1.252.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to

using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below,

refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include



anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run

that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any

warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to



exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the

Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining

where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software

Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.253 icu 69

### 1.253.1 Available under license :

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

See Terms of Use for definitions of Unicode Inc.'s Data Files and Software.

NOTICE TO USER: Carefully read the following legal agreement.  
BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"),  
YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT.  
IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2021 Unicode, Inc. All rights reserved.  
Distributed under the Terms of Use in <https://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either  
(a) this copyright and permission notice appear with all copies

of the Data Files or Software, or  
(b) this copyright and permission notice appear in associated  
Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF  
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE  
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS  
NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL  
DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE,  
DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER  
TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR  
PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder  
shall not be used in advertising or otherwise to promote the sale,  
use or other dealings in these Data Files or Software without prior  
written authorization of the copyright holder.

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the  
following exceptions:

-----  
firebug.html, firebug.js, errIcon.png, infoIcon.png, warningIcon.png:

\* Copyright (c) 2006-2007, Joe Hewitt, All rights reserved.

Distributed under the terms of the BSD License (see below)

-----  
Copyright (c) 2006-2007, Joe Hewitt

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this  
list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice,  
this list of conditions and the following disclaimer in the documentation  
and/or other materials provided with the distribution.

\* Neither the name of the Dojo Foundation nor the names of its contributors  
may be used to endorse or promote products derived from this software  
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED



WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

COPYRIGHT AND PERMISSION NOTICE (ICU 58 and later)

Copyright 1991-2021 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in <https://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either (a) this copyright and permission notice appear with all copies of the Data Files or Software, or (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

-----  
Third-Party Software Licenses

This section contains third-party software notices and/or additional terms for licensed third-party software components included within ICU

libraries.

## 1. ICU License - ICU 1.8.1 to ICU 57.1

### COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1995-2016 International Business Machines Corporation and others  
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

## 2. Chinese/Japanese Word Break Dictionary Data (cjdict.txt)

```
The Google Chrome software developed by Google is licensed under
the BSD license. Other software included in this distribution is
provided under other licenses, as set forth below.

The BSD License
http://opensource.org/licenses/bsd-license.php
Copyright (C) 2006-2008, Google Inc.

All rights reserved.
```

```
#
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
#
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided with
the distribution.
Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
#
#
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
#
#
The word list in cjdict.txt are generated by combining three word lists
listed below with further processing for compound word breaking. The
frequency is generated with an iterative training against Google web
corpora.
#
* Libtabe (Chinese)
- https://sourceforge.net/project/?group_id=1519
- Its license terms and conditions are shown below.
#
* IPADIC (Japanese)
- http://chasen.aist-nara.ac.jp/chasen/distribution.html
- Its license terms and conditions are shown below.
#
-----COPYING.libtabe ---- BEGIN-----
#
/*
* Copyright (c) 1999 TaBE Project.
* Copyright (c) 1999 Pai-Hsiang Hsiao.
* All rights reserved.
```

```
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* . Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* . Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
* . Neither the name of the TaBE Project nor the names of its
* contributors may be used to endorse or promote products derived
* from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
* REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
*/
#
/*
* Copyright (c) 1999 Computer Systems and Communication Lab,
* Institute of Information Science, Academia
* Sinica. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* . Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* . Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
* . Neither the name of the Computer Systems and Communication Lab
* nor the names of its contributors may be used to endorse or
* promote products derived from this software without specific
* prior written permission.
```

# \*  
# \* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
# \* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
# \* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS  
# \* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE  
# \* REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,  
# \* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES  
# \* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR  
# \* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
# \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
# \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
# \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
# \* OF THE POSSIBILITY OF SUCH DAMAGE.

# \*/

#

# Copyright 1996 Chih-Hao Tsai @ Beckman Institute,  
# University of Illinois  
# c-tsai4@uiuc.edu <http://casper.beckman.uiuc.edu/~c-tsai4>

#

# -----COPYING.libtabe-----END-----

#

#

# -----COPYING.ipadic-----BEGIN-----

#

# Copyright 2000, 2001, 2002, 2003 Nara Institute of Science  
# and Technology. All Rights Reserved.

#

# Use, reproduction, and distribution of this software is permitted.  
# Any copy of this software, whether in its original form or modified,  
# must include both the above copyright notice and the following  
# paragraphs.

#

# Nara Institute of Science and Technology (NAIST),  
# the copyright holders, disclaims all warranties with regard to this  
# software, including all implied warranties of merchantability and  
# fitness, in no event shall NAIST be liable for  
# any special, indirect or consequential damages or any damages  
# whatsoever resulting from loss of use, data or profits, whether in an  
# action of contract, negligence or other tortuous action, arising out  
# of or in connection with the use or performance of this software.

#

# A large portion of the dictionary entries  
# originate from ICOT Free Software. The following conditions for ICOT  
# Free Software applies to the current dictionary as well.

#

# Each User may also freely distribute the Program, whether in its  
# original form or modified, to any third party or parties, PROVIDED  
# that the provisions of Section 3 ("NO WARRANTY") will ALWAYS appear

# on, or be attached to, the Program, which is distributed substantially  
# in the same form as set out herein and that such intended  
# distribution, if actually made, will neither violate or otherwise  
# contravene any of the laws and regulations of the countries having  
# jurisdiction over the User or the intended distribution itself.

#

# NO WARRANTY

#

# The program was produced on an experimental basis in the course of the  
# research and development conducted during the project and is provided  
# to users as so produced on an experimental basis. Accordingly, the  
# program is provided without any warranty whatsoever, whether express,  
# implied, statutory or otherwise. The term "warranty" used herein  
# includes, but is not limited to, any warranty of the quality,  
# performance, merchantability and fitness for a particular purpose of  
# the program and the nonexistence of any infringement or violation of  
# any right of any third party.

#

# Each user of the program will agree and understand, and be deemed to  
# have agreed and understood, that there is no warranty whatsoever for  
# the program and, accordingly, the entire risk arising from or  
# otherwise connected with the program is assumed by the user.

#

# Therefore, neither ICOT, the copyright holder, or any other  
# organization that participated in or was otherwise related to the  
# development of the program and their respective officials, directors,  
# officers and other employees shall be held liable for any and all  
# damages, including, without limitation, general, special, incidental  
# and consequential damages, arising out of or otherwise in connection  
# with the use or inability to use the program or any product, material  
# or result produced or otherwise obtained by using the program,  
# regardless of whether they have been advised of, or otherwise had  
# knowledge of, the possibility of such damages at any time during the  
# project or thereafter. Each user will be deemed to have agreed to the  
# foregoing by his or her commencement of use of the program. The term  
# "use" as used herein includes, but is not limited to, the use,  
# modification, copying and distribution of the program and the  
# production of secondary products from the program.

#

# In the case where the program, whether in its original form or  
# modified, was distributed or delivered to or received by a user from  
# any person, organization or entity other than ICOT, unless it makes or  
# grants independently of ICOT any specific warranty to the user in  
# writing, such person, organization or entity, will also be exempted  
# from and not be held liable to the user for any such damages as noted  
# above as far as the program is concerned.

#

# -----COPYING.ipadic-----END-----

### 3. Lao Word Break Dictionary Data (laodict.txt)

```
Copyright (c) 2013 International Business Machines Corporation
and others. All Rights Reserved.
#
Project: http://code.google.com/p/lao-dictionary/
Dictionary: http://lao-dictionary.googlecode.com/git/Lao-Dictionary.txt
License: http://lao-dictionary.googlecode.com/git/Lao-Dictionary-LICENSE.txt
(copied below)
#
This file is derived from the above dictionary, with slight
modifications.

Copyright (C) 2013 Brian Eugene Wilson, Robert Martin Campbell.
All rights reserved.
#
Redistribution and use in source and binary forms, with or without
modification,
are permitted provided that the following conditions are met:
#
#
Redistributions of source code must retain the above copyright notice, this
list of conditions and the following disclaimer. Redistributions in
binary form must reproduce the above copyright notice, this list of
conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
#
#
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
OF THE POSSIBILITY OF SUCH DAMAGE.

```

### 4. Burmese Word Break Dictionary Data (burmesedict.txt)

```
Copyright (c) 2014 International Business Machines Corporation
and others. All Rights Reserved.
#
```

```
This list is part of a project hosted at:
github.com/kanyawtech/myanmar-karen-word-lists
#

Copyright (c) 2013, LeRoy Benjamin Sharon
All rights reserved.
#
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met: Redistributions of source code must retain the above
copyright notice, this list of conditions and the following
disclaimer. Redistributions in binary form must reproduce the
above copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
#
Neither the name Myanmar Karen Word Lists, nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.
#
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF
THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

```

## 5. Time Zone Database

ICU uses the public domain data and code derived from Time Zone Database for its time zone support. The ownership of the TZ database is explained in BCP 175: Procedure for Maintaining the Time Zone Database section 7.

### # 7. Database Ownership

```
#
The TZ database itself is not an IETF Contribution or an IETF
document. Rather it is a pre-existing and regularly updated work
that is in the public domain, and is intended to remain in the
public domain. Therefore, BCPs 78 [RFC5378] and 79 [RFC3979] do
```



# not apply to the TZ Database or contributions that individuals make  
# to it. Should any claims be made and substantiated against the TZ  
# Database, the organization that is providing the IANA  
# Considerations defined in this RFC, under the memorandum of  
# understanding with the IETF, currently ICANN, may act in accordance  
# with all competent court orders. No ownership claims will be made  
# by ICANN or the IETF Trust on the database or the code. Any person  
# making a contribution to the database or code waives all rights to  
# future claims in that contribution or in the TZ Database.

## 6. Google double-conversion

Copyright 2006-2011, the V8 project authors. All rights reserved.  
Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following  
disclaimer in the documentation and/or other materials provided  
with the distribution.
- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived  
from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the  
following exceptions:

-----  
dojo.css:

- \* parts Copyright (c) 2007, Yahoo! Inc. All rights reserved.  
Distributed under the terms of the BSD License

The Program includes all or portions of the following software which was obtained under the terms and conditions of the BSD License.

<http://developer.yahoo.com/yui/license.html>

Copyright (c) 2007, Yahoo! Inc.

All rights reserved.

Redistribution and use of this software in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Yahoo! Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission of Yahoo! Inc.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY

EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE

COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,

OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,

WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>,

<http://www.unicode.org/reports/>,

and <http://www.unicode.org/cldr/data/>. Unicode Software includes any source code published in the Unicode Standard or under

the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and

<http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR

OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU

UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS

AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

## COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2007 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Dojo is available under \*either\* the terms of the modified BSD license \*or\* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

-----  
The "New" BSD License:

\*\*\*\*\*

Copyright (c) 2005-2011, The Dojo Foundation  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The Academic Free License, v. 2.1:

\*\*\*\*\*

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;

c) to distribute copies of the Original Work and Derivative Works to the public;

d) to perform the Original Work publicly; and

e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under

the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

## 1.254 activation 1.2.2

### 1.254.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# Notices for Jakarta Activation

This content is produced and maintained by Jakarta Activation project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## Source Code

The project maintains the following source code repositories:



\* <https://github.com/eclipse-ee4j/jaf>

## ## Third-party Content

This project leverages the following third party content.

JUnit (4.12)

\* License: Eclipse Public License

# 1.255 jackson-dataformat-yaml 2.11.2

## 1.255.1 Available under license :

# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta ([tatu.saloranta@iki.fi](mailto:tatu.saloranta@iki.fi)), and has been in development since 2007.

It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

## ## Licensing

Jackson core and extension components may be licensed under different licenses. To find the details that apply to this artifact see the accompanying LICENSE file. For more information, including possible other licensing options, contact FasterXML.com (<http://fasterxml.com>).

## ## Credits

A list of contributors may be found from CREDITS file, which is included in some artifacts (usually source distributions); but is always available from the source code management (SCM) system project uses.

This copy of Jackson JSON processor YAML module is licensed under the Apache (Software) License, version 2.0 ("the License").

See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

# 1.256 flyway-test 6.4.0

## 1.256.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright (C) 2011-2020 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1129909867_1612394256.07/0/flyway-test-6-4-0-sources-
jar/org/flywaydb/test/annotation/package-info.java
* /opt/cola/permits/1129909867_1612394256.07/0/flyway-test-6-4-0-sources-
jar/org/flywaydb/test/annotation/FlywayTest.java
* /opt/cola/permits/1129909867_1612394256.07/0/flyway-test-6-4-0-sources-
jar/org/flywaydb/test/annotation/FlywayTests.java
```

## 1.257 python-requests 2.22.0

### 1.257.1 Available under license :

Copyright 2018 Kenneth Reitz

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

# 1.258 json-c 0.12

## 1.258.1 Available under license :

Copyright (c) 2009-2012 Eric Haszlakiewicz

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-----  
Copyright (c) 2004, 2005 Metaparadigm Pte Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.259 nettle 3.5.1+really3.5.1-2ubuntu0.2

## 1.259.1 Available under license :

/\* nettle-internal.c

Things that are used only by the testsuite and benchmark, and not included in the library.

Copyright (C) 2002, 2014 Niels Möller

This file is part of GNU Nettle.

GNU Nettle is free software: you can redistribute it and/or modify it under the terms of either:

\* the GNU Lesser General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

or

\* the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

or both in parallel, as here.

GNU Nettle is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received copies of the GNU General Public License and the GNU Lesser General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

\*/

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: Nettle

Upstream-Contact: Niels Mller <nisse@lysator.liu.se>

Source: <http://www.lysator.liu.se/~nisse/nettle/>

Copyright: 2001-2011 Niels Mller

Some parts are Copyright the Free Software Foundation and various people. See below and source code comments for details.

License: LGPL-2.1+

Comment:

Nettle is distributed under the GNU Lesser General Public License (LGPL). A few of the individual files are in the public domain. To

find the current status of particular files, you have to read the copyright notices at the top of the files.

.  
A list of the supported algorithms, their origins and licenses (from the manual):

.  
**AES**

The implementation of the AES cipher (also known as rijndael) is written by Rafael Sevilla. Assembler for x86 by Rafael Sevilla and Niels Mller, Sparc assembler by Niels Mller. Released under the LGPL.

.  
**ARCFOUR**

The implementation of the ARCFOUR (also known as RC4) cipher is written by Niels Mller. Released under the LGPL.

.  
**ARCTWO**

The implementation of the ARCTWO (also known as RC2) cipher is written by Nikos Mavroyanopoulos and modified by Werner Koch and Simon Josefsson. Released under the LGPL.

.  
**BLOWFISH**

The implementation of the BLOWFISH cipher is written by Werner Koch, copyright owned by the Free Software Foundation. Also hacked by Simon Josefsson and Niels Mller. Released under the LGPL.

.  
**CAMELLIA**

The C implementation is by Nippon Telegraph and Telephone Corporation (NTT), heavily modified by Niels Mller. Assembler for x86 and x86\_64 by Niels Mller. Released under the LGPL.

.  
**CAST128**

The implementation of the CAST128 cipher is written by Steve Reid. Released into the public domain.

.  
**DES**

The implementation of the DES cipher is written by Dana L. How, and released under the LGPL.

.  
**MD2**

The implementation of MD2 is written by Andrew Kuchling, and hacked some by Andreas Sigfridsson and Niels Mller. Python Cryptography Toolkit license (essentially public domain).

.  
**MD4**

This is almost the same code as for MD5 below, with modifications by Marcus Comstedt. Released into the public domain.

## MD5

The implementation of the MD5 message digest is written by Colin Plumb. It has been hacked some more by Andrew Kuchling and Niels Mller. Released into the public domain.

## SERPENT

The implementation of the SERPENT is based on the code in libcrypt, copyright owned by the Free Software Foundation. Adapted to Nettle by Simon Josefsson and heavily modified by Niels Mller. Assembly for x86\_64 by Niels Mller. Released under the LGPL.

## SHA1

The C implementation of the SHA1 message digest is written by Peter Gutmann, and hacked some more by Andrew Kuchling and Niels Mller. Released into the public domain. Assembler for x86 by Niels Mller, released under the LGPL.

## SHA224, SHA256, SHA384, and SHA512

Written by Niels Mller, using Peter Gutmann's SHA1 code as a model. Released under the LGPL.

## TWOFISH

The implementation of the TWOFISH cipher is written by Ruud de Rooij. Released under the LGPL.

## RSA

Written by Niels Mller, released under the LGPL. Uses the GMP library for bignum operations.

## DSA

Written by Niels Mller, released under the LGPL. Uses the GMP library for bignum operations.

Files: \*

Copyright: 2001-2011 Niels Mller

License: LGPL-2.1+

Files: aes-set-\*

Copyright: 2000, 2001, 2002 Rafael R. Sevilla, Niels Mller

License: LGPL-2.1+

Files: arctwo\*

Copyright: 2003 Nikos Mavroyanopoulos

2004 Simon Josefsson

2004 Free Software Foundation, Inc.

2002, 2004 Niels Mller

License: LGPL-2.1+

Files: base64.h base64-meta.c

Copyright: 2002 Dan Egnor

2002 Niels Mller

License: LGPL-2.1+

Files: blowfish.c

Copyright: 1998, 2001, 2002, 2003 Free Software Foundation, Inc.

2010 Simon Josefsson

License: LGPL-2.1+

Files: blowfish.h

Copyright: 1998, 2001 Free Software Foundation, Inc.

1998, 2001 Ray Dassen

1998, 2001 Niels Mller

License: LGPL-2.1+

Files: camellia-table.c camellia-crypt-internal.c

Copyright: 2006, 2007 NTT (Nippon Telegraph and Telephone Corporation)

2010 Niels Mller

License: LGPL-2.1+

Files: der2dsa.c

Copyright: 2005, 2009 Niels Mller

2009 Magnus Holmgren

License: LGPL-2.1+

Files: desCode.h descode.README desdata.c desinfo.c

Copyright: 2002 Dana L. How

License: LGPL-2+

This program is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

.

You should have received a copy of the GNU Library General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA.

.

On Debian GNU/Linux systems, the complete text of the GNU Library General Public License, version 2, can be found in /usr/share/common-licenses/LGPL-2.

Files: des.c des.h  
Copyright: 1992 Dana L. How  
1997, 2001 Niels Mller  
License: LGPL-2.1+

Files: gcm.c gcm.h  
Copyright: 2011 Katholieke Universiteit Leuven  
2011 Niels Mller  
License: LGPL-2.1+

Files: md2.c  
Copyright: ? Andrew Kuchling  
2003 Andreas Sigfridsson  
2003 Niels Mller  
License: LGPL-2.1+

Files: md4.c  
Copyright: 2003 Marcus Comstedt  
2003 Niels Mller  
License: LGPL-2.1+

Files: md5.c md5-compress.c  
Copyright: Colin Plumb, Andrew Kuchling  
2001 Niels Mller  
License: LGPL-2.1+

Files: memxor.c  
Copyright: 1991,1993, 1995 Free Software Foundation, Inc.  
2010 Niels Mller  
License: LGPL-2.1+

Files: ripemd160.c ripemd160-compress.c  
Copyright: 1998, 2001, 2002, 2003 Free Software Foundation, Inc.  
License: LGPL-2.1+

Files: ripemd160-meta.c ripemd160.h  
Copyright: 2011 Andres Mejia  
License: LGPL-2.1+

Files: serpent-encrypt.c serpent-decrypt.c serpent-set-key.c  
Copyright: 1998 Ross Anderson, Eli Biham, Lars Knudsen  
2003, 2004, 2005 Free Software Foundation, Inc.  
2010, 2011 Simon Josefsson  
2011 Niels Mller  
License: LGPL-2.1+

Files: sha\*  
Copyright: 2001, 2004 Peter Gutmann, Andrew Kuchling, Niels Mller



License: LGPL-2.1+

Files: twofish\*

Copyright: 1999 Ruud de Rooij <ruud@debian.org>

1999 J.H.M. Dassen (Ray) <jdassen@wi.LeidenUniv.nl>

2001 Niels Mller

License: LGPL-2.1+

Files: dsa2sexp.c

Copyright: 2002, 2009 Niels Mller

2009 Magnus Holmgren

License: LGPL-2.1+

Files: testsuite/des-compat-test.c

Copyright: 1995-1997 Eric Young (eay@cryptsoft.com)

License: other

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:  
"This product includes cryptographic software written by  
Eric Young (eay@cryptsoft.com)"  
The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related :-).  
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement:  
"This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files: tools/pkcs1-conv.c

Copyright: 2005, 2009 Niels Mller

2009 Magnus Holmgren

License: LGPL-2.1+

Files: x86\*/aes-\*-internal.asm

Copyright: 2001, 2002, 2005, 2008 Rafael R. Sevilla

2001, 2002, 2005, 2008 Niels Mller

License: LGPL-2.1+

Files: tools/getopt\*

Copyright: 1987-2001 Free Software Foundation, Inc.

License: GPL-2+

Files: config.guess config.sub

Copyright: 1992-2003 Free Software Foundation, Inc.

License: GPL-2+ with Autoconf exception

As a special exception to the GNU General Public License, if you distribute this file as part of a program that contains a configuration script generated by Autoconf, you may include it under the same distribution terms that you use for the rest of that program.

Files: debian/\*

Copyright: none

License: public-domain

I believe that most files in debian/ hardly contains any creative expression eligible for copyright.

Files: debian/sexp-conv.1

Copyright: 2002 Timshel Knoll <timshel@debian.org>

2007 Magnus Holmgren

License: GPL-2

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; version 2 dated June. 1991.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

.

On Debian GNU/Linux systems, the complete text of the GNU General Public License, version 2, can be found in /usr/share/common-licenses/GPL-2.

Comment:

This manpage was copied from the lsh-utils package. Timshel didn't explicitly select a license for his packaging work, but I think that it can be considered released under the same license as LSH itself.

Files: debian/pkcs1-conv.1 debian/nettle-lfib-stream.1

Copyright: 2007 Magnus Holmgren

License: GAP

Copying and distribution of this file, with or without modification, are permitted in any medium without royalty provided the copyright notice and this notice are preserved.

License: LGPL-2.1+

The nettle library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

.

The nettle library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

.

On Debian GNU/Linux systems, the complete text of the newest version of the GNU Lesser General Public License can be found in /usr/share/common-licenses/LGPL.

License: GPL-2+

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

.

On Debian GNU/Linux systems, the complete text of the newest version of the GNU General Public License can be found in

/usr/share/common-licenses/GPL.

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original

authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to



address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.260 statistics 2.1

### 1.260.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include

the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.261 python-pip 22.0.4

### 1.261.1 Available under license :

Copyright (c) 2007 Ian Bicking and Contributors  
Copyright (c) 2009 Ian Bicking, The Open Planning Project  
Copyright (c) 2011-2013 The virtualenv developers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2016 Jason R Coombs <jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# This is the MIT license

Copyright (c) 2010 ActiveState Software Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to



the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2020 Will McGugan

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2010-2020 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN

CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library,

and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever

changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined



library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status

of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public  
License along with this library; if not, write to the Free Software  
Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the library, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
Copyright (c) 2010 Jonathan Hartley  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this  
list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice,  
this list of conditions and the following disclaimer in the documentation  
and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors  
may be used to endorse or promote products derived from this software without  
specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE  
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR  
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER  
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,

OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.



THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2018, Tzu-ping Chung <uranusjr@gmail.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Pylons Project Contributor Agreement

=====

The submitter agrees by adding his or her name within the section below named "Contributors" and submitting the resulting modified document to the canonical shared repository location for this software project (whether directly, as a user with "direct commit access", or via a "pull request"), he or she is signing a contract electronically. The submitter becomes a Contributor after a) he or she signs this document by adding their name beneath the "Contributors" section below, and b) the resulting document is accepted into the canonical version control repository.

Treatment of Account

-----

Contributor will not allow anyone other than the Contributor to use his or her username or source repository login to submit code to a Pylons Project source repository. Should Contributor become aware of any such use, Contributor will immediately by notifying Agendaless Consulting. Notification must be performed by sending an email to webmaster@agendaless.com. Until such notice is received, Contributor will be presumed to have taken all actions made through Contributor's account. If the Contributor has direct commit access, Agendaless Consulting will have complete control and discretion over capabilities assigned to Contributor's

account, and may disable Contributor's account for any reason at any time.

#### Legal Effect of Contribution

-----

Upon submitting a change or new work to a Pylons Project source Repository (a "Contribution"), you agree to assign, and hereby do assign, a one-half interest of all right, title and interest in and to copyright and other intellectual property rights with respect to your new and original portions of the Contribution to Agendaless Consulting. You and Agendaless Consulting each agree that the other shall be free to exercise any and all exclusive rights in and to the Contribution, without accounting to one another, including without limitation, the right to license the Contribution to others under the Repoze Public License. This agreement shall run with title to the Contribution. Agendaless Consulting does not convey to you any right, title or interest in or to the Program or such portions of the Contribution that were taken from the Program. Your transmission of a submission to the Pylons Project source Repository and marks of identification concerning the Contribution itself constitute your intent to contribute and your assignment of the work in accordance with the provisions of this Agreement.

#### License Terms

-----

Code committed to the Pylons Project source repository (Committed Code) must be governed by the Repoze Public License (<http://repoze.org/LICENSE.txt>, aka "the RPL") or another license acceptable to Agendaless Consulting. Until Agendaless Consulting declares in writing an acceptable license other than the RPL, only the RPL shall be used. A list of exceptions is detailed within the "Licensing Exceptions" section of this document, if one exists.

#### Representations, Warranty, and Indemnification

-----

Contributor represents and warrants that the Committed Code does not violate the rights of any person or entity, and that the Contributor has legal authority to enter into this Agreement and legal authority over Contributed Code. Further, Contributor indemnifies Agendaless Consulting against violations.

#### Cryptography

-----

Contributor understands that cryptographic code may be subject to government regulations with which Agendaless Consulting and/or entities using Committed Code must comply. Any code which contains any of the items listed below must not be checked-in until Agendaless Consulting staff has been notified and has approved such contribution in writing.

- Cryptographic capabilities or features
- Calls to cryptographic features
- User interface elements which provide context relating to cryptography
- Code which may, under casual inspection, appear to be cryptographic.

#### Notices

-----

Contributor confirms that any notices required will be included in any Committed Code.

#### Licensing Exceptions

=====

None.

#### List of Contributors

=====

The below-signed are contributors to a code repository that is part of the project named "Translationstring". Each below-signed contributor has read, understands and agrees to the terms above in the section within this document entitled "Pylons Project Contributor Agreement" as of the date beside his or her name.

#### Contributors

-----

- Chris McDonough, 2011/02/16
  - Wichert Akkerman, 2012/02/02
- Copyright (c) 2012 by Simon Sapin.

Some rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided

with the distribution.

\* The names of the contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes

1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

---

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

---

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and

Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

-----

### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant

permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT



INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

-----  
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a

file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities (CA). These were automatically extracted from Mozilla's root certificates file (certdata.txt). This file can be found in the mozilla source tree:

<http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#>

It contains the certificates in PEM format and therefore can be directly used with curl / libcurl / php\_curl, or with an Apache+mod\_ssl webserver for SSL client authentication.

Just configure this file as the SSLCACertificateFile.#

\*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$  
Copyright (C) 2008-2011 INADA Naoki <[songofacandy@gmail.com](mailto:songofacandy@gmail.com)>

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

## A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes

2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
3.0	2.6	2008	PSF	yes
3.0.1	3.0	2009	PSF	yes
3.1	3.0.1	2009	PSF	yes
3.1.1	3.1	2009	PSF	yes
3.1.2	3.1	2010	PSF	yes
3.2	3.1	2010	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

=====

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2



- 
1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
  2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
  3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
  4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
  5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
  6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
  7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
  8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

-----  
BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.
7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".
3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

-----  
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====  
Contributors  
=====

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Philip Jenvey
- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name)

A. HISTORY OF THE SOFTWARE  
=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related

Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2 and above	2.1.1	2001-now	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and

otherwise using this software ("Python") in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

-----

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1  
-----



1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such

U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

-----

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

License

A copyright notice accompanies this license document that identifies the copyright holders.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source code must retain the accompanying copyright notice, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the accompanying copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Names of the copyright holders must not be used to endorse or promote products derived from this software without prior written permission from the copyright holders.
4. If any files are modified, you must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

#### Disclaimer

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

BSD 3-Clause License

Copyright (c) 2013-2021, Kim Davies

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation

and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# Copyright (c) 2012 Georgios Verigakis <verigak@gmail.com>

#

# Permission to use, copy, modify, and distribute this software for any  
# purpose with or without fee is hereby granted, provided that the above  
# copyright notice and this permission notice appear in all copies.

#

# THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES  
# WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF  
# MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR  
# ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES  
# WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN  
# ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF  
# OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

argparse is (c) 2006-2009 Steven J. Bethard <steven.bethard@gmail.com>.

The argparse module was contributed to Python as of Python 2.7 and thus was licensed under the Python license. Same license applies to all files in the argparse package project.

For details about the Python License, please see doc/Python-License.txt.

## History

-----

Before (and including) argparse 1.1, the argparse package was licensed under Apache License v2.0.

After argparse 1.1, all project files from the argparse project were deleted due to license compatibility issues between Apache License 2.0 and GNU GPL v2.

The project repository then had a clean start with some files taken from Python 2.7.1, so definitely all files are under Python License now.

Copyright (c) 2006-2021 by the respective authors (see AUTHORS file).

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2006-2013 James Graham and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Contributors

=====

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth
- \* Dirley Rodrigues
- \* Donald Stufft
- \* Grigory Petrov
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Phillip J. Eby
- \* Philip Jenvey
- \* Philip Thiem
- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think your name is missing, please add it (alpha order by first name)

Copyright (c) 2011 Agendaless Consulting and Contributors.

(<http://www.agendaless.com>), All Rights Reserved

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) Donald Stufft and individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2012-2021 Eric Larson

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2008-present The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all



other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Copyright (c) 2008-2013 The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

License for Bundle of CA Root Certificates (pip/cacert.pem)

=====

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the

editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the



same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.262 libffi 3.2.1

### 1.262.1 Available under license :

libffi - Copyright (c) 1996-2014 Anthony Green, Red Hat, Inc and others.  
See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.263 docker-containerd 1.3.2

## 1.263.1 Available under license :

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012 Pter Surnyi. Portions Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The following files were ported to Go from C files of libyaml, and thus are still covered by their original copyright and license:

apic.go  
emitterc.go  
parserc.go  
readerc.go  
scannerc.go  
writerc.go  
yamlh.go  
yamlprivateh.go

Copyright (c) 2006 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,



"control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
  
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Attribution-ShareAlike 4.0 International

=====  
Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright

and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: [wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public: [wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

=====

#### Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and

conditions.

Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](http://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.
- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.

- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.
- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.
- m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

## Section 2 -- Scope.

### a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
  - a. reproduce and Share the Licensed Material, in whole or in part; and
  - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.
3. Term. The term of this Public License is specified in Section 6(a).

4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a)(4) never produces Adapted Material.

5. Downstream recipients.

a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.

b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.

c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited



extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.
3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

### Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

#### a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or

hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.
3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.
2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.
3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,

including for purposes of Section 3(b); and

- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

#### Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.
- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.
- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

#### Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:
  - 1. automatically as of the date the violation is cured, provided

it is cured within 30 days of Your discovery of the violation; or

2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.

d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

#### Section 7 -- Other Terms and Conditions.

a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.

b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

#### Section 8 -- Interpretation.

a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.

b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.

c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.

d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities

that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).  
The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the



appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a  
copyright notice that is included in or attached to the work  
(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object  
form, that is based on (or derived from) the Work and for which the  
editorial revisions, annotations, elaborations, or other modifications  
represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a  
copyright notice that is included in or attached to the work  
(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object  
form, that is based on (or derived from) the Work and for which the  
editorial revisions, annotations, elaborations, or other modifications  
represent, as a whole, an original work of authorship. For the purposes  
of this License, Derivative Works shall not include works that remain  
separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.



7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.



You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2014-2017 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Docker

Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/kr/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.  
Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012,2013 Ernest Micklei

MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the

"Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.



## END OF TERMS AND CONDITIONS

Copyright 2014-2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.

- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 Sam Ghods

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the

direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of



this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and

wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor

has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation



source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

(except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and

may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify,

defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2013-2017 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:



\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2011-2016 Canonical Ltd.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and

issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

## 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the

attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate



and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

MIT License

Copyright (c) 2016 json-iterator

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

MIT License

Copyright (c) 2016 Jeremy Saenz & Contributors

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its



distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2017 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>  
<https://github.com/beorn7/perks>  
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein

See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format

<http://github.com/golang/protobuf/>

Copyright 2010 The Go Authors

See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).

[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)

Copyright 2013 Matt T. Proud

Licensed under the Apache License, Version 2.0

procfs provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at

SoundCloud Ltd. (<http://soundcloud.com/>).

Copyright (c) 2013 Dario Casta. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel. Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. Contribution

means Covered Software of a particular Contributor.

### 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

#### 1.6. Executable Form

means any form of the work other than Source Code Form.

#### 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

#### 1.8. License

means this document.

#### 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. Source Code Form

means the form of the work preferred for making modifications.

#### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its

Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by

reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all



distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including

negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

#### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

##### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

##### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible With Secondary Licenses, as defined by the Mozilla Public License, v. 2.0.  
Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR

A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
  
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT



LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2013, Patrick Mezard

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution

become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License.

Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

#### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

#### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the

extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section

2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject

matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v.

2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a



relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Blackfriday is distributed under the Simplified BSD License:

- > Copyright 2011 Russ Ross
- > All rights reserved.
- >
- > Redistribution and use in source and binary forms, with or without
- > modification, are permitted provided that the following conditions
- > are met:
- >
- > 1. Redistributions of source code must retain the above copyright
- > notice, this list of conditions and the following disclaimer.
- >
- > 2. Redistributions in binary form must reproduce the above
- > copyright notice, this list of conditions and the following
- > disclaimer in the documentation and/or other materials provided with
- > the distribution.
- >
- > THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
- > "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
- > LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
- > FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
- > COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
- > INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
- > BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
- > LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
- > CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- > LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
- > ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
- > POSSIBILITY OF SUCH DAMAGE.

Common libraries shared by Prometheus Go components.

Copyright 2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

ISC License

Copyright (c) 2012-2016 Dave Collins <dave@davec.name>

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH (open-source@konsorten.de)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or

Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.  
The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of  
this software and associated documentation files (the "Software"), to deal in  
the Software without restriction, including without limitation the rights to  
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of  
the Software, and to permit persons to whom the Software is furnished to do so,  
subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS  
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR  
COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER  
IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN  
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
go-runhcs is a fork of go-runc

The following is runc's legal notice.

---

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the  
United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not

violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.  
The MIT License (MIT)

Copyright (c) 2014 Brian Goff

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.264 unbound 1.5.10

### 1.264.1 Available under license :

Copyright (c) 2009, Zdenek Vasicek (vasicek AT fit.vutbr.cz)

Marek Vavrusa (xvavru00 AT stud.fit.vutbr.cz)

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the organization nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.



THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2007, NLnet Labs. All rights reserved.

This software is open source.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the NLNET LABS nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009, Dmitriy Demidov aka terminus. All rights reserved.

This software is open source.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Dmitriy Demidov nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.265 jaxb-core 2.3.3

### 1.265.1 Available under license :

Apache CXF  
Copyright 2006-2011 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,

incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.266 Lombok 1.18.12

## 1.266.1 Available under license :

Copyright (C) 2009-2015 The Project Lombok Authors.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.267 jansi-osx 1.8

## 1.267.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2009-2017 the original author(s).
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1257860178_1643019491.32/0/jansi-osx-1-8-sources-
```

```
jar/org/fusesource/jansi/internal/Kernel32.java
* /opt/cola/permits/1257860178_1643019491.32/0/jansi-osx-1-8-sources-
jar/org/fusesource/jansi/internal/WindowsSupport.java
* /opt/cola/permits/1257860178_1643019491.32/0/jansi-osx-1-8-sources-
jar/org/fusesource/jansi/internal/CLibrary.java
```

# 1.268 apr 1.6.5

## 1.268.1 Available under license :

Apache Portable Runtime  
Copyright (c) 2000-2019 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were developed at the National Center  
for Supercomputing Applications (NCSA) at the University of  
Illinois at Urbana-Champaign.

This software contains code derived from the RSA Data Security  
Inc. MD5 Message-Digest Algorithm.

This software contains code derived from UNIX V7, Copyright(C)  
Caldera International Inc.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity



exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## APACHE PORTABLE RUNTIME SUBCOMPONENTS:

The Apache Portable Runtime includes a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

From strings/apr\_fnmatch.c, include/apr\_fnmatch.h, misc/unix/getopt.c, file\_io/unix/mktemp.c, strings/apr\_strings.c:

/\*

\* Copyright (c) 1987, 1993, 1994  
\* The Regents of the University of California. All rights reserved.  
\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:  
\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.  
\* 3. All advertising materials mentioning features or use of this software  
\* must display the following acknowledgement:  
\* This product includes software developed by the University of  
\* California, Berkeley and its contributors.  
\* 4. Neither the name of the University nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.  
\*  
\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

From network\_io/unix/inet\_ntop.c, network\_io/unix/inet\_pton.c:

```
/* Copyright (c) 1996 by Internet Software Consortium.
*
* Permission to use, copy, modify, and distribute this software for any
* purpose with or without fee is hereby granted, provided that the above
* copyright notice and this permission notice appear in all copies.
*
* THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS
* ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE
* CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL
* DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR
* PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS
* ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS
* SOFTWARE.
```

From dso/aix/dso.c:

- \* Based on libdl (dlfcn.c/dlfcn.h) which is
- \* Copyright (c) 1992,1993,1995,1996,1997,1988
- \* Jens-Uwe Mager, Helios Software GmbH, Hannover, Germany.
- \*
- \* Not derived from licensed software.
- \*
- \* Permission is granted to freely use, copy, modify, and redistribute
- \* this software, provided that the author is not construed to be liable
- \* for any results of using the software, alterations are clearly marked
- \* as such, and this notice is not modified.

From strings/apr\_strnatcmp.c, include/apr\_strings.h:

strnatcmp.c -- Perform 'natural order' comparisons of strings in C.  
Copyright (C) 2000 by Martin Pool <mbp@humblebug.org.au>

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

From strings/apr\_snprintf.c:

- \*
- \* cvt - IEEE floating point formatting routines.
- \* Derived from UNIX V7, Copyright(C) Caldera International Inc.
- \*

Copyright(C) Caldera International Inc. 2001-2002. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code and documentation must retain the above

copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed or owned by Caldera International, Inc.

Neither the name of Caldera International, Inc. nor the names of other contributors may be used to endorse or promote products derived from this software without specific prior written permission.

USE OF THE SOFTWARE PROVIDED FOR UNDER THIS LICENSE BY CALDERA INTERNATIONAL, INC. AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL CALDERA INTERNATIONAL, INC. BE LIABLE FOR ANY DIRECT, INDIRECT INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.269 p11-kit 0.23.20-1ubuntu0.1

### 1.269.1 Available under license :

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The names of contributors to this software may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.270 lua 5.1.4

### 1.270.1 Available under license :

Lua License

-----

Lua is licensed under the terms of the MIT license reproduced below. This means that Lua is free software and can be used for both academic and commercial purposes at absolutely no cost.

For details and rationale, see <http://www.lua.org/license.html> .

=====

Copyright (C) 1994-2008 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.



---

(end of COPYRIGHT)

This package was debianized by John V. Belmonte <jbelmonte@debian.org> on  
Sun, 20 Nov 2005 19:55:05 -0500.

It was downloaded from <<http://www.lua.org/ftp/>>.

Copyright Holder: Lua Team <team@lua.org>

License:

Copyright (C) 1994-2005 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.271 pcre 8.42

### 1.271.1 Available under license :

PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End

PCRE LICENCE

-----

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as

specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

## THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel  
Email local part: ph10  
Email domain: cam.ac.uk

University of Cambridge Computing Service,  
Cambridge, England.

Copyright (c) 1997-2018 University of Cambridge  
All rights reserved.

## PCRE JUST-IN-TIME COMPILATION SUPPORT

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2010-2018 Zoltan Herczeg  
All rights reserved.

## STACK-LESS JUST-IN-TIME COMPILER

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2009-2018 Zoltan Herczeg  
All rights reserved.

## THE C++ WRAPPER FUNCTIONS

-----

Contributed by: Google Inc.

Copyright (c) 2007-2012, Google Inc.  
All rights reserved.

#### THE "BSD" LICENCE

-----

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the name of Google Inc. nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products

derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.272 swagger-core 2.1.9

### 1.272.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2020 SmartBear Software Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.273 openssl 1.1.1d

## 1.273.1 Available under license :

### LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts.

### OpenSSL License

-----

```
/* =====
* Copyright (c) 1998-2019 The OpenSSL Project. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
```



\*  
 \* 1. Redistributions of source code must retain the above copyright  
 \* notice, this list of conditions and the following disclaimer.  
 \*  
 \* 2. Redistributions in binary form must reproduce the above copyright  
 \* notice, this list of conditions and the following disclaimer in  
 \* the documentation and/or other materials provided with the  
 \* distribution.  
 \*  
 \* 3. All advertising materials mentioning features or use of this  
 \* software must display the following acknowledgment:  
 \* "This product includes software developed by the OpenSSL Project  
 \* for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"  
 \*  
 \* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to  
 \* endorse or promote products derived from this software without  
 \* prior written permission. For written permission, please contact  
 \* openssl-core@openssl.org.  
 \*  
 \* 5. Products derived from this software may not be called "OpenSSL"  
 \* nor may "OpenSSL" appear in their names without prior written  
 \* permission of the OpenSSL Project.  
 \*  
 \* 6. Redistributions of any form whatsoever must retain the following  
 \* acknowledgment:  
 \* "This product includes software developed by the OpenSSL Project  
 \* for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"  
 \*  
 \* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY  
 \* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR  
 \* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR  
 \* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
 \* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT  
 \* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;  
 \* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
 \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
 \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
 \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
 \* OF THE POSSIBILITY OF SUCH DAMAGE.  
 \* =====  
 \*  
 \* This product includes cryptographic software written by Eric Young  
 \* (eay@cryptsoft.com). This product includes software written by Tim  
 \* Hudson (tjh@cryptsoft.com).  
 \*  
 \*/

Original SSLeay License

-----

```
/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
 * All rights reserved.
 *
 * This package is an SSL implementation written
 * by Eric Young (eay@cryptsoft.com).
 * The implementation was written so as to conform with Netscapes SSL.
 *
 * This library is free for commercial and non-commercial use as long as
 * the following conditions are aheared to. The following conditions
 * apply to all code found in this distribution, be it the RC4, RSA,
 * lhash, DES, etc., code; not just the SSL code. The SSL documentation
 * included with this distribution is covered by the same copyright terms
 * except that the holder is Tim Hudson (tjh@cryptsoft.com).
 *
 * Copyright remains Eric Young's, and as such any Copyright notices in
 * the code are not to be removed.
 * If this package is used in a product, Eric Young should be given attribution
 * as the author of the parts of the library used.
 * This can be in the form of a textual message at program startup or
 * in documentation (online or textual) provided with the package.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the copyright
 * notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in the
 * documentation and/or other materials provided with the distribution.
 * 3. All advertising materials mentioning features or use of this software
 * must display the following acknowledgement:
 * "This product includes cryptographic software written by
 * Eric Young (eay@cryptsoft.com)"
 * The word 'cryptographic' can be left out if the rouines from the library
 * being used are not cryptographic related :-).
 * 4. If you include any Windows specific code (or a derivative thereof) from
 * the apps directory (application code) you must include an acknowledgement:
 * "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
 *
 * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
```

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*

\* The licence and distribution terms for any publically available version or  
\* derivative of this code cannot be changed. i.e. this code cannot simply be  
\* copied and put under another distribution licence  
\* [including the GNU Public Licence.]

\*/

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place - Suite 330, Boston, MA  
02111-1307, USA.

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
License is intended to guarantee your freedom to share and change free  
software--to make sure the software is free for all its users. This  
General Public License applies to most of the Free Software  
Foundation's software and to any other program whose authors commit to  
using it. (Some other Free Software Foundation software is covered by  
the GNU Library General Public License instead.) You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
this service if you wish), that you receive source code or can get it  
if you want it, that you can change the software or use pieces of it  
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid  
anyone to deny you these rights or to ask you to surrender the rights.  
These restrictions translate to certain responsibilities for you if you  
distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether  
gratis or for a fee, you must give the recipients all the rights that  
you have. You must make sure that they, too, receive or can get the  
source code. And you must show them these terms so they know their

rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License

along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER



PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## The "Artistic License"

### Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

### Definitions:

"Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder as specified below.

"Copyright Holder" is whoever is named in the copyright or copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved,

and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
  - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
  - b) use the modified Package only within your corporation or organization.
  - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.
  - d) make other distribution arrangements with the Copyright Holder.
4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
  - a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.
  - b) accompany the distribution with the machine-readable source of the Package with your modifications.
  - c) give non-standard executables non-standard names, and clearly

document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the interpreter is so embedded.

6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.

7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the regression tests for the language.

8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.

9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

# 1.274 flyway-core 6.4.4

## 1.274.1 Available under license :

No license file was found, but licenses were detected in source scan.

2020 Redgate Software Ltd

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Found in path(s):

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/META-  
INF/maven/org.flywaydb/flyway-core/pom.xml

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2010-2020 Redgate Software Ltd

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resource/filesystem/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/OracleDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/TimeFormat.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/CompositeMigrationResolver.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/firebird/FirebirdDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/CockroachRetryingTransactionalExecutionTemplate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlite/SQLiteParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/OracleParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/Database.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/h2/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/FileCopyUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/derby/DerbyDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptExecutor.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/clazz/ClassProvider.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/license/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/command/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/ExceptionUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/cockroachdb/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/schemahistory/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/filesystem/FileSystemScanner.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/derby/DerbySchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/schemahistory/SchemaHistory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlStatement.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sybasease/SybaseASEConnection.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/android/AndroidScanner.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/android/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/hsqldb/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/UrlResolver.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/migration/BaseJavaMigration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/redshift/RedshiftDatabase.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/db2/DB2Table.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/saphana/SAPHANASchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/StopWatch.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/InfoOutputProvider.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/DefaultUrlResolver.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/RowMapper.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/license/FlywayEditionUpgradeRequiredException.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/PlaceholderReplacingReader.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/ParsingContext.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/LoadableResource.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlserver/SQLServerTable.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/command/DbSchemas.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/license/VersionPrinter.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/StringUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/saphana/SAPHANADatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/derby/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/ClassPathLocationScanner.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScript.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sybasease/SybaseASETTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLConnection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/WarningImpl.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/db2/DB2Connection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/FeatureDetector.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLConnection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/LogCreatorFactory.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/h2/H2Table.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/Recorder.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/migration/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/BomFilter.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/TransactionalExecutionTemplate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/SchemaObject.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/schemahistory/JdbcTableSchemaHistory.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/informix/InformixConnection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/jboss/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/CloseableIterator.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/package-info.java



\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/ExecutionTemplate.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/executor/Context.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/migration/JavaMigration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/Scanner.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/configuration/ConfigUtils.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/redshift/RedshiftConnection.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/android/AndroidLogCreator.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/h2/H2Schema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/JarFileClassPathLocationScanner.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/PeekingReader.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/ResourceNameCache.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/command/DbClean.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/firebird/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/PositionTrackingReader.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/MigrationInfoService.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/snowflake/SnowflakeSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/snowflake/SnowflakeConnection.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/FileSystemClassPathLocationScanner.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/jboss/JBossVFSv2UrlResolver.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/h2/H2Database.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/Statement.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/android/ContextHolder.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBParser.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/Schema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/configuration/ClassicConfiguration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/ResourceProvider.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/ErrorCode.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/OracleResults.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/info/MigrationInfoContext.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/LocationScannerCache.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlserver/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/schemahistory/AppliedMigration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/OracleSqlScriptExecutor.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/callback/CallbackExecutor.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/Resource.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/executor/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/postgresql/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/db2/DB2Parser.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptMetadata.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/redshift/RedshiftSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/StatementType.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/DefaultSqlScriptExecutor.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/ResourceNameValidator.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlite/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/OracleTable.java

- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/oracle/OracleConnection.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/slf4j/Slf4jLogCreator.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/hsqldb/HSQldbConnection.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/ParserContext.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/hsqldb/HSQldbParser.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/saphana/SAPHANATable.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/java/JavaMigrationExecutor.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/package-info.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/license/Edition.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/jboss/JBossVFSv3ClassPathLocationScanner.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/callback/Statement.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBDatabase.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/apachecommons/ApacheCommonsLog.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLParser.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlStatementIterator.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/slf4j/Slf4jLog.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBRetryingStrategy.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/callback/Error.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/RecordingReader.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/migration/Context.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBConnection.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/FlywayException.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/package-info.java
- \* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/javautil/JavaUtilLog.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/slf4j/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/db2/DB2Database.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/command/DbRepair.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/firebird/FirebirdParser.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/Parser.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/PlainExecutionTemplate.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/info/MigrationInfoDumper.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/ResourceName.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLDatabase.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/Type.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/Table.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/configuration/FluentConfiguration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/Locations.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/MigrationInfoHelper.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/informix/InformixSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/logging/Log.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/DatabaseType.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLType.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/ParsedSqlStatement.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/android/AndroidLog.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/license/FlywayProUpgradeRequiredException.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/android/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/snowflake/SnowflakeDatabase.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/logging/LogFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/java/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/Function.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/AsciiTable.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLNamedLockTemplate.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/callback/DefaultCallbackExecutor.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/resolver/ResolvedMigration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/exception/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/info/MigrationInfoServiceImpl.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/configuration/Configuration.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/informix/InformixDatabase.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/derby/DerbyConnection.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/command/DbMigrate.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/MigrationInfo.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/base/Connection.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/ErrorImpl.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/firebird/FirebirdConnection.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/DateUtils.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/callback/NoopCallbackExecutor.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/DatabaseExecutionStrategy.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/sql/SqlMigrationExecutorFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/informix/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlserver/SQLServerParser.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/output/InfoOutputFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/jdbc/Results.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/db2/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/sqlscript/SqlScriptExecutorFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/callback/SqlScriptCallbackFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlserver/SQLServerEngineEdition.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/command/DbBaseline.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/SqlCallable.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/info/AppliedMigrationAttributes.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/sql/DefaultSqlMigrationExecutorFactory.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/mysql/MySQLTable.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/informix/InformixTable.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/MigrationState.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/MigrationType.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/snowflake/SnowflakeTable.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/callback/Warning.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/Flyway.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlserver/SQLServerSchema.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/javautil/package-info.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/ChecksumCalculator.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resolver/sql/SqlMigrationExecutor.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/callback/NoopCallback.java

\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-

jar/org/flywaydb/core/internal/util/BomStrippingReader.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/callback/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/java/ResolvedJavaMigration.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/logging/javautil/JavaUtilLogCreator.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/output/ErrorOutput.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/cockroachdb/CockroachDBTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/saphana/SAPHANAConnection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/clazz/NoopClassProvider.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/redshift/RedshiftType.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerConnection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/redshift/RedshiftParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/oracle/OracleSchema.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLAdvisoryLockTemplate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/configuration/ConfigurationValidator.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/callback/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/ResolvedMigrationImpl.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/logging/apachecommons/ApacheCommonsLogCreator.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/db2/DB2Type.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/util/UrlUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/logging/LogCreator.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/db2/DB2Schema.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/DriverDataSource.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sqlite/SQLiteSchema.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/TableLockingExecutionTemplate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-

jar/org/flywaydb/core/internal/command/DbInfo.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/ResolvedMigrationComparator.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/JdbcUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/output/MigrationOutput.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/h2/H2Parser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/logging/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/callback/Callback.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resource/android/AndroidResource.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/scanner/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/MigrationVersion.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/derby/DerbyTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/scanner/classpath/JarUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/java/ScanningJavaMigrationResolver.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/snowflake/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/redshift/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/Result.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sqlite/SQLiteConnection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/info/MigrationInfoImpl.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/informix/InformixParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/command/DbValidate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/mysql/MySQLSchema.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/firebird/FirebirdSchema.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sqlite/SQLiteTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-



jar/org/flywaydb/core/api/callback/BaseCallback.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sqlserver/SQLServerDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/mysql/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/sql/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/saphana/SAPHANAParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/output/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/derby/DerbyParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/schemahistory/SchemaHistoryFactory.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/sqlscript/FlywaySqlScriptException.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/saphana/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/sql/SqlMigrationResolver.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/DatabaseFactory.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/redshift/RedshiftTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/DefaultExecutionStrategy.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resource/NoopResourceProvider.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/parser/TokenType.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/db2/DB2Function.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/h2/H2Connection.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resource/classpath/ClassPathResource.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/parser/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/resolver/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLCopyParsedStatement.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/clazz/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/scanner/classpath/OsgiClassPathLocationScanner.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-

jar/org/flywaydb/core/internal/database/firebird/FirebirdTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/scanner/classpath/ResourceAndClassScanner.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sybasease/SybaseASEDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/parser/Token.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/JdbcTemplate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/postgresql/PostgreSQLTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/android/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/info/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/resolver/ChecksumMatcher.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/resolver/MigrationResolver.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/configuration/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resolver/java/FixedJavaMigrationResolver.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/ExecutionTemplateFactory.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/executor/MigrationExecutor.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/sqlscript/Delimiter.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/Location.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/jdbc/JdbcConnectionFactory.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/resource/ResourceType.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/callback/Context.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/api/configuration/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/database/sybasease/SybaseASEParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/util/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/sqlscript/ParserSqlScript.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-  
jar/org/flywaydb/core/internal/callback/SimpleContext.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-

jar/org/flywaydb/core/api/resolver/Context.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/classpath/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/AbbreviationUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/exception/FlywayDbUpgradeRequiredException.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/snowflake/SnowflakeParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlite/SQLiteDatabase.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/scanner/classpath/ClassPathScanner.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/IOUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/api/callback/Event.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sybasease/SybaseASESchema.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/StringResource.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/ResourceNameParser.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/output/InfoOutput.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/ClassUtils.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/hsqldb/HSQLDBTable.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/parser/PositionTracker.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/logging/apachecommons/package-info.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/util/Pair.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/resource/filesystem/FileSystemResource.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/exception/FlywaySqlException.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sqlserver/SQLServerApplicationLockTemplate.java  
\* /opt/cola/permits/1100808595\_1602883955.19/0/flyway-core-6-4-4-sources-jar/org/flywaydb/core/internal/database/sybasease/package-info.java

# 1.275 libestr 0.1.9

## 1.275.1 Available under license :

libestr is available under the terms of the GNU LGPL v2.1 or above (full text below).

-----  
GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means

all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any

application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.



If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the

copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot

use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

liblognorm, a fast samples-based log normalization library

Copyright (C) 2010 Rainer Gerhards

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

## 1.276 byte-buddy 1.10.14

### 1.276.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions



for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright \${project.inceptionYear} - \${current.year} \${copyright.holder}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.277 libpcap 1.7.4

### 1.277.1 Available under license :

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright

- notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
  3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

## 1.278 libusrctp 1.0

### 1.278.1 Available under license :

Copyright (c) 2015, Randall Stewart and Michael Tuexen  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of usrctp nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.279 nginx 1.18.0

## 1.279.1 Available under license :

```
/*
 * Copyright (C) 2002-2019 Igor Sysoev
 * Copyright (C) 2011-2019 Nginx, Inc.
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in the
 * documentation and/or other materials provided with the distribution.
 *
 * THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.
 */
```

# 1.280 @tensorflow/tfjs 3.11.0

## 1.280.1 Available under license :

TensorFlow.js Layers is licensed under both the MIT and the Apache 2.0 licenses.

=====  
COPYRIGHT

All contributions by Franois Chollet:  
Copyright (c) 2015 - 2018, Franois Chollet.  
All rights reserved.

All contributions by Google:  
Copyright (c) 2015 - 2018, Google LLC.  
All rights reserved.

All contributions by Microsoft:  
Copyright (c) 2017 - 2018, Microsoft, LLC  
All rights reserved.

All other contributions:  
Copyright (c) 2015 - 2018, the respective contributors.  
All rights reserved.

Each contributor holds copyright over their respective contributions.  
The project versioning (Git) records all such contribution source information.

## LICENSE

The MIT License (MIT)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,



incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner

or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.281 golang 1.8

## 1.281.1 Available under license :

```
This is the official list of people who can contribute
(and typically have contributed) code to the Go repository.
The AUTHORS file lists the copyright holders; this file
lists people. For example, Google employees are listed here
but not in AUTHORS, because Google holds the copyright.
#
The submission process automatically checks to make sure
that people submitting code are listed in this file (by email address).
#
Names should be added to this file only after verifying that
the individual or the individual's organization has agreed to
the appropriate Contributor License Agreement, found here:
#
http://code.google.com/legal/individual-cla-v1.0.html
http://code.google.com/legal/corporate-cla-v1.0.html
#
The agreement for individuals can be filled out on the web.
#
When adding J Random Contributor's name to this file,
either J's name or J's organization's name should be
added to the AUTHORS file, depending on whether the
individual or corporate CLA was used.

Names should be added to this file like so:
Individual's name <submission email address>
Individual's name <submission email address> <email2> <emailN>
#
An entry with multiple email addresses specifies that the
first address should be used in the submit logs and
that the other addresses should be recognized as the
same person when interacting with Gerrit.

Please keep the list sorted.

Aamir Khan <syst3m.w0rm@gmail.com>
Aaron France <aaron.l.france@gmail.com>
Aaron Jacobs <jacobsa@google.com>
```

Aaron Kemp <kemp.aaron@gmail.com>  
Aaron Torres <tcboox@gmail.com>  
Aaron Zinman <aaron@azinman.com>  
Abe Haskins <abeisgreat@abeisgreat.com>  
Abhinav Gupta <abhinav.g90@gmail.com>  
Adam Langley <agl@golang.org>  
Adrian Nos <nos.adrian@gmail.com>  
Adrian O'Grady <elpollouk@gmail.com>  
Adrien Bustany <adrien-xx-google@bustany.org>  
Acio Jnior <aeciodantasjunior@gmail.com>  
Ahmed Waheed Moanes <oneofone@gmail.com>  
Ahmy Yulrizka <yulrizka@gmail.com>  
Aiden Scandella <ai@uber.com>  
Ainar Garipov <gugl.zadolbal@gmail.com>  
Akihiro Suda <suda.kyoto@gmail.com>  
Akshat Kumar <seed@mail.nanosouffle.net>  
Alan Donovan <adonovan@google.com>  
Alan Shreve <alan@inconshreveable.com>  
Albert Nigmatzianov <albertnigma@gmail.com>  
Albert Strasheim <fullung@gmail.com>  
Albert Yu <yukinying@gmail.com>  
Alberto Bertogli <albertito@blitiri.com.ar>  
Alberto Donizetti <alb.donizetti@gmail.com>  
Alberto Garca Hierro <alberto@garciahierro.com> <alberto.garcia.hierro@gmail.com>  
Aleksandar Dezelin <dezelin@gmail.com>  
Alessandro Arzilli <alessandro.arzilli@gmail.com>  
Alessandro Baffa <alessandro.baffa@gmail.com>  
Alex A Skinner <alex@lx.lc>  
Alex Brainman <alex.brainman@gmail.com>  
Alex Bramley <abramley@google.com>  
Alex Browne <stephenalexbrowne@gmail.com>  
Alex Carol <alex.carol.c@gmail.com>  
Alex Jin <toalexjin@gmail.com>  
Alex Plugaru <alex@plugaru.org> <alexandru.plugaru@gmail.com>  
Alex Schroeder <alex@gnu.org>  
Alex Sergeev <abc@alexsergeev.com>  
Alex Vaghin <crhyme@google.com>  
Alexander Demakin <alexander.demakin@gmail.com>  
Alexander Dring <email@alex.d.ch>  
Alexander Larsson <alexander.larsson@gmail.com>  
Alexander Menzhinsky <amenzhinsky@gmail.com>  
Alexander Morozov <lk4d4math@gmail.com>  
Alexander Neumann <alexander@bumper.de>  
Alexander Orlov <alexander.orlov@loxal.net>  
Alexander Reece <awreece@gmail.com>  
Alexander Surma <surma@surmair.de>  
Alexander Zhavnerchik <alex.vizor@gmail.com>  
Alexander Zolotov <goldifit@gmail.com>

Alexandre Cesaro <alexandre.cesaro@gmail.com>  
Alexandre Fiori <fiorix@gmail.com>  
Alexandre Normand <alexandre.normand@gmail.com>  
Alexandru Mooi <brtznr@gmail.com>  
Alexei Sholik <alcosholik@gmail.com>  
Alexey Borzenkov <snaury@gmail.com>  
Alexey Palazhchenko <alexey.palazhchenko@gmail.com>  
Alexis Imperial-Legrand <ail@google.com>  
Aliaksandr Valialkin <valyala@gmail.com>  
Alif Rachmawadi <subosito@gmail.com>  
Allan Simon <allan.simon@supinfo.com>  
Alok Menghrajani <alok.menghrajani@gmail.com>  
Amir Mohammad Saied <amir@gluegadget.com>  
Amrut Joshi <amrut.joshi@gmail.com>  
Andre Nathan <andrenth@gmail.com>  
Andrea Spadaccini <spadaccio@google.com>  
Andreas Auernhammer <aead@mail.de>  
Andreas Jellinghaus <andreas@ionisiert.de> <anj@google.com>  
Andreas Litt <andreas.litt@gmail.com>  
Andrei Korzhevskii <a.korzhevskiy@gmail.com>  
Andrei Vieru <euvieru@gmail.com>  
Andres Erbsen <andreser@google.com>  
Andrew Austin <andrewacht@gmail.com>  
Andrew Balholm <andybalholm@gmail.com>  
Andrew Bonventre <andybons@chromium.org>  
Andrew Bursavich <abursavich@gmail.com>  
Andrew Ekstedt <andrew.ekstedt@gmail.com>  
Andrew Etter <andrew.etter@gmail.com>  
Andrew Gerrand <adg@golang.org>  
Andrew Harding <andrew@spacemonkey.com>  
Andrew Lutomirski <andy@luto.us>  
Andrew Pilloud <andrewpilloud@igneoussystem.com>  
Andrew Pogrebnoy <absourd.noise@gmail.com>  
Andrew Pritchard <awpritchard@gmail.com>  
Andrew Radev <andrey.radev@gmail.com>  
Andrew Skiba <skibaa@gmail.com>  
Andrew Szeto <andrew@jabagawee.com>  
Andrew Werner <andrew@upthere.com> <awerner32@gmail.com>  
Andrew Wilkins <axwalk@gmail.com>  
Andrew Williams <williams.andrew@gmail.com>  
Andrey Mirtchovski <mirtchovski@gmail.com>  
Andrey Petrov <andrey.petrov@shazow.net>  
Andriy Lytvynov <lytvynov.a.v@gmail.com>  
Andy Balholm <andy@balholm.com>  
Andy Davis <andy@bigandian.com>  
Andy Finkenstadt <afinkenstadt@zynga.com>  
Andy Maloney <asmaloney@gmail.com>  
Anfernee Yongkun Gui <anfernee.gui@gmail.com>



Angelo Bulfone <mbulfone@gmail.com>  
Anh Hai Trinh <anh.hai.trinh@gmail.com>  
Anmol Sethi <anmol@aubble.com>  
Anschel Schaffer-Cohen <anschelsc@gmail.com>  
Anthony Canino <anthony.canino1@gmail.com>  
Anthony Eufemio <anthony.eufemio@gmail.com>  
Anthony Martin <ality@pbrane.org>  
Anthony Starks <ajstarks@gmail.com>  
Anthony Woods <awoods@raintank.io>  
Antonio Bibiano <antbbn@gmail.com>  
Antonio Murdaca <runcom@redhat.com>  
Apisak Darakananda <pongad@gmail.com>  
Aram Hvrneanu <aram@mgk.ro>  
Areski Belaid <areski@gmail.com>  
Arkadi Pyuro <arkadi@google.com>  
Arlo Breault <arlolra@gmail.com>  
Arnaud Ysmal <arnaud.ysmal@gmail.com>  
Arne Hormann <arnehormann@gmail.com>  
Arnout Engelen <arnout@bzst.net>  
Aron Nopanen <aron.nopanen@gmail.com>  
Artyom Pervukhin <artyom.pervukhin@gmail.com>  
Arvindh Rajesh Tamilmani <art@a-30.net>  
Asim Shankar <asimshankar@gmail.com>  
Atin Malaviya <amalaviy@akamai.com>  
Ato Araki <ato.araki@gmail.com>  
Audrey Lim <audreylh@gmail.com>  
Augusto Roman <aroman@gmail.com>  
Aulus Egnatius Varialus <varialus@gmail.com>  
Austin Clements <austin@google.com> <aclements@csail.mit.edu>  
awaw fumin <awawfumin@gmail.com>  
Ayanamist Yang <ayanamist@gmail.com>  
Aymerick Jhanne <aymerick@jehanne.org>  
Baiju Muthukadan <baiju.m.mail@gmail.com>  
Balazs Lecz <leczb@google.com>  
Ben Burkert <ben@benburkert.com>  
Ben Eitzen <eitzenb@golang.org>  
Ben Fried <ben.fried@gmail.com>  
Ben Lubar <ben.lubar@gmail.com>  
Ben Lynn <benlynn@gmail.com>  
Ben Olive <sionide21@gmail.com>  
Benjamin Black <b@b3k.us>  
Benjamin Prosnitz <bprosnitz@google.com>  
Benjamin Wester <bwester@squareup.com>  
Benny Siegert <bsiegert@gmail.com>  
Benoit Sigoure <tsunanet@gmail.com>  
Berengar Lehr <Berengar.Lehr@gmx.de>  
Bill Neubauer <wcn@golang.org> <wcn@google.com> <bill.neubauer@gmail.com>  
Bill O'Farrell <billo@ca.ibm.com>

Bill Thiede <couchmoney@gmail.com>  
Billie Harold Cleek <bhcleek@gmail.com>  
Billy Lynch <wlynch@google.com>  
Bjorn Tillenius <bjorn@tillenius.me>  
Bjorn Tipling <bjorn.tipling@gmail.com>  
Blake Gentry <blakesgentry@gmail.com>  
Blake Mizerany <blake.mizerany@gmail.com>  
Blixt <me@blixt.nyc>  
Bobby Powers <bobbypowers@gmail.com>  
Boris Nagaev <nagaev@google.com>  
Brad Fitzpatrick <bradfitz@golang.org> <bradfitz@gmail.com>  
Brad Garcia <bgarcia@golang.org>  
Braden Bassingthwaite <bbassingthwaite@vendasta.com>  
Brady Catherman <brady@gmail.com>  
Brady Sullivan <brady@bsull.com>  
Brandon Gilmore <varz@google.com>  
Brendan Daniel Tracey <tracey.brendan@gmail.com>  
Brendan O'Dea <bod@golang.org>  
Brett Cannon <bcannon@gmail.com>  
Brian Dellisanti <briandellisanti@gmail.com>  
Brian G. Merrell <bgmerrell@gmail.com>  
Brian Gitonga Marete <marete@toshnix.com> <bgmarete@gmail.com> <bgm@google.com>  
Brian Kennedy <btkenedy@gmail.com>  
Brian Ketelsen <bketelsen@gmail.com>  
Brian Slesinsky <skybrian@google.com>  
Brian Smith <ohohvi@gmail.com>  
Bryan Alexander <Kozical@msn.com>  
Bryan C. Mills <bcmills@google.com>  
Bryan Chan <bryan.chan@ca.ibm.com>  
Bryan Ford <brynosaurus@gmail.com>  
Caine Tighe <arctanofyourface@gmail.com>  
Caio Marcelo de Oliveira Filho <caio.oliveira@intel.com>  
Caleb Spare <cespare@gmail.com>  
Carl Chatfield <carlchatfield@gmail.com>  
Carl Jackson <carl@stripe.com>  
Carl Johnson <me@carlmjohnson.net>  
Carl Mastrangelo <notcarl@google.com>  
Carl Shapiro <cshapiro@google.com> <cshapiro@golang.org>  
Carlos Castillo <cookieo9@gmail.com>  
Carlos Cirello <uldericofilho@gmail.com>  
Carlos Eduardo Seo <cseo@linux.vnet.ibm.com>  
Cary Hull <chull@google.com>  
Case Nelson <case.nelson@gmail.com>  
Casey Marshall <casey.marshall@gmail.com>  
Catalin Nicutar <cnicutar@google.com>  
Catalin Patulea <catalinp@google.com>  
Cedric Staub <cs@squareup.com>  
Cezar S Espinola <cezarsa@gmail.com>

ChaiShushan <chaishushan@gmail.com>  
Charles L. Dorian <cldorian@gmail.com>  
Charles Lee <zombie.fml@gmail.com>  
Charles Weill <weill@google.com>  
Cherry Zhang <cherryyz@google.com>  
Chris Broadfoot <cbro@golang.org>  
Chris Dollin <ehog.hedge@gmail.com>  
Chris Farmiloe <chrisfarms@gmail.com>  
Chris Hines <chris.cs.guy@gmail.com>  
Chris Howey <howeyc@gmail.com>  
Chris Hundt <hundt@google.com>  
Chris Jones <chris@cjones.org> <chris.jones.yar@gmail.com>  
Chris Kastorff <encryptio@gmail.com>  
Chris Lennert <calennert@gmail.com>  
Chris Manghane <cmang@golang.org>  
Chris McGee <sirnewton\_01@yahoo.ca> <newton688@gmail.com>  
Chris Stockton <chrisstocktonaz@gmail.com>  
Chris Zou <chriszou@ca.ibm.com>  
Christian Couder <chriscool@tuxfamily.org>  
Christian Himpel <chressie@googlemail.com> <chressie@gmail.com>  
Christine Hansmann <chhansmann@gmail.com>  
Christoffer Buchholz <christoffer.buchholz@gmail.com>  
Christoph Hack <christoph@tux21b.org>  
Christopher Cahoon <chris.cahoon@gmail.com>  
Christopher Guiney <chris@guiney.net>  
Christopher Nelson <nadiasvertex@gmail.com>  
Christopher Nielsen <m4dh4tt3r@gmail.com>  
Christopher Redden <christopher.redden@gmail.com>  
Christopher Swenson <cswenson@google.com>  
Christopher Wedgwood <cw@f00f.org>  
Christy Perez <christy@linux.vnet.ibm.com>  
CL Sung <clsung@gmail.com> <cl\_sung@htc.com>  
Clement Skau <clementskau@gmail.com>  
Colby Ranger <cranger@google.com>  
Colin Cross <ccross@android.com>  
Colin Edwards <colin@recursivepenguin.com>  
Colin Kennedy <moshen.colin@gmail.com>  
Conrad Irwin <conrad.irwin@gmail.com>  
Conrad Meyer <cemeyer@cs.washington.edu>  
Corey Thomasson <cthom.lists@gmail.com>  
Cosmos Nicolaou <cnicolaou@google.com>  
Cristian Staretu <unclejacksons@gmail.com>  
Cuihtlauac ALVARADO <cuihtlauac.alvarado@orange.com>  
Cyrill Schumacher <cyrill@schumacher.fm>  
Damian Gryski <dgryski@gmail.com>  
Damien Neil <dneil@google.com>  
Dan Caddigan <goldcaddy77@gmail.com>  
Dan Callahan <dan.callahan@gmail.com>

Dan Harrington <harringtond@google.com>  
Dan Jacques <dnj@google.com>  
Dan Peterson <dpiddy@gmail.com>  
Dan Pupius <dan@medium.com>  
Dan Sinclair <dan.sinclair@gmail.com>  
Daniel Fleischman <danielfleischman@gmail.com>  
Daniel Johansson <dajo2002@gmail.com>  
Daniel Kerwin <d.kerwin@gini.net>  
Daniel Krech <eikeon@eikeon.com>  
Daniel Lidn <daniel.liden.87@gmail.com>  
Daniel Mart <mvdan@mvdan.cc>  
Daniel Morsing <daniel.morsing@gmail.com>  
Daniel Nadasi <dnadasi@google.com>  
Daniel Ortiz Pereira da Silva <daniel.particular@gmail.com>  
Daniel Skinner <daniel@dasa.cc>  
Daniel Speichert <daniel@speichert.pl>  
Daniel Theophanes <kardianos@gmail.com>  
Daria Kolistratova <daria.kolistratova@intel.com>  
Darren Elwood <darren@textnode.com>  
Datong Sun <dndx@idndx.com>  
Dave Borowitz <dborowitz@google.com>  
Dave Bort <dbort@golang.org>  
Dave Cheney <dave@cheney.net>  
Dave Day <djd@golang.org>  
Dave Grijalva <dgrijalva@ngmoco.com>  
David Anderson <danderson@google.com>  
David Barnett <dbarnett@google.com>  
David Benjamin <davidben@google.com>  
David Brophy <dave@brophy.uk>  
David Brgin <676c7473@gmail.com>  
David Calavera <david.calavera@gmail.com>  
David Chase <drchase@google.com>  
David Covert <davidhcovert@gmail.com>  
David Crawshaw <david.crawshaw@zentus.com> <crawshaw@google.com> <crawshaw@golang.org>  
David du Colombier <0intro@gmail.com>  
David Forsythe <dforsythe@gmail.com>  
David G. Andersen <dave.andersen@gmail.com>  
David Glasser <glasser@meteor.com>  
David Howden <dhowden@gmail.com>  
David Hubbard <dsp@google.com>  
David Jakob Fritz <david.jakob.fritz@gmail.com>  
David Lazar <lazard@golang.org>  
David Leon Gil <coruus@gmail.com>  
David McLeish <davemc@google.com>  
David Presotto <presotto@gmail.com>  
David R. Jenni <david.r.jenni@gmail.com>  
David Sansome <me@davidsansome.com>  
David Stainton <dstainton415@gmail.com>

David Symonds <dsymonds@golang.org>  
David Thomas <davidthomas426@gmail.com>  
David Titarenco <david.titarenco@gmail.com>  
Davies Liu <davies.liu@gmail.com>  
Dean Prichard <dean.prichard@gmail.com>  
Deepak Jois <deepak.jois@gmail.com>  
Denis Bernard <db047h@gmail.com>  
Denis Brandolini <denis.brandolini@gmail.com>  
Denis Nagorny <denis.nagorny@intel.com>  
Denys Honsiorovskiy <honsiorovskiy@gmail.com>  
Derek Buitenhuis <derek.buitenhuis@gmail.com>  
Derek Che <drc@yahoo-inc.com>  
Derek Parker <parkerderek86@gmail.com>  
Derek Shockey <derek.shockey@gmail.com>  
Devon H. O'Dell <devon.odell@gmail.com>  
Dhaivat Pandit <dhaivatpandit@gmail.com>  
Dhananjay Nakrani <dhananjayn@google.com>  
Dhiru Kholia <dhiru.kholia@gmail.com>  
Didier Spezia <didier.06@gmail.com>  
Dimitri Tcaciuc <dtcaciuc@gmail.com>  
Dirk Gadsden <dirk@esherido.com>  
Diwaker Gupta <diwakergupta@gmail.com>  
Dmitri Popov <operator@cv.dp-net.com>  
Dmitri Shuralyov <shurcool@gmail.com>  
Dmitriy Dudkin <dudkin.dmitriy@gmail.com>  
Dmitriy Shelenin <deemok@googlemail.com> <deemok@gmail.com>  
Dmitriy Vyukov <dvyukov@google.com>  
Dmitry Chestnykh <dchest@gmail.com>  
Dmitry Savintsev <dsavints@gmail.com>  
Dmitry Yakunin <nonamezeil@gmail.com>  
Dominik Honnef <dominik.honnef@gmail.com>  
Dominik Vogt <vogt@linux.vnet.ibm.com>  
Donald Huang <don.hcd@gmail.com>  
Donovan Hide <donovanhide@gmail.com>  
Doug Anderson <douga@google.com>  
Drew Hintz <adhintz@google.com>  
Duncan Holm <mail@frou.org>  
Dustin Carlino <dcarlino@google.com>  
Dustin Herbison <djherbis@gmail.com>  
Dustin Long <dustmop@gmail.com>  
Dustin Sallings <dsallings@gmail.com>  
Dustin Shields-Cloues <dcloues@gmail.com>  
Dvir Volk <dvir@everything.me> <dvirsky@gmail.com>  
Eden Li <eden.li@gmail.com>  
Edward Muller <edwardam@interlix.com>  
Egon Elbre <egonelbre@gmail.com>  
Ehren Kret <ehren.kret@gmail.com>  
Eivind Uggedal <eivind@uggedal.com>

Elias Naur <elias.naur@gmail.com>  
Elliot Morrison-Reed <elliottmr@gmail.com>  
Emil Hessman <c.emil.hessman@gmail.com> <emil@hessman.se>  
Emmanuel Odeke <emm.odeke@gmail.com> <odeke@ualberta.ca>  
Eoghan Sherry <ejsherry@gmail.com>  
Eric Clark <zerohp@gmail.com>  
Eric Engestrom <eric@engestrom.ch>  
Eric Garrido <ekg@google.com>  
Eric Koleda <ekoleda+devrel@google.com>  
Eric Lagergren <ericscottlagergren@gmail.com>  
Eric Milliken <emilliken@gmail.com>  
Eric Roshan-Eisner <eric.d.eisner@gmail.com>  
Erik Aigner <aigner.erik@gmail.com>  
Erik Dubbelboer <erik@dubbelboer.com>  
Erik St. Martin <alakriti@gmail.com>  
Erik Staab <estaab@google.com>  
Erik Westrup <erik.westrup@gmail.com>  
Ernest Chiang <ernest\_chiang@htc.com>  
Esko Luontola <esko.luontola@gmail.com>  
Ethan Burns <eaburns@google.com>  
Ethan Miller <eamiller@us.ibm.com>  
Euan Kemp <euank@euank.com>  
Evan Broder <evan@stripe.com>  
Evan Brown <evanbrown@google.com>  
Evan Kroske <evankroske@google.com>  
Evan Martin <evan.martin@gmail.com>  
Evan Phoenix <evan@phx.io>  
Evan Shaw <chickencha@gmail.com>  
Ewan Chou <coocood@gmail.com>  
Fabian Wickborn <fabian@wickborn.net>  
Fabrizio Milo <mistobaan@gmail.com>  
Faiyaz Ahmed <ahmedf@vmware.com>  
Fan Hongjian <fan.howard@gmail.com>  
Fatih Arslan <fatih@arslan.io>  
Fazlul Shahriar <fshahriar@gmail.com>  
Federico Simoncelli <fsimonce@redhat.com>  
Fedor Indutny <fedor@indutny.com>  
Felix Geisendrfer <haimuiba@gmail.com>  
Filippo Valsorda <hi@filippo.io>  
Firmansyah Adiputra <frm.adiputra@gmail.com>  
Florian Uekermann <florian@uekermann-online.de> <fl@uekermann-online.de>  
Florian Weimer <fw@deneb.enyo.de>  
Florin Patan <florinpatan@gmail.com>  
Folke Behrens <folke@google.com>  
Ford Hurley <ford.hurley@gmail.com>  
Francesc Campoy <campoy@golang.org>  
Francisco Claude <fclaud@recoded.cl>  
Francisco Souza <franciscossouza@gmail.com>

Frederick Kelly Mayle III <frederickmayle@gmail.com>  
Fredrik Enestad <fredrik.enestad@soundtrackyourbrand.com>  
Frithjof Schulze <schulze@math.uni-hannover.de> <sfrithjof@gmail.com>  
Frits van Bommel <fvbommel@gmail.com>  
Fumitoshi Ukai <ukai@google.com>  
Gaal Yahas <gaal@google.com>  
Gabriel Aszalos <gabriel.aszalos@gmail.com>  
Gabriel Russell <gabriel.russell@gmail.com>  
Gareth Paul Jones <gpj@foursquare.com>  
Garrick Evans <garrick@google.com>  
Gary Burd <gary@beagledreams.com> <gary.burd@gmail.com>  
Gary Elliott <garyelliott@google.com>  
Gaurish Sharma <contact@aurishsharma.com>  
Gautham Thambidorai <gautham.dorai@gmail.com>  
Geert-Johan Riemer <gjr19912@gmail.com>  
Geoffroy Lorieux <lorieux.g@gmail.com>  
Georg Reinke <guelfey@gmail.com>  
George Shammass <george@shamm.as> <georgyo@gmail.com>  
Gerasimos Dimitriadis <gedimitr@gmail.com>  
Gideon Jan-Wessel Redelinghuys <gjredelinghuys@gmail.com>  
Giles Lean <giles.lean@pobox.com>  
Giovanni Bajo <rasky@develer.com>  
Giulio Iotti <dullgiulio@gmail.com>  
Gleb Stepanov <glebstepanov1992@gmail.com>  
Glenn Brown <glennb@google.com>  
Glenn Lewis <gmlewis@google.com>  
Gordon Klaus <gordon.klaus@gmail.com>  
Graham King <graham4king@gmail.com>  
Graham Miller <graham.miller@gmail.com>  
Greg Ward <greg@gerg.ca>  
Guillaume J. Charmes <guillaume@charmes.net>  
Guobiao Mei <meiguobiao@gmail.com>  
Gustav Paul <gustav.paul@gmail.com>  
Gustavo Franco <gustavorfranco@gmail.com>  
Gustavo Niemeyer <gustavo@niemeyer.net> <n13m3y3r@gmail.com>  
Gwenael Treguier <gwenn.kahz@gmail.com>  
Gyu-Ho Lee <gyuhox@gmail.com>  
H. brahim Gngr <igungor@gmail.com>  
Hajime Hoshi <hajimehoshi@gmail.com>  
Hallgrimur Gunnarsson <halg@google.com>  
Han-Wen Nienhuys <hanwen@google.com>  
Hari haran <hariharan.uno@gmail.com>  
Hariharan Srinath <srinathh@gmail.com>  
Harley Laue <losinggeneration@gmail.com>  
Harry Moreno <morenoh149@gmail.com>  
Harshavardhana <hrshvardhana@gmail.com>  
Hvard Haugen <havard.haugen@gmail.com>  
Hector Chu <hectorchu@gmail.com>

Hector Martin Cantero <hector@marcansoft.com>  
Henning Schmiedehausen <henning@schmiedehausen.org>  
Henrik Edwards <henrik.edwards@gmail.com>  
Henrik Hodne <henrik@hodne.io>  
Herbert Georg Fischer <herbert.fischer@gmail.com>  
Hironao OTSUBO <motemen@gmail.com>  
Hiroshi Ioka <hirochachacha@gmail.com>  
Hitoshi Mitake <mitake.hitoshi@gmail.com>  
Holden Huang <ttyh061@gmail.com>  
Hong Ruiqi <hongruiqi@gmail.com>  
Hossein Sheikh Attar <hattar@google.com>  
Hsin-Ho Yeh <yhh92u@gmail.com>  
Hu Keping <hukeping@huawei.com>  
Hyang-Ah Hana Kim <hakim@google.com> <hyangah@gmail.com>  
Ian Gudger <ian@loosescre.ws>  
Ian Lance Taylor <iant@golang.org>  
Icarus Sparry <golang@icarus.freeuk.com>  
Idora Shinatose <idora.shinatose@gmail.com>  
Igor Bernstein <igorbernstein@google.com>  
Igor Dolzhirov <bluesriverz@gmail.com>  
Ilya Tocar <ilya.tocar@intel.com>  
INADA Naoki <songofacandy@gmail.com>  
Ingo Krabbe <ikrabbe.ask@gmail.com>  
Ingo Oeser <nightlyone@googlemail.com> <nightlyone@gmail.com>  
Irieda Noboru <irieda@gmail.com>  
Isaac Wagner <ibw@isaacwagner.me>  
Ivan Babrou <ivan@cloudflare.com>  
Ivan Krasin <krasin@golang.org>  
Ivan Ukhov <ivan.ukhov@gmail.com>  
Jaana Burcu Dogan <jbd@google.com> <jbd@golang.org> <burcujdogan@gmail.com>  
Jack Lindamood <jlindamo@justin.tv>  
Jacob Baskin <jbaskin@google.com>  
Jacob H. Haven <jacob@cloudflare.com>  
Jacob Hoffman-Andrews <github@hoffman-andrews.com>  
Jae Kwon <jae@tendermint.com>  
Jakob Borg <jakob@nym.se>  
Jakub ajka <jcajka@redhat.com>  
Jakub Ryszard Czarnowicz <j.czarnowicz@gmail.com>  
James Aguilar <jaguilar@google.com>  
James Bardin <j.bardin@gmail.com>  
James Chacon <jchacon@google.com>  
James Clarke <jrtc27@jrtc27.com>  
James David Chalfant <james.chalfant@gmail.com>  
James Fysh <james.fysh@gmail.com>  
James Gray <james@james4k.com>  
James Meneghello <rawrz0r@gmail.com>  
James P. Cooper <jamespcooper@gmail.com>  
James Robinson <jamesr@google.com> <jamesr.gatech@gmail.com>



James Schofield <james@shoeboxapp.com>  
James Sweet <james.sweet88@googlemail.com>  
James Toy <nil@opensesame.st>  
James Tucker <raggi@google.com>  
James Whitehead <jnwhiteh@gmail.com>  
Jamie Beverly <jamie.r.beverly@gmail.com>  
Jamie Gennis <jgennis@google.com> <jgennis@gmail.com>  
Jamie Turner <jamwt@dropbox.com>  
Jamie Wilkinson <jaq@spacepants.org>  
Jamil Djadala <djadala@gmail.com>  
Jan H. Hosang <jan.hosang@gmail.com>  
Jan Kratochvil <jan.kratochvil@redhat.com>  
Jan Mercl <0xjnml@gmail.com>  
Jan Mercl <befelemepeseveze@gmail.com>  
Jan Newmarch <jan.newmarch@gmail.com>  
Jan Ziak <0xe2.0x9a.0x9b@gmail.com>  
Jani Monoses <jani.monoses@ubuntu.com> <jani.monoses@gmail.com>  
Jaroslavas Poepko <jp@webmaster.ms>  
Jason Barnett <jason.w.barnett@gmail.com>  
Jason Buberel <jbuberel@google.com>  
Jason Del Ponte <delpontej@gmail.com>  
Jason Hall <jasonhall@google.com>  
Jason Smale <jsmale@zendesk.com>  
Jason Travis <infomaniac7@gmail.com>  
Jay Weisskopf <jay@jayschwa.net>  
Jean-Marc Eurin <jmeurin@google.com>  
Jean-Nicolas Moal <jn.moal@gmail.com>  
Jed Denlea <jed@fastly.com>  
Jeff Craig <jeffcraig@google.com>  
Jeff Hodges <jeff@somethingsimilar.com>  
Jeff R. Allen <jra@nella.org> <jeff.allen@gmail.com>  
Jeff Sickel <jas@corpus-callosum.com>  
Jeff Wendling <jeff@spacemonkey.com>  
Jens Frederich <jfrederich@gmail.com>  
Jeremiah Harmsen <jeremiah@google.com>  
Jeremy Jackins <jeremyjackins@gmail.com>  
Jeremy Schlatter <jeremy.schlatter@gmail.com>  
Jeroen Bobbeldijk <jerbob92@gmail.com>  
Jess Frazelle <me@jessfraz.com>  
Jesse Szwedko <jesse.szwedko@gmail.com>  
Jihyun Yu <yjh0502@gmail.com>  
Jim Cote <jfcote87@gmail.com>  
Jim Kingdon <jim@bolt.me>  
Jim McGrath <jimmc2@gmail.com>  
Jimmy Zelinskie <jimmyzelinskie@gmail.com>  
Jingcheng Zhang <diogin@gmail.com>  
Jingguo Yao <yaojingguo@gmail.com>  
Jiong Du <londevil@gmail.com>

Jirka Dank <dnk@mail.muni.cz>  
Joakim Sernbrant <serbaut@gmail.com>  
Joe Farrell <joe2farrell@gmail.com>  
Joe Harrison <joehazzers@gmail.com>  
Joe Henke <joed.henke@gmail.com>  
Joe Poirier <jdpoirier@gmail.com>  
Joe Shaw <joe@joeshaw.org>  
Joe Sylve <joe.sylve@gmail.com>  
Joe Tsai <joetsai@digital-static.net>  
Joel Sing <jsing@google.com>  
Joel Stemmer <stemmertech@gmail.com>  
Johan Euphrosine <proppy@google.com>  
Johan Sageryd <j@1616.se>  
John Asmuth <jasmuth@gmail.com>  
John Beisley <huin@google.com>  
John C Barstow <jbowtie@amathaine.com>  
John DeNero <denero@google.com>  
John Dethridge <jcd@golang.org>  
John Graham-Cumming <jgc@jgc.org> <jgrahamc@gmail.com>  
John Howard Palevich <jack.palevich@gmail.com>  
John Jeffery <jjeffery@sp.com.au>  
John Jenkins <twodopeshaggy@gmail.com>  
John Newlin <jnewlin@google.com>  
John Potocny <johnp@vividcortex.com>  
John Schnake <schnake.john@gmail.com>  
John Shahid <jvshahid@gmail.com>  
John Tuley <john@tuley.org>  
Jon Chen <jchen@justin.tv>  
Jonathan Allie <jonallie@google.com>  
Jonathan Amsterdam <jba@google.com>  
Jonathan Boulle <jonathanboulle@gmail.com>  
Jonathan Feinberg <feinberg@google.com>  
Jonathan Gold <jgold.bg@gmail.com>  
Jonathan Hseu <jhseu@google.com>  
Jonathan Mark <jhmark@xenops.com> <jhmark000@gmail.com>  
Jonathan Nieder <jrn@google.com>  
Jonathan Pittman <jmpittman@google.com> <jonathan.mark.pittman@gmail.com>  
Jonathan Rudenberg <jonathan@titanous.com>  
Jonathan Wills <runningwild@gmail.com>  
Jongmin Kim <atomaths@gmail.com>  
Joonas Kuorilehto <joneskoo@derbian.fi>  
Joop Kiefte <ikojba@gmail.com> <joop@kiefte.net>  
Jordan Lewis <jordanthelewis@gmail.com>  
Jos Visser <josv@google.com>  
Jose Luis Vazquez Gonzalez <josvazg@gmail.com>  
Joseph Bonneau <jcb@google.com>  
Joseph Holsten <joseph@josephholsten.com>  
Josh Bleecher Snyder <josharian@gmail.com>

Josh Chorlton <jchorlton@gmail.com>  
Josh Goebel <dreamer3@gmail.com>  
Josh Hoak <jhoak@google.com>  
Josh Holland <jrh@joshh.co.uk>  
Joshua Boelter <joshua.boelter@intel.com>  
Joshua Chase <jcjosuachase@gmail.com>  
Jostein Stuhauug <js@solidsystem.no>  
JP Sugarbroad <jpsugar@google.com>  
JT Olds <jtolds@xnet5.com>  
Jukka-Pekka Kekkonen <karatepekka@gmail.com>  
Julia Hansbrough <flowerhack@google.com>  
Julian Kornberger <jk+github@digineo.de>  
Julian Phillips <julian@quantumfyre.co.uk>  
Julien Schmidt <google@julienschmidt.com>  
Jungho Ahn <jhahn@google.com>  
Jure Ham <jure.ham@zemanta.com>  
Justin Nu <nuss.justin@gmail.com>  
Justyn Temme <justyntemme@gmail.com>  
Kai Backman <kaib@golang.org>  
Kale Blankenship <kale@lemnisis.com>  
Kamal Aboul-Hosn <aboulhosn@google.com>  
Kamil Kisiel <kamil@kamilkisiel.net> <kamil.kisiel@gmail.com>  
Kang Hu <hukangustc@gmail.com>  
Karan Dhiman <karandhi@ca.ibm.com>  
Kato Kazuyoshi <kato.kazuyoshi@gmail.com>  
Katrina Owen <katrina.owen@gmail.com>  
Kaviraj Kanagaraj <kavirajkanagaraj@gmail.com>  
Kay Zhu <kayzhu@google.com>  
KB Sriram <kbsriram@google.com>  
Keegan Carruthers-Smith <keegan.csmith@gmail.com>  
Kei Son <hey.calmdown@gmail.com>  
Keith Ball <inflatablewoman@gmail.com>  
Keith Randall <khr@golang.org>  
Keith Rarick <kr@xph.us>  
Kelsey Hightower <kelsey.hightower@gmail.com>  
Kelvin Foo Chuan Lyi <vmirage@gmail.com>  
Ken Friedenbach <kenliz@cruzio.com>  
Ken Rockot <ken@oz.gs> <ken.rockot@gmail.com>  
Ken Sedgwick <ken@bonsai.com>  
Ken Thompson <ken@golang.org>  
Kenji Kaneda <kenji.kaneda@gmail.com>  
Kenneth Shaw <kenshaw@gmail.com>  
Kenny Grant <kennygrant@gmail.com>  
Kevin Ballard <kevin@sb.org>  
Kevin Burke <kev@inburke.com>  
Kevin Kirsche <kev.kirsche@gmail.com>  
Kevin Klues <klueska@gmail.com> <klueska@google.com>  
Kevin Malachowski <chowski@google.com>

Kevin Vu <kevin.m.vu@gmail.com>  
Kim Shrier <kshrier@racktopsystems.com>  
Kirklin McDonald <kirklin.mcdonald@gmail.com>  
Klaus Post <klauspost@gmail.com>  
Konstantin Shaposhnikov <k.shaposhnikov@gmail.com>  
Kris Rousey <krousey@google.com>  
Kristopher Watts <traetox@gmail.com>  
Kun Li <likunarmstrong@gmail.com>  
Kyle Consalus <consalus@gmail.com>  
Kyle Isom <kyle@gokyle.net>  
Kyle Lemons <kyle@kylelemons.net> <kevlar@google.com>  
L Campbell <unpantsu@gmail.com>  
Lai Jiangshan <eag0628@gmail.com>  
Larry Hosken <lahosken@golang.org>  
Larz Conwell <larzconwell@gmail.com>  
LE Manh Cuong <cuong.manhle.vn@gmail.com>  
Lee Hinman <hinman@gmail.com>  
Lee Packham <lpackham@gmail.com>  
Lewin Bormann <lewin.bormann@gmail.com>  
Lloyd Dewolf <foolswisdom@gmail.com>  
Lorenzo Stoakes <lstoakes@gmail.com>  
Louis Kruger <louisk@google.com>  
Luan Santos <cfcluan@gmail.com>  
Luca Greco <luca.greco@alcacoop.it>  
Lucien Stuker <lucien.stuker@gmail.com>  
Lucio De Re <lucio.dere@gmail.com>  
Luigi Riefolo <luigi.riefolo@gmail.com>  
Luit van Drongelen <luitvd@gmail.com>  
Luka Zakrajek <tr00.g33k@gmail.com>  
Luke Curley <qpingu@gmail.com>  
Luna Duclos <luna.duclos@palmstonegames.com>  
Luuk van Dijk <lvd@golang.org> <lvd@google.com>  
Lynn Boger <laboger@linux.vnet.ibm.com>  
Maksym Trykur <maksym.trykur@gmail.com>  
Mal Curtis <mal@mal.co.nz>  
Manfred Touron <m@42.am>  
Manoj Dayaram <platform-dev@moovweb.com> <manoj.dayaram@moovweb.com>  
Manu Garg <manugarg@google.com>  
Manu S Ajith <neo@codingarena.in>  
Manuel Mendez <mmendez534@gmail.com>  
Marc Weistroff <marc@weistroff.net>  
Marc-Antoine Ruel <maruel@chromium.org>  
Marcel Edmund Franke <marcel.edmund.franke@gmail.com>  
Marcel van Lohuizen <mpvl@golang.org>  
Marco Hennings <marco.hennings@freiheit.com>  
Marga Manterola <marga@google.com>  
Marin Bai <marin.basic02@gmail.com>  
Marius Nuennerich <mnu@google.com>

Mark Bucciarelli <mkbucc@gmail.com>  
Mark Severson <miquella@gmail.com>  
Mark Theunissen <mark.theunissen@gmail.com>  
Mark Zavislak <zavislak@google.com>  
Marko Juhani Silokunnas <marko.silokunnas@gmail.com>  
Marko Mikulicic <mkm@google.com>  
Marko Tiikkaja <marko@joh.to>  
Markus Duft <markus.duft@salomon.at>  
Markus Sonderegger <marraison@gmail.com>  
Markus Zimmermann <zimmski@gmail.com>  
Martin Bertschler <mbertschler@gmail.com>  
Martin Garton <garton@gmail.com>  
Martin Hamrle <martin.hamrle@gmail.com>  
Martin Kreichgauer <martinkr@google.com>  
Martin Mohrmann <moehrmann@google.com> <martisch@uos.de>  
Martin Neubauer <m.ne@gmx.net>  
Martin Olsson <martin@minimum.se>  
Marvin Stenger <marvin.stenger94@gmail.com>  
Mateusz Czapliski <czapkofan@gmail.com>  
Mathias Beke <git@denbeke.be>  
Mathias Leppich <mleppich@muhqu.de>  
Mathieu Lonjaret <mathieu.lonjaret@gmail.com>  
Mats Lidell <mats.lidell@cag.se> <mats.lidell@gmail.com>  
Matt Aimonetti <mattaimonetti@gmail.com>  
Matt Bostock <matt@mattbostock.com>  
Matt Brown <mbrown@google.com>  
Matt Drollette <matt@drollette.com>  
Matt Jibson <matt.jibson@gmail.com>  
Matt Joiner <anacrolix@gmail.com>  
Matt Jones <mrjones@google.com>  
Matt Layher <mdlayher@gmail.com>  
Matt Reiferson <mreiferson@gmail.com>  
Matt Robenolt <matt@ydekproductions.com>  
Matt T. Proud <matt.proud@gmail.com>  
Matt Williams <gh@mattyw.net> <mattyjwilliams@gmail.com>  
Matthew Brennan <matty.brennan@gmail.com>  
Matthew Cottingham <mattcottingham@gmail.com>  
Matthew Dempsey <mdempsey@google.com>  
Matthew Denton <mdenton@skyportsystems.com>  
Matthew Holt <Matthew.Holt+git@gmail.com>  
Matthew Horsnell <matthew.horsnell@gmail.com>  
Matthieu Hauglustaine <matt.hauglustaine@gmail.com>  
Matthieu Olivier <olivier.matthieu@gmail.com>  
Max Riveiro <kavu13@gmail.com>  
Maxim Khitrov <max@mxcrypt.com>  
Maxim Pimenov <mpimenov@google.com>  
Maxim Ushakov <ushakov@google.com>  
Maxwell Krohn <themax@gmail.com>

Meir Fischer <meirfischer@gmail.com>  
Meng Zhuo <mengzhuo1203@gmail.com>  
Mhd Sulhan <m.shulhan@gmail.com>  
Micah Stetson <micah.stetson@gmail.com>  
Michael Chaten <mchaten@gmail.com>  
Michael Darakananda <pongad@google.com>  
Michael Elkins <michael.elkins@gmail.com>  
Michael Fraenkel <michael.fraenkel@gmail.com>  
Michael Gehring <mg@ebfe.org> <gnirheg.leahcim@gmail.com>  
Michael Hoisie <hoisie@gmail.com>  
Michael Hudson-Doyle <michael.hudson@linaro.org>  
Michael Kufel <golang@c.michael-kaeufl.de>  
Michael Kelly <mjk@google.com>  
Michael Lewis <mikelikespie@gmail.com>  
Michael MacInnis <Michael.P.MacInnis@gmail.com>  
Michael Marineau <michael.marineau@coreos.com>  
Michael Matloob <matloob@google.com>  
Michael McConville <momconville@gmail.com>  
Michael McGreevy <mcgreevy@golang.org>  
Michael Munday <munday@ca.ibm.com>  
Michael Pearson <mipearson@gmail.com>  
Michael Piatek <piatek@google.com>  
Michael Pratt <mpratt@google.com>  
Michael Schaller <michael@5challer.de>  
Michael Shields <mshields@google.com>  
Michael Stapelberg <michael@stapelberg.de> <mstplbrg@googlemail.com>  
Michael T. Jones <mtj@google.com> <michael.jones@gmail.com>  
Michael Teichgraber <mteichgraber@gmx.de> <mt4swm@googlemail.com>  
Michael Vetter <g.bluehut@gmail.com>  
Michal Bohuslvek <mbohuslvek@gmail.com>  
Michal Cierniak <cierniak@google.com>  
Micha Derkacz <ziutek@inet.pl>  
Michalis Kargakis <michaliskargakis@gmail.com>  
Michel Lespinasse <>walken@google.com>  
Miek Gieben <miek@miek.nl> <remigius.gieben@gmail.com>  
Miguel Mendez <stxmendez@gmail.com>  
Mihai Borobocea <MihaiBorobocea@gmail.com>  
Mikael Tillenius <mikti42@gmail.com>  
Mike Andrews <mra@xoba.com>  
Mike Appleby <mike@app.leby.org>  
Mike Danese <mikedanese@google.com>  
Mike Houston <mike@kothar.net>  
Mike Rosset <mike.rosset@gmail.com>  
Mike Samuel <mikesamuel@gmail.com>  
Mike Solomon <msolo@gmail.com>  
Mike Strosaker <strosake@us.ibm.com>  
Mikhail Gusarov <dottedmag@dottedmag.net>  
Mikhail Panchenko <m@mihasya.com>

Miki Tebeka <miki.tebeka@gmail.com>  
Mikio Hara <mikioh.mikioh@gmail.com>  
Mikkel Krautz <mikkel@krautz.dk> <krautz@gmail.com>  
Miquel Sabat Sol <mikisabate@gmail.com>  
Miroslav Genov <mgenov@gmail.com>  
Mohit Agarwal <mohit@sdf.org>  
Momchil Velikov <momchil.velikov@gmail.com>  
Monty Taylor <mordred@inaugust.com>  
Moriyoshi Koizumi <mozo@mozo.jp>  
Morten Siebuhr <sbhr@sbhr.dk>  
Mshe van der Sterre <moshevds@gmail.com>  
Mrunal Patel <mrunalp@gmail.com>  
Muhammed Uluyol <uluyol0@gmail.com>  
Nan Deng <monnand@gmail.com>  
Nathan John Youngman <nj@nathany.com>  
Nathan Otterness <otterness@cs.unc.edu>  
Nathan P Finch <nate.finch@gmail.com>  
Nathan VanBenschoten <nvanbenschoten@gmail.com>  
Nathan Youngman <git@nathany.com>  
Nathan(yinian) Hu <nathanhu@google.com>  
Neelesh Chandola <neelesh.c98@gmail.com>  
Nevins Bartolomeo <nevins.bartolomeo@gmail.com>  
Niall Sheridan <nsheridan@gmail.com>  
Nic Day <nic.day@me.com>  
Nicholas Katsaros <nick@nickkatsaros.com>  
Nicholas Presta <nick@nickpresta.ca> <nick1presta@gmail.com>  
Nicholas Sullivan <nicholas.sullivan@gmail.com>  
Nicholas Waples <nwaples@gmail.com>  
Nick Cooper <nmvc@google.com>  
Nick Craig-Wood <nick@craig-wood.com> <nickcw@gmail.com>  
Nick Harper <nharper@google.com>  
Nick Leli <nicholasleli@gmail.com>  
Nick Patavalis <nick.patavalis@gmail.com>  
Nick Petroni <npetroni@cs.umd.edu>  
Nicolas Kaiser <nikai@nikai.net>  
Nicolas Owens <mischief@offblast.org>  
Nicolas S. Dade <nic.dade@gmail.com>  
Niels Widger <niels.widger@gmail.com>  
Nigel Kerr <nigel.kerr@gmail.com>  
Nigel Tao <nigeltao@golang.org>  
Nik Nyby <nnyby@columbia.edu>  
Niko Dziemba <niko@dziemba.com>  
Nikolay Turpitko <nikolay@turpitko.com>  
Noah Campbell <noahcampbell@gmail.com>  
Nodir Turakulov <nodir@google.com>  
Norberto Lopes <nlopes.ml@gmail.com>  
Odin Ugedal <odin@ugedal.com>  
Oleg Vakheta <helginet@gmail.com>

Oleku Konko <oleku.konko@gmail.com>  
Oling Cat <olingcat@gmail.com>  
Oliver Hookins <ohookins@gmail.com>  
Olivier Antoine <olivier.antoine@gmail.com>  
Olivier Duperray <duperray.olivier@gmail.com>  
Olivier Poitrey <rs@dailymotion.com>  
Olivier Saingre <osaingre@gmail.com>  
Omar Jarjur <ojarjur@google.com>  
zgr Kesim <oec-go@kesim.org>  
Padraig Kitterick <padraigkitterick@gmail.com>  
Paolo Giarrusso <p.giarrusso@gmail.com>  
Paolo Martini <mrtnpaolo@gmail.com>  
Parker Moore <parkrmoore@gmail.com>  
Pascal S. de Kloe <pascal@quies.net>  
Patrick Crosby <patrick@stathat.com>  
Patrick Gavlin <pgavlin@gmail.com>  
Patrick Higgins <patrick.allen.higgins@gmail.com>  
Patrick Lee <pattyshack101@gmail.com>  
Patrick Mzard <patrick@mezard.eu>  
Patrick Mylund Nielsen <patrick@patrickmn.com>  
Patrick Riley <pfr@google.com>  
Patrick Smith <pat42smith@gmail.com>  
Paul A Querna <paul.querna@gmail.com>  
Paul Borman <borman@google.com>  
Paul Chang <paulchang@google.com>  
Paul Hammond <paul@paulhammond.org>  
Paul Hankin <paulhankin@google.com>  
Paul Lalonde <paul.a.lalonde@gmail.com>  
Paul Marks <pmarks@google.com>  
Paul Meyer <paul.meyer@microsoft.com>  
Paul Nasrat <pnasrat@google.com>  
Paul Rosania <paul.rosania@gmail.com>  
Paul Sbarra <Sbarra.Paul@gmail.com>  
Paul Smith <paulsmith@pobox.com> <paulsmith@gmail.com>  
Paul van Brouwershaven <paul@vanbrouwershaven.com>  
Paul Wankadia <junyer@google.com>  
Paulo Casaretto <pcasaretto@gmail.com>  
Pavel Paulau <pavel.paulau@gmail.com>  
Pavel Zinovkin <pavel.zinovkin@gmail.com>  
Pawel Knap <pawelknap88@gmail.com>  
Pawel Szczur <filemon@google.com>  
Percy Wegmann <ox.to.a.cart@gmail.com>  
Perry Abbott <perry.j.abbott@gmail.com>  
Petar Maymoukov <petarm@gmail.com>  
Peter Armitage <peter.armitage@gmail.com>  
Peter Collingbourne <pcc@google.com>  
Peter Froehlich <peter.hans.froehlich@gmail.com>  
Peter Gonda <pgonda@google.com>



Peter Kleiweg <pkleiweg@xs4all.nl>  
Peter McKenzie <petermck@google.com>  
Peter Moody <pmoody@uber.com>  
Peter Mundy <go.peter.90@gmail.com>  
Pter Surnyi <speter.go1@gmail.com>  
Pter Szab <pts@google.com>  
Pter Szilgyi <peterke@gmail.com>  
Peter Tseng <ptseng@squareup.com>  
Peter Waldschmidt <peter@waldschmidt.com>  
Peter Waller <peter.waller@gmail.com>  
Peter Weinberger <pjw@golang.org>  
Peter Williams <pwil3058@gmail.com>  
Phil Pennock <pdp@golang.org>  
Philip Brgesen <philip.brgesen@gmail.com>  
Philip Hofer <phofer@umich.edu>  
Philip K. Warren <pkwarren@gmail.com>  
Pierre Durand <pierredurand@gmail.com>  
Pierre Roullon <pierre.roullon@gmail.com>  
Pieter Droogendijk <pieter@binky.org.uk>  
Pietro Gagliardi <pietro10@mac.com>  
Prasanna Swaminathan <prasanna@mediamath.com>  
Prashant Varanasi <prashant@prashantv.com>  
Preetam Jinka <pj@preet.am>  
Quan Tran <qeed.quan@gmail.com>  
Quan Yong Zhai <qyzhai@gmail.com>  
Quentin Perez <qperez@ocs.online.net>  
Quentin Smith <quentin@golang.org>  
Quinn Slack <sqs@sourcegraph.com>  
Quoc-Viet Nguyen <afelion@gmail.com>  
Radu Berinde <radu@cockroachlabs.com>  
Rafal Jeczalik <rjeczalik@gmail.com>  
Rahul Chaudhry <rahulchaudhry@chromium.org>  
Raif S. Naffah <go@naffah-raif.name>  
Rajat Goel <rajat.goel2010@gmail.com>  
Ralph Corderoy <ralph@inputplus.co.uk>  
Ramesh Dharan <dharan@google.com>  
Raph Levien <raph@google.com>  
Raphael Geronimi <raphael.geronimi@gmail.com>  
Raul Silvera <rsilvera@google.com>  
Rebecca Stambler <rstambler@golang.org>  
Reinaldo de Souza Jr <juniorz@gmail.com>  
Rmy Oudompheng <oudomphe@phare.normalesup.org> <remyoudompheng@gmail.com>  
Rhys Hiltner <rhys@justin.tv>  
Ricardo Padilha <ricardospadilha@gmail.com>  
Richard Barnes <rlb@ipv.sx>  
Richard Crowley <r@rcrowley.org>  
Richard Eric Gavaletz <gavaletz@gmail.com>  
Richard Gibson <richard.gibson@gmail.com>

Richard Miller <miller.research@gmail.com>  
Richard Musiol <mail@richard-musiol.de> <neelance@gmail.com>  
Rick Arnold <rickarnoldjr@gmail.com>  
Rick Hudson <rlh@golang.org>  
Riku Voipio <riku.voipio@linaro.org>  
Risto Jaakko Saarelm <rsaarelm@gmail.com>  
Rob Earhart <earhart@google.com>  
Rob Norman <rob.norman@infinitycloud.com>  
Rob Pike <r@golang.org>  
Robert Daniel Kortschak <dan.kortschak@adelaide.edu.au>  
Robert Dinu <r@varp.se>  
Robert Figueiredo <robfig@gmail.com>  
Robert Griesemer <gri@golang.org>  
Robert Hencke <robert.hencke@gmail.com>  
Robert Iannucci <iannucci@google.com>  
Robert Obryk <robryk@gmail.com>  
Robert Seseek <rseseek@google.com>  
Robert Snedegar <roberts@google.com>  
Robert Stepanek <robert.stepanek@gmail.com>  
Robin Eklind <r.eklind.87@gmail.com>  
Rodrigo Moraes de Oliveira <rodrigo.moraes@gmail.com>  
Rodrigo Rafael Monti Kochenburger <divoxx@gmail.com>  
Roger Pau Monn <royger@gmail.com>  
Roger Peppe <rogpeppe@gmail.com>  
Roland Shoemaker <rolandshoemaker@gmail.com>  
Ron Hashimoto <mail@h2so5.net>  
Ron Minnich <rminnich@gmail.com>  
Ross Light <light@google.com> <rlight2@gmail.com>  
Rowan Worth <sqweek@gmail.com>  
Rui Ueyama <rui@uoyama.com>  
Russ Cox <rsc@golang.org>  
Russell Haering <russellhaering@gmail.com>  
Ryan Bagwell <ryanbagwell@outlook.com>  
Ryan Barrett <ryanb@google.com>  
Ryan Brown <ribrd@b@google.com>  
Ryan Hitchman <hitchmanr@gmail.com>  
Ryan Lower <rpjlower@gmail.com>  
Ryan Seys <ryan@ryanseys.com>  
Ryan Slade <ryanslade@gmail.com>  
Ryuzo Yamamoto <ryuzo.yamamoto@gmail.com>  
S.alar Onur <caglar@10ur.org>  
Sai Cheemalapati <saicheems@google.com>  
Salmon Aljammz <s@0x65.net>  
Sam Ding <samding@ca.ibm.com>  
Sam Hug <samuel.b.hug@gmail.com>  
Sam Thorogood <thorogood@google.com> <sam.thorogood@gmail.com>  
Sam Whited <sam@samwhited.com>  
Sameer Ajmani <sameer@golang.org> <ajmani@gmail.com>

Sami Commerot <samic@google.com>  
Samuel Tan <samueltan@google.com>  
Samuele Pedroni <pedronis@lucediurna.net>  
Sanjay Menakuru <balasanjay@gmail.com>  
Sarah Adams <shadams@google.com>  
Sasha Lionheart <lionhearts@google.com>  
Sasha Sobol <sasha@scaledinference.com>  
Scott Barron <scott.barron@github.com>  
Scott Bell <scott@sctsm.com>  
Scott Ferguson <scottwferg@gmail.com>  
Scott Lawrence <bytbox@gmail.com>  
Scott Mansfield <smansfield@netflix.com>  
Scott Schwartz <scotts@golang.org>  
Scott Van Woudenberg <scottvw@google.com>  
Sean Burford <sburford@google.com>  
Sean Dolphin <Sean.Dolphin@kpcompass.com>  
Sean Harger <sharger@google.com>  
Sean Rees <sean@erifax.org>  
Sebastien Binet <seb.binet@gmail.com>  
Sbastien Paolacci <sebastien.paolacci@gmail.com>  
Sergei Skorobogatov <skorobo@rambler.ru>  
Sergey 'Snake' Gromov <snake.scaly@gmail.com>  
Sergey Arseev <sergey.arseev@intel.com>  
Sergio Luis O. B. Correia <sergio@correia.cc>  
Seth Hoenig <seth.a.hoenig@gmail.com>  
Seth Vargo <sethvargo@gmail.com>  
Shahar Kohanim <skohanim@gmail.com>  
Shane Hansen <shanemhansen@gmail.com>  
Shaozhen Ding <dsz0111@gmail.com>  
Shawn Ledbetter <sledbetter@google.com>  
Shawn Smith <shawn.p.smith@gmail.com>  
Shawn Walker-Salas <shawn.walker@oracle.com>  
Shenghou Ma <minux@golang.org> <minux.ma@gmail.com>  
Shinji Tanaka <shinji.tanaka@gmail.com>  
Shivakumar GN <shivakumar.gn@gmail.com>  
Shun Fan <sfan@google.com>  
Silvan Jegen <s.jegen@gmail.com>  
Simon Jefford <simon.jefford@gmail.com>  
Simon Rawet <simon@rawet.se>  
Simon Thulbourn <simon+github@thulbourn.com>  
Simon Whitehead <chemnova@gmail.com>  
Sina Siadat <siadat@gmail.com>  
Sokolov Yura <funny.falcon@gmail.com>  
Song Gao <song@gao.io>  
Spencer Nelson <s@spenczar.com>  
Spring Mc <heresy.mc@gmail.com>  
Srdjan Petrovic <spetrovic@google.com>  
Sridhar Venkatakrishnan <sridhar@laddoo.net>

StalkR <stalkr@stalkr.net>  
Stan Schwertly <stan@schwertly.com>  
Stefan Nilsson <snilsson@nada.kth.se> <trolleriprofessorn@gmail.com>  
Stphane Travostino <stephane.travostino@gmail.com>  
Stephen Ma <stephenm@golang.org>  
Stephen McQuay <stephen@mcquay.me>  
Stephen Weinberg <stephen@q5comm.com>  
Steve Francia <spf@golang.org>  
Steve McCoy <mccoyst@gmail.com>  
Steve Newman <snewman@google.com>  
Steve Phillips <elimistev@gmail.com>  
Steve Streeting <steve@stevestreeting.com>  
Steven Elliot Harris <seharris@gmail.com>  
Steven Hartland <steven.hartland@multiplay.co.uk>  
Sugu Sougoumarane <ssougou@gmail.com>  
Suharsh Sivakumar <suharshs@google.com>  
Suyash <dextrous93@gmail.com>  
Sven Almgren <sven@tras.se>  
Sven Blumenstein <svbl@google.com>  
Syohei YOSHIDA <syohex@gmail.com>  
Szabolcs Nagy <nsz@port70.net>  
Tad Glines <tad.glines@gmail.com>  
Taj Khattrra <taj.khattrra@gmail.com>  
Takashi Matsuo <tmatsuo@google.com>  
Takeshi YAMANASHI <9.nashi@gmail.com>  
Takuya Ueda <uedatakuya@gmail.com>  
Tal Shprecher <tshprecher@gmail.com>  
Tamir Duberstein <tamird@gmail.com>  
Tarmigan Casebolt <tarmigan@gmail.com>  
Taru Karttunen <taruti@taruti.net>  
Tatsuhiko Tsujikawa <tatsuhiko.t@gmail.com>  
Terrel Shumway <gopher@shumway.us>  
Tetsuo Kiso <tetsuokiso9@gmail.com>  
Than McIntosh <thanm@google.com>  
Thiago Fransosi Farina <thiago.farina@gmail.com> <tfarina@chromium.org>  
Thomas Alan Copeland <talan.copeland@gmail.com>  
Thomas de Zeeuw <thomasdezeeuw@gmail.com>  
Thomas Desrosiers <thomasdesr@gmail.com>  
Thomas Habets <habets@google.com>  
Thomas Kappler <tkappler@gmail.com>  
Thorben Krueger <thorben.krueger@gmail.com>  
Thordur Bjornsson <thorduri@secnorth.net>  
Tilman Dilo <tilman.dilo@gmail.com>  
Tim Cooijmans <timcooijmans@gmail.com>  
Tim Ebringer <tim.ebringer@gmail.com>  
Tim Henderson <tim.tadh@gmail.com>  
Tim Hockin <thockin@google.com>  
Tim Swast <swast@google.com>

Timo Savola <timo.savola@gmail.com>  
Timo Truys <alkaloid.btx@gmail.com>  
Timothy Studd <tim@timstudd.com>  
Tipp Moseley <tipp@google.com>  
Tobias Columbus <tobias.columbus@gmail.com> <tobias.columbus@googlemail.com>  
Toby Burrell <kurin@google.com>  
Todd Neal <todd@tneal.org>  
Todd Wang <toddwang@gmail.com>  
Tom Bergan <tombergan@google.com>  
Tom Heng <zhm20070928@gmail.com>  
Tom Linfoord <tomlinfoord@gmail.com>  
Tom Szymanski <tgs@google.com>  
Tom Wilkie <tom@weave.works>  
Tommy Schaefer <tommy.schaefer@teecom.com>  
Tor Andersson <tor.andersson@gmail.com>  
Tormod Erevik Lea <tormodlea@gmail.com>  
Totoro W <tw19881113@gmail.com>  
Travis Cline <travis.cline@gmail.com>  
Trevor Strohman <trevor.strohman@gmail.com>  
Trey Lawrence <lawrence.trey@gmail.com>  
Trey Tacon <ttacon@gmail.com>  
Tristan Amini <tamini01@ca.ibm.com>  
Tristan Colgate <tcolgate@gmail.com>  
Tristan Oohry <oohry@gmail.com>  
Tudor Golubenco <tudor.g@gmail.com>  
Tuo Shan <sturbo89@gmail.com> <shantuo@google.com>  
Tyler Bunnell <tylerbunnell@gmail.com>  
Tyler Treat <ttreat31@gmail.com>  
Tzu-Jung Lee <roylee17@currant.com>  
Ugorji Nwoke <ugorji@gmail.com>  
Ulf Holm Nielsen <doktor@dyregod.dk>  
Ulrich Kunitz <uli.kunitz@gmail.com>  
Uriel Mangado <uriel@berlinblue.org>  
Uttam C Pawar <uttam.c.pawar@intel.com>  
Vadim Grek <vadimprog@gmail.com>  
Vadim Vygonets <unixdj@gmail.com>  
Vega Garcia Luis Alfonso <vegacom@gmail.com>  
Victor Chudnovsky <vchudnov@google.com>  
Vincent Ambo <tazjin@googlemail.com>  
Vincent Batts <vbatts@hashbangbash.com> <vbatts@gmail.com>  
Vincent Vanackere <vincent.vanackere@gmail.com>  
Vinu Rajashekhar <vinutheraj@gmail.com>  
Vish Subramanian <vish@google.com>  
Vishvananda Ishaya <vishvananda@gmail.com>  
Vitor De Mario <vitordemario@gmail.com>  
Vlad Krasnov <vlad@cloudflare.com>  
Vladimir Mihailenco <vladimir.webdev@gmail.com>  
Vladimir Nikishenko <vova616@gmail.com>

Vladimir Stefanovic <vladimir.stefanovic@imgtec.com>  
Volker Dobler <dr.volker.dobler@gmail.com>  
Volodymyr Paprotski <vpaprots@ca.ibm.com>  
Walter Poupore <wpoupore@google.com>  
Wedson Almeida Filho <wedsonaf@google.com>  
Wei Guangjing <vcc.163@gmail.com>  
Will Chan <willchan@google.com>  
Will Norris <willnorris@google.com>  
Willem van der Schyff <willemvds@gmail.com>  
William Chan <willchan@chromium.org>  
William Josephson <wjosephson@gmail.com>  
William Orr <will@worrbase.com> <ay1244@gmail.com>  
Wisdom Omuya <deafgoat@gmail.com>  
Xia Bin <snyh@snyh.org>  
Xing Xing <mikespook@gmail.com>  
Xudong Zhang <felixmelon@gmail.com>  
Xuyang Kang <xuyangkang@gmail.com>  
Yan Zou <yzou@google.com>  
Yann Kerherv <yann.kerherve@gmail.com>  
Yao Zhang <lunaria21@gmail.com>  
Yasuharu Goto <matope.ono@gmail.com>  
Yasuhiro Matsumoto <mattn.jp@gmail.com>  
Yesudeep Mangalapilly <yesudeep@google.com>  
Yissakhar Z. Beck <yissakhar.beck@gmail.com>  
Yo-An Lin <yoanlin93@gmail.com>  
Yongjian Xu <i3dmaster@gmail.com>  
Yorman Arias <cixtords@gmail.com>  
Yoshiyuki Kanno <nekotaroh@gmail.com> <yoshiyuki.kanno@stoic.co.jp>  
Yu Heng Zhang <annita.zhang@cn.ibm.com>  
Yu Xuan Zhang <zyxsh@cn.ibm.com>  
Yuki Yugui Sonoda <yugui@google.com>  
Yusuke Kagiwada <block.rxckin.beats@gmail.com>  
Yuusei Kuwana <kuwana@kumama.org>  
Yuval Pavel Zholkover <paulzhol@gmail.com>  
Yves Junqueira <yvesj@google.com> <yves.junqueira@gmail.com>  
Zac Bergquist <zbergquist99@gmail.com>  
Zev Goldstein <zev.goldstein@gmail.com>  
Zhongwei Yao <zhongwei.yao@arm.com>  
Ziad Hatahet <hatahet@gmail.com>  
Zorion Arrizabalaga <zorionk@gmail.com>  
<faxriddinjon@gmail.com>  
<bronze1man@gmail.com>

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.282 freefont-ttf 20100919

### 1.282.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.



## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose

of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified

it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the

product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,

procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work,

for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an



organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means,

then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

## 1.283 libva 1.0.15

### 1.283.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sub license, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

IN NO EVENT SHALL PRECISION INSIGHT AND/OR ITS SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was debianized by Waldo Bastian <waldo.bastian@intel.com> on Mon, 18 Jun 2007 21:35:31 -0700.

It was downloaded from <url://example.com>

Upstream Author(s):

Waldo Bastian <waldo.bastian@intel.com>  
Jonathan Bian <jonathan.bian@intel.com>

Copyright:

(C) Copyright IBM Corporation 2004  
Copyright 1998-1999 Precision Insight, Inc., Cedar Park, Texas.  
Copyright 2000 VA Linux Systems, Inc.  
Copyright 2007 Intel Corporation

License:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sub license, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IN NO EVENT SHALL PRECISION INSIGHT AND/OR ITS SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The Debian packaging is (C) 2007, Intel Corporation and is licensed under the GPL, see `~/usr/share/common-licenses/GPL`.

# Please also look if there are files or directories which have a  
# different copyright/license attached and list them here.

# 1.284 tomcat 9.0.37

## 1.284.1 Available under license :

Apache Tomcat

Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

This software contains code derived from netty-native  
developed by the Netty project  
(<https://netty.io>, <https://github.com/netty/netty-tcnative/>)  
and from finagle-native developed at Twitter  
(<https://github.com/twitter/finagle>).

This software contains code derived from jgroups-kubernetes  
developed by the JGroups project (<http://www.jgroups.org/>).

The Windows Installer is built with the Nullsoft  
Scriptable Install System (NSIS), which is  
open source software. The original software and  
related information is available at  
<http://nsis.sourceforge.net>.

Java compilation software for JSP pages is provided by the Eclipse  
JDT Core Batch Compiler component, which is open source software.  
The original software and related information is available at  
<https://www.eclipse.org/jdt/core/>.

org.apache.tomcat.util.json.JSONParser.jj is a public domain javacc grammar  
for JSON written by Robert Fischer.  
<https://github.com/RobertFischer/json-parser>

For portions of the Tomcat JNI OpenSSL API and the OpenSSL JSSE integration  
The org.apache.tomcat.jni and the org.apache.tomcat.net.openssl packages  
are derivative work originating from the Netty project and the finagle-native  
project developed at Twitter  
\* Copyright 2014 The Netty Project  
\* Copyright 2014 Twitter

For portions of the Tomcat cloud support  
The org.apache.catalina.tribes.membership.cloud package contains derivative  
work originating from the jgroups project.  
<https://github.com/jgroups-extras/jgroups-kubernetes>  
Copyright 2002-2018 Red Hat Inc.

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd
- javaee\_8.xsd
- web-app\_4\_0.xsd
- web-common\_4\_0.xsd
- web-fragment\_4\_0.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache Tomcat

Copyright 1999-@YEAR@ The Apache Software Foundation

This product includes software developed at

The Apache Software Foundation (<http://www.apache.org/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,



"control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
  
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

#### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the Eclipse JDT Core Batch Compiler (ecj-x.x.x.jar) component:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such

derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial

Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in



order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng license.
- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be

- appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
  3. This notice may not be removed or altered from any source distribution.

bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

- a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the

rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

#### 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not

expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

#### Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd
- javaee\_8.xsd
- web-app\_4\_0.xsd
- web-common\_4\_0.xsd
- web-fragment\_4\_0.xsd

#### COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

##### 1. Definitions.

- 1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

- 1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.
- 1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. Executable. means the Covered Software in any form other than Source Code.
- 1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.
- 1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
- A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.



1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or
  - (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such

Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter

any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

#### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

### 4. Versions of the License.

#### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered

Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such

Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it

enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache Standard Taglib Specification API  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Standard Taglib Implementation  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

/\*

\* Licensed to the Apache Software Foundation (ASF) under one or more

\* contributor license agreements. See the NOTICE file distributed with  
\* this work for additional information regarding copyright ownership.  
\* The ASF licenses this file to You under the Apache License, Version 2.0  
\* (the "License"); you may not use this file except in compliance with  
\* the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Apache Tomcat

Copyright 1999-@YEAR@ The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd
- javaee\_8.xsd
- web-app\_4\_0.xsd
- web-common\_4\_0.xsd
- web-fragment\_4\_0.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner



or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the

editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the

same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

#### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd
- javaee\_8.xsd
- web-app\_4\_0.xsd
- web-common\_4\_0.xsd
- web-fragment\_4\_0.xsd



1. Definitions.

- 1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.
- 1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.
- 1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. Executable. means the Covered Software in any form other than Source Code.
- 1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.
- 1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
- A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter

acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:
  - (1) for any code that Contributor has deleted from the Contributor Version;
  - (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or
  - (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed

by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish

revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory

judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY.S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this

License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

## NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache Tomcat JDBC Pool

Copyright 2008-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions



to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices

stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

#### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the `ecj-x.x.x.jar` component and the `EnclosingMethod` and `LocalVariableTypeTable` classes in the `org.apache.tomcat.util.bcel.classfile` package:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

#### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

## 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the

extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

#### 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such

provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng



license.

- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

#### zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

#### bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY

OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

jseward@acm.org

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such

derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial

Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement

and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd

1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License. means this document.

1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications. means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus

claims, in any patent Licensable by grantor.

1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third



party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark)  
Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:  
(1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your

Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each

version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the

Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.



8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

# 1.285 fileutil 1.13.0

## 1.285.1 Available under license :

The MIT License (MIT)

Copyright (c) 2013 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012 Rodrigo Moraes. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in

the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN



OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright 2014, Google Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer

in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but



not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 Miek Gieben. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Miek Gieben nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,



incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2013 Matt T. Proud

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Gocheck - A rich testing framework for Go

Copyright (c) 2010-2013 Gustavo Niemeyer <[gustavo@niemeyer.net](mailto:gustavo@niemeyer.net)>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015, Docker Inc.

Copyright (c) 2014-2015 Prime Directive, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Prime Directive, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016 David Calavera

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE

SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,



OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or

Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");



you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.

All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common

control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,

work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013 Joshua Tacoma

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so,

subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of



this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by

the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be

liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2015-2016 Vincent Demeester

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from

this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT



(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2014-2016 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

goautoneg

<http://bitbucket.org/ww/goautoneg>

Copyright 2011, Open Knowledge Foundation Ltd.

See README.txt for license details.

perks - a fork of <https://github.com/bmizerany/perks>

<https://github.com/beorn7/perks>

Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein

See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format

<http://github.com/golang/protobuf/>

Copyright 2010 The Go Authors

See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).

[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)

Copyright 2013 Matt T. Proud

Licensed under the Apache License, Version 2.0

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

\* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.

\* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT

OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a

file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2014 Google Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it,

under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are



prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if

necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.  
The MIT License (MIT)

Copyright (c) 2014 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing



the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise

designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must

include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly

negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012, 2013 Ugorji Nwoke.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software

without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not



pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,

incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2009 The oauth2 Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

### 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

### 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

## 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

## 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

## 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

## 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

## 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your

accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

MIT

Copyright (C) 2016 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in  
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN  
THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2011-2014 - Canonical Inc.

This software is licensed under the LGPLv3, included below.

As a special exception to the GNU Lesser General Public License version 3  
("LGPL3"), the copyright holders of this Library give you permission to  
convey to a third party a Combined Work that links statically or dynamically  
to this Library without providing any Minimal Corresponding Source or  
Minimal Application Code as set out in 4d or providing the installation  
information set out in section 4e, provided that you comply with the other  
provisions of LGPL3 and provided that you meet, for the Application the  
terms and conditions of the license(s) which apply to the Application.

Except as stated in this special exception, the provisions of LGPL3 will  
continue to apply in full to this Library. If you modify this Library, you  
may apply this exception to your version of this Library, but you are not  
obliged to do so. If you do not wish to do so, delete this exception  
statement from your version. This exception does not (and cannot) modify any  
license terms which apply to the Application, with which you must still  
comply.

#### GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates  
the terms and conditions of version 3 of the GNU General Public  
License, supplemented by the additional permissions listed below.



## 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of

this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you

received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Copyright (c) 2013 Dario Casta. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

procfs provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. Contribution

means Covered Software of a particular Contributor.

### 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. Executable Form

means any form of the work other than Source Code Form.

#### 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

#### 1.8. License

means this document.

#### 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. Source Code Form

means the form of the work preferred for making modifications.

#### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is

controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or



logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to

understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any

character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any

references to the name of the license steward (except to note that such modified license differs from this License).

#### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

##### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

##### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible With Secondary Licenses, as defined by the Mozilla Public License, v. 2.0.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.



9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY

THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

### 1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

### 1.8. "License"

means this document.

#### 1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

## 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this

License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been

informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that



such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Common libraries shared by Prometheus Go components.  
Copyright 2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).  
The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

ISC License

Copyright (c) 2012-2013 Dave Collins <dave@davec.name>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Protocol Buffers for Go with Gadgets

Copyright (c) 2013, The GoGo Authors. All rights reserved.

<http://github.com/gogo/protobuf>

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.

- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this  
list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

DO WHAT THE FUCK YOU WANT TO PUBLIC LICENSE

Version 2, December 2004

Copyright (C) 2004 Sam Hocevar <sam@hocevar.net>

Everyone is permitted to copy and distribute verbatim or modified copies of this license document, and changing it is allowed as long as the name is changed.

DO WHAT THE FUCK YOU WANT TO PUBLIC LICENSE



## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. You just DO WHAT THE FUCK YOU WANT TO.

Docker

Copyright 2012-2016 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/kr/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including

the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each

Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.286 objenesis 3.1

## 1.286.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.



5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.287 atomicwrites 1.3.0

### 1.287.1 Available under license :

Copyright (c) 2015-2016 Markus Unterwaditzer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.288 Isof 4.85

## 1.288.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.289 icu 65

## 1.289.1 Available under license :

```
-*-makefile-*-
Copyright (C) 2016 and later: Unicode, Inc. and others.
License & terms of use: http://www.unicode.org/copyright.html
BSD-specific setup (FreeBSD, OpenBSD, NetBSD, *BSD)
Copyright (c) 1999-2013, International Business Machines Corporation and
others. All Rights Reserved.
```

```
Commands to generate dependency files
GEN_DEPS.c= $(CC) -E -MM $(DEFS) $(CPPFLAGS)
GEN_DEPS.cc= $(CXX) -E -MM $(DEFS) $(CPPFLAGS)
```

```
Flags for position independent code
SHAREDLIBCFLAGS = -fPIC
SHAREDLIBCXXFLAGS = -fPIC
```

SHAREDLIBCPPFLAGS = -DPIC

## Additional flags when building libraries and with threads

THREADSCPPFLAGS = -D\_REENTRANT

LIBCPPFLAGS =

## Compiler switch to embed a runtime search path

LD\_RPATH=

LD\_RPATH\_PRE= -Wl,-rpath,

## Compiler switch to embed a library name

LD\_SONAME = -Wl,-soname -Wl,\$(notdir \$(MIDDLE\_SO\_TARGET))

## Shared library options

LD\_SOOPTIONS= -Wl,-Bsymbolic

## Shared object suffix

SO = so

## Non-shared intermediate object suffix

STATIC\_O = ao

## Compilation rules

%. \$(STATIC\_O): \$(srcdir)/%.c

\$(COMPILE.c) \$(STATICCPPFLAGS) \$(STATICCFLAGS) -o \$@ \$<

%.o: \$(srcdir)/%.c

\$(COMPILE.c) \$(DYNAMICCPPFLAGS) \$(DYNAMICCFLAGS) -o \$@ \$<

%. \$(STATIC\_O): \$(srcdir)/%.cpp

\$(COMPILE.cc) \$(STATICCPPFLAGS) \$(STATICCXXFLAGS) -o \$@ \$<

%.o: \$(srcdir)/%.cpp

\$(COMPILE.cc) \$(DYNAMICCPPFLAGS) \$(DYNAMICCXXFLAGS) -o \$@ \$<

## Dependency rules

%.d: \$(srcdir)/%.c

@echo "generating dependency information for \$<"

@\$(SHELL) -ec '\$(GEN\_DEPS.c) \$< \

| sed "s^\(\$\*\)\.o[ :]\*^1.o \$@ :/g\" > \$@; \

[ -s \$@ ] || rm -f \$@'

%.d: \$(srcdir)/%.cpp

@echo "generating dependency information for \$<"

@\$(SHELL) -ec '\$(GEN\_DEPS.cc) \$< \

| sed "s^\(\$\*\)\.o[ :]\*^1.o \$@ :/g\" > \$@; \

[ -s \$@ ] || rm -f \$@'

## Versioned libraries rules

```
%. $(SO).$(SO_TARGET_VERSION_MAJOR): %. $(SO).$(SO_TARGET_VERSION)
$(RM) $@ && ln -s ${<F} $@
%. $(SO): %. $(SO).$(SO_TARGET_VERSION_MAJOR)
$(RM) $@ && ln -s ${*F}. $(SO).$(SO_TARGET_VERSION) $@
```

```
Bind internal references
```

```
LDflags that pkgdata will use
BIR_LDFLAGS= -Wl,-Bsymbolic
```

```
Dependencies [i.e. map files] for the final library
BIR_DEPS=
```

```
Remove shared library 's'
STATIC_PREFIX_WHEN_USED =
STATIC_PREFIX =
```

```
End BSD-specific setup
COPYRIGHT AND PERMISSION NOTICE (ICU 58 and later)
```

Copyright 1991-2020 Unicode, Inc. All rights reserved.  
Distributed under the Terms of Use in <https://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either (a) this copyright and permission notice appear with all copies of the Data Files or Software, or (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder

shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

-----

### Third-Party Software Licenses

This section contains third-party software notices and/or additional terms for licensed third-party software components included within ICU libraries.

#### 1. ICU License - ICU 1.8.1 to ICU 57.1

### COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1995-2016 International Business Machines Corporation and others  
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

#### 2. Chinese/Japanese Word Break Dictionary Data (cjdict.txt)

```
The Google Chrome software developed by Google is licensed under
the BSD license. Other software included in this distribution is
provided under other licenses, as set forth below.
#
The BSD License
http://opensource.org/licenses/bsd-license.php
Copyright (C) 2006-2008, Google Inc.
#
All rights reserved.
#
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
#
Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.
Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided with
the distribution.
Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.
#
#
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND
CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
#
#
The word list in cjdict.txt are generated by combining three word lists
listed below with further processing for compound word breaking. The
frequency is generated with an iterative training against Google web
corpora.
#
* Libtabe (Chinese)
- https://sourceforge.net/project/?group_id=1519
- Its license terms and conditions are shown below.
#
```

```

* IPADIC (Japanese)
- http://chasen.aist-nara.ac.jp/chasen/distribution.html
- Its license terms and conditions are shown below.
#
-----COPYING.libtabe ---- BEGIN-----
#
/*
* Copyright (c) 1999 TaBE Project.
* Copyright (c) 1999 Pai-Hsiang Hsiao.
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* . Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* . Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
* . Neither the name of the TaBE Project nor the names of its
* contributors may be used to endorse or promote products derived
* from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
* REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
*/
#
/*
* Copyright (c) 1999 Computer Systems and Communication Lab,
* Institute of Information Science, Academia
* Sinica. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*

```



```
* . Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* . Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
* . Neither the name of the Computer Systems and Communication Lab
* nor the names of its contributors may be used to endorse or
* promote products derived from this software without specific
* prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
* REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
*/
#
Copyright 1996 Chih-Hao Tsai @ Beckman Institute,
University of Illinois
c-tsai4@uiuc.edu http://casper.beckman.uiuc.edu/~c-tsai4
#
-----COPYING.libtabe-----END-----
#
#
-----COPYING.ipadic-----BEGIN-----
#
Copyright 2000, 2001, 2002, 2003 Nara Institute of Science
and Technology. All Rights Reserved.
#
Use, reproduction, and distribution of this software is permitted.
Any copy of this software, whether in its original form or modified,
must include both the above copyright notice and the following
paragraphs.
#
Nara Institute of Science and Technology (NAIST),
the copyright holders, disclaims all warranties with regard to this
software, including all implied warranties of merchantability and
fitness, in no event shall NAIST be liable for
any special, indirect or consequential damages or any damages
whatsoever resulting from loss of use, data or profits, whether in an
```

# action of contract, negligence or other tortuous action, arising out  
# of or in connection with the use or performance of this software.  
#  
# A large portion of the dictionary entries  
# originate from ICOT Free Software. The following conditions for ICOT  
# Free Software applies to the current dictionary as well.  
#  
# Each User may also freely distribute the Program, whether in its  
# original form or modified, to any third party or parties, PROVIDED  
# that the provisions of Section 3 ("NO WARRANTY") will ALWAYS appear  
# on, or be attached to, the Program, which is distributed substantially  
# in the same form as set out herein and that such intended  
# distribution, if actually made, will neither violate or otherwise  
# contravene any of the laws and regulations of the countries having  
# jurisdiction over the User or the intended distribution itself.  
#  
# NO WARRANTY  
#  
# The program was produced on an experimental basis in the course of the  
# research and development conducted during the project and is provided  
# to users as so produced on an experimental basis. Accordingly, the  
# program is provided without any warranty whatsoever, whether express,  
# implied, statutory or otherwise. The term "warranty" used herein  
# includes, but is not limited to, any warranty of the quality,  
# performance, merchantability and fitness for a particular purpose of  
# the program and the nonexistence of any infringement or violation of  
# any right of any third party.  
#  
# Each user of the program will agree and understand, and be deemed to  
# have agreed and understood, that there is no warranty whatsoever for  
# the program and, accordingly, the entire risk arising from or  
# otherwise connected with the program is assumed by the user.  
#  
# Therefore, neither ICOT, the copyright holder, or any other  
# organization that participated in or was otherwise related to the  
# development of the program and their respective officials, directors,  
# officers and other employees shall be held liable for any and all  
# damages, including, without limitation, general, special, incidental  
# and consequential damages, arising out of or otherwise in connection  
# with the use or inability to use the program or any product, material  
# or result produced or otherwise obtained by using the program,  
# regardless of whether they have been advised of, or otherwise had  
# knowledge of, the possibility of such damages at any time during the  
# project or thereafter. Each user will be deemed to have agreed to the  
# foregoing by his or her commencement of use of the program. The term  
# "use" as used herein includes, but is not limited to, the use,  
# modification, copying and distribution of the program and the  
# production of secondary products from the program.

```
#
In the case where the program, whether in its original form or
modified, was distributed or delivered to or received by a user from
any person, organization or entity other than ICOT, unless it makes or
grants independently of ICOT any specific warranty to the user in
writing, such person, organization or entity, will also be exempted
from and not be held liable to the user for any such damages as noted
above as far as the program is concerned.
#
-----COPYING.ipadic-----END-----
```

### 3. Lao Word Break Dictionary Data (laodict.txt)

```
Copyright (c) 2013 International Business Machines Corporation
and others. All Rights Reserved.
#
Project: http://code.google.com/p/lao-dictionary/
Dictionary: http://lao-dictionary.googlecode.com/git/Lao-Dictionary.txt
License: http://lao-dictionary.googlecode.com/git/Lao-Dictionary-LICENSE.txt
(copied below)
#
This file is derived from the above dictionary, with slight
modifications.

Copyright (C) 2013 Brian Eugene Wilson, Robert Martin Campbell.
All rights reserved.
#
Redistribution and use in source and binary forms, with or without
modification,
are permitted provided that the following conditions are met:
#
#
Redistributions of source code must retain the above copyright notice, this
list of conditions and the following disclaimer. Redistributions in
binary form must reproduce the above copyright notice, this list of
conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
#
#
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
```

# STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
# ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
# OF THE POSSIBILITY OF SUCH DAMAGE.  
# -----

#### 4. Burmese Word Break Dictionary Data (burmesedict.txt)

# Copyright (c) 2014 International Business Machines Corporation  
# and others. All Rights Reserved.

#  
# This list is part of a project hosted at:  
# [github.com/kanyawtech/myanmar-karen-word-lists](https://github.com/kanyawtech/myanmar-karen-word-lists)  
#

# -----  
# Copyright (c) 2013, LeRoy Benjamin Sharon

# All rights reserved.  
#

# Redistribution and use in source and binary forms, with or without  
# modification, are permitted provided that the following conditions  
# are met: Redistributions of source code must retain the above  
# copyright notice, this list of conditions and the following  
# disclaimer. Redistributions in binary form must reproduce the  
# above copyright notice, this list of conditions and the following  
# disclaimer in the documentation and/or other materials provided  
# with the distribution.

#  
# Neither the name Myanmar Karen Word Lists, nor the names of its  
# contributors may be used to endorse or promote products derived  
# from this software without specific prior written permission.

#  
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND  
# CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,  
# INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF  
# MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
# DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS  
# BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,  
# EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED  
# TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
# DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON  
# ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR  
# TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF  
# THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
# SUCH DAMAGE.

# -----

#### 5. Time Zone Database

ICU uses the public domain data and code derived from Time Zone

Database for its time zone support. The ownership of the TZ database is explained in BCP 175: Procedure for Maintaining the Time Zone Database section 7.

#### # 7. Database Ownership

#

# The TZ database itself is not an IETF Contribution or an IETF document. Rather it is a pre-existing and regularly updated work that is in the public domain, and is intended to remain in the public domain. Therefore, BCPs 78 [RFC5378] and 79 [RFC3979] do not apply to the TZ Database or contributions that individuals make to it. Should any claims be made and substantiated against the TZ Database, the organization that is providing the IANA Considerations defined in this RFC, under the memorandum of understanding with the IETF, currently ICANN, may act in accordance with all competent court orders. No ownership claims will be made by ICANN or the IETF Trust on the database or the code. Any person making a contribution to the database or code waives all rights to future claims in that contribution or in the TZ Database.

#### 6. Google double-conversion

Copyright 2006-2011, the V8 project authors. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.290 spring-security-core 5.4.10

## 1.290.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2011-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/password/Digester.java
```

No license file was found, but licenses were detected in source scan.

```
// Permission to use, copy, modify, and distribute this software for any
// purpose with or without fee is hereby granted, provided that the above
// copyright notice and this permission notice appear in all copies.
```

Found in path(s):

```
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/bcrypt/BCrypt.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
```

```

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* A token issued by { @link TokenService }.
*
* <p>
* It is important that the keys assigned to tokens are sufficiently randomised and
* secured that they can serve as identifying a unique user session. Implementations of
* { @link TokenService } are free to use encryption or encoding strategies of their choice.
* It is strongly recommended that keys are of sufficient length to balance safety against
* persistence cost. In relation to persistence cost, it is strongly recommended that
* returned keys are small enough for encoding in a cookie.
* </p>
*
* @author Ben Alex
* @since 2.0.1
*/

```

Found in path(s):

```

* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/core/token/Token.java

```

No license file was found, but licenses were detected in source scan.

```

/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Determines if the { @link #getAuthentication() } has permission to access the target
* given the permission
* @param target the target domain object to check permission on
* @param permission the permission to check on the domain object (i.e. "read",
* "write", etc).
* @return true if permission is granted to the { @link #getAuthentication() }, else
* false

```

\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/expression/SecurityExpressionOperations.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2010-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/memory/InMemoryConfiguration.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/DefaultJaasAuthenticationProvider.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-



jar/org/springframework/security/core/session/SessionCreationEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/session/SessionIdChangedEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/session/SessionDestroyedEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/DefaultMethodSecurityExpressionHandler.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/ProviderManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/MethodSecurityEvaluationContext.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/DefaultAuthenticationEventPublisher.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/session/AbstractSessionEvent.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2011-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/encrypt/Encryptors.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2015-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
```

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/CoreJackson2Module.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/AnonymousAuthenticationTokenMixin.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/RememberMeAuthenticationTokenMixin.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/UnmodifiableSetDeserializer.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/SimpleGrantedAuthorityMixin.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/UserMixin.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/UnmodifiableSetMixin.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/UsernamePasswordAuthenticationTokenMixin.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

/\*\*  
\* @param authentication represents the user in question. Should not be null.  
\* @param targetDomainObject the domain object for which permissions should be  
\* checked. May be null in which case implementations should return false, as the null  
\* condition can be checked explicitly in the expression.  
\* @param permission a representation of the permission object as supplied by the  
\* expression system. Not null.  
\* @return true if the permission is granted, false otherwise

\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/PermissionEvaluator.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2004, 2005, 2006 Acegi Technology Pty Limited  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/method/MapBasedMethodSecurityMetadataSource.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/AbstractAclVoter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureBadCredentialsEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/event/AuthorizedEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/event/LoggerListener.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationDetailsSource.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/util/MethodInvocationUtils.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/util/SimpleMethodInvocation.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AnonymousAuthenticationProvider.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/UsernamePasswordAuthenticationToken.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/util/FieldUtils.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/method/AbstractMethodSecurityMetadataSource.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/UserCache.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationManager.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/dao/DaoAuthenticationProvider.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/InheritableThreadLocalSecurityContextHolderStrategy.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/AccessDeniedException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/LoggerListener.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationServiceException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/method/MethodSecurityMetadataSource.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/TestingAuthenticationProvider.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationSuccessEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/DefaultLoginExceptionResolver.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/SpringSecurityMessageSource.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/Authentication.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/annotation/SecuredAnnotationSecurityMetadataSource.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/BadCredentialsException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/aopalliance/MethodSecurityInterceptor.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/AffirmativeBased.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationProvider.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureLockedEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/annotation/Js250MethodSecurityMetadataSource.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AbstractAuthenticationEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/event/AbstractAuthorizationEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/AuthenticationException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/SecurityContext.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/AuthorizationServiceException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/ConsensusBased.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/TestingAuthenticationToken.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/UserDetails.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/ConfigAttribute.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureCredentialsExpiredEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/GrantedAuthority.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/UnanimousBased.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/AbstractAccessDecisionManager.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/SecurityMetadataSource.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureProviderNotFoundEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/InteractiveAuthenticationSuccessEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/JaasNameCallbackHandler.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/JaasPasswordCallbackHandler.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/JaasAuthenticationCallbackHandler.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/SecurityContextHolder.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/SecurityContextImpl.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/UsernameNotFoundException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationTrustResolverImpl.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/AuthorityGranter.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/RememberMeAuthenticationProvider.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/ThreadLocalSecurityContextHolderStrategy.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/GlobalSecurityContextHolderStrategy.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationTrustResolver.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/AuthenticatedVoter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/ProviderNotFoundException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/cache/NullUserCache.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationFailedEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AnonymousAuthenticationToken.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/User.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/aspectj/AspectJCallback.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/vote/RoleVoter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/RunAsManagerImpl.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AbstractAuthenticationToken.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/dao/AbstractUserDetailsAuthenticationProvider.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureExpiredEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/SecurityContextHolderStrategy.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AccountExpiredException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/AfterInvocationProviderManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/memory/UserAttribute.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureDisabledEvent.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/AccessDecisionManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/RunAsManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/MethodInvocationPrivilegeEvaluator.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/RememberMeAuthenticationToken.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/CredentialsExpiredException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/UserDetailsService.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/AfterInvocationProvider.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/cache/EhCacheBasedUserCache.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureServiceExceptionEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationCredentialsNotFoundException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/session/SessionRegistry.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/annotation/Secured.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/event/AuthorizationFailureEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/LoginExceptionResolver.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationManagerImpl.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/event/PublicInvocationEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/memory/UserAttributeEditor.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/jdbc/JdbcDaoImpl.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/session/SessionRegistryImpl.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/DisabledException.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/event/AuthenticationCredentialsNotFoundEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationProvider.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureProxyUntrustedEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/AbstractAuthenticationFailureEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationSuccessEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/RunAsUserToken.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/JaasGrantedAuthority.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/aopalliance/MethodSecurityMetadataSourceAdvisor.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/NullRunAsManager.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/AbstractSecurityInterceptor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/util/InMemoryResource.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/SecurityContextLoginModule.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/JaasAuthenticationProvider.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/InsufficientAuthenticationException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/session/SessionInformation.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/JaasAuthenticationToken.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/SecurityConfig.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/RunAsImplAuthenticationProvider.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/LockedException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/intercept/InterceptorStatusToken.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/access/AccessDecisionVoter.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2010-2021 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/jaas/AbstractJaasAuthenticationProvider.java



No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyUtils.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2015-2020 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/jackson2/SecurityJackson2Modules.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2011-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
```

- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesGcmBytesEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/keygen/BytesKeyGenerator.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/keygen/SharedKeyGenerator.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/keygen/HexEncodingStringKeyGenerator.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/HexEncodingTextEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/keygen/StringKeyGenerator.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/CipherUtils.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/password/PasswordEncoder.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/BytesEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/keygen/SecureRandomBytesKeyGenerator.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/password/NoOpPasswordEncoder.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/TextEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/password/StandardPasswordEncoder.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/AesBytesEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesCbcBytesEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesBytesEncryptor.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/keygen/KeyGenerators.java
- \* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-

jar/org/springframework/security/crypto/util/EncodingUtils.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/prepost/PrePostAdviceReactiveMethodInterceptor.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authentication/CachingUserDetailsService.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authorization/AuthorityReactiveAuthorizationManager.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/password/DelegatingPasswordEncoder.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/password/Pbkdf2PasswordEncoder.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/core/token/KeyBasedPersistenceTokenService.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/keygen/Base64StringKeyGenerator.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/password/MessageDigestPasswordEncoder.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/concurrent/DelegatingSecurityContextCallable.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/password/LdapShaPasswordEncoder.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/jackson2/UnmodifiableListDeserializer.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authentication/DelegatingReactiveAuthenticationManager.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/concurrent/DelegatingSecurityContextRunnable.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/jackson2/BadCredentialsExceptionMixin.java
```

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/ReactiveUserDetailsPasswordService.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/provisioning/JdbcUserDetailsManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/password/Md4PasswordEncoder.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/jackson2/UnmodifiableListMixin.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/Transient.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/scheduling/DelegatingSecurityContextTaskScheduler.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/converter/RsaKeyConverters.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/annotation/CurrentSecurityContext.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManagerResolver.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/event/LogoutSuccessEvent.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManagerAdapter.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/AuthenticationManagerResolver.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/scrypt/SCryptPasswordEncoder.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/UserDetailsPasswordService.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-

jar/org/springframework/security/core/token/SecureRandomFactoryBean.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/AbstractUserDetailsReactiveAuthenticationManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/argon2/Argon2PasswordEncoder.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/UserDetailsRepositoryReactiveAuthenticationManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/ExpressionBasedPreInvocationAdvice.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/argon2/Argon2EncodingUtils.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyImpl.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2011 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/bcrypt/BCryptPasswordEncoder.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2004, 2005, 2006 Acegi Technology Pty Limited
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```

* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Reviews the Object returned from a secure object invocation, being able to
* modify the Object or throw an {@link AccessDeniedException}.
* <p>
* Typically used to ensure the principal is permitted to access the domain object
* instance returned by a service layer bean. Can also be used to mutate the domain object
* instance so the principal is only able to access authorised bean properties or
* Collection elements.
* <p>
* Special consideration should be given to using an AfterInvocationManager
* on bean methods that modify a database. Typically an
* AfterInvocationManager is used with read-only methods, such as
* public DomainObject getById(id). If used with methods that modify a
* database, a transaction manager should be used to ensure any
* AccessDeniedException will cause a rollback of the changes made by the
* transaction.
* </p>
*
* @author Ben Alex
*/

```

Found in path(s):

```

* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/intercept/AfterInvocationManager.java

```

No license file was found, but licenses were detected in source scan.

```

/*
* Copyright 2002-2013 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

```

Found in path(s):

```

* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/core/parameters/AnnotationParameterNameDiscoverer.java

```

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/annotation/AuthenticationPrincipal.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/MapReactiveUserDetailsService.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/factory/PasswordEncoderFactories.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManager.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authorization/AuthorizationDecision.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/AuthenticatedPrincipal.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authorization/AuthenticatedReactiveAuthorizationManager.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/password/PasswordEncoderUtils.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/context/ReactiveSecurityContextHolder.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/authorization/ReactiveAuthorizationManager.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/SpringSecurityCoreVersion.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/crypto/password/Md4.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/parameters/P.java

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-jar/org/springframework/security/core/userdetails/ReactiveUserDetailsService.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/expression/SecurityExpressionHandler.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/method/package-info.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authentication/AuthenticationEventPublisher.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/prepost/package-info.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/core/authority/AuthorityUtils.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/prepost/PostAuthorize.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/prepost/PrePostInvocationAttributeFactory.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/core/authority/mapping/MappableAttributesRetriever.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authentication/event/package-info.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/access/expression/method/ExpressionBasedPostInvocationAdvice.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/core/authority/package-info.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/provisioning/UserDetailsManager.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authentication/AccountStatusUserDetailsChecker.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/authentication/AccountStatusException.java
* /opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
```



jar/org/springframework/security/access/prepost/PostFilter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/Attributes2GrantedAuthoritiesMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchy.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/GrantedAuthoritiesMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/dao/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/context/DelegatingApplicationListener.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/token/Sha512DigestUtils.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/NullAuthoritiesMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/codec/Hex.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/vote/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/UserDetailsChecker.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/concurrent/DelegatingSecurityContextScheduledExecutorService.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/provisioning/MutableUser.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyAuthoritiesMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/ExpressionBasedAnnotationAttributeFactory.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PreInvocationAuthorizationAdviceVoter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/SimpleAttributes2GrantedAuthoritiesMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/annotation/Jsr250SecurityConfig.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/token/TokenService.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/PostInvocationExpressionAttribute.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/jaas/memory/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/parameters/DefaultSecurityParameterNameDiscoverer.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-

jar/org/springframework/security/scheduling/DelegatingSecurityContextSchedulingTaskExecutor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/intercept/aspectj/AspectJMethodSecurityInterceptor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/hierarchicalroles/NullRoleHierarchy.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/session/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/memory/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/codec/Utf8.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/vote/RoleHierarchyVoter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/GrantedAuthoritiesContainer.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/concurrent/DelegatingSecurityContextExecutorService.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/hierarchicalroles/CycleInRoleHierarchyException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/PermissionCacheOptimizer.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/MethodSecurityExpressionHandler.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/method/DelegatingMethodSecurityMetadataSource.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/MethodSecurityExpressionOperations.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PreFilter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/AuthenticationUserDetailsService.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/DenyAllPermissionEvaluator.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/intercept/aspectj/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/ComparableVersion.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PreInvocationAttribute.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/intercept/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-

jar/org/springframework/security/access/annotation/Js250Voter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/intercept/aspectj/MethodInvocationAdapter.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/token/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/AbstractSecurityExpressionHandler.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/MapBasedAttributes2GrantedAuthoritiesMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/password/AbstractPasswordEncoder.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/SimpleGrantedAuthority.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/jaas/event/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/UserDetailsByNameServiceWrapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/intercept/aopalliance/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/task/DelegatingSecurityContextTaskExecutor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/annotation/AnnotationMetadataExtractor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PostInvocationAuthorizationAdvice.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/CredentialsContainer.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/context/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/jackson2/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/SimpleAuthorityMapper.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/jaas/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/provisioning/InMemoryUserDetailsManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/rcp/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/annotation/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PostInvocationAttribute.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PostInvocationAdviceProvider.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-

jar/org/springframework/security/access/prepost/PreAuthorize.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/method/P.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/SecurityExpressionRoot.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PrePostAnnotationSecurityMetadataSource.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/task/DelegatingSecurityContextAsyncTaskExecutor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/jdbc/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/concurrent/DelegatingSecurityContextExecutor.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/concurrent/AbstractDelegatingSecurityContextSupport.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/token/DefaultToken.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/crypto/codec/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/authentication/InternalAuthenticationServiceException.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/provisioning/MutableUserDetails.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/authority/mapping/SimpleMappableAttributesRetriever.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/provisioning/GroupManager.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/AbstractExpressionBasedMethodConfigAttribute.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/util/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/prepost/PreInvocationAuthorizationAdvice.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/method/PreInvocationExpressionAttribute.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/event/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/method/AbstractFallbackMethodSecurityMetadataSource.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/cache/SpringCacheBasedUserCache.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/provisioning/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/core/userdetails/cache/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-

jar/org/springframework/security/access/expression/method/MethodSecurityExpressionRoot.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/hierarchicalroles/package-info.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/access/expression/ExpressionUtils.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2015-2018 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/jackson2/UserDeserializer.java  
\* /opt/cola/permits/1351887212\_1656319604.455229/0/spring-security-core-5-4-10-sources-  
jar/org/springframework/security/jackson2/UsernamePasswordAuthenticationTokenDeserializer.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

```
/**
* Base64 encoder which is a reduced version of Robert Harder's public domain
* implementation (version 2.3.7). See <a href=
```

```
* "http://iharder.sourceforge.net/current/java/base64/">http://iharder.sourceforge.net/current/java/base64/
* for more information.
* <p>
* For internal use only.
*
* @author Luke Taylor
* @since 3.0
* @deprecated Use java.util.Base64
*/
```

Found in path(s):

```
*/opt/cola/permits/1351887212_1656319604.455229/0/spring-security-core-5-4-10-sources-
jar/org/springframework/security/crypto/codec/Base64.java
```

## 1.291 activation 1.2.2

### 1.291.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# Notices for Jakarta Activation

This content is produced and maintained by Jakarta Activation project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/jaf>

## Third-party Content

This project leverages the following third party content.

JUnit (4.12)

\* License: Eclipse Public License

## 1.292 rrule 2.6.8

### 1.292.1 Available under license :

rrule.js: Library for working with recurrence rules for calendar dates.

=====

Copyright 2010, Jakub Roztocil <[jakub@roztocil.name](mailto:jakub@roztocil.name)> and Lars Schning

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of The author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR AND CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

./rrule.js and ./test/tests.js is based on python-dateutil. LICENCE:

python-dateutil - Extensions to the standard Python datetime module.

=====

Copyright (c) 2003-2011 - Gustavo Niemeyer <gustavo@niemeyer.net>

Copyright (c) 2012 - Tomi Pievilinen <tomi.pievilainen@iki.fi>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR



CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.293 pyjwt 2.3.0

### 1.293.1 Available under license :

The MIT License (MIT)

Copyright (c) 2015 Jos Padilla

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.294 cairo 1.14.2

### 1.294.1 Available under license :

MOZILLA PUBLIC LICENSE

Version 1.1

-----

1. Definitions.

1.0.1. "Commercial Use" means distribution or otherwise making the Covered Code available to a third party.

1.1. "Contributor" means each entity that creates or contributes to the creation of Modifications.

1.2. "Contributor Version" means the combination of the Original Code, prior Modifications used by a Contributor, and the Modifications made by that particular Contributor.

1.3. "Covered Code" means the Original Code or Modifications or the combination of the Original Code and Modifications, in each case including portions thereof.

1.4. "Electronic Distribution Mechanism" means a mechanism generally accepted in the software development community for the electronic transfer of data.

1.5. "Executable" means Covered Code in any form other than Source Code.

1.6. "Initial Developer" means the individual or entity identified as the Initial Developer in the Source Code notice required by Exhibit A.

1.7. "Larger Work" means a work which combines Covered Code or portions thereof with code not governed by the terms of this License.

1.8. "License" means this document.

1.8.1. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. "Modifications" means any addition to or deletion from the substance or structure of either the Original Code or any previous Modifications. When Covered Code is released as a series of files, a Modification is:

A. Any addition to or deletion from the contents of a file containing Original Code or previous Modifications.

B. Any new file that contains any part of the Original Code or previous Modifications.

1.10. "Original Code" means Source Code of computer software code which is described in the Source Code notice required by Exhibit A as Original Code, and which, at the time of its release under this License is not already Covered Code governed by this License.

1.10.1. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process,

and apparatus claims, in any patent Licensable by grantor.

1.11. "Source Code" means the preferred form of the Covered Code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an Executable, or source code differential comparisons against either the Original Code or another well known, available Covered Code of the Contributor's choice. The Source Code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

1.12. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License or a future version of this License issued under Section 6.1. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. Source Code License.

### 2.1. The Initial Developer Grant.

The Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer to use, reproduce, modify, display, perform, sublicense and distribute the Original Code (or portions thereof) with or without Modifications, and/or as part of a Larger Work; and

(b) under Patents Claims infringed by the making, using or selling of Original Code, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Code (or portions thereof).

(c) the licenses granted in this Section 2.1(a) and (b) are effective on the date Initial Developer first distributes Original Code under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: 1) for code that You delete from the Original Code; 2) separate from the Original Code; or 3) for infringements caused by: i) the modification of the Original Code or ii) the

combination of the Original Code with other software or devices.

## 2.2. Contributor Grant.

Subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor, to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof) either on an unmodified basis, with other Modifications, as Covered Code and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: 1) Modifications made by that Contributor (or portions thereof); and 2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) the licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first makes Commercial Use of the Covered Code.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: 1) for any code that Contributor has deleted from the Contributor Version; 2) separate from the Contributor Version; 3) for infringements caused by: i) third party modifications of Contributor Version or ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or 4) under Patent Claims infringed by Covered Code in the absence of Modifications made by that Contributor.

## 3. Distribution Obligations.

### 3.1. Application of License.

The Modifications which You create or to which You contribute are governed by the terms of this License, including without limitation Section 2.2. The Source Code version of Covered Code may be distributed only under the terms of this License or a future version of this License released under Section 6.1, and You must include a copy of this License with every copy of the Source Code You distribute. You may not offer or impose any terms on any Source Code version that alters or restricts the applicable version of this License or the recipients' rights hereunder. However, You may include

an additional document offering the additional rights described in Section 3.5.

### 3.2. Availability of Source Code.

Any Modification which You create or to which You contribute must be made available in Source Code form under the terms of this License either on the same media as an Executable version or via an accepted Electronic Distribution Mechanism to anyone to whom you made an Executable version available; and if made available via Electronic Distribution Mechanism, must remain available for at least twelve (12) months after the date it initially became available, or at least six (6) months after a subsequent version of that particular Modification has been made available to such recipients. You are responsible for ensuring that the Source Code version remains available even if the Electronic Distribution Mechanism is maintained by a third party.

### 3.3. Description of Modifications.

You must cause all Covered Code to which You contribute to contain a file documenting the changes You made to create that Covered Code and the date of any change. You must include a prominent statement that the Modification is derived, directly or indirectly, from Original Code provided by the Initial Developer and including the name of the Initial Developer in (a) the Source Code, and (b) in any notice in an Executable version or related documentation in which You describe the origin or ownership of the Covered Code.

### 3.4. Intellectual Property Matters

#### (a) Third Party Claims.

If Contributor has knowledge that a license under a third party's intellectual property rights is required to exercise the rights granted by such Contributor under Sections 2.1 or 2.2, Contributor must include a text file with the Source Code distribution titled "LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If Contributor obtains such knowledge after the Modification is made available as described in Section 3.2, Contributor shall promptly modify the LEGAL file in all copies Contributor makes available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Covered Code that new knowledge has been obtained.

#### (b) Contributor APIs.

If Contributor's Modifications include an application programming interface and Contributor has knowledge of patent licenses which are reasonably necessary to implement that API, Contributor must also include this information in the LEGAL file.

(c) Representations.

Contributor represents that, except as disclosed pursuant to Section 3.4(a) above, Contributor believes that Contributor's Modifications are Contributor's original creation(s) and/or Contributor has sufficient rights to grant the rights conveyed by this License.

3.5. Required Notices.

You must duplicate the notice in Exhibit A in each file of the Source Code. If it is not possible to put such notice in a particular Source Code file due to its structure, then You must include such notice in a location (such as a relevant directory) where a user would be likely to look for such a notice. If You created one or more Modification(s) You may add your name as a Contributor to the notice described in Exhibit A. You must also duplicate this License in any documentation for the Source Code where You describe recipients' rights or ownership rights relating to Covered Code. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Code. However, You may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

3.6. Distribution of Executable Versions.

You may distribute Covered Code in Executable form only if the requirements of Section 3.1-3.5 have been met for that Covered Code, and if You include a notice stating that the Source Code version of the Covered Code is available under the terms of this License, including a description of how and where You have fulfilled the obligations of Section 3.2. The notice must be conspicuously included in any notice in an Executable version, related documentation or collateral in which You describe recipients' rights relating to the Covered Code. You may distribute the Executable version of Covered Code or ownership rights under a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable version does not attempt to limit or alter the recipient's rights in the Source Code version from the rights set forth in this License. If You distribute the Executable version under a different license You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or any Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such

terms You offer.

### 3.7. Larger Works.

You may create a Larger Work by combining Covered Code with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Code.

## 4. Inability to Comply Due to Statute or Regulation.

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Code due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be included in the LEGAL file described in Section 3.4 and must be included with all distributions of the Source Code. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Application of this License.

This License applies to code to which the Initial Developer has attached the notice in Exhibit A and to related Covered Code.

## 6. Versions of the License.

### 6.1. New Versions.

Netscape Communications Corporation ("Netscape") may publish revised and/or new versions of the License from time to time. Each version will be given a distinguishing version number.

### 6.2. Effect of New Versions.

Once Covered Code has been published under a particular version of the License, You may always continue to use it under the terms of that version. You may also choose to use such Covered Code under the terms of any subsequent version of the License published by Netscape. No one other than Netscape has the right to modify the terms applicable to Covered Code created under this License.

### 6.3. Derivative Works.

If You create or use a modified version of this License (which you may only do in order to apply it to code which is not already Covered Code governed by this License), You must (a) rename Your license so that the phrases "Mozilla", "MOZILLAPL", "MOZPL", "Netscape", "MPL", "NPL" or any confusingly similar phrase do not appear in your license (except to note that your license differs from this License)

and (b) otherwise make it clear that Your version of the license contains terms which differ from the Mozilla Public License and Netscape Public License. (Filling in the name of the Initial Developer, Original Code or Contributor in the notice described in Exhibit A shall not of themselves be deemed to be modifications of this License.)

#### 7. DISCLAIMER OF WARRANTY.

COVERED CODE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED CODE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED CODE IS WITH YOU. SHOULD ANY COVERED CODE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

#### 8. TERMINATION.

8.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. All sublicenses to the Covered Code which are properly granted shall survive any termination of this License. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

8.2. If You initiate litigation by asserting a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You file such action is referred to as "Participant") alleging that:

(a) such Participant's Contributor Version directly or indirectly infringes any patent, then any and all rights granted by such Participant to You under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively, unless if within 60 days after receipt of notice You either: (i) agree in writing to pay Participant a mutually agreeable reasonable royalty for Your past and future use of Modifications made by such Participant, or (ii) withdraw Your litigation claim with respect to the Contributor Version against such Participant. If within 60 days of notice, a reasonable royalty and payment arrangement are not mutually agreed upon in writing by the parties or the litigation claim is not withdrawn, the rights granted by Participant to You under Sections 2.1 and/or 2.2 automatically terminate at the expiration of



the 60 day notice period specified above.

(b) any software, hardware, or device, other than such Participant's Contributor Version, directly or indirectly infringes any patent, then any rights granted to You by such Participant under Sections 2.1(b) and 2.2(b) are revoked effective as of the date You first made, used, sold, distributed, or had made, Modifications made by that Participant.

8.3. If You assert a patent infringement claim against Participant alleging that such Participant's Contributor Version directly or indirectly infringes any patent where such claim is resolved (such as by license or settlement) prior to the initiation of patent infringement litigation, then the reasonable value of the licenses granted by such Participant under Sections 2.1 or 2.2 shall be taken into account in determining the amount or value of any payment or license.

8.4. In the event of termination under Sections 8.1 or 8.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or any distributor hereunder prior to termination shall survive termination.

## 9. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED CODE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 10. U.S. GOVERNMENT END USERS.

The Covered Code is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Code with only those

rights set forth herein.

#### 11. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by California law provisions (except to the extent applicable law, if any, provides otherwise), excluding its conflict-of-law provisions. With respect to disputes in which at least one party is a citizen of, or an entity chartered or registered to do business in the United States of America, any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California, with venue lying in Santa Clara County, California, with the losing party responsible for costs, including without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License.

#### 12. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### 13. MULTIPLE-LICENSED CODE.

Initial Developer may designate portions of the Covered Code as "Multiple-Licensed". "Multiple-Licensed" means that the Initial Developer permits you to utilize portions of the Covered Code under Your choice of the NPL or the alternative licenses, if any, specified by the Initial Developer in the file described in Exhibit A.

#### EXHIBIT A -Mozilla Public License.

``The contents of this file are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS"

basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is \_\_\_\_\_.

The Initial Developer of the Original Code is \_\_\_\_\_.

Portions created by \_\_\_\_\_ are Copyright (C) \_\_\_\_\_  
\_\_\_\_\_. All Rights Reserved.

Contributor(s): \_\_\_\_\_.

Alternatively, the contents of this file may be used under the terms of the \_\_\_\_\_ license (the "[\_\_\_\_\_] License"), in which case the provisions of [\_\_\_\_\_] License are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of the [\_\_\_\_\_] License and not to allow others to use your version of this file under the MPL, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the [\_\_\_\_\_] License. If you do not delete the provisions above, a recipient may use your version of this file under either the MPL or the [\_\_\_\_\_] License."

[NOTE: The text of this Exhibit A may differ slightly from the text of the notices in the Source Code files of the Original Code. You should use the text of this Exhibit A rather than the text found in the Original Code Source Code for Your Modifications.]

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in

the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN



OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.  
Cairo is free software.

cairo-trace is released under the terms of the GNU General Public License (GPL) version 3. Please see COPYING-GPL-3 for the precise terms and conditions.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Suite 500, Boston, MA 02110-1335, USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run

that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any

warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to

exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the



Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining

where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software

Foundation, Inc., 51 Franklin Street, Suite 500, Boston, MA 02110-1335, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
Cairo is free software.

These tests are mainly available under a liberal MIT license to simplify any use of the code for reference purposes. Please check the opening comment of each file for copyright and licensing information.

The test suite also bundles some fonts for use by the test suite. The fonts included, their licenses, and why we use them in the test suite are as follows:

Font	License	Distinguishing feature
6x13.pcf	Public Domain	Bitmap font

The test suite also bundles some images for use by the test suite. The images included, their licenses, and why we use them in the test suite are as follows:

Image	License	Distinguishing feature
romedalen.jpg	Public Domain	Bitmap image (image/jpeg)
romedalen.png	Public Domain	Bitmap image (image/png)

The kind contributors of the bundled files are (in alphabetical order):  
yvind Kols <pippin@freedesktop.org> Author of the original romedalen shot.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to

use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.



The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

## 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and

appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be

included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is

governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work

occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.



Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively

state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.  
Cairo is free software.

These tests are mainly available under a liberal MIT license to simplify any use of the code for reference purposes. Please check the opening comment

of each file for copyright and licensing information.

Cairo is free software.

Every source file in the implementation of cairo is available to be redistributed and/or modified under the terms of either the GNU Lesser General Public License (LGPL) version 2.1 or the Mozilla Public License (MPL) version 1.1. Some files are available under more liberal terms, but we believe that in all cases, each file may be used under either the LGPL or the MPL.

See the following files in this directory for the precise terms and conditions of either license:

COPYING-LGPL-2.1

COPYING-MPL-1.1

Please see each file in the implementation for copyright and licensing information, (in the opening comment of each file).

Cairo is free software.

These utilities are all free software, please see the licensing conditions in the opening comments of each file.

Cairo is free software.

Every source file in the implementation[\*] of cairo is available to be redistributed and/or modified under the terms of either the GNU Lesser General Public License (LGPL) version 2.1 or the Mozilla Public License (MPL) version 1.1. Some files are available under more liberal terms, but we believe that in all cases, each file may be used under either the LGPL or the MPL.

See the following files in this directory for the precise terms and conditions of either license:

COPYING-LGPL-2.1

COPYING-MPL-1.1

Please see each file in the implementation for copyright and licensing information, (in the opening comment of each file).

[\*] The implementation of cairo is contained entirely within the "src" directory of the cairo source distribution. There are other components of the cairo source distribution (such as the "test", "util", and "perf") that are auxiliary to the library itself. None of the source code in these directories contributes to a build of the cairo library itself, (libcairo.so or cairo.dll or similar).

These auxiliary components are also free software, but may be under

different license terms than cairo itself. For example, most of the test cases in the perf and test directories are made available under an MIT license to simplify any use of this code for reference purposes in using cairo itself. Other files might be available under the GNU General Public License (GPL), for example. Again, please see the COPYING file under each directory and the opening comment of each file for copyright and licensing information.

# 1.295 util-linux 2.28

## 1.295.1 Available under license :

```
/*
 * Copyright (c) 1989 The Regents of the University of California.
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in the
 * documentation and/or other materials provided with the distribution.
 * 3. All advertising materials mentioning features or use of this software
 * must display the following acknowledgement:
 * This product includes software developed by the University of
 * California, Berkeley and its contributors.
 * 4. Neither the name of the University nor the names of its contributors
 * may be used to endorse or promote products derived from this software
 * without specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.
 */
NR START END SECTORS SIZE NAME UUID
1 32 7679 7648 3.7M 8f8378c0-01
2 7680 16383 8704 4.3M 8f8378c0-02
5 7936 12799 4864 2.4M
```

6 12544 16127 3584 1.8M

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The complete text of the license is available in the `../Documentation/licenses/COPYING.LGPL-2.1-or-later` file.

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable



work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or

similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive

interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to

copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

#### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
  
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
  
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the

violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.



A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms,

reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <https://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/licenses/why-not-lgpl.html>.

WEV @@ WEV[B "1

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these

rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages

are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated

straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of

its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form



under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies

the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and

conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is

safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but



does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior

written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

x ?"U@,5 @mISmIN<GimCN7g1u|E  
43mI,5WEV @@ WEV @mImImIAmImImI0mImImI\*mImI  
A0mImImI...  
lost+found...

;9GimCN7g

!"#\$%&'()\*+,-  
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()\*+,-  
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()\*+,-  
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()\*+,-  
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~WEV @@  
WEV[B "1

This library is free software; you can redistribute it and/or modify it under the terms of the Modified BSD License.

The complete text of the license is available in the  
../Documentation/licenses/COPYING.BSD-3-Clause file.  
This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The complete text of the license is available in the  
../Documentation/licenses/COPYING.LGPL-2.1-or-later  
Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above

copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## 1.296 golang 1.13.4

### 1.296.1 Available under license :

Copyright 2010-2017 Mike Bostock

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to



communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

```
This source code was written by the Go contributors.
The master list of contributors is in the main Go distribution,
visible at http://tip.golang.org/CONTRIBUTORS.
People who have agreed to one of the CLAs and can contribute patches.
The AUTHORS file lists the copyright holders; this file
lists people. For example, Google employees are listed here
but not in AUTHORS, because Google holds the copyright.
#
https://developers.google.com/open-source/cla/individual
https://developers.google.com/open-source/cla/corporate
#
Names should be added to this file as:
Name <email address>
Raul Silvera <rsilvera@google.com>
Tipp Moseley <tipp@google.com>
Hyoun Kyu Cho <netforce@google.com>
Martin Spier <spiermar@gmail.com>
Taco de Wolff <tacodewolff@gmail.com>
Andrew Hunter <andrewhhunter@gmail.com>
This source code was written by the Go contributors.
The master list of contributors is in the main Go distribution,
visible at https://tip.golang.org/CONTRIBUTORS.
Copyright (c) 2009 The Go Authors. All rights reserved.
```

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY

THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2009-2017 Andrea Leofreddi <a.leofreddi@vleo.net>. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY

AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The views and conclusions contained in the software and documentation are those of the authors and should not be interpreted as representing official policies, either expressed or implied, of Andrea Leofreddi.

```
This is the official list of people who can contribute
(and typically have contributed) code to the Go repository.
The AUTHORS file lists the copyright holders; this file
lists people. For example, Google employees are listed here
but not in AUTHORS, because Google holds the copyright.
#
Names should be added to this file only after verifying that
the individual or the individual's organization has agreed to
the appropriate Contributor License Agreement, found here:
#
http://code.google.com/legal/individual-cla-v1.0.html
http://code.google.com/legal/corporate-cla-v1.0.html
#
The agreement for individuals can be filled out on the web.

Names should be added to this file like so:
Individual's name <submission email address>
Individual's name <submission email address> <email2> <emailN>
#
An entry with multiple email addresses specifies that the
first address should be used in the submit logs and
that the other addresses should be recognized as the
same person when interacting with Gerrit.

Please keep the list sorted.

Aamir Khan <syst3m.w0rm@gmail.com>
Aaron Cannon <cannona@fireantproductions.com>
Aaron France <aaron.l.france@gmail.com>
Aaron Jacobs <jacobsa@google.com>
Aaron Kemp <kemp.aaron@gmail.com>
Aaron Stein <aaronstein12@gmail.com>
Aaron Torres <tcboox@gmail.com>
```

Aaron Zinman <aaron@azinman.com>  
Aarti Parikh <aarti.parikh@gmail.com>  
Abdullah Al Maruf <mymail.maruf@gmail.com>  
Abe Haskins <abeisgreat@abeisgreat.com>  
Abhinav Gupta <abhinav.g90@gmail.com>  
Adam Azarchs <adam.azarchs@10xgenomics.com>  
Adam Bender <abender@google.com>  
Adam Eijdenberg <adam@continusec.com>  
Adam Harvey <aharvey@php.net>  
Adam Kisala <adam.kisala@gmail.com>  
Adam Langley <agl@golang.org>  
Adam Medzinski <adam.medzinski@gmail.com>  
Adam Shannon <adamkshannon@gmail.com>  
Adam Sindelar <adamsh@google.com>  
Adam Thomason <athomason@gmail.com>  
Adam Woodbeck <adam@woodbeck.net>  
Adarsh Ravichandran <adarshravichandran91@gmail.com>  
Aditya Mukerjee <dev@chimeracoder.net>  
Adrian Hesketh <adrianhesketh@hushmail.com>  
Adrian Nos <nos.adrian@gmail.com>  
Adrian O'Grady <elpollouk@gmail.com>  
Adrien Bustany <adrien-xx-google@bustany.org>  
Adrien Petel <peteladrien@gmail.com>  
Acio Jnior <aeciodantasjunior@gmail.com>  
Aeneas Rekkas (arekkas) <aeneas@ory.am>  
Afanasev Stanislav <phpprogger@gmail.com>  
Agis Anastasopoulos <agis.anast@gmail.com>  
Agniva De Sarker <agnivade@yahoo.co.in>  
Ahmed Wahed <oneofone@gmail.com>  
Ahmet Alp Balkan <ahmetb@google.com>  
Ahmet Soormally <ahmet@mangomm.co.uk>  
Ahmy Yulrizka <yulrizka@gmail.com>  
Ahsun Ahmed <ahmed.ahsun@gmail.com>  
Aiden Scandella <ai@uber.com>  
Ainar Garipov <gugl.zadolbal@gmail.com>  
Aishraj Dahal <aishraj@users.noreply.github.com>  
Akhil Indurti <contact@akhilindurti.com>  
Akihiro Suda <suda.kyoto@gmail.com>  
Akshat Kumar <seed@mail.nanosouffle.net>  
Al Cutter <al@google.com>  
Alan Braithwaite <alan@ipaddr.org>  
Alan Donovan <adonovan@google.com>  
Alan Shreve <alan@inconshreveable.com>  
Albert Nigmatzianov <albertnigma@gmail.com>  
Albert Strasheim <fullung@gmail.com>  
Albert Teoh <albert.teoh@gmail.com>  
Albert Yu <yukinying@gmail.com>  
Alberto Bertogli <albertito@blitiri.com.ar>

Alberto Donizetti <alb.donizetti@gmail.com>  
Alberto Garca Hierro <alberto@garciahierro.com> <alberto.garcia.hierro@gmail.com>  
Aleksa Sarai <cyphar@cyphar.com>  
Aleksandar Dezelin <dezelin@gmail.com>  
Aleksandr Lukinykh <a.lukinykh@xsolla.com>  
Aleksandr Razumov <ar@cydev.ru>  
Alekseev Artem <a.artem060@gmail.com>  
Alessandro Arzilli <alessandro.arzilli@gmail.com>  
Alessandro Baffa <alessandro.baffa@gmail.com>  
Alex A Skinner <alex@lx.lc>  
Alex Brainman <alex.brainman@gmail.com>  
Alex Bramley <abramley@google.com>  
Alex Browne <stephenalexbrowne@gmail.com>  
Alex Carol <alex.carol.c@gmail.com>  
Alex Jin <toalexjin@gmail.com>  
Alex Kohler <alexjohnkohler@gmail.com>  
Alex Myasoedov <msoedov@gmail.com>  
Alex Plugaru <alex@plugaru.org> <alexandru.plugaru@gmail.com>  
Alex Schroeder <alex@gnu.org>  
Alex Sergeyev <abc@alexsergeyev.com>  
Alex Tokarev <aleksator@gmail.com>  
Alex Vaghin <crhyme@google.com>  
Alexander Demakin <alexander.demakin@gmail.com>  
Alexander Dring <email@alex.d.ch>  
Alexander F Rdseth <alexander.rodseth@appeartv.com>  
Alexander Guz <kalimatas@gmail.com>  
Alexander Kauer <alexander@affine.space>  
Alexander Kucherenko <alxkchr@gmail.com>  
Alexander Larsson <alexander.larsson@gmail.com>  
Alexander Lourier <aml@rulezz.ru>  
Alexander Menzhinsky <amenzhinsky@gmail.com>  
Alexander Morozov <lk4d4math@gmail.com>  
Alexander Neumann <alexander@bumper.de>  
Alexander Orlov <alexander.orlov@loxal.net>  
Alexander Pantyukhin <apantykhin@gmail.com>  
Alexander Polcyn <apolcyn@google.com>  
Alexander Rakoczy <alex@golang.org>  
Alexander Reece <awreece@gmail.com>  
Alexander Surma <surma@surmair.de>  
Alexander Zhavnerchik <alex.vizor@gmail.com>  
Alexander Zillion <alex@alexzillion.com>  
Alexander Zolotov <goldifit@gmail.com>  
Alexandre Cesaro <alexandre.cesaro@gmail.com>  
Alexandre Fiori <fiorix@gmail.com>  
Alexandre Maari <draeron@gmail.com>  
Alexandre Normand <alexandre.normand@gmail.com>  
Alexandre Parentea <aubonbeurre@gmail.com>  
Alexandre Viau <alexandre@alexandreviau.net>



Alexandru Mooi <brtznr@gmail.com>  
Alexei Sholik <alcosholik@gmail.com>  
Alexey Alexandrov <aalexand@google.com>  
Alexey Borzenkov <snaury@gmail.com>  
Alexey Naidonov <alexey.naidyonov@gmail.com>  
Alexey Neganov <neganovalexey@gmail.com>  
Alexey Palazhchenko <alexey.palazhchenko@gmail.com>  
Alexis Hildebrandt <surryhill@gmail.com>  
Alexis Hunt <lexer@google.com>  
Alexis Imperial-Legrand <ail@google.com>  
Ali Rizvi-Santiago <arizvisa@gmail.com>  
Aliaksandr Valialkin <valyala@gmail.com>  
Alif Rachmawadi <subosito@gmail.com>  
Allan Simon <allan.simon@supinfo.com>  
Allen Li <ayatane@google.com>  
Alok Menghrajani <alok.menghrajani@gmail.com>  
Aman Gupta <aman@tmm1.net>  
Amir Mohammad Saied <amir@gluegadget.com>  
Amr Mohammed <merodiro@gmail.com>  
Amrut Joshi <amrut.joshi@gmail.com>  
Anand K. Mistry <anand@mistry.ninja>  
Anders Pearson <anders@columbia.edu>  
Anderson Queiroz <contato@andersonq.eti.br>  
Andr Carvalho <asantostc@gmail.com>  
Andre Nathan <andrenth@gmail.com>  
Andrea Nodari <andrea.nodari91@gmail.com>  
Andrea Spadaccini <spadaccio@google.com>  
Andreas Auernhammer <aead@mail.de>  
Andreas Jellinghaus <andreas@ionisiert.de> <anj@google.com>  
Andreas Litt <andreas.litt@gmail.com>  
Andrei Gherzan <andrei@resin.io>  
Andrei Korzhevskii <a.korzhevskiy@gmail.com>  
Andrei Matei <andrei@cockroachlabs.com>  
Andrei Tudor Clin <mail@acln.ro>  
Andrei Vagin <avagin@google.com>  
Andrei Vieru <euvieru@gmail.com>  
Andres Erbsen <andreser@google.com>  
Andres Lowrie <andres.lowrie@gmail.com>  
Andrew Austin <andrewacht@gmail.com>  
Andrew Balholm <andybalholm@gmail.com>  
Andrew Benton <andrewmbenton@gmail.com>  
Andrew Bonventre <andybons@chromium.org>  
Andrew Braunstein <awbraunstein@gmail.com>  
Andrew Bursavich <abursavich@gmail.com>  
Andrew Ekstedt <andrew.ekstedt@gmail.com>  
Andrew Etter <andrew.etter@gmail.com>  
Andrew Gerrand <adg@golang.org>  
Andrew Harding <andrew@spacemonkey.com>

Andrew Jackura <ajackura@google.com>  
Andrew Lutomirski <andy@luto.us>  
Andrew Pilloud <andrewpilloud@igneoussystems.com>  
Andrew Pogrebnoy <absourd.noise@gmail.com>  
Andrew Poydence <apoydence@pivotal.io>  
Andrew Pritchard <awpritchard@gmail.com>  
Andrew Radev <andrey.radev@gmail.com>  
Andrew Skiba <skibaa@gmail.com>  
Andrew Stribblehill <ads@wompom.org>  
Andrew Szeto <andrew@jabagawee.com>  
Andrew Todd <andrew.todd@wework.com>  
Andrew Werner <andrew@upthere.com> <awerner32@gmail.com>  
Andrew Wilkins <axwalk@gmail.com>  
Andrew Williams <williams.andrew@gmail.com>  
Andrew Z Allen <me@andrewzallen.com>  
Andrey Mirtchovski <mirtchovski@gmail.com>  
Andrey Petrov <andrey.petrov@shazow.net>  
Andrii Soldatenko <andrii.soldatenko@gmail.com>  
Andrii Soluk <isoluchok@gmail.com>  
Andriy Lytvynov <lytvynov.a.v@gmail.com>  
Andrzej eel <andrii.zhezhel@gmail.com>  
Andy Balholm <andy@balholm.com>  
Andy Davis <andy@bigandian.com>  
Andy Finkenstadt <afinkenstadt@zynga.com>  
Andy Lindeman <andy@lindeman.io>  
Andy Maloney <asmaloney@gmail.com>  
Andy Walker <walkeraj@gmail.com>  
Andzej Maciusovic <andzej.maciusovic@gmail.com>  
Anfernee Yongkun Gui <anfernee.gui@gmail.com>  
Angelo Bulfone <mbulfone@gmail.com>  
Anh Hai Trinh <anh.hai.trinh@gmail.com>  
Anit Gandhi <anitgandhi@gmail.com>  
Ankit Goyal <ankit3goyal@gmail.com>  
Anmol Sethi <anmol@aubble.com>  
Anschel Schaffer-Cohen <anschelsc@gmail.com>  
Anthony Alves <cvballa3g0@gmail.com>  
Anthony Canino <anthony.canino1@gmail.com>  
Anthony Eufemio <anthony.eufemio@gmail.com>  
Anthony Fok <foka@debian.org>  
Anthony Martin <ality@pbrane.org>  
Anthony Sottile <asottile@umich.edu>  
Anthony Starks <ajstarks@gmail.com>  
Anthony Voutas <voutasaurus@gmail.com>  
Anthony Woods <awoods@raintank.io>  
Antoine GIRARD <sapk@sapk.fr>  
Antoine Martin <antoine97.martin@gmail.com>  
Anton Gyllenberg <anton@iki.fi>  
Antonin Amand <antonin.amand@gmail.com>

Antonio Antelo <aantelov87@gmail.com>  
Antonio Bibiano <antbbn@gmail.com>  
Antonio Murdaca <runcom@redhat.com>  
Antonio Troina <thoeni@gmail.com>  
Aofei Sheng <aofei@aofeisheng.com>  
Apisak Darakananda <pongad@gmail.com>  
Aram Hvrneanu <aram@mgk.ro>  
Arash Bina <arash@arash.io>  
Areski Belaid <areski@gmail.com>  
Ariel Mashraki <ariel@mashraki.co.il>  
Arkadi Pyuro <arkadi@google.com>  
Arlo Breault <arlolra@gmail.com>  
Arnaud Ysmal <arnaud.ysmal@gmail.com>  
Arne Hormann <arnehormann@gmail.com>  
Arnout Engelen <arnout@bzzt.net>  
Aron Nopanen <aron.nopanen@gmail.com>  
Artem Kolin <artemkaxboy@gmail.com>  
Arthur Fabre <arthur@arthurfabre.com>  
Arthur Khashaev <arthur@khashaev.ru>  
Artyom Pervukhin <artyom.pervukhin@gmail.com>  
Arvindh Rajesh Tamilmani <art@a-30.net>  
Ashish Gandhi <ag@ashishgandhi.org>  
Asim Shankar <asimshankar@gmail.com>  
Atin Malaviya <amalaviy@akamai.com>  
Ato Araki <ato.araki@gmail.com>  
Audrey Lim <audreylh@gmail.com>  
Audrius Butkevicius <audrius.butkevicius@gmail.com>  
Augusto Roman <aroman@gmail.com>  
Aulus Egnatius Varialus <varialus@gmail.com>  
Aurlien Rainone <aurelien.rainone@gmail.com>  
Austin Clements <austin@google.com> <aclements@csail.mit.edu>  
Avi Flax <avi@timehop.com>  
awaw fumin <awawfumin@gmail.com>  
Awn Umar <awn@cryptolosophy.io>  
Axel Wagner <axel.wagner.hh@googlemail.com>  
Ayanamist Yang <ayanamist@gmail.com>  
Aymerick Jhanne <aymerick@jehanne.org>  
Azat Kaumov <kaumov.a.r@gmail.com>  
Baiju Muthukadan <baiju.m.mail@gmail.com>  
Balaram Makam <bmakam.qdt@qualcommdatacenter.com>  
Balazs Lecz <leczb@google.com>  
Baokun Lee <nototon@gmail.com>  
Bartosz Grzybowski <melkorm@gmail.com>  
Bartosz Oler <brtsz@google.com>  
Bastian Ike <bastian.ike@gmail.com>  
Ben Burkert <ben@benburkert.com>  
Ben Eitzen <eitzenb@golang.org>  
Ben Fried <ben.fried@gmail.com>

Ben Haines <bhainesva@gmail.com>  
Ben Hoyt <benhoyt@gmail.com>  
Ben Laurie <ben@links.org> <benl@google.com>  
Ben Lubar <ben.lubar@gmail.com>  
Ben Lynn <benlynn@gmail.com>  
Ben Olive <sionide21@gmail.com>  
Ben Schwartz <bemasc@google.com>  
Ben Shi <powerman1st@163.com>  
Benjamin Black <b@b3k.us>  
Benjamin Cable <cable.benjamin@gmail.com>  
Benjamin Hsieh <tanookiben@users.noreply.github.com>  
Benjamin Peterson <benjamin@python.org>  
Benjamin Prosnitz <bprosnitz@google.com>  
Benjamin Wester <bwester@squareup.com>  
Benny Siegert <bsiegert@gmail.com>  
Benoit Sigoure <tsunanet@gmail.com>  
Berengar Lehr <Berengar.Lehr@gmx.de>  
Berkant Ipek <41230766+0xbkt@users.noreply.github.com>  
Bharath Thiruveedula <tbharath91@gmail.com>  
Bill Neubauer <wcn@golang.org> <wcn@google.com> <bill.neubauer@gmail.com>  
Bill O'Farrell <billo@ca.ibm.com>  
Bill Prin <waprin@google.com>  
Bill Thiede <couchmoney@gmail.com>  
Bill Zissimopoulos <billziss@navimatics.com>  
Billie Harold Cleek <bhcleek@gmail.com>  
Billy Lynch <wlynch@google.com>  
Bjrn Erik Pedersen <bjorn.erik.pedersen@gmail.com>  
Bjorn Tillenius <bjorn@tillenius.me>  
Bjorn Tipling <bjorn.tipling@gmail.com>  
Blain Smith <rebelgeek@blainsmith.com>  
Blake Gentry <blakesgentry@gmail.com>  
Blake Mesdag <blakemesdag@gmail.com>  
Blake Mizerany <blake.mizerany@gmail.com>  
Blixt <me@blixt.nyc>  
Bob Briski <rbriski@gmail.com>  
Bob Potter <bobby.potter@gmail.com>  
Bobby DeSimone <bobbydesimone@gmail.com>  
Bobby Powers <bobbypowers@gmail.com>  
Boris Nagaev <nagaev@google.com>  
Borja Clemente <borja.clemente@gmail.com>  
Brad Burch <brad.burch@gmail.com>  
Brad Fitzpatrick <bradfitz@golang.org> <bradfitz@gmail.com>  
Brad Garcia <bgarcia@golang.org>  
Brad Jones <rbjones@google.com>  
Brad Morgan <brad@morgabra.com>  
Brad Whitaker <bwhitaker@fastly.com>  
Braden Bassingthwaite <bbassingthwaite@vendasta.com>  
Bradley Falzon <brad@teambrad.net>

Brady Catherman <brady@gmail.com>  
Brady Sullivan <brady@bsull.com>  
Brandon Bennett <bbennett@fb.com>  
Brandon Gilmore <varz@google.com>  
Brandon Ryan <bjryan19@gmail.com>  
Brendan Daniel Tracey <tracey.brendan@gmail.com>  
Brendan O'Dea <bod@golang.org>  
Brett Cannon <bcannon@gmail.com>  
Brett Merrill <brett.j.merrill94@gmail.com>  
Brian Dellisanti <briandellisanti@gmail.com>  
Brian Downs <brian.downs@gmail.com>  
Brian G. Merrell <bgmerrell@gmail.com>  
Brian Gitonga Marete <marete@toshnix.com> <bgmarete@gmail.com> <bgm@google.com>  
Brian Kennedy <btkenedy@gmail.com>  
Brian Kessler <brian.m.kessler@gmail.com>  
Brian Ketelsen <bketelsen@gmail.com>  
Brian Slesinsky <skybrian@google.com>  
Brian Smith <ohohvi@gmail.com>  
Brian Starke <brian.starke@gmail.com>  
Bryan Alexander <Kozical@msn.com>  
Bryan C. Mills <bcmills@google.com>  
Bryan Chan <bryan.chan@ca.ibm.com>  
Bryan Ford <brynosaurus@gmail.com>  
Bryan Heden <b.heden@gmail.com>  
Bulat Gaifullin <gaifullinbf@gmail.com>  
Burak Guven <bguven@gmail.com>  
Caine Tighe <arctanofyourface@gmail.com>  
Caio Marcelo de Oliveira Filho <caio.oliveira@intel.com>  
Caleb Martinez <accounts@calebmartinez.com>  
Caleb Spare <cespare@gmail.com>  
Carl Chatfield <carlchatfield@gmail.com>  
Carl Henrik Lunde <chlunde@ifi.uio.no>  
Carl Jackson <carl@stripe.com>  
Carl Johnson <me@carlmjohnson.net>  
Carl Mastrangelo <notcarl@google.com>  
Carl Shapiro <cshapiro@google.com> <cshapiro@golang.org>  
Carlisia Campos <carlisia@grokkingtech.io>  
Carlo Alberto Ferraris <cafxx@strayorange.com>  
Carlos Castillo <cookieo9@gmail.com>  
Carlos Cirello <uldericofilho@gmail.com>  
Carlos Eduardo <me@carlosedp.com>  
Carlos Eduardo Seo <cseo@linux.vnet.ibm.com>  
Carlos Souza <carloshrsouza@gmail.com>  
Carolyn Van Slyck <me@carolynvanslyck.com>  
Carrie Bynon <cbynon@gmail.com>  
Cary Hull <chull@google.com>  
Case Nelson <case.nelson@gmail.com>  
Casey Callendrello <squeed@gmail.com>

Casey Marshall <casey.marshall@gmail.com>  
Catalin Nicutar <cnicutar@google.com>  
Catalin Patulea <catalinp@google.com>  
Cedric Staub <cs@squareup.com>  
Cezar S Espinola <cezarsa@gmail.com>  
Chad Rosier <mrosier.qdt@qualcommdatacenter.com>  
ChaiShushan <chaishushan@gmail.com>  
Channing Kimble-Brown <channing@golang.org>  
Charles Fenwick Elliott <Charles@FenwickElliott.io>  
Charles Kenney <charlesc.kenney@gmail.com>  
Charles L. Dorian <cldorian@gmail.com>  
Charles Lee <zombie.fml@gmail.com>  
Charles Weill <weill@google.com>  
Cherry Zhang <cherryz@google.com>  
Chew Choon Keat <choonkeat@gmail.com>  
Cholerae Hu <choleraehyq@gmail.com>  
Chotepud Teo <AlexRouSg@users.noreply.github.com>  
Chris Ball <chris@printf.net>  
Chris Biscardi <chris@christopherbiscardi.com>  
Chris Broadfoot <cbro@golang.org>  
Chris Dollin <ehog.hedge@gmail.com>  
Chris Farmiloe <chrisfarms@gmail.com>  
Chris Hines <chris.cs.guy@gmail.com>  
Chris Howey <howeyc@gmail.com>  
Chris Hundt <hundt@google.com>  
Chris Jones <chris@cjones.org> <chris.jones.yar@gmail.com>  
Chris Kastorff <encryptio@gmail.com>  
Chris Lennert <calennert@gmail.com>  
Chris Liles <caveryliles@gmail.com>  
Chris Manghane <cmang@golang.org>  
Chris Marchesi <chrism@vanclueverttech.com>  
Chris McGee <sirnewton\_01@yahoo.ca> <newton688@gmail.com>  
Chris Raynor <raynor@google.com>  
Chris Roche <rodaine@gmail.com>  
Chris Smith <chrsmith@users.noreply.github.com>  
Chris Stockton <chrisstocktonaz@gmail.com>  
Chris Zou <chriszou@ca.ibm.com>  
Christian Alexander <christian@linux.com>  
Christian Couder <chriscool@tuxfamily.org>  
Christian Himpel <chressie@googlemail.com> <chressie@gmail.com>  
Christian Muehlhaeuser <muesli@gmail.com>  
Christian Pellegrin <chri@evolware.org>  
Christian R. Petrin <christianpetrin@gmail.com>  
Christine Hansmann <chhansmann@gmail.com>  
Christoffer Buchholz <christoffer.buchholz@gmail.com>  
Christoph Blecker <admin@toph.ca>  
Christoph Hack <christoph@tux21b.org>  
Christopher Cahoon <chris.cahoon@gmail.com>

Christopher Guiney <chris@guiney.net>  
Christopher Henderson <chris@chenderson.org>  
Christopher Koch <chrisko@google.com>  
Christopher Nelson <nadiasvertex@gmail.com>  
Christopher Nielsen <m4dh4tt3r@gmail.com>  
Christopher Redden <christopher.redden@gmail.com>  
Christopher Swenson <cswenson@google.com>  
Christopher Wedgwood <cw@f00f.org>  
Christos Zoulas <christos@zoulas.com> <zoulasc@gmail.com>  
Christy Perez <christy@linux.vnet.ibm.com>  
CL Sung <clsung@gmail.com> <cl\_sung@htc.com>  
Clment Chigot <clement.chigot@atos.net>  
Clement Skau <clementskaug@gmail.com>  
Cody Oss <the.cody.oss@gmail.com>  
Colby Ranger <cranger@google.com>  
Colin Arnott <colin@urandom.co.uk>  
Colin Cross <ccross@android.com>  
Colin Edwards <colin@recursivepenguin.com>  
Colin Kennedy <moshen.colin@gmail.com>  
Colin Nelson <colnnelson@google.com>  
Colin Rice <clr@google.com>  
Conrad Irwin <conrad.irwin@gmail.com>  
Conrad Meyer <cemeyer@cs.washington.edu>  
Conrado Gouvea <conradopl@gmail.com>  
Constantin Konstantinidis <constantinkonstantinidis@gmail.com>  
Corey Thomasson <cthom.lists@gmail.com>  
Cosmos Nicolaou <cnicolaou@google.com>  
Costin Chirvasuta <ctin@google.com>  
Craig Citro <craigcitro@google.com>  
Cristian Staretu <unclejacksons@gmail.com>  
Cuihtlauac ALVARADO <cuihtlauac.alvarado@orange.com>  
Cyrill Schumacher <cyrrill@schumacher.fm>  
Daisuke Fujita <dtanshi45@gmail.com>  
Daker Fernandes Pinheiro <daker.fernandes.pinheiro@intel.com>  
Damian Gryski <dgryski@gmail.com>  
Damien Lespiau <damien.lespiau@gmail.com> <damien.lespiau@intel.com>  
Damien Mathieu <42@dmathieu.com>  
Damien Neil <dneil@google.com>  
Damien Tournoud <damien@platform.sh>  
Dan Ballard <dan@mindstab.net>  
Dan Caddigan <goldcaddy77@gmail.com>  
Dan Callahan <dan.callahan@gmail.com>  
Dan Harrington <harringtond@google.com>  
Dan Jacques <dnj@google.com>  
Dan Johnson <computerdruid@google.com>  
Dan Peterson <dpiddy@gmail.com>  
Dan Pupius <dan@medium.com>  
Dan Sinclair <dan.sinclair@gmail.com>

Daniel Cormier <danielc@knowbe4.com>  
Danil de Kok <me@danieldk.eu>  
Daniel Fleischman <danielfleischman@gmail.com>  
Daniel Ingram <ingramds@appstate.edu>  
Daniel Johansson <dajo2002@gmail.com>  
Daniel Kerwin <d.kerwin@gini.net>  
Daniel Krech <eikeon@eikeon.com>  
Daniel Langner <s8572327@gmail.com>  
Daniel Lidn <daniel.liden.87@gmail.com>  
Daniel Lublin <daniel@lublin.se>  
Daniel Mart <mvdan@mvdan.cc>  
Daniel Morsing <daniel.morsing@gmail.com>  
Daniel Nadasi <dnadasi@google.com>  
Daniel Nephin <dnephin@gmail.com>  
Daniel Ortiz Pereira da Silva <daniel.particular@gmail.com>  
Daniel Skinner <daniel@dasa.cc>  
Daniel Speichert <daniel@speichert.pl>  
Daniel Theophanes <kardianos@gmail.com>  
Daniel Upton <daniel@floppy.co>  
Daniela Petruzalek <daniela.petruzalek@gmail.com>  
Danny Rosseau <daniel.rosseau@gmail.com>  
Daria Kolistratova <daria.kolistratova@intel.com>  
Darien Raymond <admin@v2ray.com>  
Darren Elwood <darren@textnode.com>  
Darren Grant <darren.e.grant@gmail.com>  
Darren McCleary <darren.rmc@gmail.com>  
Darshan Parajuli <parajulidarshan@gmail.com>  
Datong Sun <dndx@idndx.com>  
Dave Borowitz <dborowitz@google.com>  
Dave Bort <dbort@golang.org>  
Dave Cheney <dave@cheney.net>  
Dave Day <djd@golang.org>  
Dave Grijalva <dgrijalva@ngmoco.com>  
Dave MacFarlane <driusan@gmail.com>  
Dave Russell <forfuncsake@gmail.com>  
David Anderson <danderson@google.com>  
David Barnett <dbarnett@google.com>  
David Benjamin <davidben@google.com>  
David Brophy <dave@brophy.uk>  
David Brgin <676c7473@gmail.com>  
David Calavera <david.calavera@gmail.com>  
David Carlier <devn xen@gmail.com>  
David Chase <drchase@google.com>  
David Covert <davidhcovert@gmail.com>  
David Crawshaw <david.crawshaw@zentus.com> <crawshaw@google.com> <crawshaw@golang.org>  
David du Colombier <0intro@gmail.com>  
David Finkel <david.finkel@gmail.com>  
David Forsythe <dforsythe@gmail.com>



David G. Andersen <dave.andersen@gmail.com>  
David Glasser <glasser@meteor.com>  
David Heuschmann <heuschmann.d@gmail.com>  
David Howden <dhowden@gmail.com>  
David Hubbard <dsp@google.com>  
David Jakob Fritz <david.jakob.fritz@gmail.com>  
David Jones <dxjones@gmail.com>  
David Lazar <lazard@golang.org>  
David Leon Gil <coruus@gmail.com>  
David McLeish <davemc@google.com>  
David Ndungu <dnjuguna@gmail.com>  
David NewHamlet <david@newhamlet.com>  
David Presotto <presotto@gmail.com>  
David R. Jenni <david.r.jenni@gmail.com>  
David Sansome <me@davidsansome.com>  
David Stainton <dstainton415@gmail.com>  
David Symonds <dsymonds@golang.org>  
David Thomas <davidthomas426@gmail.com>  
David Timm <dtimm@pivotal.io>  
David Titarenco <david.titarenco@gmail.com>  
David Tolpin <david.tolpin@gmail.com>  
David Url <david@urld.io>  
David Volquartz Lebech <david@lebech.info>  
David Wimmer <davidlwimmer@gmail.com>  
Davies Liu <davies.liu@gmail.com>  
Davor Kapsa <davor.kapsa@gmail.com>  
Dean Prichard <dean.prichard@gmail.com>  
Deepak Jois <deepak.jois@gmail.com>  
Denis Bernard <db047h@gmail.com>  
Denis Brandolini <denis.brandolini@gmail.com>  
Denis Nagorny <denis.nagorny@intel.com>  
Dennis Kuhnert <mail.kuhnert@gmail.com>  
Denys Honsiorovskyi <honsiorovskyi@gmail.com>  
Denys Smirnov <denis.smirnov.91@gmail.com>  
Derek Buitenhuis <derek.buitenhuis@gmail.com>  
Derek Che <drc@yahoo-inc.com>  
Derek McGowan <derek@mcgstyle.net>  
Derek Parker <parkerderek86@gmail.com>  
Derek Phan <derekphan94@gmail.com>  
Derek Shockey <derek.shockey@gmail.com>  
Dev Ojha <dojha12@gmail.com>  
Dev Zhoujun <dev.zhoujun@gmail.com>  
Devon H. O'Dell <devon.odell@gmail.com>  
Dhaivat Pandit <dhaivatpandit@gmail.com>  
Dhananjay Nakrani <dhananjayn@google.com>  
Dhiru Kholia <dhiru.kholia@gmail.com>  
Dhruvdutt Jadhav <dhruvdutt.jadhav@gmail.com>  
Di Xiao <dixiao@google.com>

Didier Spezia <didier.06@gmail.com>  
Diego Siqueira <diego9889@gmail.com>  
Dieter Plaetinck <dieter@raintank.io>  
Dimitri Sokolyuk <sokolyuk@gmail.com>  
Dimitri Tcaciuc <dtcaciuc@gmail.com>  
Dina Garmash <dgrmsh@gmail.com>  
Diogo Pinela <diogoid7400@gmail.com>  
Dirk Gadsden <dirk@esherido.com>  
Diwaker Gupta <diwakergupta@gmail.com>  
Dmitri Goutnik <dgoutnik@gmail.com>  
Dmitri Popov <operator@cv.dp-net.com>  
Dmitri Shuralyov <dmitshur@golang.org> <dmitri@shuralyov.com>  
Dmitriy Cherchenko <dcherchenko@gmail.com>  
Dmitriy Dudkin <dudkin.dmitriy@gmail.com>  
Dmitriy Shelenin <deemok@googlemail.com> <deemok@gmail.com>  
Dmitriy Vyukov <dvyukov@google.com>  
Dmitry Chestnykh <dchest@gmail.com>  
Dmitry Doroginin <doroginin@gmail.com>  
Dmitry Mottl <dmitry.mottl@gmail.com>  
Dmitry Neverov <dmitry.neverov@gmail.com>  
Dmitry Savintsev <dsavints@gmail.com>  
Dmitry Yakunin <nonamezeil@gmail.com>  
Domen Ipavec <domen@ipavec.net>  
Dominic Green <dominicgreen1@gmail.com>  
Dominik Honnef <dominik.honnef@gmail.com>  
Dominik Vogt <vogt@linux.vnet.ibm.com>  
Don Byington <don@dbyington.com>  
Donald Huang <don.hcd@gmail.com>  
Dong-hee Na <donghee.na92@gmail.com>  
Donovan Hide <donovanhide@gmail.com>  
Doug Anderson <douga@google.com>  
Doug Fawley <dfawley@google.com>  
Douglas Danger Manley <doug.manley@gmail.com>  
Drew Flower <drewvanstone@gmail.com>  
Drew Hintz <adhintz@google.com>  
Duncan Holm <mail@frou.org>  
Dustin Carlino <dcarlino@google.com>  
Dustin Herbison <djherbis@gmail.com>  
Dustin Long <dustmop@gmail.com>  
Dustin Sallings <dsallings@gmail.com>  
Dustin Shields-Cloues <dcloues@gmail.com>  
Dvir Volk <dvir@everything.me> <dvirsky@gmail.com>  
Dylan Waits <dylan@waits.io>  
Edan Bedrik <3d4nb3@gmail.com>  
Eddie Scholtz <escholtz@google.com>  
Eden Li <eden.li@gmail.com>  
Eduard Urbach <e.urbach@gmail.com>  
Eduardo Ramalho <eduardo.ramalho@gmail.com>

Edward Muller <edwardam@interlix.com>  
Egon Elbre <egonelbre@gmail.com>  
Ehren Kret <ehren.kret@gmail.com>  
Eitan Adler <lists@eitanadler.com>  
Eivind Uggedal <eivind@uggedal.com>  
Elbert Fliek <efliek@gmail.com>  
Eldar Rakhimberdin <ibeono@gmail.com>  
Elena Grahovac <elena@grahovac.me>  
Eli Bendersky <eliben@google.com>  
Elias Naur <mail@eliasnaur.com> <elias.naur@gmail.com>  
Elliot Morrison-Reed <elliottmr@gmail.com>  
Emerson Lin <linyintor@gmail.com>  
Emil Hessman <emil@hessman.se>  
Emil Mursalimov <mursalimovemeel@gmail.com>  
Emilien Kenler <hello@emilienkenler.com>  
Emmanuel Odeke <emm.odeke@gmail.com> <odeke@ualberta.ca>  
Eno Compton <enocom@google.com>  
Eoghan Sherry <ejsherry@gmail.com>  
Eric Chiang <eric.chiang.m@gmail.com>  
Eric Clark <zerohp@gmail.com>  
Eric Daniels <eric@erdaniels.com>  
Eric Engestrom <eric@engestrom.ch>  
Eric Garrido <ekg@google.com>  
Eric Koleda <ekoleda+devrel@google.com>  
Eric Lagergren <ericscottlagergren@gmail.com>  
Eric Milliken <emilliken@gmail.com>  
Eric Pauley <eric@pauley.me>  
Eric Ponce <tricokun@gmail.com>  
Eric Rescorla <ekr@rtfm.com>  
Eric Roshan-Eisner <eric.d.eisner@gmail.com>  
Eric Rykwaldler <e.rykwaldler@gmail.com>  
Erik Aigner <aigner.erik@gmail.com>  
Erik Dubbelboer <erik@dubbelboer.com>  
Erik St. Martin <alakriti@gmail.com>  
Erik Staab <estaab@google.com>  
Erik Westrup <erik.westrup@gmail.com>  
Erin Masatsugu <erin.masatsugu@gmail.com>  
Ernest Chiang <ernest\_chiang@htc.com>  
Erwin Oegema <blablaechthema@hotmail.com>  
Esko Luontola <esko.luontola@gmail.com>  
Ethan Burns <eaburns@google.com>  
Ethan Miller <eamiller@us.ibm.com>  
Euan Kemp <euank@euank.com>  
Eugene Kalinin <e.v.kalinin@gmail.com>  
Evan Broder <evan@stripe.com>  
Evan Brown <evanbrown@google.com>  
Evan Digby <evandigby@gmail.com>  
Evan Hicks <evan.hicks2@gmail.com>

Evan Jones <ej@evanjones.ca>  
Evan Klitzke <evan@eklitzke.org>  
Evan Kroske <evankroske@google.com>  
Evan Martin <evan.martin@gmail.com>  
Evan Phoenix <evan@phx.io>  
Evan Shaw <chickencha@gmail.com>  
Evgeniy Polyakov <zbr@ioremap.net>  
Ewan Chou <coocood@gmail.com>  
Ewan Valentine <ewan.valentine89@gmail.com>  
Eyal Posener <posener@gmail.com>  
Fabian Wickborn <fabian@wickborn.net>  
Fabian Zaremba <fabian@youreemail.eu>  
Fabrizio Milo <mistobaan@gmail.com>  
Faiyaz Ahmed <ahmedf@vmware.com>  
Fan Hongjian <fan.howard@gmail.com>  
Fangming Fang <fangming.fang@arm.com>  
Fannie Zhang <fannie.zhang@arm.com>  
Fatih Arslan <fatih@arslan.io>  
Fazal Majid <majid@apsalar.com>  
Fazlul Shahriar <fshahriar@gmail.com>  
Federico Bond <federicobond@gmail.com>  
Federico Simoncelli <fsimonce@redhat.com>  
Fedor Indutny <fedor@indutny.com>  
Fedor Korotkiy <dartslon@gmail.com>  
Felipe Oliveira <felipeweb.programador@gmail.com>  
Felix Bnemann <Felix.Buenemann@gmail.com>  
Felix Geisendrfer <haimuiba@gmail.com>  
Felix Kollmann <fk@konsorten.de>  
Filip Gruszczyski <gruszczyski@gmail.com>  
Filip Haglund <drathier@users.noreply.github.com>  
Filip Stanis <fstanis@google.com>  
Filippo Valsorda <filippo@golang.org> <filippo@cloudflare.com> <hi@filippo.io>  
Firmansyah Adiputra <frm.adiputra@gmail.com>  
Florian Forster <octo@google.com>  
Florian Uekermann <florian@uekermann-online.de> <fl@uekermann-online.de>  
Florian Weimer <fw@deneb.enyo.de>  
Florin Patan <florinpatan@gmail.com>  
Folke Behrens <folke@google.com>  
Ford Hurley <ford.hurley@gmail.com>  
Francesc Campoy <campoy@golang.org>  
Francesco Renzi <rentziass@gmail.com>  
Francisco Claude <fclaude@recoded.cl>  
Francisco Rojas <francisco.rojas.gallegos@gmail.com>  
Francisco Souza <franciscossouza@gmail.com>  
Frank Schroeder <frank.schroeder@gmail.com>  
Frank Somers <fsomers@arista.com>  
Frederic Guillot <frederic.guillot@gmail.com>  
Frederick Kelly Mayle III <frederickmayle@gmail.com>

Frederik Ring <frederik.ring@gmail.com>  
Fredrik Enestad <fredrik.enestad@soundtrackyourbrand.com>  
Fredrik Forsmo <fredrik.forsmo@gmail.com>  
Fredrik Wallgren <fredrik.wallgren@gmail.com>  
Frew Schmidt <github@frew.co>  
Frithjof Schulze <schulze@math.uni-hannover.de> <sfrithjof@gmail.com>  
Frits van Bommel <fvbommel@gmail.com>  
Fumitoshi Ukai <ukai@google.com>  
G. Hussain Chinoy <ghchinoy@gmail.com>  
Gaal Yahas <gaal@google.com>  
Gabrel Arthr Ptursson <gabriel@system.is>  
Gabriel Aszalos <gabriel.aszalos@gmail.com>  
Gabriel Guzman <gabe.guzman@gmail.com>  
Gabriel Nelle <tehsphinx@web.de>  
Gabriel Nicolas Avellaneda <avellaneda.gabriel@gmail.com>  
Gabriel Russell <gabriel.russell@gmail.com>  
Gareth Paul Jones <gpj@foursquare.com>  
Garret Kelly <gdk@google.com>  
Garrick Evans <garrick@google.com>  
Gary Burd <gary@beagledreams.com> <gary.burd@gmail.com>  
Gary Elliott <garyelliott@google.com>  
Gaurish Sharma <contact@gaurishsharma.com>  
Gautham Thambidorai <gautham.dorai@gmail.com>  
Gauthier Jolly <gauthier.jolly@gmail.com>  
Geert-Johan Riemer <gjr19912@gmail.com>  
Genevieve Luyt <genevieve.luyt@gmail.com>  
Gengliang Wang <ltnwgl@gmail.com>  
Geoff Berry <gberry.qdt@qualcommdatacenter.com>  
Geoffroy Lorieux <lorieux.g@gmail.com>  
Geon Kim <geon0250@gmail.com>  
Georg Reinke <guelfey@gmail.com>  
George Gkirtsou <ggirtsou@gmail.com>  
George Shammas <george@shamm.as> <georgyo@gmail.com>  
Gerasimos (Makis) Maropoulos <kataras2006@hotmail.com>  
Gerasimos Dimitriadis <gedimitr@gmail.com>  
Gergely Brautigam <skarlso777@gmail.com>  
Gernot Vormayr <gvormayr@gmail.com>  
Getulio Snchez <valentin2507@gmail.com>  
Gianguido Sora` <g.sora4@gmail.com>  
Gideon Jan-Wessel Redelinghuys <gjredelinghuys@gmail.com>  
Giles Lean <giles.lean@pobox.com>  
Giovanni Bajo <rasky@develer.com>  
GitHub User @ajnipr (1688456) <ajnipr@users.noreply.github.com>  
GitHub User @alkesh26 (1019076) <alkesh26@gmail.com>  
GitHub User @andrius4669 (4699695) <andrius4669@gmail.com>  
GitHub User @as (8127015) <as.utf8@gmail.com>  
GitHub User @bakape (7851952) <bakape@gmail.com>  
GitHub User @bgadrian (830001) <aditza8@gmail.com>

GitHub User @bontequero (2674999) <bontequero@gmail.com>  
GitHub User @cch123 (384546) <buaa.cch@gmail.com>  
GitHub User @chanxuehong (3416908) <chanxuehong@gmail.com>  
GitHub User @dupoxy (1143957) <dupoxy@users.noreply.github.com>  
GitHub User @erifan (31343225) <eric.fang@arm.com>  
GitHub User @esell (9735165) <eujon.sellers@gmail.com>  
GitHub User @frennkie (6499251) <mail@rhab.de>  
GitHub User @hengwu0 (41297446) <41297446+hengwu0@users.noreply.github.com>  
GitHub User @itchyny (375258) <itchyny@hatena.ne.jp>  
GitHub User @kazysshr (30496953) <kazysshr0301@gmail.com>  
GitHub User @kc1212 (1093806) <kc1212@users.noreply.github.com>  
GitHub User @Kropekk (13366453) <kamilkropiewnicki@gmail.com>  
GitHub User @linguohua (3434367) <lghchinaidea@gmail.com>  
GitHub User @LotusFenn (13775899) <fenn.lotus@gmail.com>  
GitHub User @madiganz (18340029) <zacharywmadigan@gmail.com>  
GitHub User @micnncim (21333876) <micnncim@gmail.com>  
GitHub User @mkishere (224617) <224617+mkishere@users.noreply.github.com>  
GitHub User @OlgaVIPetrova (44112727) <OVPPetrova@gmail.com>  
GitHub User @pityonline (438222) <pityonline@gmail.com>  
GitHub User @pytimer (17105586) <lixin20101023@gmail.com>  
GitHub User @saitarunreddy (21041941) <saitarunreddypalla@gmail.com>  
GitHub User @shogo-ma (9860598) <Choroma194@gmail.com>  
GitHub User @tatsumack (4510569) <tatsu.mack@gmail.com>  
GitHub User @tell-k (26263) <ffk2005@gmail.com>  
GitHub User @uhei (2116845) <uhei@users.noreply.github.com>  
GitHub User @uropek (39370426) <uropek@gmail.com>  
GitHub User @utkarsh-extc (53217283) <53217283+utkarsh-extc@users.noreply.github.com>  
GitHub User @yuanhh (1298735) <yuan415030@gmail.com>  
GitHub User @ZZMarquis (7624583) <zhonglingjian3821@163.com>  
Giulio Iotti <dullgiulio@gmail.com>  
Giulio Micheloni <giulio.micheloni@gmail.com>  
Giuseppe Valente <gvalente@arista.com>  
Gleb Stepanov <glebstepanov1992@gmail.com>  
Glenn Brown <glennb@google.com>  
Glenn Lewis <gmlewis@google.com>  
Gordon Klaus <gordon.klaus@gmail.com>  
Gordon Tyler <gordon@doxxx.net>  
Graham King <graham4king@gmail.com>  
Graham Miller <graham.miller@gmail.com>  
Grant Griffiths <ggp493@gmail.com>  
Greg Poirier <greg.istehbest@gmail.com>  
Greg Steuck <gnezdo+github@google.com>  
Greg Thelen <gthelen@google.com>  
Greg Ward <greg@gerg.ca>  
Grgoire Delattre <gregoire.delattre@gmail.com>  
Gregory Man <man.gregory@gmail.com>  
Guilherme Caruso <gui.martinscaruso@gmail.com>  
Guilherme Garnier <guilherme.garnier@gmail.com>

Guilherme Goncalves <guilhermeaugustosg@gmail.com>  
Guilherme Rezende <guilhermebr@gmail.com>  
Guillaume J. Charmes <guillaume@charmes.net>  
Guobiao Mei <meiguobiao@gmail.com>  
Guoliang Wang <iamwgliang@gmail.com>  
Gustav Paul <gustav.paul@gmail.com>  
Gustav Westling <gustav@westling.xyz>  
Gustavo Franco <gustavorfranco@gmail.com>  
Gustavo Niemeyer <gustavo@niemeyer.net> <n13m3y3r@gmail.com>  
Gwenael Treguier <gwenn.kahz@gmail.com>  
Gyu-Ho Lee <gyuhox@gmail.com>  
H. brahim Gngr <igungor@gmail.com>  
Hajime Hoshi <hajimehoshi@gmail.com>  
Hallgrimur Gunnarsson <halg@google.com>  
HAMANO Tsukasa <hamano@osstech.co.jp>  
Han-Wen Nienhuys <hanwen@google.com>  
Hang Qian <hangqian90@gmail.com>  
Hanjun Kim <hallazzang@gmail.com>  
Haosdent Huang <haosdent@gmail.com>  
Harald Nordgren <haraldnordgren@gmail.com>  
Hari haran <hariharan.uno@gmail.com>  
Hariharan Srinath <srinathh@gmail.com>  
Harley Laue <losinggeneration@gmail.com>  
Harry Moreno <morenoh149@gmail.com>  
Harshavardhana <hrshvardhana@gmail.com>  
Hasan Ozgan <hasan@ozgan.net>  
Hauke Lffler <hloeffler@users.noreply.github.com>  
Hvard Haugen <havard.haugen@gmail.com>  
He Liu <liulonnie@gmail.com>  
Hector Chu <hectorchu@gmail.com>  
Hector Martin Cantero <hector@marcansoft.com>  
Henning Schmiedehausen <henning@schmiedehausen.org>  
Henrik Edwards <henrik.edwards@gmail.com>  
Henrik Hodne <henrik@hodne.io>  
Henry Adi Sumarto <henry.adisumarto@gmail.com>  
Henry Bubert <google@mindeco.de>  
Henry Chang <mr.changyuheng@gmail.com>  
Henry Clifford <h.a.clifford@gmail.com>  
Henry Wong <liushuai.wang@elastic.co>  
Herbert Georg Fischer <herbert.fischer@gmail.com>  
Herbie Ong <herbie@google.com>  
Heschi Kreinick <heschi@google.com>  
Hidetatsu Yaginuma <ygnmhdt@gmail.com>  
Hilko Bengen <bengen@hilluzination.de>  
Hiroaki Nakamura <hnakamur@gmail.com>  
Hironao OTSUBO <motemen@gmail.com>  
Hiroshi Ioka <hirochachacha@gmail.com>  
Hitoshi Mitake <mitake.hitoshi@gmail.com>

Holden Huang <ttyh061@gmail.com>  
Hong Ruiqi <hongruiqi@gmail.com>  
Hongfei Tan <feilengcui008@gmail.com>  
Horst Rutter <hhrutter@gmail.com>  
Hossein Sheikh Attar <hattar@google.com>  
Hsin Tsao <tsao@google.com>  
Hsin-Ho Yeh <yhh92u@gmail.com>  
Hu Keping <hukeping@huawei.com>  
Hugues Bruant <hugues.bruant@gmail.com>  
Huy Le <huy.dinh.le.89@gmail.com>  
Hyang-Ah Hana Kim <hakim@google.com> <hyangah@gmail.com>  
Ian Cottrell <iancottrell@google.com>  
Ian Davis <nospam@iandavis.com>  
Ian Gudger <ian@loosescre.ws>  
Ian Haken <ihaken@netflix.com>  
Ian Kent <iankent85@gmail.com>  
Ian Lance Taylor <iant@golang.org>  
Ian Leue <ian@appboy.com>  
Ian Zapolsky <ianzapolsky@gmail.com>  
Ibrahim AshShohail <ibra.sho@gmail.com>  
Icarus Sparry <golang@icarus.freeuk.com>  
Iccha Sethi <icchasethi@gmail.com>  
Idora Shinatose <idora.shinatose@gmail.com>  
Igor Bernstein <igorbernstein@google.com>  
Igor Dolzikhov <bluesriverz@gmail.com>  
Igor Vashyst <ivashyst@gmail.com>  
Igor Zhilianin <igor.zhilianin@gmail.com>  
Illya Yalovyy <yalovoy@gmail.com>  
Ilya Tocar <ilya.tocar@intel.com>  
INADA Naoki <songofacandy@gmail.com>  
Inanc Gumus <m@inanc.io>  
Ingo Gottwald <in.gottwald@gmail.com>  
Ingo Krabbe <ikrabbe.ask@gmail.com>  
Ingo Oeser <nightlyone@googlemail.com> <nightlyone@gmail.com>  
Ioannis Georgoulas <geototti21@hotmail.com>  
Irfan Sharif <irfanmahmoudsharif@gmail.com>  
Irieda Noboru <irieda@gmail.com>  
Isaac Ardis <isaac.ardis@gmail.com>  
Isaac Wagner <ibw@isaacwagner.me>  
Iskander Sharipov <iskander.sharipov@intel.com> <quasilyte@gmail.com>  
Issac Trotts <issactrotts@google.com>  
Ivan Babrou <ivan@cloudflare.com>  
Ivan Bertona <ivan.bertona@gmail.com>  
Ivan Krasin <krasin@golang.org>  
Ivan Kutuzov <arbrix@gmail.com>  
Ivan Markin <sw@nogoegst.net>  
Ivan Moscoso <moscoso@gmail.com>  
Ivan Osadchiy <ivan.osadchii@gmail.com>



Ivan Sharavuev <shpiwan@gmail.com>  
Ivan Ukhov <ivan.ukhov@gmail.com>  
Ivy Evans <ivy@ivyevans.net>  
Jaana Burcu Dogan <jbd@google.com> <jbd@golang.org> <burcujdogan@gmail.com>  
Jack Britton <jackxbritton@gmail.com>  
Jack Lindamood <jlindamo@justin.tv>  
Jacob Baskin <jbaskin@google.com>  
Jacob Blain Christen <dweomer5@gmail.com>  
Jacob H. Haven <jacob@cloudflare.com>  
Jacob Hoffman-Andrews <github@hoffman-andrews.com>  
Jacob Walker <jacobwalker0814@gmail.com>  
Jae Kwon <jae@tendermint.com>  
Jake B <doogie1012@gmail.com>  
Jakob Borg <jakob@nym.se>  
Jakob Weisblat <jakobw@mit.edu>  
Jakub ajka <jcajka@redhat.com>  
Jakub Ryszard Czarnowicz <j.czarnowicz@gmail.com>  
James Aguilar <jaguilar@google.com>  
James Bardin <j.bardin@gmail.com>  
James Chacon <jchacon@google.com>  
James Clarke <jrtc27@jrtc27.com>  
James Cowgill <James.Cowgill@imgtec.com>  
James Craig Burley <james-github@burleyarch.com>  
James David Chalfant <james.chalfant@gmail.com>  
James Eady <jmeady@google.com>  
James Fysh <james.fysh@gmail.com>  
James Gray <james@james4k.com>  
James Hartig <fastest963@gmail.com>  
James Lawrence <jljatone@gmail.com>  
James Meneghello <rawrz0r@gmail.com>  
James Myers <jfmyers9@gmail.com>  
James Neve <jamesoneve@gmail.com>  
James Nugent <james@jen20.com>  
James P. Cooper <jamespcooper@gmail.com>  
James Robinson <jamesr@google.com> <jamesr.gatech@gmail.com>  
James Schofield <james@shoeboxapp.com>  
James Smith <jrs1995@icloud.com>  
James Sweet <james.sweet88@googlemail.com>  
James Toy <nil@opensesame.st>  
James Treanor <jtreanor3@gmail.com>  
James Tucker <raggi@google.com>  
James Whitehead <jnwhiteh@gmail.com>  
Jamie Beverly <jamie.r.beverly@gmail.com>  
Jamie Gennis <jgennis@google.com> <jgennis@gmail.com>  
Jamie Kerr <jkerr113@googlemail.com>  
Jamie Liu <jamieliu@google.com>  
Jamie Stackhouse <contin673@gmail.com>  
Jamie Turner <jamwt@dropbox.com>

Jamie Wilkinson <jaq@spacepants.org>  
Jamil Djadala <djadala@gmail.com>  
Jan Berktold <jan@berktold.co>  
Jan H. Hosang <jan.hosang@gmail.com>  
Jan Kratochvil <jan.kratochvil@redhat.com>  
Jan Lehnardt <jan@apache.org>  
Jan Mercl <0xjnml@gmail.com> <befelemepeseveze@gmail.com>  
Jan Newmarch <jan.newmarch@gmail.com>  
Jan Pilzer <jan.pilzer@gmx.de>  
Jan Steinke <jan.steinke@gmail.com>  
Jan Ziak <0xe2.0x9a.0x9b@gmail.com>  
Jani Monoses <jani.monoses@ubuntu.com> <jani.monoses@gmail.com>  
Jannis Andrija Schnitzer <jannis@schnitzer.im>  
Jared Culp <jculp14@gmail.com>  
Jaroslav Poepko <jp@webmaster.ms>  
Jason A. Donenfeld <Jason@zx2c4.com>  
Jason Barnett <jason.w.barnett@gmail.com>  
Jason Buberel <jbuberel@google.com>  
Jason Chu <jasonchujc@gmail.com>  
Jason Del Ponte <delpontej@gmail.com>  
Jason Hall <jasonhall@google.com>  
Jason Keene <jasonkeene@gmail.com>  
Jason LeBrun <jblebrun@gmail.com>  
Jason Smale <jsmale@zendesk.com>  
Jason Travis <infomaniac7@gmail.com>  
Jason Wangsadinata <jwangsadinata@gmail.com>  
Javier Kohen <jkohen@google.com>  
Javier Revillas <jrevillas@massivedynamic.io>  
Javier Segura <javism@gmail.com>  
Jay Conrod <jayconrod@google.com>  
Jay Taylor <outtatime@gmail.com>  
Jay Weisskopf <jay@jayschwa.net>  
Jean de Klerk <deklerk@google.com>  
Jean-Andr Santoni <jean.andre.santoni@gmail.com>  
Jean-Franois Bustarret <jf@bustarret.com>  
Jean-Francois Cantin <jfcantin@gmail.com>  
Jean-Marc Eurin <jmeurin@google.com>  
Jean-Nicolas Moal <jn.moal@gmail.com>  
Jed Denlea <jed@fastly.com>  
Jeet Parekh <jeetparekh96@gmail.com>  
Jeevanandam M <jeeva@myjeeva.com>  
Jeff (Zhefu) Jiang <jeffjiang@google.com>  
Jeff Craig <jeffcraig@google.com>  
Jeff Dupont <jeff.dupont@gmail.com>  
Jeff Hodges <jeff@somethingsimilar.com>  
Jeff Johnson <jrjohnson@google.com>  
Jeff R. Allen <jra@nella.org> <jeff.allen@gmail.com>  
Jeff Sickel <jas@corpus-callosum.com>

Jeff Wendling <jeff@spacemonkey.com>  
Jeffrey H <jeffreyh192@gmail.com>  
Jelte Fennema <github-tech@jeltef.nl>  
Jens Frederich <jfrederich@gmail.com>  
Jeremiah Harmsen <jeremiah@google.com>  
Jeremy Banks <\_@jeremy.ca>  
Jeremy Canady <jcanady@gmail.com>  
Jeremy Jackins <jeremyjackins@gmail.com>  
Jeremy Jay <jeremy@pbnjay.com>  
Jeremy Schlatter <jeremy.schlatter@gmail.com>  
Jeroen Bobbeldijk <jerbob92@gmail.com>  
Jeroen Simonetti <jeroen@simonetti.nl>  
Jerrin Shaji George <jerrinsg@gmail.com>  
Jess Frazelle <me@jessfraz.com>  
Jesse Szwedko <jesse.szwedko@gmail.com>  
Jess Espino <jespinog@gmail.com>  
Jianing Yu <jnyu@google.com>  
Jianqiao Li <jianqiaoli@google.com>  
Jihyun Yu <yjh0502@gmail.com>  
Jim Cote <jfcote87@gmail.com>  
Jim Kingdon <jim@bolt.me>  
Jim McGrath <jimmc2@gmail.com>  
Jim Minter <jminter@redhat.com>  
Jimmy Frasche <soapboxcicero@gmail.com>  
Jimmy Zelinskie <jimmyzelinskie@gmail.com>  
Jin-wook Jeong <jeweljar@hanmail.net>  
Jingcheng Zhang <diogin@gmail.com>  
Jingguo Yao <yaojingguo@gmail.com>  
Jingnan Si <jingnan.si@gmail.com>  
Jinkun Zhang <franksnolf@gmail.com>  
Jiong Du <londdevil@gmail.com>  
Jirka Dank <dnk@mail.muni.cz>  
Jiulong Wang <jiulongw@gmail.com>  
Joakim Sernbrant <serbaut@gmail.com>  
Joe Bowbeer <joe.bowbeer@gmail.com>  
Joe Cortopassi <joe@joecortopassi.com>  
Joe Farrell <joe2farrell@gmail.com>  
Joe Harrison <joehazzers@gmail.com>  
Joe Henke <joed.henke@gmail.com>  
Joe Kyo <xunianzu@gmail.com>  
Joe Poirier <jdpoirier@gmail.com>  
Joe Richey <joerichey@google.com>  
Joe Shaw <joe@joeshaw.org>  
Joe Sylve <joe.sylve@gmail.com>  
Joe Tsai <joetsai@digital-static.net>  
Joel Sing <joel@sing.id.au> <jsing@google.com>  
Jol Stemmer <jstemmer@google.com>  
Joel Stemmer <stemmertech@gmail.com>

Joey Geiger <jgeiger@users.noreply.github.com>  
Johan Brandhorst <johan.brandhorst@gmail.com>  
Johan Euphrosine <proppy@google.com>  
Johan Sageryd <j@1616.se>  
John Asmuth <jasmuth@gmail.com>  
John Beisley <huin@google.com>  
John C Barstow <jbowtie@amathaine.com>  
John DeNero <denero@google.com>  
John Dethridge <jcd@golang.org>  
John Gibb <johngibb@gmail.com>  
John Gilik <john@jgilik.com>  
John Graham-Cumming <jgc@jgc.org> <jgrahamc@gmail.com>  
John Howard Palevich <jack.palevich@gmail.com>  
John Jeffery <jjeffery@sp.com.au>  
John Jenkins <twodopeshaggy@gmail.com>  
John Leidegren <john.leidegren@gmail.com>  
John Moore <johnkenneth.moore@gmail.com>  
John Newlin <jnewlin@google.com>  
John Potocny <johnp@vividcortex.com>  
John R. Lenton <jlenton@gmail.com>  
John Schnake <schnake.john@gmail.com>  
John Shahid <jvshahid@gmail.com>  
John Tuley <john@tuley.org>  
John Weldon <johnweldon4@gmail.com>  
Johnny Luo <johnnyluo1980@gmail.com>  
Jon Chen <jchen@justin.tv>  
Jonas Bernoulli <jonas@bernoul.li>  
Jonathan Allie <jonallie@google.com>  
Jonathan Amsterdam <jba@google.com>  
Jonathan Boulle <jonathanboulle@gmail.com>  
Jonathan Chen <dijonkitchen@users.noreply.github.com>  
Jonathan Feinberg <feinberg@google.com>  
Jonathan Gold <jgold.bg@gmail.com>  
Jonathan Hseu <jhseu@google.com>  
Jonathan Mark <jhmark@xenops.com> <jhmark000@gmail.com>  
Jonathan Nieder <jrn@google.com>  
Jonathan Pentecost <pentecostjonathan@gmail.com>  
Jonathan Pittman <jmpittman@google.com> <jonathan.mark.pittman@gmail.com>  
Jonathan Rudenberg <jonathan@titanous.com>  
Jonathan Stacks <jonstacks13@gmail.com>  
Jonathan Wills <runningwild@gmail.com>  
Jonathon Lacher <jonathon.lacher@gmail.com>  
Jongmin Kim <atomaths@gmail.com>  
Joonas Kuorilehto <joneskoo@derbian.fi>  
Joop Kieft <ikojba@gmail.com> <joop@kiefte.net>  
Jordan Krage <jmank88@gmail.com>  
Jordan Lewis <jordanthelewis@gmail.com>  
Jordan Liggitt <liggitt@google.com>

Jordan Rhee <jordanrh@microsoft.com>  
Jordi Martin <jordimartin@gmail.com>  
Jorge Araya <jorgejavieran@yahoo.com.mx>  
Jos Visser <josv@google.com>  
Jose Luis Vazquez Gonzalez <josvazg@gmail.com>  
Joseph Bonneau <jcb@google.com>  
Joseph Holsten <joseph@josephholsten.com>  
Josh Bleecher Snyder <josharian@gmail.com>  
Josh Chorlton <jchorlton@gmail.com>  
Josh Deprez <josh.deprez@gmail.com>  
Josh Goebel <dreamer3@gmail.com>  
Josh Hoak <jhoak@google.com>  
Josh Holland <jrh@joshh.co.uk>  
Josh Roppo <joshroppo@gmail.com>  
Josh Varga <josh.varga@gmail.com>  
Joshua Boelter <joshua.boelter@intel.com>  
Joshua Chase <jcjosuachase@gmail.com>  
Joshua M. Clulow <josh.clulow@joyent.com>  
Joshua Rubin <joshua@rubixconsulting.com>  
Josselin Costanzi <josselin@costanzi.fr>  
Jostein Stuhauug <js@solidsystem.no>  
JP Sugarbroad <jpsugar@google.com>  
JT Olds <jtolds@xnet5.com>  
JT Olio <hello@jtolio.com>  
Juan Carlos <juanjcsr@gmail.com>  
Juan Pablo Civile <elementohb@gmail.com>  
Jude Pereira <judebpereira@gmail.com>  
Jukka-Pekka Kekkonen <karatepekka@gmail.com>  
Julia Hansbrough <flowerhack@google.com>  
Julian Kornberger <jk+github@digineo.de>  
Julian Pastarmov <pastarmovj@google.com>  
Julian Phillips <julian@quantumfyre.co.uk>  
Julie Qiu <julie@golang.org>  
Julien Kauffmann <julien.kauffmann@freelan.org>  
Julien Salleyron <julien.salleyron@gmail.com>  
Julien Schmidt <google@julienschmidt.com>  
Julio Montes <julio.montes@intel.com>  
Junda Liu <junda@celer.network>  
Jungho Ahn <jhahn@google.com>  
Junya Hayashi <ledmonster@gmail.com>  
Juraj Sukop <sukop@users.noreply.github.com>  
Jure Ham <jure.ham@zemanta.com>  
Justin Gracenin <jgracenin@gmail.com>  
Justin Li <git@justinli.net>  
Justin Nu <nuss.justin@gmail.com>  
Justyn Temme <justyntemme@gmail.com>  
Kelly Heller <pestophagous@gmail.com>  
Kai Backman <kaib@golang.org>

Kai Dong <dokia2357@gmail.com>  
Kai Trukenmller <ktye78@gmail.com>  
Kale Blankenship <kale@lemnisis.com>  
Kaleb Elwert <kelwert@atlassian.com>  
Kamal Aboul-Hosn <aboulhosn@google.com>  
Kamil Chmielewski <kamil.chm@gmail.com>  
Kamil Kisiel <kamil@kamilkisiel.net> <kamil.kisiel@gmail.com>  
Kamil Rytarowski <krytarowski@users.noreply.github.com>  
Kang Hu <hukangustc@gmail.com>  
Karan Dhiman <karandhi@ca.ibm.com>  
Karel Pazdera <pazderak@gmail.com>  
Karoly Negyesi <chx1975@gmail.com>  
Karsten Khler <karsten.koehler95@gmail.com>  
Karthik Nayak <karthik.188@gmail.com>  
Kashav Madan <kshvmdn@gmail.com>  
Kate Manson <kate.manson@izettle.com>  
Katie Hockman <katie@golang.org>  
Kato Kazuyoshi <kato.kazuyoshi@gmail.com>  
Katrina Owen <katrina.owen@gmail.com>  
Kaviraj Kanagaraj <kavirajkanagaraj@gmail.com>  
Kay Zhu <kayzhu@google.com>  
Kazuhiro Sera <seratch@gmail.com>  
KB Sriram <kbsriram@google.com>  
Keegan Carruthers-Smith <keegan.csmith@gmail.com>  
Kei Son <hey.calmdown@gmail.com>  
Keiji Yoshida <keijiyoshida.mail@gmail.com>  
Keith Ball <inflatablewoman@gmail.com>  
Keith Randall <khr@golang.org>  
Keith Rarick <kr@xph.us>  
Kelsey Hightower <kelsey.hightower@gmail.com>  
Kelvin Foo Chuan Lyi <vmirage@gmail.com>  
Ken Friedenbach <kenliz@cruzio.com>  
Ken Rockot <ken@oz.gs> <ken.rockot@gmail.com>  
Ken Sedgwick <ken@bonsai.com>  
Ken Thompson <ken@golang.org>  
Kenichi Tsunokawa <kenichi.tsunokawa@gmail.com>  
Kenji Kaneda <kenji.kaneda@gmail.com>  
Kenji Yano <kenji.yano@gmail.com>  
Kenneth Shaw <kenshaw@gmail.com>  
Kenny Grant <kennygrant@gmail.com>  
Kenta Mori <zoncoen@gmail.com>  
Ketan Parmar <ketanbparmar@gmail.com>  
Kevin Ballard <kevin@sb.org>  
Kevin Burke <kev@inburke.com>  
Kevin Gillette <extemporalgenome@gmail.com>  
Kevin Kirsche <kev.kirsche@gmail.com>  
Kevin Klues <klueska@gmail.com> <klueska@google.com>  
Kevin Malachowski <chowski@google.com>

Kevin Ruffin <kruffin@gmail.com>  
Kevin Vu <kevin.m.vu@gmail.com>  
Kevin Zita <bleedgreenandgold@gmail.com>  
Kieran Colford <kieran@kcolford.com>  
Kim Shrier <kshrier@racktopsystems.com>  
Kim Yongbin <kybinz@gmail.com>  
Kir Kolyshkin <kolyshkin@gmail.com>  
Kirill Motkov <Motkov.Kirill@gmail.com>  
Kirill Smelkov <kirr@nexedi.com>  
Kirk Han <kirk91.han@gmail.com>  
Kirklin McDonald <kirklin.mcdonald@gmail.com>  
Klaus Post <klauspost@gmail.com>  
Kodie Goodwin <kodiegoodwin@gmail.com>  
Koichi Shiraishi <zchee.io@gmail.com>  
Koki Ide <niconegoto@yahoo.co.jp>  
Komu Wairagu <komuw05@gmail.com>  
Konstantin <konstantin8105@gmail.com>  
Konstantin Shaposhnikov <k.shaposhnikov@gmail.com>  
Kris Kwiatkowski <kris@cloudflare.com>  
Kris Nova <kris@nivenly.com>  
Kris Rousey <krousey@google.com>  
Kristopher Watts <traetox@gmail.com>  
Kshitij Saraogi <kshitij@saraogi@gmail.com>  
Kun Li <likunarmstrong@gmail.com>  
Kunpei Sakai <namusyaka@gmail.com>  
Kuntal Majumder <hellozee@disroot.org>  
Kyle Consalus <consalus@gmail.com>  
Kyle Isom <kyle@gokyle.net>  
Kyle Jones <kyle@kyledj.com>  
Kyle Lemons <kyle@kylelemons.net> <kevlar@google.com>  
Kyle Shannon <kyle@pobox.com>  
Kyle Spiers <eiais@google.com>  
Kyle Wood <kyle@kylewood.cc>  
Kyohei Kadota <lufia@lufia.org>  
Kyrylo Silin <silin@kyrylo.org>  
L Campbell <unpantsu@gmail.com>  
Lai Jiangshan <eag0628@gmail.com>  
Lajos Papp <lalyos@yahoo.com>  
Lakshay Garg <lakshay.garg.1996@gmail.com>  
Lann Martin <lannm@google.com>  
Lanre Adelowo <yo@lanre.wtf>  
Larry Clapp <larry@theclapp.org>  
Larry Hosken <lahosken@golang.org>  
Lars Jeppesen <jeppesen.lars@gmail.com>  
Lars Lehtonen <lars.lehtonen@gmail.com>  
Lars Wiegman <lars@namsral.com>  
Larz Conwell <larzconwell@gmail.com>  
Laurent Voisin <lpvoisin@gmail.com>

Laurie Clark-Michalek <laurie@qubit.com>  
LE Manh Cuong <cuong.manhle.vn@gmail.com>  
Lee Hinman <hinman@gmail.com>  
Lee Packham <lpackham@gmail.com>  
Lehner Florian <dev@der-flo.net>  
Leigh McCulloch <leighmcc@gmail.com>  
Leo Antunes <leo@costela.net>  
Leo Rudberg <ljr@google.com>  
Leon Klingele <git@leonklingele.de>  
Leonardo Comelli <leonardo.comelli@gmail.com>  
Leonel Quinteros <leonel.quinteros@gmail.com>  
Lev Shamardin <shamardin@gmail.com>  
Lewin Bormann <lewin.bormann@gmail.com>  
Lion Yang <lion@aosc.xyz>  
Lloyd Dewolf <foolswisdom@gmail.com>  
Lorenz Bauer <lmb@cloudflare.com>  
Lorenz Nickel <mail@lorenznickel.de>  
Lorenzo Masini <rugginoso@develer.com>  
Lorenzo Stoakes <lstoakes@gmail.com>  
Louis Kruger <louisk@google.com>  
Luan Santos <cfcluan@gmail.com>  
Lubomir I. Ivanov <neolit123@gmail.com>  
Luca Bruno <luca.bruno@coreos.com>  
Luca Greco <luca.greco@alcacoop.it>  
Lucas Bremgartner <lucas.bremgartner@gmail.com>  
Lucas Clemente <lclemente@google.com>  
Lucien Stuker <lucien.stuker@gmail.com>  
Lucio De Re <lucio.dere@gmail.com>  
Ludi Rehak <ludi317@gmail.com>  
Luigi Riefolo <luigi.riefolo@gmail.com>  
Luit van Drongelen <luitvd@gmail.com>  
Luka Zakrajek <tr00.g33k@gmail.com>  
Luka Zitnik <luka.zitnik@gmail.com>  
Lukasz Milewski <lmmilewski@gmail.com>  
Luke Champine <luke.champine@gmail.com>  
Luke Curley <qpingu@gmail.com>  
Luke Granger-Brown <git@lukegb.com>  
Luna Duclos <luna.duclos@palmstonegames.com>  
Luuk van Dijk <lvd@golang.org> <lvd@google.com>  
Lyle Franklin <lylejfranklin@gmail.com>  
Lynn Boger <laboger@linux.vnet.ibm.com>  
Ma Peiqi <mapeiqi2017@gmail.com>  
Maarten Bezemer <maarten.bezemer@gmail.com>  
Maciej Dbski <maciejd@google.com>  
Madhu Rajanna <madhupr007@gmail.com>  
Magnus Hiie <magnus.hiie@gmail.com>  
Maicon Costa <maiconscosta@gmail.com>  
Mak Kolybabi <mak@kolybabi.com>



Maksym Trykur <maksym.trykur@gmail.com>  
Mal Curtis <mal@mal.co.nz>  
Manfred Touron <m@42.am>  
Manigandan Dharmalingam <manigandan.jeff@gmail.com>  
Manish Goregaokar <manishsmail@gmail.com>  
Manoj Dayaram <platform-dev@moovweb.com> <manoj.dayaram@moovweb.com>  
Mansour Rahimi <rahimi.mnr@gmail.com>  
Manu Garg <manugarg@google.com>  
Manu S Ajith <neo@codingarena.in>  
Manuel Mendez <mmendez534@gmail.com>  
Marat Khabibullin <marat.khabibullin@jetbrains.com>  
Marc Weistroff <marc@weistroff.net>  
Marc-Antoine Ruel <maruel@chromium.org>  
Marcel Edmund Franke <marcel.edmund.franke@gmail.com>  
Marcel van Lohuizen <mpvl@golang.org>  
Marcelo Cantos <marcelo.cantos@gmail.com>  
Marcelo E. Magallon <marcelo.magallon@gmail.com>  
Marco Hennings <marco.hennings@freiheit.com>  
Marcus Willock <crazcalm@gmail.com>  
Marga Manterola <marga@google.com>  
Marin Bai <marin.basic02@gmail.com>  
Mario Arranz <marioarranzr@gmail.com>  
Marius A. Eriksen <marius@grailbio.com>  
Marius Nuennerich <mnu@google.com>  
Mark Adams <mark@markadams.me>  
Mark Bucciarelli <mkbucc@gmail.com>  
Mark Glines <mark@glines.org>  
Mark Harrison <marhar@google.com>  
Mark Percival <m@mdp.im>  
Mark Pulford <mark@kyne.com.au>  
Mark Rushakoff <mark.rushakoff@gmail.com>  
Mark Ryan <mark.d.ryan@intel.com>  
Mark Severson <miquella@gmail.com>  
Mark Theunissen <mark.theunissen@gmail.com>  
Mark Villacampa <m@markvillacampa.com>  
Mark Wolfe <mark@wolfe.id.au>  
Mark Zavislak <zavislak@google.com>  
Marko Juhani Silokunnas <marko.silokunnas@gmail.com>  
Marko Kevac <marko@kevac.org>  
Marko Mikulicic <mkm@google.com>  
Marko Mudrinic <mudrinic.mare@gmail.com>  
Marko Tiikkaja <marko@joh.to>  
Markus Duft <markus.duft@salomon.at>  
Markus Sonderegger <marraison@gmail.com>  
Markus Zimmermann <zimmski@gmail.com>  
Marten Seemann <martenseemann@gmail.com>  
Martin Bertschler <mbertschler@gmail.com>  
Martin Garton <garton@gmail.com>

Martin Habbecke <marhab@google.com>  
Martin Hamrle <martin.hamrle@gmail.com>  
Martin Hoefling <martin.hoefling@gmx.de>  
Martin Kreichgauer <martinkr@google.com>  
Martin Kunc <martinkunc@users.noreply.github.com>  
Martin Lindhe <martin.j.lindhe@gmail.com>  
Martin Mohrmann <moehrmann@google.com> <martisch@uos.de>  
Martin Neubauer <m.ne@gmx.net>  
Martin Olsen <github.com@martinolsen.net>  
Martin Olsson <martin@minimum.se>  
Martin Probst <martin@probst.io>  
Martin Sucha <anty.sk+git@gmail.com>  
Martin Tournoij <martin@arp242.net>  
Martins Sipenko <martins.sipenko@gmail.com>  
Martynas Budrinas <mabu@google.com>  
Marvin Stenger <marvin.stenger94@gmail.com>  
Marwan Sulaiman <marwan.sulaiman@work.co>  
Maryan Hratson <gmarik@gmail.com>  
Masahiro Furudate <masahiro.furudate@gmail.com>  
Masahiro Wakame <vvakame@gmail.com>  
Masaki Yoshida <yoshida.masaki@gmail.com>  
Mat Byczkowski <mbyczkowski@gmail.com>  
Mat Ryer <thatmatryer@gmail.com>  
Mt Gulys <mgulyas86@gmail.com>  
Matej Bao <matejbaco@gmail.com>  
Mateus Amin <mateus.amin@gmail.com>  
Mateusz Czapliski <czapkofan@gmail.com>  
Mathias Beke <git@denbeke.be>  
Mathias Hall-Andersen <mathias@hall-andersen.dk>  
Mathias Leppich <mleppich@muhqu.de>  
Mathieu Lonjaret <mathieu.lonjaret@gmail.com>  
Mats Lidell <mats.lidell@cag.se> <mats.lidell@gmail.com>  
Matt Aimonetti <mattaimonetti@gmail.com>  
Matt Blair <me@matthewblair.net>  
Matt Bostock <matt@mattbostock.com>  
Matt Brown <mbrown@google.com>  
Matt Dee <mdee@hioscar.com>  
Matt Drollette <matt@drollette.com>  
Matt Harden <matt.harden@gmail.com>  
Matt Jibson <matt.jibson@gmail.com>  
Matt Joiner <anacrolix@gmail.com>  
Matt Jones <mrjones@google.com>  
Matt Juran <thepciet@gmail.com>  
Matt Layher <mdlayher@gmail.com>  
Matt Reiferson <mreiferson@gmail.com>  
Matt Robenolt <matt@ydekproductions.com>  
Matt Strong <mstrong1341@gmail.com>  
Matt T. Proud <matt.proud@gmail.com>

Matt Williams <gh@mattyw.net> <mattyjwilliams@gmail.com>  
Matthew Brennan <matty.brennan@gmail.com>  
Matthew Broberg <matthewbbroberg@gmail.com>  
Matthew Cottingham <mattcottingham@gmail.com>  
Matthew Dempsky <mdempsky@google.com>  
Matthew Denton <mdenton@skyportsystems.com>  
Matthew Holt <Matthew.Holt+git@gmail.com>  
Matthew Horsnell <matthew.horsnell@gmail.com>  
Matthew Waters <mwwaters@gmail.com>  
Mathieu Hauglustaine <matt.hauglustaine@gmail.com>  
Mathieu Olivier <olivier.matthieu@gmail.com>  
Matthijs Kooijman <matthijs@stdin.nl>  
Max Riveiro <kavu13@gmail.com>  
Max Schmitt <max@schmitt.mx>  
Max Semenik <maxsem.wiki@gmail.com>  
Max Ushakov <ushmax@gmail.com>  
Maxim Eryomenko <moeryomenko@gmail.com>  
Maxim Khitrov <max@mxcrypt.com>  
Maxim Pimenov <mpimenov@google.com>  
Maxim Ushakov <ushakov@google.com>  
Maxime de Roucy <maxime.deroucy@gmail.com>  
Mximo Cuadros Ortiz <mcuadros@gmail.com>  
Maxwell Krohn <themax@gmail.com>  
Maya Rashish <maya@NetBSD.org>  
Mayank Kumar <krmayankk@gmail.com>  
Meir Fischer <meirfischer@gmail.com>  
Meng Zhuo <mengzhuo1203@gmail.com>  
Mhd Sulhan <m.shulhan@gmail.com>  
Micah Stetson <micah.stetson@gmail.com>  
Michael Anthony Knyszek <mknyszek@google.com>  
Michael Brandenburg <mbrandenburg@bolste.com>  
Michael Chaten <mchaten@gmail.com>  
Michael Cook <code@mdcook.net>  
Michael Darakananda <pongad@google.com>  
Michael Dorner <mail@michaeldorf.de>  
Michael Edwards <medwards@walledcity.ca>  
Michael Elkins <michael.elkins@gmail.com>  
Michael Ellis <micellis@justin.tv>  
Michael Fraenkel <michael.fraenkel@gmail.com>  
Michael Fromberger <michael.j.fromberger@gmail.com>  
Michael Gehring <mg@ebfe.org> <gnirheg.leahcim@gmail.com>  
Michael Henderson <mdhender@users.noreply.github.com>  
Michael Hendricks <michael@ndrix.org>  
Michael Hoisie <hoisie@gmail.com>  
Michael Hudson-Doyle <michael.hudson@linaro.org>  
Michael Kasch <michael.kasch@gmail.com>  
Michael Kufl <golang@c.michael-kaeufl.de>  
Michael Kelly <mjk@google.com>

Michael Lewis <mikelikespie@gmail.com>  
Michael MacInnis <Michael.P.MacInnis@gmail.com>  
Michael Marineau <michael.marineau@coreos.com>  
Michael Matloob <matloob@google.com>  
Michael McConville <momconville@gmail.com>  
Michael McGreevy <mcgreevy@golang.org>  
Michael McLoughlin <mmcloughlin@gmail.com>  
Michael Munday <mike.munday@ibm.com>  
Michael Pearson <mipearson@gmail.com>  
Michael Piatek <piatek@google.com>  
Michael Pratt <mpratt@google.com>  
Michael Schaller <michael@5challer.de>  
Michael Schurter <michael.schurter@gmail.com>  
Michael Shields <mshields@google.com>  
Michael Stapelberg <michael@stapelberg.de> <mstplbrg@googlemail.com>  
Michael Steinert <mike.steinert@gmail.com>  
Michael T. Jones <mtj@google.com> <michael.jones@gmail.com>  
Michael Teichgrber <mteichgraeber@gmx.de> <mt4swm@googlemail.com>  
Michael Traver <mtraver@google.com>  
Michael Vetter <g.bluehut@gmail.com>  
Michael Vogt <mvo@ubuntu.com>  
Michal Bohuslvek <mbohuslvek@gmail.com>  
Michal Cierniak <cierniak@google.com>  
Micha Derkacz <ziutek@inet.pl>  
Michal Franc <lam.michal.franc@gmail.com>  
Michal Pristas <michal.pristas@gmail.com>  
Michal Rostecki <mrostecki@suse.de>  
Michalis Kargakis <michaliskargakis@gmail.com>  
Michel Lespinasse <>walken@google.com>  
Mickael Kerjean <mickael.kerjean@gmail.com>  
Mickey Reiss <mickeyreiss@gmail.com>  
Miek Gieben <miek@miek.nl> <remigius.gieben@gmail.com>  
Miguel Mendez <stxmendez@gmail.com>  
Miguel Molina <hi@mvader.me>  
Mihai Borobocea <MihaiBorobocea@gmail.com>  
Mihai Moldovan <ionic@ionic.de>  
Mihai Todor <todormihai@gmail.com>  
Mihail Minaev <minaev.mike@gmail.com>  
Mikael Tillenius <mikti42@gmail.com>  
Mike Andrews <mra@xoba.com>  
Mike Appleby <mike@app.leby.org>  
Mike Danese <mikedanese@google.com>  
Mike Houston <mike@kothar.net>  
Mike Kabischev <kabischev@gmail.com>  
Mike Rosset <mike.rosset@gmail.com>  
Mike Samuel <mikesamuel@gmail.com>  
Mike Solomon <msolo@gmail.com>  
Mike Strosaker <strosake@us.ibm.com>

Mike Tsao <mike@sowbug.com>  
Mike Wiacek <mjwiacek@google.com>  
Mikhail Gusarov <dottedmag@dottedmag.net>  
Mikhail Panchenko <m@mihasya.com>  
Miki Tebeka <miki.tebeka@gmail.com>  
Mikio Hara <mikioh.mikioh@gmail.com>  
Mikkel Krautz <mikkel@krautz.dk> <krautz@gmail.com>  
Mikoaj Baranowski <mikolajb@gmail.com>  
Milan Knezevic <milan.knezevic@mips.com>  
Milutin Jovanovic <jovanovic.milutin@gmail.com>  
MinJae Kwon <mingrammer@gmail.com>  
Miquel Sabat Sol <mikisabate@gmail.com>  
Mirko Hansen <baaazen@gmail.com>  
Miroslav Genov <mgenov@gmail.com>  
Misty De Meo <mistydemeo@gmail.com>  
Mohit Agarwal <mohit@sdf.org>  
Mohit kumar Bajoria <mohitbajo36@gmail.com>  
Momchil Velikov <momchil.velikov@gmail.com>  
Monis Khan <mkhan@redhat.com>  
Monty Taylor <mordred@inaugust.com>  
Moriyoshi Koizumi <mozo@mozo.jp>  
Morten Siebuhr <sbhr@sbhr.dk>  
Mshe van der Sterre <moshevds@gmail.com>  
Mostyn Bramley-Moore <mostyn@antipode.se>  
Mrunal Patel <mrunalp@gmail.com>  
Muhammad Falak R Wani <falakreyaz@gmail.com>  
Muhammed Uluyol <uluyol0@gmail.com>  
Muir Manders <muir@mnd.rs>  
Mura Li <mura\_li@castech.com.tw>  
Mykhailo Lesyk <mikhail@lesyk.org>  
Nan Deng <monnand@gmail.com>  
Nao Yonashiro <owan.orisano@gmail.com>  
Naoki Kanatani <k12naoki@gmail.com>  
Nate Wilkinson <nathanwilk7@gmail.com>  
Nathan Cantelmo <n.cantelmo@gmail.com>  
Nathan Caza <mastercactapus@gmail.com>  
Nathan Humphreys <nkhumphreys@gmail.com>  
Nathan John Youngman <nj@nathany.com>  
Nathan Otterness <otterness@cs.unc.edu>  
Nathan P Finch <nate.finch@gmail.com>  
Nathan VanBenschoten <nvanbenschoten@gmail.com>  
Nathan Youngman <git@nathany.com>  
Nathan(yinian) Hu <nathanhu@google.com>  
Nathaniel Cook <nvcook42@gmail.com>  
Naveen Kumar Sangi <naveenkumarsangi@protonmail.com>  
Neelesh Chandola <neelesh.c98@gmail.com>  
Neil Lyons <nwjlyons@googlemail.com>  
Neuman Vong <neuman.vong@gmail.com>

Neven Sajko <nsajko@gmail.com>  
Nevins Bartolomeo <nevins.bartolomeo@gmail.com>  
Niall Sheridan <nsheridan@gmail.com>  
Nic Day <nic.day@me.com>  
Nicholas Katsaros <nick@nickkatsaros.com>  
Nicholas Maniscalco <nicholas@maniscalco.com>  
Nicholas Ng <nickng@nickng.io>  
Nicholas Presta <nick@nickpresta.ca> <nick1presta@gmail.com>  
Nicholas Sullivan <nicholas.sullivan@gmail.com>  
Nicholas Waples <nwaples@gmail.com>  
Nick Anthony <Liberatys@outlook.com>  
Nick Cooper <nmvc@google.com>  
Nick Craig-Wood <nick@craig-wood.com> <nickcw@gmail.com>  
Nick Harper <nharper@google.com>  
Nick Kubala <nkubala@google.com>  
Nick Leli <nicholasleli@gmail.com>  
Nick Miyake <nmiyake@users.noreply.github.com>  
Nick Patavalis <nick.patavalis@gmail.com>  
Nick Petroni <npetroni@cs.umd.edu>  
Nick Robinson <nrobinson13@gmail.com>  
Nick Smolin <nick27surgut@gmail.com>  
Nicolas BRULEZ <n.brulez@gmail.com>  
Nicolas Kaiser <nikai@nikai.net>  
Nicolas Owens <mischief@offblast.org>  
Nicolas S. Dade <nic.dade@gmail.com>  
Niek Sanders <niek.sanders@gmail.com>  
Niels Widger <niels.widger@gmail.com>  
Nigel Kerr <nigel.kerr@gmail.com>  
Nigel Tao <nigeltao@golang.org>  
Nik Nyby <nnyby@columbia.edu>  
Nikhil Benesch <nikhil.benesch@gmail.com>  
Nikita Kryuchkov <nkryuchkov10@gmail.com>  
Niklas Schnelle <niklas.schnelle@gmail.com>  
Niko Dziemba <niko@dziemba.com>  
Nikolay Turpitko <nikolay@turpitko.com>  
Nils Larsgrd <nilsmagnus@gmail.com>  
Nir Soffer <nirsof@gmail.com>  
Niranjan Godbole <niranjan8192@gmail.com>  
Nishanth Shanmugham <nishanth.gerrard@gmail.com>  
Noah Campbell <noahcampbell@gmail.com>  
Noble Johnson <noblepoly@gmail.com>  
Nodir Turakulov <nodir@google.com>  
Noel Georgi <git@frezbo.com>  
Norberto Lopes <nlopes.ml@gmail.com>  
Norman B. Lancaster <qbradq@gmail.com>  
Odin Ugedal <odin@ugedal.com>  
Oleg Bulatov <dmage@yandex-team.ru>  
Oleg Vakheta <helginet@gmail.com>

Oleku Konko <oleku.konko@gmail.com>  
Oling Cat <olingcat@gmail.com>  
Oliver Hookins <ohookins@gmail.com>  
Oliver Stenbom <ostenbom@pivotal.io>  
Oliver Tonnhofer <olt@bogsoft.com>  
Olivier Antoine <olivier.antoine@gmail.com>  
Olivier Duperray <duperray.olivier@gmail.com>  
Olivier Poitrey <rs@dailymotion.com>  
Olivier Saingre <osaingre@gmail.com>  
Omar Jarjur <ojarjur@google.com>  
Oryan Moshe <iamoryanmoshe@gmail.com>  
Osamu TONOMORI <osamingo@gmail.com>  
zgr Kesim <oec-go@kesim.org>  
Pablo Lalloni <plalloni@gmail.com>  
Pablo Rozas Larraondo <pablo.larraondo@anu.edu.au>  
Pablo Santiago Blum de Aguiar <scorpus@gmail.com>  
Padraig Kitterick <padraigkitterick@gmail.com>  
Pallat Anchaleechamaikorn <yod.pallat@gmail.com>  
Paolo Giarrusso <p.giarrusso@gmail.com>  
Paolo Martini <mrtnpaolo@gmail.com>  
Parker Moore <parkrmoore@gmail.com>  
Parminder Singh <parmsingh101@gmail.com>  
Pascal Dierich <pascal@pascaldierich.com>  
Pascal S. de Kloe <pascal@quies.net>  
Pat Moroney <pat@pat.email>  
Patrick Barker <barkerp@vmware.com>  
Patrick Crosby <patrick@stathat.com>  
Patrick Gavlin <pgavlin@gmail.com>  
Patrick Higgins <patrick.allen.higgins@gmail.com>  
Patrick Lee <pattyshack101@gmail.com>  
Patrick Mzard <patrick@mezard.eu>  
Patrick Mylund Nielsen <patrick@patrickmn.com>  
Patrick Pelletier <pp.pelletier@gmail.com>  
Patrick Riley <pfr@google.com>  
Patrick Smith <pat42smith@gmail.com>  
Patrik Lundin <patrik@sigterm.se>  
Paul A Querna <paul.querna@gmail.com>  
Paul Borman <borman@google.com>  
Paul Boyd <boyd.paul2@gmail.com>  
Paul Chang <paulchang@google.com>  
Paul Hammond <paul@paulhammond.org>  
Paul Hankin <paulhankin@google.com>  
Paul Jolly <paul@myitcv.org.uk>  
Paul Lalonde <paul.a.lalonde@gmail.com>  
Paul M Furley <paul@paulfurley.com>  
Paul Marks <pmarks@google.com>  
Paul Meyer <paul.meyer@microsoft.com>  
Paul Nasrat <pnasrat@google.com>

Paul PISCUC <paul.piscuc@gmail.com>  
Paul Querna <pquerna@apache.org>  
Paul Rosania <paul.rosania@gmail.com>  
Paul Ruest <pruest@gmail.com>  
Paul Sbarra <Sbarra.Paul@gmail.com>  
Paul Smith <paulsmith@pobox.com> <paulsmith@gmail.com>  
Paul Tyng <paul@paultyng.net>  
Paul van Brouwershaven <paul@vanbrouwershaven.com>  
Paul Wankadia <junyer@google.com>  
Paulo Casaretto <pcasaretto@gmail.com>  
Paulo Flabiano Smorigo <pfsmorigo@linux.vnet.ibm.com>  
Pavel Paulau <pavel.paulau@gmail.com>  
Pavel Zinovkin <pavel.zinovkin@gmail.com>  
Pavlo Sumkin <ymkins@gmail.com>  
Pawel Knap <pawelknap88@gmail.com>  
Pawel Szczur <filemon@google.com>  
Percy Wegmann <ox.to.a.cart@gmail.com>  
Perry Abbott <perry.j.abbott@gmail.com>  
Petar Maymoukov <petarm@gmail.com>  
Peter Armitage <peter.armitage@gmail.com>  
Peter Bourgon <peter@bourgon.org>  
Peter Collingbourne <pcc@google.com>  
Peter Conerly <pconerly@gmail.com>  
Peter Dotchev <dotchev@gmail.com>  
Peter Froehlich <peter.hans.froehlich@gmail.com>  
Peter Gonda <pgonda@google.com>  
Peter Hoyes <pahoyes@gmail.com>  
Peter Kleiweg <pkleiweg@xs4all.nl>  
Peter McKenzie <petermck@google.com>  
Peter Moody <pmoody@uber.com>  
Peter Morjan <pmorjan@gmail.com>  
Peter Mundy <go.peter.90@gmail.com>  
Peter Nguyen <peter@mictis.com>  
Pter Surnyi <speter.go1@gmail.com>  
Pter Szab <pts@google.com>  
Pter Szilgyi <peterke@gmail.com>  
Peter Teichman <pteichman@fastly.com>  
Peter Tseng <ptseng@squareup.com>  
Peter Waldschmidt <peter@waldschmidt.com>  
Peter Waller <peter.waller@gmail.com>  
Peter Weinberger <pjw@golang.org>  
Peter Williams <pwil3058@gmail.com>  
Peter Wu <pwu@cloudflare.com>  
Peter Zhang <i@ddatsh.com>  
Petr Jedin <petr.jediny@gmail.com>  
Petrica Voicu <pvoicu@paypal.com>  
Phil Pearl <philip.j.r.pearl@gmail.com>  
Phil Pennock <pdp@golang.org>



Philip Brgesen <philip.borgesen@gmail.com>  
Philip Brown <phil@bolthole.com>  
Philip Hofer <phofer@umich.edu>  
Philip K. Warren <pkwarren@gmail.com>  
Philip Nelson <me@pnelson.ca>  
Philipp Stephani <phst@google.com>  
Pierre Durand <pierredurand@gmail.com>  
Pierre Prinetti <pierreprinetti@gmail.com>  
Pierre Roullon <pierre.roullon@gmail.com>  
Piers <google@helloworld.pro>  
Pieter Droogendijk <pieter@binky.org.uk>  
Pietro Gagliardi <pietro10@mac.com>  
Piyush Mishra <piyush@codeitout.com>  
Plekhanov Maxim <kishtatix@gmail.com>  
Pontus Leitzler <leitzler@gmail.com>  
Prasanna Swaminathan <prasanna@mediamath.com>  
Prashant Varanasi <prashant@prashantv.com>  
Pravendra Singh <hackpravj@gmail.com>  
Preetam Jinka <pj@preet.am>  
Pure White <wu.purewhite@gmail.com>  
Qais Patankar <qaisjp@gmail.com>  
Qiuxuan Zhu <ilsh1022@gmail.com>  
Quan Tran <qeed.quan@gmail.com>  
Quan Yong Zhai <qyzhai@gmail.com>  
Quentin Perez <qperez@ocs.online.net>  
Quentin Renard <contact@asticode.com>  
Quentin Smith <quentin@golang.org>  
Quinn Slack <sqs@sourcegraph.com>  
Quinten Yearsley <qyearsley@chromium.org>  
Quoc-Viet Nguyen <afelion@gmail.com>  
Radek Sohlich <sohlich@gmail.com>  
Radu Berinde <radu@cockroachlabs.com>  
Rafal Jeczalik <rjeczalik@gmail.com>  
Raghavendra Nagaraj <jamdagni86@gmail.com>  
Rahul Chaudhry <rahulchaudhry@chromium.org>  
Raif S. Naffah <go@naffah-raif.name>  
Rajat Goel <rajat.goel2010@gmail.com>  
Rajath Agasthya <rajathagasthya@gmail.com>  
Rajender Reddy Kompally <rajenderreddykompally@gmail.com>  
Ralph Corderoy <ralph@inputplus.co.uk>  
Ramazan AYYILDIZ <rayyildiz@gmail.com>  
Ramesh Dharan <dharan@google.com>  
Raph Levien <raph@google.com>  
Raphael Geronimi <raphael.geronimi@gmail.com>  
Raul Silvera <rsilvera@google.com>  
Ravil Bikbulatov <weeellz12@gmail.com>  
RaviTeja Pothana <ravi.tezu@gmail.com>  
Ray Tung <rtung@thoughtworks.com>

Raymond Kazlauskas <raima220@gmail.com>  
Rebecca Stambler <rstambler@golang.org>  
Reilly Watson <reillywatson@gmail.com>  
Reinaldo de Souza Jr <juniorz@gmail.com>  
Remi Gillig <remigillig@gmail.com>  
Rmy Oudompheng <oudomphe@phare.normalesup.org> <remyoudompheng@gmail.com>  
Rens Rikkerink <Ikkerens@users.noreply.github.com>  
Rhys Hiltner <rhys@justin.tv>  
Ricardo Padilha <ricardospadilha@gmail.com>  
Richard Barnes <rlb@ipv.sx>  
Richard Crowley <r@rcrowley.org>  
Richard Dingwall <rdingwall@gmail.com>  
Richard Eric Gavaletz <gavaletz@gmail.com>  
Richard Gibson <richard.gibson@gmail.com>  
Richard Miller <miller.research@gmail.com>  
Richard Musiol <mail@richard-musiol.de> <neelance@gmail.com>  
Rick Arnold <rickarnoldjr@gmail.com>  
Rick Hudson <rlh@golang.org>  
Rick Sayre <whorfin@gmail.com>  
Rijnard van Tonder <rvantonder@gmail.com>  
Riku Voipio <riku.voipio@linaro.org>  
Risto Jaakko Saareln <rsaareln@gmail.com>  
Rob Earhart <earhart@google.com>  
Rob Norman <rob.norman@infinitycloud.com>  
Rob Phoenix <rob@robphoenix.com>  
Rob Pike <r@golang.org>  
Robert Ayrapetyan <robert.ayrapetyan@gmail.com>  
Robert Daniel Kortschak <dan.kortschak@adelaide.edu.au> <dan@kortschak.io>  
Robert Dinu <r@varp.se>  
Robert Figueiredo <robfig@gmail.com>  
Robert Griesemer <gri@golang.org>  
Robert Hencke <robert.hencke@gmail.com>  
Robert Iannucci <iannucci@google.com>  
Robert Obryk <robryk@gmail.com>  
Robert Sesek <rsesek@google.com>  
Robert Snedegar <roberts@google.com>  
Robert Stepanek <robert.stepanek@gmail.com>  
Robert van Gent <rvangent@google.com>  
Robert-Andr Mauchin <zebob.m@gmail.com>  
Roberto Clapis <robclap8@gmail.com>  
Roberto Selbach <roberto@selbach.ca>  
Robin Eklind <r.eklind.87@gmail.com>  
Rodolfo Carvalho <rhcarvalho@gmail.com>  
Rodolfo Rodriguez <rodolfobgibson@gmail.com>  
Rodrigo Moraes de Oliveira <rodrigo.moraes@gmail.com>  
Rodrigo Rafael Monti Kochenburger <divoxx@gmail.com>  
Roger Pau Monn <royger@gmail.com>  
Roger Peppe <rogpeppe@gmail.com>

Rohan Verma <rohanverma2004@gmail.com>  
Roland Illig <roland.illig@gmx.de>  
Roland Shoemaker <rolandshoemaker@gmail.com>  
Romain Bague <romain.bague@elwinar.com>  
Roman Budnikov <romanyx90@yandex.ru>  
Roman Shchekin <mrqtros@gmail.com>  
Ron Hashimoto <mail@h2so5.net>  
Ron Minnich <rminnich@gmail.com>  
Ross Chater <rdchater@gmail.com>  
Ross Light <light@google.com> <rlight2@gmail.com>  
Ross Smith II <ross@smithii.com>  
Rowan Marshall <rowanajmarshall@gmail.com>  
Rowan Worth <sqweek@gmail.com>  
Rudi Kramer <rudi.kramer@gmail.com>  
Rui Ueyama <ruiui@google.com>  
Ruslan Nigmatullin <elessar@dropbox.com>  
Russ Cox <rsc@golang.org>  
Russell Haering <russellhaering@gmail.com>  
Ryan Bagwell <ryanbagwell@outlook.com>  
Ryan Barrett <ryanb@google.com>  
Ryan Boehning <ryan.boehning@apcera.com>  
Ryan Brown <ribrdb@google.com>  
Ryan Canty <jrcanty@gmail.com>  
Ryan Dahl <ry@tinyclouds.org>  
Ryan Hitchman <hitchmanr@gmail.com>  
Ryan Lower <rpjlower@gmail.com>  
Ryan Roden-Corrent <ryan@rcorre.net>  
Ryan Seys <ryan@ryanseys.com>  
Ryan Slade <ryanslade@gmail.com>  
Ryan Zhang <ryan.zhang@docker.com>  
Ryoichi KATO <ryo1kato@gmail.com>  
Ryuji Iwata <qt.luigi@gmail.com>  
Ryuma Yoshida <ryuma.y1117@gmail.com>  
Ryuzo Yamamoto <ryuzo.yamamoto@gmail.com>  
S.alar Onur <caglar@10ur.org>  
Sabin Mihai Rapan <sabin.rapan@gmail.com>  
Sad Pencil <qh06@qq.com>  
Sai Cheemalapati <saicheems@google.com>  
Sakeven Jiang <jc5930@sina.cn>  
Salmn Aljammz <s@0x65.net>  
Sam Arnold <sarnold64@bloomberg.net>  
Sam Boyer <tech@samboyer.org>  
Sam Ding <samding@ca.ibm.com>  
Sam Hug <samuel.b.hug@gmail.com>  
Sam Thorogood <thorogood@google.com> <sam.thorogood@gmail.com>  
Sam Whited <sam@samwhited.com>  
Sameer Ajmani <sameer@golang.org> <ajmani@gmail.com>  
Sami Commerot <samic@google.com>

Sami Pnknen <sami.ponkanen@gmail.com>  
Samuel Kelemen <SCKelemen@users.noreply.github.com>  
Samuel Tan <samueltan@google.com>  
Samuele Pedroni <pedronis@lucediaruna.net>  
Sander van Harmelen <sander@vanharmelen.nl>  
Sanjay Menakuru <balasanjay@gmail.com>  
Santhosh Kumar Tekuri <santhosh.tekuri@gmail.com>  
Sarah Adams <shadams@google.com>  
Sascha Brawer <sascha@brawer.ch>  
Sasha Lionheart <lionhearts@google.com>  
Sasha Sobol <sasha@scaledinference.com>  
Scott Barron <scott.barron@github.com>  
Scott Bell <scott@sctsm.com>  
Scott Crunkleton <crunk1@gmail.com>  
Scott Ferguson <scottwferg@gmail.com>  
Scott Lawrence <bytbox@gmail.com>  
Scott Mansfield <smansfield@netflix.com>  
Scott Schwartz <scotts@golang.org>  
Scott Van Woudenberg <scottvw@google.com>  
Sean Burford <sburford@google.com>  
Sean Chen <oohcode@gmail.com>  
Sean Chittenden <seanc@joyent.com>  
Sean Christopherson <sean.j.christopherson@intel.com>  
Sean Dolphin <Sean.Dolphin@kpcompass.com>  
Sean Harger <sharger@google.com>  
Sean Rees <sean@erifax.org>  
Sebastiaan van Stijn <github@gone.nl>  
Sebastian Schmidt <yath@google.com>  
Sebastien Binet <seb.binet@gmail.com>  
Sbastien Paolacci <sebastien.paolacci@gmail.com>  
Sebastien Williams-Wynn <sebastien@cytora.com>  
Segev Finer <segev208@gmail.com>  
Seiji Takahashi <timaki.st@gmail.com>  
Sergei Skorobogatov <skorobo@rambler.ru>  
Sergei Zagurskii <gvozdoder@gmail.com>  
Sergey 'Snake' Gromov <snake.scaly@gmail.com>  
Sergey Arseev <sergey.arseev@intel.com>  
Sergey Dobrodey <sergey.dobrodey@synesis.ru>  
Sergey Frolov <sfrolov@google.com>  
Sergey Lukjanov <me@slukjanov.name>  
Sergey Mishin <sergeymishine@gmail.com>  
Sergey Mudrik <sergey.mudrik@gmail.com>  
Sergey Semin <gray12511@gmail.com>  
Sergey Yanykin <syanykin@ozon.ru>  
Sergio Luis O. B. Correia <sergio@correia.cc>  
Sergiusz Bazanski <bazanski@gmail.com>  
Serhii Aheienko <serhii.aheienko@gmail.com>  
Seth Hoenig <seth.a.hoenig@gmail.com>

Seth Vargo <sethvargo@gmail.com>  
Shahar Kohanim <skohanim@gmail.com>  
Shamil Garatuev <garatuev@gmail.com>  
Shane Hansen <shanemhansen@gmail.com>  
Shaozhen Ding <dsz0111@gmail.com>  
Shaun Dunning <shaun.dunning@uservoice.com>  
Shawn Elliott <selliot@microsoft.com>  
Shawn Ledbetter <sledbetter@google.com>  
Shawn Smith <shawn.p.smith@gmail.com>  
Shawn Walker-Salas <shawn.walker@oracle.com>  
Shenghou Ma <minux@golang.org> <minux.ma@gmail.com>  
Shengjing Zhu <zs950618@gmail.com>  
Shengyu Zhang <shengyu.zhang@chaitin.com>  
Shi Han Ng <shihanng@gmail.com>  
Shijie Hao <haormj@gmail.com>  
Shinji Tanaka <shinji.tanaka@gmail.com>  
Shintaro Kaneko <kaneshin0120@gmail.com>  
Shivakumar GN <shivakumar.gn@gmail.com>  
Shivani Singhal <shivani.singhal2804@gmail.com>  
Shivansh Rai <shivansh@freebsd.org>  
Shubham Sharma <shubham.sha12@gmail.com>  
Shun Fan <sfan@google.com>  
Silvan Jegen <s.jegen@gmail.com>  
Simon Jefford <simon.jefford@gmail.com>  
Simon Rawet <simon@rawet.se>  
Simon Thulbourn <simon+github@thulbourn.com>  
Simon Whitehead <chemnova@gmail.com>  
Sina Siadat <siadat@gmail.com>  
Sokolov Yura <funny.falcon@gmail.com>  
Song Gao <song@gao.io>  
Spencer Nelson <s@spenczar.com>  
Spencer Tung <spencertung@google.com>  
Spring Mc <heresy.mc@gmail.com>  
Srdjan Petrovic <spetrovic@google.com>  
Sridhar Venkatakrishnan <sridhar@laddoo.net>  
StalkR <stalkr@stalkr.net>  
Stan Schwertly <stan@schwertly.com>  
Stanislav Afanasev <php.progger@gmail.com>  
Steeve Morin <steeve.morin@gmail.com>  
Stefan Baebler <sbaebler@outbrain.com>  
Stefan Nilsson <snilsson@nada.kth.se> <trolleriprofessorn@gmail.com>  
Stepan Shabalin <neverliberty@gmail.com>  
Stephan Renatus <srenatus@chef.io>  
Stephan Zuercher <zuercher@gmail.com>  
Stphane Travostino <stephane.travostino@gmail.com>  
Stephen Lewis <stephen@sock.org.uk>  
Stephen Lu <steuhs@users.noreply.github.com>  
Stephen Ma <stephenm@golang.org>

Stephen McQuay <stephen@mcquay.me>  
Stephen Searles <stephens2424@gmail.com>  
Stephen Weinberg <stephen@q5comm.com>  
Steve Francia <spf@golang.org>  
Steve Gilbert <stevegilbert23@gmail.com>  
Steve LoFurno <slofurno@gmail.com>  
Steve McCoy <mccoyst@gmail.com>  
Steve Mynott <steve.mynott@gmail.com>  
Steve Newman <snewman@google.com>  
Steve Phillips <elimistev@gmail.com>  
Steve Streeting <steve@stevestreeting.com>  
Steven Buss <sbuss@google.com>  
Steven Elliot Harris <seharris@gmail.com>  
Steven Erenst <stevenerenst@gmail.com>  
Steven Hartland <steven.hartland@multiplay.co.uk>  
Steven Littlebrant <imgroxx@gmail.com>  
Steven Wilkin <stevenwilkin@gmail.com>  
Stuart Jansen <sjansen@buscaluz.org>  
Sue Spence <virtuallysue@gmail.com>  
Sugu Sougoumarane <ssougou@gmail.com>  
Suharsh Sivakumar <suharshs@google.com>  
Sukrit Handa <sukrit.handa@utoronto.ca>  
Sunny <me@darkowlzz.space>  
Suriyaa Sundararuban <suriyaasundararuban@gmail.com>  
Suyash <dextrous93@gmail.com>  
Suzy Mueller <suzmue@golang.org>  
Sven Almgren <sven@tras.se>  
Sven Blumenstein <svbl@google.com>  
Sylvain Zimmer <sylvain@sylvainzimmer.com>  
Syohei YOSHIDA <syohehex@gmail.com>  
Szabolcs Nagy <nsz@port70.net>  
Taavi Kivisik <taavi.kivisik@gmail.com>  
Tad Fisher <tadfisher@gmail.com>  
Tad Glines <tad.glines@gmail.com>  
Tadas Valiukas <tadovas@gmail.com>  
Taesu Pyo <pyotaesu@gmail.com>  
Tai Le <letientai299@gmail.com>  
Taj Khattrra <taj.khattrra@gmail.com>  
Takashi Matsuo <tmatsuo@google.com>  
Takayoshi Nishida <takayoshi.nishida@gmail.com>  
Takeshi YAMANASHI <9.nashi@gmail.com>  
Takuto Ikuta <tikuta@google.com>  
Takuya Ueda <uedatakuya@gmail.com>  
Tal Shprecher <tshprecher@gmail.com>  
Tamir Duberstein <tamird@gmail.com>  
Tao Shen <shentaoskyking@gmail.com>  
Tao Wang <twang2218@gmail.com>  
Tarmigan Casebolt <tarmigan@gmail.com>

Taro Aoki <aizu.s1230022@gmail.com>  
Taru Karttunen <taruti@taruti.net>  
Tatsuhiko Tsujikawa <tatsuhiko.t@gmail.com>  
Tatsuya Kaneko <m.ddotx.f@gmail.com>  
Taufiq Rahman <taufiqrx8@gmail.com>  
Teague Cole <tnc1443@gmail.com>  
Ted Kornish <golang@tedkornish.com>  
Tejasvi Nareddy <tejunareddy@gmail.com>  
Terin Stock <terinjokes@gmail.com>  
Terrel Shumway <gopher@shumway.us>  
Tetsuo Kiso <tetsuokiso9@gmail.com>  
Than McIntosh <thanm@google.com>  
Thanabodee Charoenpiriyakij <wingyminus@gmail.com>  
Thanatat Tamtan <acoshift@gmail.com>  
Thiago Avelino <t@avelino.xxx>  
Thiago Fransosi Farina <thiago.farina@gmail.com> <tfarina@chromium.org>  
Thomas Alan Copeland <talan.copeland@gmail.com>  
Thomas Bonfort <thomas.bonfort@gmail.com>  
Thomas Bouldin <inlined@google.com>  
Thomas Bruyelle <thomas.bruyelle@gmail.com>  
Thomas Bushnell, BSG <tbushnell@google.com>  
Thomas de Zeeuw <thomasdezeeuw@gmail.com>  
Thomas Desrosiers <thomasdesr@gmail.com>  
Thomas Habets <habets@google.com>  
Thomas Kappler <tkappler@gmail.com>  
Thomas Meson <zllak@hycik.org>  
Thomas Wanielista <tomwans@gmail.com>  
Thorben Krueger <thorben.krueger@gmail.com>  
Thordur Bjornsson <thorduri@secnorth.net>  
Tiago Queiroz <contato@tiago.eti.br>  
Tianon Gravi <admwiggin@gmail.com>  
Tilman Dilo <tilman.dilo@gmail.com>  
Tim Cooijmans <timcooijmans@gmail.com>  
Tim Cooper <tim.cooper@layeh.com>  
Tim Ebringer <tim.ebringer@gmail.com>  
Tim Heckman <t@heckman.io>  
Tim Henderson <tim.tadh@gmail.com>  
Tim Hockin <thockin@google.com>  
Tim Swast <swast@google.com>  
Tim Wright <tenortim@gmail.com>  
Tim Xu <xiaoxubeii@gmail.com>  
Timo Savola <timo.savola@gmail.com>  
Timo Truys <alkaloid.btx@gmail.com>  
Timothy Studd <tim@timstudd.com>  
Tipp Moseley <tipp@google.com>  
Tobias Assarsson <tobias.assarsson@gmail.com>  
Tobias Columbus <tobias.columbus@gmail.com> <tobias.columbus@googlemail.com>  
Tobias Klauser <tklauser@distanz.ch>

Toby Burress <kurin@google.com>  
Todd Kulesza <tkulesza@google.com>  
Todd Neal <todd@tneal.org>  
Todd Wang <toddwang@gmail.com>  
Tom Anthony <git@tomanthony.co.uk>  
Tom Bergan <tombergan@google.com>  
Tom Heng <zhm20070928@gmail.com>  
Tom Lanyon <tomlanyon@google.com>  
Tom Levy <tomlevy93@gmail.com>  
Tom Limoncelli <tal@whatexit.org>  
Tom Linfoord <tomlinfoord@gmail.com>  
Tom Payne <twpayne@gmail.com>  
Tom Szymanski <tgs@google.com>  
Tom Thorogood <me+google@tomthorogood.co.uk>  
Tom Wilkie <tom@weave.works>  
Tommy Schaefer <tommy.schaefer@teecom.com>  
Tomoya Ishizaki <zaq1tomo@gmail.com>  
Tonis Tiigi <tonistiigi@gmail.com>  
Tony Reix <tony.reix@bull.net>  
Tony Walker <walkert.uk@gmail.com>  
Tooru Takahashi <tooru.takahashi134@gmail.com>  
Tor Andersson <tor.andersson@gmail.com>  
Tormod Erevik Lea <tormodlea@gmail.com>  
Toshihiro Shiino <shiino.toshihiro@gmail.com>  
Toshiki Shima <hayabusa1419@gmail.com>  
Totoro W <tw19881113@gmail.com>  
Travis Bischel <travis.bischel@gmail.com>  
Travis Cline <travis.cline@gmail.com>  
Trevor Strohman <trevor.strohman@gmail.com>  
Trey Lawrence <lawrence.trey@gmail.com>  
Trey Roessig <trey.roessig@gmail.com>  
Trey Tacon <ttacon@gmail.com>  
Tristan Amini <tamini01@ca.ibm.com>  
Tristan Colgate <tcolgate@gmail.com>  
Tristan Ooohry <ooohry@gmail.com>  
Tristan Rice <rice@fn.lc>  
Troels Thomsen <troels@thomsen.io>  
Trung Nguyen <trung.n.k@gmail.com>  
Tudor Golubenco <tudor.g@gmail.com>  
Tugdual Saunier <tugdual.saunier@gmail.com>  
Tuo Shan <sturbo89@gmail.com> <shantuo@google.com>  
Tyler Bui-Palsulich <tpalsulich@google.com>  
Tyler Bunnell <tylerbunnell@gmail.com>  
Tyler Treat <ttreat31@gmail.com>  
Tzu-Jung Lee <roylee17@currant.com>  
Udalov Max <re.udalov@gmail.com>  
Ugorji Nwoke <ugorji@gmail.com>  
Ulf Holm Nielsen <doktor@dyregod.dk>



Ulrich Kunitz <uli.kunitz@gmail.com>  
Umang Parmar <umangjparmar@gmail.com>  
Uriel Mangado <uriel@berlinblue.org>  
Urvil Patel <patelurvil38@gmail.com>  
Uttam C Pawar <uttam.c.pawar@intel.com>  
Vadim Grek <vadimprog@gmail.com>  
Vadim Vygonets <unixdj@gmail.com>  
Val Polouchkine <vpolouch@justin.tv>  
Valentin Vidic <vvidic@valentin-vidic.from.hr>  
Vega Garcia Luis Alfonso <vegacom@gmail.com>  
Venil Noronha <veniln@vmware.com>  
Veselkov Konstantin <kostozyb@gmail.com>  
Viacheslav Poturaev <vearutop@gmail.com>  
Victor Chudnovsky <vchudnov@google.com>  
Victor Vrantchan <vrancean+github@gmail.com>  
Vignesh Ramachandra <vickyramachandra@gmail.com>  
Vikas Kedia <vikask@google.com>  
Vincent Ambo <tazjin@googlemail.com>  
Vincent Batts <vbatts@hashbangbash.com> <vbatts@gmail.com>  
Vincent Vanackere <vincent.vanackere@gmail.com>  
Vinu Rajashekhar <vinutheraj@gmail.com>  
Vish Subramanian <vish@google.com>  
Vishvananda Ishaya <vishvananda@gmail.com>  
Visweswara R <r.visweswara@gmail.com>  
Vitor De Mario <vitordemario@gmail.com>  
Vivek Sekhar <vsekhar@google.com>  
Vlad Krasnov <vlad@cloudflare.com>  
Vladimir Kovpak <cn007b@gmail.com>  
Vladimir Kuzmin <vkuzmin@uber.com>  
Vladimir Mihailenco <vladimir.webdev@gmail.com>  
Vladimir Nikishenko <vova616@gmail.com>  
Vladimir Stefanovic <vladimir.stefanovic@imgtec.com>  
Vladimir Varankin <nek.narqo@gmail.com>  
Volker Dobler <dr.volker.dobler@gmail.com>  
Volodymyr Paprotski <vpaprots@ca.ibm.com>  
W. Trevor King <wking@tremily.us>  
Wade Simmons <wade@wades.im>  
Wagner Riffel <wgriffel@gmail.com>  
Walter Poupore <wpoupore@google.com>  
Wander Lairson Costa <wcosta@mozilla.com>  
Warren Fernandes <warren.f.fernandes@gmail.com>  
Wayne Ashley Berry <wayneashleyberry@gmail.com>  
Wedson Almeida Filho <wedsonaf@google.com>  
Weerasak Chongnguluam <singpor@gmail.com>  
Wi Cngru <crvv.mail@gmail.com>  
Wei Fu <fhfuwei@163.com>  
Wei Guangjing <vcc.163@gmail.com>  
Wei Xiao <wei.xiao@arm.com>

Wei Xikai <xykwei@gmail.com>  
Weichao Tang <tevic.tt@gmail.com>  
Wembley G. Leach, Jr <wembley.gl@gmail.com>  
Wenlei (Frank) He <wlhe@google.com>  
Wenzel Lowe <lowewenzel@gmail.com>  
Wil Selwood <wselwood@gmail.com>  
Wilfried Teiken <wteiken@google.com>  
Will Beason <willbeason@gmail.com>  
Will Chan <willchan@google.com>  
Will Faught <will.faught@gmail.com>  
Will Morrow <wmorrow.qdt@qualcommdatacenter.com>  
Will Norris <willnorris@google.com>  
Will Storey <will@summercat.com>  
Willem van der Schyff <willemvds@gmail.com>  
William Chan <willchan@chromium.org>  
William Chang <mr.williamchang@gmail.com>  
William Josephson <wjosephson@gmail.com>  
William Orr <will@worrbase.com> <ay1244@gmail.com>  
Wisdom Omuya <deafgoat@gmail.com>  
Wu Yunzhou <yunzhouwu@gmail.com>  
Xi Ruoyao <xry23333@gmail.com>  
Xia Bin <snyh@snyh.org>  
Xing Xing <mikespook@gmail.com>  
Xu Fei <badgangkiller@gmail.com>  
Xudong Zhang <felixmelon@gmail.com>  
Xudong Zheng <7pkvm5aw@slicealias.com>  
Xuyang Kang <xuyangkang@gmail.com>  
Yamagishi Kazutoshi <ykzts@desire.sh>  
Yan Zou <yzou@google.com>  
Yang Tian <linuxty@gmail.com>  
Yann Hodique <yhodique@google.com>  
Yann Kerherv <yann.kerherve@gmail.com>  
Yann Salan <yannsalaun1@gmail.com>  
Yao Zhang <lunaria21@gmail.com>  
Yaron de Leeuw <jarondl@google.com>  
Yasha Bubnov <girokompass@gmail.com>  
Yasser Abdolmaleki <yasser@yasser.ca>  
Yasuharu Goto <matope.ono@gmail.com>  
Yasuhiro Matsumoto <mattn.jp@gmail.com>  
Yasuyuki Oka <yasuyk@gmail.com>  
Yazen Shunnar <yazen.shunnar@gmail.com>  
Yestin Sun <ylh@pdx.edu>  
Yesudeep Mangalapilly <yesudeep@google.com>  
Yissakhar Z. Beck <yissakhar.beck@gmail.com>  
Yo-An Lin <yoanlin93@gmail.com>  
Yohei Takeda <yo.tak0812@gmail.com>  
Yongjian Xu <i3dmaster@gmail.com>  
Yorman Arias <cixtords@gmail.com>

Yoshiyuki Kanno <nekotaroh@gmail.com> <yoshiyuki.kanno@stoic.co.jp>  
Yoshiyuki Mineo <yoshiyuki.mineo@gmail.com>  
Yosuke Akatsuka <yosuke.akatsuka@gmail.com>  
Yu Heng Zhang <annita.zhang@cn.ibm.com>  
Yu Xuan Zhang <zyxsh@cn.ibm.com>  
Yuji Yaginuma <yuuji.yaginuma@gmail.com>  
Yuki OKUSHI <huyuumi.dev@gmail.com>  
Yuki Yugui Sonoda <yugui@google.com>  
Yukihiro Nishinaka <6elpinal@gmail.com>  
Yury Smolsky <yury@smolsky.by>  
Yusuke Kagiwada <block.rxckin.beats@gmail.com>  
Yuusei Kuwana <kuwana@kumama.org>  
Yuval Pavel Zholkover <paulzhol@gmail.com>  
Yves Junqueira <yvesj@google.com> <yves.junqueira@gmail.com>  
Zac Bergquist <zbergquist99@gmail.com>  
Zach Bintliff <zbintliff@gmail.com>  
Zach Gershman <zachgersh@gmail.com>  
Zach Jones <zachj1@gmail.com>  
Zachary Amsden <zach@thundertoken.com>  
Zachary Gershman <zgershman@pivotal.io>  
Zak <zrjknill@gmail.com>  
Zakatell Kanda <hi@zkanda.io>  
Zellyn Hunter <zellyn@squareup.com> <zellyn@gmail.com>  
Zev Goldstein <zev.goldstein@gmail.com>  
Zheng Dayu <davidzheng23@gmail.com>  
Zheng Xu <zheng.xu@arm.com>  
Zhengyu He <hzy@google.com>  
Zhongpeng Lin <zplin@uber.com>  
Zhongtao Chen <chenzhongtao@126.com>  
Zhongwei Yao <zhongwei.yao@arm.com>  
Zhou Peng <p@ctruple.cn>  
Ziad Hatahet <hatahet@gmail.com>  
Zorion Arrizabalaga <zorionk@gmail.com>  
<a.maksadbek@gmail.com>  
<max.faceless.frei@gmail.com>  
<hagen1778@gmail.com>  
<tbunyk@gmail.com>  
<faxriddinjon@gmail.com>  
<zs349596@gmail.com>  
<bronze1man@gmail.com>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

# 1.297 iptables 1.6.0

## 1.297.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.



Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among

countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program

`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.298 freerdp 2.1.2

### 1.298.1 Available under license :

Copyright (C) 2016 The Android Open Source Project

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,



worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.299 pm-utils 1.4.1

### 1.299.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free



Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.300 dom4j 2.1.3

## 1.300.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2001-2005 (C) MetaStuff, Ltd. All Rights Reserved.

\*

\* This software is open source.

\* See the bottom of this file for the licence.

\*/

/\*

\* Redistribution and use of this software and associated documentation

\* ("Software"), with or without modification, are permitted provided that the

\* following conditions are met:

\*

\* 1. Redistributions of source code must retain copyright statements and

\* notices. Redistributions must also contain a copy of this document.

\*

\* 2. Redistributions in binary form must reproduce the above copyright notice,

\* this list of conditions and the following disclaimer in the documentation

\* and/or other materials provided with the distribution.

\*

\* 3. The name "DOM4J" must not be used to endorse or promote products derived

\* from this Software without prior written permission of MetaStuff, Ltd. For

\* written permission, please contact dom4j-info@metastuff.com.

\*

\* 4. Products derived from this Software may not be called "DOM4J" nor may

\* "DOM4J" appear in their names without prior written permission of MetaStuff,

\* Ltd. DOM4J is a registered trademark of MetaStuff, Ltd.

\*

\* 5. Due credit should be given to the DOM4J Project - <http://www.dom4j.org>

\*

\* THIS SOFTWARE IS PROVIDED BY METASTUFF, LTD. AND CONTRIBUTORS ``AS IS" AND

\* ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL METASTUFF, LTD. OR ITS CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE

\* POSSIBILITY OF SUCH DAMAGE.

\*

\* Copyright 2001-2005 (C) MetaStuff, Ltd. All Rights Reserved.

\*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/ElementQNameIterator.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/ElementIterator.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/ElementHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/CDATA.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/Document.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/Action.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/Comment.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/Entity.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/bean/BeanDocumentFactory.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/FlyweightCDATA.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/IllegalAddException.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBModifier.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/FilterIterator.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMDocumentType.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/Pattern.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/Rule.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/NamespaceStack.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/NamespaceCache.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBObjectHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DOMReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/QName.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/VisitorSupport.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/InvalidXPathException.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/XPath.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/bean/BeanMetaData.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dtd/ElementDecl.java
- \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/XMLWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/pattern/DefaultPattern.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/xpath/XPathPattern.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultCDATA.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/PruningDispatchHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/Stylesheet.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/swing/XMLTableColumnDefinition.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/datatype/DatatypeDocumentFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXEventRecorder.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMEntityReference.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/FlyweightAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/DocumentFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultDocument.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DocumentResult.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXModifyElementHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/NodeComparator.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/ProcessingInstruction.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/UserDataElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/PerThreadSingleton.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMComment.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/XMLErrorHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/NonLazyElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/bean/BeanAttributeList.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DOMWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/FlyweightEntity.java

\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractProcessingInstruction.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/BackedList.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/STAXEventWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBSupport.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/IndexedElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/ElementStack.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/NodeFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/XPathException.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/FlyweightText.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractCharacterData.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/pattern/NodeTypePattern.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dtd/ExternalEntityDecl.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/swing/XMLTableDefinition.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/XPP3Reader.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/bean/BeanAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractCDATA.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/swing/DocumentTreeModel.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/FlyweightProcessingInstruction.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/ProxyDocumentFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/PruningElementStack.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/DocumentType.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/ContentListFacade.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractEntity.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-



\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBRuntimeExpection.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/IndexedDocumentFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractBranch.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/HTMLWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dtd/InternalEntityDecl.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMDocumentFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/datatype/DatatypeElementFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultComment.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMCDATA.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/swing/BranchTreeNode.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXModifier.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/swing/LeafTreeNode.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMNodeHelper.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBObjectModifier.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/jaxb/JAXBReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/ElementModifier.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMAttributeNodeMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/XMLResult.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXModifyReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/xpp/ProxyXmlStartTag.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dtd/AttributeDecl.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DocumentInputSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/STAXEventReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXContentHandler.java



\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/SingletonStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractDocumentType.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/DocumentException.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractText.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMNamespace.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultDocumentType.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXModifyException.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMDocument.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/UserDataDocumentFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/XPPReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/OutputFormat.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/datatype/NamedTypeResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/SingleIterator.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/RuleManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/datatype/InvalidSchemaException.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/xpath/DefaultNamespaceContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/datatype/DatatypeElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DocumentSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/ElementNameIterator.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DOMSAXContentHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/dom/DOMEElement.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/JAXPHelper.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/rule/RuleSet.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/Branch.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/Text.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DOMDocumentResult.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/datatype/SchemaParser.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/DispatchHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/io/SAXModifyContentHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/AbstractComment.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/util/AttributeHelper.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultText.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/tree/DefaultNamespace.java  
\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-jar/org/dom4j/Element.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2001-2005 (C) MetaStuff, Ltd. All Rights Reserved.

\*

\* This software is open source.

\* See the bottom of this file for the licence.

\*/

/\*

\* Redistribution and use of this software and associated documentation

\* ("Software"), with or without modification, are permitted provided that the

\* following conditions are met:

\*

\* 1. Redistributions of source code must retain copyright statements and

\* notices. Redistributions must also contain a copy of this document.

\*

\* 2. Redistributions in binary form must reproduce the above copyright notice,

\* this list of conditions and the following disclaimer in the documentation

\* and/or other materials provided with the distribution.

\*

\* 3. The name "DOM4J" must not be used to endorse or promote products derived

\* from this Software without prior written permission of MetaStuff, Ltd. For

\* written permission, please contact dom4j-info@metastuff.com.

\*  
 \* 4. Products derived from this Software may not be called "DOM4J" nor may  
 \* "DOM4J" appear in their names without prior written permission of MetaStuff,  
 \* Ltd. DOM4J is a registered trademark of MetaStuff, Ltd.  
 \*  
 \* 5. Due credit should be given to the DOM4J Project - <http://www.dom4j.org>  
 \*  
 \* THIS SOFTWARE IS PROVIDED BY METASTUFF, LTD. AND CONTRIBUTORS ``AS IS" AND  
 \* ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
 \* ARE DISCLAIMED. IN NO EVENT SHALL METASTUFF, LTD. OR ITS CONTRIBUTORS BE  
 \* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
 \* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
 \* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
 \* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
 \* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
 \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE  
 \* POSSIBILITY OF SUCH DAMAGE.  
 \*  
 \* Copyright 2001-2005 (C) MetaStuff, Ltd. All Rights Reserved.  
 \*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-  
 jar/org/dom4j/DocumentHelper.java  
 \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-  
 jar/org/dom4j/io/SAXReader.java  
 \* /opt/ws\_local/PERMITS\_SQL/1034543185\_1588830303.8/0/dom4j-2-1-3-sources-  
 jar/org/dom4j/io/SAXHelper.java

# 1.301 spring-jdbc 5.2.20.RELEASE

## 1.301.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*  
 \* Copyright 2002-2013 the original author or authors.  
 \*  
 \* Licensed under the Apache License, Version 2.0 (the "License");  
 \* you may not use this file except in compliance with the License.  
 \* You may obtain a copy of the License at  
 \*  
 \* <https://www.apache.org/licenses/LICENSE-2.0>  
 \*  
 \* Unless required by applicable law or agreed to in writing, software  
 \* distributed under the License is distributed on an "AS IS" BASIS,  
 \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/support/AbstractLobCreatingPreparedStatementCallback.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/lob/AbstractLobHandler.java
- No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2021 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterJdbcOperations.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/GenericTableMetaDataProvider.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/TableMetaDataContext.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/TableMetaDataProviderFactory.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/JdbcOperations.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/GenericCallMetaDataProvider.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/init/ScriptUtils.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/BeanPropertyRowMapper.java
  - \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterUtils.java
- No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2007 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/incrementer/DataFieldMaxValueIncrementer.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/init/CompositeDatabasePopulator.java
*/opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/RowCallbackHandler.java
*/opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/lob/LobHandler.java
*/opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/init/DatabasePopulator.java
*/opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/lookup/DataSourceLookup.java
```

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/PreparedStatementSetter.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2012 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/SingleDataSourceLookup.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/GenericStoredProcedure.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/DataSourceLookupFailureException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/AbstractSequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/SqlValue.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/xml/XmlResultProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/xml/XmlBinaryStreamProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/xml/SqlXmlFeatureNotImplementedException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/xml/XmlCharacterStreamProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/config/JdbcNamespaceHandler.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/IndiDataSourceLookup.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/InterruptibleBatchPreparedStatementSetter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/BatchPreparedStatementSetter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/support/MetaDataAccessException.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/SmartDataSource.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/SQLWarningException.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/SimpleDriverDataSourceFactory.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/init/ScriptStatementFailedException.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabase.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2019 the original author or authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/JdbcOperationsExtensions.kt

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* Strategy interface for translating between { @link SQLException SQLExceptions }

\* and Spring's data access strategy-agnostic { @link DataAccessException }

\* hierarchy.

\*

\* <p>Implementations can be generic (for example, using

\* { @link java.sql.SQLException#getSQLState() SQLState } codes for JDBC) or wholly

\* proprietary (for example, using Oracle error codes) for greater precision.

\*

\* @author Rod Johnson

\* @author Juergen Hoeller

\* @see org.springframework.dao.DataAccessException

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/SQLExceptionTranslator.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*



- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/init/ScriptParseException.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseFactoryBean.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/xml/Jdbc4SqlXmlHandler.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/simple/SimpleJdbcInsert.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/init/DataSourceInitializer.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/ConnectionProxy.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/CustomSQLExceptionCodesTranslation.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/PostgresCallMetaDataProvider.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/config/InitializeDatabaseBeanDefinitionParser.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/SqlServerCallMetaDataProvider.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/lob/DefaultLobHandler.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/lob/PassThroughBlob.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/SybaseCallMetaDataProvider.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ParameterDisposer.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/config/EmbeddedDatabaseBeanDefinitionParser.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/DelegatingDataSource.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/OracleCallMetaDataProvider.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/lob/PassThroughClob.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/AbstractDriverBasedDataSource.java
- \* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/BeanFactoryDataSourceLookup.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/SQLExceptionSubclassTranslator.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/support/SqlLobValue.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2020 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlReturnType.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/AbstractEmbeddedDatabaseConfigurer.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/AbstractRoutingDataSource.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/SQLExceptionCodeSQLExceptionTranslator.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/ParsedSql.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlProvider.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/SingleConnectionDataSource.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/SimpleDriverDataSource.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/DataSourceFactory.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/CallMetaDataProviderFactory.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/PreparedStatementCreatorFactory.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/SqlParameterSourceUtils.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/support/SQLExceptionCodesFactory.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/init/DatabasePopulatorUtils.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/SingleColumnRowMapper.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/support/JdbcUtils.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/JdbcTemplate.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/metadata/CallMetaDataContext.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/support/DatabaseMetaDataCallback.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/DriverManagerDataSource.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/namedparam/NamedParameterJdbcTemplate.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/datasource/DataSourceTransactionManager.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/simple/AbstractJdbcCall.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/StatementCreatorUtils.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/core/metadata/CallParameterMetaData.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/support/incrementer/Db2MainFrameMaxValueIncrementer.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/support/GeneratedKeyHolder.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/support/AbstractSqlTypeValue.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/DerbyEmbeddedDatabaseConfigurer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlParameterValue.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/TableParameterMetaData.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/support/JdbcBeanDefinitionReader.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/AbstractFallbackSQLExceptionTranslator.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/DataSourceUtils.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/BatchUpdateUtils.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlRowSetResultSetExtractor.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ConnectionCallback.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/CustomSQLExceptionTranslatorRegistrar.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/HsqlSequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterBatchUpdateUtils.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/OracleSequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ColumnMapRowMapper.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/simple/SimpleJdbcCall.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/SybaseAnywhereMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/config/SortedResourcesFactoryBean.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlOutParameter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/UncategorizedSQLException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ParameterizedPreparedStatementSetter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/StoredProcedure.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlReturnUpdateCount.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseConfigurerFactory.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterJdbcDaoSupport.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/simple/SimpleJdbcCallOperations.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/LobRetrievalFailureException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/support/AbstractInterruptibleBatchPreparedStatementSetter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ResultSetSupportingSqlParameter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/IsolationLevelDataSourceRouter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseBuilder.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/SqlUpdate.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/DerbyTableMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/StatementCallback.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/simple/SimpleJdbcInsertOperations.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/H2EmbeddedDatabaseConfigurer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/SybaseMax ValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/SqlOperation.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlInOutParameter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/CallableStatementCallback.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/JdbcUpdateAffectedIncorrectNumberOfRowsException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/rowset/ResultSetWrappingSqlRowSetMetaData.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/MySQLMax ValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/OutputStreamFactory.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/Db2LuwMax ValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/config/DatabasePopulatorConfigUtils.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/DerbyMax ValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/PostgresSequenceMax ValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/AbstractIdentityColumnMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/xml/SqlXmlHandler.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/RowMapper.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseFactory.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/ConnectionHolder.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseType.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/namedparam/EmptySqlParameterSource.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/HanaCallMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/ConnectionHandle.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/IsolationLevelDataSourceAdapter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/PreparedStatementCallback.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/HsqlEmbeddedDatabaseConfigurer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/DerbyCallMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/BatchSqlUpdate.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/SqlCall.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/JdbcAccessor.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/CallableStatementCreatorFactory.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/RowMapperResultSetExtractor.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlParameter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/TableMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/IncorrectResultSetColumnCountException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/AbstractDataSource.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ResultSetExtractor.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/CallMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/GenericSqlQuery.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ArgumentPreparedStatementSetter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/ArgumentTypePreparedStatementSetter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/DatabaseStartupValidator.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/H2SequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/MappingSqlQueryWithParameters.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/PreparedStatementCreator.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/WebSphereDataSourceAdapter.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/UpdatableSqlQuery.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/SimpleConnectionHandle.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseConfigurer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/CallableStatementCreator.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/RowCountCallbackHandler.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/BadSqlGrammarException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/PostgresTableMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/lob/TemporaryLobCreator.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/HanaSequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/CannotGetJdbcConnectionException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/MappingSqlQuery.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/AbstractColumnMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/HsqlTableMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/Db2CallMetaDataProvider.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/support/JdbcDaoSupport.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlTypeValue.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/AbstractDataFieldMaxValueIncrementer.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/UserCredentialsDataSourceAdapter.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/object/SqlQuery.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/InvalidResultSetAccessException.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/lookup/MapDataSourceLookup.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/SQLErrorCodes.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/PostgreSQLSequenceMaxValueIncrementer.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/metadata/OracleTableMetaDataProvider.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/core/SqlReturnResultSet.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/init/CannotReadScriptException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/support/incrementer/HsqlMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/init/ScriptException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/init/UncategorizedScriptException.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/datasource/embedded/ConnectionProperties.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-



jar/org/springframework/jdbc/support/incrementer/SqlServerMax ValueIncrementer.java  
\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-  
jar/org/springframework/jdbc/support/rowset/SqlRowSetMetaData.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/rowset/ResultSetWrappingSqlRowSet.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/JdbcTransactionObjectSupport.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/LazyConnectionDataSourceProxy.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/KeyHolder.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/TransactionAwareDataSourceProxy.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/namedparam/SqlParameterSource.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/object/RdbmsOperation.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/namedparam/BeanPropertySqlParameterSource.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/simple/AbstractJdbcInsert.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/support/AbstractLobStreamingResultSetExtractor.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/rowset/SqlRowSet.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/CustomSQLExceptionTranslatorRegistry.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/namedparam/MapSqlParameterSource.java
```

```
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/core/namedparam/AbstractSqlParameterSource.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/datasource/init/ResourceDatabasePopulator.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/support/SQLStateSQLExceptionTranslator.java
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
jar/org/springframework/jdbc/object/SqlFunction.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 2002-2018 the original author or authors.
```

```
*
```

```
* Licensed under the Apache License, Version 2.0 (the "License");
```

```
* you may not use this file except in compliance with the License.
```

```
* You may obtain a copy of the License at
```

```
*
```

```
* https://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
```

```
* distributed under the License is distributed on an "AS IS" BASIS,
```

```
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
* See the License for the specific language governing permissions and
```

```
* limitations under the License.
```

```
*/
```

```
/**
```

```
* Implement this interface when parameters need to be customized based
```

```
* on the connection. We might need to do this to make use of proprietary
```

```
* features, available only with a specific Connection type.
```

```
*
```

```
* @author Rod Johnson
```

```
* @author Thomas Risberg
```

```
* @see CallableStatementCreatorFactory#newCallableStatementCreator(ParameterMapper)
```

```
* @see org.springframework.jdbc.object.StoredProcedure#execute(ParameterMapper)
```

```
*/
```

```
/**
```

```
* Create a Map of input parameters, keyed by name.
```

```
* @param con a JDBC connection. This is useful (and the purpose of this interface)
```

```
* if we need to do something RDBMS-specific with a proprietary Connection
```

```
* implementation class. This class conceals such proprietary details. However,
```

```
* it is best to avoid using such proprietary RDBMS features if possible.
```

```
* @return a Map of input parameters, keyed by name (never {@code null})
```

```
* @throws SQLException if an SQLException is encountered setting
```

```
* parameter values (that is, there's no need to catch SQLException)
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1301486295_1649248795.81/0/spring-jdbc-5-2-20-release-sources-
```

jar/org/springframework/jdbc/core/ParameterMapper.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/core/namedparam/MapSqlParameterSourceExtensions.kt

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2008 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/support/incrementer/DB2MainFrameSequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/support/incrementer/DB2SequenceMaxValueIncrementer.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/core/DisposableSqlTypeValue.java

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/support/xml/SqlXmlValue.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* Close this LobCreator session and free its temporarily created BLOBs and CLOBs.

\* Will not need to do anything if using PreparedStatement's standard methods,

\* but might be necessary to free database resources if using proprietary means.

\* **NOTE**: Needs to be invoked after the involved PreparedStatements have

\* been executed or the affected O/R mapping sessions have been flushed.

\* Otherwise, the database resources for the temporary BLOBs might stay allocated.

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-

jar/org/springframework/jdbc/support/lob/LobCreator.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* The classes in this package make JDBC easier to use and

\* reduce the likelihood of common errors. In particular, they:

\*

\* - Simplify error handling, avoiding the need for try/catch/finally

\* blocks in application code.

\* - Present exceptions to application code in a generic hierarchy of

\* unchecked exceptions, enabling applications to catch data access

\* exceptions without being dependent on JDBC, and to ignore fatal

\* exceptions there is no value in catching.

\* - Allow the implementation of error handling to be modified

\* to target different RDBMSes without introducing proprietary

\* dependencies into application code.

\*

\*

\* 

This package and related packages are discussed in Chapter 9 of

\* <a href="https://www.amazon.com/exec/obidos/tg/detail/-/0764543857/">Expert One-On-One J2EE Design and Development</a>

\* by Rod Johnson (Wrox, 2002).

\*/

Found in path(s):

\* /opt/cola/permits/1301486295\_1649248795.81/0/spring-jdbc-5-2-20-release-sources-jar/org/springframework/jdbc/package-info.java

## 1.302 istack-commons 3.0.11

### 1.302.1 Available under license :

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)Version 1.1

#### 1. Definitions.

1.1. "Contributor" means each individual or entity that creates or contributes to the creation of Modifications.

1.2. "Contributor Version" means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. "Covered Software" means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. "Executable" means the Covered Software in any form other than Source Code.

1.5. "Initial Developer" means the individual or entity that first makes Original Software available under this License.

1.6. "Larger Work" means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. "License" means this document.

1.8. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. "Modifications" means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. "Original Software" means the Source Code and Executable form of computer software code that is

originally released under this License.

1.11. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. "Source Code" means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions

thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Oracle is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

## 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER



CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as "Participant") alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. If You assert a patent infringement claim against Participant alleging that the Participant Software directly or indirectly infringes any patent where such claim is resolved (such as by license or settlement) prior to the initiation of patent infringement litigation, then the reasonable value of the licenses granted by such Participant under Sections 2.1 or 2.2 shall be taken into account in determining the amount or value of any payment or license.

6.4. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and "commercial

computer software documentation" as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

-----  
NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest

validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C)

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## "CLASSPATH" EXCEPTION TO THE GPL VERSION 2

Certain source files distributed by Oracle are subject to the following clarification and special exception to the GPL Version 2, but only where Oracle has expressly included in the particular source file's header the words "Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the License file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

/\*

\* DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS HEADER.

\*

\* Copyright (c) YYYY Oracle and/or its affiliates. All rights reserved.

\*

\* The contents of this file are subject to the terms of either the GNU  
\* General Public License Version 2 only ("GPL") or the Common Development  
\* and Distribution License("CDDL") (collectively, the "License"). You  
\* may not use this file except in compliance with the License. You can  
\* obtain a copy of the License at  
\* [http://glassfish.java.net/public/CDDL+GPL\\_1\\_1.html](http://glassfish.java.net/public/CDDL+GPL_1_1.html)  
\* or packager/legal/LICENSE.txt. See the License for the specific  
\* language governing permissions and limitations under the License.

\*

\* When distributing the software, include this License Header Notice in each  
\* file and include the License file at packager/legal/LICENSE.txt.

\*

\* GPL Classpath Exception:

\* Oracle designates this particular file as subject to the "Classpath"  
\* exception as provided by Oracle in the GPL Version 2 section of the License  
\* file that accompanied this code.

\*

\* Modifications:

\* If applicable, add the following below the License Header, with the fields  
\* enclosed by brackets [] replaced by your own identifying information:



```
* "Portions Copyright [year] [name of copyright owner]"
*
* Contributor(s):
* If you wish your version of this file to be governed by only the CDDL or
* only the GPL Version 2, indicate your decision by adding "[Contributor]
* elects to include this software in this distribution under the [CDDL or GPL
* Version 2] license." If you don't indicate a single choice of license, a
* recipient has the option to distribute your version of this file under
* either the CDDL, the GPL Version 2 or to extend the choice of license to
* its licensees as provided above. However, if you add GPL Version 2 code
* and therefore, elected the GPL Version 2 license, then the option applies
* only if the new code is made subject to such option by the copyright
* holder.
*/
```

## 1.303 Idns 1.7.1

### 1.303.1 Available under license :

```
#!/bin/sh
DO NOT EDIT - This file generated from ./build-aux/ltmain.in
by inline-source v2014-01-03.01

libtool (GNU libtool) 2.4.6
Provide generalized library-building support services.
Written by Gordon Matzigkeit <gord@gnu.ai.mit.edu>, 1996

Copyright (C) 1996-2015 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

GNU Libtool is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
#
As a special exception to the GNU General Public License,
if you distribute this file as part of a program or library that
is built using GNU Libtool, you may include this file under the
same distribution terms that you use for the rest of that program.
#
GNU Libtool is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
General Public License for more details.
#
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

This software is copyright (c) 2013 by UNINETT Norid AS. No license is granted to other entities.

All rights reserved.

Copyright (c) 2005,2006, NLnetLabs

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of NLnetLabs nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2005,2006, NLnetLabs

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of NLnetLabs nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2011, Xelerance

Author: Christopher Olah <chris@xelerance.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Xelerance nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

/\* From openssh 4.3p2 filename openbsd-compat/fake-rfc2553.h \*/

/\*

\* Copyright (C) 2000-2003 Damien Miller. All rights reserved.

\* Copyright (C) 1999 WIDE Project. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.  
\* 3. Neither the name of the project nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.  
\*  
\* THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS'' AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.  
\*/

Copyright (C) 2013 by UNINETT Norid AS

This library is free software; you can redistribute it and/or modify  
it under the same terms as Perl itself, either Perl version 5.8.8 or,  
at your option, any later version of Perl 5 you may have available.

/\* from openssh 4.3p2 compat/strncpy.c \*/

/\*

\* Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>

\*

\* Permission to use, copy, modify, and distribute this software for any  
\* purpose with or without fee is hereby granted, provided that the above  
\* copyright notice and this permission notice appear in all copies.

\*

\* THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES  
\* WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF  
\* MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR  
\* ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES  
\* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN  
\* ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF  
\* OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\*/

/\*

\* FILE: sha2.c

\* AUTHOR: Aaron D. Gifford - <http://www.aarongifford.com/>

\*

\* Copyright (c) 2000-2001, Aaron D. Gifford

\* All rights reserved.

\*

\* Modified by Jelte Jansen to fit in ldns, and not clash with any  
\* system-defined SHA code.

\* Changes:

\* - Renamed (external) functions and constants to fit Idns style  
\* - Removed \_End and \_Data functions  
\* - Added Idns\_shaX(data, len, digest) convenience functions  
\* - Removed prototypes of \_Transform functions and made those static  
\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:  
\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.  
\* 3. Neither the name of the copyright holder nor the names of contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.  
\*  
\* THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTOR(S) ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTOR(S) BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.  
\*  
\* \$Id: sha2.c,v 1.1 2001/11/08 00:01:51 adg Exp adg \$  
\*/

Copyright (c) 2009, Zdenek Vasicek (vasicek AT fit.vutbr.cz)

Karel Slany (slany AT fit.vutbr.cz)

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
- \* Neither the name of the organization nor the names of its  
contributors may be used to endorse or promote products derived from this  
software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

/\* From openssl4.3p2 compat/inet\_aton.c \*/

/\*

\* Copyright (c) 1983, 1990, 1993

\* The Regents of the University of California. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the University nor the names of its contributors

\* may be used to endorse or promote products derived from this software

\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\* \_

\* Portions Copyright (c) 1993 by Digital Equipment Corporation.

\*

\* Permission to use, copy, modify, and distribute this software for any

\* purpose with or without fee is hereby granted, provided that the above

\* copyright notice and this permission notice appear in all copies, and that

\* the name of Digital Equipment Corporation not be used in advertising or

\* publicity pertaining to distribution of the document or software without

\* specific, written prior permission.

\*

\* THE SOFTWARE IS PROVIDED "AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL  
\* WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES  
\* OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT  
\* CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL  
\* DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR  
\* PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS  
\* ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS  
\* SOFTWARE.

\* -

\* --Copyright--

\*/

Copyright (c) 2011, Xelerance

Author: Christopher Olah <chris@xelerance.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
- \* Neither the name of Xelerance nor the names of its  
contributors may be used to endorse or promote products derived from this  
software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE  
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE  
POSSIBILITY OF SUCH DAMAGE.

## 1.304 py 1.11.0

### 1.304.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights

to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.305 ntp 4.2.8p15

### 1.305.1 Available under license :

This file is automatically generated from [html/copyright.html](#)  
Copyright Notice

jpg "Clone me," says Dolly sheepishly.

Last update: 4-Feb-2020 23:47 UTC

---

The following copyright notice applies to all files collectively called the Network Time Protocol Version 4 Distribution. Unless specifically declared otherwise in an individual file, this entire notice applies as



if the text was explicitly included in the file.

```

*
*
* Copyright (c) University of Delaware 1992-2015 *
*
*
* Permission to use, copy, modify, and distribute this software and *
* its documentation for any purpose with or without fee is hereby *
* granted, provided that the above copyright notice appears in all *
* copies and that both the copyright notice and this permission *
* notice appear in supporting documentation, and that the name *
* University of Delaware not be used in advertising or publicity *
* pertaining to distribution of the software without specific, *
* written prior permission. The University of Delaware makes no *
* representations about the suitability this software for any *
* purpose. It is provided "as is" without express or implied *
* warranty. *
*
*

```

Content starting in 2011 from Harlan Stenn, Danny Mayer, and Martin Burnicki is:

```

*
*
* Copyright (c) Network Time Foundation 2011-2020 *
*
*
* All Rights Reserved *
*
*
* Redistribution and use in source and binary forms, with or without *
* modification, are permitted provided that the following conditions *
* are met: *
*
* 1. Redistributions of source code must retain the above copyright *
* notice, this list of conditions and the following disclaimer. *
*
* 2. Redistributions in binary form must reproduce the above *
* copyright notice, this list of conditions and the following *
* disclaimer in the documentation and/or other materials provided *
* with the distribution. *
*
*
* THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS" AND ANY EXPRESS *
* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED *
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE *
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE *
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR *
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT *
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR *
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF *
* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT *
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE *
* USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH *

```

\* DAMAGE.

\*

\*\*\*\*\*

The following individuals contributed in part to the Network Time Protocol Distribution Version 4 and are acknowledged as authors of this work.

1. [1]Takao Abe <takao\_abe@xurb.jp> Clock driver for JJY receivers
2. [2]Mark Andrews <mark\_andrews@isc.org> Leitch atomic clock controller
3. [3]Bernd Altmeier <altmeier@atsoft.de> hopf Elektronik serial line and PCI-bus devices
4. [4]Viraj Bais <vbais@mailman1.intel.com> and [5]Clayton Kirkwood <kirkwood@striderfm.intel.com> port to WindowsNT 3.5
5. [6]Michael Barone <michael,barone@lmco.com> GPSVME fixes
6. [7]Karl Berry <karl@owl.HQ.ileaf.com> syslog to file option
7. [8]Greg Brackley <greg.brackley@bigfoot.com> Major rework of WINNT port. Clean up rcvbuf and iosignal code into separate modules.
8. [9]Marc Brett <Marc.Brett@westgeo.com> Magnavox GPS clock driver
9. [10]Piete Brooks <Piete.Brooks@cl.cam.ac.uk> MSF clock driver, Trimble PARSE support
10. [11]Nelson B Bolyard <nelson@bolyard.me> update and complete broadcast and crypto features in sntp
11. [12]Jean-Francois Boudreault <Jean-Francois.Boudreault@viagenie.qc.ca> IPv6 support
12. [13]Reg Clemens <reg@dwf.com> Oncore driver (Current maintainer)
13. [14]Steve Clift <clift@ml.csiro.au> OMEGA clock driver
14. [15]Casey Crellin <casey@csc.co.za> vxWorks (Tornado) port and help with target configuration
15. [16]Sven Dietrich <sven\_dietrich@trimble.com> Palisade reference clock driver, NT adj. residuals, integrated Greg's Winnt port.
16. [17]John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX port
17. [18]Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Linux port
18. [19]Dennis Ferguson <dennis@mrbill.canet.ca> foundation code for NTP Version 2 as specified in RFC-1119
19. [20]John Hay <jhay@icomtek.csir.co.za> IPv6 support and testing
20. [21]Dave Hart <davehart@davehart.com> General maintenance, Windows port interpolation rewrite
21. [22]Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X clock driver
22. [23]Glenn Hollinger <glenn@herald.usask.ca> GOES clock driver
23. [24]Mike Iglesias <iglesias@uci.edu> DEC Alpha port
24. [25]Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX port
25. [26]Jeff Johnson <jbj@chatham.usdesign.com> massive prototyping overhaul
26. [27]Hans Lambermont <Hans.Lambermont@nl.origin-it.com> or [28]<H.Lambermont@chello.nl> ntpswEEP
27. [29]Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver (Original author)
28. [30]Frank Kardel [31]<kardel (at) ntp (dot) org> PARSE <GENERIC>

- (driver 14 reference clocks), STREAMS modules for PARSE, support scripts, syslog cleanup, dynamic interface handling
29. [32]Johannes Maximilian Kuehn <kuehn@ntp.org> Rewrote sntp to comply with NTPv4 specification, ntpq saveconfig
  30. [33]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX modifications, HPUX modifications
  31. [34]Dave Katz <dkatz@cisco.com> RS/6000 AIX port
  32. [35]Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
  33. [36]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
  34. [37]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
  35. [38]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
  36. [39]Danny Mayer <mayer@ntp.org>Network I/O, Windows Port, Code Maintenance
  37. [40]David L. Mills <mills@udel.edu> Version 4 foundation, precision kernel; clock drivers: 1, 3, 4, 6, 7, 11, 13, 18, 19, 22, 36
  38. [41]Wolfgang Moeller <moeller@gwdgv1.dnet.gwdg.de> VMS port
  39. [42]Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility
  40. [43]Tom Moore <tmoore@fievel.daytonoh.ncr.com> i386 svr4 port
  41. [44]Kamal A Mostafa <kamal@whence.com> SCO OpenServer port
  42. [45]Derek Mulcahy <derek@toybox.demon.co.uk> and [46]Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver
  43. [47]Rob Neal <neal@ntp.org> Bancomm refclock and config/parse code maintenance
  44. [48]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
  45. [49]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port
  46. [50]Wilfredo Sanchez <wsanchez@apple.com> added support for NetInfo
  47. [51]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
  48. [52]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
  49. [53]Ray Schnitzler <schnitz@unipress.com> Unixware1 port
  50. [54]Michael Shields <shields@tembel.org> USNO clock driver
  51. [55]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
  52. [56]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure makeover, various other bits (see the ChangeLog)
  53. [57]Kenneth Stone <ken@sdd.hp.com> HP-UX port
  54. [58]Ajit Thyagarajan <ajit@ee.udel.edu>IP multicast/anycast support
  55. [59]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp>TRAK clock driver
  56. [60]Brian Utterback <brian.utterback@oracle.com> General codebase, Solaris issues
  57. [61]Loganaden Velvindron <loganaden@gmail.com> Sandboxing (libseccomp) support
  58. [62]Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver
  59. [63]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

---

## References

1. [mailto:%20takao\\_abe@xurb.jp](mailto:%20takao_abe@xurb.jp)
2. [mailto:%20mark\\_andrews@isc.org](mailto:%20mark_andrews@isc.org)
3. <mailto:%20altmeier@atlsoft.de>
4. <mailto:%20vbais@mailman1.intel.co>
5. <mailto:%20kirkwood@striderfm.intel.com>
6. <mailto:%20michael.barone@lmco.com>
7. <mailto:%20karl@owl.HQ.ileaf.com>
8. <mailto:%20greg.brackley@bigfoot.com>
9. <mailto:%20Marc.Brett@westgeo.com>
10. <mailto:%20Piete.Brooks@cl.cam.ac.uk>
11. <mailto:%20nelson@bolyard.me>
12. <mailto:%20Jean-Francois.Boudreault@viagenie.qc.ca>
13. <mailto:%20reg@dwf.com>
14. <mailto:%20clift@ml.csiro.au>
15. <mailto:%20casey@csc.co.za>
16. [mailto:%20Sven\\_Dietrich@trimble.COM](mailto:%20Sven_Dietrich@trimble.COM)
17. <mailto:%20dundas@salt.jpl.nasa.gov>
18. <mailto:%20duwe@immd4.informatik.uni-erlangen.de>
19. <mailto:%20dennis@mrbill.canet.ca>
20. <mailto:%20jhay@icomtek.csir.co.za>
21. <mailto:%20davehart@davehart.com>
22. <mailto:%20neoclock4x@linum.com>
23. <mailto:%20glenn@herald.usask.ca>
24. <mailto:%20iglesias@uci.edu>
25. <mailto:%20jagubox.gsfc.nasa.gov>
26. <mailto:%20jbj@chatham.usdesign.com>
27. <mailto:%20Hans.Lambermont@nl.origin-it.com>
28. <mailto:H.Lambermont@chello.nl>
29. <mailto:%20phk@FreeBSD.ORG>
30. <http://www4.informatik.uni-erlangen.de/%7ekardel>
31. <mailto:%20kardel%20%28at%29%20ntp%20%28dot%29%20org>
32. <mailto:kuehn@ntp.org>
33. <mailto:%20jones@hermes.chpc.utexas.edu>
34. <mailto:%20dkatz@cisco.com>
35. <mailto:%20leres@ee.lbl.gov>
36. <mailto:%20lindholm@ucs.ubc.ca>
37. <mailto:%20louie@ni.umd.edu>
38. <mailto:%20thorinn@diku.dk>
39. <mailto:%20mayer@ntp.org>
40. <mailto:%20mills@udel.edu>
41. <mailto:%20moeller@gwdgv1.dnet.gwdg.de>
42. <mailto:%20mogul@pa.dec.com>
43. <mailto:%20tmoore@fivel.daytonoh.ncr.com>
44. <mailto:%20kamal@whence.com>

45. mailto:%20derek@toybox.demon.co.uk
46. mailto:%20d@hd.org
47. mailto:%20neal@ntp.org
48. mailto:%20Rainer.Pruy@informatik.uni-erlangen.de
49. mailto:%20dirce@zk3.dec.com
50. mailto:%20wsanchez@apple.com
51. mailto:%20mrapple@quack.kfu.com
52. mailto:%20jack@innovativeinternet.com
53. mailto:%20schnittz@unipress.com
54. mailto:%20shields@tembel.org
55. mailto:%20pebbles.jpl.nasa.gov
56. mailto:%20harlan@pfcs.com
57. mailto:%20ken@sdd.hp.com
58. mailto:%20ajit@ee.udel.edu
59. mailto:%20tsuruoka@nc.fukuoka-u.ac.jp
60. mailto:%20brian.utterback@oracle.com
61. mailto:%20loganaden@gmail.com
62. mailto:%20vixie@vix.com
63. mailto:%20Ulrich.Windl@rz.uni-regensburg.de

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked

Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

#### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

#### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

#### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

#### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
  - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL

for conveying Corresponding Source.)

#### 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved  
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above



copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Libevent is available for use under the following license, commonly known as the 3-clause (or "modified") BSD license:

=====

Copyright (c) 2000-2007 Niels Provos <provos@citi.umich.edu>

Copyright (c) 2007-2012 Niels Provos and Nick Mathewson

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions of Libevent are based on works by others, also made available by them under the three-clause BSD license above. The copyright notices are available in the corresponding source files; the license is as above. Here's a list:

log.c:

Copyright (c) 2000 Dug Song <dugsong@monkey.org>  
Copyright (c) 1993 The Regents of the University of California.

strlcpy.c:

Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>

win32select.c:

Copyright (c) 2003 Michael A. Davis <mike@datanerds.net>

evport.c:

Copyright (c) 2007 Sun Microsystems

ht-internal.h:

Copyright (c) 2002 Christopher Clark

minheap-internal.h:

Copyright (c) 2006 Maxim Yegorushkin <maxim.yegorushkin@gmail.com>

=====

The arc4module is available under the following, sometimes called the "OpenBSD" license:

Copyright (c) 1996, David Mazieres <dm@uun.org>  
Copyright (c) 2008, Damien Miller <djm@openbsd.org>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====

The Windows timer code is based on code from libutp, which is

distributed under this license, sometimes called the "MIT" license.

Copyright (c) 2010 BitTorrent, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new

free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works

for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section

7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the



Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object

code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of

that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or

modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could

give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent

license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have

permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) by Bruce Korb - all rights reserved
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.



If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) by Bruce Korb - all rights reserved
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.  
Copyright (c) 2010 Serge A. Zaitsev

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.306 aspect-j 1.9.6

## 1.306.1 Available under license :

Found license 'Eclipse Public License 1.0' in '\* All rights reserved. \* This program and the accompanying materials are made available \* under the terms of the Eclipse Public License v1.0'

Found license 'Eclipse Public License 1.0' in '\* Copyright (c) 2005 Contributors. All rights reserved. \* This program and the accompanying materials are made available \* under the terms of the Eclipse Public License v1.0'

Found license 'Eclipse Public License 1.0' in '\* Copyright (c) 2006 Contributors. All rights reserved. \* This program and the accompanying materials are made available \* under the terms of the Eclipse Public License v1.0'

Found license 'Eclipse Public License 1.0' in '\* All rights reserved. This program and the accompanying materials \* are made available under the terms of the Eclipse Public License v1.0'

## 1.307 libevent 2.1.12

### 1.307.1 Available under license :

CMake - Cross Platform Makefile Generator

Copyright 2000-2013 Kitware, Inc.

Copyright 2000-2011 Insight Software Consortium

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the names of Kitware, Inc., the Insight Software Consortium, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----

The above copyright and license notice applies to distributions of CMake in source and binary form. Some source files contain additional notices of original copyright by their contributors; see each source for details. Third-party software packages supplied with CMake under compatible licenses provide their own copyright notices documented in corresponding subdirectories.

-----  
CMake was initially developed by Kitware with the following sponsorship:

- \* National Library of Medicine at the National Institutes of Health as part of the Insight Segmentation and Registration Toolkit (ITK).
- \* US National Labs (Los Alamos, Livermore, Sandia) ASC Parallel Visualization Initiative.
- \* National Alliance for Medical Image Computing (NAMIC) is funded by the National Institutes of Health through the NIH Roadmap for Medical Research, Grant U54 EB005149.
- \* Kitware, Inc.

Libevent is available for use under the following license, commonly known as the 3-clause (or "modified") BSD license:

=====  
Copyright (c) 2000-2007 Niels Provos <provos@citi.umich.edu>  
Copyright (c) 2007-2012 Niels Provos and Nick Mathewson

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY

THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF  
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions of Libevent are based on works by others, also made available by  
them under the three-clause BSD license above. The copyright notices are  
available in the corresponding source files; the license is as above. Here's  
a list:

log.c:

Copyright (c) 2000 Dug Song <dugsong@monkey.org>  
Copyright (c) 1993 The Regents of the University of California.

strlcpy.c:

Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>

win32select.c:

Copyright (c) 2003 Michael A. Davis <mike@datanerds.net>

evport.c:

Copyright (c) 2007 Sun Microsystems

ht-internal.h:

Copyright (c) 2002 Christopher Clark

minheap-internal.h:

Copyright (c) 2006 Maxim Yegorushkin <maxim.yegorushkin@gmail.com>

=====

The arc4module is available under the following, sometimes called the  
"OpenBSD" license:

Copyright (c) 1996, David Mazieres <dm@uun.org>  
Copyright (c) 2008, Damien Miller <djm@openbsd.org>

Permission to use, copy, modify, and distribute this software for any  
purpose with or without fee is hereby granted, provided that the above  
copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES  
WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF  
MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR  
ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES  
WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN  
ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF  
OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====  
The Windows timer code is based on code from libutp, which is distributed under this license, sometimes called the "MIT" license.

Copyright (c) 2010 BitTorrent, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.308 nio-stream-storage 1.1.3

## 1.308.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously

marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## 1.309 @tensorflow/tfjs-backend-cpu 3.11.0

### 1.309.1 Available under license :

/\*\*

\* @license

\* Copyright 2020 Google LLC. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the License);

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an AS IS BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\* =====



Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been

received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and  
You must cause any modified files to carry prominent notices stating that You changed the files; and  
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

#### APPENDIX: HOW TO APPLY THE APACHE LICENSE TO YOUR WORK

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.310 cyrus-sasl 2.1.27+dfsg-2ubuntu0.1

## 1.310.1 Available under license :

```
/* CMU libsasl
 * Tim Martin
 * Rob Earhart
 * Rob Siemborski
 */
/*
 * Copyright (c) 1998-2003 Carnegie Mellon University. All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in
 * the documentation and/or other materials provided with the
 * distribution.
 *
 * 3. The name "Carnegie Mellon University" must not be used to
 * endorse or promote products derived from this software without
 * prior written permission. For permission or any other legal
 * details, please contact
 * Office of Technology Transfer
 * Carnegie Mellon University
 * 5000 Forbes Avenue
 * Pittsburgh, PA 15213-3890
 * (412) 268-4387, fax: (412) 268-7395
 * tech-transfer@andrew.cmu.edu
 *
 * 4. Redistributions of any form whatsoever must retain the following
 * acknowledgment:
 * "This product includes software developed by Computing Services
 * at Carnegie Mellon University (http://www.cmu.edu/computing/)."
 *
 * CARNEGIE MELLON UNIVERSITY DISCLAIMS ALL WARRANTIES WITH REGARD TO
 * THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
 * AND FITNESS, IN NO EVENT SHALL CARNEGIE MELLON UNIVERSITY BE LIABLE
 * FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
 * WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN
 * AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING
 * OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
 */
```

Copyright (C) 1995-1997 Eric Young (eay@mincom.oz.au)

All rights reserved.

This package is an DES implementation written by Eric Young (eay@mincom.oz.au).  
The implementation was written so as to conform with MIT's libdes.

This library is free for commercial and non-commercial use as long as  
the following conditions are adhered to. The following conditions  
apply to all code found in this distribution.

Copyright remains Eric Young's, and as such any Copyright notices in  
the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution  
as the author of that the SSL library. This can be in the form of a textual  
message at program startup or in documentation (online or textual) provided  
with the package.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software  
must display the following acknowledgement:

This product includes software developed by Eric Young (eay@mincom.oz.au)

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE  
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
SUCH DAMAGE.

The license and distribution terms for any publically available version or  
derivative of this code cannot be changed. i.e. this code cannot simply be  
copied and put under another distribution license  
[including the GNU Public License.]

The reason behind this being stated in this direct manner is past  
experience in code simply being copied and the attribution removed

from it and then being distributed as part of other packages. This implementation was a non-trivial and unpaid effort.

/\* CMU libsasl

\* Tim Martin

\* Rob Earhart

\* Rob Siemborski

\*/

/\*

\* Copyright (c) 2001 Carnegie Mellon University. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\*

\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.

\*

\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in  
\* the documentation and/or other materials provided with the  
\* distribution.

\*

\* 3. The name "Carnegie Mellon University" must not be used to  
\* endorse or promote products derived from this software without  
\* prior written permission. For permission or any other legal  
\* details, please contact

\* Office of Technology Transfer

\* Carnegie Mellon University

\* 5000 Forbes Avenue

\* Pittsburgh, PA 15213-3890

\* (412) 268-4387, fax: (412) 268-7395

\* tech-transfer@andrew.cmu.edu

\*

\* 4. Redistributions of any form whatsoever must retain the following  
\* acknowledgment:

\* "This product includes software developed by Computing Services  
\* at Carnegie Mellon University (<http://www.cmu.edu/computing/>)."

\*

\* CARNEGIE MELLON UNIVERSITY DISCLAIMS ALL WARRANTIES WITH REGARD TO  
\* THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY  
\* AND FITNESS, IN NO EVENT SHALL CARNEGIE MELLON UNIVERSITY BE LIABLE  
\* FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES  
\* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN  
\* AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING  
\* OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\*/

# 1.311 spring-web 5.2.20.RELEASE

## 1.311.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/server/adapter/ForwardedHeaderTransformer.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/bind/annotation/RestControllerAdvice.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/ContentCachingResponseWrapper.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/client/HttpServerErrorException.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/client/MultipartBodyBuilder.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/accept/FixedContentNegotiationStrategy.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/codec/xml/Jaxb2XmlEncoder.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/codec/cbor/Jackson2CborDecoder.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/server/reactive/AbstractListenerWriteFlushProcessor.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/client/MessageBodyClientHttpResponseWrapper.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/filter/AbstractRequestLoggingFilter.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/multipart/support/MultipartResolutionDelegate.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
```

jar/org/springframework/web/server/handler/DefaultWebFilterChain.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/AbstractListenerReadPublisher.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/adapter/DefaultServerWebExchange.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/SimpleClientHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/CorsFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/UnknownHttpStatusCodeException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/DeferredResult.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/protobuf/ProtobufEncoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/cbor/Jackson2CborEncoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/HttpStatusCodeException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/HtmlCharacterEntityDecoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/handler/WebHandlerDecorator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/commons/CommonsMultipartFile.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/protobuf/ProtobufHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/CacheControl.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/ContextCleanupListener.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/xml/XmlEventDecoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/session/InMemoryWebSessionStore.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/ServletRequestAttributes.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/RestOperations.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/MappingJackson2XmlHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/RequestHandledEvent.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/AbstractJaxb2HttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/cors/reactive/CorsWebFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-



jar/org/springframework/http/client/ClientHttpRequestInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/support/BasicAuthenticationInterceptor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/ServerCodecConfigurer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/json/Jackson2SmileEncoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/cors/UrlBasedCorsConfigurationSource.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/feed/AbstractWireFeedHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/pattern/InternalPathPatternParser.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/AnnotationConfigWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/Jaxb2RootElementHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/cbor/MappingJackson2CborHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/DecoderHttpMessageReader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/OkHttp3ClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/OncePerRequestFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/RestClientResponseException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/ByteArrayHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/ServletContextScope.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/reactive/ServerWebExchangeContextFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/ResourceHttpMessageWriter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/ChannelSendOperator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/ResourceHttpMessageReader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/RequestParamMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/InterceptingClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/protobuf/ProtobufDecoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/GenericWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/bind/annotation/ControllerAdvice.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/UriUtils.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/support/AsyncHandlerMethodReturnValueHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/HttpMessageWriter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/pattern/PathPatternRouteMatcher.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpStatus.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpRange.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/HttpClientErrorException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/support/ClientDefaultCodecsImpl.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/xml/JaxbContextContainer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/reactive/ForwardedHeaderFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/HtmlUtils.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/AbstractServerHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/SourceHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/ClientCodecConfigurer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/support/ServerDefaultCodecsImpl.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/ModelFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/FormHttpMessageReader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/ServerHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/support/DefaultServerCodecConfigurer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/RestOperationsExtensions.kt  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/AbstractWebArgumentResolverAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/support/DefaultClientCodecConfigurer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/BufferedImageHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/server/ServerWebExchangeDecorator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/ClientHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/FormHttpMessageWriter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/accept/MediaTypeFileExtensionResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/support/HttpAccessor.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2010 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/ServletContextResourceLoader.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2005 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/filter/ServletContextRequestLoggingFilter.java

No license file was found, but licenses were detected in source scan.

```
This file maps Internet media types to unique file extension(s).
Although created for httpd, this file is used by many software systems
and has been placed in the public domain for unlimited redistribution.
#
The table below contains both registered and (common) unregistered types.
A type that has no unique extension can be ignored -- they are listed
here to guide configurations toward known types and to make it easier to
identify "new" types. File extensions are also commonly used to indicate
content languages and encodings, so choose them carefully.
#
Internet media types should be registered as described in RFC 4288.
The registry is at <https://www.iana.org/assignments/media-types/>.
#
This file was retrieved from
https://svn.apache.org/viewvc/httpd/httpd/trunk/docs/conf/mime.types?revision=1752884&view=co
#
MIME type (lowercased) Extensions
=====
application/1d-interleaved-parityfec
application/3gpdash-qoe-report+xml
application/3gpp-ims+xml
application/a2l
application/activemessage
application/alto-costmap+json
application/alto-costmapfilter+json
application/alto-directory+json
application/alto-endpointcost+json
application/alto-endpointcostparams+json
application/alto-endpointprop+json
application/alto-endpointpropparams+json
application/alto-error+json
application/alto-networkmap+json
application/alto-networkmapfilter+json
application/aml
application/andrew-inset ez
application/applefile
application/applixware aw
application/atf
application/atfx
application/atom+xml atom
application/atomcat+xml atomcat
application/atomdeleted+xml
application/atomicmail
```

application/atomsvc+xml atomsvc  
# application/atxml  
# application/auth-policy+xml  
# application/bacnet-xdd+zip  
# application/batch-smtp  
# application/beep+xml  
# application/calendar+json  
# application/calendar+xml  
# application/call-completion  
# application/cals-1840  
# application/cbor  
# application/ccmp+xml  
application/ccxml+xml ccxml  
# application/cdfx+xml  
application/cdmi-capability cdmia  
application/cdmi-container cdmic  
application/cdmi-domain cdmid  
application/cdmi-object cdmio  
application/cdmi-queue cdmiq  
# application/cdni  
# application/cea  
# application/cea-2018+xml  
# application/cellml+xml  
# application/cfw  
# application/cms  
# application/cnrx+xml  
# application/coap-group+json  
# application/commonground  
# application/conference-info+xml  
# application/cpl+xml  
# application/csrattrs  
# application/csta+xml  
# application/cstadata+xml  
# application/csvm+json  
application/cu-seeme cu  
# application/cybercash  
# application/dash+xml  
# application/dashdelta  
application/davmount+xml davmount  
# application/dca-rft  
# application/dcd  
# application/dec-dx  
# application/dialog-info+xml  
# application/dicom  
# application/dii  
# application/dit  
# application/dns  
application/docbook+xml dbk

# application/dskpp+xml  
application/dssc+der dssc  
application/dssc+xml xdssc  
# application/dvcs  
application/ecmascript ecma  
# application/edi-consent  
# application/edi-x12  
# application/edifact  
# application/efi  
# application/emergencycalldata.comment+xml  
# application/emergencycalldata.deviceinfo+xml  
# application/emergencycalldata.providerinfo+xml  
# application/emergencycalldata.serviceinfo+xml  
# application/emergencycalldata.subscriberinfo+xml  
application/emma+xml emma  
# application/emotionml+xml  
# application/encaprtsp  
# application/epp+xml  
application/epub+zip epub  
# application/eshop  
# application/example  
application/exi exi  
# application/fastinfoset  
# application/fastsoap  
# application/fdt+xml  
# application/fits  
# application/font-sfnt  
application/font-tdpfr pfr  
application/font-woff woff  
# application/framework-attributes+xml  
# application/geo+json  
application/gml+xml gml  
application/gpx+xml gpx  
application/gxf gxf  
# application/gzip  
# application/h224  
# application/held+xml  
# application/http  
application/hyperstudio stk  
# application/ibe-key-request+xml  
# application/ibe-pkg-reply+xml  
# application/ibe-pp-data  
# application/iges  
# application/im-iscomposing+xml  
# application/index  
# application/index.cmd  
# application/index.obj  
# application/index.response

# application/index.vnd  
application/inkml+xml ink inkml  
# application/iotp  
application/ipfix ipfix  
# application/ipp  
# application/isup  
# application/its+xml  
application/java-archive jar  
application/java-serialized-object ser  
application/java-vm class  
application/javascript js  
# application/jose  
# application/jose+json  
# application/jrd+json  
application/json json  
# application/json-patch+json  
# application/json-seq  
application/jsonml+json jsonml  
# application/jwk+json  
# application/jwk-set+json  
# application/jwt  
# application/kpml-request+xml  
# application/kpml-response+xml  
# application/ld+json  
# application/lgr+xml  
# application/link-format  
# application/load-control+xml  
application/lost+xml lostxml  
# application/lostsync+xml  
# application/lxf  
application/mac-binhex40 hqx  
application/mac-compactpro cpt  
# application/macwriteii  
application/mads+xml mads  
application/marc mrc  
application/marcxml+xml mrcx  
application/mathematica ma nb mb  
application/mathml+xml mathml  
# application/mathml-content+xml  
# application/mathml-presentation+xml  
# application/mbms-associated-procedure-description+xml  
# application/mbms-deregister+xml  
# application/mbms-envelope+xml  
# application/mbms-msk+xml  
# application/mbms-msk-response+xml  
# application/mbms-protection-description+xml  
# application/mbms-reception-report+xml  
# application/mbms-register+xml

# application/mbms-register-response+xml  
# application/mbms-schedule+xml  
# application/mbms-user-service-description+xml  
application/mbox mbox  
# application/media-policy-dataset+xml  
# application/media\_control+xml  
application/mediaservercontrol+xml mscml  
# application/merge-patch+json  
application/metalink+xml metalink  
application/metalink4+xml meta4  
application/mets+xml mets  
# application/mf4  
# application/mikey  
application/mods+xml mods  
# application/moss-keys  
# application/moss-signature  
# application/mosskey-data  
# application/mosskey-request  
application/mp21 m21 mp21  
application/mp4 mp4s  
# application/mpeg4-generic  
# application/mpeg4-iod  
# application/mpeg4-iod-xmt  
# application/mrb-consumer+xml  
# application/mrb-publish+xml  
# application/msc-ivr+xml  
# application/msc-mixer+xml  
application/msword doc dot  
application/mxf mxf  
# application/nasdata  
# application/news-checkgroups  
# application/news-groupinfo  
# application/news-transmission  
# application/nlsml+xml  
# application/nss  
# application/ocsp-request  
# application/ocsp-response  
application/octet-stream bin dms lrf mar so dist distz pkg bpk dump elc deploy  
application/oda oda  
# application/odx  
application/oebps-package+xml opf  
application/ogg ogg  
application/omdoc+xml omdoc  
application/onenote onetoc onetoc2 onetmp onepkg  
application/oxps oxps  
# application/p2p-overlay+xml  
# application/parityfec  
application/patch-ops-error+xml xer



application/pdf pdf  
# application/pdx  
application/pgp-encrypted pgp  
# application/pgp-keys  
application/pgp-signature asc sig  
application/pics-rules prf  
# application/pidf+xml  
# application/pidf-diff+xml  
application/pkcs10 p10  
# application/pkcs12  
application/pkcs7-mime p7m p7c  
application/pkcs7-signature p7s  
application/pkcs8 p8  
application/pkix-attr-cert ac  
application/pkix-cert cer  
application/pkix-crl crl  
application/pkix-pkipath pkipath  
application/pkixcmp pki  
application/pls+xml pls  
# application/poc-settings+xml  
application/postscript ai eps ps  
# application/ppsp-tracker+json  
# application/problem+json  
# application/problem+xml  
# application/provenance+xml  
# application/prs.alvestrand.titrax-sheet  
application/prs.cww cww  
# application/prs.hpub+zip  
# application/prs.nprend  
# application/prs.plucker  
# application/prs.rdf-xml-crypt  
# application/prs.xsf+xml  
application/pskc+xml pskcxml  
# application/qsig  
# application/raptorfec  
# application/rdap+json  
application/rdf+xml rdf  
application/reginfo+xml rif  
application/relax-ng-compact-syntax rnc  
# application/remote-printing  
# application/reputon+json  
application/resource-lists+xml rl  
application/resource-lists-diff+xml rld  
# application/rfc+xml  
# application/riscos  
# application/rlmi+xml  
application/rls-services+xml rs  
application/rpki-ghostbusters gbr

application/rpki-manifest mft  
application/rpki-roa roa  
# application/rpki-updown  
application/rsd+xml rsd  
application/rss+xml rss  
application/rtf rtf  
# application/rtploopback  
# application/rtx  
# application/samlassertion+xml  
# application/samlmetadata+xml  
application/sbml+xml sbml  
# application/scaip+xml  
# application/scim+json  
application/scvp-cv-request scq  
application/scvp-cv-response scs  
application/scvp-vp-request spq  
application/scvp-vp-response spp  
application/sdp sdp  
# application/sep+xml  
# application/sep-exi  
# application/session-info  
# application/set-payment  
application/set-payment-initiation setpay  
# application/set-registration  
application/set-registration-initiation setreg  
# application/sgml  
# application/sgml-open-catalog  
application/shf+xml shf  
# application/sieve  
# application/simple-filter+xml  
# application/simple-message-summary  
# application/simplesymbolcontainer  
# application/slate  
# application/smil  
application/smil+xml smi smil  
# application/smpite336m  
# application/soap+fastinfoset  
# application/soap+xml  
application/sparql-query rq  
application/sparql-results+xml srx  
# application/spirits-event+xml  
# application/sql  
application/srgs gram  
application/srgs+xml grxml  
application/sru+xml sru  
application/ssdl+xml ssdl  
application/ssml+xml ssml  
# application/tamp-apex-update

# application/tamp-apex-update-confirm  
# application/tamp-community-update  
# application/tamp-community-update-confirm  
# application/tamp-error  
# application/tamp-sequence-adjust  
# application/tamp-sequence-adjust-confirm  
# application/tamp-status-query  
# application/tamp-status-response  
# application/tamp-update  
# application/tamp-update-confirm  
application/tei+xml tei teicorpus  
application/thraud+xml tfi  
# application/timestamp-query  
# application/timestamp-reply  
application/timestamped-data tsd  
# application/ttml+xml  
# application/tve-trigger  
# application/ulpfec  
# application/urc-grpsheet+xml  
# application/urc-ressheet+xml  
# application/urc-targetdesc+xml  
# application/urc-uisocketdesc+xml  
# application/vcard+json  
# application/vcard+xml  
# application/vemmi  
# application/vividence.scriptfile  
# application/vnd.3gpp-prose+xml  
# application/vnd.3gpp-prose-pc3ch+xml  
# application/vnd.3gpp.access-transfer-events+xml  
# application/vnd.3gpp.bsf+xml  
# application/vnd.3gpp.mid-call+xml  
application/vnd.3gpp.pic-bw-large plb  
application/vnd.3gpp.pic-bw-small psb  
application/vnd.3gpp.pic-bw-var pvb  
# application/vnd.3gpp.sms  
# application/vnd.3gpp.sms+xml  
# application/vnd.3gpp.srvcc-ext+xml  
# application/vnd.3gpp.srvcc-info+xml  
# application/vnd.3gpp.state-and-event-info+xml  
# application/vnd.3gpp.ussd+xml  
# application/vnd.3gpp2.bcmcsinfo+xml  
# application/vnd.3gpp2.sms  
application/vnd.3gpp2.tcap tcap  
# application/vnd.3lightssoftware.imagescal  
application/vnd.3m.post-it-notes pwn  
application/vnd.accpac.simply.aso aso  
application/vnd.accpac.simply.imp imp  
application/vnd.acucobol acu

application/vnd.acucorp atc acute  
application/vnd.adobe.air-application-installer-package+zip air  
# application/vnd.adobe.flash.movie  
application/vnd.adobe.formscentral.fcdt fcdt  
application/vnd.adobe.fxp fxp fxpl  
# application/vnd.adobe.partial-upload  
application/vnd.adobe.xdp+xml xdp  
application/vnd.adobe.xfdf xfdf  
# application/vnd.aether.imp  
# application/vnd.ah-barcode  
application/vnd.ahead.space ahead  
application/vnd.airzip.filesecure.azf azf  
application/vnd.airzip.filesecure.azs azs  
application/vnd.amazon.ebook azw  
# application/vnd.amazon.mobi8-ebook  
application/vnd.americandynamics.acc acc  
application/vnd.amiga.ami ami  
# application/vnd.amundsen.maze+xml  
application/vnd.android.package-archive apk  
# application/vnd.anki  
application/vnd.anser-web-certificate-issue-initiation cii  
application/vnd.anser-web-funds-transfer-initiation fti  
application/vnd.antix.game-component atx  
# application/vnd.apache.thrift.binary  
# application/vnd.apache.thrift.compact  
# application/vnd.apache.thrift.json  
# application/vnd.api+json  
application/vnd.apple.installer+xml mpkg  
application/vnd.apple.mpegurl m3u8  
# application/vnd.arastra.swi  
application/vnd.aristanetworks.swi swi  
# application/vnd.artsquare  
application/vnd.astraea-software.iota iota  
application/vnd.audiograph aep  
# application/vnd.autopackage  
# application/vnd.avistar+xml  
# application/vnd.balsamiq.bmml+xml  
# application/vnd.balsamiq.bmpr  
# application/vnd.bekitzur-stech+json  
# application/vnd.biopax.rdf+xml  
application/vnd.blueice.multipass mpm  
# application/vnd.bluetooth.ep.oob  
# application/vnd.bluetooth.le.oob  
application/vnd.bmi bmi  
application/vnd.businessobjects rep  
# application/vnd.cab-jscript  
# application/vnd.canon-cpdl  
# application/vnd.canon-lips

```
application/vnd.cendio.thinlinc.clientconf
application/vnd.century-systems.tcp_stream
application/vnd.chemdraw+xml cdxml
application/vnd.chess-pgn
application/vnd.chipnuts.karaoke-mmd mmd
application/vnd.cinderella cdy
application/vnd.cirpack.isdn-ext
application/vnd.citationstyles.style+xml
application/vnd.claymore cla
application/vnd.cloanto.rp9 rp9
application/vnd.clonk.c4group c4g c4d c4f c4p c4u
application/vnd.cluetrust.cartomobile-config c11amc
application/vnd.cluetrust.cartomobile-config-pkg c11amz
application/vnd.coffeescript
application/vnd.collection+json
application/vnd.collection.doc+json
application/vnd.collection.next+json
application/vnd.comicbook+zip
application/vnd.commerce-battelle
application/vnd.commonspace csp
application/vnd.contact.cmsg cdbcmsg
application/vnd.coreos.ignition+json
application/vnd.cosmocaller cmc
application/vnd.crick.clicker clkx
application/vnd.crick.clicker.keyboard clkk
application/vnd.crick.clicker.palette clkp
application/vnd.crick.clicker.template clkt
application/vnd.crick.clicker.wordbank clkw
application/vnd.criticaltools.wbs+xml wbs
application/vnd.ctc-posml pml
application/vnd.ctct.ws+xml
application/vnd.cups-pdf
application/vnd.cups-postscript
application/vnd.cups-ppd ppd
application/vnd.cups-raster
application/vnd.cups-raw
application/vnd.curl
application/vnd.curl.car car
application/vnd.curl.pcurl pcurl
application/vnd.cyan.dean.root+xml
application/vnd.cybank
application/vnd.dart dart
application/vnd.data-vision.rdz rdz
application/vnd.debian.binary-package
application/vnd.dece.data uvf uvvf uvd uvvd
application/vnd.dece.ttml+xml uvt uvvt
application/vnd.dece.unspecified uvx uvvx
application/vnd.dece.zip uvz uvvz
```

application/vnd.denovo.fcselayout-link fe\_launch  
# application/vnd.desmume.movie  
# application/vnd.dir-bi.plate-dl-nosuffix  
# application/vnd.dm.delegation+xml  
application/vnd.dna dna  
# application/vnd.document+json  
application/vnd.dolby.mlp mlp  
# application/vnd.dolby.mobile.1  
# application/vnd.dolby.mobile.2  
# application/vnd.doremir.scorecloud-binary-document  
application/vnd.dpgraph dpg  
application/vnd.dreamfactory dfac  
# application/vnd.drive+json  
application/vnd.ds-keypoint kpxx  
# application/vnd.dtg.local  
# application/vnd.dtg.local.flash  
# application/vnd.dtg.local.html  
application/vnd.dvb.ait ait  
# application/vnd.dvb.dvbj  
# application/vnd.dvb.esgcontainer  
# application/vnd.dvb.ipdcdfnotifaccess  
# application/vnd.dvb.ipdcesgaccess  
# application/vnd.dvb.ipdcesgaccess2  
# application/vnd.dvb.ipdcesgpdd  
# application/vnd.dvb.ipdcroaming  
# application/vnd.dvb.iptv.alfec-base  
# application/vnd.dvb.iptv.alfec-enhancement  
# application/vnd.dvb.notif-aggregate-root+xml  
# application/vnd.dvb.notif-container+xml  
# application/vnd.dvb.notif-generic+xml  
# application/vnd.dvb.notif-ia-msglist+xml  
# application/vnd.dvb.notif-ia-registration-request+xml  
# application/vnd.dvb.notif-ia-registration-response+xml  
# application/vnd.dvb.notif-init+xml  
# application/vnd.dvb.pfr  
application/vnd.dvb.service svc  
# application/vnd.dxr  
application/vnd.dynageo geo  
# application/vnd.dzr  
# application/vnd.easykaraoke.cdgdownload  
# application/vnd.ecdis-update  
application/vnd.ecowin.chart mag  
# application/vnd.ecowin.filerequest  
# application/vnd.ecowin.fileupdate  
# application/vnd.ecowin.series  
# application/vnd.ecowin.seriesrequest  
# application/vnd.ecowin.seriesupdate  
# application/vnd.emclient.accessrequest+xml

application/vnd.enliven nml  
# application/vnd.enphase.envoy  
# application/vnd.eprints.data+xml  
application/vnd.epson.esf esf  
application/vnd.epson.msf msf  
application/vnd.epson.quickanime qam  
application/vnd.epson.salt slt  
application/vnd.epson.ssf ssf  
# application/vnd.ericsson.quickcall  
application/vnd.eszigno3+xml es3 et3  
# application/vnd.etsi.aoc+xml  
# application/vnd.etsi.asic-e+zip  
# application/vnd.etsi.asic-s+zip  
# application/vnd.etsi.cug+xml  
# application/vnd.etsi.iptvcommand+xml  
# application/vnd.etsi.iptvdiscovery+xml  
# application/vnd.etsi.iptvprofile+xml  
# application/vnd.etsi.iptvsad-bc+xml  
# application/vnd.etsi.iptvsad-cod+xml  
# application/vnd.etsi.iptvsad-mpvr+xml  
# application/vnd.etsi.iptvservice+xml  
# application/vnd.etsi.iptvsync+xml  
# application/vnd.etsi.iptvueprofile+xml  
# application/vnd.etsi.mcid+xml  
# application/vnd.etsi.mheg5  
# application/vnd.etsi.overload-control-policy-dataset+xml  
# application/vnd.etsi.pstn+xml  
# application/vnd.etsi.sci+xml  
# application/vnd.etsi.simservs+xml  
# application/vnd.etsi.timestamp-token  
# application/vnd.etsi.tsl+xml  
# application/vnd.etsi.tsl.der  
# application/vnd.eudora.data  
application/vnd.ezpix-album ez2  
application/vnd.ezpix-package ez3  
# application/vnd.f-secure.mobile  
# application/vnd.fastcopy-disk-image  
application/vnd.fdf fdf  
application/vnd.fdsn.mseed mseed  
application/vnd.fdsn.seed seed dataless  
# application/vnd.ffmpeg  
# application/vnd.filmit.zfc  
# application/vnd.fints  
# application/vnd.firemonkeys.cloudcell  
application/vnd.flographit gph  
application/vnd.fluxtime.clip ftc  
# application/vnd.font-fontforge-sfd  
application/vnd.frame-maker fm frame maker book

application/vnd.frogans.fnc fnc  
application/vnd.frogans.ltf ltf  
application/vnd.fsc.weblaunch fsc  
application/vnd.fujitsu.oasys oas  
application/vnd.fujitsu.oasys2 oa2  
application/vnd.fujitsu.oasys3 oa3  
application/vnd.fujitsu.oasysgp fg5  
application/vnd.fujitsu.oasysprs bh2  
# application/vnd.fujixerox.art-ex  
# application/vnd.fujixerox.art4  
application/vnd.fujixerox.ddd ddd  
application/vnd.fujixerox.docuworks xdw  
application/vnd.fujixerox.docuworks.binder xbd  
# application/vnd.fujixerox.docuworks.container  
# application/vnd.fujixerox.hbpl  
# application/vnd.fut-misnet  
application/vnd.fuzzysheet fzs  
application/vnd.genomatix.tuxedo txd  
# application/vnd.geo+json  
# application/vnd.geocube+xml  
application/vnd.geogebra.file ggb  
application/vnd.geogebra.tool ggt  
application/vnd.geometry-explorer gex gre  
application/vnd.geonext gxt  
application/vnd.geoplan g2w  
application/vnd.geospace g3w  
# application/vnd.gerber  
# application/vnd.globalplatform.card-content-mgt  
# application/vnd.globalplatform.card-content-mgt-response  
application/vnd.gmx gmx  
application/vnd.google-earth.kml+xml kml  
application/vnd.google-earth.kmz kmz  
# application/vnd.gov.sk.e-form+xml  
# application/vnd.gov.sk.e-form+zip  
# application/vnd.gov.sk.xmldatacontainer+xml  
application/vnd.grafeq gqf gqs  
# application/vnd.gridmp  
application/vnd.groove-account gac  
application/vnd.groove-help ghf  
application/vnd.groove-identity-message gim  
application/vnd.groove-injector grv  
application/vnd.groove-tool-message gtm  
application/vnd.groove-tool-template tpl  
application/vnd.groove-vcard vcg  
# application/vnd.hal+json  
application/vnd.hal+xml hal  
application/vnd.handheld-entertainment+xml zmm  
application/vnd.hbci hbci



```
application/vnd.hcl-bireports
application/vnd.hdt
application/vnd.heroku+json
application/vnd.hhe.lesson-player les
application/vnd.hp-hpgl hpgl
application/vnd.hp-hpid hpid
application/vnd.hp-hps hps
application/vnd.hp-jlyt jlt
application/vnd.hp-pcl pcl
application/vnd.hp-pclxl pclxl
application/vnd.httpphone
application/vnd.hydrostatix.sof-data sfd-hdstx
application/vnd.hyperdrive+json
application/vnd.hzn-3d-crossword
application/vnd.ibm.afplinedata
application/vnd.ibm.electronic-media
application/vnd.ibm.minipay mpy
application/vnd.ibm.modcap afp listafp list3820
application/vnd.ibm.rights-management irm
application/vnd.ibm.secure-container sc
application/vnd.iccprofile icc icm
application/vnd.ieee.1905
application/vnd.igloader igl
application/vnd.immervision-ivp ivp
application/vnd.immervision-ivu ivu
application/vnd.ims.imsccv1p1
application/vnd.ims.imsccv1p2
application/vnd.ims.imsccv1p3
application/vnd.ims.lis.v2.result+json
application/vnd.ims.lti.v2.toolconsumerprofile+json
application/vnd.ims.lti.v2.toolproxy+json
application/vnd.ims.lti.v2.toolproxy.id+json
application/vnd.ims.lti.v2.toolsettings+json
application/vnd.ims.lti.v2.toolsettings.simple+json
application/vnd.informedcontrol.rms+xml
application/vnd.informix-visionary
application/vnd.infotech.project
application/vnd.infotech.project+xml
application/vnd.innopath.wamp.notification
application/vnd.insors.igm igm
application/vnd.intercon.formnet xpw xpx
application/vnd.intergeo i2g
application/vnd.intertrust.digibox
application/vnd.intertrust.nncp
application/vnd.intu.qbo qbo
application/vnd.intu.qfx qfx
application/vnd.iptc.g2.catalogitem+xml
application/vnd.iptc.g2.conceptitem+xml
```

# application/vnd.iptc.g2.knowledgeitem+xml  
# application/vnd.iptc.g2.newsitem+xml  
# application/vnd.iptc.g2.newsmesssage+xml  
# application/vnd.iptc.g2.packageitem+xml  
# application/vnd.iptc.g2.planningitem+xml  
application/vnd.ipunplugged.rcprofile rcprofile  
application/vnd.irepository.package+xml irp  
application/vnd.is-xpr xpr  
application/vnd.isac.fcs fcs  
application/vnd.jam jam  
# application/vnd.japannet-directory-service  
# application/vnd.japannet-jpnstore-wakeup  
# application/vnd.japannet-payment-wakeup  
# application/vnd.japannet-registration  
# application/vnd.japannet-registration-wakeup  
# application/vnd.japannet-setstore-wakeup  
# application/vnd.japannet-verification  
# application/vnd.japannet-verification-wakeup  
application/vnd.jcp.javame.midlet-rms rms  
application/vnd.jisp jisp  
application/vnd.joost.joda-archive joda  
# application/vnd.jsk.isdn-ngn  
application/vnd.kahootz ktz ktr  
application/vnd.kde.karbon karbon  
application/vnd.kde.kchart chrt  
application/vnd.kde.kformula kfo  
application/vnd.kde.kivio flw  
application/vnd.kde.kontour kon  
application/vnd.kde.kpresenter kpr kpt  
application/vnd.kde.kspread ksp  
application/vnd.kde.kword kwd kwt  
application/vnd.kenameaapp htke  
application/vnd.kidspiration kia  
application/vnd.kinar kne knp  
application/vnd.koan skp skd skt skm  
application/vnd.kodak-descriptor sse  
application/vnd.las.las+xml lasxml  
# application/vnd.liberty-request+xml  
application/vnd.llamagraphics.life-balance.desktop lbd  
application/vnd.llamagraphics.life-balance.exchange+xml lbe  
application/vnd.lotus-1-2-3 123  
application/vnd.lotus-approach apr  
application/vnd.lotus-freelance pre  
application/vnd.lotus-notes nsf  
application/vnd.lotus-organizer org  
application/vnd.lotus-screencam scm  
application/vnd.lotus-wordpro lwp  
application/vnd.macports.portpkg portpkg

```
application/vnd.mapbox-vector-tile
application/vnd.marlin.drm.actiontoken+xml
application/vnd.marlin.drm.conftoken+xml
application/vnd.marlin.drm.license+xml
application/vnd.marlin.drm.mdcf
application/vnd.mason+json
application/vnd.maxmind.maxmind-db
application/vnd.mcd mcd
application/vnd.medcalldata mc1
application/vnd.mediatation.cdkey cdkey
application/vnd.meridian-slideshow
application/vnd.mfer mwf
application/vnd.mfmp mfm
application/vnd.micro+json
application/vnd.micrografx.flo flo
application/vnd.micrografx.igx igx
application/vnd.microsoft.portable-executable
application/vnd.miele+json
application/vnd.mif mif
application/vnd.minisoft-hp3000-save
application/vnd.mitsubishi.misty-guard.trustweb
application/vnd.mobius.daf daf
application/vnd.mobius.dis dis
application/vnd.mobius.mbk mbk
application/vnd.mobius.mqy mqy
application/vnd.mobius.msl msl
application/vnd.mobius.plc plc
application/vnd.mobius.txf txf
application/vnd.mophun.application mpn
application/vnd.mophun.certificate mpc
application/vnd.motorola.flexsuite
application/vnd.motorola.flexsuite.adsi
application/vnd.motorola.flexsuite.fis
application/vnd.motorola.flexsuite.gotap
application/vnd.motorola.flexsuite.kmr
application/vnd.motorola.flexsuite.ttc
application/vnd.motorola.flexsuite.wem
application/vnd.motorola.iprm
application/vnd.mozilla.xul+xml xul
application/vnd.ms-3mfdocument
application/vnd.ms-artgalry cil
application/vnd.ms-asf
application/vnd.ms-cab-compressed cab
application/vnd.ms-color.iccprofile
application/vnd.ms-excel xls xlm xla xlc xlt xlw
application/vnd.ms-excel.addin.macroenabled.12 xlam
application/vnd.ms-excel.sheet.binary.macroenabled.12 xlsb
application/vnd.ms-excel.sheet.macroenabled.12 xlsm
```

application/vnd.ms-excel.template.macroenabled.12 xltm  
application/vnd.ms-fontobject eot  
application/vnd.ms-htmlhelp chm  
application/vnd.ms-ims ims  
application/vnd.ms-lrm lrm  
# application/vnd.ms-office.activex+xml  
application/vnd.ms-officetheme thmx  
# application/vnd.ms-opentype  
# application/vnd.ms-package.obfuscated-opentype  
application/vnd.ms-pki.seccat cat  
application/vnd.ms-pki.stl stl  
# application/vnd.ms-playready.initiator+xml  
application/vnd.ms-powerpoint ppt pps pot  
application/vnd.ms-powerpoint.addin.macroenabled.12 ppam  
application/vnd.ms-powerpoint.presentation.macroenabled.12 pptm  
application/vnd.ms-powerpoint.slide.macroenabled.12 sldm  
application/vnd.ms-powerpoint.slideshow.macroenabled.12 ppsm  
application/vnd.ms-powerpoint.template.macroenabled.12 potm  
# application/vnd.ms-printdevicecapabilities+xml  
# application/vnd.ms-printing.printticket+xml  
# application/vnd.ms-printschematicket+xml  
application/vnd.ms-project mpp mpt  
# application/vnd.ms-tnef  
# application/vnd.ms-windows.devicepairing  
# application/vnd.ms-windows.nwprinting.oob  
# application/vnd.ms-windows.printerpairing  
# application/vnd.ms-windows.wsd.oob  
# application/vnd.ms-wmdrm.lic-chlg-req  
# application/vnd.ms-wmdrm.lic-resp  
# application/vnd.ms-wmdrm.meter-chlg-req  
# application/vnd.ms-wmdrm.meter-resp  
application/vnd.ms-word.document.macroenabled.12 docm  
application/vnd.ms-word.template.macroenabled.12 dotm  
application/vnd.ms-works wps wks wcm wdb  
application/vnd.ms-wpl wpl  
application/vnd.ms-xpsdocument xps  
# application/vnd.msa-disk-image  
application/vnd.mseq mseq  
# application/vnd.msign  
# application/vnd.multiad.creator  
# application/vnd.multiad.creator.cif  
# application/vnd.music-niff  
application/vnd.musician mus  
application/vnd.muvee.style msty  
application/vnd.mynfc taglet  
# application/vnd.ncd.control  
# application/vnd.ncd.reference  
# application/vnd.nervana

# application/vnd.netfpx  
application/vnd.neurolanguage.nlu nlu  
# application/vnd.nintendo.nitro.rom  
# application/vnd.nintendo.snes.rom  
application/vnd.nitf ntf nitf  
application/vnd.noblenet-directory nnd  
application/vnd.noblenet-sealer nns  
application/vnd.noblenet-web nnw  
# application/vnd.nokia.catalogs  
# application/vnd.nokia.conml+wxml  
# application/vnd.nokia.conml+xml  
# application/vnd.nokia.iptv.config+xml  
# application/vnd.nokia.isds-radio-presets  
# application/vnd.nokia.landmark+wxml  
# application/vnd.nokia.landmark+xml  
# application/vnd.nokia.landmarkcollection+xml  
# application/vnd.nokia.n-gage.ac+xml  
application/vnd.nokia.n-gage.data ngdat  
application/vnd.nokia.n-gage.symbian.install n-gage  
# application/vnd.nokia.ncd  
# application/vnd.nokia.pcd+wxml  
# application/vnd.nokia.pcd+xml  
application/vnd.nokia.radio-preset rpst  
application/vnd.nokia.radio-presets rpss  
application/vnd.novadigm.edm edm  
application/vnd.novadigm.edx edx  
application/vnd.novadigm.ext ext  
# application/vnd.ntt-local.content-share  
# application/vnd.ntt-local.file-transfer  
# application/vnd.ntt-local.ogw\_remote-access  
# application/vnd.ntt-local.sip-ta\_remote  
# application/vnd.ntt-local.sip-ta\_tcp\_stream  
application/vnd.oasis.opendocument.chart odc  
application/vnd.oasis.opendocument.chart-template otc  
application/vnd.oasis.opendocument.database odb  
application/vnd.oasis.opendocument.formula odf  
application/vnd.oasis.opendocument.formula-template odft  
application/vnd.oasis.opendocument.graphics odg  
application/vnd.oasis.opendocument.graphics-template otg  
application/vnd.oasis.opendocument.image odi  
application/vnd.oasis.opendocument.image-template oti  
application/vnd.oasis.opendocument.presentation odp  
application/vnd.oasis.opendocument.presentation-template otp  
application/vnd.oasis.opendocument.spreadsheet ods  
application/vnd.oasis.opendocument.spreadsheet-template ots  
application/vnd.oasis.opendocument.text odt  
application/vnd.oasis.opendocument.text-master odm  
application/vnd.oasis.opendocument.text-template ott

application/vnd.oasis.opendocument.text-web oth  
# application/vnd.obn  
# application/vnd.ofn.110n+json  
# application/vnd.oipf.contentaccessdownload+xml  
# application/vnd.oipf.contentaccessstreaming+xml  
# application/vnd.oipf.cspg-hexbinary  
# application/vnd.oipf.dae.svg+xml  
# application/vnd.oipf.dae.xhtml+xml  
# application/vnd.oipf.mippvcontrolmessage+xml  
# application/vnd.oipf.pae.gem  
# application/vnd.oipf.spdiscovery+xml  
# application/vnd.oipf.spdlist+xml  
# application/vnd.oipf.ueprofile+xml  
# application/vnd.oipf.userprofile+xml  
application/vnd.olpc-sugar xo  
# application/vnd.oma-scws-config  
# application/vnd.oma-scws-http-request  
# application/vnd.oma-scws-http-response  
# application/vnd.oma.bcast.associated-procedure-parameter+xml  
# application/vnd.oma.bcast.drm-trigger+xml  
# application/vnd.oma.bcast.imd+xml  
# application/vnd.oma.bcast.ltkm  
# application/vnd.oma.bcast.notification+xml  
# application/vnd.oma.bcast.provisioningtrigger  
# application/vnd.oma.bcast.sgboot  
# application/vnd.oma.bcast.sgdd+xml  
# application/vnd.oma.bcast.sgdu  
# application/vnd.oma.bcast.simple-symbol-container  
# application/vnd.oma.bcast.smartcard-trigger+xml  
# application/vnd.oma.bcast.sprov+xml  
# application/vnd.oma.bcast.stkm  
# application/vnd.oma.cab-address-book+xml  
# application/vnd.oma.cab-feature-handler+xml  
# application/vnd.oma.cab-pcc+xml  
# application/vnd.oma.cab-subscribe+xml  
# application/vnd.oma.cab-user-prefs+xml  
# application/vnd.oma.dcd  
# application/vnd.oma.dcdc  
application/vnd.oma.dd2+xml dd2  
# application/vnd.oma.drm.risd+xml  
# application/vnd.oma.group-usage-list+xml  
# application/vnd.oma.lwm2m+json  
# application/vnd.oma.lwm2m+tlv  
# application/vnd.oma.pal+xml  
# application/vnd.oma.poc.detailed-progress-report+xml  
# application/vnd.oma.poc.final-report+xml  
# application/vnd.oma.poc.groups+xml  
# application/vnd.oma.poc.invocation-descriptor+xml

# application/vnd.oma.poc.optimized-progress-report+xml  
# application/vnd.oma.push  
# application/vnd.oma.scidm.messages+xml  
# application/vnd.oma.xcap-directory+xml  
# application/vnd.omads-email+xml  
# application/vnd.omads-file+xml  
# application/vnd.omads-folder+xml  
# application/vnd.omaloc-supl-init  
# application/vnd.onepager  
# application/vnd.openblox.game+xml  
# application/vnd.openblox.game-binary  
# application/vnd.openeye.oeb  
application/vnd.openofficeorg.extension oxt  
# application/vnd.openxmlformats-officedocument.custom-properties+xml  
# application/vnd.openxmlformats-officedocument.customxmlproperties+xml  
# application/vnd.openxmlformats-officedocument.drawing+xml  
# application/vnd.openxmlformats-officedocument.drawingml.chart+xml  
# application/vnd.openxmlformats-officedocument.drawingml.chartshapes+xml  
# application/vnd.openxmlformats-officedocument.drawingml.diagramcolors+xml  
# application/vnd.openxmlformats-officedocument.drawingml.diagramdata+xml  
# application/vnd.openxmlformats-officedocument.drawingml.diagramlayout+xml  
# application/vnd.openxmlformats-officedocument.drawingml.diagramstyle+xml  
# application/vnd.openxmlformats-officedocument.extended-properties+xml  
# application/vnd.openxmlformats-officedocument.presentationml.commentauthors+xml  
# application/vnd.openxmlformats-officedocument.presentationml.comments+xml  
# application/vnd.openxmlformats-officedocument.presentationml.handoutmaster+xml  
# application/vnd.openxmlformats-officedocument.presentationml.notesmaster+xml  
# application/vnd.openxmlformats-officedocument.presentationml.noteslide+xml  
application/vnd.openxmlformats-officedocument.presentationml.presentation pptx  
# application/vnd.openxmlformats-officedocument.presentationml.presentation.main+xml  
# application/vnd.openxmlformats-officedocument.presentationml.presprops+xml  
application/vnd.openxmlformats-officedocument.presentationml.slide sldx  
# application/vnd.openxmlformats-officedocument.presentationml.slide+xml  
# application/vnd.openxmlformats-officedocument.presentationml.slidelayout+xml  
# application/vnd.openxmlformats-officedocument.presentationml.slidemaster+xml  
application/vnd.openxmlformats-officedocument.presentationml.slideshow ppsx  
# application/vnd.openxmlformats-officedocument.presentationml.slideshow.main+xml  
# application/vnd.openxmlformats-officedocument.presentationml.slideupdateinfo+xml  
# application/vnd.openxmlformats-officedocument.presentationml.tablestyles+xml  
# application/vnd.openxmlformats-officedocument.presentationml.tags+xml  
application/vnd.openxmlformats-officedocument.presentationml.template potx  
# application/vnd.openxmlformats-officedocument.presentationml.template.main+xml  
# application/vnd.openxmlformats-officedocument.presentationml.viewprops+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.calcchain+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.chartsheet+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.comments+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.connections+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.dialogsheet+xml

# application/vnd.openxmlformats-officedocument.spreadsheetml.externallink+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.pivotcachedefinition+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.pivotcacherecords+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.pivottable+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.querytable+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.revisionheaders+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.revisionlog+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.sharedstrings+xml  
application/vnd.openxmlformats-officedocument.spreadsheetml.sheet xlsx  
# application/vnd.openxmlformats-officedocument.spreadsheetml.sheet.main+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.sheetmetadata+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.styles+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.table+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.tablesinglecells+xml  
application/vnd.openxmlformats-officedocument.spreadsheetml.template xltx  
# application/vnd.openxmlformats-officedocument.spreadsheetml.template.main+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.usernames+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.volatiledependencies+xml  
# application/vnd.openxmlformats-officedocument.spreadsheetml.worksheet+xml  
# application/vnd.openxmlformats-officedocument.theme+xml  
# application/vnd.openxmlformats-officedocument.themeoverride+xml  
# application/vnd.openxmlformats-officedocument.vmldrawing  
# application/vnd.openxmlformats-officedocument.wordprocessingml.comments+xml  
application/vnd.openxmlformats-officedocument.wordprocessingml.document docx  
# application/vnd.openxmlformats-officedocument.wordprocessingml.document.glossary+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.document.main+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.endnotes+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.fonttable+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.footer+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.footnotes+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.numbering+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.settings+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.styles+xml  
application/vnd.openxmlformats-officedocument.wordprocessingml.template dotx  
# application/vnd.openxmlformats-officedocument.wordprocessingml.template.main+xml  
# application/vnd.openxmlformats-officedocument.wordprocessingml.websettings+xml  
# application/vnd.openxmlformats-package.core-properties+xml  
# application/vnd.openxmlformats-package.digital-signature-xmlsignature+xml  
# application/vnd.openxmlformats-package.relationships+xml  
# application/vnd.oracle.resource+json  
# application/vnd.orange.indata  
# application/vnd.osa.netdeploy  
application/vnd.osgeo.mapguide.package mgp  
# application/vnd.osgi.bundle  
application/vnd.osgi.dp dp  
application/vnd.osgi.subsystem esa  
# application/vnd.otps.ct-kip+xml  
# application/vnd.oxli.countgraph



# application/vnd.pagerduty+json  
application/vnd.palm pdb pqa oprc  
# application/vnd.panoply  
# application/vnd.paos.xml  
application/vnd.pawaafire paw  
# application/vnd.pcos  
application/vnd.pg.format str  
application/vnd.pg.osasli ei6  
# application/vnd.piaccess.application-licence  
application/vnd.picsel efif  
application/vnd.pmi.widget wg  
# application/vnd.poc.group-advertisement+xml  
application/vnd.pocketlearn plf  
application/vnd.powerbuilder6 pbd  
# application/vnd.powerbuilder6-s  
# application/vnd.powerbuilder7  
# application/vnd.powerbuilder7-s  
# application/vnd.powerbuilder75  
# application/vnd.powerbuilder75-s  
# application/vnd.preminet  
application/vnd.previewsystems.box box  
application/vnd.proteus.magazine mgz  
application/vnd.publishare-delta-tree qps  
application/vnd.pvi.ptid1 ptid  
# application/vnd.pwg-multiplexed  
# application/vnd.pwg-xhtml-print+xml  
# application/vnd.qualcomm.brew-app-res  
# application/vnd.quarantainenet  
application/vnd.quark.quarkxpress qxd qxt qwd qwt qxl qxb  
# application/vnd.quobject-quoxdocument  
# application/vnd.radisys.moml+xml  
# application/vnd.radisys.msml+xml  
# application/vnd.radisys.msml-audit+xml  
# application/vnd.radisys.msml-audit-conf+xml  
# application/vnd.radisys.msml-audit-conn+xml  
# application/vnd.radisys.msml-audit-dialog+xml  
# application/vnd.radisys.msml-audit-stream+xml  
# application/vnd.radisys.msml-conf+xml  
# application/vnd.radisys.msml-dialog+xml  
# application/vnd.radisys.msml-dialog-base+xml  
# application/vnd.radisys.msml-dialog-fax-detect+xml  
# application/vnd.radisys.msml-dialog-fax-sendrecv+xml  
# application/vnd.radisys.msml-dialog-group+xml  
# application/vnd.radisys.msml-dialog-speech+xml  
# application/vnd.radisys.msml-dialog-transform+xml  
# application/vnd.rainstor.data  
# application/vnd.rapid  
# application/vnd.rar

application/vnd.realvnc.bed bed  
application/vnd.recordare.musicxml mxl  
application/vnd.recordare.musicxml+xml musicxml  
# application/vnd.renlearn.rlprint  
application/vnd.rig.cryptonote cryptonote  
application/vnd.rim.cod cod  
application/vnd.rn-realmedia rm  
application/vnd.rn-realmedia-vbr rmvb  
application/vnd.route66.link66+xml link66  
# application/vnd.rs-274x  
# application/vnd.ruckus.download  
# application/vnd.s3sms  
application/vnd.sailingtracker.track st  
# application/vnd.sbm.cid  
# application/vnd.sbm.mid2  
# application/vnd.scribus  
# application/vnd.sealed.3df  
# application/vnd.sealed.csf  
# application/vnd.sealed.doc  
# application/vnd.sealed.eml  
# application/vnd.sealed.mht  
# application/vnd.sealed.net  
# application/vnd.sealed.ppt  
# application/vnd.sealed.tiff  
# application/vnd.sealed.xls  
# application/vnd.sealedmedia.softseal.html  
# application/vnd.sealedmedia.softseal.pdf  
application/vnd.seemail see  
application/vnd.sema sema  
application/vnd.semd semd  
application/vnd.semf semf  
application/vnd.shana.informed.formdata ifm  
application/vnd.shana.informed.formtemplate itp  
application/vnd.shana.informed.interchange iif  
application/vnd.shana.informed.package ipk  
application/vnd.simtech-mindmapper twd twds  
# application/vnd.siren+json  
application/vnd.smf mmf  
# application/vnd.smart.notebook  
application/vnd.smart.teacher teacher  
# application/vnd.software602.filler.form+xml  
# application/vnd.software602.filler.form-xml-zip  
application/vnd.solent.sdkm+xml sdkm sdkd  
application/vnd.spotfire.dxp dxp  
application/vnd.spotfire.sfs sfs  
# application/vnd.sss-cod  
# application/vnd.sss-dtf  
# application/vnd.sss-ntf

application/vnd.stardivision.calc sdc  
application/vnd.stardivision.draw sda  
application/vnd.stardivision.impress sdd  
application/vnd.stardivision.math smf  
application/vnd.stardivision.writer sdw vor  
application/vnd.stardivision.writer-global sgl  
application/vnd.stepmania.package smzip  
application/vnd.stepmania.stepchart sm  
# application/vnd.street-stream  
# application/vnd.sun.wadl+xml  
application/vnd.sun.xml.calc sxc  
application/vnd.sun.xml.calc.template stc  
application/vnd.sun.xml.draw sxd  
application/vnd.sun.xml.draw.template std  
application/vnd.sun.xml.impress sxi  
application/vnd.sun.xml.impress.template sti  
application/vnd.sun.xml.math sxm  
application/vnd.sun.xml.writer sxw  
application/vnd.sun.xml.writer.global sxc  
application/vnd.sun.xml.writer.template stw  
application/vnd.sus-calendar sus susp  
application/vnd.svd svd  
# application/vnd.swiftview-ics  
application/vnd.symbian.install sis six  
application/vnd.syncml+xml xsm  
application/vnd.syncml.dm+wbxml bdm  
application/vnd.syncml.dm+xml xdm  
# application/vnd.syncml.dm.notification  
# application/vnd.syncml.dmddf+wbxml  
# application/vnd.syncml.dmddf+xml  
# application/vnd.syncml.dmtnds+wbxml  
# application/vnd.syncml.dmtnds+xml  
# application/vnd.syncml.ds.notification  
application/vnd.tao.intent-module-archive tao  
application/vnd.tcpdump.pcap pcap cap dmp  
# application/vnd.tmd.mediaflex.api+xml  
# application/vnd.tml  
application/vnd.tmobile-livetv tmo  
application/vnd.trid.tpt tpt  
application/vnd.triscape.mxs mxs  
application/vnd.trueapp tra  
# application/vnd.truedoc  
# application/vnd.ubisoft.webplayer  
application/vnd.ufdl ufd ufdl  
application/vnd.uiq.theme utz  
application/vnd.umajin umj  
application/vnd.unity unityweb  
application/vnd.uoml+xml uoml

# application/vnd.uplanet.alert  
# application/vnd.uplanet.alert-wbxml  
# application/vnd.uplanet.bearer-choice  
# application/vnd.uplanet.bearer-choice-wbxml  
# application/vnd.uplanet.cacheop  
# application/vnd.uplanet.cacheop-wbxml  
# application/vnd.uplanet.channel  
# application/vnd.uplanet.channel-wbxml  
# application/vnd.uplanet.list  
# application/vnd.uplanet.list-wbxml  
# application/vnd.uplanet.listcmd  
# application/vnd.uplanet.listcmd-wbxml  
# application/vnd.uplanet.signal  
# application/vnd.uri-map  
# application/vnd.valve.source.material  
application/vnd.vcx vcx  
# application/vnd.vd-study  
# application/vnd.vectorworks  
# application/vnd.vel+json  
# application/vnd.verimatrix.vcas  
# application/vnd.vidsoft.vidconference  
application/vnd.visio vsd vst vss vsw  
application/vnd.visionary vis  
# application/vnd.vividence.scriptfile  
application/vnd.vsf vsf  
# application/vnd.wap.sic  
# application/vnd.wap.slc  
application/vnd.wap.wbxml wbxml  
application/vnd.wap.wmlc wmlc  
application/vnd.wap.wmlscriptc wmlsc  
application/vnd.webturbo wtb  
# application/vnd.wfa.p2p  
# application/vnd.wfa.wsc  
# application/vnd.windows.devicepairing  
# application/vnd.wmc  
# application/vnd.wmf.bootstrap  
# application/vnd.wolfram.mathematica  
# application/vnd.wolfram.mathematica.package  
application/vnd.wolfram.player nbp  
application/vnd.wordperfect wpd  
application/vnd.wqd wqd  
# application/vnd.wrq-hp3000-labelled  
application/vnd.wt.stf stf  
# application/vnd.wv.csp+wbxml  
# application/vnd.wv.csp+xml  
# application/vnd.wv.ssp+xml  
# application/vnd.xacml+json  
application/vnd.xara xar

application/vnd.xfdl xfdl  
# application/vnd.xfdl.webform  
# application/vnd.xmi+xml  
# application/vnd.xmpie.cpkg  
# application/vnd.xmpie.dpkg  
# application/vnd.xmpie.plan  
# application/vnd.xmpie.ppkg  
# application/vnd.xmpie.xlim  
application/vnd.yamaha.hv-dic hvd  
application/vnd.yamaha.hv-script hvs  
application/vnd.yamaha.hv-voice hvp  
application/vnd.yamaha.openscoreformat osf  
application/vnd.yamaha.openscoreformat.osfpvg+xml osfpvg  
# application/vnd.yamaha.remote-setup  
application/vnd.yamaha.smaf-audio saf  
application/vnd.yamaha.smaf-phrase spf  
# application/vnd.yamaha.through-ngn  
# application/vnd.yamaha.tunnel-udpencap  
# application/vnd.yaoweme  
application/vnd.yellowriver-custom-menu cmp  
application/vnd.zul zir zirz  
application/vnd.zzazz.deck+xml zaz  
application/voicexml+xml vxml  
# application/vq-rtcpvr  
# application/watcherinfo+xml  
# application/whoispp-query  
# application/whoispp-response  
application/widget wgt  
application/winhelp hlp  
# application/wita  
# application/wordperfect5.1  
application/wsdl+xml wsdl  
application/wspolicy+xml wspolicy  
application/x-7z-compressed 7z  
application/x-abiword abw  
application/x-ace-compressed ace  
# application/x-amf  
application/x-apple-diskimage dmg  
application/x-authorware-bin aab x32 u32 vox  
application/x-authorware-map aam  
application/x-authorware-seg aas  
application/x-bcpio bcpio  
application/x-bittorrent torrent  
application/x-blorb blb blorb  
application/x-bzip bz  
application/x-bzip2 bz2 boz  
application/x-cbr cbr cba cbt cbz cb7  
application/x-cdlink vcd

application/x-cfs-compressed cfs  
application/x-chat chat  
application/x-chess-pgn pgn  
# application/x-compress  
application/x-conference nsc  
application/x-cpio cpio  
application/x-csh csh  
application/x-debian-package deb udeb  
application/x-dgc-compressed dgc  
application/x-director dir dcr dxr cst cct cxt w3d fgd swa  
application/x-doom wad  
application/x-dtbncx+xml ncx  
application/x-dtbook+xml dtb  
application/x-dtbresource+xml res  
application/x-dvi dvi  
application/x-envoy evy  
application/x-eva eva  
application/x-font-bdf bdf  
# application/x-font-dos  
# application/x-font-framemaker  
application/x-font-ghostscript gsf  
# application/x-font-libgrx  
application/x-font-linux-psf psf  
application/x-font-otf otf  
application/x-font-pcf pcf  
application/x-font-snf snf  
# application/x-font-speedo  
# application/x-font-sunos-news  
application/x-font-ttf ttf ttc  
application/x-font-type1 pfa pfb pfm afm  
# application/x-font-vfont  
application/x-freearc arc  
application/x-futuresplash spl  
application/x-gca-compressed gca  
application/x-glulx ulx  
application/x-gnumeric gnumeric  
application/x-gramps+xml gramps  
application/x-gtar gtar  
# application/x-gzip  
application/x-hdf hdf  
application/x-install-instructions install  
application/x-iso9660-image iso  
application/x-java-jnlp-file jnlp  
application/x-latex latex  
application/x-lzh-compressed lzh lha  
application/x-mie mie  
application/x-mobipocket-ebook prc mobi  
application/x-ms-application application

application/x-ms-shortcut Ink  
application/x-ms-wmd wmd  
application/x-ms-wmz wmz  
application/x-ms-xbap xbap  
application/x-msaccess mdb  
application/x-msbinder obd  
application/x-mscardfile crd  
application/x-msclip clp  
application/x-msdownload exe dll com bat msi  
application/x-msmediaview mvb m13 m14  
application/x-msmetafile wmf wmz emf emz  
application/x-msmoney mny  
application/x-mspublisher pub  
application/x-msschedule scd  
application/x-msterminal trm  
application/x-mswrite wri  
application/x-netcdf nc cdf  
application/x-nzb nzb  
application/x-pkcs12 p12 pfx  
application/x-pkcs7-certificates p7b spc  
application/x-pkcs7-certreqresp p7r  
application/x-rar-compressed rar  
application/x-research-info-systems ris  
application/x-sh sh  
application/x-shar shar  
application/x-shockwave-flash swf  
application/x-silverlight-app xap  
application/x-sql sql  
application/x-stuffit sit  
application/x-stuffitx sitx  
application/x-subrip srt  
application/x-sv4cpio sv4cpio  
application/x-sv4crc sv4crc  
application/x-t3vm-image t3  
application/x-tads gam  
application/x-tar tar  
application/x-tcl tcl  
application/x-tex tex  
application/x-tex-tfm tfm  
application/x-texinfo texinfo texi  
application/x-tgif obj  
application/x-ustar ustar  
application/x-wais-source src  
# application/x-www-form-urlencoded  
application/x-x509-ca-cert der crt  
application/x-xfig fig  
application/x-xliff+xml xlf  
application/x-xpinstall xpi

application/x-xz xz  
application/x-zmachine z1 z2 z3 z4 z5 z6 z7 z8  
# application/x400-bp  
# application/xacml+xml  
application/xaml+xml xaml  
# application/xcap-att+xml  
# application/xcap-caps+xml  
application/xcap-diff+xml xdf  
# application/xcap-el+xml  
# application/xcap-error+xml  
# application/xcap-ns+xml  
# application/xcon-conference-info+xml  
# application/xcon-conference-info-diff+xml  
application/xenc+xml xenc  
application/xhtml+xml xhtml xht  
# application/xhtml-voice+xml  
application/xml xml xsl  
application/xml-dtd dtd  
# application/xml-external-parsed-entity  
# application/xml-patch+xml  
# application/xmpp+xml  
application/xop+xml xop  
application/xproc+xml xpl  
application/xslt+xml xslt  
application/xspf+xml xspf  
application/xv+xml mxml xhvm xvml xvm  
application/yang yang  
application/yin+xml yin  
application/zip zip  
# application/zlib  
# audio/1d-interleaved-parityfec  
# audio/32kadpcm  
# audio/3gpp  
# audio/3gpp2  
# audio/ac3  
audio/adpcm adp  
# audio/amr  
# audio/amr-wb  
# audio/amr-wb+  
# audio/aptx  
# audio/asc  
# audio/atrac-advanced-lossless  
# audio/atrac-x  
# audio/atrac3  
audio/basic au snd  
# audio/bv16  
# audio/bv32  
# audio/clearmode



# audio/cn  
# audio/dat12  
# audio/dls  
# audio/dsr-es201108  
# audio/dsr-es202050  
# audio/dsr-es202211  
# audio/dsr-es202212  
# audio/dv  
# audio/dvi4  
# audio/eac3  
# audio/encaprtsp  
# audio/evrc  
# audio/evrc-qcp  
# audio/evrc0  
# audio/evrc1  
# audio/evrcb  
# audio/evrcb0  
# audio/evrcb1  
# audio/evrcnw  
# audio/evrcnw0  
# audio/evrcnw1  
# audio/evrcwb  
# audio/evrcwb0  
# audio/evrcwb1  
# audio/evs  
# audio/example  
# audio/fwdred  
# audio/g711-0  
# audio/g719  
# audio/g722  
# audio/g7221  
# audio/g723  
# audio/g726-16  
# audio/g726-24  
# audio/g726-32  
# audio/g726-40  
# audio/g728  
# audio/g729  
# audio/g7291  
# audio/g729d  
# audio/g729e  
# audio/gsm  
# audio/gsm-efr  
# audio/gsm-hr-08  
# audio/ilbc  
# audio/ip-mr\_v2.5  
# audio/isac  
# audio/l16

# audio/120  
# audio/124  
# audio/18  
# audio/lpc  
audio/midi mid midi kar rmi  
# audio/mobile-xmf  
audio/mp4 m4a mp4a  
# audio/mp4a-latm  
# audio/mpa  
# audio/mpa-robust  
audio/mpeg mpga mp2 mp2a mp3 m2a m3a  
# audio/mpeg4-generic  
# audio/musepack  
audio/ogg oga ogg spx  
# audio/opus  
# audio/parityfec  
# audio/pcma  
# audio/pcma-wb  
# audio/pcmu  
# audio/pcmu-wb  
# audio/prs.sid  
# audio/qcelp  
# audio/raptorfec  
# audio/red  
# audio/rtp-enc-aescm128  
# audio/rtp-midi  
# audio/rtploopback  
# audio/rtx  
audio/s3m s3m  
audio/silk sil  
# audio/smv  
# audio/smv-qcp  
# audio/smv0  
# audio/sp-midi  
# audio/speex  
# audio/t140c  
# audio/t38  
# audio/telephone-event  
# audio/tone  
# audio/uemclip  
# audio/ulpfec  
# audio/vdvi  
# audio/vmr-wb  
# audio/vnd.3gpp.iufp  
# audio/vnd.4sb  
# audio/vnd.audiokoz  
# audio/vnd.celp  
# audio/vnd.cisco.nse

# audio/vnd.cmles.radio-events  
# audio/vnd.cns.anp1  
# audio/vnd.cns.infl  
audio/vnd.dece.audio uva uvva  
audio/vnd.digital-winds eol  
# audio/vnd.dlna.adts  
# audio/vnd.dolby.heaac.1  
# audio/vnd.dolby.heaac.2  
# audio/vnd.dolby.mlp  
# audio/vnd.dolby.mps  
# audio/vnd.dolby.pl2  
# audio/vnd.dolby.pl2x  
# audio/vnd.dolby.pl2z  
# audio/vnd.dolby.pulse.1  
audio/vnd.dra dra  
audio/vnd.dts dts  
audio/vnd.dts.hd dtshd  
# audio/vnd.dvb.file  
# audio/vnd.everad.plj  
# audio/vnd.hns.audio  
audio/vnd.lucent.voice lvp  
audio/vnd.ms-playready.media.pya pya  
# audio/vnd.nokia.mobile-xmf  
# audio/vnd.nortel.vbk  
audio/vnd.nuera.ecelp4800 ecelp4800  
audio/vnd.nuera.ecelp7470 ecelp7470  
audio/vnd.nuera.ecelp9600 ecelp9600  
# audio/vnd.octel.sbc  
# audio/vnd.qcelp  
# audio/vnd.rhetorex.32kadpcm  
audio/vnd.rip rip  
# audio/vnd.sealedmedia.softseal.mpeg  
# audio/vnd.vmx.cvsd  
# audio/vorbis  
# audio/vorbis-config  
audio/webm weba  
audio/x-aac aac  
audio/x-aiff aif aiff aifc  
audio/x-caf caf  
audio/x-flac flac  
audio/x-matroska mka  
audio/x-mpegurl m3u  
audio/x-ms-wax wax  
audio/x-ms-wma wma  
audio/x-pn-realaudio ram ra  
audio/x-pn-realaudio-plugin rmp  
# audio/x-tta  
audio/x-wav wav

audio/xm xm  
chemical/x-cdx cdx  
chemical/x-cif cif  
chemical/x-cmdf cmdf  
chemical/x-cml cml  
chemical/x-csml csml  
# chemical/x-pdb  
chemical/x-xyz xyz  
image/bmp bmp  
image/cgm cgm  
# image/dicom-rlc  
# image/emf  
# image/example  
# image/fits  
image/g3fax g3  
image/gif gif  
image/ief ief  
# image/jls  
# image/jp2  
image/jpeg jpeg jpg jpe  
# image/jpm  
# image/jpx  
image/ktx ktx  
# image/naplps  
image/png png  
image/prs.btif btif  
# image/prs.pti  
# image/pwg-raster  
image/sgi sgi  
image/svg+xml svg svgz  
# image/t38  
image/tiff tiff tif  
# image/tiff-fx  
image/vnd.adobe.photoshop psd  
# image/vnd.airzip.accelerator.azv  
# image/vnd.cns.inf2  
image/vnd.dece.graphic uvi uvvi uvg uvvg  
image/vnd.djvu djvu djv  
image/vnd.dvb.subtitle sub  
image/vnd.dwg dwg  
image/vnd.dxf dxf  
image/vnd.fastbidsheet fbs  
image/vnd.fpx fpx  
image/vnd.fst fst  
image/vnd.fujixerox.edmics-mmr mmr  
image/vnd.fujixerox.edmics-rlc rlc  
# image/vnd.globalgraphics.pgb  
# image/vnd.microsoft.icon

```
image/vnd.mix
image/vnd.mozilla.apng
image/vnd.ms-modi mdi
image/vnd.ms-photo wdp
image/vnd.net-fpx npx
image/vnd.radiance
image/vnd.sealed.png
image/vnd.sealedmedia.softseal.gif
image/vnd.sealedmedia.softseal.jpg
image/vnd.svf
image/vnd.tencent.tap
image/vnd.valve.source.texture
image/vnd.wap.wbmp wbmp
image/vnd.xiff xif
image/vnd.zbrush.pcx
image/webp webp
image/wmf
image/x-3ds 3ds
image/x-cmu-raster ras
image/x-cmx cmx
image/x-freehand fh fhc fh4 fh5 fh7
image/x-icon ico
image/x-mrsid-image sid
image/x-pcx pcx
image/x-pict pic pct
image/x-portable-anymap pnm
image/x-portable-bitmap pbm
image/x-portable-graymap pgm
image/x-portable-pixmap ppm
image/x-rgb rgb
image/x-tga tga
image/x-xbitmap xbm
image/x-xpixmap xpm
image/x-xwindowdump xwd
message/cpim
message/delivery-status
message/disposition-notification
message/example
message/external-body
message/feedback-report
message/global
message/global-delivery-status
message/global-disposition-notification
message/global-headers
message/http
message/imdn+xml
message/news
message/partial
```

message/rfc822 eml mime  
# message/s-http  
# message/sip  
# message/sipfrag  
# message/tracking-status  
# message/vnd.si.simp  
# message/vnd.wfa.wsc  
# model/example  
# model/gltf+json  
model/iges igs iges  
model/mesh msh mesh silo  
model/vnd.collada+xml dae  
model/vnd.dwf dwf  
# model/vnd.flatland.3dml  
model/vnd.gdl gdl  
# model/vnd.gs-gdl  
# model/vnd.gs.gdl  
model/vnd.gtw gtw  
# model/vnd.moml+xml  
model/vnd.mts mts  
# model/vnd.opengex  
# model/vnd.parasolid.transmit.binary  
# model/vnd.parasolid.transmit.text  
# model/vnd.rosette.annotated-data-model  
# model/vnd.valve.source.compiled-map  
model/vnd.vtu vtu  
model/vrml wrl vrml  
model/x3d+binary x3db x3dbz  
# model/x3d+fastinfoset  
model/x3d+vrml x3dv x3dvz  
model/x3d+xml x3d x3dz  
# model/x3d-vrml  
# multipart/alternative  
# multipart/appledouble  
# multipart/byteranges  
# multipart/digest  
# multipart/encrypted  
# multipart/example  
# multipart/form-data  
# multipart/header-set  
# multipart/mixed  
# multipart/parallel  
# multipart/related  
# multipart/report  
# multipart/signed  
# multipart/voice-message  
# multipart/x-mixed-replace  
# text/1d-interleaved-parityfec

text/cache-manifest appcache  
text/calendar ics ifb  
text/css css  
text/csv csv  
# text/csv-schema  
# text/directory  
# text/dns  
# text/ecmascript  
# text/encaprtpt  
# text/enriched  
# text/example  
# text/fwdred  
# text/grammar-ref-list  
text/html html htm  
# text/javascript  
# text/jcr-cnd  
# text/markdown  
# text/mizar  
text/n3 n3  
# text/parameters  
# text/parityfec  
text/plain txt text conf def list log in  
# text/provenance-notation  
# text/prs.fallenstein.rst  
text/prs.lines.tag dsc  
# text/prs.prop.logic  
# text/raptorfec  
# text/red  
# text/rfc822-headers  
text/richtext rtx  
# text/rtf  
# text/rtp-enc-aescm128  
# text/rtploopback  
# text/rtx  
text/sgml sgml sgm  
# text/t140  
text/tab-separated-values tsv  
text/troff t tr roff man me ms  
text/turtle ttl  
# text/ulpfec  
text/uri-list uri uris urls  
text/vcard vcard  
# text/vnd.a  
# text/vnd.abc  
text/vnd.curl curl  
text/vnd.curl.dcurl dcurl  
text/vnd.curl.mcurl mcurl  
text/vnd.curl.scurl scurl

```
text/vnd.debian.copyright
text/vnd.dmclientscript
text/vnd.dvb.subtitle sub
text/vnd.esmertec.theme-descriptor
text/vnd.fly fly
text/vnd.fmi.flexstor flx
text/vnd.graphviz gv
text/vnd.in3d.3dml 3dml
text/vnd.in3d.spot spot
text/vnd.ipc.newsml
text/vnd.ipc.nitf
text/vnd.latex-z
text/vnd.motorola.reflex
text/vnd.ms-mediapackage
text/vnd.net2phone.commcenter.command
text/vnd.radisys.msml-basic-layout
text/vnd.si.uricatalogue
text/vnd.sun.j2me.app-descriptor jad
text/vnd.trolltech.linguist
text/vnd.wap.si
text/vnd.wap.sl
text/vnd.wap.wml wml
text/vnd.wap.wmlscript wmls
text/x-asm s asm
text/x-c c cc cxx cpp h hh dic
text/x-fortran f for f77 f90
text/x-java-source java
text/x-nfo nfo
text/x-opml opml
text/x-pascal p pas
text/x-setext etx
text/x-sfv sfv
text/x-uuencode uu
text/x-vcalendar vcs
text/x-vcard vcf
text/xml
text/xml-external-parsed-entity
video/1d-interleaved-parityfec
video/3gpp 3gp
video/3gpp-tt
video/3gpp2 3g2
video/bmpeg
video/bt656
video/celb
video/dv
video/encaprtsp
video/example
video/h261 h261
```



video/h263 h263  
# video/h263-1998  
# video/h263-2000  
video/h264 h264  
# video/h264-rcdo  
# video/h264-svc  
# video/h265  
# video/iso.segment  
video/jpeg jpgv  
# video/jpeg2000  
video/jpm jpm jpgm  
video/mj2 mj2 mjp2  
# video/mp1s  
# video/mp2p  
# video/mp2t  
video/mp4 mp4 mp4v mpg4  
# video/mp4v-es  
video/mpeg mpeg mpg mpe m1v m2v  
# video/mpeg4-generic  
# video/mpv  
# video/nv  
video/ogg ogv  
# video/parityfec  
# video/pointer  
video/quicktime qt mov  
# video/raptorfec  
# video/raw  
# video/rtp-enc-aescm128  
# video/rtploopback  
# video/rtx  
# video/smp292m  
# video/ulpfec  
# video/vc1  
# video/vnd.cctv  
video/vnd.dece.hd uvh uvvh  
video/vnd.dece.mobile uvm uvvm  
# video/vnd.dece.mp4  
video/vnd.dece.pd uvp uvvp  
video/vnd.dece.sd uvs uvvs  
video/vnd.dece.video uvv uvvv  
# video/vnd.directv.mpeg  
# video/vnd.directv.mpeg-tts  
# video/vnd.dlna.mpeg-tts  
video/vnd.dvb.file dvb  
video/vnd.fvt fvt  
# video/vnd.hns.video  
# video/vnd.iptvforum.1dparityfec-1010  
# video/vnd.iptvforum.1dparityfec-2005

# video/vnd.iptvforum.2dparityfec-1010  
# video/vnd.iptvforum.2dparityfec-2005  
# video/vnd.iptvforum.ttsavc  
# video/vnd.iptvforum.ttsmpeg2  
# video/vnd.motorola.video  
# video/vnd.motorola.videop  
video/vnd.mpegurl mxu m4u  
video/vnd.ms-playready.media.pyv pyv  
# video/vnd.nokia.interleaved-multimedia  
# video/vnd.nokia.videovoip  
# video/vnd.objectvideo  
# video/vnd.radgamettools.bink  
# video/vnd.radgamettools.smacker  
# video/vnd.sealed.mpeg1  
# video/vnd.sealed.mpeg4  
# video/vnd.sealed.swf  
# video/vnd.sealedmedia.softseal.mov  
video/vnd.uvu.mp4 uvu uvvu  
video/vnd.vivo viv  
# video/vp8  
video/webm webm  
video/x-f4v f4v  
video/x-fli fli  
video/x-flv flv  
video/x-m4v m4v  
video/x-matroska mkv mk3d mks  
video/x-mng mng  
video/x-ms-asf asf asx  
video/x-ms-vob vob  
video/x-ms-wm wm  
video/x-ms-wmv wmv  
video/x-ms-wmx wmx  
video/x-ms-wvx vxw  
video/x-msvideo avi  
video/x-sgi-movie movie  
video/x-smv smv  
x-conference/x-cooltalk ice

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/mime.types

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/ClientHttpResponse.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/HierarchicalUriComponents.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/accept/ContentNegotiationManagerFactoryBean.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ServletServerHttpResponse.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/reactive/DefaultCorsProcessor.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/HttpHeaders.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/DefaultCorsProcessor.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/ReadOnlyHttpHeaders.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/adapter/WebHttpHandlerBuilder.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ServerHttpRequest.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/ReactorClientHttpConnector.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/ReactorResourceFactory.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/annotation/MapMethodProcessor.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ServerHttpResponse.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/reactive/UrlBasedCorsConfigurationSource.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/WebRequest.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/JettyClientHttpResponse.java
- \* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/ResponseCookie.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/xml/Jaxb2XmlDecoder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/CorsUtils.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/annotation/AbstractNamedValueMethodArgumentResolver.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/json/AbstractJackson2Decoder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/ServerSentEventHttpMessageWriter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/JsonbHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/accept/ContentNegotiationManager.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/NotAcceptableStatusException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/client/RestClientException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/HttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/UndertowServerHttpResponse.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/TomcatHttpHandlerAdapter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ServerHttpRequestDecorator.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/MediaType.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/reactive/CorsUtils.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/CodecConfigurer.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ReactorServerHttpResponse.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/JettyClientHttpConnector.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/ServletContextPropertyUtils.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/GsonHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/RequestMapping.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/AbstractJsonHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/CrossOrigin.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/ReactorClientHttpResponse.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/json/AbstractJackson2Encoder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/protobuf/ProtobufJsonFormatHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/multipart/MultipartHttpMessageReader.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/annotation/ModelMethodProcessor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/HttpComponentsClientHttpRequestFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/support/HandlerMethodArgumentResolverComposite.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/UriTemplate.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/ContentDisposition.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/multipart/support/MissingServletRequestPartException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/support/InvocableHandlerMethod.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/UriBuilderFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/WebExchangeBindException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/UndertowServerHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/ServerSentEventHttpMessageReader.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/JettyClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/json/Jackson2JsonDecoder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/AbstractHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/client/UnknownContentTypeException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/client/HttpMessageConverterExtractor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/DefaultServerHttpRequestBuilder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/async/WebAsyncManager.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/httpinvoker/AbstractHttpInvokerRequestExecutor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/support/InterceptingHttpAccessor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletContextResourcePatternResolver.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/json/Jackson2CodecSupport.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/DefaultUriBuilderFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/reactive/ReactorClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/UriBuilder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/pattern/PathPatternParser.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/RequestEntity.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/HttpHeadResponseDecorator.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ReactorServerHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/MediaTypeNotSupportedStatusException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/WebUtils.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/FormHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/client/RestTemplate.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/ServletServerHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/multipart/MultipartHttpMessageWriter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/support/BaseCodecConfigurer.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/i18n/AcceptHeaderLocaleContextResolver.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/AbstractJackson2HttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/HandlerMethod.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/accept/ServletPathExtensionContentNegotiationStrategy.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/MethodNotAllowedException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/support/BaseDefaultCodecs.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/Jackson2ObjectMapperBuilder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/AbstractListenerWriteProcessor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/session/DefaultWebSessionManager.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/filter/ShallowEtagHeaderFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/multipart/support/RequestPartServletServerHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/AbstractServerHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/StringHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/ControllerAdviceBean.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/accept/MappingMediaTypeFileExtensionResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/json/Jackson2Tokenizer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/ResourceHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/handler/ExceptionHandlingWebHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/EncoderHttpMessageWriter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/reactive/WriteResultPublisher.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/accept/PathExtensionContentNegotiationStrategy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/WebApplicationContextUtils.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/ServletContextAware.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/http/server/reactive/UndertowHttpHandlerAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/UndertowHeadersAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpOutputMessage.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/Jaxb2CollectionHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/ReactorHttpHandlerAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/HttpRequestMethodNotSupportedException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/HttpComponentsAsyncClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/RequestParamMapMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/OpaqueUriComponents.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/support/RestGatewaySupport.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/CodecConfigurerFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/caucho/HessianServiceExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/support/ConfigurableWebBindingInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/WebApplicationInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/AbstractListenerServerHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/session/HeaderWebSessionIdResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/AsyncRestTemplate.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/StandardServletEnvironment.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/jaxws/SimpleJaxWsServiceExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/WebAsyncUtils.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/MissingMatrixVariableException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/DefaultSslInfo.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/JettyResourceFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-



jar/org/springframework/web/method/support/HandlerMethodReturnValueHandlerComposite.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/FormContentFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/CookieGenerator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/RequestPart.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/support/AsyncHttpAccessor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/ClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/support/MultipartFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/InitBinderDataBinderFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/RequestHeaderMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/ContentCachingRequestWrapper.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/ServerSentEvent.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/GenericHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/UriTemplateHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/SslInfo.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpEntity.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/SimpleBufferingClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/protobuf/ProtobufCodecSupport.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/SpringServletContainerInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/RequestBody.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/InterceptingAsyncClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpInputMessage.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/support/ModelAndViewContainer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/DeferredResultInterceptorChain.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/support/DefaultMultipartHttpServletRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/context/ServletConfigAware.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/XmlWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/jaxws/LocalJaxWsServiceFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/httpinvoker/HttpComponentsHttpInvokerRequestExecutor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/AbstractRefreshableWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/json/MappingJacksonValue.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/HttpComponentsClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/json/Jackson2ObjectMapperFactoryBean.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/ServletHttpHandlerAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/UnsatisfiedServletRequestParameterException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/ZeroCopyHttpOutputMessage.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/ServletRequestParameterPropertyValues.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/ServerHttpResponseDecorator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/TagUtils.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/accept/ParameterContentNegotiationStrategy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/AbstractCookieValueMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/AbstractGenericHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/DefaultServerWebExchangeBuilder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/RequestCallback.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/HttpSessionRequiredException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/caucho/SimpleHessianServiceExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/json/Jackson2SmileDecoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/WebAsyncTask.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/ResponseErrorHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/http/client/Netty4ClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/ExtractingResponseErrorHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/RelativeRedirectFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpLogging.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/jsf/el/WebApplicationContextFacesELResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/session/CookieWebSessionIdResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/RequestParam.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/SessionAttributesHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/support/AllEncompassingFormHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/MissingRequestHeaderException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/commons/CommonsFileUploadSupport.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/MatrixVariable.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/accept/ContentNegotiationStrategy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/GenericFilterBean.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/ClientHttpConnector.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/PathVariable.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/Netty4ClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/HiddenHttpMethodFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/ClientHttpRequestDecorator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/HttpMessageNotReadableException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/RelativeRedirectResponseWrapper.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/pattern/PathElement.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/ServletRequestHandledEvent.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/SimpleStreamingAsyncClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/remoting/httpinvoker/SimpleHttpInvokerRequestExecutor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/NestedServletException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/ContextLoaderListener.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/adapter/AbstractReactiveWebInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/HttpMethod.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/reactive/HiddenHttpMethodFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/ContextLoader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/HttpMessageEncoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/json/MappingJackson2HttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/JavaScriptUtils.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/MarshallingHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/jaxws/AbstractJaxWsServiceExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/protobuf/ProtobufHttpMessageWriter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/InterceptingAsyncClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/NettyHeadersAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/MultipartFile.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/ClientHttpRequestInterceptor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/MissingRequestCookieException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/HttpMessageDecoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/protobuf/ExtensionRegistryInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/FacesRequestAttributes.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/ServletContextAttributeExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/ExceptionHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/jaxws/SimpleHttpServerJaxWsServiceExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/accept/AbstractMappingContentNegotiationStrategy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/AbstractContextLoaderInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/StreamingHttpOutputMessage.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/WebDataBinder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/ServletContextResource.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/multipart/FilePart.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/ExpressionValueMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/SimpleBufferingAsyncClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/WebSession.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/AbstractClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/ServletWebRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/StandardServletAsyncWebRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/CharacterEncodingFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/UnsupportedMediaTypeStatusException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/MultipartFileResource.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/support/StandardServletMultipartResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/InvalidMediaTypeException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/RequestHeader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/DefaultRequestPath.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/handler/FilteringWebHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/jsf/DelegatingNavigationHandlerProxy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/AbstractRequestAttributes.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/CallableInterceptorChain.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/ResponseBody.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/remoting/httpinvoker/SimpleHttpInvokerServiceExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/BufferingClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/ObjectToStringHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/caucho/HessianExporter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/ResourceRegionHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/commons/CommonsMultipartResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/accept/HeaderContentNegotiationStrategy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/GroovyWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/ExceptionHandlerMethodResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/HttpMessageReader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/ServletServerHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/LoggingCodecSupport.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/MissingPathVariableException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/ForwardedHeaderFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/reactive/ClientHttpResponseDecorator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/ServletServerHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/ResponseExtractor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/support/AbstractMultipartHttpServletRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/ErrorsMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/ServerErrorException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/DefaultUriTemplateHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/TomcatHeadersAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/InterceptingClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/HttpHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/cors/CorsProcessor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/HtmlCharacterEntityReferences.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/xml/AbstractXmlHttpMessageConverter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/i18n/FixedLocaleContextResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/SimpleStreamingClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/support/BasicAuthorizationInterceptor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/HttpComponentsClientHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/json/Jackson2JsonEncoder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/HttpPutFormContentFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/support/StandardMultipartHttpServletRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/JettyHttpHandlerAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/ContextPathCompositeHandler.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
/**
 * Return the web session for the current request. Always guaranteed to
 * return an instance either matching to the session id requested by the
 * client, or with a new session id either because the client did not
 * specify one or because the underlying session had expired. Use of this
 * method does not automatically create a session. See {@link WebSession}
 * for more details.
 */
```

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/ServerWebExchange.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/SessionStatus.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2009 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/Mapping.java

No license file was found, but licenses were detected in source scan.



```
/*
 * Copyright 2002-2021 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/LiteralPathElement.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/ResponseEntity.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/CaptureTheRestPathElement.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/bind/annotation/CookieValue.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/WildcardPathElement.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/MediaTypeFactory.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/SeparatorPathElement.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/SingleCharWildcardedPathElement.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/http/server/DefaultPathContainer.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/UriPathHelper.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/PathPattern.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/UriComponents.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/util/pattern/WildcardTheRestPathElement.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/server/handler/ResponseStatusExceptionHandler.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
jar/org/springframework/web/method/HandlerTypePredicate.java
* /opt/cola/permits/1301486287_1649248809.64/0/spring-web-5-2-20-release-sources-
```

jar/org/springframework/web/client/DefaultResponseErrorHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/pattern/RegexPathElement.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/support/WebRequestDataBinder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/ModelAttributeMethodProcessor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/reactive/JettyHeadersAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/pattern/CaptureVariablePathElement.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/codec/multipart/SynchronossPartHttpMessageReader.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/PathContainer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/cors/CorsConfiguration.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/adapter/HttpWebHandlerAdapter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/ResponseStatusException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/UriComponentsBuilder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/support/CompositeUriComponentsContributor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/pattern/PatternParseException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/support/WebExchangeDataBinder.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/GsonBuilderUtils.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/AsyncWebRequestInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/DefaultDataBinderFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/i18n/LocaleContextResolver.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/reactive/CorsProcessor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/HttpComponentsAsyncClientHttpResponse.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletContextParameterFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/async/CallableProcessingInterceptorAdapter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/support/ProxyFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/httpinvoker/HttpInvokerServiceExporter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AsyncClientHttpRequestExecution.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/ServerWebInputException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/OkHttp3AsyncClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/async/CallableProcessingInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/SimpleClientHttpRequestFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AbstractAsyncClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/SessionAttributeStore.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/async/DeferredResultProcessingInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/BufferingClientHttpRequestWrapper.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/httpinvoker/HttpInvokerClientInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/MappingJacksonInputMessage.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/AbstractRequestAttributesScope.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/async/TimeoutCallableProcessingInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/jaxws/LocalJaxWsServiceFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/HttpComponentsStreamingClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/OkHttp3ClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/session/WebSessionStore.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/caucho/HessianClientInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/support/HttpRequestWrapper.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/WebDataBinderFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/smile/MappingJackson2SmileHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/BufferingClientHttpResponseWrapper.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/LiveBeansViewServlet.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/multipart/FormFieldPart.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/HttpComponentsAsyncClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AsyncClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AbstractBufferingClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/client/AsyncRequestCallback.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ContextExposingHttpServletRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/ResponseStatus.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/RestController.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/DefaultSessionAttributeStore.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/async/DeferredResultProcessingInterceptorAdapter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/jaxws/JaxWsPortClientInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/httpinvoker/HttpInvokerProxyFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/support/InterceptingAsyncHttpAccessor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/Netty4ClientHttpResponse.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/NativeWebRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AbstractBufferingAsyncClientHttpRequest.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/annotation/MethodArgumentTypeMismatchException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/codec/multipart/Part.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/support/UriComponentsContributor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/EscapedErrors.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/HttpCookie.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/HttpMediaTypeNotSupportedException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletContextAttributeFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/annotation/MethodArgumentConversionNotSupportedException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/OkHttp3ClientHttpResponse.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/MethodArgumentNotValidException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/AbstractUriTemplateHandler.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/caucho/HessianProxyFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/ServletRequestUtils.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/multipart/support/StringMultipartFileEditor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AsyncClientHttpRequestFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/multipart/MultipartException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/json/GsonFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/remoting/jaxws/JaxWsPortProxyFactoryBean.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/RequestPath.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AsyncClientHttpRequestInterceptor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/multipart/support/ByteArrayMultipartFileEditor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletContextAwareProcessor.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/ServletRequestDataBinder.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/jsf/el/SpringBeanFacesELResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/AsyncWebRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/SessionStatusMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/server/ServletServerHttpAsyncRequestControl.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/support/WebArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/client/AsyncRestOperations.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/HttpRequestHandlerServlet.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/WebApplicationObjectSupport.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/RequestAttributes.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/MaxUploadSizeExceededException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/StaticWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/support/HandlerMethodReturnValueHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/filter/DelegatingFilterProxy.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/feed/RssChannelHttpMessageConverter.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2011 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/multipart/MultipartHttpServletRequest.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/HttpMessage.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/WebFilterChain.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/SessionAttributes.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/util/HttpSessionMutexListener.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/multipart/MultipartResolver.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/filter/CommonsRequestLoggingFilter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/filter/RequestContextFilter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/RequestContextListener.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/RequestMethod.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/SpringWebConstraintValidatorFactory.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/WebFilter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/HttpMessageNotWritableException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/HttpMessageConversionException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AbstractClientHttpRequestFactoryWrapper.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/request/DestructionCallbackBindingListener.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/HttpMediaTypeException.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/ServerHttpResponse.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/converter/feed/AtomFeedHttpMessageConverter.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/method/support/HandlerMethodArgumentResolver.java



\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/jsf/FacesContextUtils.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/ConfigurableWebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AbstractClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletConfigPropertySource.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/ClientHttpRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/server/ServerHttpAsyncRequestControl.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletContextPropertySource.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/CorsConfigurationSource.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/filter/CompositeFilter.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/PostMapping.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/ReactiveHttpOutputMessage.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/server/session/WebSessionIdResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/context/support/ServletContextLiveBeansView.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/cors/reactive/CorsConfigurationSource.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/remoting/httpinvoker/HttpInvokerRequestExecutor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/DeleteMapping.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/TimeoutDeferredResultProcessingInterceptor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/WebApplicationContext.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/ModelAttribute.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/annotation/SessionScope.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/multipart/MultipartRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/RequestAttribute.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/SessionAttribute.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/HttpRequestHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/converter/json/SpringHandlerInstantiator.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/SessionScope.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/support/WebBindingInitializer.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/annotation/RequestScope.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/FacesWebRequest.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/ClientHttpRequestFactory.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/WebAppRootListener.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/WebRequestInterceptor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/WebHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/RequestScope.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/client/ClientHttpRequestExecution.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/method/annotation/RequestHeaderMapMethodArgumentResolver.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/GetMapping.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/async/AsyncRequestTimeoutException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-

jar/org/springframework/web/bind/annotation/PatchMapping.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/annotation/ApplicationScope.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/http/ReactiveHttpInputMessage.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/request/RequestContextHolder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/PutMapping.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/session/WebSessionManager.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/server/WebExceptionHandler.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2012 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/jaxws/JaxWsSoapFaultException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/remoting/httpinvoker/HttpInvokerClientConfiguration.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/HttpMediaTypeNotAcceptableException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/annotation/ValueConstants.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/bind/ServletRequestBindingException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/ConfigurableWebEnvironment.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/util/IntrospectorCleanupListener.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-  
jar/org/springframework/web/context/support/SpringBeanAutowiringSupport.java

\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/annotation/InitBinder.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/jsf/DecoratingNavigationHandler.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/jsf/DelegatingPhaseListenerMulticaster.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/client/AbstractClientHttpResponse.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/http/MediaTypeEditor.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/MissingServletRequestParamException.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/bind/support/SimpleSessionStatus.java  
\* /opt/cola/permits/1301486287\_1649248809.64/0/spring-web-5-2-20-release-sources-jar/org/springframework/web/client/ResourceAccessException.java

# 1.312 host-ninja 1.10.0

## 1.312.1 Available under license :

Apache License  
Version 2.0, January 2010  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.313 busybox 1.25.0

## 1.313.1 Available under license :

bzip2 applet in busybox is based on lightly-modified source of bzip2 version 1.0.4. bzip2 source is distributed under the following conditions (copied verbatim from LICENSE file)

=====

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2006 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions



are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@bzip.org](mailto:jseward@bzip.org)

bzip2/libbzip2 version 1.0.4 of 20 December 2006

--- A note on GPL versions

BusyBox is distributed under version 2 of the General Public License (included in its entirety, below). Version 2 is the only version of this license which this version of BusyBox (or modified versions derived from this one) may be distributed under.

-----  
GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and

modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such

interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such

an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify

it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.



# 1.314 python-dotenv 0.20.0

## 1.314.1 Available under license :

python-dotenv

Copyright (c) 2014, Saurabh Kumar

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of python-dotenv nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

django-dotenv-rw

Copyright (c) 2013, Ted Tieken

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of django-dotenv nor the names of its contributors

may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Original django-dotenv  
Copyright (c) 2013, Jacob Kaplan-Moss

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of django-dotenv nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.315 loguru 0.6.0

## 1.315.1 Available under license :

MIT License

Copyright (c) 2017

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.316 sqlite 3.13.0

### 1.316.1 Available under license :

The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

May you do good and not evil.  
May you find forgiveness for yourself and forgive others.  
May you share freely, never taking more than you give.

## 1.317 zlib 1.2.11

### 1.317.1 Available under license :

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including

the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.318 spring-security-config 5.4.10

### 1.318.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/http/SessionCreationPolicy.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/DebugBeanDefinitionParser.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/core/GrantedAuthorityDefaults.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/http/FilterChainMapBeanDefinitionDecorator.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/authentication/package-info.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
```

jar/org/springframework/security/config/http/FilterInvocationSecurityMetadataSourceParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/method/InterceptMethodsBeanDefinitionDecorator.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/method/package-info.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/method/ProtectPointcutPostProcessor.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/UserDetailsServiceFactoryBean.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/ldap/LdapProviderBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/ChannelAttributeFactory.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/FilterChainBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/BeanIds.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/ldap/ContextSourceSettingPostProcessor.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/package-info.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/ldap/LdapUserServiceBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/method/MethodSecurityMetadataSourceBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/authentication/PasswordEncoderParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/PortMappingsBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/authentication/UserServiceBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/HttpFirewallBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/messaging/MessageSecurityMetadataSourceRegistry.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/package-info.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/DefaultFilterChainValidator.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/authentication/AuthenticationProviderBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/authentication/AbstractUserDetailsServiceBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/MatcherType.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/ldap/package-info.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/authentication/JdbcUserServiceBeanDefinitionParser.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/core/userdetails/UserDetailsMapFactoryBean.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/method/configuration/EnableReactiveMethodSecurity.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/method/configuration/ReactiveMethodSecuritySelector.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/reactive/EnableWebFluxSecurity.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/core/userdetails/ReactiveUserDetailsServiceResourceFactoryBean.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/configuration/GlobalAuthenticationConfigurerAdapter.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/provisioning/UserDetailsManagerResourceFactoryBean.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/SecurityWebFiltersOrder.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/AbstractServerWebExchangeMatcherRegistry.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2021 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/saml2/Saml2LoginConfigurer.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2LoginConfigurer.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/builders/FilterOrderRegistration.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/authentication/AuthenticationManagerBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/DefaultLoginPageConfigurer.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2009-2020 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/SecurityNamespaceHandler.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.

- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/method/GlobalMethodSecurityBeanDefinitionParser.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/CorsBeanDefinitionParser.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/X509Configurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/websocket/WebSocketMessageBrokerSecurityBeanDefinitionParser.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configuration/WebSecurityConfigurerAdapter.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecuritySelector.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/ExceptionHandlerConfigurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/ServletApiConfigurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/authentication/AuthenticationManagerFactoryBean.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/FormLoginBeanDefinitionParser.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/ExpressionUrlAuthorizationConfigurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/configuration/AutowiredBeanFactoryObjectPostProcessor.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2ClientConfigurerUtils.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/core/userdetails/UserDetailsResourceFactoryBean.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/SecurityContextConfigurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/CorsConfigurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/UrlAuthorizationConfigurer.java
- \* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-



jar/org/springframework/security/config/annotation/method/configuration/MethodSecurityMetadataSourceAdvisorRegistrar.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/AbstractAuthenticationFilterConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/CsrfConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/authentication/configuration/InitializeAuthenticationProviderBeanManagerConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/AbstractRequestMatcherRegistry.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/method/configuration/Jsrf250MetadataSourceConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/builders/HttpSecurity.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/openid/OpenIDLoginConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/HeadersConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/socket/AbstractSecurityWebSocketMessageBrokerConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecurityConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/configuration/ObjectPostProcessorConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/LogoutConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
```

```
jar/org/springframework/security/config/annotation/method/configuration/ReactiveMethodSecurityConfiguration.java
va
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/servlet/configuration/WebMvcSecurityConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/SessionManagementConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configuration/OAuth2ImportSelector.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/HttpBasicConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/authentication/configuration/InitializeUserDetailsBeanManager
Configurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/http/HeadersBeanDefinitionParser.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/Customizer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configuration/WebMvcSecurityConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/reactive/ReactiveOAuth2ClientImportSelector.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/reactive/WebFluxSecurityConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/crypto/RsaKeyConversionServicePostProcessor.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/authentication/configuration/AuthenticationConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/reactive/ServerHttpSecurityConfiguration.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/http/LogoutBeanDefinitionParser.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2012 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/method/MethodConfigUtils.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/WebConfigUtils.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2011 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/debug/SecurityDebugBeanFactoryPostProcessor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/OrderDecorator.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2013 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/AbstractConfigAttributeRequestMatcherRegist
ry.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/servlet/configuration/EnableWebMvcSecurity.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/UserDetailsServiceConfig
urer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configuration/SpringWebMvcImportSelector.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecurityAspectJAutoProxy
Registrar.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/AbstractHttpConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/ChannelSecurityConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/AbstractDaoAuthenticatio
nConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/FormLoginConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/AbstractConfiguredSecurityBuilder.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/SecurityBuilder.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
jar/org/springframework/security/config/annotation/web/configurers/AbstractInterceptUrlConfigurer.java
* /opt/cola/permits/1351887204_1656319601.8786132/0/spring-security-config-5-4-10-sources-
```

jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/InMemoryUserDetailsManagerConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/RequestCacheConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/ObjectPostProcessor.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/AnonymousConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configuration/AutowiredWebSecurityConfigurersIgnoreParents.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/ProviderManagerBuilder.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/method/configuration/EnableGlobalMethodSecurity.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/builders/AuthenticationManagerBuilder.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/configuration/EnableGlobalAuthentication.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/AlreadyBuiltException.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/AbstractSecurityBuilder.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/UserDetailsManagerConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/DaoAuthenticationConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/PermitAllSupport.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/JeeConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/SecurityConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/JdbcUserDetailsManagerConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/PortMapperConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/UserDetailsAwareConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/SecurityConfigurerAdapter.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/RememberMeBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/RememberMeConfigurer.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/rsocket/SecuritySocketAcceptorInterceptorConfiguration.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/rsocket/RSocketSecurityConfiguration.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/rsocket/RSocketSecurity.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/rsocket/PayloadInterceptorOrder.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/annotation/rsocket/EnableRSocketSecurity.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/http/HandlerMappingIntrospectorFactoryBean.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/http/GrantedAuthorityDefaultsParserUtils.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/http/OAuth2ClientBeanDefinitionParser.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/web/server/ServerSecurityMarker.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-

jar/org/springframework/security/config/Elements.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerContentTypeOptionsDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerFrameOptionsDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/RequiresChannelDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/CsrfDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerCorsDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/headers/HttpPublicKeyPinningDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/configuration/WebSecurityCustomizer.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/OAuth2ResourceServerBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/oauth2/login/AuthorizationEndpointDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/AuthenticationConfigBuilder.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/HttpSecurityDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/builders/WebSecurity.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/SecurityMarker.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/headers/FrameOptionsDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerOAuth2LoginDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/configuration/OAuth2ClientConfiguration.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/SessionManagementDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerCsrfDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/authentication/configurers/ldap/LdapAuthenticationProviderCon-  
figurer.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/oauth2/resourceserver/OAuth2ResourceServerSecurityMarker.  
kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/session/SessionSecurityMarker.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerHttpSecurity.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-



jar/org/springframework/security/config/web/servlet/HeadersDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/headers/ContentTypeOptionsDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/AbstractRequestMatcherDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerLogoutDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/oauth2/login/UserInfoEndpointDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerHttpSecurityDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/OAuth2ResourceServerDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/Saml2Dsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/configuration/EnableWebSecurity.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerHttpsRedirectDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/OAuth2ClientWebMvcSecurityPostProcessor.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerHttpBasicDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/configurers/oauth2/server/resource/OAuth2ResourceServer  
Configurer.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/annotation/web/configuration/SecurityReactorContextConfiguration.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/session/SessionFixationDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerAnonymousDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/server/ServerOAuth2ResourceServerDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/oauth2/resourceserver/JwtDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/oauth2/client/ClientRegistrationsBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/oauth2/client/CommonOAuth2Provider.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/headers/HttpStrictTransportSecurityDsl.kt  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/OAuth2ClientBeanDefinitionParserUtils.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/http/OAuth2LoginBeanDefinitionParser.java  
\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-  
jar/org/springframework/security/config/web/servlet/AnonymousDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerFormLoginDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/FormLoginDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/headers/ContentSecurityPolicyDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/SecurityFilters.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2ClientConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerRequestCacheDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerX509Dsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerExceptionHandlerDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/oauth2/login/OAuth2LoginSecurityMarker.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerOAuth2ClientDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/headers/ReferrerPolicyDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/HttpSecurityBeanDefinitionParser.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/oauth2/login/TokenEndpointDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/PortMapperDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configuration/WebSecurityConfiguration.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/ImplicitGrantConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerReferrerPolicyDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/headers/HeadersSecurityMarker.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerXssProtectionDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/oauth2/client/AuthorizationCodeGrantDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/oauth2/resourceserver/OpaqueTokenDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerOpaqueTokenDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/headers/XssProtectionConfigDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/CorsDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/AuthorizeRequestsDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/WebSecurityConfigurer.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/OAuth2LoginDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerHeadersDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/headers/CacheControlDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/LogoutDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/OAuth2ClientDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/X509Dsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/oauth2/login/RedirectionEndpointDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/HttpSecurityBuilder.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/HttpConfigurationBuilder.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerHttpStrictTransportSecurityDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerContentSecurityPolicyDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/ExceptionHandlerDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerCacheControlDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/annotation/web/configuration/HttpSecurityConfiguration.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/ServerJwtDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/RequestCacheDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/http/CsrfBeanDefinitionParser.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/server/AuthorizeExchangeDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/ldap/LdapServerBeanDefinitionParser.java

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/HttpBasicDsl.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/oauth2/client/OAuth2ClientSecurityMarker.kt

\* /opt/cola/permits/1351887204\_1656319601.8786132/0/spring-security-config-5-4-10-sources-jar/org/springframework/security/config/web/servlet/session/SessionConcurrencyDsl.kt

# 1.319 opencore-amr 0.1.3

## 1.319.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or

merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

1. You must give any other recipients of the Work or Derivative Works a

copy of this License; and

2. You must cause any modified files to carry prominent notices stating that You changed the files; and

3. You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

4. If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any

warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable





\* Those intending to use this software module in hardware or software products  
\* are advised that its use may infringe existing patents. The original  
\* developer of this software module and his/her company, the subsequent  
\* editors and their companies, and ISO/IEC have no liability for use of this  
\* software module or modifications thereof in an implementation. Copyright is  
\* not released for non MPEG-4 Video (ISO/IEC 14496-2) Standard conforming  
\* products.

\*

\* ACTS-MoMuSys partners retain full right to use the code for his/her own  
\* purpose, assign or donate the code to a third party and to inhibit third  
\* parties from using the code for non MPEG-4 Video (ISO/IEC 14496-2) Standard  
\* conforming products. This copyright notice must be included in all copies or  
\* derivative works.

\*

\* Copyright (c) 1996, 1997

\*

\*\*\*\*\*/

/\*\*\*\*\*

#### SC 29 Software Copyright Licencing Disclaimer:

This software module was originally developed by  
Coding Technologies

and edited by

-

in the course of development of the ISO/IEC 13818-7 and ISO/IEC 14496-3  
standards for reference purposes and its performance may not have been  
optimized. This software module is an implementation of one or more tools as  
specified by the ISO/IEC 13818-7 and ISO/IEC 14496-3 standards.

ISO/IEC gives users free license to this software module or modifications  
thereof for use in products claiming conformance to audiovisual and  
image-coding related ITU Recommendations and/or ISO/IEC International  
Standards. ISO/IEC gives users the same free license to this software module or  
modifications thereof for research purposes and further ISO/IEC standardisation.  
Those intending to use this software module in products are advised that its  
use may infringe existing patents. ISO/IEC have no liability for use of this  
software module or modifications thereof. Copyright is not released for  
products that do not conform to audiovisual and image-coding related ITU  
Recommendations and/or ISO/IEC International Standards.

The original developer retains full right to modify and use the code for its  
own purpose, assign or donate the code to a third party and to inhibit third  
parties from using the code for products that do not conform to audiovisual and  
image-coding related ITU Recommendations and/or ISO/IEC International Standards.

This copyright notice must be included in all copies or derivative works.  
Copyright (c) ISO/IEC 2003.

\*\*\*\*\*/

/\*\*\*\*\*

This software module was originally developed by

Mikko Suonio (Nokia)

in the course of development of the MPEG-2 NBC/MPEG-4 Audio standard ISO/IEC 13818-7, 14496-1,2 and 3. This software module is an implementation of a part of one or more MPEG-2 NBC/MPEG-4 Audio tools as specified by the MPEG-2 NBC/MPEG-4 Audio standard. ISO/IEC gives users of the MPEG-2 NBC/MPEG-4 Audio standards free license to this software module or modifications thereof for use in hardware or software products claiming conformance to the MPEG-2 NBC/ MPEG-4 Audio standards. Those intending to use this software module in hardware or software products are advised that this use may infringe existing patents. The original developer of this software module and his/her company, the subsequent editors and their companies, and ISO/IEC have no liability for use of this software module or modifications thereof in an implementation. Copyright is not released for non MPEG-2 NBC/MPEG-4 Audio conforming products. The original developer retains full right to use the code for his/her own purpose, assign or donate the code to a third party and to inhibit third party from using the code for non MPEG-2 NBC/MPEG-4 Audio conforming products. This copyright notice must be included in all copies or derivative works.

Copyright (c) 1997.

\*\*\*\*\*/

/\*\*\*\*\*

This software module was originally developed by  
Nokia in the course of development of the MPEG-2 AAC/MPEG-4  
Audio standard ISO/IEC13818-7, 14496-1, 2 and 3.  
This software module is an implementation of a part  
of one or more MPEG-2 AAC/MPEG-4 Audio tools as specified by the  
MPEG-2 aac/MPEG-4 Audio standard. ISO/IEC gives users of the  
MPEG-2aac/MPEG-4 Audio standards free license to this software module  
or modifications thereof for use in hardware or software products  
claiming conformance to the MPEG-2 aac/MPEG-4 Audio standards. Those  
intending to use this software module in hardware or software products

are advised that this use may infringe existing patents. The original developer of this software module, the subsequent editors and their companies, and ISO/IEC have no liability for use of this software module or modifications thereof in an implementation. Copyright is not released for non MPEG-2 aac/MPEG-4 Audio conforming products. The original developer retains full right to use the code for the developer's own purpose, assign or donate the code to a third party and to inhibit third party from using the code for non MPEG-2 aac/MPEG-4 Audio conforming products. This copyright notice must be included in all copies or derivative works.  
Copyright (c)1997.

\*\*\*\*\*/

-----  
MPEG-2 NBC Audio Decoder

"This software module was originally developed by AT&T, Dolby Laboratories, Fraunhofer Gesellschaft IIS in the course of development of the MPEG-2 NBC/MPEG-4 Audio standard ISO/IEC 13818-7, 14496-1,2 and 3. This software module is an implementation of a part of one or more MPEG-2 NBC/MPEG-4 Audio tools as specified by the MPEG-2 NBC/MPEG-4 Audio standard. ISO/IEC gives users of the MPEG-2 NBC/MPEG-4 Audio standards free license to this software module or modifications thereof for use in hardware or software products claiming conformance to the MPEG-2 NBC/MPEG-4 Audio standards. Those intending to use this software module in hardware or software products are advised that this use may infringe existing patents. The original developer of this software module and his/her company, the subsequent editors and their companies, and ISO/IEC have no liability for use of this software module or modifications thereof in an implementation. Copyright is not released for non MPEG-2 NBC/MPEG-4 Audio conforming products. The original developer retains full right to use the code for his/her own purpose, assign or donate the code to a third party and to inhibit third party from using the code for non MPEG-2 NBC/MPEG-4 Audio conforming products. This copyright notice must be included in all copies or derivative works."  
Copyright(c)1996.

-----  
/\*

- \* snprintf.c - a portable implementation of snprintf
- \*
- \* AUTHOR
- \* Mark Martinec <mark.martinec@ijs.si>, April 1999.

\*  
\* Copyright 1999, Mark Martinec. All rights reserved.  
\*  
\* TERMS AND CONDITIONS  
\* This program is free software; you can redistribute it and/or modify  
\* it under the terms of the "Frontier Artistic License" which comes  
\* with this Kit.  
\*  
\* This program is distributed in the hope that it will be useful,  
\* but WITHOUT ANY WARRANTY; without even the implied warranty  
\* of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  
\* See the Frontier Artistic License for more details.  
\*  
\*  
\*/

The "Frontier Artistic License" may be found at  
<http://www.spinwardstars.com/frontier/fal.html>

/\*-----\*/

/\*  
\* Copyright (c) 2005 The Khronos Group Inc.  
\*  
\* Permission is hereby granted, free of charge, to any person obtaining  
\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject  
\* to the following conditions:  
\* The above copyright notice and this permission notice shall be included  
\* in all copies or substantial portions of the Software.  
\*  
\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS  
\* OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*  
\*/

/\*-----\*/

/\*\* @ @ @+++ @ @ @ @\*\*\*\*\*

\*\*  
\*\* Microsoft Windows Media  
\*\* Copyright (C) Microsoft Corporation. All rights reserved.  
\*\*  
\*\*\* @ @ @ --- @ @ @ @ \*\*\*\*\*  
\*/

-----  
Portions of this file are derived from the following 3GPP standard:

3GPP TS 26.073  
ANSI-C code for the Adaptive Multi-Rate (AMR) speech codec  
Available from <http://www.3gpp.org>

(C) 2004, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TTA, TTC)  
Permission to distribute, modify and use this file under the standard license  
terms listed above has been obtained from the copyright holder.

-----  
Portions of this file are derived from the following 3GPP standard:

3GPP TS 26.173  
ANSI-C code for the Adaptive Multi-Rate - Wideband (AMR-WB) speech codec  
Available from <http://www.3gpp.org>

(C) 2007, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TTA, TTC)  
Permission to distribute, modify and use this file under the standard license  
terms listed above has been obtained from the copyright holder.

# 1.320 libunistring 0.9.10 2

## 1.320.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates  
the terms and conditions of version 3 of the GNU General Public  
License, supplemented by the additional permissions listed below.

## 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

#### 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version



published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the

earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or



- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered

work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided

above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.  
@c The GNU General Public License.  
@center Version 3, 29 June 2007

@c This file is intended to be included within another document,  
@c hence no sectioning command or @node.

@display  
Copyright @copyright{ } 2007 Free Software Foundation, Inc. @url{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.  
@end display

@heading Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program---to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you

have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

@heading TERMS AND CONDITIONS

@enumerate 0

@item Definitions.

``This License" refers to version 3 of the GNU General Public License.



``Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

``The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as ``you". ``Licensees" and ``recipients" may be individuals or organizations.

To ``modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a ``modified version" of the earlier work or a work ``based on" the earlier work.

A ``covered work" means either the unmodified Program or a work based on the Program.

To ``propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To ``convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays ``Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

@item Source Code.

The ``source code" for a work means the preferred form of the work for making modifications to it. ``Object code" means any non-source form of a work.

A ``Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

@item Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and

control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

@item Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

@item Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

@item Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

@enumerate a

@item

The work must carry prominent notices stating that you modified it, and giving a relevant date.

@item

The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to ``keep intact all notices".

@item

You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

@item

If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

@end enumerate

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

@item Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

@enumerate a

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

@item

Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

@item

Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

@item

Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

@item

Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

@end enumerate

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A ``User Product'' is either (1) a ``consumer product'', which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of

coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

@item Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

@enumerate a

@item

Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

@item

Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

@item

Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

@item

Limiting the use for publicity purposes of names of licensors or authors of the material; or

@item

Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

@item

Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

@end enumerate

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

@item Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

@item Acceptance Not Required for Having Copies.



You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

@item Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

@item Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant

patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in

connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

@item No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

@item Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

@item Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

@item Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@item Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

@end enumerate

@heading END OF TERMS AND CONDITIONS

@heading How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

```
@smallexample
@var{one line to give the program's name and a brief idea of what it does.}
Copyright (C) @var{year} @var{name of author}
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see [@url{http://www.gnu.org/licenses/}](http://www.gnu.org/licenses/).  
@end smallexample

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
@smallexample
@var{program} Copyright (C) @var{year} @var{name of author}
This program comes with ABSOLUTELY NO WARRANTY; for details type @samp{show w}.
This is free software, and you are welcome to redistribute it
under certain conditions; type @samp{show c} for details.
@end smallexample
```

The hypothetical commands `@samp{show w}` and `@samp{show c}` should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an ``about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a ``copyright disclaimer" for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see [@url{http://www.gnu.org/licenses/}](http://www.gnu.org/licenses/).

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read [@url{http://www.gnu.org/philosophy/why-not-lgpl.html}](http://www.gnu.org/philosophy/why-not-lgpl.html).  
@c The GNU Free Documentation License.  
@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,  
@c hence no sectioning command or @node.

@display  
Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.  
[@uref{http://fsf.org/}](http://fsf.org/)

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.  
@end display

@enumerate 0  
@item  
PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input

to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain @sc{ascii} without markup, Texinfo input format, La@TeX{} input format, @acronym{SGML} or @acronym{XML} using a publicly available @acronym{DTD}, and standard-conforming simple @acronym{HTML}, PostScript or @acronym{PDF} designed for human modification. Examples of transparent image formats include @acronym{PNG}, @acronym{XCF} and @acronym{JPG}. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, @acronym{SGML} or @acronym{XML} for which the @acronym{DTD} and/or processing tools are not generally available, and the machine-generated @acronym{HTML}, PostScript or @acronym{PDF} produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

VERBATIM COPYING

You may copy and distribute the Document in any medium, either



commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give

them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice.

These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements.''

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License ``or any later version'' applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the

Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

RELICENSING

``Massive Multiauthor Collaboration Site" (or ``MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A ``Massive Multiauthor Collaboration" (or ``MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

```
@group
Copyright (C) @var{year} @var{your name}.
Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU Free Documentation License, Version 1.3
or any later version published by the Free Software Foundation;
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover
Texts. A copy of the license is included in the section entitled ``GNU
Free Documentation License''.
@end group
@end smallexample
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts." line with this:

```
@smallexample
@group
with the Invariant Sections being @var{list their titles}, with
the Front-Cover Texts being @var{list}, and with the Back-Cover Texts
being @var{list}.
@end group
@end smallexample
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
```

# 1.321 uvicorn 0.15.0

## 1.321.1 Available under license :

Copyright 2017-present, [Encode OSS Ltd](<http://www.encode.io/>).  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.



\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.322 flyway-commandline 7.3.1

### 1.322.1 Available under license :

No license file was found, but licenses were detected in source scan.

2020

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Found in path(s):

\* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/META-INF/maven/org.flywaydb/flyway-commandline/pom.xml

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright © Red Gate Software Ltd 2010-2020

\*

- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/FileLog.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/ConsoleLogCreator.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/MultiLogCreator.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/FileLogCreator.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/Main.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/MultiLogger.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/ColorizedConsoleLog.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/ConsoleLog.java
- \* /opt/cola/permits/1274024552\_1645166710.08/0/flyway-commandline-7-3-1-sources-jar/org/flywaydb/commandline/CommandLineArguments.java

## 1.323 hibernate-core 5.4.20

### 1.323.1 Available under license :

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> \* version.'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html>'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegionTemplate( public DomainDataStorageAccess getCacheStorageAccess() {'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. // "proprietary" methods is better (this class is "proprietary" too).'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegionConfigImpl build() {'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegion buildDomainDataRegion('

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. "5.3 in upgrading. It will be removed in a later version."

Found license 'GNU Lesser General Public License' in '# License: GNU Lesser General Public License (LGPL), version 2.1 or later. # See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. \* Instead, for common transaction-related tasks users must utilize a proprietary API known as ExtendedJTATransaction.'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. public DomainDataRegion buildDomainDataRegion('

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. \* Expert Group and released to the public domain, as explained at \* released to the public domain, as explained at'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. \* Expert Group and released to the public domain, as explained at'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegionImpl('

Found license 'GNU Lesser General Public License' in '~ License: GNU Lesser General Public License (LGPL), version 2.1 or later ~ See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html>'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later \* See the lgpl.txt file in the root directory or <http://www.gnu.org/licenses/lgpl-2.1.html> public DomainDataRegion getRegion() {'

Found license 'GNU Lesser General Public License' in '\* License: GNU Lesser General Public License (LGPL), version 2.1 or later. \* See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>. \* \* a proprietary CDI extension SPI (that we have proposed to'

Found license 'GNU Lesser General Public License' in '\* indicated by the @author tags or express copyright attribution \* distributed under license by Red Hat Middleware LLC. \* This copyrighted material is made available to anyone wishing to use, modify, \* copy, or redistribute it subject to the terms and conditions of the GNU \* Lesser General Public License, as published by the Free Software Foundation. \* This program is distributed in the hope that it will be useful, \* but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY \* or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License \* for more details. \* You should have received a copy of the GNU Lesser General Public License \* Boston, MA 02110-1301 USA'

Found license 'GNU Lesser General Public License' in '~ License: GNU Lesser General Public License (LGPL), version 2.1 or later. ~ See the lgpl.txt file in the root directory or <<http://www.gnu.org/licenses/lgpl-2.1.html>>.'

# 1.324 cryptsetup 1.7.5

## 1.324.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means

all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any

application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.



If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the

copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot

use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

-----

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU Lesser General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the

program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third



parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions

either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

-----

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

## 1.325 swagger-integration 2.1.9

### 1.325.1 Available under license :

No license file was found, but licenses were detected in source scan.

Manifest-Version: 1.0

Bundle-Description: swagger-integration

Automatic-Module-Name: io.swagger.v3.oas.integration

Bundle-License: "Apache License 2.0";link="http://www.apache.org/licenses/LICENSE-2.0.html"

package: io.swagger

Bundle-SymbolicName: io.swagger.core.v3.swagger-integration

implementation-version: 2.1.9

Built-By: runner

Bundle-ManifestVersion: 2

Bundle-DocURL: <https://github.com/swagger-api/swagger-core/modules/swagger-integration>

Import-Package: com.fasterxml.jackson.annotation;version="[2.12,3)",com.fasterxml.jackson.databind;version="[2.12,3)",com.fasterxml.jackson.databind.annotation;version="[2.12,3)",io.github.classgraph;version="[4.8,5)",io.swagger.v3.core.converter;version="[2.1,3)",io.swagger.v3.core.jackson;version="[2.1,3)",io.swagger.v3.core.util;version="[2.1,3)",io.swagger.v3.oas.annotations;version="[2.1,3)",io.swagger.v3.oas.integration,io.swagger.v3.oas.integration.api,io.swagger.v3.oas.models;version="[2.1,3)",io.swagger.v3.oas.models.media;version="[2.1,3)",org.apache.commons.lang3;version="[3.7,4)",org.apache.commons.lang3.tuple;version="[3.7,4)",org.slf4j;version="[1.7,2)"

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Bundle-Developers: fehguy;email="fehguy@gmail.com";name="Tony Tam",webbron;email="webbron@gmail.com";name="Ron Ratovsky"

url: <https://github.com/swagger-api/swagger-core/modules/swagger-integration>

mode: development

Export-Package: io.swagger.v3.oas.integration;uses:="com.fasterxml.jackson.databind,io.swagger.v3.core.converter,io.swagger.v3.core.util,io.swagger.v3.oas.integration.api,io.swagger.v3.oas.models,org.apache.commons.lang3.tuple,org.slf4j";version="2.1.9",io.swagger.v3.oas.integration.api;uses:="com.fasterxml.jackson.databind,io.swagger.v3.core.converter,io.swagger.v3.oas.integration,io.swagger.v3.oas.models";version="2.1.9"

Bundle-Name: swagger-integration

Bundle-Version: 2.1.9

Bundle-SCM: url="https://github.com/swagger-api/swagger-core/modules/swagger-integration",connection="scm:git:git@github.com:swagger-api/swagger-core.git/modules/swagger-integration",developer-connection="scm:git:git@github.com:swagger-api/swagger-core.git/modules/swagger-integration",tag=HEAD

Created-By: Apache Maven 3.6.3

Build-Jdk: 1.8.0\_282

Found in path(s):

\* /opt/cola/permits/1165124366\_1631831566.71/0/swagger-integration-2-1-9-jar/META-INF/MANIFEST.MF

## 1.326 containerd 1.3.0

### 1.326.1 Available under license :

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012 Pter Surnyi. Portions Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,



DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

The following files were ported to Go from C files of libyaml, and thus are still covered by their original copyright and license:

apic.go  
emitterc.go  
parserc.go  
readerc.go  
scannerc.go  
writerc.go  
yamlh.go  
yamlprivateh.go

Copyright (c) 2006 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Attribution-ShareAlike 4.0 International

=====  
Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

#### Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: [wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to

copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public:

[wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

---

## Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

### Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](http://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.

- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.
- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.
- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.



m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

## Section 2 -- Scope.

### a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
  - a. reproduce and Share the Licensed Material, in whole or in part; and
  - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.
3. Term. The term of this Public License is specified in Section 6(a).
4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a) (4) never produces Adapted Material.
5. Downstream recipients.
  - a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.
  - b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You

automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.

c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.

3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

### Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

- a. retain the following if it is supplied by the Licensor with the Licensed Material:
  - i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);
  - ii. a copyright notice;
  - iii. a notice that refers to this Public License;
  - iv. a notice that refers to the disclaimer of warranties;
  - v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;
- b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and
- c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.

2. You must include the text of, or the URI or hyperlink to, the

Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.

3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

#### Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,  
  
including for purposes of Section 3(b); and
- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

#### Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.
- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION,

NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.

- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

#### Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:
  - 1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or
  - 2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

- c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.
- d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

#### Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.

b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.
- d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and



- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,



use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions

for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but



excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2014-2017 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are



met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Docker

Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/kr/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2012,2013 Ernest Micklei

#### MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and



attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2014 Sam Ghods

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR

A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate



comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including

the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each



Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed

as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this

License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2013-2017 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2011-2016 Canonical Ltd.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate



as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include

the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free,

irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

#### 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and

conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

MIT License

Copyright (c) 2016 json-iterator

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner



or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

MIT License

Copyright (c) 2016 Jeremy Saenz & Contributors

Permission is hereby granted, free of charge, to any person obtaining a copy

of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2014-2017 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and  
limitations under the License.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>  
<https://github.com/beorn7/perks>  
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein  
See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format  
<http://github.com/golang/protobuf/>  
Copyright 2010 The Go Authors  
See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).  
[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)  
Copyright 2013 Matt T. Proud  
Licensed under the Apache License, Version 2.0  
Copyright (c) 2013 Dario Casta. All rights reserved.  
Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

\* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above



copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

procfs provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2013, Georg Reinke (<[guelfey@gmail.com](mailto:guelfey@gmail.com)>), Google

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

## 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

## 1.3. Contribution

means Covered Software of a particular Contributor.

## 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

## 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

## 1.6. Executable Form

means any form of the work other than Source Code Form.

## 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

## 1.8. License

means this document.

## 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

## 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. Source Code Form

means the form of the work preferred for making modifications.

#### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and

- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable

copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims,

and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such partys negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a partys ability to bring cross-claims or counter-claims.

## 9. Miscellaneous



This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v.

2.0. If a copy of the MPL was not distributed with this file, You can obtain one at

<http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant

directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible  
With Secondary Licenses, as defined by  
the Mozilla Public License, v. 2.0.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Patrick Mezard  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

#### 1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

#### 1.8. "License"

means this document.

#### 1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is



controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by

reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the

limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license

steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Common libraries shared by Prometheus Go components.  
Copyright 2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).  
Blackfriday is distributed under the Simplified BSD License:

- > Copyright 2011 Russ Ross
- > All rights reserved.
- >
- > Redistribution and use in source and binary forms, with or without

- > modification, are permitted provided that the following conditions
- > are met:
- >
- > 1. Redistributions of source code must retain the above copyright
- > notice, this list of conditions and the following disclaimer.
- >
- > 2. Redistributions in binary form must reproduce the above
- > copyright notice, this list of conditions and the following
- > disclaimer in the documentation and/or other materials provided with
- > the distribution.
- >
- > THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
- > "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
- > LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
- > FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
- > COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
- > INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
- > BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
- > LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
- > CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- > LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN
- > ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
- > POSSIBILITY OF SUCH DAMAGE.

ISC License

Copyright (c) 2012-2016 Dave Collins <dave@davec.name>

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH (open-source@konsorten.de)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the

Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or



otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

go-runhcs is a fork of go-runc

The following is runc's legal notice.

---

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

The MIT License (MIT)

Copyright (c) 2014 Brian Goff

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.327 tftp-hpa 5.2

### 1.327.1 Available under license :

<OWNER> = Regents of the University of California

<ORGANIZATION> = University of California, Berkeley

<YEAR> = 1998

In the original BSD license, both occurrences of the phrase "COPYRIGHT HOLDERS AND CONTRIBUTORS" in the disclaimer read "REGENTS AND CONTRIBUTORS".

Here is the license template:

Copyright (c) <YEAR>, <OWNER>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the <ORGANIZATION> nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.328 spring-security-web 5.3.4.RELEASE

## 1.328.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2004, 2005, 2006 Acegi Technology Pty Limited
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/authentication/logout/LogoutHandler.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/savedrequest/Enumerator.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/util/UrlUtils.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/access/DefaultWebInvocationPrivilegeEvaluator.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/savedrequest/FastDateFormat.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/authentication/rememberme/TokenBasedRememberMeServices.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/session/HttpSessionEventPublisher.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/access/AccessDeniedHandlerImpl.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/savedrequest/SavedRequestAwareWrapper.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/access/channel/ChannelProcessingFilter.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/access/channel/RetryWithHttpEntryPoint.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/authentication/WebAuthenticationDetails.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/authentication/switchuser/SwitchUserFilter.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/PortMapperImpl.java
```

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/www/DigestAuthenticationEntryPoint.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/PortResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/RememberMeServices.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/SimpleSavedRequest.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/switchuser/AuthenticationSwitchUserEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/UsernamePasswordAuthenticationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/WebAuthenticationDetailsSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/LoginUrlAuthenticationEntryPoint.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/SecurityContextLogoutHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/ChannelDecisionManagerImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/intercept/FilterSecurityInterceptor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/ChannelEntryPoint.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/AccessDeniedHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/www/BasicAuthenticationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/AuthenticationEntryPoint.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/WebInvocationPrivilegeEvaluator.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/intercept/FilterInvocationSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/SecureChannelProcessor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/NullRememberMeServices.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/intercept/DefaultFilterInvocationSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/AnonymousAuthenticationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/www/NonceExpiredException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/ChannelDecisionManager.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/PortResolverImpl.java



\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/www/BasicAuthenticationEntryPoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/AbstractAuthenticationProcessingFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/RetryWithHttpsEntryPoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/DefaultSavedRequest.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/HttpSessionCreatedEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/servletapi/SecurityContextHolderAwareRequestFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/HttpSessionDestroyedEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/PortMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/servletapi/SecurityContextHolderAwareRequestWrapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/InsecureChannelProcessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/switchuser/SwitchUserGrantedAuthority.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/FilterChainProxy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/FilterInvocation.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/ChannelProcessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/LogoutFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/RememberMeAuthenticationFilter.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/matcher/RequestVariablesExtractor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/firewall/StrictHttpFirewall.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/servlet/util/matcher/MvcRequestMatcher.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2010-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jaasapi/JaasApiIntegrationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/DelegatingAuthenticationEntryPoint.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/matcher/ELRequestMatcher.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/matcher/RequestMatcherEditor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authorization/AuthorizationContext.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authorization/AuthorizationWebFilter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/util/matcher/AndServerWebExchangeMatcher.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/ContentTypeOptionsServerHttpHeadersWriter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/csrf/WebSessionServerCsrfTokenRepository.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/util/matcher/ServerWebExchangeMatcherEntry.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/DelegatingServerAuthenticationEntryPoint.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/util/matcher/MediaTypeServerWebExchangeMatcher.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/XContentTypeOptionsServerHttpHeadersWriter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/AbstractRememberMeServices.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/logout/RedirectServerLogoutSuccessHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/ServerAuthenticationFailureHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/ui/LoginPageGeneratingWebFilter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/StrictTransportSecurityServerHttpHeadersWriter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/savedrequest/ServerRequestCacheWebFilter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/csrf/DefaultCsrfToken.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/ServerFormLoginAuthenticationConverter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/util/matcher/ServerWebExchangeMatchers.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/XFrameOptionsServerHttpHeadersWriter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/util/matcher/ServerWebExchangeMatcher.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-

jar/org/springframework/security/web/server/authentication/logout/SecurityContextServerLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/RedirectServerAuthenticationEntryPoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/ServerAuthenticationSuccessHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/WebFilterChainProxy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/logout/ServerLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/WebFilterChainServerAuthenticationSuccessHandler.java  
va  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/csrf/CsrfException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/HttpBasicServerAuthenticationEntryPoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/context/SecurityContextServerWebExchange.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/util/matcher/OrServerWebExchangeMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/csrf/ServerCsrfTokenRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/RedirectServerAuthenticationFailureHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/ServerRedirectStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/ui/LogoutPageGeneratingWebFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authorization/DelegatingReactiveAuthorizationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/header/ServerHttpHeadersWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authorization/ExceptionTranslationWebFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/header/HttpHeaderWriterWebFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/ServerAuthenticationEntryPointFailureHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authorization/HttpStatusServerAccessDeniedHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/RedirectServerAuthenticationSuccessHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/savedrequest/NoOpServerRequestCache.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/WebFilterExchange.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/csrf/CsrfToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/context/SecurityContextServerWebExchangeWebFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authorization/ServerAccessDeniedHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/savedrequest/ServerRequestCache.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/savedrequest/WebSessionServerRequestCache.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/logout/LogoutWebFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/context/ReactorContextWebFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/SecurityWebFilterChain.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/CompositeServerHttpHeadersWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/logout/ServerLogoutSuccessHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/context/NoOpServerSecurityContextRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/PersistentTokenBasedRememberMeServices.java  
a  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/CacheControlServerHttpHeadersWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/context/ServerSecurityContextRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/ServerAuthenticationEntryPoint.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/DefaultCsrfTokenMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/DefaultSavedRequestMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/SessionInformationExpiredStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/CookieDeserializer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/WebAuthenticationDetailsMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/SavedCookieMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/ServletJackson2Module.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/CookieMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/PreAuthenticatedAuthenticationTokenMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jackson2/WebJackson2Module.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/ContentSecurityPolicyHeaderWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/transport/HttpsRedirectWebFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/AbstractAuthenticationTargetUrlRequestHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/ConcurrentSessionFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-

jar/org/springframework/security/web/authentication/AuthenticationFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/ReactivePreAuthenticatedAuthenticationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/access/intercept/RequestKey.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/ReferrerPolicyHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/header/ClearSiteDataServerHttpHeadersWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/reactive/result/method/annotation/CurrentSecurityContextArgumentResolver.  
java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/IpAddressMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/HeaderWriterFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/MediaTypeRequestMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/AuthenticationEntryPointFailureHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/session/ConcurrentSessionControlAuthenticationStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/method/annotation/CurrentSecurityContextArgumentResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/logout/LogoutSuccessEventPublishingLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/frameoptions/XFrameOptionsHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/FeaturePolicyHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/authentication/logout/HeaderWriterServerLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/HstsHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/www/BasicAuthenticationConverter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/server/csrf/CookieServerCsrfTokenRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/AuthenticationConverter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/AntPathRequestMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/StaticHeadersWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/logout/CookieClearingLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/HpkpHeaderWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/XXssProtectionHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/ClearSiteDataHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/CompositeHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/HeaderWriterLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/ExpressionBasedFilterInvocationSecurityMetadataSource.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2012-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/DelegatingEvaluationContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/SessionInformationExpiredEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CookieCsrfTokenRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/LazyCsrfTokenRepository.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2015-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at



```
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/jackson2/DefaultCsrfServerTokenMixin.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/jackson2/PreAuthenticatedAuthenticationTokenDeserializer.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/jackson2/WebServerJackson2Module.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2004, 2005, 2006, 2009 Acegi Technology Pty Limited
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/authentication/www/DigestAuthenticationFilter.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
```

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/WebExpressionConfigAttribute.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/SimpleUrlLogoutSuccessHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/CookieTheftException.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/SimpleUrlAuthenticationSuccessHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/SessionAuthenticationException.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/SavedRequest.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/SavedCookie.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/websphere/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/AuthenticationSuccessHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/SecurityContextPersistenceFilter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/TextEscapeUtils.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/HttpSessionRequestCache.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/intercept/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/debug/DebugFilter.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/RedirectStrategy.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/HttpRequestResponseHolder.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-

jar/org/springframework/security/web/authentication/SavedRequestAwareAuthenticationSuccessHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/access/expression/WebSecurityExpressionRoot.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/servletapi/HttpServletRequestFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/context/SecurityContextRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/AndRequestMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/OrRequestMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/switchuser/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/session/SessionAuthenticationStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/Http403ForbiddenEntryPoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/j2ee/J2eeBasedPreAuthenticatedWebAuthenticationD  
etailsSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/session/SessionManagementFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/rememberme/PersistentTokenRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/HttpStatusEntryPoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/servletapi/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedAuthenticationToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/rememberme/InMemoryTokenRepositoryImpl.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedGrantedAuthoritiesUserDetailsServic  
e.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/jackson2/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/WebAttributes.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/websphere/WASUsernameAndGroupsExtractor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/DefaultRedirectStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/frameoptions/AbstractRequestParameterAllowFromStrategy.ja  
va  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/NegatedRequestMatcher.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/j2ee/WebXmlMappableAttributesRetriever.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/NullAuthenticatedSessionStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/www/DigestAuthUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/firewall/RequestRejectedException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/LogoutSuccessHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/firewall/FirewalledRequest.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/ui/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/HttpSessionSecurityContextRepository.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/j2ee/J2eePreAuthenticatedProcessingFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/DefaultWebSecurityExpressionHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/x509/SubjectDnX509PrincipalExtractor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/OnCommittedResponseWrapper.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/RegisterSessionAuthenticationStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/switchuser/SwitchUserAuthorityChanger.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/SecurityFilterChain.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/RedirectUrlBuilder.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/websphere/DefaultWASUsernameAndGroupsExtractor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-

jar/org/springframework/security/web/authentication/logout/CompositeLogoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/savedrequest/RequestCacheAwareFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/ThrowableAnalyzer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedCredentialsNotFoundException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/x509/X509AuthenticationFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/Header.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/session/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/header/writers/frameoptions/WhiteListedAllowFromStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/AuthenticationFailureHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/context/SaveContextOnUpdateOrErrorResponseWrapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/DefaultSecurityFilterChain.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/session/SimpleRedirectSessionInformationExpiredStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/rememberme/PersistentRememberMeToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/matcher/RegexRequestMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/firewall/HttpFirewall.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/access/channel/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/firewall/DefaultHttpFirewall.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/j2ee/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/firewall/RequestWrapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/savedrequest/RequestCache.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/authentication/preauth/websphere/WebSpherePreAuthenticatedWebAuthentic  
ationDetailsSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/servletapi/HttpServletRequest3RequestFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-  
jar/org/springframework/security/web/util/ThrowableCauseExtractor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/RequestHeaderAuthenticationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/x509/X509PrincipalExtractor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/NullSecurityContextRepository.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/InvalidCookieException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/savedrequest/NullRequestCache.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/SimpleRedirectInvalidSessionStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/frameoptions/StaticAllowFromStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/request/async/WebAsyncManagerIntegrationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/HttpStatusReturningLogoutSuccessHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/PreAuthenticatedGrantedAuthoritiesWebAuthenticationDetails.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/RequestAttributeAuthenticationFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/debug/Logger.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/frameoptions/RegExpAllowFromStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/logout/DelegatingLogoutSuccessHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/websphere/WebSpherePreAuthenticatedProcessingFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/frameoptions/AllowFromStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/x509/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/jaasapi/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/www/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/InvalidSessionStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/channel/AbstractRetryEntryPoint.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/RememberMeAuthenticationException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/WebExpressionVoter.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/support/SecurityWebApplicationContextUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/DelegatingAuthenticationFailureHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/EvaluationContextPostProcessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/expression/AbstractVariableEvaluationContextPostProcessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/DelegatingAccessDeniedHandler.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
```

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/AuthenticationWebFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/csrf/CsrfWebFilter.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2012 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/rememberme/JdbcTokenRepositoryImpl.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):



\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/matcher/RequestHeaderRequestMatcher.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2009-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/matcher/ELRequestMatcherContext.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CsrfLogoutHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/session/InvalidSessionAccessDeniedHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/HttpSessionCsrfTokenRepository.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CsrfAuthenticationStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/util/matcher/AnyRequestMatcher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/InvalidCsrfTokenException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/DefaultCsrfToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/AbstractSessionFixationProtectionStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/ChangeSessionIdAuthenticationStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CsrfException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/MissingCsrfTokenException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/bind/support/AuthenticationPrincipalArgumentResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/servlet/support/csrf/CsrfRequestDataValueProcessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CsrfFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/context/AbstractSecurityWebApplicationInitializer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/SessionFixationProtectionStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/CompositeSessionAuthenticationStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/XContentTypeOptionsHeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CsrfTokenRepository.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/method/annotation/AuthenticationPrincipalArgumentResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/bind/annotation/AuthenticationPrincipal.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/csrf/CsrfToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/HeaderWriter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/session/SessionFixationProtectionEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/method/annotation/CsrfTokenArgumentResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/DelegatingRequestMatcherHeaderWriter.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/header/ReferrerPolicyServerHttpHeadersWriter.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/http/SecurityHeaders.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/authentication/logout/HttpStatusReturningServerLogoutSuccessHandle
r.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/authentication/ServerAuthenticationConverter.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/DefaultServerRedirectStrategy.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/util/matcher/PathPatternParserServerWebExchangeMatcher.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/authentication/HttpStatusServerEntryPoint.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/reactive/result/method/annotation/AuthenticationPrincipalArgumentResolver.
java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/authorization/ServerWebExchangeDelegatingServerAccessDeniedHan
dler.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/ServerHttpBasicAuthenticationConverter.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/authentication/logout/ForwardLogoutSuccessHandler.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/context/request/async/SecurityContextCallableProcessingInterceptor.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/authentication/ServerFormLoginAuthenticationConverter.java
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/server/authentication/DelegatingServerAuthenticationSuccessHandler.java
```

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/context/WebSessionServerSecurityContextRepository.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/ui/DefaultLogoutPageGeneratingFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/SimpleUrlAuthenticationFailureHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/ContentSecurityPolicyServerHttpHeadersWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/reactive/result/view/CsrfRequestDataValueProcessor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/ForwardAuthenticationFailureHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/csrf/CsrfServerLogoutHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/FeaturePolicyServerHttpHeadersWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/XXssProtectionServerHttpHeadersWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/firewall/FirewalledResponse.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/ui/DefaultLoginPageGeneratingFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/ExceptionMappingAuthenticationFailureHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/ForwardAuthenticationSuccessHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/ServerX509AuthenticationConverter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/util/matcher/NegatedServerWebExchangeMatcher.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/header/writers/CacheControlHeadersWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/authentication/preauth/AbstractPreAuthenticatedProcessingFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/header/StaticServerHttpHeadersWriter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/access/RequestMatcherDelegatingAccessDeniedHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/AnonymousAuthenticationWebFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/MatcherSecurityWebFilterChain.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/logout/DelegatingServerLogoutHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949352\_1599626384.45/0/spring-security-web-5-3-4-release-sources-jar/org/springframework/security/web/server/authentication/ServerHttpBasicAuthenticationConverter.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2004-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949352_1599626384.45/0/spring-security-web-5-3-4-release-sources-
jar/org/springframework/security/web/access/ExceptionTranslationFilter.java
```

## 1.329 libssh 0.9.3 2ubuntu2.2

### 1.329.1 Available under license :

MIT License

Copyright (c) 2017 Jan-Lukas Wynen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: libssh

Upstream-Contact: libssh@libssh.org

Andreas Schneider <asn@cryptomilk.org>

Source: <https://git.libssh.org/projects/libssh.git>

Files: \*

Copyright: \*No copyright\*

License: LGPL-2.1+~OpenSSL

Comment:

Using license from COPYING file.

Files: include/libssh/auth.h  
include/libssh/bignum.h  
include/libssh/bind.h  
include/libssh/buffer.h  
include/libssh/channels.h  
include/libssh/crc32.h  
include/libssh/crypto.h  
include/libssh/dh.h  
include/libssh/ecdh.h  
include/libssh/ed25519.h  
include/libssh/gssapi.h  
include/libssh/kex.h  
include/libssh/keys.h  
include/libssh/legacy.h  
include/libssh/libcrypto.h  
include/libssh/libcrypt.h  
include/libssh/libssh.h  
include/libssh/libsshpp.hpp  
include/libssh/messages.h  
include/libssh/misc.h  
include/libssh/packet.h  
include/libssh/pcap.h  
include/libssh/pki.h  
include/libssh/pki\_priv.h  
include/libssh/poll.h  
include/libssh/priv.h  
include/libssh/scp.h  
include/libssh/server.h  
include/libssh/session.h  
include/libssh/sftp.h  
include/libssh/socket.h  
include/libssh/string.h  
include/libssh/threads.h  
include/libssh/wrapper.h  
src/auth1.c  
src/base64.c  
src/bignum.c  
src/bind.c  
src/buffer.c

src/client.c  
src/connect.c  
src/crc32.c  
src/ecdh.c  
src/error.c  
src/gcrypt\_missing.c  
src/init.c  
src/kex.c  
src/kex1.c  
src/legacy.c  
src/libcrypto.c  
src/libgcrypt.c  
src/log.c  
src/messages.c  
src/packet.c  
src/packet1.c  
src/packet\_cb.c  
src/packet\_crypt.c  
src/pcap.c  
src/pki\_container\_openssh.c  
src/pki\_ed25519.c  
src/server.c  
src/session.c  
src/sftpserver.c  
src/socket.c  
src/string.c  
src/threads.c  
src/threads/pthread.c  
src/wrapper.c  
tests/benchmarks/bench\_raw.c  
tests/benchmarks/bench\_scp.c  
tests/benchmarks/bench\_sftp.c  
tests/benchmarks/benchmarks.c  
tests/benchmarks/benchmarks.h  
tests/benchmarks/latency.c  
tests/client/torture\_algorithms.c  
tests/client/torture\_auth.c  
tests/client/torture\_connect.c  
tests/client/torture\_knownhosts.c  
tests/client/torture\_session.c  
tests/test\_pcap.c  
tests/test\_socket.c

Copyright: 2003-2014, Aris Adamantiadis

License: LGPL-2.1+~OpenSSL

Files: examples/exec.c  
examples/senddata.c  
examples/CMakeLists.txt

include/libssh/ssh1.h  
include/libssh/ssh2.h  
tests/authentication.c  
tests/benchmarks/bench1.sh  
tests/benchmarks/bench2.sh  
tests/chmodtest.c  
tests/client/torture\_proxycommand.c  
tests/client/torture\_sftp\_dir.c  
tests/client/torture\_sftp\_read.c  
tests/cmdline.c  
tests/connection.c  
tests/generate.py  
tests/sftp\_stress/main.c  
tests/test\_exec.c  
tests/test\_ssh\_bind\_accept\_fd.c  
tests/test\_tunnel.c  
tests/tests.h  
tests/unittests/torture\_buffer.c  
tests/unittests/torture\_callbacks.c  
tests/unittests/torture\_channel.c  
tests/unittests/torture\_init.c  
tests/unittests/torture\_isipaddr.c  
tests/unittests/torture\_keyfiles.c  
tests/unittests/torture\_list.c  
tests/unittests/torture\_misc.c  
tests/unittests/torture\_options.c  
tests/unittests/torture\_pki.c  
tests/unittests/torture\_rand.c

Copyright: \*No copyright\*

License: LGPL-2.1+~OpenSSL

Comment:

Using license from COPYING file.

Files: examples/authentication.c  
examples/connect\_ssh.c  
examples/examples\_common.h  
examples/knownhosts.c  
examples/libssh\_scp.c  
examples/libsshpp.cpp  
examples/libsshpp\_noexcept.cpp  
examples/proxy.c  
examples/sample.c  
examples/samplesftp.c  
examples/samplesshd-cb.c  
examples/samplesshd-kbdint.c  
examples/scp\_download.c  
examples/sshnetcat.c

Copyright: 2003-2013, Aris Adamantiadis



License: public-domain

You are free to copy this file, modify it in any way, consider it being public domain. This does not apply to the rest of the library though, but it is allowed to cut-and-paste working code from this file to any license of program.

Files: src/external/curve25519\_ref.c

src/external/ed25519.c

src/external/fe25519.c

src/external/ge25519.c

src/external/ge25519\_base.data

src/external/sc25519.c

Copyright: \*No copyright\*

License: public-domain

Copied from supercop project <<https://bench.cr.yp.to/supercop.html>>

Files: tests/pkd/pkd\_client.h

tests/pkd/pkd\_daemon.c

tests/pkd/pkd\_daemon.h

tests/pkd/pkd\_hello.c

tests/pkd/pkd\_keyutil.c

tests/pkd/pkd\_keyutil.h

tests/pkd/pkd\_util.c

tests/pkd/pkd\_util.h

Copyright: 2014, Jon Simons

License: LGPL-2.1+~OpenSSL

Files: src/channels.c

src/channels1.c

src/gzip.c

src/known\_hosts.c

src/misc.c

src/options.c

src/pki.c

src/pki\_crypto.c

src/pki\_gcrypt.c

src/sftp.c

Copyright: 2003-2013, Aris Adamantiadis

2008-2013, Andreas Schneider <[asn@cryptomilk.org](mailto:asn@cryptomilk.org)>

License: LGPL-2.1+~OpenSSL

Files: include/libssh/agent.h

include/libssh/options.h

src/agent.c

src/callbacks.c

src/config.c

tests/client/torture\_forward.c

tests/client/torture\_request\_env.c

tests/torture.c

tests/torture.c

tests/torture.h

Copyright: 2008-2013, Andreas Schneider <asn@cryptomilk.org>

License: LGPL-2.1+~OpenSSL

Files: include/libssh/curve25519.h

src/curve25519.c

Copyright: 2013, Aris Adamantiadis <aris@badcode.be>

License: LGPL-2.1

Comment:

Upstream has been notified about the license incongruity with all the other files. (Is: LGPL-2.1, should be: LGPL-2.1+~OpenSSL).

Files: include/libssh/callbacks.h

src/scp.c

Copyright: 2009, Aris Adamantiadis <aris@0xbadc0de.be>

License: LGPL-2.1+~OpenSSL

Files: src/match.c

Copyright: 1995, Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland

2000, Markus Friedl

License: BSD-2-clause

Files: include/libssh/knownhosts.h

Copyright: 2014, Aris Adamantiadis <aris@badcode.be>

License: LGPL-2.1

Comment:

File header gives 20014 as the copyright year. Assuming a typo (20014 -> 2014).

.

Upstream has been notified about the license incongruity with all the other files. (Is: LGPL-2.1, should be: LGPL-2.1+~OpenSSL).

Files: src/poll.c

Copyright: 2003-2013, Aris Adamantiadis

2009, Aleksandar Kanchev

2009-2013, Andreas Schneider <asn@cryptomilk.org>

License: LGPL-2.1+~OpenSSL

Files: src/dh.c

Copyright: 2003-2013, Aris Adamantiadis

2009-2013, Andreas Schneider <asn@cryptomilk.org>

2012, Dmitriy Kuznetsov <dk@yandex.ru>

License: LGPL-2.1+~OpenSSL

Files: src/auth.c

Copyright: 2003-2013, Aris Adamantiadis <aris@0xbadc0de.be>

2008-2013, Andreas Schneider <asn@cryptomilk.org>  
License: LGPL-2.1+~OpenSSL

Files: src/getpass.c  
Copyright: 2011-2013, Andreas Schneider <asn@cryptomilk.org>  
License: LGPL-2.1+~OpenSSL

Files: src/gssapi.c  
Copyright: 2013, Aris Adamantiadis <aris@badcode.be>  
License: LGPL-2.1+~OpenSSL

Files: cmake/Modules/DefineCMakeDefaults.cmake  
cmake/Modules/DefineCompilerFlags.cmake  
cmake/Modules/DefineInstallationPaths.cmake  
cmake/Modules/DefinePlatformDefaults.cmake  
Copyright: \*No copyright\*  
License: BSD-3-clause  
Comment:  
Using license from cmake/Modules/COPYING-CMAKE-SCRIPTS

Files: cmake/Modules/AddCMockaTest.cmake  
cmake/Modules/CheckCCompilerFlagSSP.cmake  
cmake/Modules/FindArgp.cmake  
cmake/Modules/FindCMocka.cmake  
cmake/Modules/FindGCrypt.cmake  
cmake/Modules/FindGSSAPI.cmake  
cmake/Modules/FindNaCl.cmake  
cmake/Modules/FindNSIS.cmake  
cmake/Modules/MacroEnsureOutOfSourceBuild.cmake  
cmake/Modules/UseDoxygen.cmake  
Copyright: 2007-2010 Andreas Schneider  
2013, Aris Adamantiadis  
2006, Oswald Buddenhagen  
2006, Alexander Neundorf  
2006, Laurent Montel  
2006-2007 Wengo  
2007, Daniel Gollub  
2009-2011 Tobias Rautenkranz  
License: BSD-3-clause

Files: debian/\*  
Copyright: 2005-2006, Jean-Philippe Garcia Ballester <giga@le-pec.org>  
2006-2016, Laurent Bigonville <bigon@debian.org>  
2014, Mike Gabriel <sunweaver@debian.org>  
License: LGPL-2.1+~OpenSSL or BSD-2-clause or BSD-3-clause

License: LGPL-2.1+~OpenSSL

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

.

On Debian systems, the complete text of the GNU Library General Public License version 2.1 can be found in "/usr/share/common-licenses/LGPL-2.1".

.

In addition, as a special exception, the author of this program gives permission to link the code of its release with the OpenSSL project's "OpenSSL" library (or with modified versions of it that use the same license as the "OpenSSL" library), and distribute the linked executables. You must obey the GNU General Public License in all respects for all of the code used other than "OpenSSL". If you modify this file, you may extend this exception to your version of the file, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

License: LGPL-2.1

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License.

.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

.

On Debian systems, the complete text of the GNU Library General Public License version 2.1 can be found in "/usr/share/common-licenses/LGPL-2.1".

License: BSD-2-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-3-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Some parts are under the BSDv2 License :

Copyright (c) 2000 Markus Friedl. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge

for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General

Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs



(which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all

subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new

versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### Linking with OpenSSL

17. In addition, as a special exception, we give permission to link the code of its release of libssh with the OpenSSL project's "OpenSSL" library (or with

modified versions of it that use the same license as the "OpenSSL" library), and distribute the linked executables. You must obey the GNU Lesser General Public License in all respects for all of the code used other than "OpenSSL". If you modify this file, you may extend this exception to your version of the file, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

#### END OF TERMS AND CONDITIONS

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.330 glibc 2.31-0ubuntu9

### 1.330.1 Available under license :

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.  
This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources,



credits must appear in the documentation.

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.

4. This notice may not be removed or altered.

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among

countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program

`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

#### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.



For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain

special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which

must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the

Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a



license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the

"copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

This file contains the copying permission notices for various files in the GNU C Library distribution that have copyright owners other than the Free Software Foundation. These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

All code incorporated from 4.4 BSD is distributed under the following license:

Copyright (C) 1991 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach,  
derived from Mach 3.0:

Mach Operating System  
Copyright (C) 1991,1990,1989 Carnegie Mellon University  
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its  
documentation is hereby granted, provided that both the copyright  
notice and this permission notice appear in all copies of the  
software, derivative works or modified versions, and any portions  
thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS ``AS IS"  
CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR  
ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator  
School of Computer Science  
Carnegie Mellon University  
Pittsburgh PA 15213-3890

or [Software.Distribution@CS.CMU.EDU](mailto:Software.Distribution@CS.CMU.EDU) any improvements or  
extensions that they make and grant Carnegie Mellon the rights to  
redistribute these changes.

The file `if_ppp.h` is under the following CMU license:

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors  
may be used to endorse or promote products derived from this software  
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND  
CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,  
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF  
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.  
IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY  
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files inet/getnameinfo.c and sysdeps/posix/getaddrinfo.c are copyright (C) by Craig Metz and are distributed under the following license:

/\* The Inner Net License, Version 2.00

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.
2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
4. [The copyright holder has authorized the removal of this clause.]
5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. \*/

The file sunrpc/des\_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<https://www.gnu.org/licenses/>> to obtain a copy.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.



This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file `posix/PCRE.tests` is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful, but **WITHOUT ANY WARRANTY**; without even the implied warranty of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. In practice, this means that if you use PCRE in software that you distribute to others, commercially or otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant files or online help data or similar. A reference to the ftp site for the source, that is, to

`ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/`

should also be given in the documentation. However, this condition is not

intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL), then the terms of that licence shall supersede any condition above with which it is incompatible.

Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, see

<<https://www.gnu.org/licenses/>>. \*/

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

#### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

## 1.331 hikaricp 3.4.5

## 1.331.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2013,2014 Brett Wooldridge
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
 * /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/pool/HikariPool.java
 * /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/HikariJNDIFactory.java
 * /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/metrics/dropwizard/CodaHaleMetricsTracker.java
 * /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/metrics/MetricsTracker.java
 * /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/metrics/MetricsTrackerFactory.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2019 Brett Wooldridge
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/util/IsolationLevel.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2013 Brett Wooldridge

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/util/PropertyElf.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/util/UtilityElf.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/pool/ProxyStatement.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/pool/ProxyPreparedStatement.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/HikariDataSource.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/metrics/prometheus/PrometheusHistogramMetricsTracker.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/hibernate/HikariConnectionProvider.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/metrics/prometheus/PrometheusMetricsTracker.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/hibernate/HikariConfigurationUtil.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/HikariPoolMXBean.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/pool/ProxyCallableStatement.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/metrics/dropwizard/CodahaleMetricsTrackerFactory.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/HikariConfigMXBean.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2013, 2014 Brett Wooldridge
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/metrics/prometheus/HikariCPCollector.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/util/ConcurrentBag.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/pool/ProxyResultSet.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/util/DriverDataSource.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/util/SuspendResumeLock.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/util/JavassistProxyFactory.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/HikariConfig.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/pool/ProxyConnection.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/pool/ProxyLeakTaskFactory.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/pool/ProxyFactory.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/util/FastList.java
* /opt/cola/permits/1257259274_1642793180.98/0/hikaricp-3-4-5-sources-
jar/com/zaxxer/hikari/pool/ProxyLeakTask.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2017 Brett Wooldridge
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
```

\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-  
jar/com/zaxxer/hikari/metrics/IMetricsTracker.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2015 Brett Wooldridge

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-  
jar/com/zaxxer/hikari/util/ClockSource.java

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-  
jar/com/zaxxer/hikari/metrics/PoolStats.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2014 Brett Wooldridge

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/metrics/dropwizard/CodahaleHealthChecker.java
- \* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/pool/PoolEntry.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright (C) 2013, 2014 Brett Wooldridge

\*

- \* Licensed under the Apache License, Version 2.0 (the "License");

- \* you may not use this file except in compliance with the License.

- \* You may obtain a copy of the License at

\*

- \* <http://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and

- \* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/pool/PoolBase.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright (C) 2016 Brett Wooldridge

\*

- \* Licensed under the Apache License, Version 2.0 (the "License");

- \* you may not use this file except in compliance with the License.

- \* You may obtain a copy of the License at

\*

- \* <http://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and

- \* limitations under the License.



\*/

Found in path(s):

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/metrics/prometheus/PrometheusHistogramMetricsTrackerFactory.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2016 Brett Wooldridge  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1257259274\_1642793180.98/0/hikaricp-3-4-5-sources-jar/com/zaxxer/hikari/metrics/prometheus/PrometheusMetricsTrackerFactory.java

## 1.332 libpcap 1.2.1

### 1.332.1 Available under license :

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR

IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

/\*-

\* Copyright (c) 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997  
\* The Regents of the University of California. All rights reserved.

\*

\* This code is derived from the Stanford/CMU enet packet filter,  
\* (net/enet.c) distributed as part of 4.3BSD, and code contributed  
\* to Berkeley by Steven McCanne and Van Jacobson both of Lawrence  
\* Berkeley Laboratory.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.

\* 3. All advertising materials mentioning features or use of this software  
\* must display the following acknowledgement:

\* This product includes software developed by the University of  
\* California, Berkeley and its contributors.

\* 4. Neither the name of the University nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1992, 1993, 1994, 1995, 1996  
\* The Regents of the University of California. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that: (1) source code distributions  
\* retain the above copyright notice and this paragraph in its entirety, (2)  
\* distributions including binary code include the above copyright notice and  
\* this paragraph in its entirety in the documentation or other materials

```

* provided with the distribution, and (3) all advertising materials mentioning
* features or use of this software display the following acknowledgement:
* ``This product includes software developed by the University of California,
* Lawrence Berkeley Laboratory and its contributors." Neither the name of
* the University nor the names of its contributors may be used to endorse
* or promote products derived from this software without specific prior
* written permission.
* THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED
* WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF
* MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
*/
/*
* Copyright (c) 1994, 1995, 1996, 1997, 1998
* The Regents of the University of California. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* This product includes software developed by the Computer Systems
* Engineering Group at Lawrence Berkeley Laboratory.
* 4. Neither the name of the University nor of the Laboratory may be used
* to endorse or promote products derived from this software without
* specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*/

```

## 1.333 glibc 2.31

## 1.333.1 Available under license :

@c The GNU Lesser General Public License.

@center Version 2.1, February 1999

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

@end display

@subheading Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software---typically libraries---of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### @subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility

is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.



This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item

Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center @b{NO WARRANTY}

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY

KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

@smallexample

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

That's all there is to it!

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.



The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal  
permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in



non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
```



Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

This file contains the copying permission notices for various files in the GNU C Library distribution that have copyright owners other than the Free Software Foundation. These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

All code incorporated from 4.4 BSD is distributed under the following license:

Copyright (C) 1991 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS

## SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach, derived from Mach 3.0:

Mach Operating System  
Copyright (C) 1991,1990,1989 Carnegie Mellon University  
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS ``AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator  
School of Computer Science  
Carnegie Mellon University  
Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

The file if\_ppp.h is under the following CMU license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files inet/getnameinfo.c and sysdeps/posix/getaddrinfo.c are copyright (C) by Craig Metz and are distributed under the following license:

```
/* The Inner Net License, Version 2.00
```

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.
2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright

notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.

4. [The copyright holder has authorized the removal of this clause.]

5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. \*/

The file sunrpc/des\_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<https://www.gnu.org/licenses/>> to obtain a copy.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file `posix/PCRE.tests` is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful, but **WITHOUT ANY WARRANTY**; without even the implied warranty of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. In practice, this means that if you use PCRE in software that you distribute to others, commercially or otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant files or online help data or similar. A reference to the ftp site for the source, that is, to

`ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/`

should also be given in the documentation. However, this condition is not intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL), then the terms of that licence shall supersede any condition above with which it is incompatible.



Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, see <<https://www.gnu.org/licenses/>>. \*/

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{http://fsf.org/}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to

assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

#### APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles

are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit

legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the

Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers

or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice.

These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and



list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements.''

@item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate'' if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the

electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the

licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this

License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License,

to permit their use in free software.

```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
```

## 1.334 bzip2 1.0.6

### 1.334.1 Available under license :

This program, "bzip2" and associated library "libbzip2", are copyright (C) 1996-2002 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.  
jseward@acm.org  
bzip2/libbzip2 version 1.0.2 of 30 December 2001

```

/*
minibz2
 libbz2.dll test program.
 by Yoshioka Tsuneo (tsuneo@rr.iij4u.or.jp)
 This file is Public Domain. Welcome any email to me.

usage: minibz2 [-d] [-{1,2,..9}] [[srcfilename] destfilename]
*/
%%CreationDate: Wed Dec 22 1999
% Copyright (URW)++,Copyright 1999 by (URW)++ Design & Development
% (URW)++,Copyright 1999 by (URW)++ Design & Development
% See the file COPYING (GNU General Public License) for license conditions.
% As a special exception, permission is granted to include this font
% program in a Postscript or PDF file that consists of a document that
% contains text to be displayed or printed using this font, regardless
% of the conditions or license applying to the document itself.

/Notice ((URW)++,Copyright 1999 by (URW)++ Design & Development. See the file COPYING (GNU General
Public License) for license conditions. As a special exception, permission is granted to include this font program in a
Postscript or PDF file that consists of a document that contains text to be displayed or printed using this font,
regardless of the conditions or license applying to the document itself.) readonly def
/Copyright (Copyright (URW)++,Copyright 1999 by (URW)++ Design & Development) readonly def

```

# 1.335 nss-pam-ldapd 0.9.11

## 1.335.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
 Everyone is permitted to copy and distribute verbatim copies  
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
 as the successor of the GNU Library Public License, version 2, hence  
 the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
 freedom to share and change it. By contrast, the GNU General Public  
 Licenses are intended to guarantee your freedom to share and change  
 free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some

specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and

is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION



0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do

this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline

functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more

than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING

RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice



That's all there is to it!

## 1.336 jline 3.11.0

### 1.336.1 Available under license :

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.337 protobuf 2.4.1

### 1.337.1 Available under license :

Copyright 2008, Google Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its

contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

Copyright 2008, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.338 kubernetes-api 1.8.11

## 1.338.1 Available under license :

Copyright (c) 2013 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014-2015, Philip Hofer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



Copyright (c) 2012-2018 The Gorilla Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications

represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without

modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade

names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise

designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must

include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly



negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by

the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be

liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.



6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Attribution-ShareAlike 4.0 International

=====

Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: [wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public: [wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

=====

## Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](https://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.
- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to

all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.

- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.
- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.
- m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

## Section 2 -- Scope.

### a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
  - a. reproduce and Share the Licensed Material, in whole or in part; and
  - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.
3. Term. The term of this Public License is specified in Section 6(a).
4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in

all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a)(4) never produces Adapted Material.

5. Downstream recipients.

a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.

b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.

c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.
3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

### Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

#### a. Attribution.

##### 1. If You Share the Licensed Material (including in modified form), You must:

###### a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

##### 2. You may satisfy the conditions in Section 3(a)(1) in any

reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.
2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.
3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,  
  
including for purposes of Section 3(b); and
- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.



For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.
- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.
- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:
  1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or

2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

- c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.
- d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

#### Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.
- b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

#### Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.
- d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====  
Creative Commons is not a party to its public licenses.  
Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions

for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2017 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above

copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)



Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Mozilla Public License Version 2.0

=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this

License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

-----

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or

(c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

-----

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

(a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

```
*
*
* 6. Disclaimer of Warranty
* -----
*
* Covered Software is provided under this License on an "as is"
* basis, without warranty of any kind, either expressed, implied, or
* statutory, including, without limitation, warranties that the
* Covered Software is free of defects, merchantable, fit for a
```

\* particular purpose or non-infringing. The entire risk as to the \*  
\* quality and performance of the Covered Software is with You. \*  
\* Should any Covered Software prove defective in any respect, You \*  
\* (not any Contributor) assume the cost of any necessary servicing, \*  
\* repair, or correction. This disclaimer of warranty constitutes an \*  
\* essential part of this License. No use of any Covered Software is \*  
\* authorized under this License except under this disclaimer. \*  
\* \*  
\*\*\*\*\*

\*\*\*\*\*

\* \*  
\* 7. Limitation of Liability \*  
\* ----- \*  
\* \*  
\* Under no circumstances and under no legal theory, whether tort \*  
\* (including negligence), contract, or otherwise, shall any \*  
\* Contributor, or anyone who distributes Covered Software as \*  
\* permitted above, be liable to You for any direct, indirect, \*  
\* special, incidental, or consequential damages of any character \*  
\* including, without limitation, damages for lost profits, loss of \*  
\* goodwill, work stoppage, computer failure or malfunction, or any \*  
\* and all other commercial damages or losses, even if such party \*  
\* shall have been informed of the possibility of such damages. This \*  
\* limitation of liability shall not apply to liability for death or \*  
\* personal injury resulting from such party's negligence to the \*  
\* extent applicable law prohibits such limitation. Some \*  
\* jurisdictions do not allow the exclusion or limitation of \*  
\* incidental or consequential damages, so this exclusion and \*  
\* limitation may not apply to You. \*  
\* \*  
\*\*\*\*\*

## 8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be

unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.



You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a

file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.



## END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

MIT License

Copyright (c) Microsoft Corporation. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.  
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work

(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses

granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}"

replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions



for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2014-2018 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2015-Present CloudFoundry.org Foundation, Inc. All Rights Reserved.

This project contains software that is Copyright (c) 2015 Pivotal Software, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This project may include a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of each subcomponent's license, as noted in the LICENSE file.

Docker  
Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/creack/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.  
It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity



exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016-2018 Docker Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from

this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the

distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015, Tim Heckman

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice,

this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of linode-netint nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2017 Gal Ben-Haim

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2010 The Go Authors. All rights reserved.



Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

AWS SDK for Go

Copyright 2015 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Copyright 2014-2015 Stripe, Inc.

The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from

this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a



cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,

any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2016, opentracing-contrib  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of go-stdlib nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,

OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:



\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Taihei Morikuni

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.



3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed

as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this

License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Copyright (c) 2012, 2013 Ugorji Nwoke.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,



FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT

Copyright 2017 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

#### 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common

control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,



work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2011 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR

PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>  
<https://github.com/beorn7/perks>  
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein  
See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format  
<http://github.com/golang/protobuf/>  
Copyright 2010 The Go Authors  
See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).  
[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)  
Copyright 2013 Matt T. Proud  
Licensed under the Apache License, Version 2.0  
CoreOS Project  
Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc.  
(<http://www.coreos.com/>).  
Copyright (c) 2013 Dario Casta. All rights reserved.  
Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

procfs provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. Contribution

means Covered Software of a particular Contributor.

### 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and

Modifications of such Source Code Form, in each case including portions thereof.

#### 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

#### 1.6. Executable Form

means any form of the work other than Source Code Form.

#### 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

#### 1.8. License

means this document.

#### 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

### 1.13. Source Code Form

means the form of the work preferred for making modifications.

### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this

License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the

terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any



liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

#### 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including,

without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or

publish new versions of this License. Each version will be given a distinguishing version number.

## 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

## 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

## 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible With Secondary Licenses, as defined by the Mozilla Public License, v. 2.0.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,  
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY  
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE  
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2013, Patrick Mezard  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- Redistributions of source code must retain the above copyright



notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

a. that the initial Contributor has attached the notice described in

Exhibit B to the Covered Software; or

- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or

- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any

jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

#### 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing.

The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or

publish new versions of this License. Each version will be given a distinguishing version number.

## 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

## 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.  
Common libraries shared by Prometheus Go components.  
Copyright 2015 The Prometheus Authors



This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).  
The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 The OpenTracing Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH ([open-source@konsorten.de](mailto:open-source@konsorten.de))

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated

documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2016, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2016, gRPC Ecosystem

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of grpc-opentracing nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN



CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2012-2018 Mat Ryer and Tyler Bunnell

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Sean Chittenden

Copyright (c) 2016 Alex Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Bits of Go-lang's `once.Do()` were cribbed and reused here, too.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.339 nio-multipart-parser 1.1.0

## 1.339.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications

or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions

stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## 1.340 boost 1.71.0-6ubuntu6

### 1.340.1 Available under license :

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including

the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The following people hereby grant permission to replace all existing licenses on their contributions to Boost with the Boost Software License, Version 1.0. (boostinspect:nolicense boostinspect:nocopyright)

Aleksey Gurtovoy (agurtovoy@meta-comm.com)

Andrei Alexandrescu (andrewalex - at - hotmail.com) (See Boost list message of August 12, 2004 11:06:58 AM EST)

Andrew Lumsdaine ()

Anthony Williams (anthony -at- justsoftwaresolutions.co.uk)

Beman Dawes (bdawes@acm.org)

Brad King (brad.king -at- kitware.com) (See Boost list message of Wed, 21 Jul 2004 11:15:46 -0400)

Brian Osman (osman -at- vvisions.com) (See CVS log)

Bruce Barr (schmoost -at- yahoo.com) (See Boost list of Mon, 16 Aug 2004 15:06:43 -0500)

Bruno da Silva de Oliveira (bruno - at - esss.com.br)

Christain Engstrom (christian.engstrom -at- glindra.org) (See Boost list message of Mon, 30 Aug 2004 14:31:49 +0200)

Cromwell D Enage (sponage -at- yahoo.com) (See Boost list message of August 12, 2004 11:49:13 AM EST)

Dan Gohman (djk -at- cray.com) (See Boost list message of Sat, 21 Aug 2004 10:54:59 +0100)

Dan Nuffer (dan -at- nuffer.name)

Daniel Frey (d.frey -at- gmx.de, daniel.frey -at- aixigo.de)

Daniel Nuffer (dan -at- nuffer.name)

Darin Adler (darin -at- bentspoon.com) (Email to Andreas Huber, see change log)

Daryle Walker (darylew - at - hotmail.com)

Dave Abrahams (dave@boost-consulting.com)

Dave Moore (dmoore -at- viefinacial.com) (See Boost list message of 18 Dec 2003 15:35:50 -0500)

David Abrahams (dave@boost-consulting.com)

Dietmar Kuehl (dietmar\_kuehl -at- yahoo.com) (Email to Andreas Huber, see change log)

Douglas Gregor (gregod -at- cs.rpi.edu, dgregor -at- cs.indiana.edu, doug.gregor -at- gmail.com)

Dr John Maddock (john - at - johnmaddock.co.uk)

Edward D. Brey (brey -at- ductape.net) (Email to Andreas Huber, see change log)

Eric Ford (un5o6n902 -at- sneakemail.com) (See Boost list message of Sun, 15 Aug 2004 10:29:13 +0100)

Eric Friedman (ebf@users.sourceforge.net)

Eric Niebler (eric@boost-consulting.com)

Fernando Cacciola (fernando\_cacciola@ciudad.com.ar)

Fernando Luis Cacciola Carballal (fernando\_cacciola@ciudad.com.ar)

Francois Faure (Francois.Faure -at- imag.fr) (See CVS log)  
Gary Powell (powellg - at - amazon.com) (See Boost list message of 10 Feb 2004 14:22:46 -0800)  
Gennadiy Rozental (rogeeff -at- mail.com) (Email to Andreas Huber, see change log)  
Gottfried Ganssaue (Gottfried.Ganssaue -at- HAUFE.DE) (See Boost List message of Mon, 16 Aug 2004 10:09:19 +0200)  
Gottfried Ganaue (Gottfried.Ganssaue -at- HAUFE.DE) (Alternative spelling of Gottfried Ganssaue)  
Greg Colvin (gregory.colvin -at- oracle.com) (See Boost list message of Sat, 14 Aug 2004 10:57:00 +0100)  
Gregory Colvin (gregory.colvin -at- oracle.com) (See Boost list message of Sat, 14 Aug 2004 10:57:00 +0100)  
Gunter Winkler (gunter.winkler -at- unibw-muenchen.de) (See Boost List message of Mon, 16 Aug 2004 10:24:17 +0200)  
Hartmut Kaiser (hartmut.kaiser -at- gmail.com)  
Herve Bronnimann (hbr -at- poly.edu)  
Herv Brnnimann (hbr -at- poly.edu)  
Housemarque Oy (Ilari Kuittinen ilari.kuittinen -at- housemarque.fi)  
Howard Hinnant (hinnant -at- twcnv.r.com) (See Boost list message of July 25, 2004 3:44:49 PM EST)  
Hubert Holin (hubert\_holin -at- users.sourceforge.net)  
Indiana University ()  
Itay Maman (imaman -at- users.sourceforge.net)  
Jaakko Jrv (jajarvi -at- osl.iu.edu)  
Jaap Suter (j.suter -at- student.utwente.nl) (See Boost list message of Thu, 16 Sep 2004 09:32:43 -0700)  
Jeff Garland (jeff - at - crystalclearsoftware.com) (see Boost list post of July 25, 2004 19:31:09 -0700)  
Jens Maurer (Jens.Maurer@gmx.net)  
Jeremy G Siek (jsiek@osl.iu.edu)  
Jeremy Siek (jsiek@osl.iu.edu)  
Joel de Guzman (joel -at- boost-consulting.com) (See Boost list message of July 25, 2004 8:32:00 PM EST)  
John Bandela (jbandela-at-ufl.edu)  
John Maddock (john - at - johnmaddock.co.uk)  
John R Bandela (jbandela-at-ufl.edu)  
Jonathan Turkanis (turkanis -at- coderage dot com)  
Juergen Hunold (hunold -at- ive.uni-hannover.de) (See Boost List Message of Fri, 13 Aug 2004 19:39:55 +0200)  
Kevlin Henney (kevin -at- curbralan.com) (See Boost list message of Wed, 15 Sep 2004 18:15:17 +0200)  
Kresimir Fresl (fresl -at- master.grad.hr) (See Boost List message of August 16, 2004 8:23:35 AM EST)  
Lars Gullik Bjnnes (larsbj -at- lyx.org) (See Boost list message of Tue, 17 Aug 2004 15:49:02 +0100)  
Lie-Quan Lee (liequan - at - slac.stanford.edu, llee - at - cs.indiana.edu)  
Maarten Keijzer (mkeijzer -at- cs.vu.nl) (See Boost list message of Wed, 18 Aug 2004 21:43:18 +0100)  
Mac Murrett (mmurrett -at- mac.com)  
Marc Wintermantel (wintermantel -at- imes.mavt.ethz.ch, wintermantel -at- even-ag.ch) (See CVS log)  
Michael Glassford (glassfordm - at - hotmail.com)  
Michael Stevens (Michael.Stevens - at - epost.de)  
Multi Media Ltd. (pdimov@mmltd.net)  
Nicolai M Josuttis (solutions -at- josuttis.com) (See Boost list message of Mon, 30 Aug 2004 10:52:00 +0100)  
Nikolay Mladenov (nickm -at- sitius.com) (See Boost list message of Tue, 17 Aug 2004 15:45:33 +0100)  
Paul Mensonides (pmenso57 -at- comcast.net) (See Boost list message of July 21, 2004 1:12:21 AM EST)  
Pavol Droba (droba -at- topmail.sk)  
Peter Dimov (pdimov@mmltd.net)  
R W Grosse-Kunstleve (RWGrosse-Kunstleve@lbl.gov)  
Ralf W. Grosse-Kunstleve (RWGrosse-Kunstleve@lbl.gov)  
Rational Discovery LLC (Greg Landrum Landrum -at- RationalDiscovery.com) (See Boost list post of Tue, 17 Aug

2004 10:35:36 +0100)

Rene Rivera (grafik/redshift-software.com, rrivera/acm.org)

Robert Ramey (ramey@www.rrsd.com)

Roland Richter (roland -at- fill.jku.at) (See Boost list post of Mon, 16 Aug 2004 22:16:55 +0200)

Roland Schwarz (roland.schwarz -at- chello.at)

Ronald Garcia (garcia -at- cs.indiana.edu) (Email to Andreas Huber, see change log)

Samuel Krempp (krempp -at- crans.ens-cachan.fr) (See Boost list message of Mon, 27 Sep 2004 13:18:36 +0200)

Stefan Seefeld (seefeld -at- sympatico.ca)

Stephen Cleary (sclarey -at- jerviswebb.com) (See Boost list message of Tue, 28 Sep 2004 13:11:46 +0100)

Steve Cleary (Variant of Stephen Cleary)

Sylvain Pion (Sylvain.Pion - at - sophia.inria.fr)

The Trustees of Indiana University ()

Thomas Witt (witt - at - ive.uni-hannover.de, witt - at - acm.org, witt - at - styleadvisor.com)

Thorsten Jrgen Ottosen (nesotto - at - cs.auc.dk)

Thorsten Ottosen (nesotto - at - cs.auc.dk)

Toon Knapen (toon dot knapen - at - fft.be)

Trustees of Indiana University ()

University of Notre Dame ()

Vladimir Prus (ghost@cs.msu.su)

William E. Kempf () (email to Beman Dawes, 9/14/2006 4:18 PM)

Joerg Walter (jhr.walter - at - t-online.de : email to ublas mailing list Mon, 17 Sep 2007 10:17:08 +0200)

Mathias Koch (mkoch - at - idesis.de 7 : email to boost-owner@lists.boost.org Sep 2007 13:20:09 +0200)

--- end ---

## 1.341 giflib 5.2.1

### 1.341.1 Available under license :

The GIFLIB distribution is Copyright (c) 1997 Eric S. Raymond

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.



# 1.342 openjdk-jre 11.0.11u9

## 1.342.1 Available under license :

## The Unicode Standard, Unicode Character Database, Version 10.0.0

### Unicode Character Database

...

### UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,

<http://www.unicode.org/cldr/data/>,

<http://source.icu-project.org/repos/icu/>, and

<http://www.unicode.org/utility/trac/browser/>.

Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>.

Software includes any source code published in the Unicode Standard or under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,

<http://www.unicode.org/cldr/data/>,

<http://source.icu-project.org/repos/icu/>, and

<http://www.unicode.org/utility/trac/browser/>.

NOTICE TO USER: Carefully read the following legal agreement.

BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT.

IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2018 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files

or Software are furnished to do so, provided that either  
(a) this copyright and permission notice appear with all copies  
of the Data Files or Software, or  
(b) this copyright and permission notice appear in associated  
Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF  
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE  
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS  
NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL  
DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE,  
DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER  
TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR  
PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder  
shall not be used in advertising or otherwise to promote the sale,  
use or other dealings in these Data Files or Software without prior  
written authorization of the copyright holder.

---

## c-libutl 20160225

### c-libutl License

---

This software is distributed under the terms of the BSD license.

== BSD LICENSE =====

(C) 2009 by Remo Dentato (rdentato@gmail.com)

Redistribution and use in source and binary forms, with or without modification,  
are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice,  
this list of conditions and the following disclaimer in the documentation  
and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR

ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

<http://opensource.org/licenses/bsd-license.php>

...

## xwd v1.0.7

### xwd utility

<pre>

This is the copyright for the files in src/java.desktop/unix/native/libawt\_xawt:  
list.h, multiVis.h, wsutils.h, list.c, multiVis.c

Copyright 1994 Hewlett-Packard Co.

Copyright 1996, 1998 The Open Group

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation.

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of The Open Group shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from The Open Group.

</pre>

## Mozilla Elliptic Curve Cryptography (ECC)

### Mozilla ECC Notice

This notice is provided with respect to Elliptic Curve Cryptography, which is included with JRE, JDK, and OpenJDK.

You are receiving a [copy](<http://hg.openjdk.java.net/jdk9/jdk9/jdk/file/tip/src/jdk.crypto.ec/share/native/libsunec/impl>) of the Elliptic Curve Cryptography library in source form with the JDK and OpenJDK source distributions, and as object code in the JRE & JDK runtimes.

<pre>

In the case of the JRE & JDK runtimes, the terms of the Oracle license do NOT apply to the Elliptic Curve Cryptography library; it is licensed under the following license, separately from Oracle's JDK & JRE. If you do not wish to install the Elliptic Curve Cryptography library, you may delete the Elliptic Curve Cryptography library:

- On Solaris and Linux systems: delete \$(JAVA\_HOME)/lib/libsunec.so
- On Mac OSX systems: delete \$(JAVA\_HOME)/lib/libsunec.dylib
- On Windows systems: delete \$(JAVA\_HOME)\bin\sunec.dll

</pre>

### Written Offer for Source Code

<pre>

For third party technology that you receive from Oracle in binary form which is licensed under an open source license that gives you the right to receive the source code for that binary, you can obtain a copy of the applicable source code from this page:

<http://hg.openjdk.java.net/jdk9/jdk9/jdk/file/tip/src/jdk.crypto.ec/share/native/libsunec/impl>

If the source code for the technology was not provided to you with the binary, you can also receive a copy of the source code on physical media by submitting a written request to:

Oracle America, Inc.  
Attn: Associate General Counsel,  
Development and Engineering Legal  
500 Oracle Parkway, 10th Floor  
Redwood Shores, CA 94065

Or, you may send an email to Oracle using the form at:

<http://www.oracle.com/goto/opensourcecode/request>

Your request should include:

- The name of the component or binary file(s) for which you are requesting the source code
- The name and version number of the Oracle product containing the binary

- The date you received the Oracle product
- Your name
- Your company name (if applicable)
- Your return mailing address and email and
- A telephone number in the event we need to reach you.

We may charge you a fee to cover the cost of physical media and processing. Your request must be sent (i) within three (3) years of the date you received the Oracle product that included the component or binary file(s) that are the subject of your request, or (ii) in the case of code licensed under the GPL v3, for as long as Oracle offers spare parts or customer support for that product model.

</pre>

### LGPL 2.1

<pre>

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using

a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices



stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in

these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the

Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus

excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.
```

```
You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library `Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

```
</pre>
```

## IAIK (Institute for Applied Information Processing and Communication) PKCS#11 wrapper files v1

### IAIK License

<pre>

Copyright (c) 2002 Graz University of Technology. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment:

"This product includes software developed by IAIK of Graz University of Technology."

Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.

4. The names "Graz University of Technology" and "IAIK of Graz University of Technology" must not be used to endorse or promote products derived from this software without prior written permission.
5. Products derived from this software may not be called "IAIK PKCS Wrapper", nor may "IAIK" appear in their name, without prior written permission of Graz University of Technology.

THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE LICENSOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

</pre>

## CUP Parser Generator for Java v 0.11b



### CUP Parser Generator License

<pre>

Copyright 1996-2015 by Scott Hudson, Frank Flannery, C. Scott Ananian, Michael Petter

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the names of the authors or their employers not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

The authors and their employers disclaim all warranties with regard to this software, including all implied warranties of merchantability and fitness. In no event shall the authors or their employers be liable for any special, indirect or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence or other tortious action, arising out of or in connection with the use or performance of this software.

</pre>

## Harfbuzz v2.3.1

### Harfbuzz License

<http://cgit.freedesktop.org/harfbuzz/tree/COPYING>

<pre>

HarfBuzz is licensed under the so-called "Old MIT" license. Details follow. For parts of HarfBuzz that are licensed under different licenses see individual files names COPYING in subdirectories where applicable.

Copyright 2010,2011,2012 Google, Inc.

Copyright 2012 Mozilla Foundation

Copyright 2011 Codethink Limited

Copyright 2008,2010 Nokia Corporation and/or its subsidiary(-ies)

Copyright 2009 Keith Stribley

Copyright 2009 Martin Hosken and SIL International

Copyright 2007 Chris Wilson

Copyright 2006 Behdad Esfahbod

Copyright 2005 David Turner

Copyright 2004,2007,2008,2009,2010 Red Hat, Inc.

Copyright 1998-2004 David Turner and Werner Lemberg

For full copyright notices consult the individual files in the package.

Permission is hereby granted, without written agreement and without license or royalty fees, to use, copy, modify, and distribute this software and its documentation for any purpose, provided that the above copyright notice and the following two paragraphs appear in all copies of this software.

IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE COPYRIGHT HOLDER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE COPYRIGHT HOLDER SPECIFICALLY DISCLAIMS ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE SOFTWARE PROVIDED HEREUNDER IS ON AN "AS IS" BASIS, AND THE COPYRIGHT HOLDER HAS NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

All source code, except for one section, is licensed as above. The one exception is licensed with a slightly different MIT variant:

The contents of this directory are licensed under the following terms:

Copyright (C) 2012 Grigori Goronzy <greg@kinoho.net>

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

</pre>

## Double-conversion v1.1.5

### Double-conversion License

<https://raw.githubusercontent.com/google/double-conversion/master/LICENSE>

<pre>

Copyright 2006-2011, the V8 project authors. All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

</pre>

## Thai Dictionary

### Thai Dictionary License

<pre>

Copyright (C) 1982 The Royal Institute, Thai Royal Government.

Copyright (C) 1998 National Electronics and Computer Technology Center,  
National Science and Technology Development Agency,  
Ministry of Science Technology and Environment,  
Thai Royal Government.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

</pre>

## Apache Xerces v2.12.1

### Apache Xerces Notice

<pre>

```
=====
== NOTICE file corresponding to section 4(d) of the Apache License, ==
== Version 2.0, in this case for the Apache Xerces Java distribution. ==
=====
```

Apache Xerces Java  
Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:

- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.
- software copyright (c) 1999, Sun Microsystems., <http://www.sun.com>.
- voluntary contributions made by Paul Eng on behalf of the Apache Software Foundation that were originally developed at iClick, Inc., software copyright (c) 1999.

</pre>

### Apache 2.0 License

<pre>

```
 Apache License
 Version 2.0, January 2004
 http://www.apache.org/licenses/
```

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,

incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

</pre>

## Eastman Kodak Company: Portions of color management and imaging software



### Eastman Kodak Notice

<pre>

Portions Copyright Eastman Kodak Company 1991-2003

</pre>

## Little Color Management System (LCMS) v2.11

### LCMS License

<pre>

Little Color Management System

Copyright (c) 1998-2020 Marti Maria Saguer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

</pre>

#### ADDITIONAL INFORMATION ABOUT LICENSING

Certain files distributed by Oracle America, Inc. and/or its affiliates are subject to the following clarification and special exception to the GPLv2, based on the GNU Project exception for its Classpath libraries, known as the GNU Classpath Exception.

Note that Oracle includes multiple, independent programs in this software package. Some of those programs are provided under licenses deemed incompatible with the GPLv2 by the Free Software Foundation and others. For example, the package includes programs licensed under the Apache License, Version 2.0 and may include FreeType. Such programs are licensed to you under their original licenses.

Oracle facilitates your further distribution of this package by adding the Classpath Exception to the necessary parts of its GPLv2 code, which permits you to use that code in combination with other independent modules not

licensed under the GPLv2. However, note that this would not permit you to commingle code under an incompatible license with Oracle's GPLv2 licensed code by, for example, cutting and pasting such code into a file also containing Oracle's GPLv2 licensed code and then distributing the result.

Additionally, if you were to remove the Classpath Exception from any of the files to which it applies and distribute the result, you would likely be required to license some or all of the other code in that distribution under the GPLv2 as well, and since the GPLv2 is incompatible with the license terms of some items included in the distribution by Oracle, removing the Classpath Exception could therefore effectively compromise your ability to further distribute the package.

Failing to distribute notices associated with some files may also create unexpected legal consequences.

Proceed with caution and we recommend that you obtain the advice of a lawyer skilled in open source matters before removing the Classpath Exception or making modifications to this package which may subsequently be redistributed and/or involve the use of third party software.

## OASIS PKCS #11 Cryptographic Token Interface v3.0

### OASIS PKCS #11 Cryptographic Token Interface License

<pre>

Copyright OASIS Open 2020. All Rights Reserved.

All capitalized terms in the following text have the meanings assigned to them in the OASIS Intellectual Property Rights Policy (the "OASIS IPR Policy"). The full Policy may be found at the OASIS website: [<http://www.oasis-open.org/policies-guidelines/ipr>]

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to OASIS, except as needed for the purpose of developing any document or deliverable produced by an OASIS Technical Committee (in which case the rules applicable to copyrights, as set forth in the OASIS IPR Policy, must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by OASIS or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and OASIS DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. OASIS AND ITS MEMBERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THIS DOCUMENT OR ANY PART THEREOF.

[OASIS requests that any OASIS Party or any other party that believes it has patent claims that would necessarily be infringed by implementations of this OASIS Standards Final Deliverable, to notify OASIS TC Administrator and provide an indication of its willingness to grant patent licenses to such patent claims in a manner consistent with the IPR Mode of the OASIS Technical Committee that produced this deliverable.]

[OASIS invites any party to contact the OASIS TC Administrator if it is aware of a claim of ownership of any patent claims that would necessarily be infringed by implementations of this OASIS Standards Final Deliverable by a patent holder that is not willing to provide a license to such patent claims in a manner consistent with the IPR Mode of the OASIS Technical Committee that produced this OASIS Standards Final Deliverable. OASIS may include such claims on its website, but disclaims any obligation to do so.]

[OASIS takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this OASIS Standards Final Deliverable or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on OASIS' procedures with respect to rights in any document or deliverable produced by an OASIS Technical Committee can be found on the OASIS website. Copies of claims of rights made available for publication and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this OASIS Standards Final Deliverable, can be obtained from the OASIS TC Administrator. OASIS makes no representation that any information or list of intellectual property rights will at any time be complete, or that any claims in such list are, in fact, Essential Claims.]

</pre>

## Apache Commons Byte Code Engineering Library (BCEL) Version 6.3.1

### Apache Commons BCEL Notice

<pre>

```
=====
== NOTICE file corresponding to the section 4 d of ==
== the Apache License, Version 2.0, ==
== in this case for the Apache Commons BCEL distribution. ==
=====
```

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

</pre>

### Apache 2.0 License

<pre>

```
 Apache License
 Version 2.0, January 2004
 http://www.apache.org/licenses/
```

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

</pre>

```
International Components for Unicode (ICU4J) v60.2
```

```
ICU4J License
```

```
...
```

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,

<http://www.unicode.org/cldr/data/>,

<http://source.icu-project.org/repos/icu/>, and

<http://www.unicode.org/utility/trac/browser/>.

Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>.

Software includes any source code published in the Unicode Standard or under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,

<http://www.unicode.org/cldr/data/>,

<http://source.icu-project.org/repos/icu/>, and

<http://www.unicode.org/utility/trac/browser/>.



NOTICE TO USER: Carefully read the following legal agreement.  
BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S  
DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"),  
YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE  
TERMS AND CONDITIONS OF THIS AGREEMENT.  
IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE  
THE DATA FILES OR SOFTWARE.

#### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2018 Unicode, Inc. All rights reserved.  
Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining  
a copy of the Unicode data files and any associated documentation  
(the "Data Files") or Unicode software and any associated documentation  
(the "Software") to deal in the Data Files or Software  
without restriction, including without limitation the rights to use,  
copy, modify, merge, publish, distribute, and/or sell copies of  
the Data Files or Software, and to permit persons to whom the Data Files  
or Software are furnished to do so, provided that either  
(a) this copyright and permission notice appear with all copies  
of the Data Files or Software, or  
(b) this copyright and permission notice appear in associated  
Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF  
ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE  
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
NONINFRINGEMENT OF THIRD PARTY RIGHTS.  
IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS  
NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL  
DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE,  
DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER  
TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR  
PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder  
shall not be used in advertising or otherwise to promote the sale,  
use or other dealings in these Data Files or Software without prior  
written authorization of the copyright holder.

...

## Apache Xalan v2.7.2

### Apache Xalan Notice

<pre>

```
=====
=====
== NOTICE file corresponding to the section 4d of the Apache License, Version 2.0, ==
== in this case for the Apache Xalan distribution. ==
=====
=====
```

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

Specifically, we only include the XSLTC portion of the source from the Xalan distribution.  
The Xalan project has two processors: an interpretive one (Xalan Interpretive) and a  
compiled one (The XSLT Compiler (XSLTC)). We \*only\* use the XSLTC part of Xalan; We use  
the source from the packages that are part of the XSLTC sources.

Portions of this software was originally based on the following:

- software copyright (c) 1999-2002, Lotus Development Corporation., <http://www.lotus.com>.
- software copyright (c) 2001-2002, Sun Microsystems., <http://www.sun.com>.
- software copyright (c) 2003, IBM Corporation., <http://www.ibm.com>.
- voluntary contributions made by Ovidiu Predescu ([ovidiu@cup.hp.com](mailto:ovidiu@cup.hp.com)) on behalf of the  
Apache Software Foundation and was originally developed at Hewlett Packard Company.

</pre>

### Apache 2.0 License  
<pre>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

#### JLEX COPYRIGHT NOTICE, LICENSE AND DISCLAIMER.

Copyright 1996-2003 by Elliot Joel Berk and C. Scott Ananian  
Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of the authors or their employers not be used in advertising or publicity

pertaining to distribution of the software without specific, written prior permission.

The authors and their employers disclaim all warranties with regard to this software, including all implied warranties of merchantability and fitness. In no event shall the authors or their employers be liable for any special, indirect or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence or other tortious action, arising out of or in connection with the use or performance of this software. The portions of JLex output which are hard-coded into the JLex source code are (naturally) covered by this same license.

```
</pre>
```

```
Mesa 3-D Graphics Library v19.2.1
```

```
Mesa License
```

```
...
```

```
Copyright (C) 1999-2007 Brian Paul All Rights Reserved.
```

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Attention, Contributors

When contributing to the Mesa project you must agree to the licensing terms of the component to which you're contributing.

The following section lists the primary components of the Mesa distribution and their respective licenses.

Mesa Component Licenses

Component	Location	License
Main Mesa code	src/mesa/	MIT
Device drivers	src/mesa/drivers/*	MIT, generally
Gallium code	src/gallium/	MIT
Ext headers	GL/glxt.h	Khronos
	GL/glxt.h	Khronos
	GL/wglxt.h	Khronos
	KHR/khrplatform.h	Khronos

\*\*\*\*\*

----

include/GL/gl.h :

Mesa 3-D graphics library

Copyright (C) 1999-2006 Brian Paul All Rights Reserved.

Copyright (C) 2009 VMware, Inc. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*\*\*\*\*

----

include/GL/glxt.h

include/GL/glxt.h

include/GL/wglxt.h :



Copyright (c) 2013 - 2018 The Khronos Group Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and/or associated documentation files (the "Materials"), to deal in the Materials without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Materials, and to permit persons to whom the Materials are furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Materials.

THE MATERIALS ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE MATERIALS OR THE USE OR OTHER DEALINGS IN THE MATERIALS.

\*\*\*\*\*

----

include/KHR/khrplatform.h :

Copyright (c) 2008 - 2018 The Khronos Group Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and/or associated documentation files (the "Materials"), to deal in the Materials without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Materials, and to permit persons to whom the Materials are furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Materials.

THE MATERIALS ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE MATERIALS OR THE USE OR OTHER DEALINGS IN THE MATERIALS.

\*\*\*\*\*

...

## PC/SC Lite v1.8.26

### PC/SC Lite License

<pre>

Copyright (c) 1999-2003 David Corcoran <corcoran@linuxnet.com>  
Copyright (c) 2001-2011 Ludovic Rousseau <ludovic.rousseau@free.fr>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

Changes to this license can be made only by the copyright author with explicit written consent.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

</pre>

OPENJDK ASSEMBLY EXCEPTION

The OpenJDK source code made available by Oracle America, Inc. (Oracle) at [openjdk.java.net](http://openjdk.java.net) ("OpenJDK Code") is distributed under the terms of the GNU General Public License <<http://www.gnu.org/copyleft/gpl.html>> version 2 only ("GPL2"), with the following clarification and special exception.

Linking this OpenJDK Code statically or dynamically with other code

is making a combined work based on this library. Thus, the terms and conditions of GPL2 cover the whole combination.

As a special exception, Oracle gives you permission to link this OpenJDK Code with certain code licensed by Oracle as indicated at <http://openjdk.java.net/legal/exception-modules-2007-05-08.html> ("Designated Exception Modules") to produce an executable, regardless of the license terms of the Designated Exception Modules, and to copy and distribute the resulting executable under GPL2, provided that the Designated Exception Modules continue to be governed by the licenses under which they were offered by Oracle.

As such, it allows licensees and sublicensees of Oracle's GPL2 OpenJDK Code to build an executable that includes those portions of necessary code that Oracle could not provide under GPL2 (or that Oracle has provided under GPL2 with the Classpath exception). If you modify or add to the OpenJDK code, that new GPL2 code may still be combined with Designated Exception Modules if the new code is made subject to this exception by its copyright holder.

## Cryptix AES v3.2.0

### Cryptix General License

<pre>

Cryptix General License

Copyright (c) 1995-2005 The Cryptix Foundation Limited.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE CRYPTIX FOUNDATION LIMITED AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE CRYPTIX FOUNDATION LIMITED OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR

BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

</pre>

```
Independent JPEG Group: JPEG release 6b
```

```
JPEG License
```

<pre>

Must reproduce following license in documentation and/or other materials provided with distribution:

The authors make NO WARRANTY or representation, either express or implied, with respect to this software, its quality, accuracy, merchantability, or fitness for a particular purpose. This software is provided "AS IS", and you, its user, assume the entire risk as to its quality and accuracy.

This software is copyright (C) 1991-1998, Thomas G. Lane.

All Rights Reserved except as specified below.

Permission is hereby granted to use, copy, modify, and distribute this software (or portions thereof) for any purpose, without fee, subject to these conditions:

(1) If any part of the source code for this software is distributed, then this README file must be included, with this copyright and no-warranty notice unaltered; and any additions, deletions, or changes to the original files must be clearly indicated in accompanying documentation.

(2) If only executable code is distributed, then the accompanying documentation must state that "this software is based in part on the work of the Independent JPEG Group".

(3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us.

Permission is NOT granted for the use of any IJG author's name or company name in advertising or publicity relating to this software or products derived from it. This software may be referred to only as "the Independent JPEG Group's software".

We specifically permit and encourage the use of this software as the basis of commercial products, provided that all warranty or liability claims are assumed by the product vendor.

ansi2knr.c is included in this distribution by permission of L. Peter Deutsch, sole proprietor of its copyright holder, Aladdin Enterprises of Menlo Park, CA. ansi2knr.c is NOT covered by the above copyright and conditions, but instead by the usual distribution terms of the Free Software Foundation; principally, that you must include source code if you redistribute it. (See the file ansi2knr.c for full details.) However, since ansi2knr.c is not needed as part of any program generated from the IJG code, this does not limit you more than the foregoing paragraphs do.

The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that "The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

```
</pre>
JLine v3.14.0

JLine License
<pre>
```

Copyright (c) 2002-2018, the original author or authors.  
All rights reserved.

<https://opensource.org/licenses/BSD-3-Clause>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of JLine nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

</pre>

```
Apache Santuario v2.1.4
```

```
Apache Santuario Notice
```

<pre>

Apache Santuario - XML Security for Java  
Copyright 1999-2019 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

It was originally based on software copyright (c) 2001, Institute for  
Data Communications Systems, <<http://www.nue.et-inf.uni-siegen.de/>>.

The development of this software was partly funded by the European Commission in the <WebSig> project in the ISIS Programme.

</pre>

### Apache 2.0 License

<pre>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.



4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a

file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
</pre>
JRuby Joni v2.1.16
```

```
MIT License
<pre>
```

Copyright (c) 2017 JRuby Team

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

```
</pre>
DOM Level 3 Core Specification v1.0
```

```
W3C License
```

<pre>

## W3C SOFTWARE NOTICE AND LICENSE

<http://www.w3.org/Consortium/Legal/2002/copyright-software-20021231>

This work (and included software, documentation such as READMEs, or other related items) is being provided by the copyright holders under the following license. By obtaining, using and/or copying this work, you (the licensee) agree that you have read, understood, and will comply with the following terms and conditions.

Permission to copy, modify, and distribute this software and its documentation, with or without modification, for any purpose and without fee or royalty is hereby granted, provided that you include the following on ALL copies of the software and documentation or portions thereof, including modifications:

- 1.The full text of this NOTICE in a location viewable to users of the redistributed or derivative work.
- 2.Any pre-existing intellectual property disclaimers, notices, or terms and conditions. If none exist, the W3C Software Short Notice should be included (hypertext is preferred, text is permitted) within the body of any redistributed or derivative code.
- 3.Notice of any changes or modifications to the files, including the date changes were made. (We recommend you provide URIs to the location from which the code is derived.)

THIS SOFTWARE AND DOCUMENTATION IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE OR DOCUMENTATION WILL NOT INFRINGE ANY THIRD PARTY PATENTS,COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE SOFTWARE OR DOCUMENTATION. The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to the software without specific, written prior permission. Title to copyright in this software and any associated documentation will at all times remain with copyright holders.

---

This formulation of W3C's notice and license became active on December 31 2002. This version removes the copyright ownership notice such that this license can be used with materials other than those owned by the W3C, reflects

that ERCIM is now a host of the W3C, includes references to this specific dated version of the license, and removes the ambiguous grant of "use". Otherwise, this version is the same as the previous version and is written so as to preserve the Free Software Foundation's assessment of GPL compatibility and OSI's certification under the Open Source Definition. Please see our Copyright FAQ for common questions about using materials from our site, including specific terms and conditions for packages like libwww, Amaya, and Jigsaw. Other questions about this notice can be directed to [site-policy@w3.org](mailto:site-policy@w3.org).

```
</pre>
GIFLIB v5.2.1
```

```
GIFLIB License
...
```

The GIFLIB distribution is Copyright (c) 1997 Eric S. Raymond

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

<https://sourceforge.net/p/giflib/code/ci/master/tree/openbsd-reallocarray.c>

```
Copyright (c) 2008 Otto Moerbeek <otto@drijf.net>
SPDX-License-Identifier: MIT
libpng v1.6.37
```

```
libpng License
<pre>
```

```
COPYRIGHT NOTICE, DISCLAIMER, and LICENSE
=====
```

PNG Reference Library License version 2

-----

- \* Copyright (c) 1995-2019 The PNG Reference Library Authors.
- \* Copyright (c) 2018-2019 Cosmin Truta.
- \* Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- \* Copyright (c) 1996-1997 Andreas Dilger.
- \* Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind, express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

-----

libpng versions 1.0.7, July 1, 2000, through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux  
Eric S. Raymond  
Mans Rullgard

Cosmin Truta  
Gilles Vollant  
James Yu  
Mandar Sahastrabudde  
Google Inc.  
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

Some files in the "scripts" directory have other copyright owners, but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

</pre>

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.



## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is

not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on)

of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this

section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE,

YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

#### "CLASSPATH" EXCEPTION TO THE GPL

Certain source files distributed by Oracle America and/or its affiliates are subject to the following clarification and special exception to the GPL, but only where Oracle has expressly included in the particular source file's header the words "Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of

the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

```
Dynalink v.5
```

```
Dynalink License
```

```
<pre>
```

Copyright (c) 2009-2013, Attila Szegedi

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holder nor the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
</pre>
```

```
Unicode Common Local Data Repository (CLDR) v33
```

```
CLDR License
```

```
...
```

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,

<http://www.unicode.org/cldr/data/>,

<http://source.icu-project.org/repos/icu/>, and

<http://www.unicode.org/utility/trac/browser/>.

Unicode Data Files do not include PDF online code charts under the



directory <http://www.unicode.org/Public/>.

Software includes any source code published in the Unicode Standard or under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,

<http://www.unicode.org/cldr/data/>,

<http://source.icu-project.org/repos/icu/>, and

<http://www.unicode.org/utility/trac/browser/>.

NOTICE TO USER: Carefully read the following legal agreement.

BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT.

IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

#### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2018 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either

- (a) this copyright and permission notice appear with all copies of the Data Files or Software, or
- (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale,

use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

...

## ## Mozilla Public Suffix List

### ### Public Suffix Notice

...

You are receiving a copy of the Mozilla Public Suffix List in the following file: <java-home>/lib/security/public\_suffix\_list.dat. The terms of the Oracle license do NOT apply to this file; it is licensed under the Mozilla Public License 2.0, separately from the Oracle programs you receive. If you do not wish to use the Public Suffix List, you may remove the <java-home>/lib/security/public\_suffix\_list.dat file.

The Source Code of this file is available under the Mozilla Public License, v. 2.0 and is located at

[https://raw.githubusercontent.com/publicsuffix/list/cbbba1d234670453df9c930dfbf510c0474d4301/public\\_suffix\\_list.dat](https://raw.githubusercontent.com/publicsuffix/list/cbbba1d234670453df9c930dfbf510c0474d4301/public_suffix_list.dat).

If a copy of the MPL was not distributed with this file, you can obtain one at <https://mozilla.org/MPL/2.0/>.

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

...

### ### MPL v2.0

...

## Mozilla Public License Version 2.0

=====

### 1. Definitions

-----

#### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

#### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

#### 1.3. "Contribution"

means Covered Software of a particular Contributor.

#### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached

the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- (a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- (b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- (a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- (b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

### 2. License Grants and Conditions

-----

#### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

#### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

#### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a

Contributor:

- (a) for any code that a Contributor has removed from Covered Software;  
or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

-----

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under

the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any

such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

\* \*  
 \* 6. Disclaimer of Warranty \*  
 \* ----- \*  
 \* \*  
 \* Covered Software is provided under this License on an "as is" \*  
 \* basis, without warranty of any kind, either expressed, implied, or \*  
 \* statutory, including, without limitation, warranties that the \*  
 \* Covered Software is free of defects, merchantable, fit for a \*  
 \* particular purpose or non-infringing. The entire risk as to the \*  
 \* quality and performance of the Covered Software is with You. \*  
 \* Should any Covered Software prove defective in any respect, You \*  
 \* (not any Contributor) assume the cost of any necessary servicing, \*  
 \* repair, or correction. This disclaimer of warranty constitutes an \*  
 \* essential part of this License. No use of any Covered Software is \*  
 \* authorized under this License except under this disclaimer. \*  
 \* \*

\*\*\*\*\*

\*\*\*\*\*

\* \*  
 \* 7. Limitation of Liability \*  
 \* ----- \*  
 \* \*  
 \* Under no circumstances and under no legal theory, whether tort \*  
 \* (including negligence), contract, or otherwise, shall any \*  
 \* Contributor, or anyone who distributes Covered Software as \*  
 \* permitted above, be liable to You for any direct, indirect, \*  
 \* special, incidental, or consequential damages of any character \*  
 \* including, without limitation, damages for lost profits, loss of \*  
 \* goodwill, work stoppage, computer failure or malfunction, or any \*  
 \* and all other commercial damages or losses, even if such party \*  
 \* shall have been informed of the possibility of such damages. This \*  
 \* limitation of liability shall not apply to liability for death or \*  
 \* personal injury resulting from such party's negligence to the \*  
 \* extent applicable law prohibits such limitation. Some \*  
 \* jurisdictions do not allow the exclusion or limitation of \*  
 \* incidental or consequential damages, so this exclusion and \*  
 \* limitation may not apply to You. \*  
 \* \*

\*\*\*\*\*

8. Litigation  
 -----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal



place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

-----  
This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <https://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice  
-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

---

## ASM Bytecode Manipulation Framework v6.0

### ASM License

<pre>

Copyright (c) 2000-2011 France Tlcom

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

</pre>

## 1.343 lz4 1.9.2 2ubuntu0.20.04.1

### 1.343.1 Available under license :

This repository uses 2 different licenses :

- all files in the `lib` directory use a BSD 2-Clause license
- all other files use a GPLv2 license, unless explicitly stated otherwise

Relevant license is reminded at the top of each source file,  
and with presence of COPYING or LICENSE file in associated directories.

This model is selected to emphasize that  
files in the `lib` directory are designed to be included into 3rd party applications,  
while all other files, in `programs`, `tests` or `examples`,  
receive more limited attention and support for such scenario.

LZ4 Library

Copyright (c) 2011-2016, Yann Collet

All rights reserved.

Redistribution and use in source and binary forms, with or without modification,  
are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this  
list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this  
list of conditions and the following disclaimer in the documentation and/or  
other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further

restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.



Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may

consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Copyright (c) 2014, Ipsantil  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: \*

Copyright: (C) 2011+ Yann Collet

License: GPL-2+

The full text of license: <https://github.com/Cyan4973/lz4/blob/master/lib/LICENSE>

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: lz4

Source: <https://github.com/Cyan4973/lz4>

Files: \*

Copyright: Copyright (C) 2011-2017, Yann Collet.

License: BSD-2-clause

Files: lib/\*

Copyright: Copyright (C) 2011-2017, Yann Collet.

License: BSD-2-clause

Files: lib/liblz4.pc.in

Copyright: Copyright (C) 2011-2014, Yann Collet.

License: BSD-2-clause

Files: lib/lz4frame.c

lib/lz4frame\_static.h

lib/xxhash.c

lib/xxhash.h

Copyright: Copyright (C) 2011-2016, Yann Collet.

License: BSD-2-clause

Files: programs/\*

Copyright: Copyright (C) 2011-2016, Yann Collet.

License: GPL-2+

Files: programs/lz4io.c

Copyright: Copyright (C) 2011-2017, Yann Collet.

License: GPL-2+

Files: programs/platform.h

Copyright: Copyright (C) 2016 -present, Przemyslaw Skibinski, Yann Collet

License: GPL-2+

Files: programs/util.h

Copyright: Copyright (C) 2016 -present, Przemyslaw Skibinski, Yann Collet

License: GPL-2+

Files: ./examples/printVersion.c

Copyright: Takayuki Matsuoka & Yann Collet

License: GPL-2

Files: ./examples/blockStreaming\_lineByLine.c

./examples/blockStreaming\_doubleBuffer.c

Copyright: Takayuki Matsuoka

License: GPL-2

Files: ./examples/HCStreaming\_ringBuffer.c

./examples/blockStreaming\_ringBuffer.c

Copyright: Yann Collet

License: GPL-2

Files: ./examples/compress\_functions.c

./examples/simple\_buffer.c

Copyright: Kyle Harper

License: BSD-2-clause

Files: debian/\*

Copyright: 2013 Nobuhiro Iwamatsu <iwamatsu@debian.org>

License: GPL-2+

License: GPL-2

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; version 2 dated June, 1991.

.

On Debian systems, the complete text of version 2 of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'.

License: GPL-2+

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; version 2 dated June, 1991, or (at your option) any later version.

.

On Debian systems, the complete text of version 2 of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'.

License: BSD-2-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

.

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.344 docker 1.9.1

### 1.344.1 Available under license :

jclouds docker API

Copyright 2009-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain

separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the



origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

# 1.345 @tensorflow/tfjs-backend-webgl 3.11.0

## 1.345.1 Available under license :

/\*\*

\* @license

\* Copyright 2020 Google LLC. All Rights Reserved.

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are

under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

## APPENDIX: HOW TO APPLY THE APACHE LICENSE TO YOUR WORK

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

# 1.346 netty-handler 4.1.51.Final

## 1.346.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2016 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License, version
* 2.0 (the "License"); you may not use this file except in compliance with the
* License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
```

\* License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/flow/FlowControlHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2018 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslSession.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslTlsv13X509ExtendedTrustManager.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/ExtendedOpenSslSession.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslCachingKeyMaterialProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslX509KeyManagerFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslX509TrustManagerWrapper.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslPrivateKey.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslKeyMaterial.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslCachingX509KeyManagerFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslKeyMaterialProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SignatureAlgorithmConverter.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2011 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/traffic/AbstractTrafficShapingHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2019 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/TrustManagerFactoryWrapper.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/SimpleKeyManagerFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/address/DynamicAddressConnectHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/KeyManagerFactoryWrapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslPrivateKeyMethod.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/address/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/PseudoRandomFunction.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslMasterKeyHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/traffic/TrafficCounter.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/traffic/package-info.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2016 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*



- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/PemPrivateKey.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/PemX509Certificate.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/flow/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslEngine.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/PemEncoded.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/PemValue.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/X509TrustManagerWrapper.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/flush/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/Java8SslUtils.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslCertificateException.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslContext.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/flush/FlushConsolidationHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/DelegatingSslContext.java
- \* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2017 The Netty Project
- \*
- \* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/ocsp/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/AbstractSniHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/SslCompletionEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/SslCloseCompletionEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/Conscrypt.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/SniCompletionEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/OptionalSslHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/JdkAlpnSslUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/JdkAlpnSslEngine.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/SslClientHelloHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/ConscryptAlpnSslEngine.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2014 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\*/

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

// Try the OpenJDK's proprietary implementation.

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/ssl/util/SelfSignedCertificate.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2014 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-  
jar/io/netty/handler/traffic/GlobalChannelTrafficShapingHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2013 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslHandshakeCompletionEvent.java

No license file was found, but licenses were detected in source scan.

~ Copyright 2012 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,  
~ version 2.0 (the "License"); you may not use this file except in compliance  
~ with the License. You may obtain a copy of the License at:

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software  
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
~ License for the specific language governing permissions and limitations  
~ under the License.

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-handler/pom.xml

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolAccessor.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslSessionTicketKey.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolNames.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslJavaxX509Certificate.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslContextBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ClientAuth.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolNegotiationHandler.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2012 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/ChunkedStream.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/IdleStateHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/logging/LoggingHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/NotSslRecordException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/ChunkedFile.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/ChunkedNioStream.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-

jar/io/netty/handler/logging/LogLevel.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/ChunkedWriteHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/ChunkedInput.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/ReadTimeoutException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/TimeoutException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/IdleStateEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/WriteTimeoutException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/IdleState.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/WriteTimeoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/logging/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/timeout/ReadTimeoutHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/stream/ChunkedNioFile.java  
No license file was found, but licenses were detected in source scan.

# The Netty Project licenses this file to you under the Apache License,  
# version 2.0 (the "License"); you may not use this file except in compliance  
# with the License. You may obtain a copy of the License at:  
# <http://www.apache.org/licenses/LICENSE-2.0>  
# distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/META-INF/native-image/io.netty.handler.native-image.properties  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2020 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/address/ResolveAddressHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/logging/ByteBufFormat.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslHandshakeTimeoutException.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2014 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/PemReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SniHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslX509Certificate.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/Java7SslParametersUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslSessionStats.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkApplicationProtocolNegotiator.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslServerContext.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JettyNpnSslEngine.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslEngineMap.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslContext.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/traffic/GlobalChannelTrafficCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/BouncyCastleSelfSignedCertGenerator.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslClientContext.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/CipherSuiteConverter.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslSessionContext.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/CipherSuiteFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslEngine.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslContext.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslDefaultApplicationProtocolNegotiator.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolNegotiator.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkSslEngine.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/RuleBasedIpFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkAlpnApplicationProtocolNegotiator.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkSslServerContext.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkDefaultApplicationProtocolNegotiator.java

\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslProvider.java



\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkSslContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolConfig.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/UniqueIpFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslApplicationProtocolNegotiator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslServerSessionContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkNpnApplicationProtocolNegotiator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/ApplicationProtocolUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/IpSubnetFilterRule.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/IpFilterRule.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSslNpnApplicationProtocolNegotiator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/SslUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/IpFilterRuleType.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JdkSslClientContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/OpenSsl.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948687\_1595240769.66/0/netty-handler-4-1-51-final-sources-jar/io/netty/handler/ssl/JettyAlpnSslEngine.java

## 1.347 docker 19.03.5-r1

### 1.347.1 Available under license :

Copyright (c) 2014-2015, Philip Hofer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated

documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012-2018 The Gorilla Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer

in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>



## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.



"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the

Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside

or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer,

and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally

submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson



Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and  
limitations under the License.

Attribution-ShareAlike 4.0 International

=====

Creative Commons Corporation ("Creative Commons") is not a law firm and  
does not provide legal services or legal advice. Distribution of  
Creative Commons public licenses does not create a lawyer-client or  
other relationship. Creative Commons makes its licenses and related  
information available on an "as-is" basis. Creative Commons gives no  
warranties regarding its licenses, any material licensed under their  
terms and conditions, or any related information. Creative Commons  
disclaims all liability for damages resulting from their use to the  
fullest extent possible.

### Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and  
conditions that creators and other rights holders may use to share  
original works of authorship and other material subject to copyright  
and certain other rights specified in the public license below. The  
following considerations are for informational purposes only, are not  
exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are  
intended for use by those authorized to give the public  
permission to use material in ways otherwise restricted by  
copyright and certain other rights. Our licenses are  
irrevocable. Licensors should read and understand the terms  
and conditions of the license they choose before applying it.  
Licensors should also secure all rights necessary before  
applying our licenses so that the public can reuse the  
material as expected. Licensors should clearly mark any  
material not subject to the license. This includes other CC-

licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: [wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public:

[wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

=====  
Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.

- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](https://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.
- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the

public may access the material from a place and at a time individually chosen by them.

l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.

m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

## Section 2 -- Scope.

a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:

a. reproduce and Share the Licensed Material, in whole or in part; and

b. produce, reproduce, and Share Adapted Material.

2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.

3. Term. The term of this Public License is specified in Section 6(a).

4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a) (4) never produces Adapted Material.

5. Downstream recipients.



- a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.
- b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.
- c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.
2. Patent and trademark rights are not licensed under this Public License.
3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

### Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

#### a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

#### b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.
2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.
3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

#### Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,  
  
including for purposes of Section 3(b); and
- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

#### Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS,

IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.

- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.
- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

#### Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:
  - 1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or
  - 2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

- c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.

d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.
- b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.
- d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo

of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).

The MIT License (MIT)

Copyright (c) 2017 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR

A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Mozilla Public License Version 2.0

=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

### 1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.



1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

-----

## 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to

distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

-----

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

\* \*
\* 6. Disclaimer of Warranty \*
\* ----- \*
\* \*
\* Covered Software is provided under this License on an "as is" \*
\* basis, without warranty of any kind, either expressed, implied, or \*
\* statutory, including, without limitation, warranties that the \*
\* Covered Software is free of defects, merchantable, fit for a \*
\* particular purpose or non-infringing. The entire risk as to the \*
\* quality and performance of the Covered Software is with You. \*
\* Should any Covered Software prove defective in any respect, You \*
\* (not any Contributor) assume the cost of any necessary servicing, \*
\* repair, or correction. This disclaimer of warranty constitutes an \*
\* essential part of this License. No use of any Covered Software is \*
\* authorized under this License except under this disclaimer. \*

\* \*
\*\*\*\*\*

```

*
*
* 7. Limitation of Liability
* -----
*
* Under no circumstances and under no legal theory, whether tort
* (including negligence), contract, or otherwise, shall any
* Contributor, or anyone who distributes Covered Software as
* permitted above, be liable to You for any direct, indirect,
* special, incidental, or consequential damages of any character
* including, without limitation, damages for lost profits, loss of
* goodwill, work stoppage, computer failure or malfunction, or any
* and all other commercial damages or losses, even if such party
* shall have been informed of the possibility of such damages. This
* limitation of liability shall not apply to liability for death or
* personal injury resulting from such party's negligence to the
* extent applicable law prohibits such limitation. Some
* jurisdictions do not allow the exclusion or limitation of
* incidental or consequential damages, so this exclusion and
* limitation may not apply to You.
*

```

8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

-----

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

#### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

#### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

#### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

##### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

##### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Apache License

Version 2.0, January 2004

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally



submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

MIT License

Copyright (c) Microsoft Corporation. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.

All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE



## SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2014-2018 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise

designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must

include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly



negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015-Present CloudFoundry.org Foundation, Inc. All Rights Reserved.

This project contains software that is Copyright (c) 2015 Pivotal Software, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

This project may include a number of subcomponents with separate  
copyright notices and license terms. Your use of these subcomponents  
is subject to the terms and conditions of each subcomponent's license,  
as noted in the LICENSE file.

Docker  
Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/creack/pty>) developed  
by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the  
United States and other governments.  
It is your responsibility to ensure that your use and/or transfer does not  
violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the

documentation and/or other materials provided with the distribution.

\* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You



institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016-2018 Docker Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY

THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015, Tim Heckman

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of linode-netint nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

MIT License

Copyright (c) 2017 Gal Ben-Haim

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

AWS SDK for Go

Copyright 2015 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Copyright 2014-2015 Stripe, Inc.

The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,



and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016, opentracing-contrib

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of go-stdlib nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the

direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and



wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor

has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2013 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND



NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Taihei Morikuni

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a

cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,



any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Copyright (c) 2012, 2013 Ugorji Nwoke.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification,  
are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice,  
this list of conditions and the following disclaimer in the documentation  
and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used  
to endorse or promote products derived from this software  
without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR  
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES  
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;  
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON  
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS  
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this  
list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice,

this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT

Copyright 2017 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining

a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration



files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where

such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

#### 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of

any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2011 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at



<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>  
<https://github.com/beorn7/perks>  
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein  
See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format  
<http://github.com/golang/protobuf/>  
Copyright 2010 The Go Authors  
See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).  
[https://github.com/mattproud/golang\\_protobuf\\_extensions](https://github.com/mattproud/golang_protobuf_extensions)  
Copyright 2013 Matt T. Proud  
Licensed under the Apache License, Version 2.0  
CoreOS Project  
Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc.  
(<http://www.coreos.com/>).  
procf provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).  
Copyright (c) 2013 Dario Casta. All rights reserved.  
Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.  
Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

## 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

## 1.3. Contribution

means Covered Software of a particular Contributor.

## 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

## 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

## 1.6. Executable Form

means any form of the work other than Source Code Form.

## 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

## 1.8. License

means this document.

## 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

## 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. Source Code Form

means the form of the work preferred for making modifications.

#### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and

- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including

copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or

indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter



hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible  
With Secondary Licenses, as defined by  
the Mozilla Public License, v. 2.0.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED  
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR  
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF  
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING  
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS  
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015 Matthew Heon <mheon@redhat.com>

Copyright (c) 2015 Paul Moore <pmoore@redhat.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice,  
this list of conditions and the following disclaimer in the documentation  
and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method,



process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License.

Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

#### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

#### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent

necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Copyright (c) 2013, Patrick Mezard  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Common libraries shared by Prometheus Go components.

Copyright 2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).  
The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of

the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH (open-source@konsorten.de)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
The MIT License (MIT)

Copyright (c) 2016 The OpenTracing Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER



LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2016, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016, gRPC Ecosystem

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of grpc-opentracing nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Sean Chittenden

Copyright (c) 2016 Alex Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell

copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Bits of Go-lang's `once.Do()` were cribbed and reused here, too.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2012-2018 Mat Ryer and Tyler Bunnell



Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.348 chardet 3.0.4

## 1.348.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them

with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free

library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to

distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.



7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is

copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or

modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.349 libarchive 3.4.0-2ubuntu1.2

### 1.349.1 Available under license :

The libarchive distribution as a whole is Copyright by Tim Kientzle and is subject to the copyright notice reproduced at the bottom of this file.

Each individual file in this distribution should have a clear copyright/licensing statement at the beginning of the file. If any do not, please let me know and I will rectify it. The following is intended to summarize the copyright status of the individual files; the actual statements in the files are controlling.

\* Except as listed below, all C sources (including .c and .h files) and documentation files are subject to the copyright notice reproduced at the bottom of this file.

\* The following source files are also subject in whole or in part to a 3-clause UC Regents copyright; please read the individual source files for details:

libarchive/archive\_entry.c  
libarchive/archive\_read\_support\_filter\_compress.c  
libarchive/archive\_write\_add\_filter\_compress.c  
libarchive/mtree.5

\* The following source files are in the public domain:

libarchive/archive\_getdate.c

\* The following source files are triple-licensed with the ability to choose from CC0 1.0 Universal, OpenSSL or Apache 2.0 licenses:

libarchive/archive\_blake2.h  
libarchive/archive\_blake2\_impl.h  
libarchive/archive\_blake2s\_ref.c  
libarchive/archive\_blake2sp\_ref.c

\* The build files---including Makefiles, configure scripts, and auxiliary scripts used as part of the compile process---have widely varying licensing terms. Please check individual files before distributing them to see if those restrictions apply to you.

I intend for all new source code to use the license below and hope over time to replace code with other licenses with new implementations that do use the license below. The varying licensing of the build scripts seems to be an unavoidable mess.

Copyright (c) 2003-2018 <author(s)>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR(S) ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF

THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.350 libffi 3.3 4

### 1.350.1 Available under license :

<https://sourceware.org/libffi/>

libffi - Copyright (c) 1996-2019 Anthony Green, Red Hat, Inc and others.

See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The libffi source distribution contains certain code that is not part of libffi, and is only used as tooling to assist with the building and testing of libffi. This includes the msvcc.sh script used to wrap the Microsoft compiler with GNU compatible command-line options, make\_sunver.pl, and the libffi test code distributed in the testsuite/libffi.bhaible directory. This code is distributed with libffi for the purpose of convenience only, and libffi is in no way derived from this code.

msvcc.sh and testsuite/libffi.bhaible are both distributed under the terms of the GNU GPL version 2, as below.

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.



c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.351 rsyslog 7.6.7

## 1.351.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License

without being bound by section 3 of the GNU GPL.

## 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

## 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

## 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.

c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it



is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

#### GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

## 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.



Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.



## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains

in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a

copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place

additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an



organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a

publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this

License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF

ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following

conditions:

1. You must give any other recipients of the Work or Derivative Works a copy of this License; and
  2. You must cause any modified files to carry prominent notices stating that You changed the files; and
  3. You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  4. If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License. You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.
5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend,

and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# 1.352 dmidecode 2.12

## 1.352.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.



Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among

countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Library General  
Public License instead of this License.

## 1.353 opencv 4.1.1

### 1.353.1 Available under license :

Copyright (C) 2016 The Android Open Source Project

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2011-2014 Idiap Research Institute (Ronan Collobert)

Copyright (c) 2012-2014 Deepmind Technologies (Koray Kavukcuoglu)

Copyright (c) 2011-2012 NEC Laboratories America (Koray Kavukcuoglu)

Copyright (c) 2011-2013 NYU (Clement Farabet)

Copyright (c) 2006-2010 NEC Laboratories America (Ronan Collobert, Leon Bottou, Iain Melvin, Jason Weston)

Copyright (c) 2006 Idiap Research Institute (Samy Bengio)

Copyright (c) 2001-2004 Idiap Research Institute (Ronan Collobert, Samy Bengio, Johnny Mariethoz)

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.

3. Neither the names of Deepmind Technologies, NYU, NEC Laboratories America and IDIAP Research Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

BSD License

Copyright (c) 2000-2006, [www.hamcrest.org](http://www.hamcrest.org)  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Hamcrest nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH



DAMAGE.

Copyright (c) 2008-2015 The Khronos Group Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and/or associated documentation files (the "Materials"), to deal in the Materials without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Materials, and to permit persons to whom the Materials are furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Materials.

MODIFICATIONS TO THIS FILE MAY MEAN IT NO LONGER ACCURATELY REFLECTS KHRONOS STANDARDS. THE UNMODIFIED, NORMATIVE VERSIONS OF KHRONOS SPECIFICATIONS AND HEADER INFORMATION ARE LOCATED AT <https://www.khronos.org/registry/>

THE MATERIALS ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE MATERIALS OR THE USE OR OTHER DEALINGS IN THE MATERIALS.

Copyright (c) 1988-1997 Sam Leffler

Copyright (c) 1991-1997 Silicon Graphics, Inc.

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that (i) the above copyright notices and this permission notice appear in all copies of the software and related documentation, and (ii) the names of Sam Leffler and Silicon Graphics may not be used in any advertising or publicity relating to the software without the specific, prior written permission of Sam Leffler and Silicon Graphics.

THE SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (C) 2001 Fabrice Bellard

FFmpeg is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

FFmpeg is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with FFmpeg; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

---

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get

it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with

the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the



Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the

Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time.

Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest

possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

SCALA LICENSE

Copyright (c) 2002-2008 EPFL, Lausanne, unless otherwise specified.

All rights reserved.

This software was developed by the Programming Methods Laboratory of the Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland.

Permission to use, copy, modify, and distribute this software in source or binary form for any purpose with or without fee is hereby granted, provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the EPFL nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2008, 2009, 2010 Steven Blundy, Josh Cough, Mark Harrah, Stuart Roebuck, Tony Sloane, Vesa Vilhonen, Jason Zaugg  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,

DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

quirc -- QR-code recognition library

Copyright (C) 2010-2012 Daniel Beer <dlbeer@gmail.com>

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Simple Build Tool Launcher

Copyright 2008, 2009, 2010 Mark Harrah, David MacIver

Licensed under BSD-style license (see LICENSE)

Classes from the Scala library are distributed with the launcher.

Copyright 2002-2008 EPFL, Lausanne

Licensed under BSD-style license (see licenses/LICENSE\_Scala)

JLine is distributed with the launcher.

It is licensed under a BSD-style license (see licenses/LICENSE\_JLine)

Classes from Apache Ivy, licensed under the Apache License, Version 2.0 (see licenses/LICENSE\_Apache) are distributed with the launcher.

It requires the following notice:

This product includes software developed by

The Apache Software Foundation (<http://www.apache.org/>).

Portions of Ivy were originally developed by

Jayasoft SARL (<http://www.jayasoft.fr/>)

and are licensed to the Apache Software Foundation under the "Software Grant License Agreement"

THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,

INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too. When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its

contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program. In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or



binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software

Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at

compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2006, Industrial Light & Magic, a division of Lucasfilm Entertainment Company Ltd. Portions contributed and copyright held by others as indicated. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Industrial Light & Magic nor the names of any other contributors to this software may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This license applies to all parts of Protocol Buffers except the following:

- Atomicops support for generic gcc, located in `src/google/protobuf/stubs/atomicops_internals_generic_gcc.h`. This file is copyrighted by Red Hat Inc.
- Atomicops support for AIX/POWER, located in `src/google/protobuf/stubs/atomicops_internals_power.h`. This file is copyrighted by Bloomberg Finance LP.

Copyright 2014, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

libjpeg-turbo Licenses

=====

libjpeg-turbo is covered by three compatible BSD-style open source licenses:

- The IJG (Independent JPEG Group) License, which is listed in [README.ijg](README.ijg)

This license applies to the libjpeg API library and associated programs (any code inherited from libjpeg, and any modifications to that code.)

- The Modified (3-clause) BSD License, which is listed below

This license covers the TurboJPEG API library and associated programs, as well as the build system.

- The [zlib License](https://opensource.org/licenses/Zlib)

This license is a subset of the other two, and it covers the libjpeg-turbo SIMD extensions.

#### Complying with the libjpeg-turbo Licenses

=====

This section provides a roll-up of the libjpeg-turbo licensing terms, to the best of our understanding.

1. If you are distributing a modified version of the libjpeg-turbo source, then:

1. You cannot alter or remove any existing copyright or license notices from the source.

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 1 of the Modified BSD License
- Clauses 1 and 3 of the zlib License

2. You must add your own copyright notice to the header of each source file you modified, so others can tell that you modified that file (if there is not an existing copyright header in that file, then you can simply add a notice stating that you modified the file.)

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 2 of the zlib License

3. You must include the IJG README file, and you must not alter any of the copyright or license text in that file.

**\*\*Origin\*\***

- Clause 1 of the IJG License

2. If you are distributing only libjpeg-turbo binaries without the source, or if you are distributing an application that statically links with libjpeg-turbo, then:

1. Your product documentation must include a message stating:

This software is based in part on the work of the Independent JPEG Group.

**\*\*Origin\*\***

- Clause 2 of the IJG license

2. If your binary distribution includes or uses the TurboJPEG API, then your product documentation must include the text of the Modified BSD License (see below.)

**\*\*Origin\*\***

- Clause 2 of the Modified BSD License

3. You cannot use the name of the IJG or The libjpeg-turbo Project or the contributors thereof in advertising, publicity, etc.

**\*\*Origin\*\***

- IJG License

- Clause 3 of the Modified BSD License

4. The IJG and The libjpeg-turbo Project do not warrant libjpeg-turbo to be free of defects, nor do we accept any liability for undesirable consequences resulting from your use of the software.

**\*\*Origin\*\***

- IJG License

- Modified BSD License

- zlib License

The Modified (3-clause) BSD License

=====

Copyright (C)2009-2019 D. R. Commander. All Rights Reserved.

Copyright (C)2015 Viktor Szathmry. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the libjpeg-turbo Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS", AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Why Three Licenses?

=====

The zlib License could have been used instead of the Modified (3-clause) BSD License, and since the IJG License effectively subsumes the distribution conditions of the zlib License, this would have effectively placed libjpeg-turbo binary distributions under the IJG License. However, the IJG License specifically refers to the Independent JPEG Group and does not extend attribution and endorsement protections to other entities. Thus, it was desirable to choose a license that granted us the same protections for new code that were granted to the IJG for code derived from their software.

```
<?xml version="1.0"?>
<opencv_storage>
<!-- Automatically converted from haarcascade2, window size = 64x16 -->
<haarcascade_pltzzz64x16_16STG type_id="opencv-haar-classifier">
 <size>
 64 16</size>
 <stages>
 <_>
 <!-- stage 0 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 32 2 8 6 -1.</_>
 <_>
 32 4 8 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.6915600746870041e-002</threshold>
 <left_val>-9.5547717809677124e-001</left_val>
 <right_val>8.9129137992858887e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
```

```

<!-- root node -->
<feature>
 <rects>
 <_>
 0 4 6 10 -1.</_>
 <_>
 3 4 3 10 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.4228349328041077e-002</threshold>
<left_val>-9.2089319229125977e-001</left_val>
<right_val>8.8723921775817871e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 55 0 8 6 -1.</_>
 <_>
 55 0 4 3 2.</_>
 <_>
 59 3 4 3 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-1.0168660432100296e-002</threshold>
<left_val>8.8940089941024780e-001</left_val>
<right_val>-7.7847331762313843e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 44 7 4 9 -1.</_>
 <_>
 44 10 4 3 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.0863260142505169e-003</threshold>
<left_val>-8.7998157739639282e-001</left_val>
<right_val>5.8651781082153320e-001</right_val></_></_></trees>
<stage_threshold>-2.0683259963989258e+000</stage_threshold>
<parent>-1</parent>
<next>-1</next></_>
<_>
<!-- stage 1 -->
<trees>
 <_>

```



```

<!-- tree 0 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 29 1 16 4 -1.</_>
 <_>
 29 3 16 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.9062159359455109e-002</threshold>
 <left_val>-8.7765061855316162e-001</left_val>
 <right_val>8.5373121500015259e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 5 9 8 -1.</_>
 <_>
 3 5 3 8 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3903399705886841e-002</threshold>
 <left_val>-9.2079448699951172e-001</left_val>
 <right_val>7.5155001878738403e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 44 0 20 14 -1.</_>
 <_>
 44 0 10 7 2.</_>
 <_>
 54 7 10 7 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-3.5404648631811142e-002</threshold>
 <left_val>6.7834627628326416e-001</left_val>
 <right_val>-9.0937072038650513e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
 <!-- root node -->
 <feature>

```

```

 <rects>
 <_>
 41 7 6 9 -1.</_>
 <_>
 43 7 2 9 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.2988721765577793e-003</threshold>
 <left_val>-8.1054258346557617e-001</left_val>
 <right_val>5.8985030651092529e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 4 21 4 -1.</_>
 <_>
 7 4 7 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.4959490876644850e-003</threshold>
 <left_val>-9.7632282972335815e-001</left_val>
 <right_val>4.5473039150238037e-001</right_val></_></_></trees>
 <stage_threshold>-1.6632349491119385e+000</stage_threshold>
 <parent>0</parent>
 <next>-1</next></_>
 <_>
 <!-- stage 2 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 31 2 11 6 -1.</_>
 <_>
 31 4 11 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3864099755883217e-002</threshold>
 <left_val>-9.3137168884277344e-001</left_val>
 <right_val>8.2478952407836914e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>

```

```

 <rects>
 <_>
 56 3 6 11 -1.</_>
 <_>
 59 3 3 11 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.5775209069252014e-002</threshold>
 <left_val>8.5526448488235474e-001</left_val>
 <right_val>-8.7574672698974609e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 32 14 32 2 -1.</_>
 <_>
 32 15 32 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.0646049864590168e-002</threshold>
 <left_val>8.5167151689529419e-001</left_val>
 <right_val>-6.7789041996002197e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 2 8 14 -1.</_>
 <_>
 4 2 4 14 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.7000989764928818e-002</threshold>
 <left_val>-8.0041092634201050e-001</left_val>
 <right_val>6.4893317222595215e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 19 0 22 6 -1.</_>
 <_>
 19 0 11 3 2.</_>
 <_>

```

```

 30 3 11 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>5.2989721298217773e-003</threshold>
 <left_val>-9.5342522859573364e-001</left_val>
 <right_val>5.0140267610549927e-001</right_val></_></_></trees>
<stage_threshold>-1.3346730470657349e+000</stage_threshold>
<parent>1</parent>
<next>-1</next></_>
<_>
<!-- stage 3 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 0 6 6 -1.</_>
 <_>
 56 0 3 3 2.</_>
 <_>
 59 3 3 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-6.9233630783855915e-003</threshold>
 <left_val>8.2654470205307007e-001</left_val>
 <right_val>-8.5396027565002441e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 32 0 14 12 -1.</_>
 <_>
 32 0 7 6 2.</_>
 <_>
 39 6 7 6 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.2539249658584595e-001</threshold>
 <left_val>-1.2996139936149120e-002</left_val>
 <right_val>-3.2377028808593750e+003</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>

```

```

 <rects>
 <_>
 2 1 43 4 -1.</_>
 <_>
 2 3 43 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.3474893569946289e-002</threshold>
 <left_val>-6.4648061990737915e-001</left_val>
 <right_val>8.2302427291870117e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 34 10 30 5 -1.</_>
 <_>
 44 10 10 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.2217150330543518e-002</threshold>
 <left_val>-7.5190877914428711e-001</left_val>
 <right_val>6.3705182075500488e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 9 9 5 -1.</_>
 <_>
 3 9 3 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.0000640302896500e-002</threshold>
 <left_val>-6.2077498435974121e-001</left_val>
 <right_val>6.1317932605743408e-001</right_val></_></_></trees>
 <stage_threshold>-1.6521669626235962e+000</stage_threshold>
 <parent>2</parent>
 <next>-1</next></_>
 <_>
 <!-- stage 4 -->
 <trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>

```

```

 <rects>
 <_>
 2 1 43 6 -1.</_>
 <_>
 2 3 43 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>9.2297486960887909e-002</threshold>
 <left_val>-7.2764229774475098e-001</left_val>
 <right_val>8.0554759502410889e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 53 4 9 8 -1.</_>
 <_>
 56 4 3 8 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.7613969519734383e-002</threshold>
 <left_val>-7.0769268274307251e-001</left_val>
 <right_val>7.3315787315368652e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 36 4 14 8 -1.</_>
 <_>
 36 4 7 4 2.</_>
 <_>
 43 8 7 4 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.2465449981391430e-002</threshold>
 <left_val>-8.4359270334243774e-001</left_val>
 <right_val>5.7046437263488770e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 14 14 49 2 -1.</_>
 <_>

```

```

 14 15 49 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.3886829614639282e-002</threshold>
 <left_val>8.2656508684158325e-001</left_val>
 <right_val>-5.2783298492431641e-001</right_val></_></_></trees>
<stage_threshold>-1.4523630142211914e+000</stage_threshold>
<parent>3</parent>
<next>-1</next></_>
<_>
<!-- stage 5 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 5 4 9 -1.</_>
 <_>
 2 5 2 9 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.8821349367499352e-002</threshold>
 <left_val>-8.1122857332229614e-001</left_val>
 <right_val>6.9127470254898071e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 21 1 38 4 -1.</_>
 <_>
 21 3 38 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.1703320592641830e-002</threshold>
 <left_val>-7.6482647657394409e-001</left_val>
 <right_val>6.4212161302566528e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 44 12 18 3 -1.</_>
 <_>

```

```

 53 12 9 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.6298670321702957e-002</threshold>
 <left_val>5.0207728147506714e-001</left_val>
 <right_val>-8.4020161628723145e-001</right_val></_></_>
</>
<!-- tree 3 -->
</>
<!-- root node -->
<feature>
 <rects>
 </>
 10 4 9 3 -1.</_>
 </>
 13 4 3 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-4.9458951689302921e-003</threshold>
 <left_val>6.1991941928863525e-001</left_val>
 <right_val>-6.1633539199829102e-001</right_val></_></_>
</>
<!-- tree 4 -->
</>
<!-- root node -->
<feature>
 <rects>
 </>
 40 4 10 4 -1.</_>
 </>
 45 4 5 4 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-5.1894597709178925e-003</threshold>
 <left_val>4.4975179433822632e-001</left_val>
 <right_val>-8.0651968717575073e-001</right_val></_></_>
</>
<!-- tree 5 -->
</>
<!-- root node -->
<feature>
 <rects>
 </>
 17 14 47 2 -1.</_>
 </>
 17 15 47 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.8824130296707153e-002</threshold>
 <left_val>6.1992841958999634e-001</left_val>
 <right_val>-5.5643159151077271e-001</right_val></_></_>
</>

```



```

<!-- tree 6 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 8 5 4 7 -1.</_>
 <_>
 10 5 2 7 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>5.6571601890027523e-003</threshold>
 <left_val>-4.8346561193466187e-001</left_val>
 <right_val>6.8647360801696777e-001</right_val></_></_></trees>
 <stage_threshold>-2.2358059883117676e+000</stage_threshold>
 <parent>4</parent>
 <next>-1</next></_>
<_>
<!-- stage 6 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 0 6 6 -1.</_>
 <_>
 56 0 3 3 2.</_>
 <_>
 59 3 3 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-9.1503243893384933e-003</threshold>
 <left_val>6.8174481391906738e-001</left_val>
 <right_val>-7.7866071462631226e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 0 6 6 -1.</_>
 <_>
 0 0 3 3 2.</_>
 <_>
 3 3 3 3 2.</_></rects>
 <tilted>0</tilted></feature>

```

```

<threshold>7.4933180585503578e-003</threshold>
<left_val>-6.8696027994155884e-001</left_val>
<right_val>6.6913938522338867e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 13 4 48 2 -1.</_>
 <_>
 29 4 16 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.5296419411897659e-002</threshold>
 <left_val>-7.3576509952545166e-001</left_val>
 <right_val>5.9453499317169189e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 42 1 6 15 -1.</_>
 <_>
 42 6 6 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.1669679544866085e-002</threshold>
 <left_val>-8.4733831882476807e-001</left_val>
 <right_val>4.5461329817771912e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 30 8 3 5 -1.</_>
 <_>
 31 8 1 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.5769430212676525e-003</threshold>
 <left_val>-5.8270388841629028e-001</left_val>
 <right_val>7.7900522947311401e-001</right_val></_></_>
<_>
<!-- tree 5 -->
<_>

```

```

<!-- root node -->
<feature>
 <rects>
 <_>
 55 10 8 6 -1.</_>
 <_>
 55 13 8 3 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-1.4139170525595546e-003</threshold>
<left_val>4.5126929879188538e-001</left_val>
<right_val>-9.0696328878402710e-001</right_val></_></_></trees>
<stage_threshold>-1.8782069683074951e+000</stage_threshold>
<parent>5</parent>
<next>-1</next></_>
<_>
<!-- stage 7 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 4 6 4 7 -1.</_>
 <_>
 6 6 2 7 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-5.3149578161537647e-003</threshold>
 <left_val>6.5218788385391235e-001</left_val>
 <right_val>-7.9464268684387207e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 3 6 8 -1.</_>
 <_>
 59 3 3 8 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.2906960919499397e-002</threshold>
 <left_val>6.6433382034301758e-001</left_val>
 <right_val>-7.3633247613906860e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>

```

```

<!-- root node -->
<feature>
 <rects>
 <_>
 37 2 4 6 -1.</_>
 <_>
 37 4 4 2 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>9.4887977465987206e-003</threshold>
<left_val>-8.2612031698226929e-001</left_val>
<right_val>4.9333500862121582e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 10 30 6 -1.</_>
 <_>
 0 12 30 2 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>4.5138411223888397e-002</threshold>
<left_val>-5.4704028367996216e-001</left_val>
<right_val>7.6927912235260010e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 4 21 12 -1.</_>
 <_>
 7 4 7 12 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.5049019604921341e-002</threshold>
<left_val>-8.6739641427993774e-001</left_val>
<right_val>5.2807968854904175e-001</right_val></_></_></trees>
<stage_threshold>-1.0597369670867920e+000</stage_threshold>
<parent>6</parent>
<next>-1</next></_>
<_>
<!-- stage 8 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>

```

```

<!-- root node -->
<feature>
 <rects>
 <_>
 44 0 1 14 -1.</_>
 <_>
 44 7 1 7 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>6.6414438188076019e-003</threshold>
<left_val>-7.7290147542953491e-001</left_val>
<right_val>6.9723731279373169e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 54 3 4 3 -1.</_>
 <_>
 56 3 2 3 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.4703629314899445e-003</threshold>
<left_val>-7.4289917945861816e-001</left_val>
<right_val>6.6825848817825317e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 32 0 30 6 -1.</_>
 <_>
 32 0 15 3 2.</_>
 <_>
 47 3 15 3 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-2.2910499945282936e-002</threshold>
<left_val>4.3986389040946960e-001</left_val>
<right_val>-9.0588808059692383e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>

```

```

 0 8 9 7 -1.</_>
 <_>
 3 8 3 7 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.4193221479654312e-002</threshold>
 <left_val>-6.9507479667663574e-001</left_val>
 <right_val>6.2501090764999390e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 30 10 3 3 -1.</_>
 <_>
 31 10 1 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.5060020377859473e-003</threshold>
 <left_val>-6.8670761585235596e-001</left_val>
 <right_val>8.2241541147232056e-001</right_val></_></_>
<_>
<!-- tree 5 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 21 3 24 4 -1.</_>
 <_>
 29 3 8 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.9838380467263050e-005</threshold>
 <left_val>-9.2727631330490112e-001</left_val>
 <right_val>6.4723730087280273e-001</right_val></_></_>
<_>
<!-- tree 6 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 42 3 12 6 -1.</_>
 <_>
 46 3 4 6 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.2170299416757189e-005</threshold>
 <left_val>5.6555831432342529e-001</left_val>

```

```

 <right_val>-9.6788132190704346e-001</right_val></_></_></trees>
<stage_threshold>-1.4993519783020020e+000</stage_threshold>
<parent>7</parent>
<next>-1</next></_>
<_>
<!-- stage 9 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 56 9 6 6 -1.</_>
 <_>
 59 9 3 6 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.1395259760320187e-002</threshold>
 <left_val>7.1383631229400635e-001</left_val>
 <right_val>-8.7429678440093994e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 6 4 1 6 -1.</_>
 <_>
 6 7 1 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.1864590235054493e-003</threshold>
 <left_val>8.5311782360076904e-001</left_val>
 <right_val>-6.4777731895446777e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 0 12 4 -1.</_>
 <_>
 0 0 6 2 2.</_>
 <_>
 6 2 6 2 2.</_></rects>
 <tilted>0</tilted></feature>

```

```

 <threshold>2.3193720262497663e-003</threshold>
 <left_val>-7.6411879062652588e-001</left_val>
 <right_val>7.1867972612380981e-001</right_val></_></_>
 </_>
 <!-- tree 3 -->
 </_>
 <!-- root node -->
 <feature>
 <rects>
 </_>
 43 12 18 2 -1.</_>
 </_>
 52 12 9 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-7.9916073009371758e-003</threshold>
 <left_val>6.6442942619323730e-001</left_val>
 <right_val>-7.9540950059890747e-001</right_val></_></_>
 </_>
 <!-- tree 4 -->
 </_>
 <!-- root node -->
 <feature>
 <rects>
 </_>
 9 5 2 8 -1.</_>
 </_>
 10 5 1 8 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.4212740352377295e-003</threshold>
 <left_val>-6.3904231786727905e-001</left_val>
 <right_val>7.5050598382949829e-001</right_val></_></_></trees>
 <stage_threshold>-8.4829801321029663e-001</stage_threshold>
 <parent>8</parent>
 <next>-1</next></_>
 </_>
 <!-- stage 10 -->
 <trees>
 </_>
 <!-- tree 0 -->
 </_>
 <!-- root node -->
 <feature>
 <rects>
 </_>
 1 9 6 3 -1.</_>
 </_>
 3 9 2 3 3.</_></rects>
 <tilted>0</tilted></feature>

```



```

<threshold>6.4091659151017666e-003</threshold>
<left_val>8.8425230979919434e-001</left_val>
<right_val>9.9953681230545044e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 56 8 2 8 -1.</_>
 <_>
 56 12 2 4 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-6.3316390151157975e-004</threshold>
 <left_val>8.3822172880172729e-001</left_val>
 <right_val>-9.8322170972824097e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 24 2 6 13 -1.</_>
 <_>
 26 2 2 13 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-6.4947169448714703e-005</threshold>
 <left_val>1.</left_val>
 <right_val>-9.1822808980941772e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 33 7 24 4 -1.</_>
 <_>
 41 7 8 4 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>5.3404141217470169e-003</threshold>
 <left_val>-9.4317251443862915e-001</left_val>
 <right_val>9.0425151586532593e-001</right_val></_></_></trees>
<stage_threshold>-6.0007210820913315e-002</stage_threshold>
<parent>9</parent>
<next>-1</next></_>

```

```

<_>
<!-- stage 11 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 1 1 57 4 -1.</_>
 <_>
 1 3 57 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.0755469650030136e-001</threshold>
 <left_val>-7.1647202968597412e-001</left_val>
 <right_val>8.7827038764953613e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 2 6 14 -1.</_>
 <_>
 3 2 3 14 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.1668949872255325e-002</threshold>
 <left_val>-8.7051069736480713e-001</left_val>
 <right_val>5.8807212114334106e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 52 3 6 10 -1.</_>
 <_>
 54 3 2 10 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-1.0572380386292934e-002</threshold>
 <left_val>6.2438100576400757e-001</left_val>
 <right_val>-7.4027371406555176e-001</right_val></_></_>
 <_>
 <!-- tree 3 -->
 <_>

```

```

<!-- root node -->
<feature>
 <rects>
 <_>
 1 14 61 2 -1.</_>
 <_>
 1 15 61 1 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-2.7396259829401970e-002</threshold>
<left_val>8.9776748418807983e-001</left_val>
<right_val>-5.2986758947372437e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 28 0 11 12 -1.</_>
 <_>
 28 4 11 4 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.5918649509549141e-002</threshold>
<left_val>-8.6482518911361694e-001</left_val>
<right_val>5.3121817111968994e-001</right_val></_></_></trees>
<stage_threshold>-9.6125108003616333e-001</stage_threshold>
<parent>10</parent>
<next>-1</next></_>
<_>
<!-- stage 12 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 22 1 41 4 -1.</_>
 <_>
 22 3 41 2 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>7.1039132773876190e-002</threshold>
 <left_val>-7.5719678401947021e-001</left_val>
 <right_val>7.5645631551742554e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>

```

```

<!-- root node -->
<feature>
 <rects>
 <_>
 41 6 6 8 -1.</_>
 <_>
 43 6 2 8 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>7.6241148635745049e-003</threshold>
<left_val>-7.9783838987350464e-001</left_val>
<right_val>7.1733069419860840e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 50 9 14 5 -1.</_>
 <_>
 57 9 7 5 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-2.7092639356851578e-002</threshold>
<left_val>6.0071170330047607e-001</left_val>
<right_val>-8.4794402122497559e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 4 1 12 5 -1.</_>
 <_>
 10 1 6 5 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>-8.1267888890579343e-004</threshold>
<left_val>5.9364068508148193e-001</left_val>
<right_val>-8.9295238256454468e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 37 9 3 3 -1.</_>
 <_>

```

```

 38 9 1 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>8.3705072756856680e-004</threshold>
 <left_val>-6.4887362718582153e-001</left_val>
 <right_val>7.8537952899932861e-001</right_val></_></_></trees>
<stage_threshold>-1.0618970394134521e+000</stage_threshold>
<parent>11</parent>
<next>-1</next></_>
<_>
<!-- stage 13 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 54 0 10 6 -1.</_>
 <_>
 54 0 5 3 2.</_>
 <_>
 59 3 5 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-9.7556859254837036e-003</threshold>
 <left_val>7.6982218027114868e-001</left_val>
 <right_val>-8.5293501615524292e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 47 0 6 11 -1.</_>
 <_>
 49 0 2 11 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-8.6617246270179749e-003</threshold>
 <left_val>8.4029090404510498e-001</left_val>
 <right_val>-7.1949690580368042e-001</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>

```

```

 19 2 20 2 -1.</_>
 <_>
 19 3 20 1 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.6897840425372124e-002</threshold>
 <left_val>-5.3601992130279541e-001</left_val>
 <right_val>9.5484441518783569e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 14 4 6 11 -1.</_>
 <_>
 17 4 3 11 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>4.7526158596156165e-005</threshold>
 <left_val>-7.6412862539291382e-001</left_val>
 <right_val>7.5398761034011841e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 31 9 33 2 -1.</_>
 <_>
 42 9 11 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>6.5607670694589615e-003</threshold>
 <left_val>-9.9346441030502319e-001</left_val>
 <right_val>6.4864277839660645e-001</right_val></_></_></trees>
 <stage_threshold>-7.3307347297668457e-001</stage_threshold>
 <parent>12</parent>
 <next>-1</next></_>
<_>
<!-- stage 14 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>

```

```

 6 1 53 6 -1.</_>
 <_>
 6 3 53 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.0103269666433334e-001</threshold>
 <left_val>-7.3275578022003174e-001</left_val>
 <right_val>8.4619927406311035e-001</right_val></_></_>
<_>
<!-- tree 1 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 49 9 4 6 -1.</_>
 <_>
 49 9 2 3 2.</_>
 <_>
 51 12 2 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.8920811018906534e-004</threshold>
 <left_val>7.1564781665802002e-001</left_val>
 <right_val>-8.8221758604049683e-001</right_val></_></_>
<_>
<!-- tree 2 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 9 30 7 -1.</_>
 <_>
 10 9 10 7 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.0838840156793594e-002</threshold>
 <left_val>-8.7420248985290527e-001</left_val>
 <right_val>6.0648679733276367e-001</right_val></_></_>
<_>
<!-- tree 3 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 40 4 6 2 -1.</_>
 <_>
 42 4 2 2 3.</_></rects>
 <tilted>0</tilted></feature>

```

```

<threshold>5.0803890917450190e-004</threshold>
<left_val>-9.0554022789001465e-001</left_val>
<right_val>6.4213967323303223e-001</right_val></_></_>
<_>
<!-- tree 4 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 1 9 6 1 -1.</_>
 <_>
 3 9 2 1 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.3357039317488670e-003</threshold>
 <left_val>-9.2574918270111084e-001</left_val>
 <right_val>8.6384928226470947e-001</right_val></_></_>
<_>
<!-- tree 5 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 47 3 4 10 -1.</_>
 <_>
 47 8 4 5 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>8.0239427916239947e-005</threshold>
 <left_val>-9.9618428945541382e-001</left_val>
 <right_val>9.5355111360549927e-001</right_val></_></_>
<_>
<!-- tree 6 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 31 5 30 11 -1.</_>
 <_>
 41 5 10 11 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>3.2030208967626095e-003</threshold>
 <left_val>-1.</left_val>
 <right_val>1.0001050233840942e+000</right_val></_></_>
<_>
<!-- tree 7 -->
<_>

```



```

<!-- root node -->
<feature>
 <rects>
 <_>
 0 0 2 1 -1.</_>
 <_>
 1 0 1 1 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>0.</threshold>
<left_val>0.</left_val>
<right_val>-1.</right_val></_></_>
<_>
<!-- tree 8 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 21 3 42 5 -1.</_>
 <_>
 35 3 14 5 3.</_></rects>
 <tilted>0</tilted></feature>
<threshold>2.6143440045416355e-003</threshold>
<left_val>-1.</left_val>
<right_val>1.0002139806747437e+000</right_val></_></_>
<_>
<!-- tree 9 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 0 0 2 1 -1.</_>
 <_>
 1 0 1 1 2.</_></rects>
 <tilted>0</tilted></feature>
<threshold>0.</threshold>
<left_val>0.</left_val>
<right_val>-1.</right_val></_></_>
<_>
<!-- tree 10 -->
<_>
<!-- root node -->
<feature>
 <rects>
 <_>
 8 5 30 9 -1.</_>
 <_>

```

```

 8 8 30 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-7.0475979009643197e-004</threshold>
 <left_val>1.</left_val>
 <right_val>-9.9976968765258789e-001</right_val></_></_>
 </_>
 <!-- tree 11 -->
 </_>
 <!-- root node -->
 <feature>
 <rects>
 </_>
 3 12 33 3 -1.</_>
 </_>
 14 12 11 3 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.1271279547363520e-003</threshold>
 <left_val>-9.9694627523422241e-001</left_val>
 <right_val>1.0002720355987549e+000</right_val></_></_>
 </_>
 <!-- tree 12 -->
 </_>
 <!-- root node -->
 <feature>
 <rects>
 </_>
 0 0 3 2 -1.</_>
 </_>
 1 0 1 2 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.4224430671893060e-004</threshold>
 <left_val>1.</left_val>
 <right_val>-1.</right_val></_></_>
 </_>
 <!-- tree 13 -->
 </_>
 <!-- root node -->
 <feature>
 <rects>
 </_>
 46 4 3 8 -1.</_>
 </_>
 47 4 1 8 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>7.4700301047414541e-004</threshold>
 <left_val>-9.9108231067657471e-001</left_val>
 <right_val>9.9941182136535645e-001</right_val></_></_></trees>
 <stage_threshold>-1.0991690158843994e+000</stage_threshold>

```

```

<parent>13</parent>
<next>-1</next></_>
<_>
<!-- stage 15 -->
<trees>
 <_>
 <!-- tree 0 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 1 2 6 5 -1.</_>
 <_>
 3 2 2 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>1.7227890202775598e-003</threshold>
 <left_val>-9.3608891963958740e-001</left_val>
 <right_val>8.7251222133636475e-001</right_val></_></_>
 <_>
 <!-- tree 1 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 0 3 18 5 -1.</_>
 <_>
 6 3 6 5 3.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>2.7599320746958256e-003</threshold>
 <left_val>-9.9757021665573120e-001</left_val>
 <right_val>1.0000289678573608e+000</right_val></_></_>
 <_>
 <!-- tree 2 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 3 1 6 14 -1.</_>
 <_>
 6 1 3 14 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-8.9444358309265226e-005</threshold>
 <left_val>1.</left_val>
 <right_val>-9.9264812469482422e-001</right_val></_></_>
 <_>

```

```

<!-- tree 3 -->
<_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 3 6 2 10 -1.</_>
 <_>
 3 11 2 5 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.7962020249105990e-004</threshold>
 <left_val>8.2833290100097656e-001</left_val>
 <right_val>-9.8444151878356934e-001</right_val></_></_>
 <_>
 <!-- tree 4 -->
 <_>
 <!-- root node -->
 <feature>
 <rects>
 <_>
 42 0 4 6 -1.</_>
 <_>
 42 0 2 3 2.</_>
 <_>
 44 3 2 3 2.</_></rects>
 <tilted>0</tilted></feature>
 <threshold>-2.7560539820115082e-005</threshold>
 <left_val>1.</left_val>
 <right_val>-9.9543339014053345e-001</right_val></_></_></trees>
 <stage_threshold>-9.1314977407455444e-001</stage_threshold>
 <parent>14</parent>
 <next>-1</next></_></stages></haarcascade_pltzzz64x16_16STG>
 </opencv_storage>

```

JasPer License Version 2.0

Copyright (c) 2001-2006 Michael David Adams

Copyright (c) 1999-2000 Image Power, Inc.

Copyright (c) 1999-2000 The University of British Columbia

All rights reserved.

Permission is hereby granted, free of charge, to any person (the "User") obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

1. The above copyright notices and this permission notice (which includes the disclaimer below) shall be included in all copies or substantial portions of the Software.
2. The name of a copyright holder shall not be used to endorse or promote products derived from the Software without specific prior written permission.

THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF THE SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER. THE SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. NO ASSURANCES ARE PROVIDED BY THE COPYRIGHT HOLDERS THAT THE SOFTWARE DOES NOT INFRINGE THE PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY OTHER ENTITY. EACH COPYRIGHT HOLDER DISCLAIMS ANY LIABILITY TO THE USER FOR CLAIMS BROUGHT BY ANY OTHER ENTITY BASED ON INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OR OTHERWISE. AS A CONDITION TO EXERCISING THE RIGHTS GRANTED HEREUNDER, EACH USER HEREBY ASSUMES SOLE RESPONSIBILITY TO SECURE ANY OTHER INTELLECTUAL PROPERTY RIGHTS NEEDED, IF ANY. THE SOFTWARE IS NOT FAULT-TOLERANT AND IS NOT INTENDED FOR USE IN MISSION-CRITICAL SYSTEMS, SUCH AS THOSE USED IN THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL SYSTEMS, DIRECT LIFE SUPPORT MACHINES, OR WEAPONS SYSTEMS, IN WHICH THE FAILURE OF THE SOFTWARE OR SYSTEM COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE ("HIGH RISK ACTIVITIES"). THE COPYRIGHT HOLDERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR HIGH RISK ACTIVITIES.

Copyright (c) 2011, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License for Berkeley SoftFloat Release 3c

John R. Hauser  
2017 February 10

The following applies to the whole of SoftFloat Release 3c as well as to each source file individually.

Copyright 2011, 2012, 2013, 2014, 2015, 2016, 2017 The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS", AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

By downloading, copying, installing or using the software you agree to this license.

If you do not agree to this license, do not download, install, copy or use the software.



It was downloaded from <http://www.ece.uvic.ca/~mdadams/jasper/>

Upstream Author: Michael Adams <mdadams@ece.uvic.ca>

License:

JasPer License Version 2.0

Copyright (c) 1999-2000 Image Power, Inc.

Copyright (c) 1999-2000 The University of British Columbia

Copyright (c) 2001-2003 Michael David Adams

All rights reserved.

Permission is hereby granted, free of charge, to any person (the "User") obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

1. The above copyright notices and this permission notice (which includes the disclaimer below) shall be included in all copies or substantial portions of the Software.
2. The name of a copyright holder shall not be used to endorse or promote products derived from the Software without specific prior written permission.

THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF THE SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER. THE SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. NO ASSURANCES ARE PROVIDED BY THE COPYRIGHT HOLDERS THAT THE SOFTWARE DOES NOT INFRINGE THE PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY OTHER ENTITY. EACH COPYRIGHT HOLDER DISCLAIMS ANY LIABILITY TO THE USER FOR CLAIMS BROUGHT BY ANY OTHER ENTITY BASED ON INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OR OTHERWISE. AS A CONDITION TO EXERCISING THE RIGHTS GRANTED HEREUNDER, EACH USER HEREBY ASSUMES SOLE RESPONSIBILITY TO SECURE



ANY OTHER INTELLECTUAL PROPERTY RIGHTS NEEDED, IF ANY. THE SOFTWARE IS NOT FAULT-TOLERANT AND IS NOT INTENDED FOR USE IN MISSION-CRITICAL SYSTEMS, SUCH AS THOSE USED IN THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL SYSTEMS, DIRECT LIFE SUPPORT MACHINES, OR WEAPONS SYSTEMS, IN WHICH THE FAILURE OF THE SOFTWARE OR SYSTEM COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE ("HIGH RISK ACTIVITIES"). THE COPYRIGHT HOLDERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR HIGH RISK ACTIVITIES.

Copyright (c) 2002-2006, Marc Prud'hommeaux <mwp1@cornell.edu>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of JLine nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

04 ,-/1

!((0%23%()Ljava/lang/String;)V,(Ljava/lang/Object;)Ljava/lang/StringBuffer;(Ljava/lang/Object;)Z,(Ljava/lang/St

```
ring;)Ljava/lang/StringBuffer;(Ljava/lang/String;Ljava/lang/String;)VE([Lorg/apache/ivy/core/module/id/ModuleR
evisionId;)Ljava/lang/String;->...<init>CircularDependencyHelper.javaCodeLineNumberTableLjava/lang/String;
SourceFileaddappend
formatMessagegetNamegetUrljava/lang/Objectjava/lang/StringBufferjava/util/HashSet
java/util/Setname-org/apache/ivy/core/module/descriptor/LicenseToStringurl0%3% !#3*
+, $ *#*$+##* $#!#!*
$
!)#JLYYM*2W+*2W>*1,
W+*2,*2W
,
W,$2+,-."/*011=2H4O5R/X8&"
COPYRIGHT NOTICE, DISCLAIMER, and LICENSE
=====
```

PNG Reference Library License version 2

- \* Copyright (c) 1995-2018 The PNG Reference Library Authors.
- \* Copyright (c) 2018 Cosmin Truta.
- \* Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- \* Copyright (c) 1996-1997 Andreas Dilger.
- \* Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind, express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

-----

libpng versions 1.0.7, July 1, 2000 through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux  
Eric S. Raymond  
Mans Rullgard  
Cosmin Truta  
Gilles Vollant  
James Yu  
Mandar Sahastrabudde  
Google Inc.  
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

Some files in the "scripts" directory have other copyright owners, but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are  
Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would

be appreciated.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or

Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]



Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.354 glibc 2.27

### 1.354.1 Available under license :

@c The GNU Lesser General Public License.

@center Version 2.1, February 1999

@c This file is intended to be included within another document,  
@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence the  
version number 2.1.]

@end display

@subheading Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software---typically libraries---of the Free  
Software Foundation and other authors who decide to use it. You can use  
it too, but we suggest you first think carefully about whether this  
license or the ordinary General Public License is the better strategy to  
use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a

combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each

licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not.

Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A

suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item



Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent

license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free

programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center @b{NO WARRANTY}

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the

``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

@smallexample

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

That's all there is to it!

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.

2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and

(2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and

you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by



modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License

may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Lesser General  
Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these

rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages

are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated

straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of

its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form



under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies

the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and

conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is

safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF

YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

#### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall



directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material

this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify

you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements" or ``Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements". Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit.

When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

#### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit



corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

This file contains the copying permission notices for various files in the GNU C Library distribution that have copyright owners other than the Free Software Foundation. These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

All code incorporated from 4.4 BSD is distributed under the following license:

Copyright (C) 1991 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach, derived from Mach 3.0:

Mach Operating System  
Copyright (C) 1991,1990,1989 Carnegie Mellon University  
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS "AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator  
School of Computer Science  
Carnegie Mellon University  
Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

The file if\_ppp.h is under the following CMU license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files inet/getnameinfo.c and sysdeps/posix/getaddrinfo.c are copyright (C) by Craig Metz and are distributed under the following license:

```
/* The Inner Net License, Version 2.00
```

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.
2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
4. [The copyright holder has authorized the removal of this clause.]
5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. \*/

The file sunrpc/des\_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<http://www.gnu.org/licenses/>> to obtain a copy.

The libidn code is copyright Simon Josefsson, with portions copyright The Internet Society, Tom Tromeey and Red Hat, Inc.:

Copyright (C) 2002, 2003, 2004, 2011 Simon Josefsson

This file is part of GNU Libidn.

GNU Libidn is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

GNU Libidn is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with GNU Libidn; if not, see <<http://www.gnu.org/licenses/>>.

The following notice applies to portions of libidn/nfkc.c:

This file contains functions from GLIB, including gutf8.c and gunidecomp.c, all licensed under LGPL and copyright hold by:

Copyright (C) 1999, 2000 Tom Trome  
Copyright 2000 Red Hat, Inc.

The following applies to portions of libidn/punycod.c and libidn/punycod.h:

This file is derived from RFC 3492bis written by Adam M. Costello.

Disclaimer and license: Regarding this entire document or any portion of it (including the pseudocode and C code), the author makes no guarantees and is not responsible for any damage resulting from its use. The author grants irrevocable permission to anyone to use, modify, and distribute it in any way that does not diminish the rights of anyone else to use, modify, and distribute it, provided that redistributed derivative works do not contain misleading author or version information. Derivative works need not be licensed under similar terms.

Copyright (C) The Internet Society (2003). All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are included on all such copies and derivative works. However, this document itself may not be modified in any way, such as by removing the copyright notice or references to the Internet Society or other Internet organizations, except as needed for the purpose of developing Internet standards in which case the procedures for copyrights defined in the Internet Standards process must be followed, or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.  
All rights reserved.



Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.  
This software is not subject to any license of the American Telephone  
and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on  
any computer system, and to alter it and redistribute it, subject  
to the following restrictions:

1. The author is not responsible for the consequences of use of this  
software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by  
explicit claim or by omission. Since few users ever read sources,  
credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be  
misrepresented as being the original software. Since few users  
ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file `posix/PCRE.tests` is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any  
computer system, and to redistribute it freely, subject to the following  
restrictions:

1. This software is distributed in the hope that it will be useful,  
but **WITHOUT ANY WARRANTY**; without even the implied warranty of  
**MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.
2. The origin of this software must not be misrepresented, either by  
explicit claim or by omission. In practice, this means that if you use  
PCRE in software that you distribute to others, commercially or  
otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package,  
which is open source software, written by Philip Hazel, and copyright  
by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant  
files or online help data or similar. A reference to the ftp site for  
the source, that is, to

<ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/>

should also be given in the documentation. However, this condition is not intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.

4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL), then the terms of that licence shall supersede any condition above with which it is incompatible.

Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Part of stdio-common/tst-printf.c is copyright C E Chew:

(C) Copyright C E Chew

Feel free to copy, use and distribute this software provided:

1. you do not pretend that you wrote it
2. you leave this copyright notice intact.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public

License along with this library; if not, see  
<<http://www.gnu.org/licenses/>>. \*/

# 1.355 dmidecode 3.5

## 1.355.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among



countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program

`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.356 syslinux 6.03

## 1.356.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether

gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate

copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program

with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such

parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING



OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate

parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
675 Mass Ave, Cambridge, MA 02139, USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights.

These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to

exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt

otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that

system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
```



under certain conditions; type ``show c'` for details.

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
``Gnomovision'` (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The Syslinux logo is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.

/\*

\* Copyright (c) 2001, 2002 Swedish Institute of Computer Science.

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without modification,

\* are permitted provided that the following conditions are met:

\*

\* 1. Redistributions of source code must retain the above copyright notice,

\* this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright notice,

\* this list of conditions and the following disclaimer in the documentation

\* and/or other materials provided with the distribution.

\* 3. The name of the author may not be used to endorse or promote products

\* derived from this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED

\* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF

\* MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT

\* SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,

\* EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,

## PROCUREMENT

\* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING  
\* IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY  
\* OF SUCH DAMAGE.

\*

\* This file is part of the lwIP TCP/IP stack.

\*

\* Author: Adam Dunkels <adam@sics.se>

\*

\*/

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

## COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license.

libpng versions 1.2.6, August 15, 2004, through 1.2.44, June 26, 2010, are Copyright (c) 2004, 2006-2009 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux

Eric S. Raymond

Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger  
Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.

2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

A "png\_get\_copyright" function is available, for convenient use in "about" boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31) and "pngnow.png" (98x31).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson

glennrp at users.sourceforge.net

June 26, 2010

libcom32 and libutil are licensed under the MIT license:

```

Copyright 2004-2009 H. Peter Anvin - All Rights Reserved
Portions Copyright 2009 Intel Corporation; author: H. Peter Anvin

Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to use,
copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom
the Software is furnished to do so, subject to the following
conditions:

The above copyright notice and this permission notice shall
be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
```

```
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
OTHER DEALINGS IN THE SOFTWARE.
##

```

The files in the sample, modules and libgpl directories are mostly under the GNU GPL (see the file COPYING in the directory above.)

In general gPXE files are licensed under the GPL. GPLed files are in general either from Linux or have been explicitly put under GPL by the authors. The license for a file is usually documented at the top of the file.

A few files are inherited from FreeBSD netboot and therefore can be used under BSD or GPL. Documented in this file are some of the non-GPL'ed files. If the internal documentation for a file disagrees with what is documented in this file, the internal documentation for the file shall be override this file.

File Copyright status

```
src/core/misc.c BSD
src/drivers/net/3c509.c BSD
src/drivers/net/3c509.h BSD
src/drivers/net/3c595.c BSD
src/drivers/net/3c595.h BSD
src/drivers/net/3c90x.c Open Source
src/drivers/net/epic100.c None
src/drivers/net/epic100.h None
src/drivers/net/ns8390.c BSD
src/drivers/net/ns8390.h BSD
src/arch/i386/include/bits/string.h None
```

The EFI headers contained herein are copied from the EFI Development Kit, available from <http://www.tianocore.org> and published under the following licence:

BSD License from Intel  
Copyright (c) 2004, Intel Corporation  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This licence applies only to files that are part of the EFI Development Kit. Other files may contain their own licence terms, or may fall under the standard gPXE GPL licence.

## 1.357 ehcache 3.8.1

### 1.357.1 Available under license :

No license file was found, but licenses were detected in source scan.

<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/META-INF/maven/org.ehcache.modules/ehcache-impl/pom.xml
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/META-INF/maven/org.ehcache.modules/ehcache-core/pom.xml
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/META-INF/maven/org.ehcache.modules/ehcache-107/pom.xml
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/META-INF/maven/org.ehcache.modules/ehcache-xml/pom.xml
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/META-INF/maven/org.ehcache.modules/ehcache-api/pom.xml

No license file was found, but licenses were detected in source scan.

~ Copyright Terracotta, Inc.

~

~ Licensed under the Apache License, Version 2.0 (the "License");

~ you may not use this file except in compliance with the License.

~ You may obtain a copy of the License at

~

~ <http://www.apache.org/licenses/LICENSE>

2.0

~

~ Unless required by applicable law or agreed to in writing, software

~ distributed under the License is distributed on an "AS IS" BASIS,

~ WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

~ See the License for the specific language governing permissions and

~ limitations under the License.

Found in path(s):

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/ehcache-multi.xsd

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/ehcache-core.xsd

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/ehcache-107-ext.xsd

No license file was found, but licenses were detected in source scan.

#

# Copyright Terracotta, Inc.

#

# Licensed under the Apache License, Version 2.0 (the "License");

# you may not use this file except in compliance with the License.

# You may obtain a copy of the License at

#

# <http://www.apache.org/licenses/LICENSE-2.0>

#

# Unless required by applicable law or agreed to in writing, software

# distributed under the License is distributed on an "AS IS" BASIS,

# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

# See the License for the specific language governing permissions and

# limitations under the License.

#

org.ehcache.jsr107.internal.Jsr107CacheConfigurationParser

Found in path(s):

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/META-

INF/services/org.ehcache.xml.CacheServiceConfigurationParser

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright Terracotta, Inc.

- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/DefaultConfigurationResolver.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/service/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/events/InvocationScopedEventSink.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/ResourceUnit.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/Jsr107Cache.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/SizedResourcePoolImpl.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/CompactJavaSerializer.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Eh107IdentityCopier.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/OptionalServiceDependencies.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/loaderwriter/DefaultCacheLoaderWriterProviderFactory.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/CacheResources.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/sizeof/DefaultSizeOfEngineProviderFactory.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/CloseUtil.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/loaderwriter/CacheLoaderWriter.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/heap/SizeOfEngineProvider.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/InternalStatus.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/ServiceConfiguration.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/executor/PooledExecutionService.java



- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/loaderwriter/BulkCacheLoadingException.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/loaderwriter/LocalLoaderWriterStore.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/CacheIterationException.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/config/CoreConfigurationBuilder.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/OperationStatistic.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/DoubleSerializer.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/LatencyHistogramConfiguration.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/CacheServiceConfigurationParser.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/OnHeapStrategy.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/expiry/ExpiryPolicy.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/loaderwriter/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/WriteOperation.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/store/disk/OffHeapDiskStoreProviderConfiguration.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/ClassInstanceProvider.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/loaderwriter/DefaultCacheLoaderWriterProviderConfiguration.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Eh107Configuration.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/copy/DefaultCopyProvider.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/copy/DefaultCopyProviderFactory.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/store/DefaultStoreEventDispatcher.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/CharSerializer.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/WriteBehindProviderConfigurationParser.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/persistence/CacheManagerPersistenceConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/ServiceDependencies.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/Eviction.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Jsr107Service.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/OffHeapStore.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/HeuristicConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/LongSerializer.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/disk/factories/EhcachePersistentSegmentFactory.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/config/DefaultConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/serializer/DefaultSerializationProviderConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/internal/util/ValueSuppliers.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/holders/LookupOnlyOnHeapKey.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/ByteArraySerializer.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/time/TimeSourceService.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/holders/OnHeapKey.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/copy/CopyProvider.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/ServiceCreationConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/ServiceProvider.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/resilience/ResilienceStrategyProvider.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/StoreEventDispatcher.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/JaxbHelper.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/events/EventDispatchTask.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/copy/DefaultCopyProviderConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/model/CacheSpec.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/BinaryValueHolder.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/internal/WrappedCacheLoaderWriter.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/portability/SerializerPortability.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/DefaultStatisticsService.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/units/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/PooledExecutionServiceConfigurationBuilder.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/BinaryOffHeapValueHolder.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/ServiceConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/XmlConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/TierStatistics.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/config/store/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/service/SimpleCoreServiceConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/model/CacheDefinition.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/loaderwriter/DefaultCacheLoaderWriterConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/TransientStateRepository.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Unwrap.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/time/SystemTimeSource.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/executor/PartitionedUnorderedExecutor.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/EhcacheExpiryWrapper.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/NullCompletionListener.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/InternalCache.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/SimpleBackend.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/OffHeapStoreProviderFactory.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/AbstractOffHeapStore.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/BaseCacheConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/persistence/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/DefaultTierStatistics.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/AbstractWriteBehind.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/CacheManagerBuilder.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/disk/DiskWriteThreadPool.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/config/Jsr107Configuration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/persistence/DefaultDiskResourceServiceFactory.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/config/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/loaderwriter/BulkCacheWritingException.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/copy/IdentityCopier.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/TimeSourceConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/tiering/CachingTier.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/SingleOperation.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/disk/EhcachePersistentConcurrentOffHeapClockCache.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/SimpleCoreServiceCreationConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/event/CacheEvent.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/loaderwriter/CacheLoadingException.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/service/DefaultSerializerConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/WriteBehindConfigurationBuilder.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/event/EventFiring.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/serialization/DefaultSerializationProviderFactory.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/factories/EhcacheSegmentFactory.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/resilience/RobustResilienceStrategy.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/StateTransitionException.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/StateChangeListener.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/expiry/Expiry.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/events/CloseableStoreEventSink.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/WriteBehindProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/PooledExecutionServiceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/loaderwriter/LocalWriteBehindLoaderWriterStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/copy/ReadWriteCopier.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/event/EventType.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/persistence/DefaultPersistenceConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/EventListenerWrapper.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/FluentConfigurationBuilder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/OnHeapStoreProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/basic/NopStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/CacheManagerServiceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/loaderwriter/writebehind/WriteBehindProviderConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/events/StoreEvent.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/OffHeapValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/SizedResourcePool.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/ClassInstanceConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/units/EntryUnit.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/tiering/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/executor/OnDemandExecutionService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/CacheManagerListener.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/loaderwriter/LoaderWriterStoreProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/ConfigurationMerger.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/InternalRuntimeConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-

jar/org/ehcache/config/builders/ConfigurationBuilder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/ResourceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/sizeof/listeners/exceptions/VisitorListenerException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/Service.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/expiry/Duration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/loaderwriter/CacheLoaderWriterConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/executor/OutOfBandScheduledExecutor.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/event/DefaultCacheEventListenerConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/ServiceLocator.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/EhcacheManager.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/config/units/MemoryUnit.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/HigherCachingTierOperationOutcomes.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/config/ResourcePools.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/copy/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/WriteBehind.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/event/DefaultCacheEventDispatcherConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/PersistentUserManagedEhcache.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/loaderwriter/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/PersistentUserManagedCache.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/spi/serialization/DefaultSerializationProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/config/builders/CacheEventListenerConfigurationBuilder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/event/DefaultEventSourceConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/DelegatingOperationObserver.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/LowerCachingTierOperationsOutcome.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/tiering/AuthoritativeTier.java

- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/events/StoreEventSource.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/CacheConfigurationProperty.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/copy/SerializingCopier.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/DefaultCacheManagerProviderService.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/CacheConfigurationBuilder.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/XmlModel.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/ExpiryPolicyBuilder.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/EhcacheConcurrentOffHeapClockCache.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/internal/resilience/ThrowingResilienceStrategy.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/Cache.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/OffHeapStoreUtils.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/resilience/DefaultResilienceStrategyProvider.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/loaderwriter/CacheLoaderWriterProvider.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/expiry/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/disk/OffHeapDiskStore.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/persistence/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/DeleteAllOperation.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/TierOperationOutcomes.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/ResourcePool.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/CachePersistenceException.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/CacheEventDispatcher.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/MaintainableService.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/DomUtil.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/UserManagedCacheBuilder.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/executor/package-info.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-

jar/org/ehcache/impl/internal/spi/loaderwriter/DefaultCacheLoaderWriterProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/events/CacheEventDispatcherFactoryImpl.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/serialization/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/InternalCacheManager.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/model/CacheTemplate.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/loaderwriter/writebehind/DefaultWriteBehindConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/ExpiryPolicyToEhcacheExpiry.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/config/ConfigurationElementState.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/TimeSourceServiceFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/loaderwriter/WriteBehindConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/exceptions/StorePassThroughException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/events/StoreEventListener.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/provider/DefaultCopyProviderConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/events/StoreEventSink.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/service/DefaultCopierConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/offheap/BasicOffHeapValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/offheap/EhcacheOffHeapBackingMap.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/heap/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107CompleteConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/DeleteOperation.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/Status.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/serialization/UnsupportedTypeException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/store/heap/DefaultSizeOfEngineProviderConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/heap/holders/OnHeapValueHolder.java



\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/service/LocalPersistenceService.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/SpecIterator.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/exceptions/ExceptionFactory.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/internal/DefaultJs107Service.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/serializer/DefaultSerializerConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/LifeCycledAdapter.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/util/Pacer.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/loaderwriter/WriteBehindProvider.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/event/CacheEventDispatcherFactoryConfiguration.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/CacheEventDispatcherFactoryConfigurationParser.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/CacheConfigurationChangeListener.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/time/TickingTimeSource.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/package-info.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/copy/Copier.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/holders/BaseOnHeapKey.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/events/CacheEventDispatcherImpl.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Eh107CacheEntryEvent.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/StringSerializer.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/sizeof/DefaultSizeOfEngine.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/event/package-info.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/serializer/package-info.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/persistence/FileBasedStateRepository.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/service/ServiceFactory.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/service/DefaultCacheEventListenerConfigurationParser.java  
 \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/config/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/persistence/PersistableResourceService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/FluentCacheConfigurationBuilder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/loaderwriter/writebehind/DefaultBatchingConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/events/FireableStoreEventHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/tiering/TieredStoreProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/CacheEventListenerProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Eh107CacheStatisticsMXBean.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/config/ExpiryUtils.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/executor/PartitionedScheduledExecutor.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/AbstractValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/WriteAllOperation.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/PlainJavaSerializer.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/PersistentCacheManager.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/events/CacheEventNotificationListenerServiceProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/store/StoreConfigurationImpl.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/StatusTransitioner.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/CoreServiceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/config/Jsr107CacheConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/osgi/EhcacheActivator.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/service/DefaultResilienceStrategyConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/WrapperStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/loaderwriter/LoaderWriterValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/AbstractWrapperStoreProvider.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/store/BaseStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/serialization/SerializerException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/holders/CopiedOnHeapKey.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/event/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/LifeCycled.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/loaderwriter/LoaderWriterStoreProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/store/disk/OffHeapDiskStoreConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/OffHeapDiskStoreProviderConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/resilience/ResilienceStrategy.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/expiry/Expirations.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/model/ListenersConfig.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/UserManagedCacheConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/exceptions/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/EventListenerAdaptors.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/service/DefaultWriteBehindConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/OperationObserver.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/disk/OffHeapDiskStoreProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/ResourceType.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/event/DefaultCacheEventListenerProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/StripedWriteBehind.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/KeyBasedOperation.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/events/StoreEventFilter.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/serialization/SerializationProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/resilience/RobustLoaderWriterResilienceStrategy.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-

jar/org/ehcache/core/spi/service/CacheManagerProviderService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/events/StoreEventImpl.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/resilience/AbstractResilienceStrategy.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/loaderwriter/CacheWritingException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/CachingTierOperationOutcomes.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/heap/Backend.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/service/OffHeapDiskStoreConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/service/ExecutionService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/resilience/DefaultResilienceStrategyProviderConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/internal/tck/Eh107MBeanServerBuilder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/resilience/DefaultRecoveryStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/tiering/LowerCachingTier.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107CacheLoaderWriter.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/config/store/StoreEventSourceConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/AuthoritativeTierOperationOutcomes.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/util/ClassLoading.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/persistence/UserManagedPersistenceContext.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/ListenerResources.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/service/DefaultCacheEventDispatcherConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/ChainedObserver.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/offheap/OffHeapMapStatistics.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/BatchingLocalHeapWriteBehindQueue.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/DefaultStatisticsServiceFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/sizeof/NoopSizeOfEngine.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-

jar/org/ehcache/impl/internal/executor/DefaultExecutionServiceFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/events/CacheEventAdapter.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/spi/resilience/DefaultResilienceStrategyProviderFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/util/ThreadFactoryUtil.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/events/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/BaseConfigParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/DelegatedMappedOperationStatistics.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/events/CacheEventListenerConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/sizeof/DefaultSizeOfEngineProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/executor/PartitionedOrderedExecutor.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/config/builders/CacheManagerConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/offheap/SwitchableEvictionAdvisor.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/resilience/RecoveryStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/multi/XmlMultiConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/serialization/StatefulSerializer.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/time/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107Expiry.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/store/StoreSupport.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/store/HashUtils.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/BulkOps.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107CacheLoaderWriterProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/heap/holders/SerializedOnHeapValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/collections/ConcurrentWeakIdentityHashMap.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-

jar/org/ehcache/jsr107/EhcacheCachingProvider.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/model/SizeOfEngineLimits.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/store/heap/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/events/DisabledCacheEventNotificationService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/service/PluralService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/service/StatisticsService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/heap/LimitExceededException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/store/tiering/HigherCachingTier.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/executor/ExecutorUtil.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/UserManagedCache.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/provider/CacheManagerPersistenceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/StatsUtils.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/service/DiskResourceService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/time/TimeSource.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/offheap/LazyOffHeapValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/resilience/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/tiering/CompoundCachingTier.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107CacheMXBean.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/Ehcache.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107CacheManager.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/BatchOperation.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/persistence/DefaultLocalPersistenceServiceFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/events/package-  
info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/provider/ThreadPoolServiceCreationConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/executor/PooledExecutionServiceConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/DefaultSerializationProviderConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/ResourcePoolsImpl.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/tiering/TieredStore.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/builders/ResourcePoolsBuilder.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/persistence/DefaultDiskResourceService.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/persistence/FileUtils.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/util/CollectionUtil.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/CoreServiceCreationConfigurationParser.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/HumanReadable.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/tiering/CompoundCachingTierProviderFactory.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Eh107ReverseConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/EvictionAdvisor.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/copy/package-info.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/ValueStatistic.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/loaderwriter/writebehind/NonBatchingLocalHeapWriteBehindQueue.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/events/FudgingInvocationScopedEventSink.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/CacheConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/DefaultTimeSourceService.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/DefaultCacheStatistics.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/config/store/StoreStatisticsConfiguration.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/offheap/portability/OffHeapValueHolderPortability.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/Builder.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/CacheOperationOutcomes.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-

jar/org/ehcache/jsr107/internal/Js107ServiceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/DelegatingOperationStatistic.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/events/CacheEventDispatcherFactory.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/EhcacheRuntimeConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/persistence/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/ValueSupplier.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/events/StoreEvents.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/persistence/DefaultLocalPersistenceService.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/ChainedOperationObserver.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/osgi/SafeOsgi.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/statistics/StoreOperationOutcomes.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/Eh107Cache.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/serialization/IntegerSerializer.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/events/NullStoreEventDispatcher.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/heap/holders/CopiedOnHeapValueHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/serialization/TransientStateHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/store/heap/DefaultSizeOfEngineConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/store/disk/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/jsr107/internal/Js107CacheLoaderWriter.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/config/copy/DefaultCopierConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/xml/service/DefaultCacheLoaderWriterConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/model/Expiry.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/spi/serialization/Serializer.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/core/spi/service/ServiceUtils.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/events/ThreadLocalStoreEventDispatcher.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-  
jar/org/ehcache/impl/internal/store/offheap/MemorySizeParser.java



\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/CacheManager.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/service/FileBasedPersistenceContext.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/util/ByteBufferInputStream.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/Eh107MXBean.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/CacheResourceConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/EhcacheBase.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/ConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/resilience/StoreAccessException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/service/DefaultSizeOfEngineConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/exceptions/XmlConfigurationException.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/OnHeapStore.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/ServiceCreationConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/persistence/StateRepository.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/Configuration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/SuppliedValueStatistic.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/loaderwriter/writebehind/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/heap/SizeOfEngine.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/event/CacheEventListener.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/persistence/StateHolder.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/store/heap/KeyCopyBackend.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/ClassInstanceProviderConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/sizeof/listeners/EhcacheVisitorListener.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/events/CacheEvents.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/osgi/OsgiServiceLoader.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/ZeroOperationStatistic.java

\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/Store.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/util/ServiceUtil.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/serialization/FloatSerializer.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/events/AbstractStoreEventDispatcher.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/copy/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/CacheConfigurationChangeEvent.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/resilience/DefaultResilienceStrategyConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/SourceStatistic.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/spi/store/ConfigurationChangeSupport.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/config/AbstractResourcePool.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/event/EventOrdering.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/CacheStatistics.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/config/CacheRuntimeConfiguration.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/CoreCacheConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/jsr107/internal/Js107CacheConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/spi/service/package-info.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/core/statistics/Js107LatencyMonitor.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/xml/provider/DefaultSizeOfEngineProviderConfigurationParser.java  
\* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/spi/event/DefaultCacheEventListenerProvider.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Licensed to the Apache Software Foundation (ASF) under one or more  
\* contributor license agreements. See the NOTICE file distributed with  
\* this work for additional information regarding copyright ownership.  
\* The ASF licenses this file to You under the Apache License, Version 2.0  
\* (the "License"); you may not use this file except in compliance with  
\* the License. You may obtain a copy of the License at  
\*

- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/commonslang/ArrayUtils.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/commonslang/reflect/MemberUtils.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/commonslang/ClassUtils.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/commonslang/reflect/MethodUtils.java
- \* /opt/cola/permits/1135872409\_1613620769.24/0/ehcache-3-8-1-sources-1-jar/org/ehcache/impl/internal/classes/commonslang/reflect/ConstructorUtils.java

# 1.358 libcap-ng 0.7.9 2.1build1

## 1.358.1 Available under license :

### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You

can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use

this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data



structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials

specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR

CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if

necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

(This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.)

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain

special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)



"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which

must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the

Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a

license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the

"copyright" line and a pointer to where the full notice is found.

{description}  
Copyright (C) {year} {fullname}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

{signature of Ty Coon}, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This



General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
```

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.359 spring-webflux 5.2.20.RELEASE

## 1.359.1 Available under license :

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"



means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

=====

#### SPRING FRAMEWORK 5.2.20.RELEASE SUBCOMPONENTS:

Spring Framework 5.2.20.RELEASE includes a number of subcomponents with separate copyright notices and license terms. The product that includes this file does not necessarily use all the open source subcomponents referred to below. Your use of the source code for these subcomponents is subject to the terms and conditions of the following licenses.

>>> ASM 7.3 (org.ow2.asm:asm:7.3, org.ow2.asm:asm-commons:7.3):

Copyright (c) 2000-2011 INRIA, France Telecom  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1999-2009, OW2 Consortium <<https://www.ow2.org/>>

>>> CGLIB 3.3 (cglib:cglib:3.3):

Per the LICENSE file in the CGLIB JAR distribution downloaded from [https://github.com/cglib/cglib/releases/download/RELEASE\\_3\\_3\\_0/cglib-3.3.0.jar](https://github.com/cglib/cglib/releases/download/RELEASE_3_3_0/cglib-3.3.0.jar), CGLIB 3.3 is licensed under the Apache License, version 2.0, the text of which is included above.

>>> Objenesis 3.1 (org.objenesis:objenesis:3.1):

Per the LICENSE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html>, Objenesis 3.1 is licensed under the Apache License, version 2.0, the text of which is included above.

Per the NOTICE file in the Objenesis ZIP distribution downloaded from <http://objenesis.org/download.html> and corresponding to section 4d of the Apache License, Version 2.0, in this case for Objenesis:

Objenesis

Copyright 2006-2019 Joe Walnes, Henri Tremblay, Leonardo Mesquita

=====

To the extent any open source components are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://spring.io/projects>, Pivotal's website at <https://network.pivotal.io/open-source>, or by sending a request, with your name and address to: Pivotal Software, Inc., 875 Howard Street, 5th floor, San Francisco, CA 94103, Attention: General Counsel. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. Pivotal can mail a copy of the Source Files to you on a CD or equivalent physical medium.

This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product. Alternatively, the Source Files may accompany the Software.

Spring Framework 5.2.20.RELEASE

Copyright (c) 2002-2022 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0

(the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the license.txt file.

## 1.360 ehcache-impl 3.8.1

### 1.360.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Licensed to the Apache Software Foundation (ASF) under one or more  
\* contributor license agreements. See the NOTICE file distributed with  
\* this work for additional information regarding copyright ownership.  
\* The ASF licenses this file to You under the Apache License, Version 2.0  
\* (the "License"); you may not use this file except in compliance with  
\* the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1258059351\_1643027373.36/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/commonslang/ClassUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/commonslang/reflect/MethodUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/commonslang/ArrayUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/commonslang/reflect/ConstructorUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/commonslang/reflect/MemberUtils.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright Terracotta, Inc.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");

- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/basic/NopStore.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/resilience/RobustLoaderWriterResilienceStrategy.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/serialization/StringSerializer.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/DefaultTimeSourceService.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/resilience/AbstractResilienceStrategy.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/loaderwriter/DefaultCacheLoaderWriterConfiguration.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/spi/serialization/DefaultSerializationProviderFactory.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/events/CacheEventDispatcherImpl.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/resilience/DefaultResilienceStrategyProviderConfiguration.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/serialization/IntegerSerializer.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/loaderwriter/writebehind/AbstractWriteBehind.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/heap/Backend.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/config/builders/WriteBehindConfigurationBuilder.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/executor/OnDemandExecutionService.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/config/builders/CacheManagerConfiguration.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/config/builders/CacheEventListenerConfigurationBuilder.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/persistence/package-info.java
- \* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/internal/sizeof/NoopSizeOfEngine.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/loaderwriter/DefaultCacheLoaderWriterProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/store/heap/DefaultSizeOfEngineProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/disk/EhcachePersistentConcurrentOffHeapClockCache.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/resilience/DefaultResilienceStrategyProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/BatchOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/CompactJavaSerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/persistence/CacheManagerPersistenceConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/serializer/DefaultSerializationProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/resilience/RobustResilienceStrategy.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/TransientStateHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/persistence/FileUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/WriteBehindProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/executor/OutOfBandScheduledExecutor.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/event/DefaultCacheEventListenerConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/ClassInstanceProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/LongSerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/executor/DefaultExecutionServiceFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/disk/factories/EhcachePersistentSegmentFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/OnHeapStoreProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/loaderwriter/LocalWriteBehindLoaderWriterStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/SingleOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/resilience/DefaultResilienceStrategyProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/BinaryOffHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-



jar/org/ehcache/impl/internal/spi/loaderwriter/DefaultCacheLoaderWriterProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/events/CacheEventAdapter.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/config/builders/PooledExecutionServiceConfigurationBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/copy/IdentityCopier.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/store/disk/OffHeapDiskStoreConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/executor/ExecutorUtil.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/persistence/UserManagedPersistenceContext.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/persistence/DefaultDiskResourceServiceFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/ThreadLocalStoreEventDispatcher.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/TimeSourceConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/event/DefaultCacheEventDispatcherConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/NonBatchingLocalHeapWriteBehindQueue.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/copy/DefaultCopyProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/OffHeapStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/FudgingInvocationScopedEventSink.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/event/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/copy/SerializingCopier.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/loaderwriter/writebehind/DefaultBatchingConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/store/disk/OffHeapDiskStoreProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/event/DefaultEventSourceConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/config/builders/UserManagedCacheBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/loaderwriter/LoaderWriterStoreProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/config/builders/ResourcePoolsBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/OnHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/internal/sizeof/DefaultSizeOfEngine.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/SimpleBackend.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/tiering/TieredStoreProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/BinaryValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/copy/DefaultCopyProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/loaderwriter/writebehind/WriteBehindProviderConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/factories/EhcacheSegmentFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/CloseableStoreEventSink.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/PlainJavaSerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/serializer/DefaultSerializerConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/SerializedOnHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/loaderwriter/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/event/DefaultCacheEventListenerProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/disk/OffHeapDiskStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/serialization/DefaultSerializationProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/tiering/CompoundCachingTierProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/EhcacheOffHeapBackingMap.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/DisabledCacheEventNotificationService.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/BatchingLocalHeapWriteBehindQueue.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/executor/PooledExecutionService.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/OffHeapMapStatistics.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/SwitchableEvictionAdvisor.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/util/ThreadFactoryUtil.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/serializer/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/internal/store/tiering/TieredStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/loaderwriter/writebehind/WriteBehind.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/copy/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/offheap/BasicOffHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/store/DefaultStoreEventDispatcher.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/events/AbstractStoreEventDispatcher.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/classes/ClassInstanceProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/loaderwriter/LoaderWriterStoreProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/serialization/TransientStateRepository.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/WriteOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/events/StoreEvents.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/persistence/DefaultLocalPersistenceService.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/executor/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/spi/event/DefaultCacheEventListenerProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/KeyBasedOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/serialization/CharSerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/executor/PartitionedUnorderedExecutor.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/loaderwriter/writebehind/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/ResourcePoolsImpl.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/BaseCacheConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/config/builders/CacheConfigurationBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/util/Pacer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/executor/PooledExecutionServiceConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/offheap/OffHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/config/store/heap/DefaultSizeOfEngineConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/CacheEventDispatcherFactoryImpl.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/concurrent/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/executor/PartitionedScheduledExecutor.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/EhcacheConcurrentOffHeapClockCache.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/persistence/DefaultLocalPersistenceServiceFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/CacheEventNotificationListenerServiceProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/DeleteOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/OffHeapStoreUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/StoreEventImpl.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/config/builders/UserManagedCacheConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/MemorySizeParser.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/WriteAllOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/LookupOnlyOnHeapKey.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/events/FireableStoreEventHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/operations/DeleteAllOperation.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/disk/OffHeapDiskStoreProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/loaderwriter/LocalLoaderWriterStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/loaderwriter/writebehind/StripedWriteBehind.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/classes/ClassInstanceConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/FloatSerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/concurrent/EvictingConcurrentMap.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/persistence/FileBasedStateRepository.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/config/copy/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/config/builders/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/OnHeapKey.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/OnHeapStrategy.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/store/heap/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/sizeof/listeners/exceptions/VisitorListenerException.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/BaseOnHeapKey.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/resilience/DefaultResilienceStrategyConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/CopiedOnHeapKey.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/heap/holders/CopiedOnHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/serialization/DoubleSerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/executor/PartitionedOrderedExecutor.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/AbstractResourcePool.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/config/store/disk/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/tiering/CompoundCachingTier.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/LazyOffHeapValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/portability/OffHeapValueHolderPortability.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/sizeof/DefaultSizeOfEngineProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/events/EventDispatchTask.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/loaderwriter/DefaultCacheLoaderWriterProvider.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/store/offheap/OffHeapStoreProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/spi/copy/DefaultCopyProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/impl/internal/util/ServiceUtil.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-  
jar/org/ehcache/config/builders/ExpiryPolicyBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/events/package-info.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/sizeof/listeners/EhcacheVisitorListener.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/SizedResourcePoolImpl.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/config/builders/ConfigurationBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/events/InvocationScopedEventSink.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/heap/OnHeapStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/offheap/AbstractOffHeapStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/copy/DefaultCopierConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/store/HashUtils.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/heap/KeyCopyBackend.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/event/CacheEventDispatcherFactoryConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/offheap/HeuristicConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/persistence/DefaultDiskResourceService.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/copy/ReadWriteCopier.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/config/builders/CacheManagerBuilder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/loaderwriter/writebehind/DefaultWriteBehindConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/disk/DiskWriteThreadPool.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/TimeSourceServiceFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/config/persistence/DefaultPersistenceConfiguration.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/offheap/portability/SerializerPortability.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/sizeof/DefaultSizeOfEngineProviderFactory.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/store/BaseStore.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/serialization/ByteArraySerializer.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-jar/org/ehcache/impl/internal/store/loaderwriter/LoaderWriterValueHolder.java  
\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/config/persistence/package-info.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright Terracotta, Inc.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*

\* Written by Doug Lea with assistance from members of JCP JSR-166

\* Expert Group and released to the public domain, as explained at

\* <http://creativecommons.org/publicdomain/zero/1.0/>

\*/

Found in path(s):

\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/internal/concurrent/ConcurrentHashMap.java

\* /opt/cola/permits/1258059351\_1643027373.36/0/ehcache-impl-3-8-1-sources-

jar/org/ehcache/impl/internal/concurrent/ThreadLocalRandomUtil.java

## 1.361 util-linux 2.22.2

### 1.361.1 Available under license :

/\*

\* Copyright (c) 1989 The Regents of the University of California.

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. All advertising materials mentioning features or use of this software

\* must display the following acknowledgement:

\* This product includes software developed by the University of  
 \* California, Berkeley and its contributors.  
 \* 4. Neither the name of the University nor the names of its contributors  
 \* may be used to endorse or promote products derived from this software  
 \* without specific prior written permission.  
 \*  
 \* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
 \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
 \* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
 \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
 \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
 \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
 \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
 \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
 \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
 \* SUCH DAMAGE.  
 \*/

This library is free software; you can redistribute it and/or  
 modify it under the terms of the GNU Lesser General Public  
 License as published by the Free Software Foundation; either  
 version 2.1 of the License, or (at your option) any later  
 version.

The complete text of the license is available in the  
 ../Documentation/licenses/COPYING.LGPL-2.1-or-later file.

WEV @@ WEV[B "1

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
 Everyone is permitted to copy and distribute verbatim copies  
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
 as the successor of the GNU Library Public License, version 2, hence  
 the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
 freedom to share and change it. By contrast, the GNU General Public  
 Licenses are intended to guarantee your freedom to share and change  
 free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
 specially designated software packages--typically libraries--of the



Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use

this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so

that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object

file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in



certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A

FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original

authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.



To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

x ?"U@,5 @mISmIN<GimCN7g1u|E

43mI,5WEV @@ WEV @mImImIAmImImI0mImImI\*mImI

A0mImImI...

lost+found...

;9GimCN7g

!"#\$%&'()\*+,-

./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()\*+,-

./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()\*+,-

./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~

!"#\$%&'()\*+,-

./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^\_`abcdefghijklmnopqrstuvwxyz{|}~WEV @@

WEV[B "1

This library is free software; you can redistribute it and/or modify it under the terms of the Modified BSD License.

The complete text of the license is available in the `../Documentation/licenses/COPYING.BSD-3-Clause` file.  
This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The complete text of the license is available in the `../Documentation/licenses/COPYING.LGPL-2.1-or-later`  
Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## 1.362 postgresql-jdbc 42.2.14

### 1.362.1 Available under license :

Copyright 2017, OnGres.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON

ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1997, PostgreSQL Global Development Group  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Additional License files can be found in the 'licenses' folder located in the same directory as the LICENSE file (i.e. this file)

- Software produced outside the ASF which is available under other licenses (not Apache-2.0)

BSD-2-Clause

- \* com.ongres.scram:client:2.1
- \* com.ongres.scram:common:2.1
- \* com.ongres.stringprep:saslprep:1.1
- \* com.ongres.stringprep:stringprep:1.1

Copyright 2019, OnGres.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.363 kmod 23

### 1.363.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do

these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work

which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses



the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of

the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a

work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception,

the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library

subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting

redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.



GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a

notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this

License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free

programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or

(at your option) any later version.

This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.

You should have received a copy of the GNU General Public License along  
with this program; if not, write to the Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this  
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than `show w' and `show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Lesser General  
Public License instead of this License.

```
LGPL
LGPL
LGPL
```

# 1.364 libvpx 1.4.0

## 1.364.1 Available under license :

Copyright 2008, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) 2005-2012 x264 project

Authors: Loren Merritt <lorenm@u.washington.edu>

Anton Mitrofanov <BugMaster@narod.ru>

Jason Garrett-Glaser <darkshikari@gmail.com>

Henrik Gramner <hengar-6@student.ltu.se>

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN

ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 2010, The WebM Project authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google, nor the WebM Project, nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2010, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google nor the names of its contributors may be used to endorse or promote products derived from this software



without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright 2011 The LibYuv Project Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# This file contains a list of people who've made non-trivial  
# contribution to the Google C++ Testing Framework project. People  
# who commit code to the project are encouraged to add their names  
# here. Please keep the list sorted by first names.

Ajay Joshi <jaj@google.com>

Balzs Dn <balazs.dan@gmail.com>  
Bharat Mediratta <bharat@menalto.com>  
Chandler Carruth <chandlerc@google.com>  
Chris Prince <cprince@google.com>  
Chris Taylor <taylorc@google.com>  
Dan Egnor <egnor@google.com>  
Eric Roman <eroman@chromium.org>  
Hady Zalek <hady.zalek@gmail.com>  
Jeffrey Yasskin <jyasskin@google.com>  
Ji Sigursson <joi@google.com>  
Keir Mierle <mierle@gmail.com>  
Keith Ray <keith.ray@gmail.com>  
Kenton Varda <kenton@google.com>  
Manuel Klimek <klimek@google.com>  
Markus Heule <markus.heule@gmail.com>  
Mika Raento <mikie@iki.fi>  
Mikls Fazekas <mfazekas@szemafor.com>  
Pasi Valminen <pasi.valminen@gmail.com>  
Patrick Hanna <phanna@google.com>  
Patrick Riley <pfr@google.com>  
Peter Kaminski <piotrk@google.com>  
Preston Jackson <preston.a.jackson@gmail.com>  
Rainer Klaffenboeck <rainer.klaffenboeck@dynatrace.com>  
Russ Cox <rsc@google.com>  
Russ Rufer <russ@pentad.com>  
Sean Mcafee <eefacm@gmail.com>  
Sigurur sgeirsson <siggi@google.com>  
Tracy Bialik <tracy@pentad.com>  
Vadim Berman <vadimb@google.com>  
Vlad Losev <vladl@google.com>  
Zhanyong Wan <wan@google.com>

# 1.365 libatomic 10.3.0-1ubuntu1~20.04

## 1.365.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If

the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of

copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product,



doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent

that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express

agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.



# 1.366 popt 1.16

## 1.366.1 Available under license :

Copyright (c) 1998 Red Hat Software

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

# 1.367 x264 0.155.2917+git0a84d98-2

## 1.367.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by

the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program"

means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary

form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.368 mail 1.6.2

### 1.368.1 Available under license :

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)  
Version 1.1

#### 1. Definitions.

- 1.1. "Contributor" means each individual or entity that creates or contributes to the creation of Modifications.
- 1.2. "Contributor Version" means the combination of the Original Software, prior Modifications used by a



Contributor (if any), and the Modifications made by that particular Contributor.

1.3. "Covered Software" means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. "Executable" means the Covered Software in any form other than Source Code.

1.5. "Initial Developer" means the individual or entity that first makes Original Software available under this License.

1.6. "Larger Work" means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. "License" means this document.

1.8. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. "Modifications" means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. "Original Software" means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. "Source Code" means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

#### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of

this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

#### 4. Versions of the License.

##### 4.1. New Versions.

Oracle is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

##### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

##### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

#### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

#### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as "Participant") alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. If You assert a patent infringement claim against Participant alleging that the Participant Software directly or indirectly infringes any patent where such claim is resolved (such as by license or settlement) prior to the initiation of patent infringement litigation, then the reasonable value of the licenses granted by such Participant under Sections 2.1 or 2.2 shall be taken into account in determining the amount or value of any payment or license.

6.4. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

#### 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 8. U.S. GOVERNMENT END USERS.

The Covered Software is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" (as that term is defined at 48 C.F.R. § 252.227-7014(a)(1)) and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE

(CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

# 1.369 mpdecimal 2.4.2

## 1.369.1 Available under license :

/\*

\* Copyright (c) 2008-2016 Stefan Kraah. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\*

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\*

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\*

\* THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*/

### DOCUMENTATION LICENSE

=====

Copyright 2010-2016 Stefan Kraah. All rights reserved.

Redistribution and use in source (RST) and 'compiled' forms (HTML, PDF, PostScript and so forth) with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code (RST) must retain the above

copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.

2. Modified documents must carry a notice that modification has occurred. This notice must also be present in any compiled form.
3. Redistributions in compiled form (converted to HTML, PDF, PostScript and other formats) must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS DOCUMENTATION IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### DISTRIBUTOR NOTES

=====

The license is the standard FreeBSD Documentation License with an added clause that requires a user notice for modifications. The following modification notices are sufficient:

RST files

-----

The modification notice may be added below the license:

Copyright 2010-2016 Stefan Krahn. All rights reserved.

...

...

IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This file was modified in 2016 by DISTRIBUTOR.

HTML files

-----

The modification notice may be added to the copyright footer:

Copyright 2010-2016 Stefan Krahe, modified 2016 by DISTRIBUTOR.

## 1.370 logback-core 1.2.3

### 1.370.1 Available under license :

Found license 'Eclipse Public License 1.0' in '\* Copyright (C) 1999-2015, QOS.ch. All rights reserved. \* This program and the accompanying materials are dual-licensed under \* either the terms of the Eclipse Public License v1.0 as published by \* under the terms of the GNU Lesser General Public License version 2.1 \* as published by the Free Software Foundation.'

Found license 'GNU Lesser General Public License' in '\* Copyright (C) 1999-2015, QOS.ch. All rights reserved. \* This program and the accompanying materials are dual-licensed under \* either the terms of the Eclipse Public License v1.0 as published by \* under the terms of the GNU Lesser General Public License version 2.1 \* as published by the Free Software Foundation.'

## 1.371 jakarta-annotation-api 1.3.5

### 1.371.1 Available under license :

# Eclipse Public License - v 2.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

#### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial content Distributed under this Agreement, and

b) in the case of each subsequent Contributor:

- i) changes to the Program, and
- ii) additions to the Program;

where such changes and/or additions to the Program originate from and are Distributed by that particular Contributor. A Contribution "originates" from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include changes or additions to the Program that are not Modified Works.

"Contributor" means any person or entity that Distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone

or when combined with the Program.

"Program" means the Contributions Distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement or any Secondary License (as applicable), including Contributors.

"Derivative Works" shall mean any work, whether in Source Code or other form, that is based on (or derived from) the Program and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship.

"Modified Works" shall mean any work in Source Code or other form that results from an addition to, deletion from, or modification of the contents of the Program, including, for purposes of clarity any new file in Source Code form that contains any contents of the Program. Modified Works shall not include works that contain only declarations, interfaces, types, classes, structures, or files of the Program solely in each case in order to link to, bind by name, or subclass the Program or Modified Works thereof.

"Distribute" means the acts of a) distributing or b) making available in any manner that enables the transfer of a copy.

"Source Code" means the form of a Program preferred for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Secondary License" means either the GNU General Public License, Version 2.0, or any later versions of that license, including any exceptions or additional permissions as identified by the initial Contributor.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, Distribute and sublicense the Contribution of such Contributor, if any, and such Derivative Works.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in Source Code or other form. This patent license shall apply to the combination of the Contribution and the Program if, at



the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to Distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

e) Notwithstanding the terms of any Secondary License, no Contributor makes additional grants to any Recipient (other than those set forth in this Agreement) as a result of such Recipient's receipt of the Program under the terms of a Secondary License (if permitted under the terms of Section 3).

### 3. REQUIREMENTS

3.1 If a Contributor Distributes the Program in any form, then:

a) the Program must also be made available as Source Code, in accordance with section 3.2, and the Contributor must accompany the Program with a statement that the Source Code for the Program is available under this Agreement, and informs Recipients how to obtain it in a reasonable manner on or through a medium customarily used for software exchange; and

b) the Contributor may Distribute the Program under a license different than this Agreement, provided that such license:

i) effectively disclaims on behalf of all other Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all other Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) does not attempt to limit or alter the recipients' rights in the Source Code under section 3.2; and

iv) requires any subsequent distribution of the Program by any party to be under a license that satisfies the requirements of this section 3.

### 3.2 When the Program is Distributed as Source Code:

a) it must be made available under this Agreement, or if the Program (i) is combined with other material in a separate file or files made available under a Secondary License, and (ii) the initial Contributor attached to the Source Code the notice described in Exhibit A of this Agreement, then the Program may be made available under the terms of such Secondary Licenses, and

b) a copy of this Agreement must be included with each copy of the Program.

3.3 Contributors may not remove or alter any copyright, patent, trademark, attribution notices, disclaimers of warranty, or limitations of liability ("notices") contained within the Program from any copy of the Program which they Distribute, provided that Contributors may add their own appropriate notices.

## 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified

Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further

action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be Distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to Distribute the Program (including its Contributions) under the new version.

Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved. Nothing in this Agreement is intended to be enforceable by any entity that is not a Contributor or Recipient. No third-party beneficiary rights are created under this Agreement.

Exhibit A - Form of Secondary Licenses Notice

"This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License, v. 2.0 are satisfied: {name license(s), version(s), and exceptions or additional permissions here}."

Simply including a copy of this Agreement, including this Exhibit A is not sufficient to license the Source Code under Secondary Licenses.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

---

## The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor  
Boston, MA 02110-1335  
USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have.

You must make sure that they, too, receive or can get the source code.  
And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and  
(2) offer you this license which gives you legal permission to copy,  
distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain  
that everyone understands that there is no warranty for this free  
software. If the software is modified by someone else and passed on, we  
want its recipients to know that what they have is not the original, so  
that any problems introduced by others will not reflect on the original  
authors' reputations.

Finally, any free program is threatened constantly by software patents.  
We wish to avoid the danger that redistributors of a free program will  
individually obtain patent licenses, in effect making the program  
proprietary. To prevent this, we have made it clear that any patent must  
be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and  
modification follow.

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a  
notice placed by the copyright holder saying it may be distributed under  
the terms of this General Public License. The "Program", below, refers  
to any such program or work, and a "work based on the Program" means  
either the Program or any derivative work under copyright law: that is  
to say, a work containing the Program or a portion of it, either  
verbatim or with modifications and/or translated into another language.  
(Hereinafter, translation is included without limitation in the term  
"modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not  
covered by this License; they are outside its scope. The act of running  
the Program is not restricted, and the output from the Program is  
covered only if its contents constitute a work based on the Program  
(independent of having been made by running the Program). Whether that  
is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source  
code as you receive it, in any medium, provided that you conspicuously  
and appropriately publish on each copy an appropriate copyright notice  
and disclaimer of warranty; keep intact all the notices that refer to  
this License and to the absence of any warranty; and give any other  
recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or



distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may

add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1335 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type
`show w'. This is free software, and you are welcome to redistribute
it under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

---

### ## CLASSPATH EXCEPTION

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

# Notices for Jakarta Annotations

This content is produced and maintained by the Jakarta Annotations project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.ca>

### ## Trademarks

Jakarta Annotations is a trademark of the Eclipse Foundation.

### ## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at

<http://www.eclipse.org/legal/epl-2.0>. This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License v. 2.0 are satisfied: GNU General Public License, version 2 with the GNU Classpath Exception which is available at <https://www.gnu.org/software/classpath/license.html>.

SPDX-License-Identifier: EPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/common-annotations-api>

## Third-party Content

## Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

# 1.372 Ivm2 2.02.162

## 1.372.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser

General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and



distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data

structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials

specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE

LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we



want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the

Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions

of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it

free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.373 audit 2.8.4 3

### 1.373.1 Available under license :

#### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General



Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the

Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses

the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of

the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a

work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception,

the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library

subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version,

but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that



everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any

part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any

later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General



Public License instead of this License.

# 1.374 cache-api 1.1.1

## 1.374.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensors for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and  
You must cause any modified files to carry prominent notices stating that You changed the files; and  
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## 1.375 hd-parm 9.38

### 1.375.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals



of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

This package was debianized by Christopher L Cheney <ccheney@debian.org> on Wed, 21 Nov 2001 15:51:14 -0600.

It was downloaded from <http://www.ibiblio.org/pub/Linux/system/hardware>

Upstream Author: Mark S. Lord <mlord@pobox.com>

Copyright:

```
/* hdparm.c - Command line interface to get/set hard disk parameters */
```

/\* - by Mark Lord 1994-2008 -- freely distributable \*/

You are free to distribute this software under the terms of the BSD License.  
On Debian systems, the complete text of the BSD License can be found in  
/usr/share/common-licenses/BSD  
BSD-Style Open Source License:

You may freely use, modify, and redistribute the hdparm program,  
as either binary or source, or both.

The only condition is that my name and copyright notice  
remain in the source code as-is.

Mark Lord (mlord@pobox.com)

## 1.376 pydantic 1.9.0

### 1.376.1 Available under license :

The MIT License (MIT)

Copyright (c) 2017, 2018, 2019, 2020, 2021 Samuel Colvin and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE.

## 1.377 Im-sensors 3.3.1

### 1.377.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any

part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any



later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the

library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from

such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the

Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under



Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on

the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to

refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing

and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public  
License along with this library; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the library, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
Here is a list of the main contributors to lm-sensors version 3.

- \* Frodo Looijaard  
Original author of libsensors, sensors-detect, sensors and isadump.
- \* Merlin Hughes  
Original author of sensord.
- \* Bob Schlaermann  
Dynamic chip feature detection (a.k.a. generic chip support) in  
libsensors and sensors.
- \* Mark M. Hoffman  
Many improvements to the libsensors configuration file scanner.
- \* Jean Delvare  
New libsensors API, and migration of sensors and sensord thereto.  
Many optimizations in libsensors and sensors.  
Configuration file converter.  
Rewrite of sensors-detect.  
Support for multiple configuration files in libsensors.

## 1.378 lua 5.1.4

### 1.378.1 Available under license :

Lua License

-----

Lua is licensed under the terms of the MIT license reproduced below.

This means that Lua is free software and can be used for both academic and commercial purposes at absolutely no cost.

For details and rationale, see <http://www.lua.org/license.html> .

=====  
Copyright (C) 1994-2008 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
(end of COPYRIGHT)

## 1.379 nss-pam-Idapd 0.9.11

### 1.379.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a

restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and



modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a

derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2)

will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute

the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that

system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if



necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## 1.380 libarchive 3.3.3

### 1.380.1 Available under license :

The libarchive distribution as a whole is Copyright by Tim Kientzle and is subject to the copyright notice reproduced at the bottom of this file.

Each individual file in this distribution should have a clear copyright/licensing statement at the beginning of the file. If any do not, please let me know and I will rectify it. The following is intended to summarize the copyright status of the individual files; the actual statements in the files are controlling.

\* Except as listed below, all C sources (including .c and .h files) and documentation files are subject to the copyright notice reproduced at the bottom of this file.

\* The following source files are also subject in whole or in part to a 3-clause UC Regents copyright; please read the individual source files for details:

libarchive/archive\_entry.c

libarchive/archive\_read\_support\_filter\_compress.c

libarchive/archive\_write\_add\_filter\_compress.c

libarchive/mtree.5

\* The following source files are in the public domain:

libarchive/archive\_getdate.c

\* The following source files are triple-licensed with the ability to choose from CC0 1.0 Universal, OpenSSL or Apache 2.0 licenses:

libarchive/archive\_blake2.h

libarchive/archive\_blake2\_impl.h

libarchive/archive\_blake2s\_ref.c

libarchive/archive\_blake2sp\_ref.c

\* The build files---including Makefiles, configure scripts, and auxiliary scripts used as part of the compile process---have

widely varying licensing terms. Please check individual files before distributing them to see if those restrictions apply to you.

I intend for all new source code to use the license below and hope over time to replace code with other licenses with new implementations that do use the license below. The varying licensing of the build scripts seems to be an unavoidable mess.

Copyright (c) 2003-2018 <author(s)>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR(S) ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.381 netty-resolver 4.1.51.Final

### 1.381.1 Available under license :

No license file was found, but licenses were detected in source scan.

~ Copyright 2014 The Netty Project  
~  
~ The Netty Project licenses this file to you under the Apache License,  
~ version 2.0 (the "License"); you may not use this file except in compliance  
~ with the License. You may obtain a copy of the License at:  
~  
~ <http://www.apache.org/licenses/LICENSE>  
2.0  
~

~ Unless required by applicable law or agreed to in writing, software  
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
~ License for the specific language governing permissions and limitations  
~ under the License.

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-resolver/pom.xml

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2014 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/NoopAddressResolverGroup.java

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/SimpleNameResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/NoopAddressResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/NameResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/AddressResolverGroup.java

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/package-info.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2017 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/ResolvedAddressTypes.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/HostsFileEntries.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2015 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/DefaultAddressResolverGroup.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/DefaultNameResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/AbstractAddressResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/HostsFileEntriesResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/InetAddressResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1072948623\_1595240780.88/0/netty-resolver-4-1-51-final-sources-jar/io/netty/resolver/HostsFileParser.java

```
* /opt/ws_local/PERMITS_SQL/1072948623_1595240780.88/0/netty-resolver-4-1-51-final-sources-
jar/io/netty/resolver/InetSocketAddressResolver.java
* /opt/ws_local/PERMITS_SQL/1072948623_1595240780.88/0/netty-resolver-4-1-51-final-sources-
jar/io/netty/resolver/CompositeNameResolver.java
* /opt/ws_local/PERMITS_SQL/1072948623_1595240780.88/0/netty-resolver-4-1-51-final-sources-
jar/io/netty/resolver/AddressResolver.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2016 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072948623_1595240780.88/0/netty-resolver-4-1-51-final-sources-
jar/io/netty/resolver/RoundRobinInetAddressResolver.java
```

## 1.382 reactive-streams 1.0.3

### 1.382.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/******
* Licensed under Public Domain (CC0) *
* *
* To the extent possible under law, the person who associated CC0 with *
* this code has waived all copyright and related or neighboring *
* rights to this code. *
* *
* You should have received a copy of the CC0 legalcode along with this *
* work. If not, see <http://creativecommons.org/publicdomain/zero/1.0/>.*
*****/
```

Found in path(s):

```
* /opt/cola/permits/1135840663_1613613063.73/0/reactive-streams-1-0-3-sources-3-
jar/org/reactivestreams/Publisher.java
```

\* /opt/cola/permits/1135840663\_1613613063.73/0/reactive-streams-1-0-3-sources-3-jar/org/reactivestreams/FlowAdapters.java  
\* /opt/cola/permits/1135840663\_1613613063.73/0/reactive-streams-1-0-3-sources-3-jar/org/reactivestreams/Processor.java  
\* /opt/cola/permits/1135840663\_1613613063.73/0/reactive-streams-1-0-3-sources-3-jar/org/reactivestreams/Subscription.java  
\* /opt/cola/permits/1135840663\_1613613063.73/0/reactive-streams-1-0-3-sources-3-jar/org/reactivestreams/Subscriber.java

## 1.383 dhcpcd 9.1.1

### 1.383.1 Available under license :

Copyright (c) 2006-2020 Roy Marples <roy@marples.name>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.384 kubernetes-client 1.8.11

### 1.384.1 Available under license :

Copyright (c) 2013 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014-2015, Philip Hofer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise



designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must

include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly

negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2014-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012-2018 The Gorilla Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from

this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.



8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf



of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2013-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of

the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Attribution-ShareAlike 4.0 International

=====  
Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

#### Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors: [wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public:

[wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

---

## Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

### Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in

accordance with the terms and conditions of this Public License.

- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](https://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.
- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.



- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.
- m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

## Section 2 -- Scope.

### a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
  - a. reproduce and Share the Licensed Material, in whole or in part; and
  - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.
3. Term. The term of this Public License is specified in Section 6(a).
4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a) (4) never produces Adapted Material.
5. Downstream recipients.
  - a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically

receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.

b. Additional offer from the Licensor -- Adapted Material.

Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material under the conditions of the Adapter's License You apply.

c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.

3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the

following conditions.

a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.
2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and context in which You Share Adapted Material.
3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

#### Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,  
  
including for purposes of Section 3(b); and
- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

#### Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS,

ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.

b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.

c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

#### Section 6 -- Term and Termination.

a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.

b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:

1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or
2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.

d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.
- b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and independent of the terms and conditions of this Public License.

Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.
- d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements,

understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications

represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without



modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade

names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

The MIT License (MIT)

Copyright (c) 2017 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer  
in the documentation and/or other materials provided with the  
distribution.
- \* Neither the name of Google Inc. nor the names of its  
contributors may be used to endorse or promote products derived from  
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,

DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.



Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Mozilla Public License Version 2.0

=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to  
the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used  
by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached  
the notice in Exhibit A, the Executable Form of such Source Code  
Form, and Modifications of such Source Code Form, in each case  
including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described  
in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of  
version 1.1 or earlier of the License, but not also under the  
terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial

ownership of such entity.

## 2. License Grants and Conditions

-----

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

-----

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and



(b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered

Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

```
*
*
* 6. Disclaimer of Warranty
* -----
*
* Covered Software is provided under this License on an "as is"
* basis, without warranty of any kind, either expressed, implied, or
* statutory, including, without limitation, warranties that the
* Covered Software is free of defects, merchantable, fit for a
* particular purpose or non-infringing. The entire risk as to the
* quality and performance of the Covered Software is with You.
* Should any Covered Software prove defective in any respect, You
* (not any Contributor) assume the cost of any necessary servicing,
* repair, or correction. This disclaimer of warranty constitutes an
* essential part of this License. No use of any Covered Software is
```

\* authorized under this License except under this disclaimer. \*

\*\*\*\*\*

\*\*\*\*\*

\* 7. Limitation of Liability \*

----- \*

\* Under no circumstances and under no legal theory, whether tort \*

\* (including negligence), contract, or otherwise, shall any \*

\* Contributor, or anyone who distributes Covered Software as \*

\* permitted above, be liable to You for any direct, indirect, \*

\* special, incidental, or consequential damages of any character \*

\* including, without limitation, damages for lost profits, loss of \*

\* goodwill, work stoppage, computer failure or malfunction, or any \*

\* and all other commercial damages or losses, even if such party \*

\* shall have been informed of the possibility of such damages. This \*

\* limitation of liability shall not apply to liability for death or \*

\* personal injury resulting from such party's negligence to the \*

\* extent applicable law prohibits such limitation. Some \*

\* jurisdictions do not allow the exclusion or limitation of \*

\* incidental or consequential damages, so this exclusion and \*

\* limitation may not apply to You. \*

\*\*\*\*\*

8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

MIT License

Copyright (c) Microsoft Corporation. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.

All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner

or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions



of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2014-2018 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015-Present CloudFoundry.org Foundation, Inc. All Rights Reserved.

This project contains software that is Copyright (c) 2015 Pivotal Software, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This project may include a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of each subcomponent's license, as noted in the LICENSE file.

Docker

Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/creack/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."



"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,

incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016-2018 Docker Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.



Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Tim Heckman

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of linode-netint nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Gal Ben-Haim

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

AWS SDK for Go

Copyright 2015 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Copyright 2014-2015 Stripe, Inc.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a



result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above

copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally

submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2016, opentracing-contrib  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of go-stdlib nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer

in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but



not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to

the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 Taihei Morikuni

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed



as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012, 2013 Ugorji Nwoke.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the



editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the

same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT

Copyright 2017 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory

patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

#### 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks,

service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within



third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Copyright (c) 2011 Keith Rarick

Permission is hereby granted, free of charge, to any person  
obtaining a copy of this software and associated  
documentation files (the "Software"), to deal in the  
Software without restriction, including without limitation  
the rights to use, copy, modify, merge, publish, distribute,  
sublicense, and/or sell copies of the Software, and to  
permit persons to whom the Software is furnished to do so,  
subject to the following conditions:

The above copyright notice and this permission notice shall  
be included in all copies or substantial portions of the  
Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY  
KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE  
WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR  
PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS  
OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR  
OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR  
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Prometheus instrumentation library for Go applications  
Copyright 2012-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>  
<https://github.com/beorn7/perks>  
Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein  
See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format  
<http://github.com/golang/protobuf/>  
Copyright 2010 The Go Authors  
See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).  
[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)  
Copyright 2013 Matt T. Proud  
Licensed under the Apache License, Version 2.0  
CoreOS Project  
Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc.  
(<http://www.coreos.com/>).  
procfs provides functions to retrieve system, kernel and process  
metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).  
Copyright (c) 2013 Dario Casta. All rights reserved.  
Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following disclaimer

in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2015 Matthew Heon <[mheon@redhat.com](mailto:mheon@redhat.com)>

Copyright (c) 2015 Paul Moore <[pmoore@redhat.com](mailto:pmoore@redhat.com)>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. Contribution

means Covered Software of a particular Contributor.

### 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. Executable Form

means any form of the work other than Source Code Form.

### 1.7. Larger Work



means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

#### 1.8. License

means this document.

#### 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. Source Code Form

means the form of the work preferred for making modifications.

#### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the

outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability

shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible With Secondary Licenses, as defined by the Mozilla Public License, v. 2.0.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.



"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the

Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside

or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer,

and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Mozilla Public License, version 2.0

### 1. Definitions

#### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

#### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

#### 1.3. "Contribution"

means Covered Software of a particular Contributor.

#### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

### 2. License Grants and Conditions

#### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

#### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

#### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License.

Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under

the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any



such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

#### 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

## 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

## 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

## 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

## 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible

With Secondary Licenses", as defined by  
the Mozilla Public License, v. 2.0.  
Copyright (c) 2013, Patrick Mezard  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote  
products derived from this software without specific prior written  
permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS  
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED  
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A  
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT  
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED  
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR  
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF  
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING  
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS  
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Common libraries shared by Prometheus Go components.

Copyright 2015 The Prometheus Authors

This product includes software developed at  
SoundCloud Ltd. (<http://soundcloud.com/>).  
The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of  
this software and associated documentation files (the "Software"), to deal in  
the Software without restriction, including without limitation the rights to  
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of  
the Software, and to permit persons to whom the Software is furnished to do so,  
subject to the following conditions:

The above copyright notice and this permission notice shall be included in all  
copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 The OpenTracing Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH (open-source@konsorten.de)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2016, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed



as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this

License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016, gRPC Ecosystem

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of grpc-opentracing nor the names of its

contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2012-2018 Mat Ryer and Tyler Bunnell

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2017 Sean Chittenden

Copyright (c) 2016 Alex Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Bits of Go-lang's `once.Do()` were cribbed and reused here, too.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.385 libmnl 1.0.3

### 1.385.1 Available under license :

30 atime=1337191922.583566431

30 ctime=1338052482.808834269

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal  
permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in



non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
```



Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.386 audit 2.8.5-2ubuntu6

## 1.386.1 Available under license :

### GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether

this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those

libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do

this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline

functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more

than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.



9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE

LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and

(2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and

you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License



may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if

necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.387 fdisk 1.1.0

## 1.387.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
them if you wish), that you receive source code or can get it if you  
want it, that you can change the software or use pieces of it in new  
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you  
these rights or asking you to surrender the rights. Therefore, you have

certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that

Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this

License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This



alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or

specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that

country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work,

but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF

DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:



<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

## 1.388 inotify-tools 3.14

### 1.388.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for

this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any

patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED

OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.389 snake-yaml 1.26

### 1.389.1 Available under license :

Found license 'GNU Lesser General Public License' in '// This module is multi-licensed and may be used under the terms // EPL, Eclipse Public License, V1.0 or later, <http://www.eclipse.org/legal> // LGPL, GNU Lesser General Public License, V2.1 or later, <http://www.gnu.org/licenses/lgpl.html> // GPL, GNU General Public License, V2 or later, <http://www.gnu.org/licenses/gpl.html> // AL, Apache License, V2.0 or later, <http://www.apache.org/licenses> // BSD, BSD License, <http://www.opensource.org/licenses/bsd-license.php> \* Multi-licensed: EPL / LGPL / GPL / AL / BSD.'

Found license 'Eclipse Public License 1.0' in '// This module is multi-licensed and may be used under the terms // EPL, Eclipse Public License, V1.0 or later, <http://www.eclipse.org/legal> // LGPL, GNU Lesser General Public License, V2.1 or later, <http://www.gnu.org/licenses/lgpl.html> // GPL, GNU General Public License, V2 or later, <http://www.gnu.org/licenses/gpl.html> // AL, Apache License, V2.0 or later, <http://www.apache.org/licenses> // BSD, BSD License, <http://www.opensource.org/licenses/bsd-license.php> \* Multi-licensed: EPL / LGPL / GPL / AL / BSD.'



# 1.390 hawtjni-runtime 1.17

## 1.390.1 Available under license :

Found license 'Eclipse Public License 1.0' in '\* All rights reserved. This program and the accompanying materials \* are made available under the terms of the Eclipse Public License v1.0'

# 1.391 liblogging 1.0.3

## 1.391.1 Available under license :

Copyright 2002-2014

Rainer Gerhards and Adiscon GmbH. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.392 pcre 10.34-7

## 1.392.1 Available under license :

PCRE2 LICENCE

Please see the file LICENCE in the PCRE2 distribution for licensing details.

End

## PCRE2 LICENCE

-----

PCRE2 is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Releases 10.00 and above of PCRE2 are distributed under the terms of the "BSD" licence, as specified below, with one exemption for certain binary redistributions. The documentation for PCRE2, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a just-in-time compiler that can be used to optimize pattern matching. This is an optional feature that can be omitted when the library is built.

## THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel  
Email local part: ph10  
Email domain: cam.ac.uk

University of Cambridge Computing Service,  
Cambridge, England.

Copyright (c) 1997-2019 University of Cambridge  
All rights reserved.

## PCRE2 JUST-IN-TIME COMPILATION SUPPORT

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2010-2019 Zoltan Herczeg  
All rights reserved.

## STACK-LESS JUST-IN-TIME COMPILER

-----

Written by: Zoltan Herczeg  
Email local part: hzmester

Email domain: freemail.hu

Copyright(c) 2009-2019 Zoltan Herczeg  
All rights reserved.

#### THE "BSD" LICENCE

-----

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notices, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notices, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the names of any contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### EXEMPTION FOR BINARY LIBRARY-LIKE PACKAGES

-----

The second condition in the BSD licence (covering binary redistributions) does not apply all the way down a chain of software. If binary package A includes PCRE2, it must respect the condition, but if package B is software that includes package A, the condition is not imposed on package B unless it uses PCRE2 independently.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.393 freerdp 2.0.0-rc4

### 1.393.1 Available under license :

Copyright (C) 2016 The Android Open Source Project

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensors for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.



# 1.394 spring-boot 2.3.3.RELEASE

## 1.394.1 Available under license :

Copyright 2012-2013 the original author or authors.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Spring Boot \${version}

Copyright (c) 2012-2020 Pivotal, Inc.

This product is licensed to you under the Apache License, Version 2.0  
(the "License"). You may not use this product except in compliance with  
the License.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

open\_source\_licenses.txt

Spring Boot CLI

=====

Pivotal makes available all content in this download ("Content"). Unless otherwise indicated below, the Content is provided to you under the terms and conditions of the Apache License 2.0 (the "License"). A copy of the license is available in the file called LICENSE.txt or you may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

The following copyright statements and licenses apply to various open

source software packages (or portions thereof) that are distributed with this content.

---

---

## TABLE OF CONTENTS

---

---

The following is a listing of the open source components detailed in this document. This list is provided for your convenience; please read further if you wish to review the copyright notice(s) and the full text of the license associated with each component.

### SECTION 1: BSD-STYLE, MIT-STYLE, OR SIMILAR STYLE LICENSES

- >>> JLine (jline:jline)
- >>> JOpt Simple (net.sf.jopt-simple:jopt-simple)
- >>> ASM 4.0 (org.ow2.asm:asm)

### SECTION 2: Apache License, V2.0

- >>> JSON library from Android SDK (com.vaadin.external.google:android-json)
- >>> Apache Commons Codec (commons-codec:commons-codec)
- >>> Apache HttpClient (org.apache.httpcomponents:httpclient)
- >>> Apache HttpCore (org.apache.httpcomponents:httpcore)
- >>> Plexus Cipher: encryption/decryption Component (org.sonatype.plexus:plexus-cipher)
- >>> Plexus Security Dispatcher Component (org.sonatype.plexus:plexus-sec-dispatcher)
- >>> Apache Commons Logging (commons-logging:commons-logging)
- >>> Apache Groovy (org.codehaus.groovy:groovy)
- >>> Maven Aether Provider (org.apache.maven:maven-aether-provider)
- >>> Maven Model (org.apache.maven:maven-model)
- >>> Maven Model Builder (org.apache.maven:maven-model-builder)
- >>> Maven Repository Metadata Model (org.apache.maven:maven-repository-metadata)
- >>> Maven Settings (org.apache.maven:maven-settings)
- >>> Maven Settings Builder (org.apache.maven:maven-settings-builder)
- >>> Plexus :: Component Annotations (org.codehaus.plexus:plexus-component-annotations)
- >>> Plexus Common Utilities (org.codehaus.plexus:plexus-utils)
- >>> Plexus Component API (org.codehaus.plexus:plexus-component-api)
- >>> Plexus Interpolation API (org.codehaus.plexus:plexus-interpolation)

### SECTION 3: Eclipse Public License, Version 1.0

- >>> Aether API (org.eclipse.aether:aether-api)
- >>> Aether Connector Basic (org.eclipse.aether:aether-connector-basic)

>>> Aether Implementation (org.eclipse.aether:aether-impl)  
>>> Aether SPI (org.eclipse.aether:aether-spi)  
>>> Aether Transport File (org.eclipse.aether:aether-transport-file)  
>>> Aether Transport HTTP (org.eclipse.aether:aether-transport-http)  
>>> Aether Utilities (org.eclipse.aether:aether-util)

----- SECTION 1: BSD-STYLE, MIT-STYLE, OR SIMILAR STYLE LICENSES -----

BSD-STYLE, MIT-STYLE, OR SIMILAR STYLE LICENSES are applicable to the following component(s).

>>> JLine (jline:jline)

Copyright (c) 2002-2006, Marc Prud'hommeaux <mwp1@cornell.edu>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of JLine nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

>>> net.sf.jopt-simple:jopt-simple:4.5

The MIT License (MIT)

Copyright (c) <year> <copyright holders>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

>>> org.ow2.asm:asm

Copyright (c) 2000-2011 INRIA, France Telecom

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE



IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

----- SECTION 2: Apache License, V2.0 -----

Apache License, V2.0 is applicable to the following component(s).

```
>>> org.apache.httpcomponents:httpClient
>>> org.apache.httpcomponents:httpcore
>>> org.sonatype.plexus:plexus-cipher
>>> org.sonatype.plexus:plexus-sec-dispatcher
>>> commons-logging:commons-logging
>>> org.codehaus.groovy:groovy
>>> org.apache.maven:maven-aether-provider
>>> org.apache.maven:maven-model
>>> org.apache.maven:maven-model-builder
>>> org.apache.maven:maven-repository-metadata
>>> org.apache.maven:maven-settings
>>> org.apache.maven:maven-settings-builder
>>> org.codehaus.plexus:plexus-component-annotations
>>> org.codehaus.plexus:plexus-utils
>>> org.codehaus.plexus:plexus-component-api
>>> org.codehaus.plexus:plexus-interpolation
```

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License

```
>>> CGLIB 3.0 (cglib:cglib:3.0):
```

Per the LICENSE file in the CGLIB JAR distribution downloaded from <https://sourceforge.net/projects/cglib/files/cglib3/3.0/cglib-3.0.jar/download>, CGLIB 3.0 is licensed under the Apache License, version 2.0, the text of which is included above.

----- SECTION 3: Eclipse Public License, Version 1.0 -----

Eclipse Public License, Version 1.0 is applicable to the following component(s).

```
>>> org.eclipse.aether:aether-api
>>> org.eclipse.aether:aether-connector-basic
>>> org.eclipse.aether:aether-impl
>>> org.eclipse.aether:aether-spi
>>> org.eclipse.aether:aether-transport-file
>>> org.eclipse.aether:aether-transport-http
>>> org.eclipse.aether:aether-util
```

The Eclipse Foundation makes available all content in this plug-in ("Content"). Unless otherwise indicated below, the Content is provided to you under the terms and conditions of the Eclipse Public License Version 1.0 ("EPL"). A copy of the EPL is available at <https://www.eclipse.org/legal/epl-v10.html>.

For purposes of the EPL, "Program" will mean the Content.

If you did not receive this Content directly from the Eclipse Foundation, the Content is being redistributed by another party ("Redistributor") and different terms and conditions may apply to your use of any object code in the Content. Check the Redistributor's license that was provided with the Content. If no such license exists, contact the Redistributor. Unless otherwise indicated below, the terms and conditions of the EPL still apply to any source code in the Content and such source code may be obtained at <https://www.eclipse.org/>

=====

To the extent any open source subcomponents are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://github.com/spring-projects/spring-boot>, or by sending a request, with your name and address to:

Pivotal, Inc., 875 Howard St,  
San Francisco, CA 94103  
United States of America

or email [info@pivotal.io](mailto:info@pivotal.io). All such requests should clearly specify:

#### OPEN SOURCE FILES REQUEST

Attention General Counsel

[legal]

= Legal

{spring-boot-version}

Copyright © 2012-2020

Copies of this document may be made for your own use and for distribution to others, provided that you do not charge any fee for such copies and further provided that each copy contains this Copyright Notice, whether distributed in print or electronically.

## 1.395 libsrtp 2.2.0

### 1.395.1 Available under license :

```
/*
 *
 * Copyright (c) 2001-2017 Cisco Systems, Inc.
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 *
 * Redistributions in binary form must reproduce the above
 * copyright notice, this list of conditions and the following
 * disclaimer in the documentation and/or other materials provided
 * with the distribution.
 *
 * Neither the name of the Cisco Systems, Inc. nor the names of its
 * contributors may be used to endorse or promote products derived
 * from this software without specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
 * "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
 * LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
 * FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
 * COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
 * INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
```

\* (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR  
\* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
\* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
\* OF THE POSSIBILITY OF SUCH DAMAGE.  
\*  
\*/

## 1.396 bzip2 1.0.8

## 1.397 libbsd 0.4.1

### 1.397.1 Available under license :

The following 4-clause BSD licenses are only for man pages, specifically for man/arc4random.3, man/tree.3 and man/getprogname.3.

Copyright 1997 Niels Provos <provos@physnet.uni-hamburg.de>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:  
This product includes software developed by Niels Provos.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2001 Christopher G. Demetriou  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed for the  
NetBSD Project. See <http://www.netbsd.org/> for  
information about NetBSD.

4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The rest of the licenses apply to code and/or man pages.

Copyright 2004-2006, 2008-2011 Guillem Jover <[guillem@hadrons.org](mailto:guillem@hadrons.org)>  
Copyright 2005 Hector Garcia Alvarez  
Copyright 2005 Aurelien Jarno  
Copyright 2006 Robert Millan

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 1980, 1982, 1986, 1989-1994

The Regents of the University of California. All rights reserved.

Some code is derived from software contributed to Berkeley by the American National Standards Committee X3, on Information Processing Systems.

Some code is derived from software contributed to Berkeley by Peter McIlroy.

Some code is derived from software contributed to Berkeley by Ronnie Kon at Mindcraft Inc., Kevin Lew and Elmer Yglesias.

Some code is derived from software contributed to Berkeley by Dave Borman at Cray Research, Inc.

Some code is derived from software contributed to Berkeley by Paul Vixie.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 1996 Peter Wemm <peter@FreeBSD.org>.

All rights reserved.

Copyright 2002 Networks Associates Technology, Inc.

All rights reserved.

Portions of this software were developed for the FreeBSD Project by ThinkSec AS and NAI Labs, the Security Research Division of Network Associates, Inc. under DARPA/SPAWAR contract N66001-01-C-8035 ("CBOSS"), as part of the DARPA CHATS research program.

Redistribution and use in source and binary forms, with or without modification, is permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 1995 Peter Wemm <peter@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, is permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice immediately at the beginning of the file, without modification, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. This work was done expressly for inclusion into FreeBSD. Other use is permitted provided this notation is included.
4. Absolutely no warranty of function or purpose is made by the author Peter Wemm.
5. Modifications may be freely made to this file providing the above conditions are met.

--

Copyright 1997-2000, 2002, 2005, 2006, 2008 The NetBSD Foundation, Inc.  
All rights reserved.

Some code was contributed to The NetBSD Foundation by Allen Briggs.

Some code is derived from software contributed to The NetBSD Foundation by Jason R. Thorpe of the Numerical Aerospace Simulation Facility, NASA Ames Research Center, by Luke Mewburn and by Tomas Svensson.

Some code is derived from software contributed to The NetBSD Foundation by Julio M. Merino Vidal, developed as part of Google's Summer of Code 2005 program.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS  
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED



TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright (c) 2009 Advanced Computing Technologies LLC

Written by: John H. Baldwin <jhb@FreeBSD.org>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 1998, M. Warner Losh <imp@freebsd.org>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2001 Dima Dorfman.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2002 Niels Provos <provos@citi.umich.edu>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2002 Thomas Moestl <tm@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2005 Pawel Jakub Dawidek <pjd@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2007 Eric Anderson <anderson@FreeBSD.org>  
Copyright 2007 Pawel Jakub Dawidek <pjd@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 2007 Dag-Erling Codan Smrgrav  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

--

Copyright 2007 Dag-Erling Codan Smrgrav  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

--

Copyright 1998, 2000 Todd C. Miller <Todd.Miller@courtesan.com>

Copyright 2004 Ted Unangst

Copyright 2004 Ted Unangst and Todd Miller

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

--

Copyright 2000-2002, 2004-2005, 2007, 2010

Todd C. Miller <Todd.Miller@courtesan.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Sponsored in part by the Defense Advanced Research Projects Agency (DARPA) and Air Force Research Laboratory, Air Force Materiel Command, USAF, under agreement number F39502-99-1-0512

--

Copyright 1996 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

--

Copyright 1996, David Mazieres <dm@uun.org>

Copyright 2008, Damien Miller <djm@openbsd.org>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

Modification and redistribution in source and binary forms is permitted provided that due credit is given to the author and the OpenBSD project (for instance by leaving this copyright notice intact).

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

This code is derived from section 17.1 of Applied Cryptography, second edition, which describes a stream cipher allegedly compatible with RSA Labs "RC4" cipher (the actual description of which is a trade secret). The same algorithm is used as a stream cipher called "arcfour" in Tatu Ylonen's ssh package.

Here the stream cipher has been modified always to include the time when initializing the state. That makes it impossible to regenerate the same random sequence twice, so this can't be used for encryption, but will generate good random numbers.

RC4 is a registered trademark of RSA Laboratories.

--

This code implements the MD5 message-digest algorithm. The algorithm is due to Ron Rivest. This code was written by Colin Plumb in 1993, no copyright is claimed. This code is in the public domain; do with it what you wish.

Equivalent code is available from RSA Data Security, Inc. This code has been tested against that, and is equivalent, except that you don't need to include two pages of legalese with every copy.

To compute the message digest of a chunk of bytes, declare an MD5Context structure, pass it to MD5Init, call MD5Update as needed on buffers full of bytes, and then call MD5Final, which will fill a supplied 16-byte array with the digest.

--

"THE BEER-WARE LICENSE" (Revision 42):  
<phk@login.dkuug.dk> wrote this file. As long as you retain this notice you can do whatever you want with this stuff. If we meet some day, and you think this stuff is worth it, you can buy me a beer in return. Poul-Henning Kamp

# 1.398 xerces-c 3.2.2+debian-1build3

## 1.398.1 Available under license :

=====  
== NOTICE file corresponding to section 4(d) of the Apache License, ==  
== Version 2.0, in this case for the Apache Xerces distribution. ==  
=====

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:  
- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.



"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

# 1.399 jakarta xml bind api 2.3.3

## 1.399.1 Available under license :

Copyright (c) 2017, 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
[/]: # " Copyright (c) 2018, 2019 Oracle and/or its affiliates. All rights reserved. "
```

```
[/]: # " "
```

```
[/]: # " This program and the accompanying materials are made available under the "
```

```
[/]: # " terms of the Eclipse Distribution License v. 1.0, which is available at "
```

```
[/]: # " http://www.eclipse.org/org/documents/edl-v10.php. "
```

```
[/]: # " "
```

```
[/]: # " SPDX-License-Identifier: BSD-3-Clause "
```

```
Notices for Jakarta XML Binding
```

This content is produced and maintained by the Jakarta XML Binding project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb>

## ## Trademarks

Jakarta XML Binding is a trademark of the Eclipse Foundation.

## ## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## ## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## ## Source Code

The project maintains the following source code repositories:

- \* <https://github.com/eclipse-ee4j/jaxb-api>
- \* <https://github.com/eclipse-ee4j/jaxb-tck>

## ## Third-party Content

This project leverages the following third party content.

Apache River (3.0.0)

- \* License: Apache-2.0 AND BSD-3-Clause

ASM 7 (n/a)

- \* License: BSD-3-Clause
- \* Project: <https://asm.ow2.io/>
- \* Source: <https://repository.ow2.org/nexus/#nexus-search;gav~org.ow2.asm~asm-commons~~~~kw,versionexpand>

JTHarness (5.0)

- \* License: (GPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0)
- \* Project: <https://wiki.openjdk.java.net/display/CodeTools/JT+Harness>
- \* Source: <http://hg.openjdk.java.net/code-tools/jtharness/>

normalize.css (3.0.2)

\* License: MIT

SigTest (n/a)

\* License: GPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0

## Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

# 1.400 jansi 1.18

## 1.400.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and  
You must cause any modified files to carry prominent notices stating that You changed the files; and  
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices



that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

# 1.401 webjars-locator-core 0.45

## 1.401.1 Available under license :

MIT

# 1.402 micrometer-core 1.5.4

## 1.402.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2018 VMware, Inc.
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * https://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/ipc/http/OkHttpSender.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/instrument/logging/LoggingRegistryConfig.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/ipc/http/ReactorNettySender.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/instrument/logging/LoggingMeterRegistry.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/instrument/push/PushRegistryConfig.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/instrument/StrongReferenceGaugeFunction.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/ipc/http/HttpSender.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/instrument/binder/kafka/KafkaConsumerMetrics.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
jar/io/micrometer/core/ipc/http/HttpStatusClass.java
* /opt/ws_local/PERMITS_SQL/1089949011_1600184760.1/0/micrometer-core-1-5-4-sources-
```

jar/io/micrometer/core/instrument/util/NamedThreadFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/util/JsonUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/push/PushMeterRegistry.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/MultiGauge.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/ipc/http/URLConnectionSender.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2012-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/internal/OnlyOnceLoggingDenyMeterFilter.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2019 VMware, Inc.
* <p>
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
* <p>
* https://www.apache.org/licenses/LICENSE-2.0
* <p>
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/httpcomponents/MicrometerHttpRequestExecutor.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/httpcomponents/PoolingHttpClientConnectionManagerMetricsBinder.java  
No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2020 VMware, Inc.  
\* <p>  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use super file except in compliance with the License.  
\* You may obtain a copy of the License at  
\* <p>  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\* <p>  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/kafka/KafkaClientMetrics.java  
No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2019 VMware, Inc.  
\* <p>  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\* <p>  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\* <p>  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

/\*

\* Copyright 2017 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/LocationAwareSlf4JLogger.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2019 VMware, Inc.

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\* <p>

\* <https://www.apache.org/licenses/LICENSE-2.0>

\* <p>

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jetty/OnCompletionAsyncListener.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Timer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/TimedScheduledExecutorService.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jetty/InstrumentedQueuedThreadPool.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/WarnThenDebugLogger.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jetty/TimedHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/TimedCallable.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-

jar/io/micrometer/core/instrument/binder/mongodb/MongoMetricsCommandListener.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jvm/JvmMemory.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/internal/TimerRunnable.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/mongodb/MongoMetricsConnectionPoolListener.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettyServerThreadPoolMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettyConnectionMetrics.java  
No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2019 VMware, Inc.
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * https://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
/*
 * Copyright 2013 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
/**
 * Copyright (c) 2004-2011 QOS.ch
 * All rights reserved.
 *
 * Permission is hereby granted, free of charge, to any person obtaining
```

\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:

\*

\* The above copyright notice and this permission notice shall be  
\* included in all copies or substantial portions of the Software.

\*

\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
\* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE  
\* LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION  
\* OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION  
\* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/util/internal/logging/FormattingTuple.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/util/internal/logging/MessageFormatter.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2017 Pivotal Software, Inc.

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\* <p>

\* <https://www.apache.org/licenses/LICENSE-2.0>

\* <p>

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettyStatisticsMetrics.java

No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2019 VMware, Inc.
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * https://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
/**
 * Copyright 2012 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
/**
 * Copyright (c) 2004-2011 QOS.ch
 * All rights reserved.
 *
 * Permission is hereby granted, free of charge, to any person obtaining
 * a copy of this software and associated documentation files (the
 * "Software"), to deal in the Software without restriction, including
 * without limitation the rights to use, copy, modify, merge, publish,
 * distribute, sublicense, and/or sell copies of the Software, and to
 * permit persons to whom the Software is furnished to do so, subject to
 * the following conditions:
 *
 * The above copyright notice and this permission notice shall be
 * included in all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
 * EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
 * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
```



\* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE  
\* LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION  
\* OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION  
\* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/util/internal/logging/JdkLogger.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/util/internal/logging/InternalLogger.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2020 VMware, Inc.

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\* <p>

\* <https://www.apache.org/licenses/LICENSE-2.0>

\* <p>

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/internal/CumulativeHistogramLongTaskTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettyClientTags.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/config/validate/Validated.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/http/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/httpcomponents/HttpContextUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/httpcomponents/MicrometerHttpClientInterceptor.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/config/validate/InvalidReason.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/config/validate/DurationValidator.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-

jar/io/micrometer/core/instrument/binder/http/HttpServletRequestTagsProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/config/validate/PropertyValidator.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/step/StepTuple2.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/db/JooqExecuteListener.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/distribution/FixedBoundaryVictoriaMetricsHistogram.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettyClientTagsProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jvm/JvmHeapPressureMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/config/validate/ValidationException.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/db/MetricsDSLContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/step/StepValue.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/http/DefaultHttpServletRequestTagsProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/distribution/TimeWindowSum.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/kafka/KafkaMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/http/HttpRequestTags.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/cache/HazelcastIMapAdapter.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettySslHandshakeMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/httpcomponents/DefaultUriMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/http/Outcome.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jpa/HibernateQueryMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/config/MeterRegistryConfigValidator.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-  
jar/io/micrometer/core/instrument/binder/jetty/JettyClientMetrics.java  
No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2017 VMware, Inc.

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

- \* You may obtain a copy of the License at
- \* <p>
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \* <p>
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/NoopHistogram.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/MockClock.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/CacheMeterBinder.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/hystrix/HystrixMetricsBinder.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepMeterRegistry.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/lang/NonNullApi.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/TimeWindowMax.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/CaffeineCacheMetrics.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/simple/SimpleMeterRegistry.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/TimeGauge.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/MeterEquivalence.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/MissingRequiredConfigurationException.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/annotation/Timed.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Measurement.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/pause/NoPauseDetector.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/db/DatabaseTableMetrics.java
- \* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/logging/Log4j2Metrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/aop/CountedAspect.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/StringEscapeUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/search/RequiredSearch.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/okhttp3/OkHttpMetricsEventListener.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/ImmutableTag.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/annotation/TimedSet.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepLong.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/LongTaskTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardDistributionSummary.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardFunctionCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/BaseUnits.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/MeterPartition.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepFunctionCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopLongTaskTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeLongTaskTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/hystrix/MicrometerMetricsPublisherCommand.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/DistributionSummary.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/aop/TimedAspect.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/pause/PauseDetector.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/EhCache2Metrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/Mergeable.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/system/FileDescriptorMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Tags.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Statistic.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardMeterRegistry.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/MeterRegistry.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Metrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeDistributionSummary.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/lang/Nullable.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/DiskSpaceMetrics.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeGauge.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/push/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepTimer.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/logging/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardFunctionTimer.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/TimeUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopTimeGauge.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/simple/CountingMode.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeMeterRegistry.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/AbstractTimeWindowHistogram.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepRegistryConfig.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Meter.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeCustomMeter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeTimeGauge.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/JvmCompilationMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/cumulative/CumulativeFunctionCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/MeterRegistryConfig.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/simple/SimpleConfig.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/InvalidConfigurationException.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/JvmThreadMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Clock.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/AbstractTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/HierarchicalNameMapper.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/JCacheMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/DefaultMeter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepDouble.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/AbstractMeter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/AbstractCompositeMeter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/search/MeterNotFoundException.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/system/UptimeMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/HistogramGauges.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/cumulative/CumulativeCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/MeterBinder.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/IOUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/hystrix/MicrometerMetricsPublisherThreadPool.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/db/PostgreSQLDatabaseMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopDistributionSummary.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/MeterFilter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/PercentileHistogramBuckets.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepMeasurement.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/system/ProcessorMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/ValueAtPercentile.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/DistributionStatisticConfig.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/FunctionCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Gauge.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/Histogram.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/MeterFilterReply.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/CountAtBucket.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/DoubleFormat.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/TimedExecutor.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/cumulative/CumulativeDistributionSummary.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/StringUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopFunctionTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/JvmMemoryMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/annotation/Incubating.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/TimeWindowPercentileHistogram.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/cumulative/CumulativeTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/tomcat/TomcatMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopFunctionCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardConfig.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/HistogramSnapshot.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/TimedExecutorService.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/HistogramSupport.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/annotation/Counted.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/pause/ClockDriftPauseDetector.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopMeter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeFunctionCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/cumulative/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardRate.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/search/Search.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/FunctionTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeMeter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardGauge.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/JvmGcMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/lang/NonNullFields.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Tag.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/composite/CompositeFunctionTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/pause/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/package-info.java



\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/AbstractPartition.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardClock.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/AbstractDistributionSummary.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/DefaultLongTaskTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/search/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/hystrix/MicrometerMetricsPublisher.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/HazelcastCacheMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/cumulative/CumulativeFunctionTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/config/NamingConvention.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/lang/NonNull.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/logging/LogbackMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/Counter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/ClassLoaderMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/dropwizard/DropwizardCounter.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/cache/GuavaCacheMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepFunctionTimer.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jvm/ExecutorServiceMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/internal/DefaultGauge.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/jpa/HibernateMetrics.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/step/StepDistributionSummary.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/noop/NoopGauge.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/distribution/TimeWindowFixedBoundaryHistogram.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/util/package-info.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/simple/package-info.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2020 VMware, Inc.

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use super file except  
\* in compliance with the License. You may obtain a copy of the License at

\* <p>

\* <https://www.apache.org/licenses/LICENSE-2.0>

\* <p>

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/instrument/binder/kafka/KafkaStreamsMetrics.java

No license file was found, but licenses were detected in source scan.

/\*\*

\* Copyright 2019 VMware, Inc.

\* <p>

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\* <p>

\* <https://www.apache.org/licenses/LICENSE-2.0>

\* <p>

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and  
\* limitations under the License.

\*/

/\*

\* Copyright 2013 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/package-info.java  
No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2019 VMware, Inc.
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * https://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
/*
 * Copyright 2012 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/Slf4JLoggerFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/InternalLogLevel.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/Slf4JLogger.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/AbstractInternalLogger.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/InternalLoggerFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1089949011\_1600184760.1/0/micrometer-core-1-5-4-sources-jar/io/micrometer/core/util/internal/logging/JdkLoggerFactory.java

## 1.403 ipmi-tool 1.8.18

### 1.403.1 Available under license :

Copyright (c) 2003 Sun Microsystems, Inc. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistribution of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Sun Microsystems, Inc. or the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

This software is provided "AS IS," without a warranty of any kind.

ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

# 1.404 spring-beans 5.2.20.RELEASE

## 1.404.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2011 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486271_1649248813.39/0/spring-beans-5-2-20-release-sources-
jar/org/springframework/beans/factory/annotation/Qualifier.java
* /opt/cola/permits/1301486271_1649248813.39/0/spring-beans-5-2-20-release-sources-
jar/org/springframework/beans/factory/xml/BeanDefinitionParser.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2002-2012 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1301486271_1649248813.39/0/spring-beans-5-2-20-release-sources-
jar/org/springframework/beans/factory/parsing/ConstructorArgumentEntry.java
```

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/NamespaceHandler.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/NullSourceExtractor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CurrencyEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/InputSourceEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/EmptyReaderEventListener.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/ConversionNotSupportedException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/PassThroughSourceExtractor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanDefinitionValidationException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanCurrentlyInCreationException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/DocumentLoader.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/support/MutableSortDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/ComponentDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/PropertyResourceConfigurer.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/LocaleEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CharsetEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/BeanReference.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/SimplePropertyNamespaceHandler.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/HierarchicalBeanFactory.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanFactoryAware.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/ProblemReporter.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanIsNotAFactoryException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/wiring/ClassNameBeanWiringInfoResolver.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/Configurable.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyEditorRegistrar.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanIsAbstractException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/BeanDefinitionParsingException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyEditorRegistry.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanCreationNotAllowedException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/FactoryBeanNotInitializedException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/BeanDefinitionDecorator.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/MethodReplacer.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanExpressionException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/wiring/BeanWiringInfoResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/AbstractComponentDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/SecurityContextProvider.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/support/SortDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/XmlBeanDefinitionStoreException.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2021 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/TypeMismatchException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-

jar/org/springframework/beans/factory/groovy/GroovyBeanDefinitionReader.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/PathEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/ConstructorArgumentValues.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/annotation/AutowiredAnnotationBeanPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/RootBeanDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/AbstractBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/PlaceholderConfigurerSupport.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/ConstructorResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/xml/ParserContext.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/AbstractBeanDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/AbstractAutowireCapableBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/AbstractNestablePropertyAccessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/GenericTypeAwarePropertyDescriptor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/DisposableBeanAdapter.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2010 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/BeanDefinitionRegistryPostProcessor.java



No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/SingletonBeanRegistry.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/BeanDefinitionDocumentReader.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2022 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/CachedIntrospectionResults.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2009 the original author or authors.

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/Autowire.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2014 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/SmartInitializingSingleton.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/NotReadablePropertyException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/AbstractSimpleBeanDefinitionParser.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/AnnotatedBeanDefinition.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2020 the original author or authors.

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/BeanEntry.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/ListableBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/CglibSubclassingInstantiationStrategy.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/DependencyDescriptor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/support/ArgumentConvertingMethodInvoker.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/InjectionMetadata.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/AbstractPropertyAccessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/YamlProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/ParseState.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/DefaultSingletonBeanRegistry.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/PropertyEntry.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanDefinitionValueResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/FactoryBeanRegistrySupport.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/URIEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/Value.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-

jar/org/springframework/beans/factory/xml/XmlBeanDefinitionReader.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/parsing/QualifierEntry.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/DirectFieldAccessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/BeanDefinitionDefaults.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/FactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/StaticListableBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/parsing/ReaderContext.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/PropertiesBeanDefinitionReader.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/DefaultListableBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/BeanDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/ReplaceOverride.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/BeanWrapperImpl.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/SimpleAutowireCandidateResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/xml/BeanDefinitionParserDelegate.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/GenericTypeAwareAutowireCandidateResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/AutowireCandidateResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/BeanUtils.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/annotation/Lookup.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/BeanDefinitionReaderUtils.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/RuntimeBeanNameReference.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/DocumentDefaultsDefinition.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/Problem.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/ConfigurableListableBeanFactory.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/PatternEditor.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/ImportDefinition.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/DeprecatedBeanWarner.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/ConfigurablePropertyAccessor.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/XmlReaderContext.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/ProviderCreatingFactoryBean.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/PropertiesEditor.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/NullBean.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/BeanExpressionResolver.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/ByteArrayPropertyEditor.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/ObjectFactoryCreatingFactoryBean.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/ListableBeanFactoryExtensions.kt
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/NamespaceHandlerSupport.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CharArrayPropertyEditor.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/EmbeddedValueResolver.java
- \* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/AliasDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/PropertiesFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/ClassEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/LookupOverride.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanClassLoaderAware.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/ServiceLocatorFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/MethodOverride.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CharacterEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/CustomAutowireConfigurer.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/MapFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/ListFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/ResourceBundleEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyAccessorUtils.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/PropertyPathFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/wiring/BeanWiringInfo.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ManagedProperties.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeansException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeanWrapper.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/ClassArrayEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ChildBeanDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeanMetadataAttribute.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/FatalBeanException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanDefinitionReader.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/AbstractSingleBeanDefinitionParser.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/Location.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/SetFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/serviceloader/AbstractServiceLoaderBasedFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/MethodInvokingBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeanMetadataAttributeAccessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/BeanDefinitionHolder.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/GenericBeanDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/YamlPropertiesFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/StringArrayPropertyEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/TypeConverterDelegate.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/ConfigurableBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/ResourceEntityResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/DefaultBeanNameGenerator.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeanMetadataElement.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/BeanDefinitionVisitor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-

jar/org/springframework/beans/factory/config/BeanPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/annotation/Autowired.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/groovy/GroovyBeanDefinitionWrapper.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/StringTrimmerEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/BeanDefinitionBuilder.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/TypedStringValue.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/xml/PluggableSchemaResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/annotation/AnnotatedGenericBeanDefinition.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/AutowiredPropertyMarker.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/xml/BeansDtdResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/annotation/AnnotationBeanUtils.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/PropertyDescriptorUtils.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/TypeConverterSupport.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/xml/DelegatingEntityResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/AutowireUtils.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/TypeConverter.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/YamlMapFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/InstantiationAwareBeanPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/ExtendedBeanInfo.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/CustomMapEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/annotation/InitDestroyAnnotationBeanPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/RuntimeBeanReference.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/BeanFactoryPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/UUIDEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-



jar/org/springframework/beans/factory/support/AbstractBeanDefinitionReader.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/PropertyValue.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/PreferencesPlaceholderConfigurer.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/CustomCollectionEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/PropertyBatchUpdateException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/BeanFactoryUtils.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/MethodOverrides.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/AutowiredCapableBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/PropertyPlaceholderConfigurer.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/InjectionPoint.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/annotation/ParameterResolutionDelegate.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/serviceloader/ServiceFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/PropertyValuesEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/parsing/ReaderEventListener.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/parsing/DefaultsDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanNameGenerator.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/serviceloader/ServiceLoaderFactoryBean.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/InputStreamEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/NamespaceHandlerResolver.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/ReaderEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/NamedBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/FileEditor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/serviceloader/ServiceListFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/SourceExtractor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/NullValueInNestedPathException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ImplicitlyAppearedSingletonException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/Scope.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/support/ResourceEditorRegistrar.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/UtilNamespaceHandler.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-

jar/org/springframework/beans/factory/BeanInitializationException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/SmartInstantiationAwareBeanPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/URLEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/BeanDefinitionCustomizer.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/propertyeditors/ZoneIdEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/BeanNameAware.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/ObjectProvider.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/SimpleSecurityContextProvider.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/InitializingBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/CustomScopeConfigurer.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/AbstractFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/config/CustomEditorConfigurer.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/parsing/FailFastProblemReporter.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/support/SimpleInstantiationStrategy.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/PropertyMatches.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/SimpleConstructorNamespaceHandler.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/AbstractBeanDefinitionParser.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/support/PagedListHolder.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/Required.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/FieldRetrievingFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyValues.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ManagedArray.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/PropertyOverrideConfigurer.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/NotWritablePropertyException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/QualifierAnnotationAutowireCandidateResolver.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyAccessor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanDefinitionRegistry.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ManagedMap.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/ObjectFactory.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/InstantiationStrategy.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/BeanComponentDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanDefinitionStoreException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyAccessException.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/InstantiationAwareBeanPostProcessorAdapter.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/DestructionAwareBeanPostProcessor.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/parsing/CompositeComponentDefinition.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ManagedList.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanDefinitionResource.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/MethodInvokingFactoryBean.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/XmlBeanFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyAccessorFactory.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/NamedBeanHolder.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/NoUniqueBeanDefinitionException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CustomNumberEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/NoSuchBeanDefinitionException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/MethodInvocationException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/MergedBeanDefinitionPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/SimpleBeanDefinitionRegistry.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/DefaultBeanDefinitionDocumentReader.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/Mergeable.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/ManagedSet.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/BeanDefinitionOverrideException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanCreationException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanNotOfRequiredTypeException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/Aware.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/config/BeanExpressionContext.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CustomDateEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/wiring/BeanConfigurerSupport.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/DefaultNamespaceHandlerResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/AnnotationBeanWiringInfoResolver.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/SmartFactoryBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/PropertyEditorRegistrySupport.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/BeanFactoryExtensions.kt

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/MutablePropertyValues.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/BeanFactoryAnnotationUtils.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/InvalidPropertyException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/xml/DefaultDocumentLoader.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/support/PropertyComparator.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/DisposableBean.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeanInstantiationException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/CannotLoadBeanClassException.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/support/AutowiredCandidateQualifier.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/propertyeditors/CustomBooleanEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/annotation/RequiredAnnotationBeanPostProcessor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/factory/UnsatisfiedDependencyException.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/BeanInfoFactory.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-jar/org/springframework/beans/SimpleTypeConverter.java

\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-

jar/org/springframework/beans/propertyeditors/TimeZoneEditor.java  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/factory/groovy/GroovyDynamicElementReader.groovy  
\* /opt/cola/permits/1301486271\_1649248813.39/0/spring-beans-5-2-20-release-sources-  
jar/org/springframework/beans/ExtendedBeanInfoFactory.java

# 1.405 spring-security-core 5.3.4.RELEASE

## 1.405.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2013 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/core/parameters/AnnotationParameterNameDiscoverer.java
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/core/annotation/AuthenticationPrincipal.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2015-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
```

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/jackson2/SecurityJackson2Modules.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* Determines if the { @link #getAuthentication() } has permission to access the target

\* given the permission

\* @param target the target domain object to check permission on

\* @param permission the permission to check on the domain object (i.e. "read",

\* "write", etc).

\* @return true if permission is granted to the { @link #getAuthentication() }, else

\* false

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/expression/SecurityExpressionOperations.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software



- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/keygen/Base64StringKeyGenerator.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/DelegatingReactiveAuthenticationManager.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/Transient.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/ReactiveUserDetailsPasswordService.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/MessageDigestPasswordEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/scheduling/DelegatingSecurityContextTaskScheduler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authorization/AuthorityReactiveAuthorizationManager.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/jackson2/UnmodifiableListDeserializer.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/provisioning/JdbcUserDetailsManager.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/expression/method/DefaultMethodSecurityExpressionHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/token/KeyBasedPersistenceTokenService.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/LdapShaPasswordEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/jackson2/UnmodifiableListMixin.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextCallable.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextRunnable.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/prepost/PrePostAdviceReactiveMethodInterceptor.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/CachingUserDetailsService.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/Md4PasswordEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/DelegatingPasswordEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/jackson2/BadCredentialsExceptionMixin.java
- \* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-

jar/org/springframework/security/crypto/password/Pbkdf2PasswordEncoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/DefaultAuthenticationEventPublisher.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/expression/method/MethodSecurityEvaluationContext.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/ProviderManager.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\*

\* @param authentication represents the user in question. Should not be null.

\* @param targetDomainObject the domain object for which permissions should be

\* checked. May be null in which case implementations should return false, as the null

- \* condition can be checked explicitly in the expression.
- \* @param permission a representation of the permission object as supplied by the
- \* expression system. Not null.
- \* @return true if the permission is granted, false otherwise

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/PermissionEvaluator.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2010-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/DefaultJaasAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/AbstractJaasAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/memory/InMemoryConfiguration.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2011-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/encrypt/Encryptors.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2011-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/password/Digester.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-

jar/org/springframework/security/core/context/ReactiveSecurityContextHolder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authorization/AuthorizationDecision.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/password/PasswordEncoderUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/ReactiveAuthenticationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/ReactiveUserDetailsService.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authorization/AuthenticatedReactiveAuthorizationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/password/Md4.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/factory/PasswordEncoderFactories.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/SpringSecurityCoreVersion.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authorization/ReactiveAuthorizationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/AuthenticatedPrincipal.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/parameters/P.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/MapReactiveUserDetailsService.java  
No license file was found, but licenses were detected in source scan.

// Permission to use, copy, modify, and distribute this software for any  
// purpose with or without fee is hereby granted, provided that the above  
// copyright notice and this permission notice appear in all copies.

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/bcrypt/BCrypt.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/  
/\*\*  
\* Base64 encoder which is a reduced version of Robert Harder's public domain  
\* implementation (version 2.3.7). See <a  
\* href="http://iharder.sourceforge.net/current/java/base64/">http://iharder.sourceforge.net/current/java/base64/</a>  
for more information.  
\* <p>  
\* For internal use only.  
\*  
\* @author Luke Taylor  
\* @since 3.0  
\* @deprecated Use java.util.Base64  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/codec/Base64.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/UsernamePasswordAuthenticationTokenDeserializer.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/UserDeserializer.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyUtils.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2011 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/bcrypt/BCryptPasswordEncoder.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.

\*/

/\*\*

\* A token issued by { @link TokenService }.

\*

\* <p>

\* It is important that the keys assigned to tokens are sufficiently randomised and  
\* secured that they can serve as identifying a unique user session. Implementations of  
\* { @link TokenService } are free to use encryption or encoding strategies of their choice.  
\* It is strongly recommended that keys are of sufficient length to balance safety against  
\* persistence cost. In relation to persistence cost, it is strongly recommended that  
\* returned keys are small enough for encoding in a cookie.

\* </p>

\*

\* @author Ben Alex

\* @since 2.0.1

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/token/Token.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/expression/method/PreInvocationExpressionAttribute.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/method/AbstractFallbackMethodSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-



jar/org/springframework/security/core/authority/SimpleGrantedAuthority.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/jaas/event/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/MethodSecurityExpressionRoot.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/method/P.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/SecurityExpressionRoot.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/InternalAuthenticationServiceException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PostInvocationAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PostFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/intercept/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PreInvocationAuthorizationAdviceVoter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/GrantedAuthoritiesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/jaas/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/intercept/aspectj/AspectJMethodSecurityInterceptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/annotation/AnnotationMetadataExtractor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/AccountStatusException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/provisioning/MutableUser.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/session/SessionDestroyedEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/concurrent/DelegatingSecurityContextScheduledExecutorService.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/intercept/aspectj/MethodInvocationAdapter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/MappableAttributesRetriever.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/MethodSecurityExpressionOperations.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/AbstractExpressionBasedMethodConfigAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-

jar/org/springframework/security/core/authority/mapping/MapBasedAttributes2GrantedAuthoritiesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/context/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/provisioning/UserDetailsManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PostAuthorize.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/GrantedAuthoritiesContainer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/SimpleMappableAttributesRetriever.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/NullAuthoritiesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/context/DelegatingApplicationListener.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/AuthorityUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/session/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/ExpressionUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/vote/RoleHierarchyVoter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PreFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/UserDetailsByNameServiceWrapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PrePostInvocationAttributeFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/concurrent/DelegatingSecurityContextExecutor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/SimpleAttributes2GrantedAuthoritiesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/UserDetailsChecker.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/task/DelegatingSecurityContextAsyncTaskExecutor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/codec/Utf8.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/event/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/jdbc/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PrePostAnnotationSecurityMetadataSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-

jar/org/springframework/security/access/PermissionCacheOptimizer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/concurrent/AbstractDelegatingSecurityContextSupport.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/vote/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/provisioning/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/password/AbstractPasswordEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PostInvocationAdviceProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PreInvocationAuthorizationAdvice.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/provisioning/GroupManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/util/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/cache/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/SecurityExpressionHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/cache/SpringCacheBasedUserCache.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/task/DelegatingSecurityContextTaskExecutor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/DenyAllPermissionEvaluator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/method/DelegatingMethodSecurityMetadataSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/token/Sha512DigestUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/session/SessionCreationEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/annotation/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/rcp/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/hierarchicalroles/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/provisioning/InMemoryUserDetailsManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-

jar/org/springframework/security/core/userdetails/AuthenticationUserDetailsService.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/memory/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyAuthoritiesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/Attributes2GrantedAuthoritiesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/scheduling/DelegatingSecurityContextSchedulingTaskExecutor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/ExpressionBasedAnnotationAttributeFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/codec/Hex.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/hierarchicalroles/CycleInRoleHierarchyException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/CredentialsContainer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/AccountStatusUserDetailsChecker.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/token/DefaultToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/intercept/aspectj/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/method/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PreAuthorize.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/jaas/memory/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/parameters/DefaultSecurityParameterNameDiscoverer.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/AbstractSecurityExpressionHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/dao/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PostInvocationAuthorizationAdvice.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/AuthenticationEventPublisher.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/codec/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/SimpleAuthorityMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-

jar/org/springframework/security/access/expression/method/PostInvocationExpressionAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/annotation/Js250Voter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/concurrent/DelegatingSecurityContextExecutorService.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/token/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/provisioning/MutableUserDetails.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/annotation/Js250SecurityConfig.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/intercept/aopalliance/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/hierarchicalroles/NullRoleHierarchy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/authority/mapping/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/MethodSecurityExpressionHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/event/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/prepost/PreInvocationAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/ExpressionBasedPostInvocationAdvice.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/token/TokenService.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

```
/*
 * Licensed to the Apache Software Foundation (ASF) under one
 * or more contributor license agreements. See the NOTICE file
 * distributed with this work for additional information
 * regarding copyright ownership. The ASF licenses this file
 * to you under the Apache License, Version 2.0 (the
 * "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an
 * "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY
 * KIND, either express or implied. See the License for the
 * specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/core/ComparableVersion.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2015-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/jackson2/CoreJackson2Module.java
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/jackson2/UserMixin.java
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/jackson2/UnmodifiableSetDeserializer.java
* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
```

jar/org/springframework/security/jackson2/UnmodifiableSetMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/RememberMeAuthenticationTokenMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/SimpleGrantedAuthorityMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/UsernamePasswordAuthenticationTokenMixin.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/jackson2/AnonymousAuthenticationTokenMixin.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/scrypt/SCryptPasswordEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/converter/RsaKeyConverters.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/userdetails/UserDetailsPasswordService.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/argon2/Argon2PasswordEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/ReactiveAuthenticationManagerResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/AbstractUserDetailsReactiveAuthenticationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/argon2/Argon2EncodingUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/token/SecureRandomFactoryBean.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/expression/method/ExpressionBasedPreInvocationAdvice.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/event/LogoutSuccessEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/UserDetailsRepositoryReactiveAuthenticationManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/annotation/CurrentSecurityContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyImpl.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManagerAdapter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationManagerResolver.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2011-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/PasswordEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/keygen/SecureRandomBytesKeyGenerator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/util/EncodingUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/encrypt/HexEncodingTextEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/encrypt/TextEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/keygen/HexEncodingStringKeyGenerator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/StandardPasswordEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/password/NoOpPasswordEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesCbcBytesEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-



jar/org/springframework/security/crypto/encrypt/CipherUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/keygen/SharedKeyGenerator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/encrypt/BouncyCastleAesBytesEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/keygen/StringKeyGenerator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/keygen/KeyGenerators.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/encrypt/AesBytesEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/encrypt/BytesEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/encrypt/BouncyCastleAesGcmBytesEncryptor.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/crypto/keygen/BytesKeyGenerator.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2004, 2005, 2006 Acegi Technology Pty Limited
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/AccessDecisionVoter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/access/intercept/MethodInvocationPrivilegeEvaluator.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/util/FieldUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/core/session/SessionRegistry.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/AnonymousAuthenticationProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-  
jar/org/springframework/security/authentication/event/AuthenticationFailureServiceExceptionEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/annotation/Secured.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AbstractAuthenticationFailureEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationManager.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationTrustResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/AfterInvocationProviderManager.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/JaasGrantedAuthority.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/event/PublicInvocationEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/event/AbstractAuthorizationEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationServiceException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/AuthenticatedVoter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/aopalliance/MethodSecurityInterceptor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/LockedException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/UserDetailsService.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureCredentialsExpiredEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureProviderNotFoundEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/TestingAuthenticationToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/UnanimousBased.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/RememberMeAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/SpringSecurityMessageSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/SecurityConfig.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/ConsensusBased.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/AfterInvocationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationManagerImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AbstractAuthenticationEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/NullRunAsManager.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/AbstractAccessDecisionManager.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/InterceptorStatusToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/LoggerListener.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/InheritableThreadLocalSecurityContextHolderStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/session/SessionRegistryImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/InteractiveAuthenticationSuccessEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/AbstractSecurityInterceptor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/event/AuthenticationCredentialsNotFoundEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/event/AuthorizedEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/TestingAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/AuthorityGranter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/ConfigAttribute.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/UsernameNotFoundException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureProxyUntrustedEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/RunAsManagerImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureExpiredEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/DefaultLoginExceptionResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/SecurityContext.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/JaasNameCallbackHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/AuthorizationServiceException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/memory/UserAttributeEditor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/annotation/SecuredAnnotationSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/GrantedAuthority.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/Authentication.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureBadCredentialsEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationFailedEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/SecurityContextImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/method/MethodSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/RunAsUserToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/dao/DaoAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/jdbc/JdbcDaoImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/SecurityContextHolderStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/UserCache.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureLockedEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationCredentialsNotFoundException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/JaasAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/AbstractAclVoter.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/cache/EhCacheBasedUserCache.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/annotation/JsR250MethodSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/rcp/RemoteAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/util/MethodInvocationUtils.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/RunAsImplAuthenticationProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/GlobalSecurityContextHolderStrategy.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/util/InMemoryResource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/SecurityContextHolder.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationSuccessEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/SecurityContextLoginModule.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/CredentialsExpiredException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AccountExpiredException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/session/SessionInformation.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/event/LoggerListener.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/aopalliance/MethodSecurityMetadataSourceAdvisor.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/AccessDeniedException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/memory/UserAttribute.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/event/AuthenticationFailureDisabledEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/method/MapBasedMethodSecurityMetadataSource.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/DisabledException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/UserDetails.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/util/SimpleMethodInvocation.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/InsufficientAuthenticationException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationManager.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationSuccessEvent.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/JaasAuthenticationCallbackHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/JaasAuthenticationToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/ProviderNotFoundException.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/UsernamePasswordAuthenticationToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationTrustResolverImpl.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AnonymousAuthenticationToken.java

\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/aspectj/AspectJCallback.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/User.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/BadCredentialsException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/event/AuthorizationFailureEvent.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/AuthenticationException.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/context/ThreadLocalSecurityContextHolderStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AuthenticationDetailsSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/core/userdetails/cache/NullUserCache.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/AffirmativeBased.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/method/AbstractMethodSecurityMetadataSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/AccessDecisionManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/SecurityMetadataSource.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/AbstractAuthenticationToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/vote/RoleVoter.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/dao/AbstractUserDetailsAuthenticationProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/RememberMeAuthenticationToken.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/JaasPasswordCallbackHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/access/intercept/RunAsManager.java  
\* /opt/ws\_local/PERMITS\_SQL/1081949690\_1599626417.25/0/spring-security-core-5-3-4-release-sources-jar/org/springframework/security/authentication/jaas/LoginExceptionResolver.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2004, 2005, 2006 Acegi Technology Pty Limited

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

```

*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Reviews the Object returned from a secure object invocation, being able to
* modify the Object or throw an {@link AccessDeniedException}.
* <p>
* Typically used to ensure the principal is permitted to access the domain object
* instance returned by a service layer bean. Can also be used to mutate the domain object
* instance so the principal is only able to access authorised bean properties or
* Collection elements.
* <p>
* Special consideration should be given to using an AfterInvocationManager
* on bean methods that modify a database. Typically an
* AfterInvocationManager is used with read-only methods, such as
* public DomainObject getById(id). If used with methods that modify a
* database, a transaction manager should be used to ensure any
* AccessDeniedException will cause a rollback of the changes made by the
* transaction.
* </p>
*
* @author Ben Alex
*/

```

Found in path(s):

```

* /opt/ws_local/PERMITS_SQL/1081949690_1599626417.25/0/spring-security-core-5-3-4-release-sources-
jar/org/springframework/security/access/intercept/AfterInvocationManager.java

```

# 1.406 python-multipart 0.0.5

## 1.406.1 Available under license :

Copyright 2012, Andrew Dunham

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and

limitations under the License.

# 1.407 tar 1.30+dfsg 7ubuntu0.20.04.2

## 1.407.1 Available under license :

/\* Per-directory exclusion files for tar.

Copyright 2014, 2016-2017 Free Software Foundation, Inc.

This file is part of GNU tar.

GNU tar is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

GNU tar is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

\*/

### GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you



have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

## 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.



You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type 'show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type 'show c' for details.
```

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

Authors of GNU tar.

Public domain tar was written by John Gilmore, with contributions from Henry Spencer, Fred Fish, Ian Darwin, Geoff Collyer, Stan Barber, Guy Harris, Dave Brower, Richard Todd, Michael Rendell, Stu Heiss, and Rich Salz.

The FSF version, named GNU tar, was derived from public domain tar by Jay Fenlason and Joy Kendall. Amy Gorin and Melissa Weisshaus contributed to the manual. GNU tar has been maintained in turn by Thomas Bushnell BSG, François Pinard, Paul Eggert, and Sergey Poznyakoff.

Many others have contributed to GNU tar; please see the files THANKS and ChangeLog.

# 1.408 junixsocket-common 2.3.2

## 1.408.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * junixsocket
 *
 * Copyright 2009-2020 Christian Kohlschütter
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/Closeables.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/AFUNIXSocket.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/AFUNIXSocketCredentials.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/AFUNIXServerSocket.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/NativeLibraryLoader.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/AFUNIXSocketCapability.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/AFUNIXSocketImpl.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/SuppressFBWarnings.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/AFUNIXSocketAddress.java
* /opt/ws_local/PERMITS_SQL/1046144794_1589880088.21/0/junixsocket-common-2-3-2-sources-
jar/org/newsclub/net/unix/NativeUnixSocket.java
```

# 1.409 fribidi 1.0.11

## 1.409.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave



you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means

all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any

application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the

copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot

use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.



14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.410 commons-fileupload 62

## 1.410.1 Available under license :

Apache Commons FileUpload  
Copyright 2002-2018 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

# 1.411 postgres-sql 12.12

## 1.411.1 Available under license :

This regular expression package was originally developed by Henry Spencer.  
It bears the following copyright notice:

\*\*\*\*\*

Copyright (c) 1998, 1999 Henry Spencer. All rights reserved.

Development of this software was funded, in part, by Cray Research Inc., UUNET Communications Services Inc., Sun Microsystems Inc., and Scriptics Corporation, none of whom are responsible for the results. The author thanks all of them.

Redistribution and use in source and binary forms -- with or without modification -- are permitted for any purpose, provided that redistributions in source form retain this entire copyright notice and indicate the origin and nature of any modifications.

I'd appreciate being given credit for this package in the documentation of software which uses it, but that is not a requirement.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL HENRY SPENCER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\*\*\*\*\*

PostgreSQL adopted the code out of Tcl 8.4.1. Portions of regc\_locale.c and re\_syntax.n were developed by Tcl developers other than Henry; these files bear the Tcl copyright and license notice:

\*\*\*\*\*

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState Corporation and other parties. The following terms apply to all files

associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

\*\*\*\*\*

Subsequent modifications to the code by the PostgreSQL project follow the same license terms as the rest of PostgreSQL.

PostgreSQL Database Management System  
(formerly known as Postgres, then as Postgres95)

Portions Copyright (c) 1996-2022, PostgreSQL Global Development Group

Portions Copyright (c) 1994, The Regents of the University of California



Permission to use, copy, modify, and distribute this software and its documentation for any purpose, without fee, and without a written agreement is hereby granted, provided that the above copyright notice and this paragraph and the following two paragraphs appear in all copies.

IN NO EVENT SHALL THE UNIVERSITY OF CALIFORNIA BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE UNIVERSITY OF CALIFORNIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE UNIVERSITY OF CALIFORNIA SPECIFICALLY DISCLAIMS ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE SOFTWARE PROVIDED HEREUNDER IS ON AN "AS IS" BASIS, AND THE UNIVERSITY OF CALIFORNIA HAS NO OBLIGATIONS TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

## 1.412 commons-collections 4.4

### 1.412.1 Available under license :

Apache Commons Collections  
Copyright 2001-2019 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.413 fontconfig 2.6.0

## 1.413.1 Available under license :

fontconfig/COPYING

Copyright 2000,2001,2002,2003,2004,2006,2007 Keith Packard

Copyright 2005 Patrick Lam

Copyright 2009 Roozbeh Pournader

Copyright 2008,2009 Red Hat, Inc.

Copyright 2008 Danilo Egan  
Copyright 2012 Google, Inc.

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the author(s) not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. The authors make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THE AUTHOR(S) DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## 1.414 berkeley-db 4.4.20

### 1.414.1 Available under license :

Copyright (c) 1996-2005

Sleepycat Software. All rights reserved.

See the file LICENSE for redistribution information.

/\*\_

\* \$Id: LICENSE,v 12.1 2005/06/16 20:20:10 bostic Exp \$

\*/

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software, please contact Sleepycat Software by email at [info@sleepycat.com](mailto:info@sleepycat.com), or on the Web at <http://www.sleepycat.com>.

=====  
/\*

\* Copyright (c) 1990-2005

\* Sleepycat Software. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. Redistributions in any form must be accompanied by information on
- \* how to obtain complete source code for the DB software and any
- \* accompanying software that uses the DB software. The source code
- \* must either be included in the distribution or be available for no
- \* more than the cost of distribution plus a nominal fee, and must be
- \* freely redistributable under reasonable conditions. For an
- \* executable file, complete source code means the source code for all
- \* modules it contains. It does not include source code for modules or
- \* files that typically accompany the major components of the operating
- \* system on which the executable file runs.

\*

\* THIS SOFTWARE IS PROVIDED BY SLEEPYCAT SOFTWARE ``AS IS" AND ANY EXPRESS  
\* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
\* WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR  
\* NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL SLEEPYCAT SOFTWARE  
\* BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF  
\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1990, 1993, 1994, 1995  
\* The Regents of the University of California. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the University nor the names of its contributors
- \* may be used to endorse or promote products derived from this software
- \* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1995, 1996

\* The President and Fellows of Harvard University. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the University nor the names of its contributors

\* may be used to endorse or promote products derived from this software

\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY HARVARD AND ITS CONTRIBUTORS ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL HARVARD OR ITS CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*/

Copyright (c) 2005, 2006, Theo Schlossnagle

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name OmniTI nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.



THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.415 expat 2.2.9

### 1.415.1 Available under license :

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper  
Copyright (c) 2001-2019 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.416 netty-codec-http 4.1.51.Final

### 1.416.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2019 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/  
/\*  
\* Adaptation of <http://bjoern.hoehrmann.de/utf-8/decoder/dfa/>  
\*  
\* Copyright (c) 2008-2009 Bjoern Hoehrmann <bjoern@hoehrmann.de>  
\*  
\* Permission is hereby granted, free of charge, to any person obtaining a copy of this software  
\* and associated documentation files (the "Software"), to deal in the Software without restriction,  
\* including without limitation the rights to use, copy, modify, merge, publish, distribute,  
\* sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is  
\* furnished to do so, subject to the following conditions:  
\*  
\* The above copyright notice and this permission notice shall be included in all copies or  
\* substantial portions of the Software.  
\*  
\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
\* IMPLIED, INCLUDING  
\* BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR  
\* PURPOSE AND  
\* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE  
\* FOR ANY CLAIM,  
\* DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE,  
\* ARISING FROM,  
\* OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
\* SOFTWARE.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/Utf8Validator.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

```
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
// (BSD License: http://www.opensource.org/licenses/bsd-license)
// All rights reserved.
// Redistribution and use in source and binary forms, with or
// * Redistributions of source code must retain the above
// copyright notice, this list of conditions and the
// following disclaimer.
// * Redistributions in binary form must reproduce the above
// following disclaimer in the documentation and/or other
// * Neither the name of the Webbit nor the names of
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket13FrameEncoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket08FrameEncoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket07FrameEncoder.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2019 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketServerProtocolConfig.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker07.java
```

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketCloseStatus.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/CloseWebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionFilter.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientProtocolConfig.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocket00FrameDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshakerFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker13.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerProtocolHandshakeHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/CorruptedWebSocketFrameException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker00.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerProtocolHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionFilterProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketDecoderConfig.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker08.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2014 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations

\* under the License.

\*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/ServerCookieEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HttpChunkedInput.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HttpStatusClass.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HttpHeadersEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerFrameDeflateDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockZlibDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyFrameDecoderDelegate.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtension.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HTTPHeaderValues.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HTTPHeaderNames.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketServerExtensionHandshaker.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketServerExtension.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockRawDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateClientExtensionHandshaker.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtensionHandshaker.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/WebSocketServerCompressionHandler.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateServerExtensionHandshaker.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-

jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtension.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyProtocolException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspHeaderNames.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/compression/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateFrameServerExtensionHandshaker.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketServerExtensionHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyFrameEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/Utf8FrameValidator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerFrameDeflateEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateFrameClientExtensionHandshaker.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspHeaderValues.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/compression/WebSocketClientCompressionHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyFrameDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpMessageUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionData.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/ClientCookieEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtensionHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyFrameCodec.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2017 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/ReadOnlyHttpHeaders.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketScheme.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpServerExpectContinueHandler.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2013 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License, version  
\* 2.0 (the "License"); you may not use this file except in compliance with the  
\* License. You may obtain a copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/cors/CorsConfig.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/cors/CorsHandler.java  
No license file was found, but licenses were detected in source scan.

# The Netty Project licenses this file to you under the Apache License,  
# version 2.0 (the "License"); you may not use this file except in compliance  
# with the License. You may obtain a copy of the License at:

```
http://www.apache.org/licenses/LICENSE-2.0
distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/META-INF/native-image/io.netty/codec-http/native-image.properties
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 2015 The Netty Project
```

```
*
```

```
* The Netty Project licenses this file to you under the Apache License, version
```

```
* 2.0 (the "License"); you may not use this file except in compliance with the
```

```
* License. You may obtain a copy of the License at:
```

```
*
```

```
* http://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
```

```
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
```

```
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
```

```
* License for the specific language governing permissions and limitations under
```

```
* the License.
```

```
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io.netty.handler.codec/http/cors/CorsConfigBuilder.java
```

No license file was found, but licenses were detected in source scan.

```
~ Copyright 2012 The Netty Project
```

```
~
```

```
~ The Netty Project licenses this file to you under the Apache License,
```

```
~ version 2.0 (the "License"); you may not use this file except in compliance
```

```
~ with the License. You may obtain a copy of the License at:
```

```
~
```

```
~ http://www.apache.org/licenses/LICENSE
```

```
2.0
```

```
~
```

```
~ Unless required by applicable law or agreed to in writing, software
```

```
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
```

```
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
```

```
~ License for the specific language governing permissions and limitations
```

```
~ under the License.
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/META-INF/maven/io.netty/netty-codec-http/pom.xml
```



No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/multipart/AbstractMemoryHttpData.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/HttpContentDecompressor.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/package-info.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/multipart/InterfaceHttpPostRequestDecoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/multipart/HttpPostRequestDecoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/spdy/SpdyHttpResponseStreamIdHandler.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/HttpResponseDecoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/spdy/DefaultSpdySettingsFrame.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/HttpContentEncoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/DefaultCookie.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/rtsp/package-info.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/multipart/DiskAttribute.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/HttpMethod.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
```

jar/io/netty/handler/codec/http/DefaultHttpObject.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpResponseEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpContentDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpObjectAggregator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpObjectDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpContent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/InterfaceHttpData.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/QueryStringEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/Cookie.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpPostBodyUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpHeaders.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/Attribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketHandshakeException.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpPostRequestEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshakerFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/DefaultHttpDataFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpDataFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/DefaultHttpHeaders.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpServerCodec.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyHttpHeaders.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/DefaultHttpResponse.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/AbstractDiskHttpData.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpObject.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-

jar/io/netty/handler/codec/rtsp/RtspVersions.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpClientCodec.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocket00FrameEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker00.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker07.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/MemoryAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpMessage.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/LastHttpContent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpVersion.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspObjectDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/DiskFileUpload.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/ContinuationWebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/MixedFileUpload.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpRequestDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspHeaders.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/FileUpload.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspResponseStatuses.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/DefaultHttpRequest.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpRequest.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspRequestDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/DefaultLastHttpContent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/BinaryWebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-

jar/io/netty/handler/codec/rtsp/RtspMethods.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/AbstractHttpData.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/CaseIgnoringComparator.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpRequestEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspResponseDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpResponseStatus.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpResponse.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker08.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpPostMultipartRequestDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspResponseEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/DefaultHttpContent.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyHttpEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/TextWebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpObjectEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/MemoryFileUpload.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdySession.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpConstants.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/PongWebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpPostStandardRequestDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspRequestEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/MixedAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/InternalAttribute.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpContentCompressor.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-

jar/io/netty/handler/codec/http/QueryStringDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/DefaultHttpMessage.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/PingWebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpData.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker13.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspObjectEncoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketFrame.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpHeaderDateFormat.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/CookieDecoder.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketVersion.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2014 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License, version 2.0 (the  
\* "License"); you may not use this file except in compliance with the License. You may obtain a  
\* copy of the License at:  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpServerUpgradeHandler.java  
\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-  
jar/io/netty/handler/codec/http/HttpClientUpgradeHandler.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2015 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,

- \* version 2.0 (the "License"); you may not use this file except in compliance
- \* with the License. You may obtain a copy of the License at:
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/DefaultCookie.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/ServerCookieEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/CookieDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/CookieEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/Cookie.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/CookieHeaderNames.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/CombinedHttpHeaders.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/ClientCookieDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HttpExpectationFailedEvent.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/rtsp/RtspEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/ServerCookieDecoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HttpScheme.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/CookieUtil.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/EmptyHttpHeaders.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/HttpUtil.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cookie/ClientCookieEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-

```
jar/io/netty/handler/codec/http/cookie/CookieUtil.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/rtsp/RtspDecoder.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2019 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
// (BSD License: http://www.opensource.org/licenses/bsd-license)
// All rights reserved.
// Redistribution and use in source and binary forms, with or
// * Redistributions of source code must retain the above
// copyright notice, this list of conditions and the
// following disclaimer.
// * Redistributions in binary form must reproduce the above
// following disclaimer in the documentation and/or other
// * Neither the name of the Webbit nor the names of
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket08FrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket13FrameDecoder.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket07FrameDecoder.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2013 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*

```

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketFrameEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyWindowUpdateFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdySessionStatus.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyWindowUpdateFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyDataFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdySynReplyFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyStreamFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyRstStreamFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/FullHttpResponse.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdySynStreamFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyPingFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/FullHttpRequest.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyDataFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyVersion.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/DefaultFullHttpResponse.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdySettingsFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyGoAwayFrame.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/cors/package-info.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockRawEncoder.java
- \* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientProtocolHandler.java



\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketFrameAggregator.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHttpDecoder.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHttpCodec.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaders.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/DefaultFullHttpRequest.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyStreamFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyPingFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdySynStreamFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdySynReplyFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyRstStreamFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/ComposedLastHttpContent.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientProtocolHandshakeHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyGoAwayFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdySessionHandler.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyHeaders.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/FullHttpRequest.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketFrameDecoder.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyCodecUtil.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockEncoder.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyHeadersFrame.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockZlibEncoder.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHeaderBlockJZlibEncoder.java

\* /opt/ws\_local/PERMITS\_SQL/1072411888\_1594999339.26/0/netty-codec-http-4-1-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyStreamStatus.java

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketProtocolHandler.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/spdy/SpdyHeadersFrame.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2016 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/multipart/FileUploadUtil.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/HttpServerKeepAliveHandler.java
* /opt/ws_local/PERMITS_SQL/1072411888_1594999339.26/0/netty-codec-http-4-1-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketChunkedInput.java
```

## 1.417 kubernetes-apimachinery 1.8.11

### 1.417.1 Available under license :

Copyright (c) 2014-2015, Philip Hofer

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN

AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the

direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and

wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor

has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (C) 2013 Blake Mizerany

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2015 Rackspace. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
Copyright (c) 2012-2018 The Gorilla Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,



SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS



Copyright 2013-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Vishvananda Ishaya.

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and

limitations under the License.

Copyright 2012 SocialCode

Permission is hereby granted, free of charge, to any person obtaining

a copy of this software and associated documentation files (the

"Software"), to deal in the Software without restriction, including

without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to

the following conditions:

The above copyright notice and this permission notice shall be

included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND

NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE

LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION

OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION

WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,



incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2013-2018 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2013 Ben Johnson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications

represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without

modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade

names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Attribution-ShareAlike 4.0 International

---

Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

#### Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors:  
[wiki.creativecommons.org/Considerations\\_for\\_licensors](http://wiki.creativecommons.org/Considerations_for_licensors)

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason--for example, because of any applicable exception or limitation to copyright--then that use is not regulated by the license. Our licenses grant only permissions under copyright and certain

other rights that a licensor has authority to grant. Use of the licensed material may still be restricted for other reasons, including because others have copyright or other rights in the material. A licensor may make special requests, such as asking that all changes be marked or described. Although not required by our licenses, you are encouraged to respect those requests where reasonable. More considerations for the public:

[wiki.creativecommons.org/Considerations\\_for\\_licensees](http://wiki.creativecommons.org/Considerations_for_licensees)

---

## Creative Commons Attribution-ShareAlike 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree to be bound by the terms and conditions of this Creative Commons Attribution-ShareAlike 4.0 International Public License ("Public License"). To the extent this Public License may be interpreted as a contract, You are granted the Licensed Rights in consideration of Your acceptance of these terms and conditions, and the Licensor grants You such rights in consideration of benefits the Licensor receives from making the Licensed Material available under these terms and conditions.

### Section 1 -- Definitions.

- a. Adapted Material means material subject to Copyright and Similar Rights that is derived from or based upon the Licensed Material and in which the Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public License, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image.
- b. Adapter's License means the license You apply to Your Copyright and Similar Rights in Your contributions to Adapted Material in accordance with the terms and conditions of this Public License.
- c. BY-SA Compatible License means a license listed at [creativecommons.org/compatiblelicenses](http://creativecommons.org/compatiblelicenses), approved by Creative Commons as essentially the equivalent of this Public License.
- d. Copyright and Similar Rights means copyright and/or similar rights closely related to copyright including, without limitation,

performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized. For purposes of this Public License, the rights specified in Section 2(b)(1)-(2) are not Copyright and Similar Rights.

- e. Effective Technological Measures means those measures that, in the absence of proper authority, may not be circumvented under laws fulfilling obligations under Article 11 of the WIPO Copyright Treaty adopted on December 20, 1996, and/or similar international agreements.
- f. Exceptions and Limitations means fair use, fair dealing, and/or any other exception or limitation to Copyright and Similar Rights that applies to Your use of the Licensed Material.
- g. License Elements means the license attributes listed in the name of a Creative Commons Public License. The License Elements of this Public License are Attribution and ShareAlike.
- h. Licensed Material means the artistic or literary work, database, or other material to which the Licensor applied this Public License.
- i. Licensed Rights means the rights granted to You subject to the terms and conditions of this Public License, which are limited to all Copyright and Similar Rights that apply to Your use of the Licensed Material and that the Licensor has authority to license.
- j. Licensor means the individual(s) or entity(ies) granting rights under this Public License.
- k. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.
- l. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.
- m. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.



Section 2 -- Scope.

a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:
  - a. reproduce and Share the Licensed Material, in whole or in part; and
  - b. produce, reproduce, and Share Adapted Material.
2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.
3. Term. The term of this Public License is specified in Section 6(a).
4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a) (4) never produces Adapted Material.
5. Downstream recipients.
  - a. Offer from the Licensor -- Licensed Material. Every recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.
  - b. Additional offer from the Licensor -- Adapted Material. Every recipient of Adapted Material from You automatically receives an offer from the Licensor to exercise the Licensed Rights in the Adapted Material

under the conditions of the Adapter's License You apply.

c. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.

3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

### Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor

with the Licensed Material:

- i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);
  - ii. a copyright notice;
  - iii. a notice that refers to this Public License;
  - iv. a notice that refers to the disclaimer of warranties;
  - v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;
- b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and
  - c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.
2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.
3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

b. ShareAlike.

In addition to the conditions in Section 3(a), if You Share Adapted Material You produce, the following conditions also apply.

1. The Adapter's License You apply must be a Creative Commons license with the same License Elements, this version or later, or a BY-SA Compatible License.
2. You must include the text of, or the URI or hyperlink to, the Adapter's License You apply. You may satisfy this condition in any reasonable manner based on the medium, means, and

context in which You Share Adapted Material.

3. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, Adapted Material that restrict exercise of the rights granted under the Adapter's License You apply.

#### Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

- a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;
- b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material,  
  
including for purposes of Section 3(b); and
- c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

#### Section 5 -- Disclaimer of Warranties and Limitation of Liability.

- a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.
- b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES,

COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.

- c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

#### Section 6 -- Term and Termination.

- a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.
- b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:
  - 1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or
  - 2. upon express reinstatement by the Licensor.

For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

- c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.
- d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

#### Section 7 -- Other Terms and Conditions.

- a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.
- b. Any arrangements, understandings, or agreements regarding the Licensed Material not stated herein are separate from and

independent of the terms and conditions of this Public License.

Section 8 -- Interpretation.

- a. For the avoidance of doubt, this Public License does not, and shall not be interpreted to, reduce, limit, restrict, or impose conditions on any use of the Licensed Material that could lawfully be made without permission under this Public License.
- b. To the extent possible, if any provision of this Public License is deemed unenforceable, it shall be automatically reformed to the minimum extent necessary to make it enforceable. If the provision cannot be reformed, it shall be severed from this Public License without affecting the enforceability of the remaining terms and conditions.
- c. No term or condition of this Public License will be waived and no failure to comply consented to unless expressly agreed to by the Licensor.
- d. Nothing in this Public License constitutes or may be interpreted as a limitation upon, or waiver of, any privileges and immunities that apply to the Licensor or You, including from the legal processes of any jurisdiction or authority.

=====

Creative Commons is not a party to its public licenses. Notwithstanding, Creative Commons may elect to apply one of its public licenses to material it publishes and in those instances will be considered the "Licensor." Except for the limited purpose of indicating that material is shared under a Creative Commons public license or as otherwise permitted by the Creative Commons policies published at [creativecommons.org/policies](http://creativecommons.org/policies), Creative Commons does not authorize the use of the trademark "Creative Commons" or any other trademark or logo of Creative Commons without its prior written consent including, without limitation, in connection with any unauthorized modifications to any of its public licenses or any other arrangements, understandings, or agreements concerning use of licensed material. For the avoidance of doubt, this paragraph does not form part of the public licenses.

Creative Commons may be contacted at [creativecommons.org](http://creativecommons.org).  
The MIT License (MIT)

Copyright (c) 2017 Yasuhiro Matsumoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Copyright (c) 2012 fsnotify Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2015 Microsoft

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004



## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally

submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Mozilla Public License Version 2.0

=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

### 1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

### 1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

-----

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if

permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

-----

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work



You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

#### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

#### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

\* \*  
\* 6. Disclaimer of Warranty \*  
\* ----- \*  
\* \*  
\* Covered Software is provided under this License on an "as is" \*  
\* basis, without warranty of any kind, either expressed, implied, or \*  
\* statutory, including, without limitation, warranties that the \*  
\* Covered Software is free of defects, merchantable, fit for a \*  
\* particular purpose or non-infringing. The entire risk as to the \*  
\* quality and performance of the Covered Software is with You. \*  
\* Should any Covered Software prove defective in any respect, You \*  
\* (not any Contributor) assume the cost of any necessary servicing, \*  
\* repair, or correction. This disclaimer of warranty constitutes an \*  
\* essential part of this License. No use of any Covered Software is \*  
\* authorized under this License except under this disclaimer. \*  
\* \*  
\* \*

\*\*\*\*\*

\*\*\*\*\*

\* \*

\* 7. Limitation of Liability \*

\* ----- \*

\* \*

\* Under no circumstances and under no legal theory, whether tort \*

\* (including negligence), contract, or otherwise, shall any \*

\* Contributor, or anyone who distributes Covered Software as \*

\* permitted above, be liable to You for any direct, indirect, \*

\* special, incidental, or consequential damages of any character \*

\* including, without limitation, damages for lost profits, loss of \*

\* goodwill, work stoppage, computer failure or malfunction, or any \*

\* and all other commercial damages or losses, even if such party \*

\* shall have been informed of the possibility of such damages. This \*

\* limitation of liability shall not apply to liability for death or \*

\* personal injury resulting from such party's negligence to the \*

\* extent applicable law prohibits such limitation. Some \*

\* jurisdictions do not allow the exclusion or limitation of \*

\* incidental or consequential damages, so this exclusion and \*

\* limitation may not apply to You. \*

\* \*

\*\*\*\*\*

## 8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions.

Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or

publish new versions of this License. Each version will be given a distinguishing version number.

#### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

#### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

#### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

##### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

##### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner

or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

MIT License

Copyright (c) Microsoft Corporation. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy



of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

The MIT License (MIT)

Copyright (c) 2012-2015 Ugorji Nwoke.

All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including

the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each



Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2015, Google Inc  
Copyright 2018, GoGo Authors

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2014-2018 The Docker & Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015-Present CloudFoundry.org Foundation, Inc. All Rights Reserved.

This project contains software that is Copyright (c) 2015 Pivotal Software, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

This project may include a number of subcomponents with separate  
copyright notices and license terms. Your use of these subcomponents  
is subject to the terms and conditions of each subcomponent's license,  
as noted in the LICENSE file.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a  
copyright notice that is included in or attached to the work  
(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2015 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Docker

Copyright 2012-2017 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

This product contains software (<https://github.com/creack/pty>) developed by Keith Rarick, licensed under the MIT License.

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,



publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016-2018 Docker Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Samuel Stauffer <samuel@descolada.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the

names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2017 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2014 CloudFlare Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Tim Heckman

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of linode-netint nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Open Source Initiative OSI - The MIT License (MIT):Licensing

The MIT License (MIT)

Copyright (c) 2013 Ralph Caraveo (deckarep@gmail.com)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

runc

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<http://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <http://www.bis.doc.gov>

See also <http://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2014 Philip Hofer

Portions Copyright (c) 2009 The Go Authors (license at <http://golang.org>) where indicated

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 Honza Pokorny

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

MIT License

Copyright (c) 2017 Gal Ben-Haim

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2010 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,



DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

AWS SDK for Go

Copyright 2015 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Copyright 2014-2015 Stripe, Inc.

The MIT License (MIT)

Copyright (c) 2013 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright The containerd Authors

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, The GoGo Authors. All rights reserved.

Protocol Buffers for Go with Gadgets

Go support for Protocol Buffers - Google's data interchange format

Copyright 2010 The Go Authors. All rights reserved.

<https://github.com/golang/protobuf>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2009,2014 Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and



(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

Copyright (c) 2016, opentracing-contrib

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of go-stdlib nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Extensions of the original work are copyright (c) 2011 Miek Gieben

As this is fork of the official Go code the same license applies:

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work

(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses

granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]"

replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2012 Alex Ogier. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



The MIT License (MIT)

Copyright (c) 2013 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2015 James Saryerwinnie

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2013 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 Taihei Morikuni

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2018 gotest.tools authors

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

Copyright 2012 Matt T. Proud (matt.proud@gmail.com)

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:



- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2014-2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

Copyright (c) 2012, 2013 Ugorji Nwoke.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2015, Dave Cheney <dave@cheney.net>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright (c) 2014, OmniTI Computer Consulting, Inc.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Mitchell Hashimoto

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT

Copyright 2017 Tnis Tiigi <tonistiigi@gmail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF



MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Data model artifacts for Prometheus.

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions,

annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

## 2. Grant of Copyright License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

## 3. Grant of Patent License.

Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

## 4. Redistribution.

You may reproduce and distribute copies of the Work or Derivative Works thereof

in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

#### 5. Submission of Contributions.

Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

#### 6. Trademarks.

This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

#### 7. Disclaimer of Warranty.

Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

#### 8. Limitation of Liability.

In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

#### 9. Accepting Warranty or Additional Liability.

While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2016 The Linux Foundation.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at



<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2011 Keith Rarick

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2014 Alan Shreve

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Prometheus instrumentation library for Go applications

Copyright 2012-2015 The Prometheus Authors

This product includes software developed at

SoundCloud Ltd. (<http://soundcloud.com/>).

The following components are included in this product:

perks - a fork of <https://github.com/bmizerany/perks>

<https://github.com/beorn7/perks>

Copyright 2013-2015 Blake Mizerany, Bjrn Rabenstein

See <https://github.com/beorn7/perks/blob/master/README.md> for license details.

Go support for Protocol Buffers - Google's data interchange format

<http://github.com/golang/protobuf/>

Copyright 2010 The Go Authors

See source code for license details.

Support for streaming Protocol Buffer messages for the Go language (golang).

[https://github.com/matttproud/golang\\_protobuf\\_extensions](https://github.com/matttproud/golang_protobuf_extensions)

Copyright 2013 Matt T. Proud

Licensed under the Apache License, Version 2.0

CoreOS Project

Copyright 2018 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

Copyright (c) 2013 Dario Casta. All rights reserved.

Copyright (c) 2012 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,

DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

procfs provides functions to retrieve system, kernel and process metrics from the pseudo-filesystem proc.

Copyright 2014-2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

Docker

Copyright 2012-2015 Docker, Inc.

This product includes software developed at Docker, Inc. (<https://www.docker.com>).

The following is courtesy of our legal counsel:

Use and transfer of Docker may be subject to certain restrictions by the United States and other governments.

It is your responsibility to ensure that your use and/or transfer does not violate applicable laws.

For more information, please see <https://www.bis.doc.gov>

See also <https://www.apache.org/dev/crypto.html> and/or seek legal counsel.

Copyright (c) 2015 Matthew Heon <[mheon@redhat.com](mailto:mheon@redhat.com)>

Copyright (c) 2015 Paul Moore <[pmoore@redhat.com](mailto:pmoore@redhat.com)>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2013, Georg Reinke (<guelfey at gmail dot com>), Google

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

## 1. Definitions

### 1.1. Contributor

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. Contributor Version

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. Contribution

means Covered Software of a particular Contributor.

### 1.4. Covered Software

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and

Modifications of such Source Code Form, in each case including portions thereof.

#### 1.5. Incompatible With Secondary Licenses

means

- a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or
- b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

#### 1.6. Executable Form

means any form of the work other than Source Code Form.

#### 1.7. Larger Work

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

#### 1.8. License

means this document.

#### 1.9. Licensable

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. Modifications

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. Patent Claims of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

### 1.12. Secondary License

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

### 1.13. Source Code Form

means the form of the work preferred for making modifications.

### 1.14. You (or Your)

means an individual or a legal entity exercising rights under this License. For legal entities, You includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this

License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the

terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any



liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

#### 6. Disclaimer of Warranty

Covered Software is provided under this License on an as is basis, without warranty of any kind, either expressed, implied, or statutory, including,

without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or

publish new versions of this License. Each version will be given a distinguishing version number.

## 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

## 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

## 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

### Exhibit B - Incompatible With Secondary Licenses Notice

This Source Code Form is Incompatible With Secondary Licenses, as defined by the Mozilla Public License, v. 2.0.

Copyright 2013 Suryandaru Triandana <syndtr@gmail.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are

met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions

for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2013, Patrick Mezard  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The names of its contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License, version 2.0

### 1. Definitions



1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

a. that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

b. that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether

at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

#### 1.10. "Modifications"

means any of the following:

- a. any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or
- b. any new file in Source Code Form that contains any Covered Software.

#### 1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

#### 1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- a. under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- b. under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- a. for any code that a Contributor has removed from Covered Software; or
- b. for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- c. under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its

Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- a. such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- b. You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the

Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

#### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

#### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by

some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

## 6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer.

## 7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall any Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

## 8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be

attached.

#### Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Common libraries shared by Prometheus Go components.

Copyright 2015 The Prometheus Authors

This product includes software developed at SoundCloud Ltd. (<http://soundcloud.com/>).

The MIT License (MIT)

Copyright (c) 2014 Armon Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.



The MIT License (MIT)

Copyright (c) 2016 The OpenTracing Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

(The MIT License)

Copyright (c) 2017 marvin + konsorten GmbH (open-source@konsorten.de)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2016, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above

copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
The MIT License (MIT)

Copyright (c) 2014 Simon Eskildsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2016 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2015 Vincent Batts, Raleigh, NC, USA

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2016, gRPC Ecosystem

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of grpc-opentracing nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2014 The AUTHORS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

Copyright (c) 2012-2018 Mat Ryer and Tyler Bunnell

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.



MIT License

Copyright (c) 2017 Sean Chittenden

Copyright (c) 2016 Alex Dadgar

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

Bits of Go-lang's `once.Do()` were cribbed and reused here, too.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

CoreOS Project

Copyright 2014 CoreOS, Inc

This product includes software developed at CoreOS, Inc.

(<http://www.coreos.com/>).

The MIT License (MIT)

Copyright (c) 2015 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.418 libevent 2.1.11-stable-1

### 1.418.1 Available under license :

CMake - Cross Platform Makefile Generator

Copyright 2000-2013 Kitware, Inc.

Copyright 2000-2011 Insight Software Consortium

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the names of Kitware, Inc., the Insight Software Consortium, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The above copyright and license notice applies to distributions of CMake in source and binary form. Some source files contain additional notices of original copyright by their contributors; see each source for details. Third-party software packages supplied with CMake under compatible licenses provide their own copyright notices documented in corresponding subdirectories.

-----  
CMake was initially developed by Kitware with the following sponsorship:

\* National Library of Medicine at the National Institutes of Health as part of the Insight Segmentation and Registration Toolkit (ITK).

\* US National Labs (Los Alamos, Livermore, Sandia) ASC Parallel Visualization Initiative.

\* National Alliance for Medical Image Computing (NAMIC) is funded by the National Institutes of Health through the NIH Roadmap for Medical Research, Grant U54 EB005149.

\* Kitware, Inc.

Libevent is available for use under the following license, commonly known as the 3-clause (or "modified") BSD license:

=====  
Copyright (c) 2000-2007 Niels Provos <provos@citi.umich.edu>  
Copyright (c) 2007-2012 Niels Provos and Nick Mathewson

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====  
Portions of Libevent are based on works by others, also made available by them under the three-clause BSD license above. The copyright notices are available in the corresponding source files; the license is as above. Here's a list:

log.c:  
Copyright (c) 2000 Dug Song <dugsong@monkey.org>  
Copyright (c) 1993 The Regents of the University of California.

strlcpy.c:  
Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>

win32select.c:  
Copyright (c) 2003 Michael A. Davis <mike@datanerds.net>

evport.c:  
Copyright (c) 2007 Sun Microsystems

ht-internal.h:  
Copyright (c) 2002 Christopher Clark

minheap-internal.h:

Copyright (c) 2006 Maxim Yegorushkin <maxim.yegorushkin@gmail.com>

=====

The arc4module is available under the following, sometimes called the "OpenBSD" license:

Copyright (c) 1996, David Mazieres <dm@uun.org>

Copyright (c) 2008, Damien Miller <djm@openbsd.org>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====

The Windows timer code is based on code from libutp, which is distributed under this license, sometimes called the "MIT" license.

Copyright (c) 2010 BitTorrent, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN

## THE SOFTWARE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.419 coturn 4.5.1.3

## 1.419.1 Notifications :

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

## 1.419.2 Available under license :

/\*

\* TURN Server - RFC5766 TURN Server implementation

\* Copyright (C) 2011, 2012, 2013 Citrix Systems

\*

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the project nor the names of its contributors

\* may be used to endorse or promote products derived from this software  
 \* without specific prior written permission.  
 \*  
 \* THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND  
 \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
 \* ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE  
 \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
 \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
 \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
 \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
 \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
 \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
 \* SUCH DAMAGE.  
 \*/

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

-----

```
/* =====
 * Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in
 * the documentation and/or other materials provided with the
 * distribution.
 *
 * 3. All advertising materials mentioning features or use of this
 * software must display the following acknowledgment:
 * "This product includes software developed by the OpenSSL Project
 * for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
 *
 */
```

\* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to  
 \* endorse or promote products derived from this software without  
 \* prior written permission. For written permission, please contact  
 \* openssl-core@openssl.org.  
 \*

\* 5. Products derived from this software may not be called "OpenSSL"  
 \* nor may "OpenSSL" appear in their names without prior written  
 \* permission of the OpenSSL Project.  
 \*

\* 6. Redistributions of any form whatsoever must retain the following  
 \* acknowledgment:  
 \* "This product includes software developed by the OpenSSL Project  
 \* for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"  
 \*

\* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY  
 \* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR  
 \* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR  
 \* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
 \* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT  
 \* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;  
 \* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
 \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
 \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
 \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
 \* OF THE POSSIBILITY OF SUCH DAMAGE.  
 \* =====  
 \*

\* This product includes cryptographic software written by Eric Young  
 \* (eay@cryptsoft.com). This product includes software written by Tim  
 \* Hudson (tjh@cryptsoft.com).  
 \*

\*/

Original SSLeay License

-----

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)  
 \* All rights reserved.  
 \*

\* This package is an SSL implementation written  
 \* by Eric Young (eay@cryptsoft.com).  
 \* The implementation was written so as to conform with Netscapes SSL.  
 \*

\* This library is free for commercial and non-commercial use as long as  
 \* the following conditions are adhered to. The following conditions  
 \* apply to all code found in this distribution, be it the RC4, RSA,  
 \* lhash, DES, etc., code; not just the SSL code. The SSL documentation



\* included with this distribution is covered by the same copyright terms

\* except that the holder is Tim Hudson (tjh@cryptsoft.com).

\*

\* Copyright remains Eric Young's, and as such any Copyright notices in

\* the code are not to be removed.

\* If this package is used in a product, Eric Young should be given attribution

\* as the author of the parts of the library used.

\* This can be in the form of a textual message at program startup or

\* in documentation (online or textual) provided with the package.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. All advertising materials mentioning features or use of this software

\* must display the following acknowledgement:

\* "This product includes cryptographic software written by

\* Eric Young (eay@cryptsoft.com)"

\* The word 'cryptographic' can be left out if the routines from the library

\* being used are not cryptographic related :-).

\* 4. If you include any Windows specific code (or a derivative thereof) from

\* the apps directory (application code) you must include an acknowledgement:

\* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

\*

\* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*

\* The licence and distribution terms for any publically available version or

\* derivative of this code cannot be changed. i.e. this code cannot simply be

\* copied and put under another distribution licence

\* [including the GNU Public Licence.]

\*/

# 1.420 spring-retry 1.2.5.RELEASE

## 1.420.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2006-2012 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135864284_1613618157.58/0/spring-retry-1-2-5-release-sources-1-
jar/org/springframework/retry/backoff/ExponentialRandomBackOffPolicy.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2014-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135864284_1613618157.58/0/spring-retry-1-2-5-release-sources-1-
jar/org/springframework/retry/annotation/AnnotationAwareRetryOperationsInterceptor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2006-2013 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135864284_1613618157.58/0/spring-retry-1-2-5-release-sources-1-
jar/org/springframework/classify/BinaryExceptionClassifier.java
* /opt/cola/permits/1135864284_1613618157.58/0/spring-retry-1-2-5-release-sources-1-
jar/org/springframework/retry/policy/SimpleRetryPolicy.java
* /opt/cola/permits/1135864284_1613618157.58/0/spring-retry-1-2-5-release-sources-1-
jar/org/springframework/classify/SubclassClassifier.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2016-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135864284_1613618157.58/0/spring-retry-1-2-5-release-sources-1-
jar/org/springframework/retry/annotation/CircuitBreaker.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012-2013 the original author or authors.
```

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/annotation/Recover.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/annotation/Backoff.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/annotation/EnableRetry.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2012-2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/RetryStatisticsFactory.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/StatisticsListener.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/DefaultStatisticsRepository.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/ExponentialAverageRetryStatistics.java

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/DefaultRetryStatisticsFactory.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/DefaultRetryStatistics.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/StatisticsRepository.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/stats/MutableRetryStatistics.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2006-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/interceptor/StatefulRetryOperationsInterceptor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2006-2007 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with

\* the License. You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on

\* an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the

\* specific language governing permissions and limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-

jar/org/springframework/retry/interceptor/RetryOperationsInterceptor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/interceptor/FixedKeyGenerator.java

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/CircuitBreakerRetryPolicy.java

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/ExpressionRetryPolicy.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2008 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/util/AnnotationMethodResolver.java

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-

jar/org/springframework/classify/util/MethodResolver.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/classify/util/MethodInvoker.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2014 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/interceptor/RetryInterceptorBuilder.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/annotation/RetryConfiguration.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/backoff/ThreadWaitSleeper.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/annotation/Retryable.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/interceptor/Retryable.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/classify/util/SimpleMethodInvoker.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2006-2007 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/NoBackOffPolicy.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/ExceptionClassifierRetryPolicy.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/AlwaysRetryPolicy.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/ExhaustedRetryException.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/RetryCacheCapacityExceededException.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/PatternMatchingClassifier.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/annotation/Classifier.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/BackToBackPatternClassifier.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/support/RetrySimulator.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/SoftReferenceMapRetryContextCache.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/interceptor/NewMethodArgumentsIdentifier.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/RetryPolicy.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/ClassifierSupport.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/MapRetryContextCache.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/RecoveryCallback.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/BackOffInterruptedException.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/Classifier.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/SleepingBackOffPolicy.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/policy/RetryContextCache.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/RetryStatistics.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/ObjectWaitSleeper.java
- \* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-



jar/org/springframework/retry/RetryCallback.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/support/RetrySimulation.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/interceptor/MethodArgumentsKeyGenerator.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/classify/PatternMatcher.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/RetryContext.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/policy/CompositeRetryPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/RetryListener.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/policy/TimeoutRetryPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/interceptor/MethodInvocationRecoverer.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/classify/ClassifierAdapter.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/RetryState.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/TerminatedRetryException.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/listener/RetryListenerSupport.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/backoff/Sleeper.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/backoff/BackOffContext.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/backoff/BackOffPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/policy/NeverRetryPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/RetryException.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/backoff/StatelessBackOffPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/RetryOperations.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/support/RetrySynchronizationManager.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-  
jar/org/springframework/retry/support/DefaultRetryState.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/classify/util/MethodInvokerUtils.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2006-2014 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/UniformRandomBackOffPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/context/RetryContextSupport.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/support/RetryTemplate.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/FixedBackOffPolicy.java  
\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/backoff/ExponentialBackOffPolicy.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2013-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864284\_1613618157.58/0/spring-retry-1-2-5-release-sources-1-jar/org/springframework/retry/annotation/RecoverAnnotationRecoveryHandler.java

## 1.421 opus 1.3.1

### 1.421.1 Available under license :

Copyright 2001-2011 Xiph.Org, Skype Limited, Octasic,  
Jean-Marc Valin, Timothy B. Terriberry,  
CSIRO, Gregory Maxwell, Mark Borgerding,  
Erik de Castro Lopo

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of Internet Society, IETF or IETF Trust, nor the names of specific contributors, may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS  
``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT  
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR  
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER

OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Opus is subject to the royalty-free patent licenses which are specified at:

Xiph.Org Foundation:  
<https://datatracker.ietf.org/ipr/1524/>

Microsoft Corporation:  
<https://datatracker.ietf.org/ipr/1914/>

Broadcom Corporation:  
<https://datatracker.ietf.org/ipr/1526/>

## 1.422 curl 7.62.0-DEV

### 1.422.1 Available under license :

License Mixing

=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that [GPL](<https://www.gnu.org/licenses/gpl.html>) licensed code is not allowed to be linked with code licensed under the [Original BSD license](<https://spdx.org/licenses/BSD-4-Clause.html>) (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an [exception](<https://www.gnu.org/licenses/gpl-faq.html#GPLIncompatibleLibs>). This particular problem was addressed when the [Modified BSD license](<https://opensource.org/licenses/BSD-3-Clause>) was created, which does not have the announcement clause that collides with GPL.

## libcurl

Uses an [MIT style license](<https://curl.haxx.se/docs/copyright.html>) that is very liberal.

### ## OpenSSL

(May be used for SSL/TLS support) Uses an Original BSD-style license with an announcement clause that makes it "incompatible" with GPL. You are not allowed to ship binaries that link with OpenSSL that includes GPL code (unless that specific GPL code includes an exception for OpenSSL - a habit that is growing more and more common). If OpenSSL's licensing is a problem for you, consider using another TLS library.

### ## GnuTLS

(May be used for SSL/TLS support) Uses the [LGPL](<https://www.gnu.org/licenses/lgpl.html>) license. If this is a problem for you, consider using another TLS library. Also note that GnuTLS itself depends on and uses other libs (libgcrypt and libgpg-error) and they too are LGPL- or GPL-licensed.

### ## WolfSSL

(May be used for SSL/TLS support) Uses the GPL license or a proprietary license. If this is a problem for you, consider using another TLS library.

### ## NSS

(May be used for SSL/TLS support) Is covered by the [MPL](<https://www.mozilla.org/MPL/>) license, the GPL license and the LGPL license. You may choose to license the code under MPL terms, GPL terms, or LGPL terms. These licenses grant you different permissions and impose different obligations. You should select the license that best meets your needs.

### ## mbedTLS

(May be used for SSL/TLS support) Uses the [Apache 2.0 license](<https://opensource.org/licenses/Apache-2.0>) or the GPL license. You may choose to license the code under Apache 2.0 terms or GPL terms. These licenses grant you different permissions and impose different obligations. You should select the license that best meets your needs.

### ## BoringSSL

(May be used for SSL/TLS support) As an OpenSSL fork, it has the same license as that.

### ## libressl

(May be used for SSL/TLS support) As an OpenSSL fork, it has the same license as that.

### ## c-ares

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

### ## zlib

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

### ## MIT Kerberos

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

### ## Heimdal

(May be used for GSS support) Heimdal is Original BSD licensed with the announcement clause.

### ## GNU GSS

(May be used for GSS support) GNU GSS is GPL licensed. Note that you may not distribute binary curl packages that uses this if you build curl to also link and use any Original BSD licensed libraries!

### ## libidn

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the full LGPL license text. Please properly point out what parts of the distributed package that the license addresses.

### ## OpenLDAP

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

## libssh2

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.  
COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2019, Daniel Stenberg, <daniel@haxx.se>, and many contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

## 1.423 jackson-datatype-jdk8 2.11.2

### 1.423.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of

fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any



medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and  
You must cause any modified files to carry prominent notices stating that You changed the files; and  
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or

rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## 1.424 tzlocal 4.2

### 1.424.1 Available under license :

Copyright 2011-2017 Lennart Regebro

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.425 ipmiutil 2.9.9

### 1.425.1 Available under license :

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: ipmiutil

Upstream-Contact: Andy Cress <[arcress@users.sourceforge.net](mailto:arcress@users.sourceforge.net)>

Source: <http://ipmiutil.sourceforge.net>

Comment: This COPYING file includes detail about each source file in ipmiutil

Files: \*

Copyright: 2001-2008, Intel Corporation

2009-2012, Kontron America

2013, Andy Cress <[arcress@users.sourceforge.net](mailto:arcress@users.sourceforge.net)>

License: BSD-3-clause

Files: lib/lanplus/\*

Copyright: 2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/itsol.c

Copyright: 2005 Tyan Computer Corp.

License: BSD-3-clause

Files: util/iekanalyzer.c

Copyright: 2007 Kontron Canada, Inc.

2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/md2.h

Copyright: 2003 FreeIPMI Core Team

Comment: Build does not include this file, unless 'configure --enable-gpl'

License: GPL-2.0

Files: util/AnsiTerm.cpp

Copyright: 2009 Robert Nelson <robertnelson at users.sourceforge.net>

License: BSD-2-clause

Files: util/oem\_dell.c

Copyright: 2008, Dell Inc

License: BSD-3-clause

Files: util/oem\_sun.c

Copyright: 2005 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/ifiwall.c

Copyright: 2010 Kontron America Inc.

2005 International Business Machines, Inc.

2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/ifwum.c util/ihpm.c

Copyright: 2004-2006 Kontron Canada, Inc.

2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/md5.c

Copyright: 1999, 2000, 2002 Aladdin Enterprises.

Comment: Aladdin unrestricted license is compatible with BSD-3-clause

License: Aladdin

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose,

including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

L. Peter Deutsch  
ghost@aladdin.com

License: BSD-3-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- a. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- b. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- c. Neither the name of Kontron, nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-2-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- a. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- b. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: GPL-2.0

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

A copy of the GNU General Public License is available as /usr/share/common-licenses/GPL-2 in the Debian distribution or on the World Wide Web at <http://www.gnu.org/copyleft/gpl.html>. You can also obtain it by writing to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA.

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: ipmiutil

Upstream-Contact: Andy Cress <[arcress@users.sourceforge.net](mailto:arcress@users.sourceforge.net)>

Source: <http://ipmiutil.sourceforge.net>

Comment: This package was debianized by Andy Cress on 2010-10-29, with Debian package updates by Alex Waite on 2013-06-14

Files: \*

Copyright: 2001-2008, Intel Corporation  
2009-2012, Kontron America  
2013, Andy Cress <[arcress@users.sourceforge.net](mailto:arcress@users.sourceforge.net)>

License: BSD-3-clause

Files: lib/lanplus/\*

Copyright: 2003 Sun Microsystems, Inc.  
License: BSD-3-clause

Files: util/itsol.c

Copyright: 2005 Tyan Computer Corp.  
License: BSD-3-clause

Files: util/iekanalyzer.c

Copyright: 2007 Kontron Canada, Inc.  
2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/md2.h

Copyright: 2003 FreeIPMI Core Team  
Comment: Optional to include this file, based on configure options

License: GPL-2.0

Files: util/AnsiTerm.cpp

Copyright: 2009 Robert Nelson <robertnelson at users.sourceforge.net>

License: BSD-2-clause

Files: util/oem\_dell.c

Copyright: 2008, Dell Inc

License: BSD-3-clause

Files: util/oem\_sun.c

Copyright: 2005 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/ifiwall.c

Copyright: 2010 Kontron America Inc.

2005 International Business Machines, Inc.

2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/ifwum.c util/ihpm.c

Copyright: 2004-2006 Kontron Canada, Inc.

2003 Sun Microsystems, Inc.

License: BSD-3-clause

Files: util/md5.c

Copyright: 1999, 2000, 2002 Aladdin Enterprises.

Comment: Aladdin unrestricted license is compatible with BSD-3-clause

License: Aladdin

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

L. Peter Deutsch

ghost@aladdin.com

License: BSD-3-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- a. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- b. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- c. Neither the name of Kontron, nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-2-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- a. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- b. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: GPL-2.0

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

A copy of the GNU General Public License is available as

/usr/share/common-licenses/GPL-2 in the Debian distribution or on the World Wide Web at <http://www.gnu.org/copyleft/gpl.html>. You can also obtain it by writing to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA.

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: ipmiutil

Upstream-Contact: Andy Cress <[arcress@users.sourceforge.net](mailto:arcress@users.sourceforge.net)>

Source: <http://ipmiutil.sourceforge.net>

<http://www.openmash.org/lxr/source/src/getopt.c?c=gsm>

<http://www.openssl.org/source/openssl-0.9.8x.tar.gz>

Comment: This COPYING.win covers contributed source used in Windows ipmiutil.exe

Files: getopt.c

Copyright: 1987-2001 The Regents of the University of California.

License: BSD-3-clause

Files: getopt.h

Copyright: 2007 Andy Cress <[arcress@users.sourceforge.net](mailto:arcress@users.sourceforge.net)>

License: BSD-3-clause

Files: openssl-0.9.8x/\* (libeay32.dll, ssleay32.dll binaries)

See <https://www.openssl.org/source/license.html>

Copyright: 1998-2011, The OpenSSL Project

1995-1998, Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com))

Comment:

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact [openssl-core@openssl.org](mailto:openssl-core@openssl.org).

License: OpenSSL-License and Original-SSLeay-License

License: BSD-3-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- a. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- b. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- c. Neither the name of Kontron, nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES



(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: OpenSSL-License

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment:  
"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact [openssl-core@openssl.org](mailto:openssl-core@openssl.org).
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment:  
"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,

STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
OF THE POSSIBILITY OF SUCH DAMAGE.

=====

This product includes cryptographic software written by Eric Young  
(eay@cryptsoft.com). This product includes software written by Tim  
Hudson (tjh@cryptsoft.com).

License: Original-SSLey-License

This package is an SSL implementation written  
by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as  
the following conditions are aheared to. The following conditions  
apply to all code found in this distribution, be it the RC4, RSA,  
lhash, DES, etc., code; not just the SSL code. The SSL documentation  
included with this distribution is covered by the same copyright terms  
except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in  
the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution  
as the author of the parts of the library used.

This can be in the form of a textual message at program startup or  
in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software  
must display the following acknowledgement:  
"This product includes cryptographic software written by  
Eric Young (eay@cryptsoft.com)"  
The word 'cryptographic' can be left out if the rouines from the library  
being used are not cryptographic related :-).
4. If you include any Windows specific code (or a derivative thereof) from  
the apps directory (application code) you must include an acknowledgement:  
"This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND

ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence

[including the GNU Public Licence.]

The BSD License

Copyright (c) 2003, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- a.. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- b.. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- c.. Neither the name of Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.426 poco 1.9.2-3ubuntu3

## 1.426.1 Available under license :

Guenter Obiltschnig  
Alex Fabijanic  
Peter Schojer  
Ferdinand Beyer  
Krzysztof Burghardt  
Claus Dabringer  
Caleb Epstein  
Eran Hammer-Lahav  
Chris Johnson  
Sergey Kholodilov  
Ryan Kraay  
Larry Lewis  
Andrew J. P. Maclean  
Andrew Marlow  
Paschal Mushubi  
Jiang Shan  
David Shawley  
Sergey Skorokhodov  
Tom Tan  
Sergey N. Yatskevich  
Marc Chevrier  
Philippe Cuvillier  
Marian Krivos  
Franky Braem  
Philip Prindeville  
Anton Yabchinskiy  
Rangel Reale  
Fabrizio Duhem  
Patrick White  
Mike Naquin  
Roger Meier  
Mathaus Mendel  
Arturo Castro  
Adrian Imboden  
Matej Knopp  
Patrice Tarabbia  
Lucas Clemente  
Karl Reid  
Pascal Bach  
Cristian Thiago Moecke  
Sergei Nikulov  
Aaron Kaluszka  
Iyed Bennour  
Scott Davis  
Kristin Cowalcijk  
Yuval Kashtan  
Christopher Baker

Scott Davis  
Jeff Adams  
Martin Osborne  
Bjrn Schramke  
Francis Andre

Note about WCELIBCEX files copyright.

File copyright is held by a file author.

Files created for the first version of the WCELIBCEX project are copyrighted by (c) 2006 Taxus SI Ltd., <http://www.taxussi.com.pl>

See comment in header of source files for more details.

See LICENSE.txt for license agreement.

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-----  
Note:

Individual files contain the following tag instead of the full license text.

SPDX-License-Identifier: BSL-1.0

This enables machine processing of license information based on the SPDX License Identifiers that are here available: <http://spdx.org/licenses/>  
WCELIBCEX - Windows CE C Library Extensions

The source code of the WCELIBCEX library is licensed under MIT License:

<http://opensource.org/licenses/mit-license.php>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.427 databases 0.5.5

### 1.427.1 Available under license :

No license file was found, but licenses were detected in source scan.

"License :: OSI Approved :: BSD License",

Found in path(s):

\* /opt/cola/permits/1291445530\_1647855595.89/0/databases-0-5-5-tar-gz/databases-0.5.5/setup.py

No license file was found, but licenses were detected in source scan.

*Databases is [BSD](https://github.com/encode/databases/blob/master/LICENSE.md) licensed code. Designed & built in Brighton, England.*

Found in path(s):

\* /opt/cola/permits/1291445530\_1647855595.89/0/databases-0-5-5-tar-gz/databases-0.5.5/README.md

No license file was found, but licenses were detected in source scan.

Metadata-Version: 2.1

Name: databases

Version: 0.5.5

Summary: Async database support for Python.

Home-page: <https://github.com/encode/databases>

Author: Tom Christie

Author-email: tom@tomchristie.com

License: BSD

Description: # Databases

```
<p>

</p>
```

Databases gives you simple asyncio support for a range of databases.

It allows you to make queries using the powerful [SQLAlchemy Core][sqlalchemy-core] expression language, and provides support for PostgreSQL, MySQL, and SQLite.

Databases is suitable for integrating against any async Web framework, such as [Starlette][starlette], [Sanic][sanic], [Responder][responder], [Quart][quart], [aiohttp][aiohttp], [Tornado][tornado], or [FastAPI][fastapi].

**\*\*Documentation\*\*:** [https://www.encode.io/databases/](https://www.encode.io/databases/)

**\*\*Requirements\*\*:** Python 3.6+

---

## Installation

```
```shell
$ pip install databases
```
```

You can install the required database drivers with:

```
```shell
$ pip install databases[postgresql]
$ pip install databases[mysql]
$ pip install databases[sqlite]
```
```

Default driver support is provided using one of [asyncpg][asyncpg], [aiomysql][aiomysql], or [aiosqlite][aiosqlite].

You can also use other database drivers supported by `databases`:

```
```shel
```

```
$ pip install databases[postgresql+aiopg]
$ pip install databases[mysql+asyncmy]
...

```

Note that if you are using any synchronous SQLAlchemy functions such as `engine.create_all()` or `[alembic][alembic]` migrations then you still have to install a synchronous DB driver: `[psycopg2][psycopg2]` for PostgreSQL and `[pymysql][pymysql]` for MySQL.

Quickstart

For this example we'll create a very simple SQLite database to run some queries against.

```
```shell
$ pip install databases[sqlite]
$ pip install ipython
...

```

We can now run a simple example from the console.

Note that we want to use `ipython` here, because it supports using `await` expressions directly from the console.

```
```python
# Create a database instance, and connect to it.
from databases import Database
database = Database('sqlite:///example.db')
await database.connect()

# Create a table.
query = """CREATE TABLE HighScores (id INTEGER PRIMARY KEY, name VARCHAR(100), score
INTEGER)"""
await database.execute(query=query)

# Insert some data.
query = "INSERT INTO HighScores(name, score) VALUES (:name, :score)"
values = [
    {"name": "Daisy", "score": 92},
    {"name": "Neil", "score": 87},
    {"name": "Carol", "score": 43},
]
await database.execute_many(query=query, values=values)

#Run a database query.
query = "SELECT * FROM HighScores"
rows = await database.fetch_all(query=query)

```



```
print('High Scores:', rows)
'''
```

Check out the documentation on [making database queries](https://www.encode.io/databases/database_queries/) for examples of how to start using databases together with SQLAlchemy core expressions.

— —

Databases is a

BSD licensed code. Designed & built in Brighton, England.

[sqlalchemy-core]: <https://docs.sqlalchemy.org/en/latest/core/>

[sqlalchemy-core-tutorial]: <https://docs.sqlalchemy.org/en/latest/core/tutorial.html>

[alembic]: <https://alembic.sqlalchemy.org/en/latest/>

[psycopg2]: <https://www.psycopg.org/>

[pymysql]: <https://github.com/PyMySQL/PyMySQL>

[asyncpg]: <https://github.com/MagicStack/asyncpg>

[aiomysql]: <https://github.com/aio-libs/aiomysql>

[aiosqlite]: <https://github.com/jreese/aiosqlite>

[starlette]: <https://github.com/encode/starlette>

[sanic]: <https://github.com/huge-success/sanic>

[responder]: <https://github.com/kennethreitz/responder>

[quart]: <https://gitlab.com/pgjones/quart>

[aiohttp]: <https://github.com/aio-libs/aiohttp>

[tornado]: <https://github.com/tornadoweb/tornado>

[fastapi]: <https://github.com/tiangolo/fastapi>

Platform: UNKNOWN

Classifier: Development Status :: 3 - Alpha

Classifier: Environment :: Web Environment

Classifier: Intended Audience :: Developers

Classifier: License :: OSI Approved :: BSD License

Classifier: Operating System :: OS Independent

Classifier: Topic :: Internet :: WWW/HTTP

Classifier: Programming Language :: Python :: 3

Classifier: Programming Language :: Python :: 3.6

Classifier: Programming Language :: Python :: 3.7

Classifier: Programming Language :: Python :: 3.8

Classifier: Programming Language :: Python :: 3.9

Classifier: Programming Language :: Python :: 3.10

Classifier: Programming Language :: Python :: 3 :: Only

Requires-Python: >=3.6

Description-Content-Type: text/markdown

Provides-Extra: postgresql

Provides-Extra: mysql

Provides-Extra: mysql+asyncmy

Provides-Extra: sqlite

Provides-Extra: postgresql+aiopg

Found in path(s):

* /opt/cola/permits/1291445530_1647855595.89/0/databases-0-5-5-tar-gz/databases-0.5.5/PKG-INFO

* /opt/cola/permits/1291445530_1647855595.89/0/databases-0-5-5-tar-gz/databases-0.5.5/databases.egg-info/PKG-INFO

1.428 spring-context 5.2.20.RELEASE

1.428.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/MapBindingResult.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ImportSelector.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/DefaultManagedTaskExecutor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/AbstractBindingResult.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ScopedProxyMode.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/support/AbstractValueAdaptingCache.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/AbstractResourceBasedMessageSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/DeferredImportSelector.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/jmx/support/RegistrationPolicy.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/Configuration.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/concurrent/DefaultManagedTaskScheduler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/validation/beanvalidation/MethodValidationInterceptor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/AbstractApplicationEventMulticaster.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/concurrent/ConcurrentMapCache.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/AutoProxyRegistrar.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/number/money/Jsr354NumberFormatAnnotationFormatterFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/FullyQualifiedAnnotationBeanNameGenerator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/annotation/ScheduledAnnotationBeanPostProcessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/Bean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scripting/groovy/GroovyScriptFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/concurrent/ConcurrentTaskExecutor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/expression/StandardBeanExpressionResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/validation/AbstractErrors.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/validation/beanvalidation/MethodValidationPostProcessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ConfigurationClassParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ScannedGenericBeanDefinition.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ejb/config/AbstractJndiLocatingBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ContextAnnotationAutowireCandidateResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/support/SimpleThreadScope.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/validation/BindException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ConfigurationCondition.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/support/DefaultFormattingConversionService.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/scheduling/concurrent/ThreadPoolTaskExecutor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/support/SimpleCacheManager.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/Condition.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/support/NoOpCache.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/index/CandidateComponentsIndex.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/support/NoOpCacheManager.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/interceptor/CacheAspectSupport.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ComponentScan.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/ assembler/InterfaceBasedMBeanInfoAssembler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/AnnotationConfigApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/ConfigurableApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/config/TaskExecutorFactoryBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/LoadTimeWeavingConfiguration.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/PropertySource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/MBeanExportConfiguration.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ConditionContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/metadata/AbstractJmxAttribute.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/concurrent/ConcurrentMapCacheManager.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/annotation/ManagedAttribute.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/AnnotationBeanNameGenerator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/support/PostProcessorRegistrationDelegate.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ConfigurationClassBeanDefinitionReader.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/concurrent/ExecutorConfigurationSupport.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/support/AbstractRefreshableApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/cache/interceptor/SimpleKey.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2009 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/LifecycleProcessor.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2019 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

/**

* {@link FactoryBean} that obtains a WebSphere {@link javax.management.MBeanServer}

* reference through WebSphere's proprietary {@code AdminServiceFactory} API,

* available on WebSphere 5.1 and higher.

*

* <p>Exposes the {@code MBeanServer} for bean references.

*

* <p>This {@code FactoryBean} is a direct alternative to {@link MBeanServerFactoryBean},

* which uses standard JMX 1.2 API to access the platform's {@link MBeanServer}.

```
*
* <p>See the javadocs for WebSphere's
* <a
href="https://www.ibm.com/support/knowledgecenter/SSEQTJ_9.0.0/com.ibm.websphere.javadoc.doc/web/apidocs
/com/ibm/websphere/management/AdminServiceFactory.html">{ @code AdminServiceFactory }</a>
* and
* <a
href="https://www.ibm.com/support/knowledgecenter/SSEQTJ_9.0.0/com.ibm.websphere.javadoc.doc/web/apidocs
/com/ibm/websphere/management/MBeanFactory.html">{ @code MBeanFactory }</a>.
*
* @author Juergen Hoeller
* @author Rob Harrop
* @since 2.0.3
* @see javax.management.MBeanServer
* @see MBeanServerFactoryBean
*/
```

Found in path(s):

```
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/support/WebSphereMBeanServerFactoryBean.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2005 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/metadata/ManagedOperation.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2014 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
```

* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/AnnotationFormatterFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/annotation/Validated.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/BasicOperation.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/MessageSourceResourceBundleLocator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/ContextLifecycleScheduledTaskRegistrar.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/PropertySources.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/ApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AsyncConfigurerSupport.java

No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/cache/interceptor/SimpleKeyGenerator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/standard/MonthDayFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/rmi/RmiClientInterceptorUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/config/AbstractPropertyLoadingBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/interceptor/CacheEvaluationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scripting/bsh/BshScriptFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/Parser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/Primary.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/annotation/ManagedNotifications.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/annotation/SchedulingConfiguration.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/config/ExecutorBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ScopeMetadataResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/TaskScheduler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jndi/JndiPropertySource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/support/CompositeCacheManager.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/config/ScheduledTasksBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/annotation/Caching.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/config/PropertyOverrideBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/Printer.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jndi/JndiLocatorDelegate.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scripting/support/StandardScriptUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/standard/YearMonthFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/standard/TemporalAccessorParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/annotation/CacheEvict.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/scripting/groovy/GroovyObjectCustomizer.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/support/GenericXmlApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/standard/TemporalAccessorPrinter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/RemoteInvocationUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/standard/DurationFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/interceptor/KeyGenerator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/annotation/Schedules.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/annotation/Cacheable.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/standard/PeriodFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/support/FormatterPropertyEditorAdapter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/instrument/classloading/weblogic/WebLogicLoadTimeWeaver.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2017 the original author or authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/ModelMapExtensions.kt
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/ModelExtensions.kt
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.

```

*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
*   https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Indicates that a component is only eligible for registration when all
* { @linkplain #value specified conditions } match.
*
* <p>A <em>condition</em> is any state that can be determined programmatically
* before the bean definition is due to be registered (see { @link Condition } for details).
*
* <p>The { @code @Conditional } annotation may be used in any of the following ways:
* <ul>
* <li>as a type-level annotation on any class directly or indirectly annotated with
* { @code @Component }, including { @link Configuration @Configuration } classes</li>
* <li>as a meta-annotation, for the purpose of composing custom stereotype
* annotations</li>
* <li>as a method-level annotation on any { @link Bean @Bean } method</li>
* </ul>
*
* <p>If a { @code @Configuration } class is marked with { @code @Conditional },
* all of the { @code @Bean } methods, { @link Import @Import } annotations, and
* { @link ComponentScan @ComponentScan } annotations associated with that
* class will be subject to the conditions.
*
* <p><strong>NOTE</strong>: Inheritance of { @code @Conditional } annotations
* is not supported; any conditions from superclasses or from overridden
* methods will not be considered. In order to enforce these semantics,
* { @code @Conditional } itself is not declared as
* { @link java.lang.annotation.Inherited @Inherited }; furthermore, any
* custom <em>composed annotation</em> that is meta-annotated with
* { @code @Conditional } must not be declared as { @code @Inherited }.
*
* @author Phillip Webb
* @author Sam Brannen
* @since 4.0
* @see Condition
*/

```

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Conditional.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2015 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/ManagedNotification.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/SpringConstraintValidatorFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/MonthDayFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/ScriptEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/AnnotationDrivenBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/CacheConfig.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Role.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/StandardScriptEvalException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/number/money/CurrencyUnitFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/ManagedOperationParameters.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/number/PercentStyleFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/EventListenerFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/RemoteTimeoutException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/YearMonthFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/PayloadApplicationEvent.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/PeriodFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/ManagedOperationParameter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/ManagedMetric.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ComponentScans.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/ManagedOperation.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/ManagedResource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/DurationFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/config/LangNamespaceHandler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/support/CronTrigger.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ImportResource.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2016 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

/**

* Abstract the invocation of a cache operation.

*

* <p>Does not provide a way to transmit checked exceptions but

* provide a special exception that should be used to wrap any

* exception that was thrown by the underlying invocation.

* Callers are expected to handle this issue type specifically.

*
* @author Stephane Nicoll
* @since 4.1
*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheOperationInvoker.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2013 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/DateTimeParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/FilterType.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Description.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/CustomizableThreadFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/ReadableInstantPrinter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/MessageSourceResourceBundle.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/LocalDateParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/LocalDateTimeParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/ReadablePartialPrinter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/i18n/TimeZoneAwareLocaleContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/validation/beanvalidation/OptionalValidatorFactoryBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/joda/MillisecondInstantPrinter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/i18n/LocaleContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/datetime/joda/LocalTimeParser.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2011 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/ApplicationEventPublisherAware.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ImportAware.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ConflictingBeanDefinitionException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/notification/NotificationPublisherAware.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2021 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ConfigurationClassEnhancer.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/CommonAnnotationBeanPostProcessor.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ClassPathScanningCandidateComponentProvider.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Lazy.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ComponentScanAnnotationParser.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/annotation/DateTimeFormat.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/config/AnnotationDrivenCacheBeanDefinitionParser.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ui/ConcurrentModel.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/CachePut.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/SpringValidatorAdapter.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ConfigurationClassPostProcessor.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/support/BindingAwareModelMap.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/AbstractApplicationContext.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/support/BindingAwareConcurrentModel.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/SourceFilteringListener.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ConfigurationClassUtils.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/LocalValidatorFactoryBean.java
 - * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/index/CandidateComponentsIndexLoader.java
- No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2017 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.

- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/EmbeddedValueResolutionSupport.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/AnnotatedElementKey.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/IntervalTask.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/FixedRateTask.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/number/CurrencyStyleFormatter.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/CronTask.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AnnotationAsyncExecutionInterceptor.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AsyncConfigurer.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembly/MethodExclusionMBeanInfoAssembler.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ConcurrentTaskScheduler.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/SimpleInstrumentableClassLoader.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/TriggerTask.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/RmiProxyFactoryBean.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/BeanFactoryCacheOperationSourceAdvisor.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheInterceptor.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/config/LoadTimeWeaverBeanDefinitionParser.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiAccessor.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/DateTimeContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/StaticScriptSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ClassPathXmlApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/NamedCacheResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/stereotype/Service.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AspectJAutoProxyRegistrar.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/NotificationListenerBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/ScriptFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/support/NullValue.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/BeanFactoryAccessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ScheduledExecutorTask.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/AbstractXmlApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/DateTimeFormatterFactoryBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/config/CacheNamespaceHandler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/NotificationListenerHolder.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ConversionServiceFactoryBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/AbstractRefreshableConfigApplicationContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/tomcat/TomcatLoadTimeWeaver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/metadata/ManagedMetric.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/DefaultMessageCodesResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/support/MethodInvokingRunnable.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/metadata/ManagedResource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ejb/access/SimpleRemoteSlsbInvokerInterceptor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/EventPublicationInterceptor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/access/MBeanProxyFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/support/FormattingConversionServiceFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/naming/MetadataNamingStrategy.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/StandardScriptEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/MapAccessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/SimpleLoadTimeWeaver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/Task.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/naming/ObjectNamingStrategy.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/Jsr310DateTimeFormatAnnotationFormatterFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/JodaDateTimeFormatAnnotationFormatterFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/EnvironmentAccessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/CustomValidatorBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/metadata/JmxMetadataUtils.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/weaving/LoadTimeWeaverAwareProcessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/groovy/GroovyScriptEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/number/NumberStyleFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/metadata/ManagedNotification.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/weblogic/WebLogicClassPreProcessorAdapter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/config/MBeanExportBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/TypeMismatchNamingException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ReschedulingRunnable.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/FixedDelayTask.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/bsh/BshScriptEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/ScheduledTask.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/concurrent/ConcurrentMapCacheFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/DateTimeFormatterFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/MessageSourceResolvable.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/glassfish/GlassFishLoadTimeWeaver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/DateTimeFormatAnnotationFormatterFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/SimpleCacheErrorHandler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ejb/access/LocalSlsbInvokerInterceptor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/SimpleThrowawayClassLoader.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/websphere/WebSphereLoadTimeWeaver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/DateTimeFormatterFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/access/ConnectorDelegate.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AnnotationScopeMetadataResolver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheErrorHandler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/number/money/MonetaryAmountFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/support/SimpleValueWrapper.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/stereotype/Repository.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiObjectTargetSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/JodaTimeContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/stereotype/Controller.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/DateFormatRegistrar.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembler/AbstractMBeanInfoAssembler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/EnvironmentAware.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/JodaTimeFormatterRegistrar.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/RemoteExporter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/BeanExpressionContextAccessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/i18n/SimpleLocaleContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/JsR330ScopeMetadataResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ApplicationListenerDetector.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/stereotype/Component.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/MetricType.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/RemoteAccessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/stereotype/Indexed.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ui/ExtendedModelMap.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/DelegatingMessageSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/i18n/SimpleTimeZoneAwareLocaleContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ejb/access/AbstractRemoteSlsbInvokerInterceptor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/number/NumberFormatAnnotationFormatterFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/ScheduledTaskHolder.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/JndiRmiProxyFactoryBean.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2007 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/remoting/support/RemoteInvocationExecutor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/RemoteInvocationFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/metadata/ManagedOperationParameter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/SpringModelMBean.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2019 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/interceptor/AbstractCacheInvoker.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jndi/support/SimpleJndiBeanFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/instrument/classloading/InstrumentationLoadTimeWeaver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/ModelMap.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/annotation/Async.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ParserStrategyUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/cache/interceptor/CompositeCacheOperationSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/EventExpressionEvaluator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/ApplicationEventMulticaster.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/support/TaskUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/support/MBeanServerConnectionFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/SpringCacheAnnotationParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AnnotationConfigRegistry.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/SimpleApplicationEventMulticaster.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/ApplicationListener.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/MessageSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/jboss/JBossLoadTimeWeaver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/DataBinder.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/ApplicationListenerMethodAdapter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/ObjectError.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/EventListenerMethodProcessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/annotation/AnnotationJmxAttributeSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ResourceBundleMessageSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/InstantFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/MBeanServerFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/AnnotationCacheOperationSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/BeanDefinitionDsl.kt

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/ScheduledTaskRegistrar.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/support/AbstractCacheManager.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ImportBeanDefinitionRegistrar.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AnnotatedBeanDefinitionReader.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/weaving/DefaultContextLoadTimeWeaver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ui/Model.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/EventListener.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/access/MBeanClientInterceptor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/GenericApplicationContextExtensions.kt

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/StaticApplicationContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/DefaultMessageSourceResolvable.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/SmartLifecycle.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ConfigurationClass.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/ConnectorServerFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AnnotationConfigApplicationContextExtensions.kt

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheOperationSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/ApplicationEventPublisher.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/Scheduled.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheProxyFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/CacheManager.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ClassPathBeanDefinitionScanner.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/ShadowingClassLoader.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/AbstractMessageSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/Cache.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/GenericApplicationContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheOperationSourcePointcut.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ReloadableResourceBundleMessageSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ApplicationContextAwareProcessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/config/PropertyPlaceholderBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiTemplateEditor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/CacheAnnotationParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/ApplicationEvent.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/StandardScriptFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Import.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/StaticMessageSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/ResourceLoaderAware.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2012 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/RemoteConnectFailureException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/MBeanExportException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/SchedulerBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/EnableMBeanExport.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/RemoteLookupFailureException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/RmiClientInterceptor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/soap/SoapFaultException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/LocaleContextMessageInterpolator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/RefreshableScriptTargetSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/FormatterRegistrar.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/jmx/access/MBeanConnectFailureException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/ContextStoppedEvent.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/ApplicationContextException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/RemoteInvocationTraceInterceptor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/ContextClosedEvent.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/LoadTimeWeavingConfigurer.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/validation/BindingResultUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/NoSuchMessageException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/context/ThemeSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/naming/SelfNaming.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/ScopeMetadata.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/SchedulingAwareRunnable.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/instrument/classloading/LoadTimeWeaver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ejb/access/EjbAccessException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/support/DelegatingErrorHandlingRunnable.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jndi/JndiLookupFailureException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ejb/config/JeeNamespaceHandler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/UnableToRegisterMBeanException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ejb/config/LocalStatelessSessionBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/context/HierarchicalThemeSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/metadata/JmxAttributeSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/Trigger.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/config/SpringConfiguredBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/rmi/CodebaseAwareObjectInputStream.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/validation/MessageCodesResolver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/notification/UnableToSendNotificationException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/ApplicationContextEvent.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/HierarchicalMessageSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/rmi/RmiInvocationHandler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/ContextRefreshedEvent.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/number/AbstractNumberFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/annotation/AnnotationMBeanExporter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/config/TaskNamespaceHandler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ejb/config/RemoteStatelessSessionBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/assembler/AutodetectCapableMBeanInfoAssembler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/context/Theme.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/ApplicationContextAware.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/Phased.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/assembler/MBeanInfoAssembler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/access/MBeanInfoRetrievalException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/weaving/LoadTimeWeaverAware.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/DefaultRemoteInvocationFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/rmi/RmiBasedExporter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/event/ContextStartedEvent.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ejb/config/JndiLookupBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/context/support/SimpleTheme.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/validation/BindingErrorProcessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/RemoteInvocationFailureException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-

jar/org/springframework/remoting/RemoteProxyFailureException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/DefaultRemoteInvocationExecutor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/access/InvalidInvocationException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/TriggerContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/config/ContextNamespaceHandler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/format/Formatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/UrlBasedRemoteAccessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/access/InvocationFailureException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scheduling/SchedulingException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/JmxException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/scripting/ScriptSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/MBeanExporterListener.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/annotation/AnnotationConfigBeanDefinitionParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/context/support/LiveBeansViewMBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/MBeanServerNotFoundException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/remoting/support/RemoteInvocationBasedAccessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/ui/context/support/UiApplicationContextUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-
jar/org/springframework/jmx/export/metadata/InvalidMetadataException.java

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2018 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,

- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/naming/IdentityNamingStrategy.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AsyncAnnotationBeanPostProcessor.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/Errors.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/SmartApplicationListener.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/CachingConfigurationSelector.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/SimpleHttpServerFactoryBean.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/notification/NotificationPublisher.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/JmxUtils.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/MessageSourceSupport.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiLocatorSupport.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/naming/KeyNamingStrategy.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/FieldError.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AsyncAnnotationAdvisor.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/BeanMethod.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ConfigurationMethod.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ejb/access/LocalStatelessSessionProxyFactoryBean.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/FileSystemXmlApplicationContext.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/RemoteAccessException.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/Lifecycle.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ejb/access/SimpleRemoteStatelessSessionProxyFactoryBean.java
- * /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheOperationExpressionEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembly/MethodNameBasedMBeanInfoAssembler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/DirectFieldBindingResult.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/MessageSourceAware.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CachePutOperation.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ejb/access/AbstractSlsbInvokerInterceptor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/beanvalidation/BeanValidationPostProcessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/EnableAsync.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ThreadPoolTaskScheduler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiObjectFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ApplicationObjectSupport.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/weaving/AspectJWeavingEnabler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/DateTimeConverters.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/GenericApplicationListener.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/ScriptCompilationException.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/notification/ModelMBeanNotificationPublisher.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/MBeanExportOperations.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/DefaultBindingErrorProcessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/MessageSourceAccessor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/weblogic/WebLogicClassLoaderAdapter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/config/ScriptBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/SmartValidator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/config/MBeanServerBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ConditionEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/access/NotificationListenerRegistrar.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ThreadPoolExecutorFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/SchedulingConfigurer.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AbstractAsyncConfiguration.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembly/AbstractReflectiveMBeanInfoAssembler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AnnotationConfigUtils.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/YearFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/config/CacheAdviceParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/DateFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/RemoteInvocation.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheOperation.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/EmbeddedValueResolverAware.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/JodaTimeConverters.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/RemotingSupport.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/support/FormattingConversionService.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Scope.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheResolver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/Profile.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/annotation/NumberFormat.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/DefaultManagedAwareThreadFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/CachingConfigurer.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembly/MetadataMBeanInfoAssembler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/DefaultEventListenerFactory.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/metadata/ManagedAttribute.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/ProxyAsyncConfiguration.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/ContextTypeMatchClassLoader.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/joda/JodaTimeContextHolder.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/EnableCaching.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/MBeanRegistrationSupport.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ForkJoinPoolFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/BeanFactoryResolver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ComponentScanBeanDefinitionParser.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/bsh/BshScriptUtils.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/CachedExpressionEvaluator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/SchedulingTaskExecutor.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/i18n/LocaleContextHolder.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/WeavingTransformer.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/concurrent/ScheduledExecutorFactoryBean.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/RemoteInvocationResult.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/DependsOn.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/config/CacheManagementConfigUtils.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/RmiInvocationWrapper.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/expression/MethodBasedEvaluationContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ui/context/support/ResourceBundleThemeSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AdviceModeImportSelector.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/NameMatchCacheOperationSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheableOperation.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/config/TaskManagementConfigUtils.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/SimpleCacheResolver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/support/CronSequenceGenerator.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/ScriptFactoryPostProcessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/support/ResourceScriptSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/BeanAnnotationHelper.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AsyncConfigurationSelector.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/DateTimeFormatterRegistrar.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/AbstractFallbackCacheOperationSource.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/DefaultLifecycleProcessor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheEvictOperation.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/config/ScriptingDefaultsParser.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/MessageCodeFormatter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/LiveBeansView.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/ProxyCachingConfiguration.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/RemoteInvocationSerializingExporter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/JndiRmiClientInterceptor.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/DateTimeFormatterFactory.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/ResourceOverridingShadowingClassLoader.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/RmiServiceExporter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/AbstractPropertyBindingResult.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/JndiRmiServiceExporter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/websphere/WebSphereClassLoaderAdapter.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/EnableLoadTimeWeaving.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/support/ObjectNameManager.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/BeanPropertyBindingResult.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiTemplate.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/MBeanExporter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/FormatterRegistry.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/DateTimeContextHolder.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/AsyncResult.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scripting/config/LangNamespaceUtils.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/GenericGroovyApplicationContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/ui/context/support/DelegatingThemeSource.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheOperationInvocationContext.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/annotation/EnableScheduling.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiCallback.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/AdviceMode.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jndi/JndiObjectLocator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/EventExpressionRootObject.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/support/PropertySourcesPlaceholderConfigurer.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/AbstractCacheResolver.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/format/datetime/standard/MonthFormatter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembly/SimpleReflectiveMBeanInfoAssembler.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/CachingConfigurerSupport.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/Validator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ScopedProxyCreator.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/support/RemoteInvocationBasedExporter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/event/GenericApplicationListenerAdapter.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ProfileCondition.java

* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/jmx/export/assembly/AbstractConfigurableMBeanInfoAssembler.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/VariableNotAvailableException.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/BindingResult.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/support/PeriodicTrigger.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/ImportRegistry.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/support/ScheduledMethodRunnable.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/scheduling/support/SimpleTriggerContext.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/remoting/rmi/RmiRegistryFactoryBean.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/interceptor/CacheExpressionRootObject.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/validation/ValidationUtils.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/ApplicationContextInitializer.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/cache/annotation/AbstractCachingConfiguration.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/ReflectiveLoadTimeWeaver.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/instrument/classloading/websphere/WebSphereClassPreDefinePlugin.java
* /opt/cola/permits/1301998088_1649311102.01/0/spring-context-5-2-20-release-sources-1-jar/org/springframework/context/annotation/EnableAspectJAutoProxy.java

1.429 click 8.1.2

1.429.1 Available under license :

No license file was found, but licenses were detected in source scan.

License :: OSI Approved :: BSD License

Found in path(s):

* /opt/cola/permits/1298235603_1649268976.82/0/click-8-1-2-tar-gz/click-8.1.2/setup.cfg

No license file was found, but licenses were detected in source scan.

Contributor Covenant Code of Conduct

Our Pledge

In the interest of fostering an open and welcoming environment, we as

contributors and maintainers pledge to making participation in our project and our community a harassment-free experience for everyone, regardless of age, body size, disability, ethnicity, sex characteristics, gender identity and expression, level of experience, education, socio-economic status, nationality, personal appearance, race, religion, or sexual identity and orientation.

Our Standards

Examples of behavior that contributes to creating a positive environment include:

- * Using welcoming and inclusive language
- * Being respectful of differing viewpoints and experiences
- * Gracefully accepting constructive criticism
- * Focusing on what is best for the community
- * Showing empathy towards other community members

Examples of unacceptable behavior by participants include:

- * The use of sexualized language or imagery and unwelcome sexual attention or advances
- * Trolling, insulting/derogatory comments, and personal or political attacks
- * Public or private harassment
- * Publishing others' private information, such as a physical or electronic address, without explicit permission
- * Other conduct which could reasonably be considered inappropriate in a professional setting

Our Responsibilities

Project maintainers are responsible for clarifying the standards of acceptable behavior and are expected to take appropriate and fair corrective action in response to any instances of unacceptable behavior.

Project maintainers have the right and responsibility to remove, edit, or reject comments, commits, code, wiki edits, issues, and other contributions that are not aligned to this Code of Conduct, or to ban temporarily or permanently any contributor for other behaviors that they deem inappropriate, threatening, offensive, or harmful.

Scope

This Code of Conduct applies both within project spaces and in public spaces when an individual is representing the project or its community. Examples of representing a project or community include using an official project e-mail address, posting via an official social media account, or acting as an appointed representative at an online or offline event. Representation of a project may be further defined and clarified by project maintainers.

Enforcement

Instances of abusive, harassing, or otherwise unacceptable behavior may be reported by contacting the project team at report@palletsprojects.com. All complaints will be reviewed and investigated and will result in a response that is deemed necessary and appropriate to the circumstances. The project team is obligated to maintain confidentiality with regard to the reporter of an incident. Further details of specific enforcement policies may be posted separately.

Project maintainers who do not follow or enforce the Code of Conduct in good faith may face temporary or permanent repercussions as determined by other members of the project's leadership.

Attribution

This Code of Conduct is adapted from the [Contributor Covenant][homepage], version 1.4, available at <https://www.contributor-covenant.org/version/1/4/code-of-conduct.html>

[homepage]: <https://www.contributor-covenant.org>

For answers to common questions about this code of conduct, see <https://www.contributor-covenant.org/faq>

Found in path(s):

* /opt/cola/permits/1298235603_1649268976.82/0/click-8-1-2-tar-gz/click-8.1.2/CODE_OF_CONDUCT.md

No license file was found, but licenses were detected in source scan.

Copyright 2014 Pallets

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Found in path(s):

* /opt/cola/permits/1298235603_1649268976.82/0/click-8-1-2-tar-gz/click-8.1.2/LICENSE.rst

No license file was found, but licenses were detected in source scan.

Including attribution to #612

Found in path(s):

* /opt/cola/permits/1298235603_1649268976.82/0/click-8-1-2-tar-gz/click-8.1.2/tests/test_formatting.py

No license file was found, but licenses were detected in source scan.

Copyright 2001-2006 Gregory P. Ward. All rights reserved.

Copyright 2002-2006 Python Software Foundation. All rights reserved.

Found in path(s):

* /opt/cola/permits/1298235603_1649268976.82/0/click-8-1-2-tar-gz/click-8.1.2/src/click/parser.py

No license file was found, but licenses were detected in source scan.

.. _contrib:

```
=====  
click-contrib  
=====
```

As the userbase of Click grows, more and more major feature requests pop up in Click's bugtracker. As reasonable as it may be for those features to be bundled with Click instead of being a standalone project, many of those requested features are either highly experimental or have unproven practical use, while potentially being a burden to maintain.

This is why `click-contrib_` exists. The GitHub organization is a collection of possibly experimental third-party packages whose featureset does not belong into Click, but also a playground for major features that may be added to Click in the future. It is also meant to coordinate and concentrate effort on writing third-party extensions for Click, and to ease the effort of searching for such extensions. In that sense it could be described as a low-maintenance alternative to extension repositories of other frameworks.

Please note that the quality and stability of those packages may be different than what you expect from Click itself. While published under a common

organization, they are still projects separate from Click.

.. _click-contrib: <https://github.com/click-contrib/>

Found in path(s):

* /opt/cola/permits/1298235603_1649268976.82/0/click-8-1-2-tar-gz/click-8.1.2/docs/contrib.rst

1.430 spring-aop 5.2.20.RELEASE

1.430.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AopNamespaceHandler.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/MethodInvocationProceedingJoinPoint.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/ExposeInvocationInterceptor.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AspectEntry.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/autoproxy/AspectJPrecedenceComparator.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/BeanFactoryAspectJAdvisorsBuilder.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/AbstractMonitoringInterceptor.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/autoproxy/AspectJAwareAdvisorAutoProxyCreator.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AdviceEntry.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AdvisorEntry.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJAdviceParameterNameDiscoverer.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/AopContext.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/ReflectiveAspectJAdvisorFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/adapt/MethodBeforeAdviceInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/PointcutEntry.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/CustomizableTraceInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/autoproxy/AbstractAdvisorAutoProxyCreator.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2012 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/scope/DefaultScopedObject.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJAopUtils.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/target/dynamic/BeanFactoryRefreshableTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/AopInvocationException.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/PointcutComponentDefinition.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/target/PoolingConfig.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-

jar/org/springframework/aop/interceptor/ConcurrencyThrottleInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/MethodBeforeAdviceAdapter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/AopProxyFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/SimpleBeanTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/UnknownAdviceTypeException.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/DynamicMethodMatcherPointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/ThreadLocalTargetSourceStats.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/LazyInitTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/scope/ScopedObject.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/config/ScopedProxyBeanDefinitionDecorator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/AfterReturningAdviceAdapter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/AdvisorAdapter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/dynamic/Refreshable.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/IntroductionInfo.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/AopConfigException.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/interceptor/DebugInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/PointcutAdvisor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/JdkRegexpMethodPointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/Pointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/ThrowsAdviceAdapter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/AfterReturningAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/AdvisorAdapterRegistrationManager.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/AopProxy.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/StaticMethodMatcherPointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-

jar/org/springframework/aop/config/SpringConfiguredBeanDefinitionParser.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/IntroductionAdvisor.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2019 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

```
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/scope/ScopedProxyUtils.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/aopalliance/intercept/Interceptor.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/interceptor/AsyncUncaughtExceptionHandler.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/support/annotation/AnnotationMatchingPointcut.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/support/RootClassFilter.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/support/AopUtils.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/framework/AdvisedSupport.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/MethodMatcher.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/framework/AopProxyUtils.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/support/NameMatchMethodPointcut.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/aspectj/TypePatternClassFilter.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/support/Pointcuts.java  
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-  
jar/org/springframework/aop/aspectj/AspectJProxyUtils.java
```

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AbstractAspectJAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/ComposablePointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/ClassFilters.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/annotation/AnnotationMethodMatcher.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/AspectMetadata.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/JdkDynamicAopProxy.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/ReflectiveMethodInvocation.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/MethodMatchers.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/ClassFilter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/ObjenesisCglibAopProxy.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/ControlFlowPointcut.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/AspectJAdvisorFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJAfterThrowingAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJMethodBeforeAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-

jar/org/springframework/aop/TargetClassAware.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/AspectJAfterAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/ProxyMethodInvocation.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/SingletonAspectInstanceFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/annotation/PrototypeAspectInstanceFactory.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2021 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/ProxyFactoryBean.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/CglibAopProxy.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/AbstractAutoProxyCreator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/annotation/AbstractAspectJAdvisorFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/DefaultAopProxyFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/aopalliance/intercept/Joinpoint.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/DefaultIntroductionAdvisor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/DynamicIntroductionAdvice.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2014 the original author or authors.

*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/NameMatchMethodPointcutAdvisor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/PrototypeTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/target/LazyInitTargetSourceCreator.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/aopalliance/intercept/Invocation.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/aopalliance/aop/Advice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/TargetSourceCreator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/aopalliance/intercept/ConstructorInterceptor.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/ProxyFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/MetadataAwareAspectInstanceFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJAfterReturningAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/target/ThreadLocalTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/aopalliance/intercept/MethodInvocation.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/SingletonMetadataAwareAspectInstanceFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/SimpleMetadataAwareAspectInstanceFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AspectJAutoProxyBeanDefinitionParser.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2006 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/InstantiationModelAwarePointcutAdvisor.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
*/

- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJAroundAdvice.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/PerformanceMonitorInterceptor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectInstanceFactory.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/DefaultBeanFactoryPointcutAdvisor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/MethodLocatingFactoryBean.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/JamonPerformanceMonitorInterceptor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/DefaultPointcutAdvisor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/AnnotationAwareAspectJAutoProxyCreator.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/DelegatePerTargetObjectIntroductionInterceptor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/AbstractExpressionPointcut.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AbstractInterceptorDrivenBeanDefinitionDecorator.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/ExpressionPointcut.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/AbstractBeanFactoryPointcutAdvisor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/SimpleTraceInterceptor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/autoproxy/InfrastructureAdvisorAutoProxyCreator.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJExpressionPointcutAdvisor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/autoproxy/BeanNameAutoProxyCreator.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/Advisor.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/SimpleBeanFactoryAwareAspectInstanceFactory.java
- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/AbstractPointcutAdvisor.java

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AspectComponentDefinition.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/interceptor/AbstractTraceInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/LazySingletonAspectInstanceFactoryDecorator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/DelegatingIntroductionInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/AbstractGenericPointcutAdvisor.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2018 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/target/CommonsPool2TargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/config/AdvisorComponentDefinition.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/target/SingletonTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/aopalliance/intercept/MethodInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/target/AbstractPoolingTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/TruePointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/support/AbstractRegexpMethodPointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/AdvisorChainFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/annotation/BeanFactoryAspectInstanceFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-

jar/org/springframework/aop/target/AbstractLazyCreationTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/dynamic/AbstractRefreshableTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/BeanFactoryAdvisorRetrievalHelper.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/config/AopConfigUtils.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/ProxyConfig.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/target/QuickTargetSourceCreator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/IntroductionAwareMethodMatcher.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/interceptor/AsyncExecutionInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/annotation/AnnotationClassFilter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/AspectJPrecedenceInformation.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/TrueMethodMatcher.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/IntroductionInfoSupport.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/DefaultAdvisorChainFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/TargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/RegexpMethodPointcutAdvisor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/annotation/InstantiationModelAwarePointcutAdvisorImpl.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/StaticMethodMatcher.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/HotSwappableTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/AbstractAdvisingBeanPostProcessor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/aopalliance/intercept/ConstructorInvocation.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/Advised.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/DefaultAdvisorAdapterRegistry.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/DefaultAdvisorAutoProxyCreator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/interceptor/SimpleAsyncUncaughtExceptionHandler.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-

jar/org/springframework/aop/aspectj/AspectJExpressionPointcut.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/AbstractSingletonProxyFactoryBean.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/aopalliance/aop/AspectException.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/EmptyTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/interceptor/ExposeBeanNameAdvisors.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/SimpleAspectInstanceFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/AfterReturningAdviceInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/annotation/NotAnAtAspectException.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/annotation/AspectJProxyFactory.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/target/AbstractBeanFactoryBasedTargetSourceCreator.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/ProxyProcessorSupport.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/ProxyCreationContext.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/AutoProxyUtils.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/RuntimeTestWalker.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/ThrowsAdviceInterceptor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/AspectJPointcutAdvisor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/AdvisorAdapterRegistry.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/scope/ScopedProxyFactoryBean.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/autoproxy/AbstractBeanFactoryAwareAdvisingPostProcessor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/MethodBeforeAdvice.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/ProxyCreatorSupport.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/DynamicMethodMatcher.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/AbstractBeanFactoryBasedTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/config/ConfigBeanDefinitionParser.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-

jar/org/springframework/aop/config/AopNamespaceUtils.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/support/StaticMethodMatcherPointcutAdvisor.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/framework/adapter/GlobalAdvisorAdapterRegistry.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/TrueClassFilter.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/interceptor/AsyncExecutionAspectSupport.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/target/AbstractPrototypeBasedTargetSource.java
* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/aspectj/DeclareParentsAdvisor.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2008 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-
jar/org/springframework/aop/ThrowsAdvice.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2007 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/AopInfrastructureBean.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/RawTargetAccess.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/BeforeAdvice.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/AdvisedSupportListener.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/AfterAdvice.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/SpringProxy.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/framework/InterceptorAndDynamicMethodMatcher.java
 - * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/IntroductionInterceptor.java
- No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2013 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301486327_1649248790.73/0/spring-aop-5-2-20-release-sources-jar/org/springframework/aop/aspectj/AspectJWeaverMessageHandler.java

1.431 jctools-core 3.0.0

1.431.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <artifactId>jctools-core</artifactId>
  <groupId>org.jctools</groupId>
  <version>3.0.0</version>
  <name>Java Concurrency Tools Core Library</name>
  <description>Java Concurrency Tools Core Library</description>
  <packaging>bundle</packaging>

  <dependencies>
    <dependency>
      <groupId>org.hamcrest</groupId>
      <artifactId>hamcrest-all</artifactId>
      <version>${hamcrest.version}</version>
      <scope>test</scope>
    </dependency>

    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>${junit.version}</version>
      <scope>test</scope>
    </dependency>

    <dependency>
      <groupId>com.google.guava</groupId>
      <artifactId>guava-testlib</artifactId>
      <version>${guava-testlib.version}</version>
      <scope>test</scope>
    </dependency>
  </dependencies>
  <build>
    <plugins>
      <plugin>
        <groupId>org.apache.maven.plugins</groupId>
        <artifactId>maven-surefire-plugin</artifactId>
        <version>3.0.0-M3</version>
        <configuration>
          <includes>
            <include>*</include>
          </includes>
        </configuration>
      </plugin>
    </plugins>
  </build>
</project>
```

```

<plugin>
  <groupId>org.apache.felix</groupId>
  <artifactId>maven-bundle-plugin</artifactId>
  <version>4.2.1</version>
  <extensions>>true</extensions>
  <configuration>
    <instructions>
      <Import-Package>sun.misc;resolution:=optional</Import-Package>
    </instructions>
  </configuration>
</plugin>
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-source-plugin</artifactId>
  <version>3.2.0</version>
  <executions>
    <execution>
      <id>attach-sources</id>
      <phase>verify</phase>
      <goals>
        <goal>jar-no-fork</goal>
      </goals>
    </execution>
  </executions>
</plugin>
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-javadoc-plugin</artifactId>
  <version>3.1.1</version>
  <configuration>
    <additionalOptions>
      <additionalOption>-Xdoclint:none</additionalOption>
    </additionalOptions>
    <source>8</source>
  </configuration>
  <executions>
    <execution>
      <id>attach-javadocs</id>
      <goals>
        <goal>jar</goal>
      </goals>
    </execution>
  </executions>
</plugin>
</plugins>
</build>

<distributionManagement>

```

```
<repository>
  <id>bintray-jctools-jctools</id>
  <name>jctools-jctools</name>
  <url>https://api.bintray.com/maven/jctools/jctools/jctools-core/;publish=1</url>
</repository>
</distributionManagement>
```

```
<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>
```

```
<licenses>
  <license>
    <name>Apache License, Version 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    <distribution>repo</distribution>
  </license>
</licenses>
```

```
<scm>
  <url>https://github.com/JCTools/JCTools</url>
  <connection>scm:git:https://github.com/JCTools/JCTools</connection>
  <tag>HEAD</tag>
</scm>
```

```
<developers>
  <developer>
    <url>https://github.com/nitsanw</url>
  </developer>
  <developer>
    <url>https://github.com/mjpt777</url>
  </developer>
  <developer>
    <url>https://github.com/RichardWarburton</url>
  </developer>
  <developer>
    <url>https://github.com/kay</url>
  </developer>
  <developer>
    <url>https://github.com/franz1981</url>
  </developer>
</developers>
```

```
<prerequisites>
  <maven>3.5.0</maven>
</prerequisites>
```

```
<properties>
  <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
```

```
<java.version>1.6</java.version>
<java.test.version>1.8</java.test.version>

<maven.compiler.source>${java.version}</maven.compiler.source>
<maven.compiler.target>${java.version}</maven.compiler.target>
<maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
<maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

<hamcrest.version>1.3</hamcrest.version>
<junit.version>4.12</junit.version>
<guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>
```

Found in path(s):

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/queues/MessagePassingQueueUtil.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/util/UnsafeJvmInfo.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/queues/atomic/MpscAtomicArrayQueue.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/queues/atomic/MpscLinkedAtomicQueue.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/queues/atomic/MpmcAtomicArrayQueue.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/queues/SpSCGrowableArrayQueue.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org.jctools/queues/SpSCArrayQueue.java

* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/maps/ConcurrentAutoTable.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/maps/NonBlockingIdentityHashMap.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/MpscGrowableArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/util/Pow2.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/spec/ConcurrentQueueSpec.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/BaseLinkedQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/util/InternalAPI.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/SpscLinkedQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/atomic/SpscChunkedAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/spec/Ordering.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/spec/Preference.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/maps/AbstractEntry.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/MpscLinkedQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/package-info.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/util/RangeUtil.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/util/PortableJvmInfo.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/MpscArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/QueueFactory.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/MpscBlockingConsumerArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/maps/NonBlockingHashSet.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-

jar/org/jctools/queues/IndexedQueueSizeUtil.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/LinkedListAtomicNode.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpscCompoundQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpscUnboundedArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/SpmcAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpscUnboundedXaddChunk.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/SpvcAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/SupportsIterator.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/SpvcGrowableAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/BaseMpscLinkedListArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/BaseLinkedListAtomicQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/SpmcArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/SpvcUnboundedArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/maps/NonBlockingHashMapLong.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/ConcurrentCircularArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/maps/NonBlockingSetInt.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpmcUnboundedXaddChunk.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/BaseSpvcLinkedListAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpscChunkedArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/maps/NonBlockingHashMap.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/util/UnsafeLongArrayAccess.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/SpvcLinkedListAtomicQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpscUnboundedXaddArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-

jar/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MessagePassingQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/BaseSpscLinkedListArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/LinkedListNode.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/MpmcArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-jar/org/jctools/util/UnsafeAccess.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/util/UnsafeRefArrayAccess.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/SpSCChunkedArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java
* /opt/cola/permits/1257637630_1642977964.98/0/jctools-core-3-0-0-sources-
jar/org/jctools/queues/atomic/AtomicQueueFactory.java

1.432 jackson-module-parameter-names

2.11.2

1.432.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and
You must cause any modified files to carry prominent notices stating that You changed the files; and
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by

reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

1.433 pixman 0.32.6

1.433.1 Available under license :

The following is the MIT license, agreed upon by most contributors.
Copyright holders of new code should use this license statement where possible. They may also add themselves to the list below.

/*

- * Copyright 1987, 1988, 1989, 1998 The Open Group
- * Copyright 1987, 1988, 1989 Digital Equipment Corporation
- * Copyright 1999, 2004, 2008 Keith Packard
- * Copyright 2000 SuSE, Inc.
- * Copyright 2000 Keith Packard, member of The XFree86 Project, Inc.
- * Copyright 2004, 2005, 2007, 2008, 2009, 2010 Red Hat, Inc.
- * Copyright 2004 Nicholas Miell
- * Copyright 2005 Lars Knoll & Zack Rusin, Trolltech
- * Copyright 2005 Trolltech AS
- * Copyright 2007 Luca Barbato
- * Copyright 2008 Aaron Plattner, NVIDIA Corporation
- * Copyright 2008 Rodrigo Kumpera
- * Copyright 2008 Andr Tupinamb
- * Copyright 2008 Mozilla Corporation
- * Copyright 2008 Frederic Plourde
- * Copyright 2009, Oracle and/or its affiliates. All rights reserved.
- * Copyright 2009, 2010 Nokia Corporation
- *
- * Permission is hereby granted, free of charge, to any person obtaining a
- * copy of this software and associated documentation files (the "Software"),
- * to deal in the Software without restriction, including without limitation
- * the rights to use, copy, modify, merge, publish, distribute, sublicense,
- * and/or sell copies of the Software, and to permit persons to whom the
- * Software is furnished to do so, subject to the following conditions:
- *
- * The above copyright notice and this permission notice (including the next
- * paragraph) shall be included in all copies or substantial portions of the
- * Software.
- *
- * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
- * IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
- * FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
- * THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
- * LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
- * FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER

* DEALINGS IN THE SOFTWARE.

*/

1.434 postgresql 12.12

1.434.1 Available under license :

This regular expression package was originally developed by Henry Spencer.

It bears the following copyright notice:

Copyright (c) 1998, 1999 Henry Spencer. All rights reserved.

Development of this software was funded, in part, by Cray Research Inc., UUNET Communications Services Inc., Sun Microsystems Inc., and Scriptics Corporation, none of whom are responsible for the results. The author thanks all of them.

Redistribution and use in source and binary forms -- with or without modification -- are permitted for any purpose, provided that redistributions in source form retain this entire copyright notice and indicate the origin and nature of any modifications.

I'd appreciate being given credit for this package in the documentation of software which uses it, but that is not a requirement.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL HENRY SPENCER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

PostgreSQL adopted the code out of Tcl 8.4.1. Portions of regc_locale.c and re_syntax.n were developed by Tcl developers other than Henry; these files bear the Tcl copyright and license notice:

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState

Corporation and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARS. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

Subsequent modifications to the code by the PostgreSQL project follow the same license terms as the rest of PostgreSQL.
PostgreSQL Database Management System
(formerly known as Postgres, then as Postgres95)

Portions Copyright (c) 1996-2022, PostgreSQL Global Development Group

Portions Copyright (c) 1994, The Regents of the University of California

Permission to use, copy, modify, and distribute this software and its documentation for any purpose, without fee, and without a written agreement is hereby granted, provided that the above copyright notice and this paragraph and the following two paragraphs appear in all copies.

IN NO EVENT SHALL THE UNIVERSITY OF CALIFORNIA BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE UNIVERSITY OF CALIFORNIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE UNIVERSITY OF CALIFORNIA SPECIFICALLY DISCLAIMS ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE SOFTWARE PROVIDED HEREUNDER IS ON AN "AS IS" BASIS, AND THE UNIVERSITY OF CALIFORNIA HAS NO OBLIGATIONS TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

1.435 packaging 19.0

1.435.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed

as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this

License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

This software is made available under the terms of *either* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of *both* these licenses.

Copyright (c) Donald Stufft and individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.436 pymongo 3.12.3

1.436.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

PyMongo uses third-party libraries or other resources that may be distributed under licenses different than the PyMongo software.

In the event that we accidentally failed to list a required notice, please bring it to our attention through any of the ways detailed here:

`mongodb-dev@googlegroups.com`

The attached notices are provided for information only.

For any licenses that require disclosure of source, sources are available at <https://github.com/mongodb/mongo-python-driver>.

1) License Notice for time64.c

Copyright (c) 2007-2010 Michael G Schwern

This software originally derived from Paul Sheer's pivotal_gmtime_r.c.

The MIT License:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

2) License Notice for bson-stdint-win32.h

ISO C9x compliant stdint.h for Microsoft Visual Studio

Based on ISO/IEC 9899:TC2 Committee draft (May 6, 2005) WG14/N1124

Copyright (c) 2006-2013 Alexander Chemeris

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the product nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

3) License Notice for encoding_helpers.c

Portions Copyright 2001 Unicode, Inc.

Disclaimer

This source code is provided as is by Unicode, Inc. No claims are made as to fitness for any particular purpose. No warranties of any kind are expressed or implied. The recipient agrees to determine applicability of information provided. If this file has been purchased on magnetic or optical media from Unicode, Inc., the sole remedy for any claim will be exchange of defective media within 90 days of receipt.

Limitations on Rights to Redistribute This Code

Unicode, Inc. hereby grants the right to freely use the information supplied in this file in the creation of products supporting the Unicode Standard, and to make copies of this file in any form for internal or external distribution as long as this notice remains attached.

4) License Notice for ssl_match_hostname.py

Python License (Python-2.0)

Python License, Version 2 (Python-2.0)

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001-2013 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and

Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

1.437 dash 0.5.7

1.437.1 Available under license :

Copyright (c) 1989-1994

The Regents of the University of California. All rights reserved.

Copyright (c) 1997 Christos Zoulas. All rights reserved.

Copyright (c) 1997-2005

Herbert Xu <herbert@gondor.apana.org.au>. All rights reserved.

This code is derived from software contributed to Berkeley by Kenneth Almquist.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

mksignames.c:

This file is not directly linked with dash. However, its output is.

Copyright (C) 1992 Free Software Foundation, Inc.

This file is part of GNU Bash, the Bourne Again SHell.

Bash is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version.

Bash is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License with your Debian GNU/Linux system, in `/usr/share/common-licenses/GPL`, or with the Debian GNU/Linux hello source package as the file `COPYING`. If not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111 USA.

1.438 gnutls 3.7

1.438.1 Available under license :

The "inih" library is distributed under the New BSD license:

Copyright (c) 2009, Ben Hoyt
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Ben Hoyt nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY BEN HOYT "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL BEN HOYT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them

with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free

library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to

distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is

copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or

modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided

by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the Combined Work with a copy of the GNU GPL and this license document.

c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is

necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====
Written by Andy Polyakov <appro@fy.chalmers.se> for the OpenSSL project. The module is, however, dual licensed under OpenSSL and CRYPTOGRAMS licenses depending on where you obtain it. For further details see <https://www.openssl.org/~appro/cryptograms/>.
=====

Copyright (c) 2006-2012, CRYPTOGRAMS by <appro@openssl.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain copyright notices, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the CRYPTOGRAMS nor the names of its copyright holder and contributors may be used to endorse or promote products derived from this software without specific prior written permission.

ALTERNATIVELY, provided that this notice is retained in full, this product may be distributed under the terms of the GNU General Public License (GPL), in which case the provisions of the GPL apply INSTEAD OF those given above.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
#####  
## Constant-time SSSE3 AES core implementation.  
## version 0.1  
##  
## By Mike Hamburg (Stanford University), 2009  
## Public domain.  
##  
## For details see https://shiftright.org/papers/vector\_aes/ and  
## https://crypto.stanford.edu/vpaes/.
```

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to

share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to

avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a

covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by

this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the

additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a

party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY

APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) by Bruce Korb - all rights reserved

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or

(at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) by Bruce Korb - all rights reserved
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<https://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

LICENSING

=====

Since GnuTLS version 3.1.10, the core library is released under the GNU Lesser General Public License (LGPL) version 2.1 or later (see doc/COPYING.LESSER for the license terms).

The GNU LGPL applies to the main GnuTLS library, while the included applications as well as gnutls-openssl library are under the GNU GPL version 3. The gnutls library is located in the lib/ and libdane/ directories, while the applications in src/ and, the gnutls-openssl library is at extra/.

The documentation in doc/ is under the GNU FDL license 1.3.

Note, however, that the nettle and the gmp libraries which are GnuTLS dependencies, they are distributed under a LGPLv3+ or GPLv2+ dual license. As such binaries linking to them need to adhere to either LGPLv3+ or the GPLv2+ license.

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

The MIT License (MIT)

Copyright (c) 2016 Wrymouth Innovation Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and

intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- moral rights retained by the original author(s) and/or performer(s);
- publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- rights protecting the extraction, dissemination, use and reuse of data in a Work;
- database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
- other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the

earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered

work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided

above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see [<https://www.gnu.org/licenses/>](https://www.gnu.org/licenses/).

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/philosophy/why-not-lgpl.html>.

1.439 rtmpdump 2.4+20151223.gitfa8646d.1-2build1

1.439.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge

for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General

Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs

(which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all

subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new

versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!
GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively

when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you

received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software

Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.440 gzip 1.10 Oubuntu4

1.440.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains

that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without

permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source

includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention

is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work,

and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the

Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a

network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered

work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the

option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

1.441 open-vm-tools 9.4.0

1.441.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for

you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many

libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is

included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany

it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by

the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively

convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software

Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed

under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on

the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a

special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to

refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and

of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
```

GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of VMware Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission of VMware Inc.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

1. Definitions.

- 1.1. "Contributor" means each individual or entity that creates or contributes to the creation of Modifications.
- 1.2. "Contributor Version" means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.
- 1.3. "Covered Software" means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. "Executable" means the Covered Software in any form other than Source Code.
- 1.5. "Initial Developer" means the individual or entity that first makes Original Software available under this License.
- 1.6. "Larger Work" means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. "License" means this document.
- 1.8. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. "Modifications" means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modifications; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. "Original Software" means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. "Source Code" means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants.

2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof),

with or without Modifications, and/or as part of a Larger Work; and

- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third

party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

3. Distribution Obligations.

3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version

of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

4. Versions of the License.

4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding

declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as "Participant") alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

8. U.S. GOVERNMENT END USERS.

The Covered Software is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" (as that term is defined at 48 C.F.R. 252.227-7014(a)(1)) and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48

C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

1.442 sysv-init 2.93-8

1.442.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any

part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any

later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Sysvinit is Copyright (C) 1991-2004 Miquel van Smoorenburg
Updated Copyright (C) 2018 Jesse Smith

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

On Debian GNU/Linux systems, the complete text of the GNU General Public License can be found in `~/usr/share/common-licenses/GPL-2'`.

Send patches to sysvinit-devel@nongnu.org

1.443 lua 5.2.3

1.444 tcpdump 4.9.2

1.444.1 Available under license :

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED

1.445 p11-kit 0.23.15-2+deb10u1

1.445.1 Available under license :

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * The names of contributors to this software may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.446 junixsocket-core 2.3.2

1.446.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was

submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

1.447 openssl 1.1.1n

1.447.1 Available under license :

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts.

OpenSSL License

```
/* =====  
* Copyright (c) 1998-2019 The OpenSSL Project. All rights reserved.  
*  
* Redistribution and use in source and binary forms, with or without  
* modification, are permitted provided that the following conditions  
* are met:  
*  
* 1. Redistributions of source code must retain the above copyright  
* notice, this list of conditions and the following disclaimer.  
*  
* 2. Redistributions in binary form must reproduce the above copyright  
* notice, this list of conditions and the following disclaimer in  
* the documentation and/or other materials provided with the  
* distribution.  
*  
* 3. All advertising materials mentioning features or use of this  
* software must display the following acknowledgment:  
* "This product includes software developed by the OpenSSL Project  
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"  
*  
*
```

* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
 * endorse or promote products derived from this software without
 * prior written permission. For written permission, please contact
 * openssl-core@openssl.org.
 *

* 5. Products derived from this software may not be called "OpenSSL"
 * nor may "OpenSSL" appear in their names without prior written
 * permission of the OpenSSL Project.
 *

* 6. Redistributions of any form whatsoever must retain the following
 * acknowledgment:
 * "This product includes software developed by the OpenSSL Project
 * for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"
 *

* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
 * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 * PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
 * ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
 * OF THE POSSIBILITY OF SUCH DAMAGE.
 * =====
 *

* This product includes cryptographic software written by Eric Young
 * (eay@cryptsoft.com). This product includes software written by Tim
 * Hudson (tjh@cryptsoft.com).
 *
 */

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
 * All rights reserved.
 *
 * This package is an SSL implementation written
 * by Eric Young (eay@cryptsoft.com).
 * The implementation was written so as to conform with Netscapes SSL.
 *
 * This library is free for commercial and non-commercial use as long as
 * the following conditions are aheared to. The following conditions
 * apply to all code found in this distribution, be it the RC4, RSA,
 * lhash, DES, etc., code; not just the SSL code. The SSL documentation

* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*
* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* "This product includes cryptographic software written by
* Eric Young (eay@cryptsoft.com)"
* The word 'cryptographic' can be left out if the routines from the library
* being used are not cryptographic related :-).
* 4. If you include any Windows specific code (or a derivative thereof) from
* the apps directory (application code) you must include an acknowledgement:
* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
*
* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*
* The licence and distribution terms for any publically available version or
* derivative of this code cannot be changed. i.e. this code cannot simply be
* copied and put under another distribution licence
* [including the GNU Public Licence.]
*/

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place - Suite 330, Boston, MA

02111-1307, USA.

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software

patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in

whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium

customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to

this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program

specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General

Public License instead of this License.

The "Artistic License"

Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

Definitions:

"Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder as specified below.

"Copyright Holder" is whoever is named in the copyright or copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.

2. You may apply bug fixes, portability fixes and other modifications

derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.

3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:

a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.

b) use the modified Package only within your corporation or organization.

c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:

a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.

b) accompany the distribution with the machine-readable source of the Package with your modifications.

c) give non-standard executables non-standard names, and clearly document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the

interpreter is so embedded.

6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.

7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the regression tests for the language.

8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.

9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

1.448 libiconv 1.14

1.448.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we

have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices"

to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that

same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice;

keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms

of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further

restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission

to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free

patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion

of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if

written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

1.449 flex 2.5.35

1.449.1 Available under license :

/* Redistribution and use in source and binary forms, with or without */
/* modification, are permitted provided that the following conditions */
/* are met: */

/* 1. Redistributions of source code must retain the above copyright */
/* notice, this list of conditions and the following disclaimer. */
/* 2. Redistributions in binary form must reproduce the above copyright */
/* notice, this list of conditions and the following disclaimer in the */
/* documentation and/or other materials provided with the distribution. */

/* Neither the name of the University nor the names of its contributors */
/* may be used to endorse or promote products derived from this software */
/* without specific prior written permission. */

/* THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR */
/* IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED */
/* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR */
/* PURPOSE. */

?Flex carries the copyright used for BSD software, slightly modified
because it originated at the Lawrence Berkeley (not Livermore!) Laboratory,
which operates under a contract with the Department of Energy:

Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007 The Flex Project.

Copyright (c) 1990, 1997 The Regents of the University of California.
All rights reserved.

This code is derived from software contributed to Berkeley by
Vern Paxson.

The United States Government has rights in this work pursuant
to contract no. DE-AC03-76SF00098 between the United States
Department of Energy and the University of California.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.

Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This basically says "do whatever you please with this software except remove this notice or take advantage of the University's (or the flex authors') name".

Note that the "flex.sk1" scanner skeleton carries no copyright notice. You are free to do whatever you please with scanners generated using flex; for them, you are not even bound by the above copyright.

1.450 gvfs 1.28.2-1ubuntu1~16.04.2

1.450.1 Available under license :

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it

if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License

treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work

during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on

the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to

refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing

and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Library General Public License for more details.

You should have received a copy of the GNU Library General Public
License along with this library; if not, write to the
Free Software Foundation, Inc., 51 Franklin Street - Fifth Floor,
Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for
software and other kinds of works.

The licenses for most software and other practical works are designed
to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you

want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is

released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this

conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must

suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you

add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly

provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever

licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner

consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

1.451 expat 2.2.5

1.451.1 Available under license :

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper
Copyright (c) 2001-2017 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY

CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.452 jq 1.4

1.452.1 Available under license :

Oniguruma LICENSE

/*_

* Copyright (c) 2002-2015 K.Kosako <kkosako0@gmail.com>

* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

*

* THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE

* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

* SUCH DAMAGE.

*/

jq is copyright (C) 2012 Stephen Dolan

Permission is hereby granted, free of charge, to any person obtaining

a copy of this software and associated documentation files (the

"Software"), to deal in the Software without restriction, including

without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to

the following conditions:

The above copyright notice and this permission notice shall be

included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

jq's documentation (everything found under the docs/ subdirectory in the source tree) is licensed under the Creative Commons CC BY 3.0 license, which can be found at:

<https://creativecommons.org/licenses/by/3.0/>

The documentation website includes a copy of Twitter's Bootstrap and relies on Bonsai, Liquid templates and various other projects, look them up for detailed licensing conditions.

jq incorporates David M. Gay's `dtoa.c` and `g_fmt.c`, which bear the following notices:

`dtoa.c`:

The author of this software is David M. Gay.

Copyright (c) 1991, 2000, 2001 by Lucent Technologies.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

`g_fmt.c`:

The author of this software is David M. Gay.

Copyright (c) 1991, 1996 by Lucent Technologies.

Permission to use, copy, modify, and distribute this software for any

purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

1.453 antlr 2.7.7

1.453.1 Available under license :

SOFTWARE RIGHTS

ANTLR 1989-2006 Developed by Terence Parr
Partially supported by University of San Francisco & jGuru.com

We reserve no legal rights to the ANTLR--it is fully in the public domain. An individual or company may do whatever they wish with source code distributed with ANTLR or the code generated by ANTLR, including the incorporation of ANTLR, or its output, into commercial software.

We encourage users to develop software with ANTLR. However, we do ask that credit is given to us for developing ANTLR. By "credit", we mean that if you use ANTLR or incorporate any source code into one of your programs (commercial product, research project, or otherwise) that you acknowledge this fact somewhere in the documentation, research report, etc... If you like ANTLR and have developed a nice tool with the output, please mention that you developed it using ANTLR. In addition, we ask that the headers remain intact in our source code. As long as these guidelines are kept, we expect to continue enhancing this system and expect to make other tools available as they are completed.

The primary ANTLR guy:

Terence Parr
parr@cs.usfca.edu
parr@antlr.org

1.454 sqlalchemy 1.4.34

1.454.1 Available under license :

Copyright 2005-2022 SQLAlchemy authors and contributors <see AUTHORS file>.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.455 bzip2 1.0.8

1.455.1 Available under license :

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: bzip2

Source: <http://www.bzip.org/>

Files: *

Copyright: 1996-2010 Julian R Seward <jseward@bzip.org>

License: BSD-variant

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must

not be misrepresented as being the original software.

- 4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files: debian/*

Copyright: 2018 Nicolas Boulenguez <nicolas.boulenguez@free.fr>

2012-2015 Santiago Ruano Rincn <santiago@debian.org>

2014 Canonical Ltd.

2004-2011 Anibal Monsalve Salazar <anibal@debian.org>

1999-2002 Philippe Troin <phil@fifi.org>

1997-1999 Anthony Fok <foka@debian.org>

License: GPL-2

The full text of the GNU General Public License version 2 can be found in /usr/share/common-licenses/GPL-2.

1.456 ehcache-api 3.8.1

1.456.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright Terracotta, Inc.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/serialization/SerializerException.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/Status.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/expiry/Expiry.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/resilience/ResilienceStrategy.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/expiry/Expirations.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/Service.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/serialization/SerializationProvider.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/CacheWritingException.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/CacheLoaderWriterConfiguration.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/OptionalServiceDependencies.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/CacheManager.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/StateTransitionException.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/persistence/StateHolder.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/resilience/RecoveryStore.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/package-info.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/copy/Copier.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/expiry/ExpiryPolicy.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/units/package-info.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/MaintainableService.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/resilience/StoreAccessException.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/Eviction.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/CacheConfiguration.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/event/EventOrdering.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/persistence/PersistableResourceService.java
- * /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/event/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/FluentConfigurationBuilder.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/Configuration.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/ServiceDependencies.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/ValueSupplier.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/BulkCacheLoadingException.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/serialization/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/CacheLoadingException.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/ResourceType.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/copy/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/WriteBehindConfiguration.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/persistence/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/event/EventType.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/PersistentUserManagedCache.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/ResourcePool.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/EvictionAdvisor.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/CacheIterationException.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/PluralService.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/event/CacheEventListener.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/ResourceUnit.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/Builder.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/BulkCacheWritingException.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/Cache.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/units/MemoryUnit.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/resilience/ResilienceStrategyProvider.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/CacheLoaderWriterProvider.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/event/EventFiring.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/UserManagedCache.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/expiry/Duration.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/ResourcePools.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/WriteBehindProvider.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/event/CacheEvent.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/CacheRuntimeConfiguration.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/loaderwriter/CacheLoaderWriter.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/ServiceCreationConfiguration.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/copy/CopyProvider.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/expiry/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/ServiceProvider.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/PersistentCacheManager.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/serialization/StatefulSerializer.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/serialization/UnsupportedTypeException.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/FluentCacheConfigurationBuilder.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/resilience/package-info.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/service/ServiceConfiguration.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/CachePersistenceException.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/config/units/EntryUnit.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/serialization/Serializer.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-jar/org/ehcache/spi/persistence/StateRepository.java

* /opt/cola/permits/1258059202_1643027219.24/0/ehcache-api-3-8-1-sources-

1.457 golang 1.15.15

1.457.1 Available under license :

```
# This is the official list of people who can contribute
# (and typically have contributed) code to the Go repository.
# The AUTHORS file lists the copyright holders; this file
# lists people. For example, Google employees are listed here
# but not in AUTHORS, because Google holds the copyright.
#
# Names should be added to this file only after verifying that
# the individual or the individual's organization has agreed to
# the appropriate Contributor License Agreement, found here:
#
# http://code.google.com/legal/individual-cla-v1.0.html
# http://code.google.com/legal/corporate-cla-v1.0.html
#
# The agreement for individuals can be filled out on the web.

# Names should be added to this file like so:
# Individual's name <submission email address>
# Individual's name <submission email address> <email2> <emailN>
#
# An entry with multiple email addresses specifies that the
# first address should be used in the submit logs and
# that the other addresses should be recognized as the
# same person when interacting with Gerrit.

# Please keep the list sorted.

Aamir Khan <syst3m.w0rm@gmail.com>
Aaron Beitch <aaronb@arista.com>
Aaron Bieber <deftly@gmail.com>
Aaron Cannon <cannona@fireantproductions.com>
Aaron France <aaron.l.france@gmail.com>
Aaron Jacobs <jacobsa@google.com>
Aaron Kemp <kemp.aaron@gmail.com>
Aaron Patterson <tenderlove@ruby-lang.org>
Aaron Stein <aaronstein12@gmail.com>
Aaron Torres <tcboox@gmail.com>
Aaron Zinman <aaron@azinman.com>
Aarti Parikh <aarti.parikh@gmail.com>
Abdullah Al Maruf <mymail.maruf@gmail.com>
Abe Haskins <abeisgreat@abeisgreat.com>
Abhinav Gupta <abhinav.g90@gmail.com>
Adam Azarchs <adam.azarchs@10xgenomics.com>
```


Adam Bender <abender@google.com>
Adam Eijdenberg <adam@continusec.com>
Adam Harvey <aharvey@php.net>
Adam Kisala <adam.kisala@gmail.com>
Adam Langley <agl@golang.org>
Adam Medzinski <adam.medzinski@gmail.com>
Adam Shannon <adamkshannon@gmail.com>
Adam Shelton <aashelt90@gmail.com>
Adam Sindelar <adamsh@google.com>
Adam Thomason <athomason@gmail.com>
Adam Williams <pwnfactory@gmail.com>
Adam Woodbeck <adam@woodbeck.net>
Adarsh Ravichandran <adarshravichandran91@gmail.com>
Aditya Harindar <aditya.harindar@gmail.com>
Aditya Mukerjee <dev@chimeracoder.net>
Adrian Hesketh <adrianhesketh@hushmail.com>
Adrian Nos <nos.adrian@gmail.com>
Adrian O'Grady <elpollouk@gmail.com>
Adrien Bustany <adrien-xx-google@bustany.org>
Adrien Delorme <adrien.delorme@icloud.com>
Adrien Petel <peteladrien@gmail.com>
Acio Jnior <aeciodantasjunior@gmail.com>
Aeneas Rekkas (arekkas) <aeneas@ory.am>
Afanasev Stanislav <phpprogger@gmail.com>
Agis Anastasopoulos <agis.anast@gmail.com>
Agniva De Sarker <agnivade@yahoo.co.in>
Ahmed Wahed <oneofone@gmail.com>
Ahmet Alp Balkan <ahmetb@google.com>
Ahmet Soormally <ahmet@mangomm.co.uk>
Ahmy Yulrizka <yulrizka@gmail.com>
Ahsun Ahmed <ahmed.ahsun@gmail.com>
Aiden Scandella <ai@uber.com>
Ainar Garipov <gugl.zadolbal@gmail.com>
Aishraj Dahal <aishraj@users.noreply.github.com>
Akhil Indurti <aindurti@gmail.com>
Akihiro Suda <suda.kyoto@gmail.com>
Akshat Kumar <seed@mail.nanosouffle.net>
Al Cutter <al@google.com>
Alan Braithwaite <alan@ipaddr.org>
Alan Donovan <adonovan@google.com>
Alan Shreve <alan@inconshreveable.com>
Albert Nigmatzianov <albertnigma@gmail.com>
Albert Strasheim <fullung@gmail.com>
Albert Teoh <albert.teoh@gmail.com>
Albert Yu <yukinying@gmail.com>
Alberto Bertogli <albertito@blitiri.com.ar>
Alberto Donizetti <alb.donizetti@gmail.com>
Alberto Garca Hierro <alberto@garciahierro.com> <alberto.garcia.hierro@gmail.com>

Alec Benzer <alec.benzer@gmail.com>
Aleksa Sarai <cyphar@cyphar.com>
Aleksandar Dezelin <dezelin@gmail.com>
Aleksandr Lukinykh <a.lukinykh@xsolla.com>
Aleksandr Razumov <ar@cydev.ru>
Alekseev Artem <a.artem060@gmail.com>
Alessandro Arzilli <alessandro.arzilli@gmail.com>
Alessandro Baffa <alessandro.baffa@gmail.com>
Alex A Skinner <alex@lx.lc>
Alex Brainman <alex.brainman@gmail.com>
Alex Bramley <abramley@google.com>
Alex Browne <stephenalexbrowne@gmail.com>
Alex Buchanan <buchanae@gmail.com>
Alex Carol <alex.carol.c@gmail.com>
Alex Gaynor <alex@alloy.us>
Alex Harford <alex.harford@saucelabs.com>
Alex Jin <toalexjin@gmail.com>
Alex Kohler <alexjohnkohler@gmail.com>
Alex Myasoedov <msoedov@gmail.com>
Alex Plugaru <alex@plugaru.org> <alexandru.plugaru@gmail.com>
Alex Schroeder <alex@gnu.org>
Alex Sergeev <abc@alexsergeev.com>
Alex Tokarev <aleksator@gmail.com>
Alex Vaghin <crhyme@google.com>
Alex Zhirov <azhirov@google.com>
Alexander Demakin <alexander.demakin@gmail.com>
Alexander Dring <email@alex.d.ch>
Alexander F Rdseth <alexander.rodseth@appeartv.com>
Alexander Greim <alexxx@iltempo.de>
Alexander Guz <kalimatas@gmail.com>
Alexander Kauer <alexander@affine.space>
Alexander Kucherenko <alxkchr@gmail.com>
Alexander Larsson <alexander.larsson@gmail.com>
Alexander Lourier <aml@rulezz.ru>
Alexander Menzhinsky <amenzhinsky@gmail.com>
Alexander Morozov <lk4d4math@gmail.com>
Alexander Neumann <alexander@bumper.de>
Alexander Nohe <alex.nohe427@gmail.com>
Alexander Orlov <alexander.orlov@loxal.net>
Alexander Pantyukhin <apantykhin@gmail.com>
Alexander Polcyn <apolcyn@google.com>
Alexander Rakoczy <alex@golang.org>
Alexander Reece <awreece@gmail.com>
Alexander Surma <surma@surmair.de>
Alexander Zhavnerchik <alex.vizor@gmail.com>
Alexander Zillion <alex@alexzillion.com>
Alexander Zolotov <goldifit@gmail.com>
Alexandr Mayorskiy <a.mayorskiy@corp.mail.ru>

Alexandre Cesaro <alexandre.cesaro@gmail.com>
Alexandre Fiori <fiorix@gmail.com>
Alexandre Maari <draeron@gmail.com>
Alexandre Normand <alexandre.normand@gmail.com>
Alexandre Parentea <aubonbeurre@gmail.com>
Alexandre Viau <alexandre@alexandreviau.net>
Alexandru Mooi <brtznr@gmail.com>
Alexei Sholik <alcosholik@gmail.com>
Alexey Alexandrov <aalexand@google.com>
Alexey Borzenkov <snaury@gmail.com>
Alexey Naidonov <alexey.naidyonov@gmail.com>
Alexey Neganov <neganovalexey@gmail.com>
Alexey Palazhchenko <alexey.palazhchenko@gmail.com>
Alexey Semenyuk <alexsemenyuk88@gmail.com>
Alexis Hildebrandt <surryhill@gmail.com>
Alexis Hunt <lexer@google.com>
Alexis Imperial-Legrand <ail@google.com>
Ali Farooq <ali.farooq0@pm.me>
Ali Rizvi-Santiago <arizvisa@gmail.com>
Aliaksandr Valialkin <valyala@gmail.com>
Alif Rachmawadi <subosito@gmail.com>
Allan Simon <allan.simon@supinfo.com>
Allen Li <ayatane@google.com>
Alok Menghrajani <alok.menghrajani@gmail.com>
Aman Gupta <aman@tmm1.net>
Amarjeet Anand <amarjeetanandsingh@gmail.com>
Amir Mohammad Saied <amir@gluegadget.com>
Amr Mohammed <merodiro@gmail.com>
Amrut Joshi <amrut.joshi@gmail.com>
An Long <aisk1988@gmail.com>
An Xiao <hac@zju.edu.cn>
Anand K. Mistry <anand@mistry.ninja>
Anders Pearson <anders@columbia.edu>
Anderson Queiroz <contato@andersonq.eti.br>
Andr Carvalho <asantostc@gmail.com>
Andr Martins <aanm90@gmail.com>
Andre Nathan <andrenth@gmail.com>
Andrea Nodari <andrea.nodari91@gmail.com>
Andrea Spadaccini <spadaccio@google.com>
Andreas Auernhammer <aead@mail.de>
Andreas Jellinghaus <andreas@ionisiert.de> <anj@google.com>
Andreas Litt <andreas.litt@gmail.com>
Andrei Enshin <b1os@bk.ru>
Andrei Gherzan <andrei@resin.io>
Andrei Korzhevskii <a.korzhevskiy@gmail.com>
Andrei Matei <andrei@cockroachlabs.com>
Andrei Tudor Clin <mail@acln.ro>
Andrei Vagin <avagin@google.com>

Andrei Vieru <euvieru@gmail.com>
Andres Erbsen <andreser@google.com>
Andres Lowrie <andres.lowrie@gmail.com>
Andrew Austin <andrewaact@gmail.com>
Andrew Balholm <andybalholm@gmail.com>
Andrew Benton <andrewmbenton@gmail.com>
Andrew Bonventre <andybons@chromium.org>
Andrew Braunstein <awbraunstein@gmail.com>
Andrew Bursavich <abursavich@gmail.com>
Andrew Ekstedt <andrew.ekstedt@gmail.com>
Andrew Etter <andrew.etter@gmail.com>
Andrew G. Morgan <agm@google.com>
Andrew Gerrand <adg@golang.org>
Andrew Harding <andrew@spacemonkey.com>
Andrew Jackura <ajackura@google.com>
Andrew Louis <alouis@digitalocean.com>
Andrew Lutomirski <andy@luto.us>
Andrew Medvedev <andrew.y.medvedev@gmail.com>
Andrew Pilloud <andrewpilloud@igneoussystems.com>
Andrew Pogrebnoy <absourd.noise@gmail.com>
Andrew Poydence <apoydence@pivotal.io>
Andrew Pritchard <awpritchard@gmail.com>
Andrew Radev <andrey.radev@gmail.com>
Andrew Skiba <skibaa@gmail.com>
Andrew Stormont <astormont@racktopsystems.com>
Andrew Stribblehill <ads@wompom.org>
Andrew Szeto <andrew@jabagawee.com>
Andrew Todd <andrew.todd@wework.com>
Andrew Werner <andrew@upthere.com> <awerner32@gmail.com>
Andrew Wilkins <axwalk@gmail.com>
Andrew Williams <williams.andrew@gmail.com>
Andrew Z Allen <me@andrewzallen.com>
Andrey Mirtchovski <mirtchovski@gmail.com>
Andrey Petrov <andrey.petrov@shazow.net>
Andrii Soldatenko <andrii.soldatenko@gmail.com>
Andrii Soluk <isoluchok@gmail.com>
Andriy Lytvynov <lytvynov.a.v@gmail.com>
Andrzej eel <andrii.zhezhel@gmail.com>
Andy Balholm <andy@balholm.com>
Andy Davis <andy@bigandian.com>
Andy Finkenstadt <afinkenstadt@zynga.com>
Andy Lindeman <andy@lindeman.io>
Andy Maloney <asmaloney@gmail.com>
Andy Pan <panjf2000@gmail.com>
Andy Walker <walkeraj@gmail.com>
Andy Wang <cbeuw.andy@gmail.com>
Andzej Maciusovic <andzej.maciusovic@gmail.com>
Anfernee Yongkun Gui <anfernee.gui@gmail.com>

Angelo Bulfone <mbulfone@gmail.com>
Anh Hai Trinh <anh.hai.trinh@gmail.com>
Anit Gandhi <anitgandhi@gmail.com>
Ankit Goyal <ankit3goyal@gmail.com>
Anmol Sethi <anmol@aubble.com>
Annirudh Prasad <annirudh@wandb.com>
Anschel Schaffer-Cohen <anschelsc@gmail.com>
Anthony Alves <cvballa3g0@gmail.com>
Anthony Canino <anthony.canino1@gmail.com>
Anthony Eufemio <anthony.eufemio@gmail.com>
Anthony Fok <foka@debian.org>
Anthony Martin <ality@pbrane.org>
Anthony Sottile <asottile@umich.edu>
Anthony Starks <ajstarks@gmail.com>
Anthony Voutas <voutasaurus@gmail.com>
Anthony Woods <awoods@raintank.io>
Antoine GIRARD <sapk@sapk.fr>
Antoine Martin <antoine97.martin@gmail.com>
Anton Gyllenberg <anton@iki.fi>
Anton Kuklin <anton.a.kuklin@gmail.com>
Antonin Amand <antonin.amand@gmail.com>
Antonio Antelo <aantelov87@gmail.com>
Antonio Bibiano <antbbn@gmail.com>
Antonio Huete Jimenez <tuxillo@quantumachine.net>
Antonio Murdaca <runcom@redhat.com>
Antonio Troina <thoeni@gmail.com>
Anze Kolar <me@akolar.com>
Aofei Sheng <aofei@aofeisheng.com>
Apisak Darakananda <pongad@gmail.com>
Aram Hvrneanu <aram@mgk.ro>
Araragi Hokuto <kanseihonbucho@protonmail.com>
Arash Bina <arash@arash.io>
Arda Gl <ardaguclu@gmail.com>
Areski Belaid <areski@gmail.com>
Ariel Mashraki <ariel@mashraki.co.il>
Arkadi Pyuro <arkadi@google.com>
Arlo Breault <arlolra@gmail.com>
Arnaud Ysmal <arnaud.ysmal@gmail.com>
Arne Hormann <arnehormann@gmail.com>
Arnout Engelen <arnout@bzzt.net>
Aron Nopanen <aron.nopanen@gmail.com>
Artem Alekseev <artem.alekseev@intel.com>
Artem Kolin <artemkaxboy@gmail.com>
Arthur Fabre <arthur@arthurfabre.com>
Arthur Khashaev <arthur@khashaev.ru>
Artyom Pervukhin <artyom.pervukhin@gmail.com>
Arvindh Rajesh Tamilmani <art@a-30.net>
Ashish Gandhi <ag@ashishgandhi.org>

Asim Shankar <asimshankar@gmail.com>
Atin Malaviya <amalaviy@akamai.com>
Ato Araki <ato.araki@gmail.com>
Audrey Lim <audreylh@gmail.com>
Audrius Butkevicius <audrius.butkevicius@gmail.com>
Augusto Roman <aroman@gmail.com>
Aulus Egnatius Varialus <varialus@gmail.com>
Aurlien Rainone <aurelien.rainone@gmail.com>
Aurlio A. Heckert <aurium@gmail.com>
Austin Clements <austin@google.com> <aclements@csail.mit.edu>
Avi Flax <avi@timehop.com>
awaw fumin <awawfumin@gmail.com>
Awn Umar <awn@cryptolosophy.io>
Axel Wagner <axel.wagner.hh@googlemail.com>
Ayan George <ayan@ayan.net>
Ayanamist Yang <ayanamist@gmail.com>
Ayke van Laethem <aykevanlaethem@gmail.com>
Aymerick Jhanne <aymerick@jehanne.org>
Azat Kaumov <kaumov.a.r@gmail.com>
Baiju Muthukadan <baiju.m.mail@gmail.com>
Balaram Makam <bmakam.qdt@qualcommdatacenter.com>
Balazs Lecz <leczb@google.com>
Baokun Lee <nototon@gmail.com>
Barnaby Keene <accounts@southcla.ws>
Bartosz Grzybowski <melkorm@gmail.com>
Bartosz Oler <brtsz@google.com>
Bastian Ike <bastian.ike@gmail.com>
Ben Burkert <ben@benburkert.com>
Ben Eitzen <eitzenb@golang.org>
Ben Fried <ben.fried@gmail.com>
Ben Haines <bhainesva@gmail.com>
Ben Hoyt <benhoyt@gmail.com>
Ben Laurie <ben@links.org> <benl@google.com>
Ben Lubar <ben.lubar@gmail.com>
Ben Lynn <benlynn@gmail.com>
Ben Olive <sionide21@gmail.com>
Ben Schwartz <bemasc@google.com>
Ben Shi <powerman1st@163.com>
Ben Toews <mastahyeti@gmail.com>
Benjamin Black <b@b3k.us>
Benjamin Cable <cable.benjamin@gmail.com>
Benjamin Hsieh <tanookiben@users.noreply.github.com>
Benjamin Peterson <benjamin@python.org>
Benjamin Prosnitz <bprosnitz@google.com>
Benjamin Wester <bwester@squareup.com>
Benjamin Wuethrich <benjamin.wuethrich@gmail.com>
Benny Siegert <bsiegert@gmail.com>
Benoit Sigoure <tsunanet@gmail.com>

Berengar Lehr <Berengar.Lehr@gmx.de>
Berkant Ipek <41230766+0xbkt@users.noreply.github.com>
Bharath Thiruveedula <tbharath91@gmail.com>
Bhavin Gandhi <bhavin7392@gmail.com>
Bill Neubauer <wcn@golang.org> <wcn@google.com> <bill.neubauer@gmail.com>
Bill O'Farrell <billo@ca.ibm.com>
Bill Prin <waprin@google.com>
Bill Thiede <couchmoney@gmail.com>
Bill Zissimopoulos <billziss@navimatics.com>
Billie Harold Cleek <bhcleek@gmail.com>
Billy Lynch <wlynch@google.com>
Billy Zaelani Malik <m.billyzaelani@gmail.com>
Bjrn Erik Pedersen <bjorn.erik.pedersen@gmail.com>
Bjorn Tillenius <bjorn@tillenius.me>
Bjorn Tipling <bjorn.tipling@gmail.com>
Blain Smith <rebelgeek@blainsmith.com>
Blake Gentry <blakesgentry@gmail.com>
Blake Mesdag <blakemesdag@gmail.com>
Blake Mizerany <blake.mizerany@gmail.com>
Blixt <me@blixt.nyc>
Bob Briski <rbriski@gmail.com>
Bob McNaughton <bobmcn@gmail.com>
Bob Potter <bobby.potter@gmail.com>
Bobby DeSimone <bobbydesimone@gmail.com>
Bobby Powers <bobbypowers@gmail.com>
Boqin Qin <bobbqqin@gmail.com>
Boris Nagaev <nagaev@google.com>
Borja Clemente <borja.clemente@gmail.com>
Brad Burch <brad.burch@gmail.com>
Brad Erickson <bderickson@gmail.com>
Brad Fitzpatrick <bradfitz@golang.org> <bradfitz@gmail.com>
Brad Garcia <bgarcia@golang.org>
Brad Jones <rbjones@google.com>
Brad Morgan <brad@morgabra.com>
Brad Whitaker <bwhitaker@fastly.com>
Braden Bassingthwaite <bbassingthwaite@vendasta.com>
Bradford Lamson-Scribner <brad.lamson@gmail.com>
Bradley Falzon <brad@teambrad.net>
Brady Catherman <brady@gmail.com>
Brady Sullivan <brady@bsull.com>
Brandon Bennett <bbennett@fb.com>
Brandon Gilmore <varz@google.com>
Brandon Philips <brandon@ifup.org>
Brandon Ryan <bjryan19@gmail.com>
Brayden Cloud <bcloud@google.com>
Brendan Daniel Tracey <tracey.brendan@gmail.com>
Brendan O'Dea <bod@golang.org>
Brett Cannon <bcannon@gmail.com>

Brett Merrill <brett.j.merrill94@gmail.com>
Brian Dellisanti <briandellisanti@gmail.com>
Brian Downs <brian.downs@gmail.com>
Brian Falk <falk@logicparty.org>
Brian G. Merrell <bgmerrell@gmail.com>
Brian Gitonga Marete <marete@toshnix.com> <bgmarete@gmail.com> <bgm@google.com>
Brian Kennedy <btkennedy@gmail.com>
Brian Kessler <brian.m.kessler@gmail.com>
Brian Ketelsen <bketelsen@gmail.com>
Brian Slesinsky <skybrian@google.com>
Brian Smith <ohohvi@gmail.com>
Brian Starke <brian.starke@gmail.com>
Bryan Alexander <Kozical@msn.com>
Bryan C. Mills <bcmills@google.com>
Bryan Chan <bryan.chan@ca.ibm.com>
Bryan Ford <brynosaurus@gmail.com>
Bryan Heden <b.heden@gmail.com>
Bulat Gaifullin <gaifullinbf@gmail.com>
Burak Guven <bguven@gmail.com>
Caine Tighe <arctanofyourface@gmail.com>
Caio Marcelo de Oliveira Filho <caio.oliveira@intel.com>
Caleb Martinez <accounts@calebmartinez.com>
Caleb Spare <cespare@gmail.com>
Carl Chatfield <carlchatfield@gmail.com>
Carl Henrik Lunde <chlunde@ifi.uio.no>
Carl Jackson <carl@stripe.com>
Carl Johnson <me@carlmjohnson.net>
Carl Mastrangelo <notcarl@google.com>
Carl Shapiro <cshapiro@google.com> <cshapiro@golang.org>
Carlisia Campos <carlisia@grokkingtech.io>
Carlo Alberto Ferraris <cafxx@strayorange.com>
Carlos Amedee <carlos@golang.org>
Carlos Castillo <cookieo9@gmail.com>
Carlos Cirello <uldericofilho@gmail.com>
Carlos Eduardo <me@carlosedp.com>
Carlos Eduardo Seo <cseo@linux.vnet.ibm.com>
Carlos Iriarte <ciriarte@gmail.com>
Carlos Souza <carloshrsouza@gmail.com>
Carolyn Van Slyck <me@carolynvanslyck.com>
Carrie Bynon <cbynon@gmail.com>
Cary Hull <chull@google.com>
Case Nelson <case.nelson@gmail.com>
Casey Callendrello <squeed@gmail.com>
Casey Marshall <casey.marshall@gmail.com>
Catalin Nicutar <cnicutar@google.com>
Catalin Patulea <catalinp@google.com>
Cedric Staub <cs@squareup.com>
Cezar S Espinola <cezarsa@gmail.com>

Chad Rosier <mrosier.qdt@qualcommdatacenter.com>
ChaiShushan <chaishushan@gmail.com>
Changkun Ou <hi@changkun.us>
Channing Kimble-Brown <channing@golang.org>
Chao Xu <xuchao@google.com>
Charles Fenwick Elliott <Charles@FenwickElliott.io>
Charles Kenney <charlesc.kenney@gmail.com>
Charles L. Dorian <cldorian@gmail.com>
Charles Lee <zombie.fml@gmail.com>
Charles Weill <weill@google.com>
Chauncy Cullitan <chauncyc@google.com>
Chen Zhihan <energiehund@gmail.com>
Cherry Zhang <cherryyz@google.com>
Chew Choon Keat <choonkeat@gmail.com>
Cholerae Hu <choleraehyq@gmail.com>
Chotepud Teo <AlexRouSg@users.noreply.github.com>
Chris Ball <chris@printf.net>
Chris Biscardi <chris@christopherbiscardi.com>
Chris Broadfoot <cbro@golang.org>
Chris Dollin <ehog.hedge@gmail.com>
Chris Farmiloe <chrisfarms@gmail.com>
Chris Hines <chris.cs.guy@gmail.com>
Chris Howey <howeyc@gmail.com>
Chris Hundt <hundt@google.com>
Chris Jones <chris@cjones.org> <chris.jones.yar@gmail.com>
Chris Kastorff <encryptio@gmail.com>
Chris Le Roy <brompwnie@users.noreply.github.com>
Chris Lennert <calennert@gmail.com>
Chris Liles <caveryliles@gmail.com>
Chris Manghane <cmang@golang.org>
Chris Marchesi <chrism@vanclueverttech.com>
Chris McGee <sirnewton_01@yahoo.ca> <newton688@gmail.com>
Chris Raynor <raynor@google.com>
Chris Roche <rodaine@gmail.com>
Chris Smith <chrsmith@users.noreply.github.com>
Chris Stockton <chrisstocktonaz@gmail.com>
Chris Zou <chriszou@ca.ibm.com>
Christian Alexander <christian@linux.com>
Christian Couder <chriscool@tuxfamily.org>
Christian Himpel <chressie@googlemail.com> <chressie@gmail.com>
Christian Muehlhaeuser <muesli@gmail.com>
Christian Pellegrin <chri@evolware.org>
Christian R. Petrin <christianpetrin@gmail.com>
Christine Hansmann <chhansmann@gmail.com>
Christoffer Buchholz <christoffer.buchholz@gmail.com>
Christoph Blecker <admin@toph.ca>
Christoph Hack <christoph@tux21b.org>
Christopher Cahoon <chris.cahoon@gmail.com>

Christopher Guiney <chris@guiney.net>
Christopher Henderson <chris@chenderson.org>
Christopher Koch <chrisko@google.com>
Christopher Loessl <cloessl+github@gmail.com>
Christopher Nelson <nadiasvertex@gmail.com>
Christopher Nielsen <m4dh4tt3r@gmail.com>
Christopher Redden <christopher.redden@gmail.com>
Christopher Swenson <cswenson@google.com>
Christopher Wedgwood <cw@f00f.org>
Christos Zoulas <christos@zoulas.com> <zoulasc@gmail.com>
Christy Perez <christy@linux.vnet.ibm.com>
CL Sung <clsung@gmail.com> <cl_sung@htc.com>
Clement Chigot <clement.chigot@atos.net>
Clement Skau <clementskaug@gmail.com>
Clint J. Edwards <clint.j.edwards@gmail.com>
Cody Oss <the.cody.oss@gmail.com>
Colby Ranger <cranger@google.com>
Colin Arnott <colin@urandom.co.uk>
Colin Cross <ccross@android.com>
Colin Edwards <colin@recursivepenguin.com>
Colin Kennedy <moshen.colin@gmail.com>
Colin Nelson <colnnelson@google.com>
Colin Rice <clr@google.com>
Conrad Irwin <conrad.irwin@gmail.com>
Conrad Meyer <cemeyer@cs.washington.edu>
Conrado Gouvea <conradopl@gmail.com>
Constantin Konstantinidis <constantinkonstantinidis@gmail.com>
Corey Thomasson <cthom.lists@gmail.com>
Corne van der Plas <vdplas@gmail.com>
Cosmos Nicolaou <cnicolaou@google.com>
Costin Chirvasuta <ctin@google.com>
Craig Citro <craigcitro@google.com>
Cristian Staretu <unclejacksons@gmail.com>
Cuihtlauac ALVARADO <cuihtlauac.alvarado@orange.com>
Cyrill Schumacher <cyrill@schumacher.fm>
Daisuke Fujita <dtanshi45@gmail.com>
Daisuke Suzuki <daisuzu@gmail.com>
Daker Fernandes Pinheiro <daker.fernandes.pinheiro@intel.com>
Damian Gryski <dgryski@gmail.com>
Damien Lespiau <damien.lespiau@gmail.com> <damien.lespiau@intel.com>
Damien Mathieu <42@dmathieu.com>
Damien Neil <dneil@google.com>
Damien Tournoud <damien@platform.sh>
Dan Ballard <dan@mindstab.net>
Dan Caddigan <goldcaddy77@gmail.com>
Dan Callahan <dan.callahan@gmail.com>
Dan Harrington <harringtond@google.com>
Dan Jacques <dnj@google.com>

Dan Johnson <computerdruid@google.com>
Dan Peterson <dpiddy@gmail.com>
Dan Pupius <dan@medium.com>
Dan Scales <danscales@google.com>
Dan Sinclair <dan.sinclair@gmail.com>
Daniel Cormier <danielc@knowbe4.com>
Danil de Kok <me@danieldk.eu>
Daniel Fleischman <danielfleischman@gmail.com>
Daniel Ingram <ingramds@appstate.edu>
Daniel Johansson <dajo2002@gmail.com>
Daniel Kerwin <d.kerwin@gini.net>
Daniel Krech <eikeon@eikeon.com>
Daniel Kumor <rdkumor@gmail.com>
Daniel Langner <s8572327@gmail.com>
Daniel Lidn <daniel.liden.87@gmail.com>
Daniel Lublin <daniel@lublin.se>
Daniel Mangum <georgedanielmangum@gmail.com>
Daniel Mart <mvdan@mvdan.cc>
Daniel Morsing <daniel.morsing@gmail.com>
Daniel Nadasi <dnadasi@google.com>
Daniel Nephin <dnephin@gmail.com>
Daniel Ortiz Pereira da Silva <daniel.particular@gmail.com>
Daniel Skinner <daniel@dasa.cc>
Daniel Speichert <daniel@speichert.pl>
Daniel Theophanes <kardianos@gmail.com>
Daniel Upton <daniel@floppy.co>
Daniela Petruzalek <daniela.petruzalek@gmail.com>
Danish Dua <danishdua@google.com>
Danish Prakash <grafitykoncept@gmail.com>
Danny Rosseau <daniel.rosseau@gmail.com>
Daria Koliustratova <daria.koliustratova@intel.com>
Darien Raymond <admin@v2ray.com>
Darren Elwood <darren@textnode.com>
Darren Grant <darren.e.grant@gmail.com>
Darren McCleary <darren.rmc@gmail.com>
Darshan Parajuli <parajulidarshan@gmail.com>
Datong Sun <dndx@idndx.com>
Dave Borowitz <dborowitz@google.com>
Dave Bort <dbort@golang.org>
Dave Cheney <dave@cheney.net>
Dave Day <djd@golang.org>
Dave Grijalva <dgrijalva@ngmoco.com>
Dave MacFarlane <driusan@gmail.com>
Dave Russell <forfuncsake@gmail.com>
David Anderson <danderson@google.com>
David Barnett <dbarnett@google.com>
David Benjamin <davidben@google.com>
David Bond <davidsbond93@gmail.com>

David Brophy <dave@brophy.uk>
David Brgin <676c7473@gmail.com>
David Calavera <david.calavera@gmail.com>
David Carlier <devnexen@gmail.com>
David Carter <fresco.raja@gmail.com>
David Chase <drchase@google.com>
David Covert <davidhcovert@gmail.com>
David Crawshaw <david.crawshaw@zentus.com> <crawshaw@google.com> <crawshaw@golang.org>
David du Colombier <0intro@gmail.com>
David Finkel <david.finkel@gmail.com>
David Forsythe <dforsythe@gmail.com>
David G. Andersen <dave.andersen@gmail.com>
David Glasser <glasser@meteor.com>
David Golden <david@autopragmatic.com>
David Heuschmann <heuschmann.d@gmail.com>
David Howden <dhowden@gmail.com>
David Hubbard <dsp@google.com>
David Jakob Fritz <david.jakob.fritz@gmail.com>
David Jones <dxjones@gmail.com>
David Lazar <lazard@golang.org>
David Leon Gil <coruus@gmail.com>
David McLeish <davemc@google.com>
David Ndungu <dnjuguna@gmail.com>
David NewHamlet <david@newhamlet.com>
David Presotto <presotto@gmail.com>
David R. Jenni <david.r.jenni@gmail.com>
David Sansome <me@davidsansome.com>
David Stainton <dstainton415@gmail.com>
David Symonds <dsymonds@golang.org>
David Thomas <davidthomas426@gmail.com>
David Timm <dtimm@pivotal.io>
David Titarenco <david.titarenco@gmail.com>
David Tolpin <david.tolpin@gmail.com>
David Url <david@urld.io>
David Volquartz Lebech <david@lebech.info>
David Wimmer <davidlwimmer@gmail.com>
Davies Liu <davies.liu@gmail.com>
Davor Kapsa <davor.kapsa@gmail.com>
Dean Eigenmann <7621705+decanus@users.noreply.github.com>
Dean Prichard <dean.prichard@gmail.com>
Deepak Jois <deepak.jois@gmail.com>
Denis Bernard <db047h@gmail.com>
Denis Brandolini <denis.brandolini@gmail.com>
Denis Isaev <idenx@yandex.com>
Denis Nagorny <denis.nagorny@intel.com>
Dennis Kuhnert <mail.kuhnert@gmail.com>
Denys Honsiorovskiy <honsiorovskiy@gmail.com>
Denys Smirnov <denis.smirnov.91@gmail.com>

Derek Buitenhuis <derek.buitenhuis@gmail.com>
Derek Che <drc@yahoo-inc.com>
Derek McGowan <derek@mcgstyle.net>
Derek Parker <parkerderek86@gmail.com>
Derek Phan <derekphan94@gmail.com>
Derek Shockey <derek.shockey@gmail.com>
Dev Ojha <dojha12@gmail.com>
Dev Zhoujun <dev.zhoujun@gmail.com>
Devon H. O'Dell <devon.odell@gmail.com>
Dhaivat Pandit <dhaivatpandit@gmail.com>
Dhananjay Nakrani <dhananjayn@google.com>
Dhiru Kholia <dhiru.kholia@gmail.com>
Dhruvdudd Jadhav <dhrvdudd.jadhav@gmail.com>
Di Xiao <dixiao@google.com>
Didier Spezia <didier.06@gmail.com>
Diego Siqueira <diego9889@gmail.com>
Dieter Plaetinck <dieter@raintank.io>
Dimitri Sokolyuk <sokolyuk@gmail.com>
Dimitri Tcaciuc <dtcaciuc@gmail.com>
Dina Garmash <dgrmsh@gmail.com>
Diogo Pinela <diogoid7400@gmail.com>
Dirk Gadsden <dirk@esherido.com>
Diwaker Gupta <diwakergupta@gmail.com>
Dmitri Goutnik <dgoutnik@gmail.com>
Dmitri Popov <operator@cv.dp-net.com>
Dmitri Shuralyov <dmitshur@golang.org> <dmitri@shuralyov.com>
Dmitriy Cherchenko <dcherchenko@gmail.com>
Dmitriy Dudkin <dudkin.dmitriy@gmail.com>
Dmitriy Shelenin <deemok@googlemail.com> <deemok@gmail.com>
Dmitriy Vyukov <dvyukov@google.com>
Dmitry Chestnykh <dchest@gmail.com>
Dmitry Doroginin <doroginin@gmail.com>
Dmitry Mottl <dmitry.mottl@gmail.com>
Dmitry Neverov <dmitry.neverov@gmail.com>
Dmitry Savintsev <dsavints@gmail.com>
Dmitry Yakunin <nonamezeil@gmail.com>
Doga Fincan <doga@icloud.com>
Domas Tamauskas <puerdomus@gmail.com>
Domen Ipavec <domen@ipavec.net>
Dominic Green <dominicgreen1@gmail.com>
Dominik Honnef <dominik.honnef@gmail.com>
Dominik Vogt <vogt@linux.vnet.ibm.com>
Don Byington <don@dbyington.com>
Donald Huang <don.hcd@gmail.com>
Dong-hee Na <donghee.na92@gmail.com>
Donovan Hide <donovanhide@gmail.com>
Doug Anderson <douga@google.com>
Doug Fawley <dfawley@google.com>

Douglas Danger Manley <doug.manley@gmail.com>
Drew Flower <drewvanstone@gmail.com>
Drew Hintz <adhintz@google.com>
Duco van Amstel <duco.vanamstel@gmail.com>
Duncan Holm <mail@frou.org>
Dustin Carlino <dcarlino@google.com>
Dustin Herbison <djherbis@gmail.com>
Dustin Long <dustmop@gmail.com>
Dustin Sallings <dsallings@gmail.com>
Dustin Shields-Cloues <dcloues@gmail.com>
Dvir Volk <dvir@everything.me> <dvirsky@gmail.com>
Dylan Waits <dylan@waits.io>
Ed Schouten <ed@nuxi.nl>
Edan Bedrik <3d4nb3@gmail.com>
Eddie Scholtz <escholtz@google.com>
Eden Li <eden.li@gmail.com>
Eduard Urbach <e.urbach@gmail.com>
Eduardo Ramalho <eduardo.ramalho@gmail.com>
Eduardo Villaseor <evillasrmx@gmail.com>
Edward Muller <edwardam@interlix.com>
Egon Elbre <egonelbre@gmail.com>
Ehren Kret <ehren.kret@gmail.com>
Eitan Adler <lists@eitanadler.com>
Eivind Uggedal <eivind@uggedal.com>
Elbert Fliek <efliek@gmail.com>
Eldar Rakhimberdin <ibeono@gmail.com>
Elena Grahovac <elena@grahovac.me>
Eli Bendersky <eliben@google.com>
Elias Naur <mail@eliasnaur.com> <elias.naur@gmail.com>
Elliot Morrison-Reed <elliottmr@gmail.com>
Ellison Leao <ellisonleao@gmail.com>
Emerson Lin <linyintor@gmail.com>
Emil Hessman <emil@hessman.se>
Emil Mursalimov <mursalimovemeel@gmail.com>
Emilien Kenler <hello@emilienkenler.com>
Emmanuel Odeke <emm.odeke@gmail.com> <odeke@ualberta.ca>
Emrecan Bati <emrecanbati@gmail.com>
Eno Compton <enocom@google.com>
Eoghan Sherry <ejsherry@gmail.com>
Eric Biggers <ebiggers@google.com>
Eric Brown <browne@vmware.com>
Eric Chiang <eric.chiang.m@gmail.com>
Eric Clark <zerohp@gmail.com>
Eric Daniels <eric@erdaniels.com>
Eric Engestrom <eric@engestrom.ch>
Eric Garrido <ekg@google.com>
Eric Koleda <ekoleda+devrel@google.com>
Eric Lagergren <ericscottlagergren@gmail.com>

Eric Milliken <emilliken@gmail.com>
Eric Pauley <eric@pauley.me>
Eric Ponce <tricokun@gmail.com>
Eric Rescorla <ekr@rtfm.com>
Eric Roshan-Eisner <eric.d.eisner@gmail.com>
Eric Rutherford <erutherford@gmail.com>
Eric Rykwalder <e.rykwalder@gmail.com>
Erick Tryzelaar <etryzelaar@google.com>
Erik Aigner <aigner.erik@gmail.com>
Erik Dubbelboer <erik@dubbelboer.com>
Erik St. Martin <alakriti@gmail.com>
Erik Staab <estaab@google.com>
Erik Westrup <erik.westrup@gmail.com>
Erin Masatsugu <erin.masatsugu@gmail.com>
Ernest Chiang <ernest_chiang@htc.com>
Erwin Oegema <blablaechthema@hotmail.com>
Esko Luontola <esko.luontola@gmail.com>
Ethan Burns <eaburns@google.com>
Ethan Miller <eamiller@us.ibm.com>
Euan Kemp <euank@euank.com>
Eugene Formanenko <mo4islona@gmail.com>
Eugene Kalinin <e.v.kalinin@gmail.com>
Evan Broder <evan@stripe.com>
Evan Brown <evanbrown@google.com>
Evan Digby <evandigby@gmail.com>
Evan Hicks <evan.hicks2@gmail.com>
Evan Jones <ej@evanjones.ca>
Evan Klitzke <evan@eklitzke.org>
Evan Kroske <evankroske@google.com>
Evan Martin <evan.martin@gmail.com>
Evan Phoenix <evan@phx.io>
Evan Shaw <chickencha@gmail.com>
Evgeniy Kulikov <tuxuls@gmail.com>
Evgeniy Polyakov <zbr@ioremap.net>
Ewan Chou <coocood@gmail.com>
Ewan Valentine <ewan.valentine89@gmail.com>
Eyal Posener <posener@gmail.com>
Fabian Wickborn <fabian@wickborn.net>
Fabian Zaremba <fabian@youreemail.eu>
Fabrizio Milo <mistobaan@gmail.com>
Faiyaz Ahmed <ahmedf@vmware.com>
Fan Hongjian <fan.howard@gmail.com>
Fangming Fang <fangming.fang@arm.com>
Fannie Zhang <fannie.zhang@arm.com>
Fatih Arslan <fatih@arslan.io>
Fazal Majid <majid@apsalar.com>
Fazlul Shahriar <fshahriar@gmail.com>
Federico Bond <federicobond@gmail.com>

Federico Simoncelli <fsimonce@redhat.com>
Fedor Indutny <fedor@indutny.com>
Fedor Korotkiy <dartslon@gmail.com>
Felipe Oliveira <felipeweb.programador@gmail.com>
Felix Bnemann <Felix.Buenemann@gmail.com>
Felix Cornelius <9767036+fcornelius@users.noreply.github.com>
Felix Geisendrfer <haimuiba@gmail.com>
Felix Kollmann <fk@konsorten.de>
Ferenc Szabo <frncmx@gmail.com>
Filip Gruszczyski <gruszczzy@gmail.com>
Filip Haglund <drathier@users.noreply.github.com>
Filip Stanis <fstanis@google.com>
Filippo Valsorda <filippo@golang.org> <filippo@cloudflare.com> <hi@filippo.io>
Firmansyah Adiputra <frm.adiputra@gmail.com>
Florian Forster <octo@google.com>
Florian Uekermann <florian@uekermann-online.de> <f1@uekermann-online.de>
Florian Weimer <fw@deneb.enyo.de>
Florin Patan <florinpatan@gmail.com>
Folke Behrens <folke@google.com>
Ford Hurley <ford.hurley@gmail.com>
Francesc Campoy <campoy@golang.org>
Francesco Renzi <rentziass@gmail.com>
Francisco Claude <fclaude@recoded.cl>
Francisco Rojas <francisco.rojas.gallegos@gmail.com>
Francisco Souza <franciscossouza@gmail.com>
Frank Schroeder <frank.schroeder@gmail.com>
Frank Somers <fsomers@arista.com>
Frederic Guillot <frederic.guillot@gmail.com>
Frederick Kelly Mayle III <frederickmayle@gmail.com>
Frederik Ring <frederik.ring@gmail.com>
Frederik Zipp <fzipp@gmx.de>
Fredrik Enestad <fredrik.enestad@soundtrackyourbrand.com>
Fredrik Forsmo <fredrik.forsmo@gmail.com>
Fredrik Wallgren <fredrik.wallgren@gmail.com>
Frew Schmidt <github@frew.co>
Frithjof Schulze <schulze@math.uni-hannover.de> <sfritjhof@gmail.com>
Frits van Bommel <fvbommel@gmail.com>
Fujimoto Kyosuke <kyoro.f@gmail.com>
Fumitoshi Ukai <ukai@google.com>
G. Hussain Chinoy <ghchinoy@gmail.com>
Gaal Yahas <gaal@google.com>
Gabrel Arthr Ptursson <gabriel@system.is>
Gabriel Aszalos <gabriel.aszalos@gmail.com>
Gabriel Guzman <gabe.guzman@gmail.com>
Gabriel Nelle <tehsphinx@web.de>
Gabriel Nicolas Avellaneda <avellaneda.gabriel@gmail.com>
Gabriel Rosenhouse <rosenhouse@gmail.com>
Gabriel Russell <gabriel.russell@gmail.com>

Gareth Paul Jones <gpj@foursquare.com>
Garret Kelly <gdk@google.com>
Garrick Evans <garrick@google.com>
Gary Burd <gary@beagledreams.com> <gary.burd@gmail.com>
Gary Elliott <garyelliott@google.com>
Gaurish Sharma <contact@gaurishsharma.com>
Gautham Thambidorai <gautham.dorai@gmail.com>
Gauthier Jolly <gauthier.jolly@gmail.com>
Gawen Arab <gawen.arab@c.zen.ly>
Geert-Johan Riemer <gjr19912@gmail.com>
Genevieve Luyt <genevieve.luyt@gmail.com>
Gengliang Wang <ltnwgl@gmail.com>
Geoff Berry <gberry.qdt@qualcommdatacenter.com>
Geoffroy Lorieux <lorieux.g@gmail.com>
Geon Kim <geon0250@gmail.com>
Georg Reinke <guelfey@gmail.com>
George Gkirtsou <ggirtsou@gmail.com>
George Hartzell <hartzell@alerce.com>
George Shammas <george@shamm.as> <georgyo@gmail.com>
Gerasimos (Makis) Maropoulos <kataras2006@hotmail.com>
Gerasimos Dimitriadis <gedimitr@gmail.com>
Gergely Brautigam <skarlso777@gmail.com>
Gernot Vormayr <gvormayr@gmail.com>
Gert Cuykens <gert.cuykens@gmail.com>
Getulio Snchez <valentin2507@gmail.com>
Ghazni Nattarshah <ghazni.nattarshah@gmail.com>
Gianguido Sora` <g.sora4@gmail.com>
Gideon Jan-Wessel Redelinghuys <gjredelinghuys@gmail.com>
Giles Lean <giles.lean@pobox.com>
Giovanni Bajo <rasky@develer.com>
GitHub User @aca (50316549) <acadx0@gmail.com>
GitHub User @ajnrp (1688456) <ajnrp@users.noreply.github.com>
GitHub User @ajz01 (4744634) <ajzdenek@gmail.com>
GitHub User @alkesh26 (1019076) <alkesh26@gmail.com>
GitHub User @andig (184815) <cpuidle@gmx.de>
GitHub User @andrius4669 (4699695) <andrius4669@gmail.com>
GitHub User @as (8127015) <as.utf8@gmail.com>
GitHub User @bakape (7851952) <bakape@gmail.com>
GitHub User @bgadrian (830001) <aditza8@gmail.com>
GitHub User @bontequero (2674999) <bontequero@gmail.com>
GitHub User @cch123 (384546) <buaa.cch@gmail.com>
GitHub User @chainhelen (7046329) <chainhelen@gmail.com>
GitHub User @chanxuehong (3416908) <chanxuehong@gmail.com>
GitHub User @cncal (23520240) <flycalvin@qq.com>
GitHub User @DQNEO (188741) <dqneo@gmail.com>
GitHub User @Dreamacro (8615343) <chuainian@gmail.com>
GitHub User @dupoxy (1143957) <dupoxy@users.noreply.github.com>
GitHub User @erifan (31343225) <eric.fang@arm.com>

GitHub User @esell (9735165) <eujon.sellers@gmail.com>
GitHub User @fatedier (7346661) <fatedier@gmail.com>
GitHub User @frennkie (6499251) <mail@rhab.de>
GitHub User @geedchin (11672310) <geedchin@gmail.com>
GitHub User @GrigoriyMikhalkin (3637857) <grigoriymikhalkin@gmail.com>
GitHub User @hengwu0 (41297446) <41297446+hengwu0@users.noreply.github.com>
GitHub User @itchyny (375258) <itchyny@hatena.ne.jp>
GitHub User @jinmiaoluo (39730824) <jinmiaoluo@icloud.com>
GitHub User @jobbrown (6345470) <msshane2008@gmail.com>
GitHub User @kazysshr (30496953) <kazysshr0301@gmail.com>
GitHub User @kc1212 (1093806) <kc1212@users.noreply.github.com>
GitHub User @Kropekk (13366453) <kamilkropiewnicki@gmail.com>
GitHub User @linguohua (3434367) <lghchinaidea@gmail.com>
GitHub User @LotusFenn (13775899) <fenn.lotus@gmail.com>
GitHub User @ly303550688 (11519839) <yang.liu636@gmail.com>
GitHub User @madiganz (18340029) <zacharymadigan@gmail.com>
GitHub User @maltalex (10195391) <code@bit48.net>
GitHub User @Matts966 (28551465) <Matts966@users.noreply.github.com>
GitHub User @micnncim (21333876) <micnncim@gmail.com>
GitHub User @mkishere (224617) <224617+mkishere@users.noreply.github.com>
GitHub User @nu50218 (40682920) <nu_ll@icloud.com>
GitHub User @OlgaVIPetrova (44112727) <OVPPetrova@gmail.com>
GitHub User @pityonline (438222) <pityonline@gmail.com>
GitHub User @po3rin (29445112) <abctail30@gmail.com>
GitHub User @pokutuna (57545) <popopopokutuna@gmail.com>
GitHub User @pytimer (17105586) <lixin20101023@gmail.com>
GitHub User @ramenjuniti (32011829) <ramenjuniti@gmail.com>
GitHub User @saitarunreddy (21041941) <saitarunreddypalla@gmail.com>
GitHub User @shogo-ma (9860598) <Chorama194@gmail.com>
GitHub User @skanehira (7888591) <sho19921005@gmail.com>
GitHub User @tatsumack (4510569) <tatsu.mack@gmail.com>
GitHub User @tell-k (26263) <ffk2005@gmail.com>
GitHub User @tennashi (10219626) <tennashio@gmail.com>
GitHub User @uhei (2116845) <uhei@users.noreply.github.com>
GitHub User @uropek (39370426) <uropek@gmail.com>
GitHub User @utkarsh-extc (53217283) <utkarsh.extc@gmail.com>
GitHub User @witchard (4994659) <witchard@hotmail.co.uk>
GitHub User @yah01 (12216890) <kagaminehuan@gmail.com>
GitHub User @yuanhh (1298735) <yuan415030@gmail.com>
GitHub User @zikaeroh (48577114) <zikaeroh@gmail.com>
GitHub User @ZZMarquis (7624583) <zhonglingjian3821@163.com>
Giulio Iotti <dullgiulio@gmail.com>
Giulio Micheloni <giulio.micheloni@gmail.com>
Giuseppe Valente <gvalente@arista.com>
Gleb Stepanov <glebstepanov1992@gmail.com>
Glenn Brown <glennb@google.com>
Glenn Lewis <gmlewis@google.com>
Gordon Klaus <gordon.klaus@gmail.com>

Gordon Tyler <gordon@doxxx.net>
Graham King <graham4king@gmail.com>
Graham Miller <graham.miller@gmail.com>
Grant Griffiths <ggp493@gmail.com>
Greg Poirier <greg.istehbest@gmail.com>
Greg Steuck <gnezdo+github@google.com>
Greg Thelen <gthelen@google.com>
Greg Ward <greg@gerg.ca>
Grgoire Delattre <gregoire.delattre@gmail.com>
Gregory Man <man.gregory@gmail.com>
Gregory Petrosyan <gregory.petrosyan@gmail.com>
Guilherme Caruso <gui.martinscaruso@gmail.com>
Guilherme Garnier <guilherme.garnier@gmail.com>
Guilherme Goncalves <guilhermeaugustosg@gmail.com>
Guilherme Rezende <guilhermebr@gmail.com>
Guillaume J. Charmes <guillaume@charmes.net>
Gnther Noack <gnoack@google.com>
Guobiao Mei <meiguobiao@gmail.com>
Guoliang Wang <iamwgliang@gmail.com>
Gustav Paul <gustav.paul@gmail.com>
Gustav Westling <gustav@westling.xyz>
Gustavo Franco <gustavorfranco@gmail.com>
Gustavo Niemeyer <gustavo@niemeyer.net> <n13m3y3r@gmail.com>
Gwenael Treguier <gwenn.kahz@gmail.com>
Gyu-Ho Lee <gyuhox@gmail.com>
H. brahim Gngr <igungor@gmail.com>
Hajime Hoshi <hajimehoshi@gmail.com>
Hallgrimur Gunnarsson <halg@google.com>
HAMANO Tsukasa <hamano@osstech.co.jp>
Han-Wen Nienhuys <hanwen@google.com>
Hang Qian <hangqian90@gmail.com>
Hanjun Kim <hallazzang@gmail.com>
Haosdent Huang <haosdent@gmail.com>
Harald Nordgren <haraldnordgren@gmail.com>
Hari haran <hariharan.uno@gmail.com>
Hariharan Srinath <srinathh@gmail.com>
Harley Laue <losinggeneration@gmail.com>
Harry Moreno <morenoh149@gmail.com>
Harshavardhana <hrshvardhana@gmail.com>
Hasan Ozgan <hasan@ozgan.net>
Hasit Bhatt <hasit.p.bhatt@gmail.com>
Hauke Lffler <hloeffler@users.noreply.github.com>
Hvard Haugen <havard.haugen@gmail.com>
He Liu <liulonnie@gmail.com>
Hector Chu <hectorchu@gmail.com>
Hector Martin Cantero <hector@marcansoft.com>
Henning Schmiedehausen <henning@schmiedehausen.org>
Henrik Edwards <henrik.edwards@gmail.com>

Henrik Hodne <henrik@hodne.io>
Henry Adi Sumarto <henry.adisumarto@gmail.com>
Henry Bubert <google@mindeco.de>
Henry Chang <mr.changyuheng@gmail.com>
Henry Clifford <h.a.clifford@gmail.com>
Henry Wong <liushuai.wang@elastic.co>
Herbert Georg Fischer <herbert.fischer@gmail.com>
Herbie Ong <herbie@google.com>
Heschi Kreinick <heschi@google.com>
Hidetatsu Yaginuma <ygnmhdt@gmail.com>
Hilko Bengen <bengen@hilluzination.de>
Hiroaki Nakamura <hnakamur@gmail.com>
Hiromichi Ema <ema.hiro@gmail.com>
Hironao OTSUBO <motemen@gmail.com>
Hiroshi Ioka <hirochachacha@gmail.com>
Hitoshi Mitake <mitake.hitoshi@gmail.com>
Holden Huang <ttyh061@gmail.com>
Hong Ruiqi <hongruiqi@gmail.com>
Hongfei Tan <feilengcui008@gmail.com>
Horacio Duran <horacio.duran@gmail.com>
Horst Rutter <hhrutter@gmail.com>
Hossein Sheikh Attar <hattar@google.com>
Howard Zhang <howard.zhang@arm.com>
Hsin Tsao <tsao@google.com>
Hsin-Ho Yeh <yhh92u@gmail.com>
Hu Keping <hukeping@huawei.com>
Huan Du <i@huandu.me>
Hugues Bruant <hugues.bruant@gmail.com>
Huy Le <huy.dinh.le.89@gmail.com>
Hyang-Ah Hana Kim <hakim@google.com> <hyangah@gmail.com>
Hyoyoung Chang <hyoyoung@gmail.com>
Ian Cottrell <iancottrell@google.com>
Ian Davis <nospam@iandavis.com>
Ian Gudger <ian@loosescre.ws>
Ian Haken <ihaken@netflix.com>
Ian Kent <iankent85@gmail.com>
Ian Lance Taylor <iant@golang.org>
Ian Leue <ian@appboy.com>
Ian Zapolsky <ianzapolsky@gmail.com>
Ibrahim AshShohail <ibra.sho@gmail.com>
Icarus Sparry <golang@icarus.freeuk.com>
Iccha Sethi <icchasethi@gmail.com>
Idora Shinatose <idora.shinatose@gmail.com>
Ignacio Hagopian <jsign.uy@gmail.com>
Igor Bernstein <igorbernstein@google.com>
Igor Dolzhikov <bluesriverz@gmail.com>
Igor Vashyst <ivashyst@gmail.com>
Igor Zhilianin <igor.zhilianin@gmail.com>

Ilya Yalovyy <yalovoy@gmail.com>
Ilya Sinelnikov <sidhmangh@gmail.com>
Ilya Tocar <ilya.tocar@intel.com>
INADA Naoki <songofacandy@gmail.com>
Inanc Gumus <m@inanc.io>
Ingo Gottwald <in.gottwald@gmail.com>
Ingo Krabbe <ikrabbe.ask@gmail.com>
Ingo Oeser <nightlyone@googlemail.com> <nightlyone@gmail.com>
Ioannis Georgoulas <geototti21@hotmail.com>
Irbe Krumina <irbekrm@gmail.com>
Irfan Sharif <irfanmahmoudsharif@gmail.com>
Irieda Noboru <irieda@gmail.com>
Isaac Ardis <isaac.ardis@gmail.com>
Isaac Wagner <ibw@isaacwagner.me>
Isfan Azhabil <isfanazhabil@gmail.com>
Iskander Sharipov <iskander.sharipov@intel.com> <quasilyte@gmail.com>
Issac Trotts <issactrotts@google.com>
Ivan Babrou <ivan@cloudflare.com>
Ivan Bertona <ivan.bertona@gmail.com>
Ivan Krasin <krasin@golang.org>
Ivan Kutuzov <arbrix@gmail.com>
Ivan Markin <sw@nogoegst.net>
Ivan Moscoso <moscoso@gmail.com>
Ivan Osadchii <ivan.osadchii@gmail.com>
Ivan Sharavuev <shpiwan@gmail.com>
Ivan Trubach <mr.trubach@icloud.com>
Ivan Ukhov <ivan.ukhov@gmail.com>
Ivy Evans <ivy@ivyevans.net>
Jaana Burcu Dogan <jbd@google.com> <jbd@golang.org> <burcujdogan@gmail.com>
Jaap Aarts <jjaap.aarts1@gmail.com>
Jack Britton <jackxbritton@gmail.com>
Jack Lindamood <jlindamo@justin.tv>
Jacob Baskin <jbaskin@google.com>
Jacob Blain Christen <dweomer5@gmail.com>
Jacob H. Haven <jacob@cloudflare.com>
Jacob Hoffman-Andrews <github@hoffman-andrews.com>
Jacob Walker <jacobwalker0814@gmail.com>
Jae Kwon <jae@tendermint.com>
Jake B <doogie1012@gmail.com>
Jakob Borg <jakob@nym.se>
Jakob Weisblat <jakobw@mit.edu>
Jakub ajka <jcajka@redhat.com>
Jakub Kaczmarzyk <jakubk@mit.edu>
Jakub Ryszard Czarnowicz <j.czarnowicz@gmail.com>
Jamal Carvalho <jamal.a.carvalho@gmail.com>
James Aguilar <jaguilar@google.com>
James Bardin <j.bardin@gmail.com>
James Chacon <jchacon@google.com>

James Clarke <jrtc27@jrtc27.com>
James Cowgill <James.Cowgill@imgtec.com>
James Craig Burley <james-github@burleyarch.com>
James David Chalfant <james.chalfant@gmail.com>
James Eady <jmeady@google.com>
James Fysh <james.fysh@gmail.com>
James Gray <james@james4k.com>
James Hartig <fastest963@gmail.com>
James Lawrence <jljatone@gmail.com>
James Meneghello <rawrz0r@gmail.com>
James Myers <jfmyers9@gmail.com>
James Neve <jamesoneve@gmail.com>
James Nugent <james@jen20.com>
James P. Cooper <jamespcooper@gmail.com>
James Robinson <jamesr@google.com> <jamesr.gatech@gmail.com>
James Schofield <james@shoeboxapp.com>
James Smith <jrs1995@icloud.com>
James Sweet <james.sweet88@googlemail.com>
James Toy <nil@opensesame.st>
James Treanor <jtreanor3@gmail.com>
James Tucker <raggi@google.com>
James Whitehead <jnwhiteh@gmail.com>
Jamie Beverly <jamie.r.beverly@gmail.com>
Jamie Gennis <jgennis@google.com> <jgennis@gmail.com>
Jamie Kerr <jkerr113@googlemail.com>
Jamie Liu <jameliu@google.com>
Jamie Stackhouse <contin673@gmail.com>
Jamie Turner <jamwt@dropbox.com>
Jamie Wilkinson <jaq@spacepants.org>
Jamil Djadala <djadala@gmail.com>
Jan Berktold <jan@berktold.co>
Jan H. Hosang <jan.hosang@gmail.com>
Jan Kratochvil <jan.kratochvil@redhat.com>
Jan Lehnardt <jan@apache.org>
Jan Mercl <0xjnm@gmail.com> <befelemepeseveze@gmail.com>
Jan Newmarch <jan.newmarch@gmail.com>
Jan Pilzer <jan.pilzer@gmx.de>
Jan Steinke <jan.steinke@gmail.com>
Jan Ziak <0xe2.0x9a.0x9b@gmail.com>
Jani Monoses <jani.monoses@ubuntu.com> <jani.monoses@gmail.com>
Jannis Andrija Schnitzer <jannis@schnitzer.im>
Jared Allard <jaredallard@users.noreply.github.com>
Jared Culp <jculp14@gmail.com>
Jaroslav Poepko <jp@webmaster.ms>
Jason A. Donenfeld <Jason@zx2c4.com>
Jason Baker <jason-baker@users.noreply.github.com>
Jason Barnett <jason.w.barnett@gmail.com>
Jason Buberel <jbuberel@google.com>

Jason Chu <jasonchujc@gmail.com>
Jason Del Ponte <delpontej@gmail.com>
Jason Hall <jasonhall@google.com>
Jason Keene <jasonkeene@gmail.com>
Jason LeBrun <jblebrun@gmail.com>
Jason Smale <jsmale@zendesk.com>
Jason Travis <infomaniac7@gmail.com>
Jason Wangsadinata <jwangsadinata@gmail.com>
Javier Kohen <jkohen@google.com>
Javier Revillas <jrevillas@massivedynamic.io>
Javier Segura <javism@gmail.com>
Jay Conrod <jayconrod@google.com>
Jay Taylor <outtatime@gmail.com>
Jay Weisskopf <jay@jayschwa.net>
Jean de Klerk <deklerk@google.com>
Jean-Andr Santoni <jean.andre.santoni@gmail.com>
Jean-Franois Bustarret <jf@bustarret.com>
Jean-Francois Cantin <jfcantin@gmail.com>
Jean-Marc Eurin <jmeurin@google.com>
Jean-Nicolas Moal <jn.moal@gmail.com>
Jed Denlea <jed@fastly.com>
Jdrzej Szczepaniak <jbszczepaniak@gmail.com>
Jeet Parekh <jeetparekh96@gmail.com>
Jeevanandam M <jeeva@myjeeva.com>
Jeff (Zhefu) Jiang <jeffjiang@google.com>
Jeff Craig <jeffcraig@google.com>
Jeff Dupont <jeff.dupont@gmail.com>
Jeff Hodges <jeff@somethingsimilar.com>
Jeff Johnson <jrjohnson@google.com>
Jeff R. Allen <jra@nella.org> <jeff.allen@gmail.com>
Jeff Sickel <jas@corpus-callosum.com>
Jeff Wendling <jeff@spacemonkey.com>
Jeffrey H <jeffreyh192@gmail.com>
Jelte Fennema <github-tech@jeltef.nl>
Jens Frederich <jfrederich@gmail.com>
Jeremiah Harmsen <jeremiah@google.com>
Jeremy Banks <_@jeremy.ca>
Jeremy Canady <jcanady@gmail.com>
Jeremy Faller <jeremy@golang.org>
Jeremy Jackins <jeremyjackins@gmail.com>
Jeremy Jay <jeremy@pbnjay.com>
Jeremy Schlatter <jeremy.schlatter@gmail.com>
Jeroen Bobbeldijk <jerbob92@gmail.com>
Jeroen Simonetti <jeroen@simonetti.nl>
Jerrin Shaji George <jerrinsg@gmail.com>
Jess Frazelle <me@jessfraz.com>
Jesse Szwedko <jesse.szwedko@gmail.com>
Jess Espino <jespinog@gmail.com>

Jia Zhan <jzhan@uber.com>
Jiacai Liu <jiacai2050@gmail.com>
Jianing Yu <jnyu@google.com>
Jianqiao Li <jianqiaoli@google.com>
Jie Ma <jienius@outlook.com>
Jihyun Yu <yjh0502@gmail.com>
Jim Cote <jfcote87@gmail.com>
Jim Kingdon <jim@bolt.me>
Jim McGrath <jimmc2@gmail.com>
Jim Minter <jminter@redhat.com>
Jimmy Frasche <soapboxcicero@gmail.com>
Jimmy Zelinskie <jimmyzelinskie@gmail.com>
Jin-wook Jeong <jeweljar@hanmail.net>
Jingcheng Zhang <diogin@gmail.com>
Jingguo Yao <yaojingguo@gmail.com>
Jingnan Si <jingnan.si@gmail.com>
Jinkun Zhang <franksnolf@gmail.com>
Jiong Du <londdevil@gmail.com>
Jirka Dank <dnk@mail.muni.cz>
Jiulong Wang <jiulongw@gmail.com>
Joakim Sernbrant <serbaut@gmail.com>
Joe Bowbeer <joe.bowbeer@gmail.com>
Joe Cortopassi <joe@joecortopassi.com>
Joe Farrell <joe2farrell@gmail.com>
Joe Harrison <joehazzers@gmail.com>
Joe Henke <joed.henke@gmail.com>
Joe Kyo <xunianzu@gmail.com>
Joe Poirier <jdpoirier@gmail.com>
Joe Richey <joerichey@google.com>
Joe Shaw <joe@joeshaw.org>
Joe Sylve <joe.sylve@gmail.com>
Joe Tsai <joetsai@digital-static.net>
Joel Sing <joel@sing.id.au> <jsing@google.com>
Jol Stemmer <jstemmer@google.com>
Joel Stemmer <stemmertech@gmail.com>
Joey Geiger <jgeiger@users.noreply.github.com>
Johan Brandhorst <johan.brandhorst@gmail.com>
Johan Euphrosine <proppy@google.com>
Johan Jansson <johan.jansson@iki.fi>
Johan Sageryd <j@1616.se>
John Asmuth <jasmuth@gmail.com>
John Beisley <huin@google.com>
John C Barstow <jbowtie@amathaine.com>
John DeNero <denero@google.com>
John Dethridge <jcd@golang.org>
John Gibb <johngibb@gmail.com>
John Gilik <john@jgilik.com>
John Graham-Cumming <jgc@jgc.org> <jgrahamc@gmail.com>

John Howard Palevich <jack.palevich@gmail.com>
John Jeffery <jjeffery@sp.com.au>
John Jenkins <twodopeshaggy@gmail.com>
John Leidegren <john.leidegren@gmail.com>
John McCabe <john@johnmccabe.net>
John Moore <johnkenneth.moore@gmail.com>
John Newlin <jnewlin@google.com>
John Papandriopoulos <jpap.code@gmail.com>
John Potocny <johnp@vividcortex.com>
John R. Lenton <jlenton@gmail.com>
John Schnake <schnake.john@gmail.com>
John Shahid <jvshahid@gmail.com>
John Tuley <john@tuley.org>
John Weldon <johnweldon4@gmail.com>
Johnny Luo <johnnyluo1980@gmail.com>
Jon Chen <jchen@justin.tv>
Jon Johnson <jonjohnson@google.com>
Jonas Bernoulli <jonas@bernoul.li>
Jonathan Allie <jonallie@google.com>
Jonathan Amsterdam <jba@google.com>
Jonathan Boule <jonathanboule@gmail.com>
Jonathan Chen <dijonkitchen@users.noreply.github.com>
Jonathan Feinberg <feinberg@google.com>
Jonathan Gold <jgold.bg@gmail.com>
Jonathan Hseu <jhseu@google.com>
Jonathan Mark <jhmark@xenops.com> <jhmark000@gmail.com>
Jonathan Nieder <jrn@google.com>
Jonathan Pentecost <pentecostjonathan@gmail.com>
Jonathan Pittman <jmpittman@google.com> <jonathan.mark.pittman@gmail.com>
Jonathan Rudenberg <jonathan@titanous.com>
Jonathan Stacks <jonstacks13@gmail.com>
Jonathan Wills <runningwild@gmail.com>
Jonathon Lacher <jonathon.lacher@gmail.com>
Jongmin Kim <atomaths@gmail.com>
Joonas Kuorilehto <joneskoo@derbian.fi>
Joop Kiefte <ikojba@gmail.com> <joop@kiefte.net>
Jordan Christiansen <xordspar0@gmail.com>
Jordan Krage <jmank88@gmail.com>
Jordan Lewis <jordanthelewis@gmail.com>
Jordan Liggitt <liggitt@google.com>
Jordan Rhee <jordanrh@microsoft.com>
Jordi Martin <jordimartin@gmail.com>
Jorge Araya <jorgejavieran@yahoo.com.mx>
Jorge L. Fatta <jorge.fatta@auth0.com>
Jos Visser <josv@google.com>
Josa Gesell <josa@gesell.me>
Jose Luis Vquez Gonzlez <josvazg@gmail.com>
Joseph Bonneau <jcb@google.com>

Joseph Holsten <joseph@josephholsten.com>
Josh Baum <joshbaum@google.com>
Josh Bleecher Snyder <josharian@gmail.com>
Josh Chorlton <jchorlton@gmail.com>
Josh Deprez <josh.deprez@gmail.com>
Josh Goebel <dreamer3@gmail.com>
Josh Hoak <jhoak@google.com>
Josh Holland <jrh@joshh.co.uk>
Josh Roppo <joshroppo@gmail.com>
Josh Varga <josh.varga@gmail.com>
Joshua Bezaleel Abednego <joshua.bezaleel@gmail.com>
Joshua Boelter <joshua.boelter@intel.com>
Joshua Chase <jcjosuachase@gmail.com>
Joshua Crowgey <jcrowgey@uw.edu>
Joshua M. Clulow <josh.clulow@joyent.com>
Joshua Rubin <joshua@rubixconsulting.com>
Josselin Costanzi <josselin@costanzi.fr>
Jostein Stuhaug <js@solidsystem.no>
JP Sugarbroad <jpsugar@google.com>
JT Olds <jtolds@xnet5.com>
JT Olio <hello@jtolio.com>
Juan Carlos <juanjcsr@gmail.com>
Juan Pablo Civile <elementohb@gmail.com>
Jude Pereira <judebpereira@gmail.com>
Jukka-Pekka Kekkonen <karatepekka@gmail.com>
Julia Hansbrough <flowerhack@google.com>
Julian Kornberger <jk+github@digineo.de>
Julian Pastarmov <pastarmovj@google.com>
Julian Phillips <julian@quantumfyre.co.uk>
Julian Tibble <julian.tibble@gmail.com>
Julie Qiu <julie@golang.org>
Julien Kauffmann <julien.kauffmann@freelan.org>
Julien Salleyron <julien.salleyron@gmail.com>
Julien Schmidt <google@julienschmidt.com>
Julio Montes <julio.montes@intel.com>
Jun Zhang <jim.zoumo@gmail.com>
Junda Liu <junda@celer.network>
Junggho Ahn <jhahn@google.com>
Junya Hayashi <ledmonster@gmail.com>
Juraj Sukop <sukop@users.noreply.github.com>
Jure Ham <jure.ham@zemanta.com>
Justin Gracenin <jgracenin@gmail.com>
Justin Li <git@justinli.net>
Justin Nu <nuss.justin@gmail.com>
Justyn Temme <justyntemme@gmail.com>
Kai Backman <kaib@golang.org>
Kai Dong <dokia2357@gmail.com>
Kai Trukenmiller <ktye78@gmail.com>

Kale Blankenship <kale@lemnisis.com>
Kaleb Elwert <kelwert@atlassian.com>
Kalman Bekesi <kalmanb@google.com>
Kamal Aboul-Hosn <aboulhosn@google.com>
Kamil Chmielewski <kamil.chm@gmail.com>
Kamil Kisiel <kamil@kamilkisiel.net> <kamil.kisiel@gmail.com>
Kamil Rytarowski <krytarowski@users.noreply.github.com>
Kang Hu <hukangustc@gmail.com>
Kanta Ebihara <kantaebihara@gmail.com>
Karan Dhiman <karandhi@ca.ibm.com>
Karel Pazdera <pazderak@gmail.com>
Karoly Negyesi <chx1975@gmail.com>
Karsten Khler <karsten.koehler95@gmail.com>
Karthik Nayak <karthik.188@gmail.com>
Kashav Madan <kshvmdn@gmail.com>
Kate Manson <kate.manson@izettle.com>
Katharine Berry <ktbry@google.com>
Katie Hockman <katie@golang.org>
Kato Kazuyoshi <kato.kazuyoshi@gmail.com>
Katrina Owen <katrina.owen@gmail.com>
Kaviraj Kanagaraj <kavirajkanagaraj@gmail.com>
Kay Zhu <kayzhu@google.com>
Kazuhiro Sera <seratch@gmail.com>
KB Sriram <kbsriram@google.com>
Keegan Carruthers-Smith <keegan.csmith@gmail.com>
Kei Son <hey.calmdown@gmail.com>
Keiji Yoshida <keijiyoshida.mail@gmail.com>
Keisuke Kishimoto <keisuke.kishimoto@gmail.com>
Keith Ball <inflatablewoman@gmail.com>
Keith Randall <khr@golang.org>
Keith Rarick <kr@xph.us>
Kelly Heller <pestophagous@gmail.com>
Kelsey Hightower <kelsey.hightower@gmail.com>
Kelvin Foo Chuan Lyi <vmirage@gmail.com>
Ken Friedenbach <kenliz@cruzio.com>
Ken Rockot <ken@oz.gs> <ken.rockot@gmail.com>
Ken Sedgwick <ken@bonsai.com>
Ken Thompson <ken@golang.org>
Kenichi Tsunokawa <kenichi.tsunokawa@gmail.com>
Kenji Kaneda <kenji.kaneda@gmail.com>
Kenji Yano <kenji.yano@gmail.com>
Kenneth Shaw <kenshaw@gmail.com>
Kenny Grant <kennygrant@gmail.com>
Kenta Mori <zoncoen@gmail.com>
Kerollos Magdy <kerolloz@yahoo.com>
Ketan Parmar <ketanbparmar@gmail.com>
Kevan Swanberg <kevswanberg@gmail.com>
Kevin Ballard <kevin@sb.org>

Kevin Burke <kev@inburke.com>
Kvin Douglas <dunglas@gmail.com>
Kevin Gillette <extemporalgenome@gmail.com>
Kevin Kirsche <kev.kirsche@gmail.com>
Kevin Klues <klueska@gmail.com> <klueska@google.com>
Kevin Malachowski <chowski@google.com>
Kevin Ruffin <kruffin@gmail.com>
Kevin Vu <kevin.m.vu@gmail.com>
Kevin Zita <bleedgreenandgold@gmail.com>
Keyan Pishdadian <kpishdadian@gmail.com>
Kezhu Wang <kezhuw@gmail.com>
Khosrow Moossavi <khos2ow@gmail.com>
Kieran Colford <kieran@kcolford.com>
Kim Shrier <kshrier@racktopsystems.com>
Kim Yongbin <kybinz@gmail.com>
Kir Kolyshkin <kolyshkin@gmail.com>
Kirill Korotaev <kirillx@gmail.com>
Kirill Motkov <Motkov.Kirill@gmail.com>
Kirill Smelkov <kirr@nexedi.com>
Kirill Tatchihin <kirabsuir@gmail.com>
Kirk Han <kirk91.han@gmail.com>
Kirklin McDonald <kirklin.mcdonald@gmail.com>
Klaus Post <klauspost@gmail.com>
Kodie Goodwin <kodiegoodwin@gmail.com>
Koichi Shiraishi <zchee.io@gmail.com>
Koki Ide <niconegoto@yahoo.co.jp>
Koki Tomoshige <tomocy.dev@gmail.com>
Komu Wairagu <komuw05@gmail.com>
Konstantin <konstantin8105@gmail.com>
Konstantin Shaposhnikov <k.shaposhnikov@gmail.com>
Koya IWAMURA <kiwamura0314@gmail.com>
Kris Kwiatkowski <kris@cloudflare.com>
Kris Nova <kris@nivenly.com>
Kris Rousey <krousey@google.com>
Kristopher Watts <traetox@gmail.com>
Kshitij Saraogi <kshitijgaraogi@gmail.com>
Kun Li <likunarmstrong@gmail.com>
Kunpei Sakai <namusyaka@gmail.com>
Kuntal Majumder <hellozee@disroot.org>
Kush Patel <kush.patel@hootsuite.com>
Kyle Consalus <consalus@gmail.com>
Kyle Isom <kyle@gokyle.net>
Kyle Jones <kyle@kyledj.com>
Kyle Lemons <kyle@kylelemons.net> <kevlar@google.com>
Kyle Nusbaum <kyle@datadog.com>
Kyle Shannon <kyle@pobox.com>
Kyle Spiers <eiais@google.com>
Kyle Wood <kyle@kylewood.cc>

Kyohei Kadota <lufia@lufia.org>
Kyrylo Silin <silin@kyrylo.org>
L Campbell <unpantsu@gmail.com>
Lai Jiangshan <eag0628@gmail.com>
Lajos Papp <lalyos@yahoo.com>
Lakshay Garg <lakshay.garg.1996@gmail.com>
Lann Martin <lanm@google.com>
Lanre Adelowo <yo@lanre.wtf>
Larry Clapp <larry@theclapp.org>
Larry Hosken <lahosken@golang.org>
Lars Jeppesen <jeppesen.lars@gmail.com>
Lars Lehtonen <lars.lehtonen@gmail.com>
Lars Wiegman <lars@namsral.com>
Larz Conwell <larzconwell@gmail.com>
Laurent Voisin <lpvoisin@gmail.com>
Laurie Clark-Michalek <laurie@qubit.com>
LE Manh Cuong <cuong.manhle.vn@gmail.com>
Lee Hinman <hinman@gmail.com>
Lee Packham <lpackham@gmail.com>
Lehner Florian <dev@der-flo.net>
Leigh McCulloch <leighmcc@gmail.com>
Leo Antunes <leo@costela.net>
Leo Rudberg <ljr@google.com>
Leon Klingele <git@leonklingele.de>
Leonardo Comelli <leonardo.comelli@gmail.com>
Leonel Quinteros <leonel.quinteros@gmail.com>
Lev Shamardin <shamardin@gmail.com>
Lewin Bormann <lewin.bormann@gmail.com>
Liam Haworth <liam@haworth.id.au>
Lily Chung <lilithkchung@gmail.com>
Lion Yang <lion@aosc.xyz>
Liz Rice <liz@lizrice.com>
Lloyd Dewolf <foolswisdom@gmail.com>
Lorenz Bauer <lmb@cloudflare.com>
Lorenz Brun <lorenz@brun.one>
Lorenz Nickel <mail@lorenznickel.de>
Lorenzo Masini <rugginoso@develer.com>
Lorenzo Stoakes <lstoakes@gmail.com>
Louis Kruger <louisk@google.com>
Luan Santos <cfcluan@gmail.com>
Lubomir I. Ivanov <neolit123@gmail.com>
Luca Bruno <luca.bruno@coreos.com>
Luca Greco <luca.greco@alcacoop.it>
Lucas Bremgartner <lucas.bremgartner@gmail.com>
Lucas Clemente <lclemente@google.com>
Lucien Stuker <lucien.stuker@gmail.com>
Lucio De Re <lucio.dere@gmail.com>
Ludi Rehak <ludi317@gmail.com>

Luigi Riefolo <luigi.riefolo@gmail.com>
Luit van Drongelen <luitvd@gmail.com>
Luka Zakrajek <tr00.g33k@gmail.com>
Luka Zitnik <luka.zitnik@gmail.com>
Lukasz Milewski <lmmilewski@gmail.com>
Luke Champine <luke.champine@gmail.com>
Luke Curley <qpingu@gmail.com>
Luke Granger-Brown <git@lukegb.com>
Luke Young <bored-engineer@users.noreply.github.com>
Luna Duclos <luna.duclos@palmstonegames.com>
Luuk van Dijk <lvd@golang.org> <lvd@google.com>
Lyle Franklin <lylejfranklin@gmail.com>
Lynn Boger <laboger@linux.vnet.ibm.com>
Ma Peiqi <mapeiqi2017@gmail.com>
Maarten Bezemer <maarten.bezemer@gmail.com>
Maciej Dbski <maciejd@google.com>
Madhu Rajanna <madhupr007@gmail.com>
Magnus Hiie <magnus.hiie@gmail.com>
Maicon Costa <maiconscosta@gmail.com>
Mak Kolybabi <mak@kolybabi.com>
Maksym Trykur <maksym.trykur@gmail.com>
Mal Curtis <mal@mal.co.nz>
Manfred Touron <m@42.am>
Manigandan Dharmalingam <manigandan.jeff@gmail.com>
Manish Goregaokar <manishsmail@gmail.com>
Manoj Dayaram <platform-dev@moovweb.com> <manoj.dayaram@moovweb.com>
Mansour Rahimi <rahimi.mnr@gmail.com>
Manu Garg <manugarg@google.com>
Manu S Ajith <neo@codingarena.in>
Manuel Mendez <mmendez534@gmail.com>
Marat Khabibullin <marat.khabibullin@jetbrains.com>
Marc Sanmiquel <marcsanmiquel@gmail.com>
Marc Weistroff <marc@weistroff.net>
Marc-Antoine Ruel <maruel@chromium.org>
Marcel Edmund Franke <marcel.edmund.franke@gmail.com>
Marcel van Lohuizen <mpvl@golang.org>
Marcelo Cantos <marcelo.cantos@gmail.com>
Marcelo E. Magallon <marcelo.magallon@gmail.com>
Marco Hennings <marco.hennings@freiheit.com>
Marcus Weiner <marcus.weiner@gmail.com>
Marcus Willock <crazcalm@gmail.com>
Marga Manterola <marga@google.com>
Mariano Cano <mariano@smallstep.com>
Marin Bai <marin.basic02@gmail.com>
Mario Arranz <marioarranzr@gmail.com>
Marius A. Eriksen <marius@grailbio.com>
Marius Nuennerich <mnu@google.com>
Mark Adams <mark@markadams.me>

Mark Bucciarelli <mkbucc@gmail.com>
Mark Glines <mark@glines.org>
Mark Harrison <marhar@google.com>
Mark Percival <m@mdp.im>
Mark Pulford <mark@kyne.com.au>
Mark Rushakoff <mark.rushakoff@gmail.com>
Mark Ryan <mark.d.ryan@intel.com>
Mark Severson <miquella@gmail.com>
Mark Theunissen <mark.theunissen@gmail.com>
Mark Villacampa <m@markvillacampa.com>
Mark Wolfe <mark@wolfe.id.au>
Mark Zavislak <zavislak@google.com>
Marko Juhani Silokunnas <marko.silokunnas@gmail.com>
Marko Kevac <marko@kevac.org>
Marko Kungla <marko.kungla@gmail.com>
Marko Mikulicic <mkm@google.com>
Marko Mudrinic <mudrinic.mare@gmail.com>
Marko Tiikkaja <marko@joh.to>
Markus Duft <markus.duft@salomon.at>
Markus Sonderegger <marraison@gmail.com>
Markus Zimmermann <zimmski@gmail.com>
Marten Seemann <martenseemann@gmail.com>
Martin Asquino <martin.asquino@gmail.com>
Martin Bertschler <mbertschler@gmail.com>
Martin Garton <garton@gmail.com>
Martin Habbecke <marhab@google.com>
Martin Hamrle <martin.hamrle@gmail.com>
Martin Hoefling <martin.hoefling@gmx.de>
Martin Kreichgauer <martinkr@google.com>
Martin Kunc <martinkunc@users.noreply.github.com>
Martin Lindhe <martin.j.lindhe@gmail.com>
Martin Mohrmann <moehrmann@google.com> <martisch@uos.de>
Martin Neubauer <m.ne@gmx.net>
Martin Olsen <github.com@martinolsen.net>
Martin Olsson <martin@minimum.se>
Martin Probst <martin@probst.io>
Martin Sucha <anty.sk+git@gmail.com>
Martin Tournoij <martin@arp242.net>
Martins Sipenko <martins.sipenko@gmail.com>
Martynas Budrinas <mabu@google.com>
Marvin Stenger <marvin.stenger94@gmail.com>
Marwan Sulaiman <marwan.sulaiman@work.co>
Maryan Hratson <gmarik@gmail.com>
Masahiro Furudate <masahiro.furudate@gmail.com>
Masahiro Wakame <vvakame@gmail.com>
Masaki Yoshida <yoshida.masaki@gmail.com>
Masaya Watanabe <sfbgwm30@gmail.com>
Mat Byczkowski <mbyczkowski@gmail.com>

Mat Ryer <thatmatryer@gmail.com>
Mt Gulys <mgulyas86@gmail.com>
Matej Bao <matejbaco@gmail.com>
Mateus Amin <mateus.amin@gmail.com>
Mateusz Czapliski <czapkofan@gmail.com>
Mathias Beke <git@denbeke.be>
Mathias Hall-Andersen <mathias@hall-andersen.dk>
Mathias Leppich <mleppich@muhqu.de>
Mathieu Lonjaret <mathieu.lonjaret@gmail.com>
Mats Lidell <mats.lidell@cag.se> <mats.lidell@gmail.com>
Matt Aimonetti <mattaimonetti@gmail.com>
Matt Blair <me@matthewblair.net>
Matt Bostock <matt@mattbostock.com>
Matt Brown <mdbrown@google.com>
Matt Dee <mdee@hioscar.com>
Matt Drollette <matt@drollette.com>
Matt Harden <matt.harden@gmail.com>
Matt Jibson <matt.jibson@gmail.com>
Matt Joiner <anacrolix@gmail.com>
Matt Jones <mrjones@google.com>
Matt Juran <thepciet@gmail.com>
Matt Layher <mdllyher@gmail.com>
Matt Reiferson <mreiferson@gmail.com>
Matt Robenolt <matt@ydekproductions.com>
Matt Strong <mstrong1341@gmail.com>
Matt T. Proud <matt.proud@gmail.com>
Matt Williams <gh@mattyw.net> <mattyjwilliams@gmail.com>
Matthew Brennan <matty.brennan@gmail.com>
Matthew Broberg <matthewbbroberg@gmail.com>
Matthew Cottingham <mattcottingham@gmail.com>
Matthew Dempsky <mdempsky@google.com>
Matthew Denton <mdenton@skyportsystems.com>
Matthew Holt <Matthew.Holt+git@gmail.com>
Matthew Horsnell <matthew.horsnell@gmail.com>
Matthew Waters <mwwaters@gmail.com>
Matthieu Hauglustaine <matt.hauglustaine@gmail.com>
Matthieu Olivier <olivier.matthieu@gmail.com>
Matthijs Kooijman <matthijs@stdin.nl>
Max Riveiro <kavu13@gmail.com>
Max Schmitt <max@schmitt.mx>
Max Semenik <maxsem.wiki@gmail.com>
Max Ushakov <ushmax@gmail.com>
Maxim Eryomenko <moeryomenko@gmail.com>
Maxim Khitrov <max@mxcrypt.com>
Maxim Pimenov <mpimenov@google.com>
Maxim Pugachev <pugachev.mm@gmail.com>
Maxim Ushakov <ushakov@google.com>
Maxime de Roucy <maxime.deroucy@gmail.com>

Mximo Cuadros Ortiz <mcuadros@gmail.com>
Maxwell Krohn <themax@gmail.com>
Maya Rashish <maya@NetBSD.org>
Mayank Kumar <krmayankk@gmail.com>
Meir Fischer <meirfischer@gmail.com>
Meng Zhuo <mengzhuo1203@gmail.com> <mzh@golangcn.org>
Mhd Sulhan <m.shulhan@gmail.com>
Micah Stetson <micah.stetson@gmail.com>
Michael Anthony Knyszek <mknyszek@google.com>
Michael Brandenburg <mbrandenburg@bolste.com>
Michael Chaten <mchaten@gmail.com>
Michael Cook <code@mdcook.net>
Michael Darakananda <pongad@google.com>
Michael Dorner <mail@michaeldorf.de>
Michael Edwards <medwards@walledcity.ca>
Michael Elkins <michael.elkins@gmail.com>
Michael Ellis <micellis@justin.tv>
Michael Fraenkel <michael.fraenkel@gmail.com>
Michael Fromberger <michael.j.fromberger@gmail.com>
Michael Gehring <mg@ebfe.org> <gnirheg.leahcim@gmail.com>
Michael Henderson <mdhender@users.noreply.github.com>
Michael Hendricks <michael@ndrix.org>
Michael Hoisie <hoisie@gmail.com>
Michael Hudson-Doyle <michael.hudson@linaro.org>
Michael Kasch <michael.kasch@gmail.com>
Michael Kufl <golang@c.michael-kaeufl.de>
Michael Kelly <mjk@google.com>
Michael Lewis <mikelikespie@gmail.com>
Michael MacInnis <Michael.P.MacInnis@gmail.com>
Michael Marineau <michael.marineau@coreos.com>
Michael Matloob <matloob@google.com>
Michael McConville <momconville@gmail.com>
Michael McGreevy <mcgreevy@golang.org>
Michael McLoughlin <mmcloughlin@gmail.com>
Michael Munday <mike.munday@ibm.com>
Michael Pearson <mipearson@gmail.com>
Michael Piatek <piatek@google.com>
Michael Pratt <mpratt@google.com>
Michael Schaller <michael@5challer.de>
Michael Schurter <michael.schurter@gmail.com>
Michael Shields <mshields@google.com>
Michael Stapelberg <michael@stapelberg.de> <mstplbrg@googlemail.com>
Michael Steinert <mike.steinert@gmail.com>
Michael T. Jones <mtj@google.com> <michael.jones@gmail.com>
Michael Teichgrber <mteichgraeber@gmx.de> <mt4swm@googlemail.com>
Michael Traver <mtraver@google.com>
Michael Vetter <g.bluehut@gmail.com>
Michael Vogt <mvo@ubuntu.com>

Michal Bohuslvek <mbohuslvek@gmail.com>
Michal Cierniak <cierniak@google.com>
Micha Derkacz <ziutek@inet.pl>
Michal Franc <lam.michal.franc@gmail.com>
Micha owicki <mlowicki@gmail.com>
Michal Pristas <michal.pristas@gmail.com>
Michal Rostecki <mrostecki@suse.de>
Michalis Kargakis <michaliskargakis@gmail.com>
Michel Lespinasse <>walken@google.com>
Mickael Kerjean <mickael.kerjean@gmail.com>
Mickey Reiss <mickeyreiss@gmail.com>
Miek Gieben <miek@miek.nl> <remigius.gieben@gmail.com>
Miguel Acero <acero@google.com>
Miguel Mendez <stxmendez@gmail.com>
Miguel Molina <hi@mvader.me>
Mihai Borobocea <MihaiBorobocea@gmail.com>
Mihai Moldovan <ionic@ionic.de>
Mihai Todor <todormihai@gmail.com>
Mihail Minaev <minaev.mike@gmail.com>
Mikael Tillenius <mikti42@gmail.com>
Mike Andrews <mra@xoba.com>
Mike Appleby <mike@app.leby.org>
Mike Danese <mikedanese@google.com>
Mike Houston <mike@kothar.net>
Mike Kabischev <kabischev@gmail.com>
Mike Rosset <mike.rosset@gmail.com>
Mike Samuel <mikesamuel@gmail.com>
Mike Solomon <msolo@gmail.com>
Mike Strosaker <strosake@us.ibm.com>
Mike Tsao <mike@sowbug.com>
Mike Wiacek <mjwiacek@google.com>
Mikhail Fesenko <progga@gmail.com>
Mikhail Gusarov <dottedmag@dottedmag.net>
Mikhail Panchenko <m@mihasya.com>
Miki Tebeka <miki.tebeka@gmail.com>
Mikio Hara <mikioh.mikioh@gmail.com>
Mikkel Krautz <mikkel@krautz.dk> <krautz@gmail.com>
Mikoaj Baranowski <mikolajb@gmail.com>
Milan Knezevic <milan.knezevic@mips.com>
Milan Patel <bicelot3@gmail.com>
Milutin Jovanovic <jovanovic.milutin@gmail.com>
MinJae Kwon <mingrammer@gmail.com>
Miquel Sabat Sol <mikisabate@gmail.com>
Mirko Hansen <baaazen@gmail.com>
Miroslav Genov <mgenov@gmail.com>
Misty De Meo <mistydemeo@gmail.com>
Mohit Agarwal <mohit@sdf.org>
Mohit kumar Bajoria <mohitbajo36@gmail.com>

Mohit Verma <vmohit.93@gmail.com>
Momchil Velikov <momchil.velikov@gmail.com>
Monis Khan <mkhan@redhat.com>
Monty Taylor <mordred@inaugust.com>
Moritz Fain <moritz@fain.io>
Moriyoshi Koizumi <mozo@mozo.jp>
Morten Siebuhr <sbhr@sbhr.dk>
Mshe van der Sterre <moshevds@gmail.com>
Mostyn Bramley-Moore <mostyn@antipode.se>
Mrunal Patel <mrunalp@gmail.com>
Muhammad Falak R Wani <falakreyaz@gmail.com>
Muhammed Uluyol <uluyol0@gmail.com>
Muir Manders <muir@mnd.rs>
Mukesh Sharma <sharma.mukesh439@gmail.com>
Mura Li <mura_li@castech.com.tw>
Mykhailo Lesyk <mikhail@lesyk.org>
Naman Aggarwal <aggarwal.nam@gmail.com>
Nan Deng <monnand@gmail.com>
Nao Yonashiro <owan.orisano@gmail.com>
Naoki Kanatani <k12naoki@gmail.com>
Nate Wilkinson <nathanwilk7@gmail.com>
Nathan Cantelmo <n.cantelmo@gmail.com>
Nathan Caza <mastercactus@gmail.com>
Nathan Dias <nathan.dias@orijtech.com>
Nathan Fiscoletti <nathan.fiscoletti@vrazo.com>
Nathan Humphreys <nkhumphreys@gmail.com>
Nathan John Youngman <nj@nathany.com>
Nathan Otterness <otterness@cs.unc.edu>
Nathan P Finch <nate.finch@gmail.com>
Nathan VanBenschoten <nvanbenschoten@gmail.com>
Nathan Youngman <git@nathany.com>
Nathan(yinian) Hu <nathanhu@google.com>
Nathaniel Cook <nvcook42@gmail.com>
Naveen Kumar Sangi <naveenkumarsangi@protonmail.com>
Neeilan Selvalingam <neeilan96@gmail.com>
Neelesh Chandola <neelesh.c98@gmail.com>
Neil Lyons <nwjlyons@googlemail.com>
Neuman Vong <neuman.vong@gmail.com>
Neven Sajko <nsajko@gmail.com>
Nevins Bartolomeo <nevins.bartolomeo@gmail.com>
Niall Sheridan <nsheridan@gmail.com>
Nic Day <nic.day@me.com>
Nicholas Katsaros <nick@nickkatsaros.com>
Nicholas Maniscalco <nicholas@maniscalco.com>
Nicholas Ng <nickng@nickng.io>
Nicholas Presta <nick@nickpresta.ca> <nick1presta@gmail.com>
Nicholas Sullivan <nicholas.sullivan@gmail.com>
Nicholas Waples <nwaples@gmail.com>

Nick Anthony <Liberatys@outlook.com>
Nick Cooper <nmvc@google.com>
Nick Craig-Wood <nick@craig-wood.com> <nickcw@gmail.com>
Nick Harper <nharper@google.com>
Nick Kubala <nkubala@google.com>
Nick Leli <nicholasleli@gmail.com>
Nick Miyake <nmiyake@users.noreply.github.com>
Nick Patavalis <nick.patavalis@gmail.com>
Nick Petroni <npetroni@cs.umd.edu>
Nick Robinson <nrobinson13@gmail.com>
Nick Smolin <nick27surgut@gmail.com>
Nicolas BRULEZ <n.brulez@gmail.com>
Nicolas Kaiser <nikai@nikai.net>
Nicolas Owens <mischief@offblast.org>
Nicolas S. Dade <nic.dade@gmail.com>
Niek Sanders <niek.sanders@gmail.com>
Niels Widger <niels.widger@gmail.com>
Nigel Kerr <nigel.kerr@gmail.com>
Nigel Tao <nigeltao@golang.org>
Nik Nyby <nnyby@columbia.edu>
Nikhil Benesch <nikhil.benesch@gmail.com>
Nikita Gillmann <nikita@n0.is> <ng0@n0.is>
Nikita Kryuchkov <nkryuchkov10@gmail.com>
Nikita Vanyasin <nikita.vanyasin@gmail.com>
Niklas Schnelle <niklas.schnelle@gmail.com>
Niko Dziemba <niko@dziemba.com>
Nikolay Turpitko <nikolay@turpitko.com>
Nikson Kanti Paul <nikson.sust@gmail.com>
Nils Larsgrd <nilsmagnus@gmail.com>
Nir Soffer <nirsof@gmail.com>
Niranjan Godbole <niranjan8192@gmail.com>
Nishanth Shanmugham <nishanth.gerrard@gmail.com>
Noah Campbell <noahcampbell@gmail.com>
Noah Goldman <noahg34@gmail.com>
Noble Johnson <noblepoly@gmail.com>
Nodir Turakulov <nodir@google.com>
Noel Georgi <git@frezbo.com>
Norberto Lopes <nlopes.ml@gmail.com>
Norman B. Lancaster <qbradq@gmail.com>
Nuno Cruces <ncruces@users.noreply.github.com>
Obeyda Djefal <djefobey@gmail.com>
Odin Ugedal <odin@ugedal.com>
Oleg Bulatov <dmage@yandex-team.ru>
Oleg Vakheta <helginet@gmail.com>
Oleku Konko <oleku.konko@gmail.com>
Oling Cat <olingcat@gmail.com>
Oliver Hookins <ohookins@gmail.com>
Oliver Powell <oliverpowell84@gmail.com>

Oliver Stenbom <ostenbom@pivotal.io>
Oliver Tonnhofer <olt@bogsoft.com>
Olivier Antoine <olivier.antoine@gmail.com>
Olivier Duperray <duperray.olivier@gmail.com>
Olivier Poitrey <rs@dailymotion.com>
Olivier Saingre <osaingre@gmail.com>
Omar Jarjur <ojarjur@google.com>
Oryan Moshe <iamoryanmoshe@gmail.com>
Osamu TONOMORI <osamingo@gmail.com>
zgr Kesim <oec-go@kesim.org>
Pablo Caderno <kaderno@gmail.com>
Pablo Lalloni <plalloni@gmail.com>
Pablo Rozas Larraondo <pablo.larraondo@anu.edu.au>
Pablo Santiago Blum de Aguiar <scorphus@gmail.com>
Padraig Kitterick <padraigkitterick@gmail.com>
Pallat Anchaleechamaikorn <yod.pallat@gmail.com>
Panos Georgiadis <pgeorgiadis@suse.de>
Pantelis Sampaziotis <psampaz@gmail.com>
Paolo Giarrusso <p.giarrusso@gmail.com>
Paolo Martini <mrtnpaolo@gmail.com>
Parker Moore <parkrmoore@gmail.com>
Parminder Singh <parmsingh101@gmail.com>
Pascal Dierich <pascal@pascaldierich.com>
Pascal S. de Kloe <pascal@quies.net>
Paschalis Tsilias <paschalis.tsilias@gmail.com>
Pasi Thkp <pasi.tahkapaa@gmail.com>
Pat Moroney <pat@pat.email>
Patrick Barker <barkerp@vmware.com>
Patrick Crosby <patrick@stathat.com>
Patrick Gavlin <pgavlin@gmail.com>
Patrick Higgins <patrick.allen.higgins@gmail.com>
Patrick Lee <pattyshack101@gmail.com>
Patrick Mzard <patrick@mezard.eu>
Patrick Mylund Nielsen <patrick@patrickmn.com>
Patrick Pelletier <pp.pelletier@gmail.com>
Patrick Riley <pfr@google.com>
Patrick Smith <pat42smith@gmail.com>
Patrik Lundin <patrik@sigterm.se>
Paul A Querna <paul.querna@gmail.com>
Paul Borman <borman@google.com>
Paul Boyd <boyd.paul2@gmail.com>
Paul Chang <paulchang@google.com>
Paul D. Weber <x0bdev@gmail.com>
Paul Hammond <paul@paulhammond.org>
Paul Hankin <paulhankin@google.com>
Paul Jolly <paul@myitcv.org.uk>
Paul Lalonde <paul.a.lalonde@gmail.com>
Paul M Furley <paul@paulfurley.com>

Paul Marks <pmarks@google.com>
Paul Meyer <paul.meyer@microsoft.com>
Paul Nasrat <pnasrat@google.com>
Paul PISCUC <paul.piscuc@gmail.com>
Paul Querna <pquerna@apache.org>
Paul Rosania <paul.rosania@gmail.com>
Paul Ruest <pruest@gmail.com>
Paul Sbarra <Sbarra.Paul@gmail.com>
Paul Smith <paulsmith@pobox.com> <paulsmith@gmail.com>
Paul Tyng <paul@paultyng.net>
Paul van Brouwershaven <paul@vanbrouwershaven.com>
Paul Wankadia <junyer@google.com>
Paulo Casaretto <pcasaretto@gmail.com>
Paulo Flabiano Smorigo <pfsmorigo@linux.vnet.ibm.com>
Paulo Gomes <paulo.gomes.uk@gmail.com>
Pavel Paulau <pavel.paulau@gmail.com>
Pavel Zinovkin <pavel.zinovkin@gmail.com>
Pavlo Sumkin <ymkins@gmail.com>
Pawel Knap <pawelknap88@gmail.com>
Pawel Szczur <filemon@google.com>
Pei Xian Chee <luciolas1991@gmail.com>
Percy Wegmann <ox.to.a.cart@gmail.com>
Perry Abbott <perry.j.abbott@gmail.com>
Petar Dambovaliev <petar.atanasov.1987@gmail.com>
Petar Maymoukov <petarm@gmail.com>
Peter Armitage <peter.armitage@gmail.com>
Peter Bourgon <peter@bourgon.org>
Peter Collingbourne <pcc@google.com>
Peter Conerly <pconerly@gmail.com>
Peter Dotchev <dotchev@gmail.com>
Peter Froehlich <peter.hans.froehlich@gmail.com>
Peter Gonda <pgonda@google.com>
Peter Hoyes <pahoyes@gmail.com>
Peter Kleiweg <pkleiweg@xs4all.nl>
Peter McKenzie <petermck@google.com>
Peter Moody <pmoody@uber.com>
Peter Morjan <pmorjan@gmail.com>
Peter Mundy <go.peter.90@gmail.com>
Peter Nguyen <peter@mictis.com>
Pter Surnyi <speter.go1@gmail.com>
Pter Szab <pts@google.com>
Pter Szilgyi <peterke@gmail.com>
Peter Teichman <pteichman@fastly.com>
Peter Tseng <ptseng@squareup.com>
Peter Waldschmidt <peter@waldschmidt.com>
Peter Waller <peter.waller@gmail.com>
Peter Weinberger <pjw@golang.org>
Peter Williams <pwil3058@gmail.com>

Peter Wu <pwu@cloudflare.com>
Peter Zhang <i@ddatsh.com>
Petr Jedin <petr.jediny@gmail.com>
Petrica Voicu <pvoicu@paypal.com>
Phil Pearl <philip.j.r.pearl@gmail.com>
Phil Pennock <pdp@golang.org>
Philip Brgesen <philip.brgesen@gmail.com>
Philip Brown <phil@bolthole.com>
Philip Hofer <phofer@umich.edu>
Philip K. Warren <pkwarren@gmail.com>
Philip Nelson <me@pnelson.ca>
Philipp Stephani <phst@google.com>
Pierre Carru <pierre.carru@eshard.com>
Pierre Durand <pierredurand@gmail.com>
Pierre Prinetti <pierreprinetti@gmail.com>
Pierre Roullon <pierre.roullon@gmail.com>
Piers <google@helloworldpro.com>
Pieter Droogendijk <pieter@binky.org.uk>
Pietro Gagliardi <pietro10@mac.com>
Piyush Mishra <piyush@codeitout.com>
Plekhanov Maxim <kishtatix@gmail.com>
Polina Osadcha <polliosa@google.com>
Pontus Leitzler <leitzler@gmail.com>
Povilas Versockas <p.versockas@gmail.com>
Prasanga Siripala <pj@pjeps.com.au>
Prasanna Swaminathan <prasanna@mediamath.com>
Prashant Agrawal <prashant.a.vjti@gmail.com>
Prashant Varanasi <prashant@prashantv.com>
Praveen Kumar <praveen+git@kumar.in>
Pravendra Singh <hackpravj@gmail.com>
Preetam Jinka <pj@preet.am>
Pure White <wu.purewhite@gmail.com>
Qais Patankar <qaisjp@gmail.com>
Qiuxuan Zhu <ilsh1022@gmail.com>
Quan Tran <qeed.quan@gmail.com>
Quan Yong Zhai <qyzhai@gmail.com>
Quentin Perez <qperez@ocs.online.net>
Quentin Renard <contact@asticode.com>
Quentin Smith <quentin@golang.org>
Quey-Liang Kao <s101062801@m101.nthu.edu.tw>
Quinn Slack <sqs@sourcegraph.com>
Quinten Yearsley <qyearsley@chromium.org>
Quoc-Viet Nguyen <afelion@gmail.com>
Radek Sohlich <sohlich@gmail.com>
Radu Berinde <radu@cockroachlabs.com>
Rafal Jeczalik <rjeczalik@gmail.com>
Raghavendra Nagaraj <jamdagni86@gmail.com>
Rahul Chaudhry <rahulchaudhry@chromium.org>

Raif S. Naffah <go@naffah-raif.name>
Rajat Goel <rajat.goel2010@gmail.com>
Rajath Agasthya <rajathagasthya@gmail.com>
Rajender Reddy Kompally <rajenderreddykompally@gmail.com>
Ralph Corderoy <ralph@inputplus.co.uk>
Ramazan AYYILDIZ <rayyildiz@gmail.com>
Ramesh Dharan <dharan@google.com>
Raph Levien <raph@google.com>
Raphael Geronimi <raphael.geronimi@gmail.com>
Raul Silvera <rsilvera@google.com>
Ravil Bikbulatov <weeellz12@gmail.com>
RaviTeja Pothana <ravi.tezu@gmail.com>
Ray Tung <rtung@thoughtworks.com>
Raymond Kazlauskas <raima220@gmail.com>
Rebecca Stambler <rstambler@golang.org>
Reilly Watson <reillywatson@gmail.com>
Reinaldo de Souza Jr <juniorz@gmail.com>
Remi Gillig <remigillig@gmail.com>
Rmy Oudompheng <oudomphe@phare.normalesup.org> <remyoudompheng@gmail.com>
Ren Ogaki <re.yuz77777@gmail.com>
Rens Rikkerink <Ikkerens@users.noreply.github.com>
Rhys Hiltner <rhys@justin.tv>
Ricardo Padilha <ricardospadilha@gmail.com>
Ricardo Seriani <ricardo.seriani@gmail.com>
Richard Barnes <rlb@ipv.sx>
Richard Crowley <r@rcrowley.org>
Richard Dingwall <rdingwall@gmail.com>
Richard Eric Gavaletz <gavaletz@gmail.com>
Richard Gibson <richard.gibson@gmail.com>
Richard Miller <miller.research@gmail.com>
Richard Musiol <mail@richard-musiol.de> <neelance@gmail.com>
Richard Ulmer <codesoap@mailbox.org>
Richard Wilkes <wilkes@me.com>
Rick Arnold <rickarnoldjr@gmail.com>
Rick Hudson <rlh@golang.org>
Rick Sayre <whorfin@gmail.com>
Rijnard van Tonder <rvantonder@gmail.com>
Riku Voipio <riku.voipio@linaro.org>
Risto Jaakko Saarelm <rsaarelm@gmail.com>
Rob Earhart <earhart@google.com>
Rob Findley <rfindley@google.com>
Rob Norman <rob.norman@infinitycloud.com>
Rob Phoenix <rob@robphoenix.com>
Rob Pike <r@golang.org>
Robert Ayrapetyan <robert.ayrapetyan@gmail.com>
Robert Daniel Kortschak <dan.kortschak@adelaide.edu.au> <dan@kortschak.io>
Robert Dinu <r@varp.se>
Robert Figueiredo <robfig@gmail.com>

Robert Griesemer <gri@golang.org>
Robert Hencke <robert.hencke@gmail.com>
Robert Iannucci <iannucci@google.com>
Robert Kuska <rkuska@gmail.com>
Robert Obryk <robryk@gmail.com>
Robert Sesek <rsesek@google.com>
Robert Snedegar <roberts@google.com>
Robert Stepanek <robert.stepanek@gmail.com>
Robert van Gent <rvangent@google.com>
Robert-Andr Mauchin <zebob.m@gmail.com>
Roberto Clapis <robclap8@gmail.com>
Roberto Selbach <roberto@selbach.ca>
Robin Eklind <r.eklind.87@gmail.com>
Robin Zhong <robin@robinzhong.co>
Rodolfo Carvalho <rhcarvalho@gmail.com>
Rodolfo Rodriguez <rodolfobgibson@gmail.com>
Rodrigo Moraes de Oliveira <rodrigo.moraes@gmail.com>
Rodrigo Rafael Monti Kochenburger <divoxx@gmail.com>
Roger Pau Monn <royger@gmail.com>
Roger Peppe <rogpeppe@gmail.com>
Rohan Challa <rohan@golang.org>
Rohan Verma <rohanverma2004@gmail.com>
Rohith Ravi <entombedvirus@gmail.com>
Roland Illig <roland.illig@gmx.de>
Roland Shoemaker <rolandshoemaker@gmail.com>
Romain Bague <romain.bague@elwinar.com>
Roman Budnikov <romanyx90@yandex.ru>
Roman Kollr <roman.kollar.0@gmail.com>
Roman Shchekin <mrqtros@gmail.com>
Ron Hashimoto <mail@h2so5.net>
Ron Minnich <rminnich@gmail.com>
Ross Chater <rdchater@gmail.com>
Ross Kinsey <rossikinsey@gmail.com>
Ross Light <light@google.com> <rlight2@gmail.com>
Ross Smith II <ross@smithii.com>
Rowan Marshall <rowanajmarshall@gmail.com>
Rowan Worth <sqweek@gmail.com>
Rudi Kramer <rudi.kramer@gmail.com>
Rui Ueyama <ruiui@google.com>
Ruixin Bao <ruixin.bao@ibm.com>
Ruslan Nigmatullin <elessar@dropbox.com>
Russ Cox <rsc@golang.org>
Russell Haering <russellhaering@gmail.com>
Ryan Bagwell <ryanbagwell@outlook.com>
Ryan Barrett <ryanb@google.com>
Ryan Boehning <ryan.boehning@apcera.com>
Ryan Brown <ribrd@b@gmail.com>
Ryan Canty <jrcanty@gmail.com>

Ryan Dahl <ry@tinyclouds.org>
Ryan Hitchman <hitchmanr@gmail.com>
Ryan Lower <rpjlower@gmail.com>
Ryan Roden-Corrent <ryan@rcorre.net>
Ryan Seys <ryan@ryanseys.com>
Ryan Slade <ryanslade@gmail.com>
Ryan Zhang <ryan.zhang@docker.com>
Ryoichi KATO <ryo1kato@gmail.com>
Ryuji Iwata <qt.luigi@gmail.com>
Ryuma Yoshida <ryuma.y1117@gmail.com>
Ryuzo Yamamoto <ryuzo.yamamoto@gmail.com>
S.alar Onur <caglar@10ur.org>
Sabin Mihai Rapan <sabin.rapan@gmail.com>
Sad Pencil <qh06@qq.com>
Sai Cheemalapati <saicheems@google.com>
Sakeven Jiang <jc5930@sina.cn>
Salmn Aljammz <s@0x65.net>
Sam Arnold <sarnold64@bloomberg.net>
Sam Boyer <tech@samboyer.org>
Sam Chen <chenxsan@gmail.com>
Sam Cross <samgcdev@gmail.com>
Sam Ding <samding@ca.ibm.com>
Sam Hug <samuel.b.hug@gmail.com>
Sam Thorogood <thorogood@google.com> <sam.thorogood@gmail.com>
Sam Whited <sam@samwhited.com>
Sameer Ajmani <sameer@golang.org> <ajmani@gmail.com>
Sami Commerot <samic@google.com>
Sami Pnknen <sami.ponkanen@gmail.com>
Samuel Kelemen <SCKelemen@users.noreply.github.com>
Samuel Tan <samueltan@google.com>
Samuele Pedroni <pedronis@lucediaruna.net>
Sander van Harmelen <sander@vanharmelen.nl>
Sanjay Menakuru <balasanjay@gmail.com>
Santhosh Kumar Tekuri <santhosh.tekuri@gmail.com>
Sarah Adams <shadams@google.com>
Sardorbek Pulatov <sardorbek.pulatov@outlook.com>
Sascha Brawer <sascha@brawer.ch>
Sasha Lionheart <lionhearts@google.com>
Sasha Sobol <sasha@scaledinference.com>
Scott Barron <scott.barron@github.com>
Scott Bell <scott@sctsm.com>
Scott Crunkleton <crunk1@gmail.com>
Scott Ferguson <scottwferg@gmail.com>
Scott Lawrence <bytbox@gmail.com>
Scott Mansfield <smansfield@netflix.com>
Scott Ragan <ragansa@fb.com>
Scott Schwartz <scotts@golang.org>
Scott Van Woudenberg <scottvw@google.com>

Sean Burford <sburford@google.com>
Sean Chen <oohcode@gmail.com>
Sean Chittenden <seanc@joyent.com>
Sean Christopherson <sean.j.christopherson@intel.com>
Sean Dolphin <Sean.Dolphin@kpcompass.com>
Sean Harger <sharger@google.com>
Sean Liao <seankhliao@gmail.com>
Sean Rees <sean@erifax.org>
Sebastiaan van Stijn <github@gone.nl>
Sebastian Chlopecki <sebsebmc@gmail.com>
Sebastian Kinne <skinne@google.com>
Sebastian Schmidt <yath@google.com>
Sebastien Binet <seb.binet@gmail.com>
Sbastien Paolacci <sebastien.paolacci@gmail.com>
Sebastien Williams-Wynn <sebastien@cytora.com>
Segev Finer <segev208@gmail.com>
Seiji Takahashi <timaki.st@gmail.com>
Sergei Lemeshkin <sergeilem@gmail.com>
Sergei Skorobogatov <skorobo@rambler.ru>
Sergei Zagurskii <gvozdoder@gmail.com>
Sergey 'SnakE' Gromov <snake.scaly@gmail.com>
Sergey Arseev <sergey.arseev@intel.com>
Sergey Dobrodey <sergey.dobrodey@synesis.ru>
Sergey Frolov <sfrolov@google.com>
Sergey Glushchenko <gsserge@gmail.com>
Sergey Ivanov <ser1325@gmail.com>
Sergey Lukjanov <me@slukjanov.name>
Sergey Mishin <sergeymishine@gmail.com>
Sergey Mudrik <sergey.mudrik@gmail.com>
Sergey Semin <gray12511@gmail.com>
Sergey Yanykin <syanykin@ozon.ru>
Sergio Luis O. B. Correia <sergio@correia.cc>
Sergiusz Bazanski <bazanski@gmail.com>
Serhat Giydiren <serhatgiydiren@gmail.com>
Serhii Aheienko <serhii.aheienko@gmail.com>
Seth Hoenig <seth.a.hoenig@gmail.com>
Seth Vargo <sethvargo@gmail.com>
Shahar Kohanim <skohanim@gmail.com>
Shamil Garatuev <garatuev@gmail.com>
Shane Hansen <shanemhansen@gmail.com>
Shang Jian Ding <sding3@ncsu.edu>
Shaozhen Ding <dsz0111@gmail.com>
Shaquille Wyan Que <shaqywyuan@gmail.com>
Shaun Dunning <shaun.dunning@uservoice.com>
Shawn Elliott <sellott@microsoft.com>
Shawn Ledbetter <sledbetter@google.com>
Shawn Smith <shawn.p.smith@gmail.com>
Shawn Walker-Salas <shawn.walker@oracle.com>

Shenghou Ma <minux@golang.org> <minux.ma@gmail.com>
Shengjing Zhu <zs950618@gmail.com>
Shengyu Zhang <shengyu.zhang@chaitin.com>
Shi Han Ng <shihanng@gmail.com>
Shijie Hao <haormj@gmail.com>
Shinji Tanaka <shinji.tanaka@gmail.com>
Shintaro Kaneko <kaneshin0120@gmail.com>
Shivakumar GN <shivakumar.gn@gmail.com>
Shivani Singhal <shivani.singhal2804@gmail.com>
Shivansh Rai <shivansh@freebsd.org>
Shivashis Padhi <shivashispadhi@gmail.com>
Shubham Sharma <shubham.sha12@gmail.com>
Shun Fan <sfan@google.com>
Silvan Jegen <s.jegen@gmail.com>
Simarpreet Singh <simar@linux.com>
Simon Drake <simondrake1990@gmail.com>
Simon Ferquel <simon.ferquel@docker.com>
Simon Jefford <simon.jefford@gmail.com>
Simon Rawet <simon@rawet.se>
Simon Rozman <simon@rozman.si>
Simon Thulbourn <simon+github@thulbourn.com>
Simon Whitehead <chemnova@gmail.com>
Sina Siadat <siadat@gmail.com>
Sjoerd Siebinga <sjoerd.siebinga@gmail.com>
Sokolov Yura <funny.falcon@gmail.com>
Song Gao <song@gao.io>
Soojin Nam <jsunam@gmail.com>
Sren L. Hansen <soren@linux2go.dk>
Spencer Kocot <spencerkocot@gmail.com>
Spencer Nelson <s@spenczar.com>
Spencer Tung <spencertung@google.com>
Spring Mc <heresy.mc@gmail.com>
Srdjan Petrovic <spetrovic@google.com>
Sridhar Venkatakrishnan <sridhar@laddoo.net>
Srinidhi Kaushik <shrinidhi.kaushik@gmail.com>
StalkR <stalkr@stalkr.net>
Stan Schwertly <stan@schwertly.com>
Stanislav Afanasev <php.progger@gmail.com>
Steeve Morin <steeve.morin@gmail.com>
Stefan Baebler <sbaebler@outbrain.com>
Stefan Nilsson <snilsson@nada.kth.se> <trolleriprofessorn@gmail.com>
Stepan Shabalin <neverliberty@gmail.com>
Stephan Renatus <srenatus@chef.io>
Stephan Zuercher <zuercher@gmail.com>
Stphane Travostino <stephane.travostino@gmail.com>
Stephen Lewis <stephen@sock.org.uk>
Stephen Lu <steuhs@users.noreply.github.com>
Stephen Ma <stephenm@golang.org>

Stephen McQuay <stephen@mcquay.me>
Stephen Searles <stephens2424@gmail.com>
Stephen Weinberg <stephen@q5comm.com>
Steve Francia <spf@golang.org>
Steve Gilbert <stevegilbert23@gmail.com>
Steve LoFurno <slofurno@gmail.com>
Steve McCoy <mccoyst@gmail.com>
Steve Mynott <steve.mynott@gmail.com>
Steve Newman <snewman@google.com>
Steve Phillips <elimistev@gmail.com>
Steve Streeting <steve@stevestreeting.com>
Steven Buss <sbuss@google.com>
Steven Elliot Harris <seharris@gmail.com>
Steven Erenst <stevenerenst@gmail.com>
Steven Hartland <steven.hartland@multiplay.co.uk>
Steven Littlebrant <imgroxx@gmail.com>
Steven Wilkin <stevenwilkin@gmail.com>
Stuart Jansen <sjansen@buscaluz.org>
Sue Spence <virtuallysue@gmail.com>
Sugu Sougoumarane <ssougou@gmail.com>
Suharsh Sivakumar <suharshs@google.com>
Sukrit Handa <sukrit.handa@utoronto.ca>
Sunny <me@darkowlzz.space>
Suriyaa Sundararuban <suriyaasundararuban@gmail.com>
Suyash <dextrous93@gmail.com>
Suzy Mueller <suzmue@golang.org>
Sven Almgren <sven@tras.se>
Sven Blumenstein <svbl@google.com>
Sven Taute <sven.taute@gmail.com>
Sylvain Zimmer <sylvain@sylvainzimmer.com>
Syohei YOSHIDA <syohex@gmail.com>
Szabolcs Nagy <nsz@port70.net>
Taavi Kivisik <taavi.kivisik@gmail.com>
Tad Fisher <tadfisher@gmail.com>
Tad Glines <tad.glines@gmail.com>
Tadas Valiukas <tadovas@gmail.com>
Tadeo Kondrak <me@tadeo.ca>
Taesu Pyo <pyotaesu@gmail.com>
Tai Le <letientai299@gmail.com>
Taj Khattrra <taj.khattrra@gmail.com>
Takashi Matsuo <tmatsuo@google.com>
Takayoshi Nishida <takayoshi.nishida@gmail.com>
Takeshi YAMANASHI <9.nashi@gmail.com>
Takuto Ikuta <tikuta@google.com>
Takuya Ueda <uedatakuya@gmail.com>
Tal Shprecher <tshprecher@gmail.com>
Tams Gulcsi <tgulacsi78@gmail.com>
Tamir Duberstein <tamird@gmail.com>

Tao Qingyun <qingyunha@gmail.com>
Tao Shen <shentaoskyking@gmail.com>
Tao Wang <twang2218@gmail.com>
Tarmigan Casebolt <tarmigan@gmail.com>
Taro Aoki <aizu.s1230022@gmail.com>
Taru Karttunen <taruti@taruti.net>
Tatsuhiko Tsujikawa <tatsuhiko.t@gmail.com>
Tatsuya Kaneko <m.ddotx.f@gmail.com>
Taufiq Rahman <taufiqrx8@gmail.com>
Teague Cole <tnc1443@gmail.com>
Ted Kornish <golang@tedkornish.com>
Tejasvi Nareddy <tejunareddy@gmail.com>
Terin Stock <terinjokes@gmail.com>
Terrel Shumway <gopher@shumway.us>
Tetsuo Kiso <tetsuokiso9@gmail.com>
Than McIntosh <thanm@google.com>
Thanabodee Charoenpiriyakij <wingyminus@gmail.com>
Thanatat Tamtan <acoshift@gmail.com>
The Hatsune Daishi <nao20010128@gmail.com>
Thiago Avelino <t@avelino.xxx>
Thiago Fransosi Farina <thiago.farina@gmail.com> <tfarina@chromium.org>
Thomas Alan Copeland <talan.copeland@gmail.com>
Thomas Bonfort <thomas.bonfort@gmail.com>
Thomas Bouldin <inlined@google.com>
Thomas Bruyelle <thomas.bruyelle@gmail.com>
Thomas Bushnell, BSG <tbushnell@google.com>
Thomas de Zeeuw <thomasdezeeuw@gmail.com>
Thomas Desrosiers <thomasdesr@gmail.com>
Thomas Habets <habets@google.com>
Thomas Kappler <tkappler@gmail.com>
Thomas Meson <zllak@hycik.org>
Thomas Symborski <thomas.symborski@gmail.com>
Thomas Wanielista <tomwans@gmail.com>
Thorben Krueger <thorben.krueger@gmail.com>
Thordur Bjornsson <thorduri@secnorth.net>
Tiago Queiroz <contato@tiago.eti.br>
Tianji Wu <the729@gmail.com>
Tianon Gravi <admwiggin@gmail.com>
Tilman Dilo <tilman.dilo@gmail.com>
Tim Cooijmans <timcooijmans@gmail.com>
Tim Cooper <tim.cooper@layeh.com>
Tim Ebringer <tim.ebringer@gmail.com>
Tim Heckman <t@heckman.io>
Tim Henderson <tim.tadh@gmail.com>
Tim Hockin <thockin@google.com>
Tim Mhlmann <muhlemmer@gmail.com>
Tim Swast <swast@google.com>
Tim Wright <tenortim@gmail.com>

Tim Xu <xiaoxubeii@gmail.com>
Timmy Douglas <timmyd983@gmail.com>
Timo Savola <timo.savola@gmail.com>
Timo Truys <alkaloid.btx@gmail.com>
Timothy Studd <tim@timstudd.com>
Tipp Moseley <tipp@google.com>
Tobias Assarsson <tobias.assarsson@gmail.com>
Tobias Columbus <tobias.columbus@gmail.com> <tobias.columbus@googlemail.com>
Tobias Klauser <tklauser@distanz.ch>
Toby Burrell <kurin@google.com>
Todd Kulesza <tkulesza@google.com>
Todd Neal <todd@tneal.org>
Todd Wang <toddwang@gmail.com>
Tom Anthony <git@tomanthony.co.uk>
Tom Bergan <tombergan@google.com>
Tom Heng <zhm20070928@gmail.com>
Tom Lanyon <tomlanyon@google.com>
Tom Levy <tomlevy93@gmail.com>
Tom Limoncelli <tal@whatexit.org>
Tom Linfoord <tomlinfoord@gmail.com>
Tom Parkin <tom.parkin@gmail.com>
Tom Payne <twpayne@gmail.com>
Tom Szymanski <tgs@google.com>
Tom Thorogood <me+google@tomthorogood.co.uk>
Tom Wilkie <tom@weave.works>
Tomas Dabasinskas <tomas@dabasinskas.net>
Tommy Schaefer <tommy.schaefer@teecom.com>
Tomohiro Kusumoto <zabio1192@gmail.com>
Tomoya Ishizaki <zaq1tomo@gmail.com>
Tonis Tiigi <tonistiigi@gmail.com>
Tony Reix <tony.reix@bull.net>
Tony Walker <walkert.uk@gmail.com>
Tooru Takahashi <tooru.takahashi134@gmail.com>
Tor Andersson <tor.andersson@gmail.com>
Torben Schinke <torben.schinke@neotos.de>
Tormod Erevik Lea <tormodlea@gmail.com>
Toshihiro Shiino <shiino.toshihiro@gmail.com>
Toshiki Shima <hayabusa1419@gmail.com>
Totoro W <tw19881113@gmail.com>
Travis Bischel <travis.bischel@gmail.com>
Travis Cline <travis.cline@gmail.com>
Trevor Strohman <trevor.strohman@gmail.com>
Trey Lawrence <lawrence.trey@gmail.com>
Trey Roessig <trey.roessig@gmail.com>
Trey Tacon <ttacon@gmail.com>
Tristan Amini <tamini01@ca.ibm.com>
Tristan Colgate <tcolgate@gmail.com>
Tristan Oohry <oohry@gmail.com>

Tristan Rice <rice@fn.lc>
Troels Thomsen <troels@thomsen.io>
Trung Nguyen <trung.n.k@gmail.com>
Tsuji Daishiro <dram.dt.shonan@gmail.com>
Tudor Golubenco <tudor.g@gmail.com>
Tugdual Saunier <tugdual.saunier@gmail.com>
Tuo Shan <sturbo89@gmail.com> <shantuo@google.com>
Tyler Bui-Palsulich <tpalsulich@google.com>
Tyler Bunnell <tylerbunnell@gmail.com>
Tyler Treat <ttreat31@gmail.com>
Tyson Andre <tysonandre775@gmail.com>
Tzach Shabtay <tzachshabtay@gmail.com>
Tzu-Jung Lee <roylee17@currant.com>
Udalov Max <re.udalov@gmail.com>
Ugorji Nwoke <ugorji@gmail.com>
Ulf Holm Nielsen <doktor@dyregod.dk>
Ulrich Kunitz <uli.kunitz@gmail.com>
Umang Parmar <umangjparmar@gmail.com>
Uriel Mangado <uriel@berlinblue.org>
Urvil Patel <patelurvil38@gmail.com>
Uttam C Pawar <uttam.c.pawar@intel.com>
Vadim Grek <vadimprog@gmail.com>
Vadim Vygonets <unixdj@gmail.com>
Val Polouchkine <vpolouch@justin.tv>
Valentin Vidic <vvidic@valentin-vidic.from.hr>
Vee Zhang <veezhang@126.com> <vveezhang@gmail.com>
Vega Garcia Luis Alfonso <vegacom@gmail.com>
Venil Noronha <veniln@vmware.com>
Veselkov Konstantin <kostozyb@gmail.com>
Viacheslav Poturaev <vearutop@gmail.com>
Victor Chudnovsky <vchudnov@google.com>
Victor Vrantchan <vrancean+github@gmail.com>
Vignesh Ramachandra <vickyramachandra@gmail.com>
Vikas Kedia <vikask@google.com>
Ville Skytt <ville.skytta@iki.fi>
Vincent Ambo <tazjin@googlemail.com>
Vincent Batts <vbatts@hashbangbash.com> <vbatts@gmail.com>
Vincent Vanackere <vincent.vanackere@gmail.com>
Vinu Rajashekhar <vinutheraj@gmail.com>
Vish Subramanian <vish@google.com>
Vishvananda Ishaya <vishvananda@gmail.com>
Visweswara R <r.visweswara@gmail.com>
Vitaly Zdanevich <zdanevich.vitaly@ya.ru>
Vitor De Mario <vitordemario@gmail.com>
Vivek Sekhar <vsekhar@google.com>
Vivian Liang <vliang88@gmail.com>
Vlad Krasnov <vlad@cloudflare.com>
Vladimir Evgrafov <evgrafov.vladimir@gmail.com>

Vladimir Kovpak <cn007b@gmail.com>
Vladimir Kuzmin <vkuzmin@uber.com>
Vladimir Mihailenco <vladimir.webdev@gmail.com>
Vladimir Nikishenko <vova616@gmail.com>
Vladimir Stefanovic <vladimir.stefanovic@imgtec.com>
Vladimir Varankin <nek.narqo@gmail.com>
Vojtech Bocek <vbocek@gmail.com>
Volker Dobler <dr.volker.dobler@gmail.com>
Volodymyr Paprotski <vpaprots@ca.ibm.com>
W. Trevor King <wking@tremily.us>
Wade Simmons <wade@wades.im>
Wagner Riffel <wgriffel@gmail.com>
Walt Della <walt@javins.net>
Walter Poupore <wpoupore@google.com>
Wander Lairson Costa <wcosta@mozilla.com>
Wang Xuerui <git@xen0n.name>
Warren Fernandes <warren.f.fernandes@gmail.com>
Wayne Ashley Berry <wayneashleyberry@gmail.com>
Wedson Almeida Filho <wedsonaf@google.com>
Weerasak Chongnguluam <singpor@gmail.com>
Wi Cngru <crvv.mail@gmail.com>
Wei Fu <fhfuwei@163.com>
Wei Guangjing <vcc.163@gmail.com>
Wei Xiao <wei.xiao@arm.com>
Wei Xikai <xykwei@gmail.com>
Weichao Tang <tevic.tt@gmail.com>
Wembley G. Leach, Jr <wembley.gl@gmail.com>
Wenlei (Frank) He <wlhe@google.com>
Wenzel Lowe <lowewenzel@gmail.com>
Wil Selwood <wselwood@gmail.com>
Wilfried Teiken <wteiken@google.com>
Will Beason <willbeason@gmail.com>
Will Chan <willchan@google.com>
Will Faught <will.faught@gmail.com>
Will Morrow <wmorrow.qdt@qualcommdatacenter.com>
Will Norris <willnorris@google.com>
Will Storey <will@summercat.com>
Willem van der Schyff <willemvds@gmail.com>
William Chan <willchan@chromium.org>
William Chang <mr.williamchang@gmail.com>
William Josephson <wjosephson@gmail.com>
William Orr <will@worrbase.com> <ay1244@gmail.com>
William Poussier <william.poussier@gmail.com>
Wisdom Omuya <deafgoat@gmail.com>
Wu Yunzhou <yunzhouwu@gmail.com>
Xi Ruoyao <xry23333@gmail.com>
Xia Bin <snyh@snyh.org>
Xiangdong Ji <xiangdong.ji@arm.com>

Xing Xing <mikespook@gmail.com>
Xingqang Bai <bxq2011hust@qq.com>
Xu Fei <badgangkiller@gmail.com>
Xudong Zhang <felixmelon@gmail.com>
Xudong Zheng <7pkvm5aw@slicealias.com>
Xuyang Kang <xuyangkang@gmail.com>
Yamagishi Kazutoshi <ykzts@desire.sh>
Yan Zou <yzou@google.com>
Yang Hau <vulxj0j8j8@gmail.com>
Yang Tian <linuxty@gmail.com>
Yann Hodique <yhodique@google.com>
Yann Kerherv <yann.kerherve@gmail.com>
Yann Salan <yannsalaun1@gmail.com>
Yannic Bonenberger <contact@yannic-bonenberger.com>
Yao Zhang <lunaria21@gmail.com>
Yaron de Leeuw <jarondl@google.com>
Yaroslav Vorobiov <yar.vorobiov@gmail.com>
Yasha Bubnov <girokompas@gmail.com>
Yasser Abdolmaleki <yasser@yasser.ca>
Yasuharu Goto <matope.ono@gmail.com>
Yasuhiro Matsumoto <mattn.jp@gmail.com>
Yasuyuki Oka <yasuyk@gmail.com>
Yazen Shunnar <yazen.shunnar@gmail.com>
Yestin Sun <ylh@pdx.edu>
Yesudeep Mangalapilly <yesudeep@google.com>
Yissakhar Z. Beck <yissakhar.beck@gmail.com>
Yo-An Lin <yoanlin93@gmail.com>
Yohei Takeda <yo.tak0812@gmail.com>
Yongjian Xu <i3dmaster@gmail.com>
Yorman Arias <cixtords@gmail.com>
Yoshiyuki Kanno <nekotaroh@gmail.com> <yoshiyuki.kanno@stoic.co.jp>
Yoshiyuki Mineo <yoshiyuki.mineo@gmail.com>
Yosuke Akatsuka <yosuke.akatsuka@gmail.com>
Yu Heng Zhang <annita.zhang@cn.ibm.com>
Yu Xuan Zhang <zyxsh@cn.ibm.com>
Yuichi Kishimoto <yk2220s@gmail.com>
Yuichi Nishiwaki <yuichi.nishiwaki@gmail.com>
Yuji Yaginuma <yuuji.yaginuma@gmail.com>
Yuki OKUSHI <huyuumi.dev@gmail.com>
Yuki Yugui Sonoda <yugui@google.com>
Yukihiro Nishinaka <6elpinal@gmail.com>
Yury Smolsky <yury@smolsky.by>
Yusuke Kagiwada <block.rxckin.beats@gmail.com>
Yuusei Kuwana <kuwana@kumama.org>
Yuval Pavel Zholkover <paulzhol@gmail.com>
Yves Junqueira <yvesj@google.com> <yves.junqueira@gmail.com>
Zac Bergquist <zbergquist99@gmail.com>
Zach Bintliff <zbintliff@gmail.com>

Zach Gershman <zachgersh@gmail.com>
Zach Jones <zachj1@gmail.com>
Zachary Amsden <zach@thundertoken.com>
Zachary Gershman <zgershman@pivotal.io>
Zak <zrjknill@gmail.com>
Zakatell Kanda <hi@zkanda.io>
Zellyn Hunter <zellyn@squareup.com> <zellyn@gmail.com>
Zev Goldstein <zev.goldstein@gmail.com>
Zhang Boyang <zhangboyang.id@gmail.com>
Zheng Dayu <davidzheng23@gmail.com>
Zheng Xu <zheng.xu@arm.com>
Zhengyu He <hzy@google.com>
Zhongpeng Lin <zplin@uber.com>
Zhongtao Chen <chenzhongtao@126.com>
Zhongwei Yao <zhongwei.yao@arm.com>
Zhou Peng <p@ctruple.cn>
Ziad Hatahet <hatahet@gmail.com>
Ziheng Liu <lzhfromustc@gmail.com>
Zorion Arrizabalaga <zorionk@gmail.com>
<a.maksadbek@gmail.com>
<max.faceless.frei@gmail.com>
<hagen1778@gmail.com>
<tbunyk@gmail.com>
<faxriddinjon@gmail.com>
<zs349596@gmail.com>
<bronze1man@gmail.com>
Copyright 2010-2017 Mike Bostock
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the author nor the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES

(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

```
# This source code was written by the Go contributors.  
# The master list of contributors is in the main Go distribution,  
# visible at http://tip.golang.org/CONTRIBUTORS.  
# People who have agreed to one of the CLAs and can contribute patches.  
# The AUTHORS file lists the copyright holders; this file  
# lists people. For example, Google employees are listed here  
# but not in AUTHORS, because Google holds the copyright.  
#  
# https://developers.google.com/open-source/cla/individual  
# https://developers.google.com/open-source/cla/corporate  
#
```

```
# Names should be added to this file as:
```

```
# Name <email address>
```

```
Raul Silvera <rsilvera@google.com>
```

```
Tipp Moseley <tipp@google.com>
```

```
Hyoun Kyu Cho <netforce@google.com>
```

```
Martin Spier <spiermar@gmail.com>
```

```
Taco de Wolff <tacodewolff@gmail.com>
```

```
Andrew Hunter <andrewhhunter@gmail.com>
```

```
# This source code was written by the Go contributors.  
# The master list of contributors is in the main Go distribution,  
# visible at https://tip.golang.org/CONTRIBUTORS.
```

```
Copyright (c) 2009 The Go Authors. All rights reserved.
```

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

- * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.

* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Copyright (c) 2019 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Copyright (c) 2015 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
Copyright 2009-2017 Andrea Leofreddi <a.leofreddi@vleo.net>. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN

IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The views and conclusions contained in the software and documentation are those of the authors and should not be interpreted as representing official policies, either expressed or implied, of Andrea Leofreddi.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the

editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the

same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.458 sqlite 3.31.1-4ubuntu0.5

1.458.1 Available under license :

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: sqlite3

Source: <https://www.sqlite.org/cgi/src/dir?ci=trunk>

Files: *

Copyright: D. Richard Hipp <drh@hwaci.com>

License: public-domain

The files listed have been put on the public domain by the sqlite3 contributors.

Files: debian/*

Copyright: 2006- Laszlo Boszormenyi (GCS) <gcs@debian.org>,

2005-2006 Tomas Fasth <tomfa@debian.org>,

2001-2005 Andreas Rottmann <rotty@debian.org>

License: GPL-2+

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 as published by the Free Software Foundation.

.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License along with this package; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

On Debian systems, the full text of the GNU General Public License version 2 can be found in the file `/usr/share/common-licenses/GPL-2`.

1.459 oniguruma 6.9.4-1

1.459.1 Available under license :

Oniguruma LICENSE

Copyright (c) 2002-2020 K.Kosako <kkosako0@gmail.com>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.460 activation 1.1

1.460.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

- * The contents of this file are subject to the terms
- * of the Common Development and Distribution License
- * (the "License"). You may not use this file except
- * in compliance with the License.

*

- * You can obtain a copy of the license at


```
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)SecuritySupport.java 1.3 05/11/16
*
* Copyright 2002-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/SecuritySupport.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)CommandInfo.java 1.11 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
```

*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/CommandInfo.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing
* permissions and limitations under the License.

*

* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]

*/

/*

* @(#)ImageViewerCanvas.java 1.3 05/11/16

*

* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/com/sun/activation/viewers/ImageViewerCanvas.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing

```
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)DataContentHandlerFactory.java 1.6 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataContentHandlerFactory.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)URLDataSource.java 1.10 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/URLDataSource.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing
* permissions and limitations under the License.

*

* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]

*/

/*

* @(#)MailcapCommandMap.java 1.40 05/11/16

*

* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/MailcapCommandMap.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing
* permissions and limitations under the License.

*

* When distributing Covered Code, include this CDDL

```
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MimeTypeParameterList.java 1.11 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimeTypeParameterList.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)CommandMap.java 1.19 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/CommandMap.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 */
/*
 * @(#)MimeTypeParseException.java 1.6 05/11/16
 *
 * Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimeTypeParseException.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
```

```
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)DataHandler.java 1.39 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataHandler.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)UnsupportedDataException.java 1.9 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/UnsupportedDataException.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)FileTypeMap.java 1.8 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/FileTypeMap.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
```



```
* [name of copyright owner]
*/
/*
* @(#)MimeType.java 1.19 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimeType.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
```

```
*/
/*
* @(#)MimeTypeEntry.java 1.4 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/registries/MimeTypeEntry.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
```

```
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)TextViewer.java 1.9 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/viewers/TextViewer.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
```

* @(#)FileDataSource.java 1.9 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/FileDataSource.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing
* permissions and limitations under the License.

*

* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]

*/

/*

* @(#)LogSupport.java 1.4 05/11/16
*
* Copyright 2002-2005 Sun Microsystems, Inc. All Rights Reserved.
*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/com/sun/activation/registries/LogSupport.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at

```
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)DataContentHandler.java 1.16 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataContentHandler.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)ActivationDataFlavor.java 1.14 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/ActivationDataFlavor.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing
* permissions and limitations under the License.

*

* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]

*/

/*

* @(#)MimeTypeFile.java 1.8 05/11/16

*

* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/com/sun/activation/registries/MimeTypeFile.java

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing

```
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)TextEditor.java 1.8 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/viewers/TextEditor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MailcapFile.java 1.23 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-  
jar/com/sun/activation/registries/MailcapFile.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* The contents of this file are subject to the terms  
* of the Common Development and Distribution License  
* (the "License"). You may not use this file except  
* in compliance with the License.
```

```
*
```

```
* You can obtain a copy of the license at  
* glassfish/bootstrap/legal/CDDLv1.0.txt or  
* https://glassfish.dev.java.net/public/CDDLv1.0.html.  
* See the License for the specific language governing  
* permissions and limitations under the License.
```

```
*
```

```
* When distributing Covered Code, include this CDDL  
* HEADER in each file and include the License file at  
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
* add the following below this CDDL HEADER, with the  
* fields enclosed by brackets "[]" replaced with your  
* own identifying information: Portions Copyright [yyyy]  
* [name of copyright owner]
```

```
*/
```

```
/*
```

```
* @(#)MailcapTokenizer.java 1.6 05/11/16
```

```
*
```

```
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-  
jar/com/sun/activation/registries/MailcapTokenizer.java
```

No license file was found, but licenses were detected in source scan.

```
<!--
```

The contents of this file are subject to the terms
of the Common Development and Distribution License
(the "License"). You may not use this file except
in compliance with the License.

You can obtain a copy of the license at
[glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.dev.java.net/public/CDDLv1.0.txt) or
<https://glassfish.dev.java.net/public/CDDLv1.0.html>.
See the License for the specific language governing
permissions and limitations under the License.

When distributing Covered Code, include this CDDL
HEADER in each file and include the License file at
glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
add the following below this CDDL HEADER, with the
fields enclosed by brackets "[]" replaced with your
own identifying information: Portions Copyright [yyyy]
[name of copyright owner]

@(#)package.html 1.1 05/11/16

Copyright 2001-2005 Sun Microsystems, Inc. All Rights Reserved.

-->

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/package.html

No license file was found, but licenses were detected in source scan.

/*

* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.

*

* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
* See the License for the specific language governing
* permissions and limitations under the License.

*

* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]

*/

/*

* @(#)MailcapParseException.java 1.4 05/11/16

*

* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

*/

Found in path(s):

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/registries/MailcapParseException.java

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 */
/*
 * @(#)MimetypesFileTypeMap.java 1.17 05/11/16
 *
 * Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimetypesFileTypeMap.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
```

```
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)DataSource.java 1.11 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataSource.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)ImageViewer.java 1.8 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/viewers/ImageViewer.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)CommandObject.java 1.9 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/CommandObject.java
```

1.461 python 3.7.3

1.461.1 Available under license :

Copyright (c) 2002 Jorge Acereda <jacereda@users.sourceforge.net> &
Peter O'Gorman <ogorman@users.sourceforge.net>

Portions may be copyright others, see the AUTHORS file included with this
distribution.

Maintained by Peter O'Gorman <ogorman@users.sourceforge.net>

Bug Reports and other queries should go to <ogorman@users.sourceforge.net>

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Additional Conditions for this Windows binary build

This program is linked with and uses Microsoft Distributable Code, copyrighted by Microsoft Corporation. The Microsoft Distributable Code is embedded in each .exe, .dll and .pyd file as a result of running the code through a linker.

If you further distribute programs that include the Microsoft Distributable Code, you must comply with the restrictions on distribution specified by Microsoft. In particular, you must require distributors and external end users to agree to terms that protect the Microsoft Distributable Code at least as much as Microsoft's own requirements for the Distributable Code. See Microsoft's documentation (included in its developer tools and on its website at microsoft.com) for specific details.

Redistribution of the Windows binary build of the Python interpreter complies with this agreement, provided that you do not:

- alter any copyright, trademark or patent notice in Microsoft's Distributable Code;
- use Microsoft's trademarks in your programs' names or in a way that suggests your programs come from or are endorsed by Microsoft;
- distribute Microsoft's Distributable Code to run on a platform other than Microsoft operating systems, run-time technologies or application platforms; or
- include Microsoft Distributable Code in malicious, deceptive or unlawful programs.

These restrictions apply only to the Microsoft Distributable Code as defined above, not to Python itself or any programs running on the Python interpreter. The redistribution of the Python interpreter and libraries is governed by the Python Software License included with this file, or by other licenses as marked.

X Window System License - X11R6.4

Copyright (c) 1998 The Open Group

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of The Open Group shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from The Open Group.

X Window System is a trademark of The Open Group
libffi - Copyright (c) 1996-2003 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED ``AS IS'', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL CYGNUS SOLUTIONS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright

Python and this documentation is:

Copyright 2001-2019 Python Software Foundation. All rights reserved.

Copyright 2000 BeOpen.com. All rights reserved.

Copyright 1995-2000 Corporation for National Research Initiatives. All rights reserved.

Copyright 1991-1995 Stichting Mathematisch Centrum. All rights reserved.

See `:ref:`history-and-license`` for complete license and permissions information.

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper

Copyright (c) 2001-2017 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This license applies to the bootstrapper application that is embedded within the installer. It has no impact on the licensing for the rest of the installer or Python itself, as no code covered by this license exists in any other part of the

product.

Microsoft Reciprocal License (MS-RL)

This license governs use of the accompanying software. If you use the software, you accept this license. If you do not accept the license, do not use the software.

1. Definitions

The terms "reproduce," "reproduction," "derivative works," and "distribution" have the same meaning here as under U.S. copyright law.

A "contribution" is the original software, or any additions or changes to the software.

A "contributor" is any person that distributes its contribution under this license.

"Licensed patents" are a contributor's patent claims that read directly on its contribution.

2. Grant of Rights

(A) Copyright Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free copyright license to reproduce its contribution, prepare derivative works of its contribution, and distribute its contribution or any derivative works that you create.

(B) Patent Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free license under its licensed patents to make, have made, use, sell, offer for sale, import, and/or otherwise dispose of its contribution in the software or derivative works of the contribution in the software.

3. Conditions and Limitations

(A) Reciprocal Grants- For any file you distribute that contains code from the software (in source code or binary format), you must provide recipients the source code to that file along with a copy of this license, which license will govern that file. You may license other files that are entirely your own work and do not contain code from the software under any terms you choose.

(B) No Trademark License- This license does not grant you rights to use any contributors' name, logo, or trademarks.

(C) If you bring a patent claim against any contributor over patents that you claim are infringed by the software, your patent license from such contributor to the software ends automatically.

(D) If you distribute any portion of the software, you must retain all copyright, patent, trademark, and attribution notices that are present in the software.

(E) If you distribute any portion of the software in source code form, you may do so only under this license by including a complete copy of this license with your distribution. If you distribute any portion of the software in compiled or object code form, you may only do so under a license that complies with this license.

(F) The software is licensed "as-is." You bear the risk of using it. The contributors give no express warranties, guarantees or conditions. You may have additional consumer rights under your local laws which this license cannot change. To the extent permitted under your local laws, the contributors exclude the implied warranties of merchantability, fitness for a particular purpose and non-infringement.

A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting

Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations, which became Zope Corporation. In 2001, the Python Software Foundation (PSF, see <https://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation was a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2 and above	2.1.1	2001-now	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1

is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to

create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND

DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to

distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

.. highlightlang:: none

.. _history-and-license:

History and License

History of the software

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <https://www.cwi.nl/>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <https://www.cnri.reston.va.us/>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation; see <http://www.zope.com/>). In 2001, the Python Software Foundation (PSF, see <https://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <https://opensource.org/> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL compatible?
0.9.0 thru 1.2	n/a	1991-1995	CWI	yes

1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes	
+-----+					
1.6	1.5.2	2000	CNRI	no	
+-----+					
2.0	1.6	2000	BeOpen.com	no	
+-----+					
1.6.1	1.6	2001	CNRI	no	
+-----+					
2.1	2.0+1.6.1	2001	PSF	no	
+-----+					
2.0.1	2.0+1.6.1	2001	PSF	yes	
+-----+					
2.1.1	2.1+2.0.1	2001	PSF	yes	
+-----+					
2.1.2	2.1.1	2002	PSF	yes	
+-----+					
2.1.3	2.1.2	2002	PSF	yes	
+-----+					
2.2 and above	2.1.1	2001-now	PSF	yes	
+-----+					

.. note::

GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

Terms and conditions for accessing or otherwise using Python

=====

PSF LICENSE AGREEMENT FOR PYTHON |release|

.. parsed-literal::

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using Python |release| software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce,

analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python |release| alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright 2001-2019 Python Software Foundation; All Rights Reserved" are retained in Python |release| alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python |release| or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python |release|.
4. PSF is making Python |release| available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON |release| WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON |release| FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON |release|, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
8. By copying, installing or otherwise using Python |release|, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

.. parsed-literal::

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.
7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

.. parsed-literal::

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>."
3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third

party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

.. parsed-literal::

Copyright 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE,

DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Licenses and Acknowledgements for Incorporated Software

=====

This section is an incomplete, but growing list of licenses and acknowledgements for third-party software incorporated in the Python distribution.

Mersenne Twister

The `:mod:`_random`` module includes code based on a download from <http://www.math.sci.hiroshima-u.ac.jp/~m-mat/MT/MT2002/emt19937ar.html>. The following are the verbatim comments from the original code::

A C-program for MT19937, with initialization improved 2002/1/26.

Coded by Takuji Nishimura and Makoto Matsumoto.

Before using, initialize the state by using `init_genrand(seed)`
or `init_by_array(init_key, key_length)`.

Copyright (C) 1997 - 2002, Makoto Matsumoto and Takuji Nishimura,
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
3. The names of its contributors may not be used to endorse or promote
products derived from this software without specific prior written
permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Any feedback is very welcome.

<http://www.math.sci.hiroshima-u.ac.jp/~m-mat/MT/emt.html>

email: m-mat @ math.sci.hiroshima-u.ac.jp (remove space)

Sockets

The `:mod:`socket`` module uses the functions, `:func:`getaddrinfo``, and
`:func:`getnameinfo``, which are coded in separate source files from the WIDE
Project, <http://www.wide.ad.jp/>. ::

Copyright (C) 1995, 1996, 1997, and 1998 WIDE Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Asynchronous socket services

The `:mod:`asynchat`` and `:mod:`asyncore`` modules contain the following notice::

Copyright 1996 by Sam Rushing

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Sam Rushing not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

SAM RUSHING DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN

NO EVENT SHALL SAM RUSHING BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Cookie management

The `:mod:`http.cookies`` module contains the following notice::

Copyright 2000 by Timothy O'Malley <timo@alum.mit.edu>

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Timothy O'Malley not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Timothy O'Malley DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL Timothy O'Malley BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Execution tracing

The `:mod:`trace`` module contains the following notice::

portions copyright 2001, Autonomous Zones Industries, Inc., all rights...
err... reserved and offered to the public under the terms of the
Python 2.2 license.
Author: Zooko O'Whielacronx
<http://zooko.com/>
<mailto:zooko@zooko.com>

Copyright 2000, Mojam Media, Inc., all rights reserved.

Author: Skip Montanaro

Copyright 1999, Bioreason, Inc., all rights reserved.

Author: Andrew Dalke

Copyright 1995-1997, Automatrix, Inc., all rights reserved.

Author: Skip Montanaro

Copyright 1991-1995, Stichting Mathematisch Centrum, all rights reserved.

Permission to use, copy, modify, and distribute this Python software and its associated documentation for any purpose without fee is hereby granted, provided that the above copyright notice appears in all copies, and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of neither Automatrix, Bioreason or Mojam Media be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

UUencode and UUdecode functions

The `:mod:`uu`` module contains the following notice::

Copyright 1994 by Lance Ellinghouse

Cathedral City, California Republic, United States of America.

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Lance Ellinghouse not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

LANCE ELLINGHOUSE DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL LANCE ELLINGHOUSE CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Modified by Jack Jansen, CWI, July 1995:

- Use `binascii` module to do the actual line-by-line conversion between ascii and binary. This results in a 1000-fold speedup. The C version is still 5 times faster, though.
- Arguments more compliant with Python standard

XML Remote Procedure Calls

The `:mod:`xmlrpc.client`` module contains the following notice::

The XML-RPC client interface is

Copyright (c) 1999-2002 by Secret Labs AB

Copyright (c) 1999-2002 by Fredrik Lundh

By obtaining, using, and/or copying this software and/or its associated documentation, you agree that you have read, understood, and will comply with the following terms and conditions:

Permission to use, copy, modify, and distribute this software and its associated documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies, and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Secret Labs AB or the author not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

SECRET LABS AB AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL SECRET LABS AB OR THE AUTHOR BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

`test_epoll`

The `:mod:`test_epoll`` module contains the following notice::

Copyright (c) 2001-2006 Twisted Matrix Laboratories.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to

the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Select kqueue

The `:mod:`select`` module contains the following notice for the kqueue interface::

Copyright (c) 2000 Doug White, 2006 James Knight, 2007 Christian Heimes
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

SipHash24

The file `:file:`Python/pyhash.c`` contains Marek Majkowski' implementation of

Dan Bernstein's SipHash24 algorithm. The contains the following note::

<MIT License>

Copyright (c) 2013 Marek Majkowski <marek@popcount.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

</MIT License>

Original location:

<https://github.com/majek/csiphash/>

Solution inspired by code from:

Samuel Neves (supercop/crypto_auth/siphash24/little)

djb (supercop/crypto_auth/siphash24/little2)

Jean-Philippe Aumasson (<https://131002.net/siphash/siphash24.c>)

strtod and dtoa

The file :file:`Python/dtoa.c`, which supplies C functions dtoa and strtod for conversion of C doubles to and from strings, is derived from the file of the same name by David M. Gay, currently available from <http://www.netlib.org/fp/>. The original file, as retrieved on March 16, 2009, contains the following copyright and licensing notice::

```
/******
```

```
*
```

```
* The author of this software is David M. Gay.
```

```
*
```

```
* Copyright (c) 1991, 2000, 2001 by Lucent Technologies.
```

```
*
```

```
* Permission to use, copy, modify, and distribute this software for any  
* purpose without fee is hereby granted, provided that this entire notice  
* is included in all copies of any software which is or includes a copy  
* or modification of this software and in all copies of the supporting  
* documentation for such software.
```

```
*
```

```
* THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED
```

* WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR LUCENT MAKES ANY
* REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY
* OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.
*
*****/

OpenSSL

The modules :mod:`hashlib`, :mod:`posix`, :mod:`ssl`, :mod:`crypt` use the OpenSSL library for added performance if made available by the operating system. Additionally, the Windows and Mac OS X installers for Python may include a copy of the OpenSSL libraries, so we include a copy of the OpenSSL license here::

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

/* =====

* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

*

* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.

*

* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.

*

* 3. All advertising materials mentioning features or use of this
* software must display the following acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"

```

*
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
*   endorse or promote products derived from this software without
*   prior written permission. For written permission, please contact
*   openssl-core@openssl.org.
*
* 5. Products derived from this software may not be called "OpenSSL"
*   nor may "OpenSSL" appear in their names without prior written
*   permission of the OpenSSL Project.
*
* 6. Redistributions of any form whatsoever must retain the following
*   acknowledgment:
*   "This product includes software developed by the OpenSSL Project
*   for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* =====
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*
*/

```

Original SSLeay License

```

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
* All rights reserved.
*
* This package is an SSL implementation written
* by Eric Young (eay@cryptsoft.com).
* The implementation was written so as to conform with Netscapes SSL.
*
* This library is free for commercial and non-commercial use as long as
* the following conditions are aheared to. The following conditions
* apply to all code found in this distribution, be it the RC4, RSA,

```

* lhash, DES, etc., code; not just the SSL code. The SSL documentation
* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*
* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

- * 1. Redistributions of source code must retain the copyright
* notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* "This product includes cryptographic software written by
* Eric Young (eay@cryptsoft.com)"
* The word 'cryptographic' can be left out if the routines from the library
* being used are not cryptographic related :-).
- * 4. If you include any Windows specific code (or a derivative thereof) from
* the apps directory (application code) you must include an acknowledgement:
* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

*
* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*
* The licence and distribution terms for any publically available version or
* derivative of this code cannot be changed. i.e. this code cannot simply be
* copied and put under another distribution licence
* [including the GNU Public Licence.]
*/

expat

The `:mod:`pyexpat`` extension is built using an included copy of the expat sources unless the build is configured `--with-system-expat`::`

Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd
and Clark Cooper

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

libffi

The `:mod:`_ctypes`` extension is built using an included copy of the libffi sources unless the build is configured `--with-system-libffi`::`

Copyright (c) 1996-2008 Red Hat, Inc and others.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED ``AS IS'', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

zlib

The `:mod:`zlib`` extension is built using an included copy of the zlib sources if the zlib version found on the system is too old to be used for the build::

Copyright (C) 1995-2011 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

cfuhash

The implementation of the hash table used by the `:mod:`tracemalloc`` is based on the cfuhash project::

Copyright (c) 2005 Don Owens

All rights reserved.

This code is released under the BSD license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

libmpdec

The `:mod:`_decimal`` module is built using an included copy of the libmpdec library unless the build is configured `--with-system-libmpdec`::`

Copyright (c) 2008-2016 Stefan Krahl. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.462 gson 2.8.6

1.462.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright (C) 2010 The Android Open Source Project

* Copyright (C) 2012 Google Inc.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/LinkedTreeMap.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/LinkedHashMap.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright (C) 2018 The Gson authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/GsonBuildConfig.java

No license file was found, but licenses were detected in source scan.

/*
* Copyright (C) 2017 The Gson authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/reflect/PreJava9ReflectionAccessor.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/PreJava9DateFormatProvider.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/reflect/ReflectionAccessor.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/reflect/UnsafeReflectionAccessor.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/JavaVersion.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2011 Google Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/TypeAdapters.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/JsonTreeReader.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/ArrayTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/ObjectTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/MapTypeAdapterFactory.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/TypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/JsonReaderInternalAccess.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/JsonTreeWriter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/TypeAdapterFactory.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright (C) 2008 Google Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
```

- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <http://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonParseException.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonPrimitive.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/ExclusionStrategy.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonDeserializer.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/\$Gson\$Preconditions.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/Excluder.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonSerializationContext.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonArray.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/annotations/Since.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/Primitives.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/reflect/TypeToken.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/Gson.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonIOException.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonObject.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonSerializer.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/ObjectConstructor.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonNull.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonDeserializationContext.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonElement.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/GsonBuilder.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/FieldNamingPolicy.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/FieldNamingStrategy.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/DefaultDateTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/annotations/Until.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/annotations/SerializedName.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/annotations/Expose.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/InstanceCreator.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright (C) 2014 Google Inc.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/annotations/JsonAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/bind/JsonAdapterAnnotationTypeAdapterFactory.java
No license file was found, but licenses were detected in source scan.

/**
* Copyright (C) 2008 Google Inc.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/\$Gson\$Types.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright (C) 2010 Google Inc.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/stream/JsonToken.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/stream/JsonWriter.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/stream/JsonScope.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/stream/MalformedJsonException.java

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/stream/JsonReader.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright (C) 2011 Google Inc.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/LazilyParsedNumber.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/SqlDateTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/ConstructorConstructor.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/TimeTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/DateTypeAdapter.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/UnsafeAllocator.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/internal/bind/TreeTypeAdapter.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright (C) 2010 Google Inc.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-
jar/com/google/gson/JsonSyntaxException.java
* /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/internal/Streams.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright (C) 2009 Google Inc.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

- * You may obtain a copy of the License at
- *
- * <http://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/LongSerializationPolicy.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonStreamParser.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/FieldAttributes.java
- * /opt/cola/permits/1108597571_1606176527.27/0/gson-2-8-6-sources-1-jar/com/google/gson/JsonParser.java

1.463 sqlite 3071401

1.463.1 Available under license :

The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

May you do good and not evil.
 May you find forgiveness for yourself and forgive others.
 May you share freely, never taking more than you give.

1.464 xalan-c 1.11-9build1

1.464.1 Available under license :

The CurrentSVN sources conform to the ASF License version 2.0.

The ASF licensing information needs to be updated in the documentation.

A copy of The Apache Software Foundation License version 2.0 needs to replace the following file in the repository.

xalan/c/trunk/xdocs/sources/xalan/License

A NOTICE file needs to be ratified by the XALAN PMC and added to the repository documentation.

xalan/c/trunk/xdocs/sources/xalan/NOTICE

Here is some possible text for the NOTICE file.

```
=====  
== NOTICE file corresponding to section 4(d) of the Apache License. ==  
== Version 2.0, in this case for the Apache Xalan distribution. ==  
=====
```

Apache XALAN-C
Copyright (c) 1999-2011 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

This software is based on the ASF XERCES-C project.

Portions of this software were originally based on the following:
- software copyright (c) 1999, IBM Corporation. (<http://www.ibm.com>).

Additional copyright submissions and contributions:

```
=====  
== NOTICE file corresponding to section 4(d) of the Apache License. ==  
== Version 2.0, in this case for the Apache Xalan distribution. ==  
=====
```

Apache XALAN-C
Copyright (c) 1999-2012 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

This software is based on the ASF XERCES-C project.

Portions of this software were originally based on the following:
- software copyright (c) 1999, IBM Corporation. (<http://www.ibm.com>).

Additional copyright submissions and contributions:

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by

the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be

liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====
== NOTICE file corresponding to section 4(d) of the Apache License. ==
== Version 2.0, in this case for the Apache Xalan distribution. ==

Apache XALAN-C
Copyright (c) 1999-2012 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

This software is based on the ASF XERCES-C project.

Portions of this software were originally based on the following:
- software copyright (c) 1999, IBM Corporation. (<http://www.ibm.com>).

Additional copyright submissions and contributions:

1.465 latencyutils 2.0.3

1.466 libgcrypt 1.8.5 5ubuntu1.1

1.466.1 Available under license :

This package was debianized by Ivo Timmermans <ivo@debian.org> on
Fri, 3 Aug 2001 10:02:38 +0200.

It was taken over by Matthias Urlichs <smurf@debian.org>, and is now
maintained by Andreas Metzler <ametzler@debian.org> Eric Dorland
<eric@debian.org>, James Westby <jw+debian@jameswestby.net>

It was downloaded from <https://ftp.gnupg.org/gcrypt/libgcrypt/>.

Up to end of 2012 libgcrypt copyright was owned solely by FSF, since then
contributions without copyright assignment to the FSF have been integrated.

Upstream Authors (from AUTHORS)

8X-----

List of Copyright holders

=====

Copyright (C) 1989,1991-2019 Free Software Foundation, Inc.
Copyright (C) 1994 X Consortium
Copyright (C) 1996 L. Peter Deutsch
Copyright (C) 1997 Werner Koch
Copyright (C) 1998 The Internet Society
Copyright (C) 1996-1999 Peter Gutmann, Paul Kendall, and Chris Wedgwood
Copyright (C) 1996-2006 Peter Gutmann, Matt Thomlinson and Blake Coverett

Copyright (C) 2003 Nikos Mavroyanopoulos
Copyright (C) 2006-2007 NTT (Nippon Telegraph and Telephone Corporation)
Copyright (C) 2012-2019 g10 Code GmbH
Copyright (C) 2012 Simon Josefsson, Niels Mller
Copyright (c) 2012 Intel Corporation
Copyright (C) 2013 Christian Grothoff
Copyright (C) 2013-2017 Jussi Kivilinna
Copyright (C) 2013-2014 Dmitry Eremin-Solenikov
Copyright (C) 2014 Stephan Mueller
Copyright (C) 2017 Bundesamt fr Sicherheit in der Informationstechnik

Authors with a FSF copyright assignment

=====

LIBGCRYPT Werner Koch 2001-06-07

Assigns past and future changes.

Assignment for future changes terminated on 2012-12-04.

wk@gnupg.org

Designed and implemented Libgrypt.

GNUPG Matthew Skala 1998-08-10

Disclaims changes.

mskala@ansuz.sooke.bc.ca

Wrote cipher/twofish.c.

GNUPG Natural Resources Canada 1998-08-11

Disclaims changes by Matthew Skala.

GNUPG Michael Roth Germany 1998-09-17

Assigns changes.

mroth@nessie.de

Wrote cipher/des.c.

Changes and bug fixes all over the place.

GNUPG Niklas Hernaeus 1998-09-18

Disclaims changes.

nh@df.lth.se

Weak key patches.

GNUPG Rmi Guyomarch 1999-05-25

Assigns past and future changes. (g10/compress.c, g10/encr-data.c,
g10/free-packet.c, g10/mdfilter.c, g10/plaintext.c, util/iobuf.c)

rguyom@mail.dotcom.fr

ANY g10 Code GmbH 2001-06-07

Assignment for future changes terminated on 2012-12-04.

Code marked with ChangeLog entries of g10 Code employees.

LIBGCRYPT Timo Schulz 2001-08-31

Assigns past and future changes.
twoaday@freakmail.de

LIBGCRYPT Simon Josefsson 2002-10-25

Assigns past and future changes to FSF (cipher/{md4,crc}.c, CTR mode,
CTS/MAC flags, self test improvements)
simon@josefsson.org

LIBGCRYPT Moritz Schulte 2003-04-17

Assigns past and future changes.
moritz@g10code.com

GNUTLS Nikolaos Mavrogiannopoulos 2003-11-22

nmav@gnutls.org
Original code for cipher/rfc2268.c.

LIBGCRYPT The Written Word 2005-04-15

Assigns past and future changes. (new: src/libcrypt.pc.in,
src/Makefile.am, src/secmem.c, mpi/hppa1.1/mpih-mul3.S,
mpi/hppa1.1/udiv-qrnd.S, mpi/hppa1.1/mpih-mul2.S,
mpi/hppa1.1/mpih-mul1.S, mpi/Makefile.am, tests/prime.c,
tests/register.c, tests/ac.c, tests/basic.c, tests/tsexp.c,
tests/keygen.c, tests/pubkey.c, configure.ac, acinclude.m4)

LIBGCRYPT Brad Hards 2006-02-09

Assigns Past and Future Changes
bradh@frogmouth.net
(Added OFB mode. Changed cipher/cipher.c, test/basic.c doc/gcrypt.tex.
added SHA-224, changed cipher/sha256.c, added HMAC tests.)

LIBGCRYPT Hye-Shik Chang 2006-09-07

Assigns Past and Future Changes
perky@freebsd.org
(SEED cipher)

LIBGCRYPT Werner Dittmann 2009-05-20

Assigns Past and Future Changes
werner.dittmann@t-online.de
(mpi/amd64, tests/mpitests.c)

GNUPG David Shaw

Assigns past and future changes.
dshaw@jabberwocky.com
(cipher/camellia-glue.c and related stuff)

LIBGCRYPT Andrey Jivsov 2010-12-09

Assigns Past and Future Changes

openpgp@brainhub.org

(cipher/ecc.c and related files)

LIBGCRYPT Ulrich Mller 2012-02-15

Assigns Past and Future Changes

ulm@gentoo.org

(Changes to cipher/idea.c and related files)

LIBGCRYPT Vladimir Serbinenko 2012-04-26

Assigns Past and Future Changes

phcoder@gmail.com

(cipher/serpent.c)

Authors with a DCO

=====

Andrei Scherer <andsch@inbox.com>

2014-08-22:BF7CEF794F9.000003F0andsch@inbox.com:

Christian Aistleitner <christian@quelltextlich.at>

2013-02-26:20130226110144.GA12678@quelltextlich.at:

Christian Grothoff <christian@grothoff.org>

2013-03-21:514B5D8A.6040705@grothoff.org:

Dmitry Eremin-Solenikov <dbaryshkov@gmail.com>

2013-07-13:20130713144407.GA27334@fangorn.rup.mentorg.com:

Dmitry Kasatkin <dmitry.kasatkin@intel.com>

2012-12-14:50CAE2DB.80302@intel.com:

Jrmie Courrges-Anglas <jca@wxcvbn.org>

2016-05-26:87bn3ssqg0.fsf@ritchie.wxcvbn.org

Jussi Kivilinna <jussi.kivilinna@mbnet.fi>

2012-11-15:20121115172331.150537dzb5i6jmy8@www.dalek.fi:

Jussi Kivilinna <jussi.kivilinna@iki.fi>

2013-05-06:5186720A.4090101@iki.fi:

Markus Teich <markus dot teich at stusta dot mhn dot de>

2014-10-08:20141008180509.GA2770@trolle:

Mathias L. Baumann <mathias.baumann at sociomantic.com>

2017-01-30:07c06d79-0828-b564-d604-fd16c7c86ebe@sociomantic.com:

Milan Broz <gmazyland@gmail.com>
2014-01-13:52D44CC6.4050707@gmail.com:

Peter Wu <peter@lekensteyn.nl>
2015-07-22:20150722191325.GA8113@al:

Rafal Carr <funman@videolan.org>
2012-04-20:4F91988B.1080502@videolan.org:

Sergey V. <sftp.mtuci@gmail.com>
2013-11-07:2066221.51Ya7Yq760@darkstar:

Stephan Mueller <smueller@chronox.de>
2014-08-22:2008899.25OeoeVVVA@myon.chronox.de:

Tom Mrz <tm@t8m.info>
2012-04-16:1334571250.5056.52.camel@vespa.frost.loc:

Vitezslav Cizek <vcizek@suse.com>
2015-11-05:20151105131424.GA32700@kolac.suse.cz

Werner Koch <wk@gnupg.org> (g10 Code GmbH)
2012-12-05:87obi8u4h2.fsf@vigenere.g10code.de:

More credits

=====

Libgcrypt used to be part of GnuPG but has been taken out into its own package on 2000-12-21.

Most of the stuff in mpi has been taken from an old GMP library version by Torbjorn Granlund <tege@noisy.tmg.se>.

The files cipher/rndunix.c and cipher/rndw32.c are based on those files from Cryptlib. Copyright Peter Gutmann, Paul Kendall, and Chris Wedgwood 1996-1999.

The ECC code cipher/ecc.c was based on code by Sergi Blanch i Torne, sergi at calcurco dot org.

The implementation of the Camellia cipher has been taken from the original NTT provided GPL source.

The CAVS testing program tests/cavs_driver.pl is not to be considered a part of libgcrypt proper. We distribute it merely for convenience. It has a permissive license and is copyrighted by atsec information security corporation. See the file for details.

The file salsa20.c is based on D.J. Bernstein's public domain code and taken from Nettle. Copyright 2012 Simon Josefsson and Niels Miller.

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
8X-----

License:

Most of the package is licensed under the GNU Lesser General Public License (LGPL) version 2.1 (or later), except for helper and debugging binaries. See below for details. The documentation is licensed under the GPLv2 (or later), see below.

Excerpt from upstream's README:

The library is distributed under the terms of the GNU Lesser General Public License (LGPL); see the file COPYING.LIB for the actual terms. The helper programs (e.g. gcryptrnd and getrandom) as well as the documentation are distributed under the terms of the GNU General Public License (GPL); see the file COPYING for the actual terms.

This library used to be available under the GPL - this was changed with version 1.1.7 with the rationale that there are now many free crypto libraries available and many of them come with capabilities similar to Libcrypt. We decided that to foster the use of cryptography in Free Software an LGPLed library would make more sense because it avoids problems due to license incompatibilities between some Free Software licenses and the GPL.

Please note that in many cases it is better for a library to be licensed under the GPL, so that it provides an advantage for free software projects. The Lesser GPL is so named because it does less to protect the freedom of the users of the code that it covers. See <http://www.gnu.org/philosophy/why-not-lgpl.html> for more explanation.

An example of the license headers of the LGPL is

Copyright (C) 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2006
2007, 2008, 2009, 2010, 2011 Free Software Foundation, Inc.

This file is part of Libgcrypt.

Libgcrypt is free software; you can redistribute it and/or modify
it under the terms of the GNU Lesser General Public License as
published by the Free Software Foundation; either version 2.1 of
the License, or (at your option) any later version.

Libgcrypt is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

On Debian GNU/Linux systems, the complete text of the GNU Lesser
General Public License can be found in
'/usr/share/common-licenses/LGPL';

The documentation licensed under the GPL

Copyright © 2000, 2002, 2003, 2004, 2006, 2007, 2008, 2009, 2011, 2012 Free Software Foundation,
Inc. ©

Copyright © 2012, 2013, 2016 2017 g10 Code GmbH

@quotation

Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU General Public License as published by the
Free Software Foundation; either version 2 of the License, or (at your
option) any later version. The text of the license can be found in the
section entitled ``GNU General Public License''.

Further details on licensing:

From upstream's LICENSES file

8X-----

Additional license notices for Libgcrypt. -*- org -*-

This file contains the copying permission notices for various files in
the Libgcrypt distribution which are not covered by the GNU Lesser
General Public License (LGPL) or the GNU General Public License (GPL).

These notices all require that a copy of the notice be included
in the accompanying documentation and be distributed with binary

distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

* BSD_3Clause

For files:

- cipher/sha256-avx-amd64.S
- cipher/sha256-avx2-bmi2-amd64.S
- cipher/sha256-ssse3-amd64.S
- cipher/sha512-avx-amd64.S
- cipher/sha512-avx2-bmi2-amd64.S
- cipher/sha512-ssse3-amd64.S

#+begin_quote

Copyright (c) 2012, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY INTEL CORPORATION "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL CORPORATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#+end_quote

For files:

- random/jitterentropy-base.c
- random/jitterentropy.h
- random/rndjent.c (plus common Libgcrypt copyright holders)

#+begin_quote

* Copyright Stephan Mueller <smueller@chronox.de>, 2013

*

* License

* =====

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, and the entire permission notice in its entirety,

* including the disclaimer of warranties.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. The name of the author may not be used to endorse or promote

* products derived from this software without specific prior

* written permission.

*

* ALTERNATIVELY, this product may be distributed under the terms of

* the GNU General Public License, in which case the provisions of the GPL are

* required INSTEAD OF the above restrictions. (This clause is

* necessary due to a potential bad interaction between the GPL and

* the restrictions contained in a BSD-style copyright.)

*

* THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED

* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES

* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF

* WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE

* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT

* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR

* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF

* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE

* USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH

* DAMAGE.

#+end_quote

* X License

For files:

- install.sh

#+begin_quote

Copyright (C) 1994 X Consortium

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

#+end_quote

* Public domain

For files:

- cipher/arcfour-amd64.S

#+begin_quote

Author: Marc Bevand <bevand_m (at) epita.fr>

Licence: I hereby disclaim the copyright on this code and place it in the public domain.

#+end_quote

* OCB license 1

For files:

- cipher/cipher-ocb.c

#+begin_quote

OCB is covered by several patents but may be used freely by most software. See <http://web.cs.ucdavis.edu/~rogaway/ocb/license.htm> .

In particular license 1 is suitable for Libgcrypt: See

<http://web.cs.ucdavis.edu/~rogaway/ocb/license1.pdf> for the full license document; it basically says:

License 1 License for Open-Source Software Implementations of OCB
(Jan 9, 2013)

Under this license, you are authorized to make, use, and distribute open-source software implementations of OCB. This license terminates for you if you sue someone over their open-source software implementation of OCB claiming that you have a patent covering their implementation.

License for Open Source Software Implementations of OCB
January 9, 2013

1 Definitions

1.1 Licensor means Phillip Rogaway.

1.2 Licensed Patents means any patent that claims priority to United States Patent Application No. 09/918,615 entitled Method and Apparatus for Facilitating Efficient Authenticated Encryption, and any utility, divisional, provisional, continuation, continuations-in-part, reexamination, reissue, or foreign counterpart patents that may issue with respect to the aforesaid patent application. This includes, but is not limited to, United States Patent No. 7,046,802; United States Patent No. 7,200,227; United States Patent No. 7,949,129; United States Patent No. 8,321,675 ; and any patent that issues out of United States Patent Application No. 13/669,114.

1.3 Use means any practice of any invention claimed in the Licensed Patents.

1.4 Software Implementation means any practice of any invention claimed in the Licensed Patents that takes the form of software executing on a user-programmable, general-purpose computer or that takes the form of a computer-readable medium storing such software. Software Implementation does not include, for example, application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), embedded systems, or IP cores.

1.5 Open Source Software means software whose source code is published and made available for inspection and use by anyone because either (a) the source code is subject to a license that permits recipients to copy, modify, and distribute the source code without payment of fees or royalties, or (b) the source code is in the public domain, including code released for public use through a CC0 waiver. All licenses certified by the Open Source Initiative at opensource.org as of January 9, 2013 and all Creative Commons licenses identified on the creativecommons.org website as of January 9,

2013, including the Public License Fallback of the CC0 waiver, satisfy these requirements for the purposes of this license.

1.6 Open Source Software Implementation means a Software Implementation in which the software implicating the Licensed Patents is Open Source Software. Open Source Software Implementation does not include any Software Implementation in which the software implicating the Licensed Patents is combined, so as to form a larger program, with software that is not Open Source Software.

2 License Grant

2.1 License. Subject to your compliance with the terms of this license, including the restriction set forth in Section 2.2, Licensor hereby grants to you a perpetual, worldwide, non-exclusive, non-transferable, non-sublicenseable, no-charge, royalty-free, irrevocable license to practice any invention claimed in the Licensed Patents in any Open Source Software Implementation.

2.2 Restriction. If you or your affiliates institute patent litigation (including, but not limited to, a cross-claim or counterclaim in a lawsuit) against any entity alleging that any Use authorized by this license infringes another patent, then any rights granted to you under this license automatically terminate as of the date such litigation is filed.

3 Disclaimer

YOUR USE OF THE LICENSED PATENTS IS AT YOUR OWN RISK AND UNLESS REQUIRED BY APPLICABLE LAW, LICENSOR MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED PATENTS OR ANY PRODUCT EMBODYING ANY LICENSED PATENT, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT. IN NO EVENT WILL LICENSOR BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM OR RELATED TO ANY USE OF THE LICENSED PATENTS, INCLUDING, WITHOUT LIMITATION, DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR SPECIAL DAMAGES, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES PRIOR TO SUCH AN OCCURRENCE.

#+end_quote

8X-----

On Debian GNU/Linux systems, the text of the GNU General Public License, version 2 can be found in `~/usr/share/common-licenses/GPL-2`.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

```
/* hashtest.c - Check the hash functions
* Copyright (C) 2013 g10 Code GmbH
*
* This file is part of Libgcrypt.
*
* Libgcrypt is free software; you can redistribute it and/or modify
* it under the terms of the GNU Lesser General Public License as
* published by the Free Software Foundation; either version 2.1 of
* the License, or (at your option) any later version.
*
* Libgcrypt is distributed in the hope that it will be useful,
* but WITHOUT ANY WARRANTY; without even the implied warranty of
* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
* GNU Lesser General Public License for more details.
*
* You should have received a copy of the GNU Lesser General Public
* License along with this program; if not, see <http://www.gnu.org/licenses/>.
*/
```

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no

charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

^L

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

Additional license notices for Libgcrypt. - *- org - *-

This file contains the copying permission notices for various files in the Libgcrypt distribution which are not covered by the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL).

These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

* BSD_3Clause

For files:

- cipher/sha256-avx-amd64.S
- cipher/sha256-avx2-bmi2-amd64.S
- cipher/sha256-ssse3-amd64.S
- cipher/sha512-avx-amd64.S
- cipher/sha512-avx2-bmi2-amd64.S
- cipher/sha512-ssse3-amd64.S

#+begin_quote

Copyright (c) 2012, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY INTEL CORPORATION "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL CORPORATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR

PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#+end_quote

For files:

- random/jitterentropy-base.c
- random/jitterentropy.h
- random/rndjent.c (plus common Libgcrypt copyright holders)

#+begin_quote

* Copyright Stephan Mueller <smueller@chronox.de>, 2013

*

* License

* =====

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, and the entire permission notice in its entirety,

* including the disclaimer of warranties.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. The name of the author may not be used to endorse or promote

* products derived from this software without specific prior

* written permission.

*

* ALTERNATIVELY, this product may be distributed under the terms of

* the GNU General Public License, in which case the provisions of the GPL are

* required INSTEAD OF the above restrictions. (This clause is

* necessary due to a potential bad interaction between the GPL and

* the restrictions contained in a BSD-style copyright.)

*

* THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED

* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES

* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF

* WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE

* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT

* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR

* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF

* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE

* USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH

* DAMAGE.

#+end_quote

* X License

For files:

- install.sh

#+begin_quote

Copyright (C) 1994 X Consortium

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

#+end_quote

* Public domain

For files:

- cipher/arcfour-amd64.S

#+begin_quote

Author: Marc Bevand <bevand_m (at) epita.fr>

Licence: I hereby disclaim the copyright on this code and place it in the public domain.

#+end_quote

* OCB license 1

For files:

- cipher/cipher-ocb.c

#+begin_quote

OCB is covered by several patents but may be used freely by most software. See <http://web.cs.ucdavis.edu/~rogaway/ocb/license.htm> . In particular license 1 is suitable for Libgcrypt: See <http://web.cs.ucdavis.edu/~rogaway/ocb/license1.pdf> for the full license document; it basically says:

License 1 License for Open-Source Software Implementations of OCB
(Jan 9, 2013)

Under this license, you are authorized to make, use, and distribute open-source software implementations of OCB. This license terminates for you if you sue someone over their open-source software implementation of OCB claiming that you have a patent covering their implementation.

License for Open Source Software Implementations of OCB
January 9, 2013

1 Definitions

1.1 Licensor means Phillip Rogaway.

1.2 Licensed Patents means any patent that claims priority to United States Patent Application No. 09/918,615 entitled Method and Apparatus for Facilitating Efficient Authenticated Encryption, and any utility, divisional, provisional, continuation, continuations-in-part, reexamination, reissue, or foreign counterpart patents that may issue with respect to the aforesaid patent application. This includes, but is not limited to, United States Patent No. 7,046,802; United States Patent No. 7,200,227; United States Patent No. 7,949,129; United States Patent No. 8,321,675 ; and any patent that issues out of United States Patent Application No. 13/669,114.

1.3 Use means any practice of any invention claimed in the Licensed Patents.

1.4 Software Implementation means any practice of any invention claimed in the Licensed Patents that takes the form of software executing on a user-programmable, general-purpose computer or that takes the form of a computer-readable medium storing such software. Software Implementation does not include, for example, application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), embedded systems, or IP cores.

1.5 Open Source Software means software whose source code is published and made available for inspection and use by anyone because either (a) the

source code is subject to a license that permits recipients to copy, modify, and distribute the source code without payment of fees or royalties, or (b) the source code is in the public domain, including code released for public use through a CC0 waiver. All licenses certified by the Open Source Initiative at opensource.org as of January 9, 2013 and all Creative Commons licenses identified on the creativecommons.org website as of January 9, 2013, including the Public License Fallback of the CC0 waiver, satisfy these requirements for the purposes of this license.

1.6 Open Source Software Implementation means a Software Implementation in which the software implicating the Licensed Patents is Open Source Software. Open Source Software Implementation does not include any Software Implementation in which the software implicating the Licensed Patents is combined, so as to form a larger program, with software that is not Open Source Software.

2 License Grant

2.1 License. Subject to your compliance with the terms of this license, including the restriction set forth in Section 2.2, Licensor hereby grants to you a perpetual, worldwide, non-exclusive, non-transferable, non-sublicensable, no-charge, royalty-free, irrevocable license to practice any invention claimed in the Licensed Patents in any Open Source Software Implementation.

2.2 Restriction. If you or your affiliates institute patent litigation (including, but not limited to, a cross-claim or counterclaim in a lawsuit) against any entity alleging that any Use authorized by this license infringes another patent, then any rights granted to you under this license automatically terminate as of the date such litigation is filed.

3 Disclaimer

YOUR USE OF THE LICENSED PATENTS IS AT YOUR OWN RISK AND UNLESS REQUIRED BY APPLICABLE LAW, LICENSOR MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED PATENTS OR ANY PRODUCT EMBODYING ANY LICENSED PATENT, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT WILL LICENSOR BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM OR RELATED TO ANY USE OF THE LICENSED PATENTS, INCLUDING, WITHOUT LIMITATION, DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR SPECIAL DAMAGES, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES PRIOR TO SUCH AN OCCURRENCE.

#+end_quote

* Copyright (C) 2013 g10 Code GmbH

*

* This file is part of Libgcrypt.

*

* Libgcrypt is free software; you can redistribute it and/or modify
* it under the terms of the GNU Lesser General Public License as
* published by the Free Software Foundation; either version 2.1 of
* the License, or (at your option) any later version.
*
* Libgcrypt is distributed in the hope that it will be useful,
* but WITHOUT ANY WARRANTY; without even the implied warranty of
* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
* GNU Lesser General Public License for more details.
*
* You should have received a copy of the GNU Lesser General Public
* License along with this program; if not, see <<http://www.gnu.org/licenses/>>.
*/

1.467 sqlite 3.7.14.1

1.467.1 Available under license :

The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

May you do good and not evil.
May you find forgiveness for yourself and forgive others.
May you share freely, never taking more than you give.

1.468 netty 4.1.51.Final

1.468.1 Available under license :

Copyright (c) 2003-2008 Yuta Mori All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,

WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The person or persons who have associated work with this document (the "Dedicator" or "Certifier") hereby either (a) certifies that, to the best of his knowledge, the work of authorship identified is in the public domain of the country from which the work is published, or (b) hereby dedicates whatever copyright the dedicators holds in the work of authorship identified below (the "Work") to the public domain. A certifier, moreover, dedicates any copyright interest he may have in the associated work, and for these purposes, is described as a "dedicator" below.

A certifier has taken reasonable steps to verify the copyright status of this work. Certifier recognizes that his good faith efforts may not shield him from liability if in fact the work certified is not in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to the detriment of the Dedicator's heirs and successors. Dedicator intends this dedication to be an overt act of relinquishment in perpetuity of all present and future rights under copyright law, whether vested or contingent, in the Work. Dedicator understands that such relinquishment of all rights includes the relinquishment of all rights to enforce (by lawsuit or otherwise) those copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose, commercial or non-commercial, and in any way, including by methods that have not yet been invented or conceived.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License

Copyright (c) 2009 William Kinney

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the

Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This copy of Aalto XML processor is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivative works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/>

A copy is also included with both the the downloadable source code package and jar that contains class bytecodes, as file "ASL 2.0". In both cases, that file should be located next to this file: in source distribution the location should be "release-notes/asl"; and in jar "META-INF/" (BSD License: <http://www.opensource.org/licenses/bsd-license>)

Copyright (c) 2011, Joe Walnes, Aslak Hellesøy and contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the Webbit nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written

permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The Netty Project

=====

Please visit the Netty web site for more information:

* <https://netty.io/>

Copyright 2014 The Netty Project

The Netty Project licenses this file to you under the Apache License, version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Also, please refer to each LICENSE.<component>.txt file, which is located in the 'license' directory of the distribution file, for the license terms of the components that this product depends on.

This product contains the extensions to Java Collections Framework which has been derived from the works by JSR-166 EG, Doug Lea, and Jason T. Greene:

* LICENSE:

* license/LICENSE.jsr166y.txt (Public Domain)

* HOMEPAGE:

* <http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/>

* <http://viewvc.jboss.org/cgi-bin/viewvc.cgi/jboss/cache/experimental/jsr166/>

This product contains a modified version of Robert Harder's Public Domain Base64 Encoder and Decoder, which can be obtained at:

* LICENSE:

* license/LICENSE.base64.txt (Public Domain)

* HOMEPAGE:

* <http://iharder.sourceforge.net/current/java/base64/>

This product contains a modified portion of 'Webbit', an event based WebSocket and HTTP server, which can be obtained at:

* LICENSE:

* license/LICENSE.webbit.txt (BSD License)

* HOMEPAGE:

* <https://github.com/joewalnes/webbit>

This product contains a modified portion of 'SLF4J', a simple logging facade for Java, which can be obtained at:

* LICENSE:

* license/LICENSE.slf4j.txt (MIT License)

* HOMEPAGE:

* <http://www.slf4j.org/>

This product contains a modified portion of 'Apache Harmony', an open source Java SE, which can be obtained at:

* NOTICE:

* license/NOTICE.harmony.txt

* LICENSE:

* license/LICENSE.harmony.txt (Apache License 2.0)

* HOMEPAGE:

* <http://archive.apache.org/dist/harmony/>

This product contains a modified portion of 'jzip2', a Java bzip2 compression and decompression library written by Matthew J. Francis. It can be obtained at:

* LICENSE:

* license/LICENSE.jzip2.txt (MIT License)

* HOMEPAGE:

* <https://code.google.com/p/jzip2/>

This product contains a modified portion of 'libdivsufsort', a C API library to construct the suffix array and the Burrows-Wheeler transformed string for any input string of

a constant-size alphabet written by Yuta Mori. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.libdivsufsort.txt (MIT License)
- * HOMEPAGE:
 - * <https://github.com/y-256/libdivsufsort>

This product contains a modified portion of Nitsan Wakart's 'JCTools', Java Concurrency Tools for the JVM, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.jctools.txt (ASL2 License)
- * HOMEPAGE:
 - * <https://github.com/JCTools/JCTools>

This product optionally depends on 'JZlib', a re-implementation of zlib in pure Java, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.jzlib.txt (BSD style License)
- * HOMEPAGE:
 - * <http://www.jcraft.com/jzlib/>

This product optionally depends on 'Compress-LZF', a Java library for encoding and decoding data in LZF format, written by Tatu Saloranta. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.compress-lzf.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/ning/compress>

This product optionally depends on 'lz4', a LZ4 Java compression and decompression library written by Adrien Grand. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.lz4.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/jpountz/lz4-java>

This product optionally depends on 'lzma-java', a LZMA Java compression and decompression library, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.lzma-java.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/jponge/lzma-java>

This product contains a modified portion of 'jfastlz', a Java port of FastLZ compression

and decompression library written by William Kinney. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.jfastlz.txt (MIT License)
- * HOMEPAGE:
 - * <https://code.google.com/p/jfastlz/>

This product contains a modified portion of and optionally depends on 'Protocol Buffers', Google's data interchange format, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.protobuf.txt (New BSD License)
- * HOMEPAGE:
 - * <https://github.com/google/protobuf>

This product optionally depends on 'Bouncy Castle Crypto APIs' to generate a temporary self-signed X.509 certificate when the JVM does not provide the equivalent functionality. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.bouncycastle.txt (MIT License)
- * HOMEPAGE:
 - * <http://www.bouncycastle.org/>

This product optionally depends on 'Snappy', a compression library produced by Google Inc, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.snappy.txt (New BSD License)
- * HOMEPAGE:
 - * <https://github.com/google/snappy>

This product optionally depends on 'JBoss Marshalling', an alternative Java serialization API, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.jboss-marshalling.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/jboss-remoting/jboss-marshalling>

This product optionally depends on 'Caliper', Google's micro-benchmarking framework, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.caliper.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/google/caliper>

This product optionally depends on 'Apache Commons Logging', a logging framework, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.commons-logging.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <http://commons.apache.org/logging/>

This product optionally depends on 'Apache Log4J', a logging framework, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.log4j.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <http://logging.apache.org/log4j/>

This product optionally depends on 'Aalto XML', an ultra-high performance non-blocking XML processor, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.aalto-xml.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <http://wiki.fasterxml.com/AaltoHome>

This product contains a modified version of 'HPACK', a Java implementation of the HTTP/2 HPACK algorithm written by Twitter. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.hpack.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/twitter/hpack>

This product contains a modified version of 'HPACK', a Java implementation of the HTTP/2 HPACK algorithm written by Cory Benfield. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.hyper-hpack.txt (MIT License)
- * HOMEPAGE:
 - * <https://github.com/python-hyper/hpack/>

This product contains a modified version of 'HPACK', a Java implementation of the HTTP/2 HPACK algorithm written by Tatsuhiro Tsujikawa. It can be obtained at:

- * LICENSE:
 - * license/LICENSE.nghttp2-hpack.txt (MIT License)
- * HOMEPAGE:
 - * <https://github.com/nghttp2/nghttp2/>

This product contains a modified portion of 'Apache Commons Lang', a Java library provides utilities for the java.lang API, which can be obtained at:

- * LICENSE:
 - * license/LICENSE.commons-lang.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://commons.apache.org/proper/commons-lang/>

This product contains the Maven wrapper scripts from 'Maven Wrapper', that provides an easy way to ensure a user has everything necessary to run the Maven build.

- * LICENSE:
 - * license/LICENSE.mvn-wrapper.txt (Apache License 2.0)
- * HOMEPAGE:
 - * <https://github.com/takari/maven-wrapper>

This product contains the dnsinfo.h header file, that provides a way to retrieve the system DNS configuration on MacOS.

This private header is also used by Apple's open source mDNSResponder (<https://opensource.apple.com/tarballs/mDNSResponder/>).

- * LICENSE:
 - * license/LICENSE.dnsinfo.txt (Apache License 2.0)
 - * HOMEPAGE:
 - * <http://www.opensource.apple.com/source/configd/configd-453.19/dnsinfo/dnsinfo.h>
- The MIT License (MIT)

Copyright (c) 2014 Cory Benfield

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2011, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache Harmony

Copyright 2006, 2010 The Apache Software Foundation.

This product includes software developed at

The Apache Software Foundation (<http://www.apache.org/>).

Copyright (c) 2010-2011 Matthew J. Francis and Contributors of the jbzip2 Project

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2009-2010 Ning, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The person or persons who have associated work with this document (the "Dedicator" or "Certifier") hereby either (a) certifies that, to the best of his knowledge, the work of authorship identified is in the public domain of the country from which the work is published, or (b) hereby dedicates whatever copyright the dedicators holds in the work of authorship identified below (the "Work") to the public domain. A certifier, moreover, dedicates any copyright interest he may have in the associated work, and for these purposes, is described as a "dedicator" below.

A certifier has taken reasonable steps to verify the copyright status of this work. Certifier recognizes that his good faith efforts may not shield him from liability if in fact the work certified is not in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to the detriment of the Dedicator's heirs and successors. Dedicator intends this dedication to be an overt act of relinquishment in perpetuate of all present and future rights under copyright law, whether vested or contingent, in the Work. Dedicator understands that such relinquishment of all rights includes the relinquishment of all rights to enforce (by lawsuit or otherwise) those copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose, commercial or non-commercial, and in any way, including by methods that have not yet been invented or conceived.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

The MIT License

Copyright (c) 2012, 2014, 2015, 2016 Tatsuhiro Tsujikawa

Copyright (c) 2012, 2014, 2015, 2016 nghttp2 contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION

OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2000 - 2013 The Legion of the Bouncy Castle Inc.

(<http://www.bouncycastle.org>)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2000,2001,2002,2003,2004 ymnk, JCraft,Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL JCRAFT, INC. OR ANY CONTRIBUTORS TO THIS SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,

EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

/*

* Copyright (c) 2004-2007 QOS.ch

* All rights reserved.

*

* Permission is hereby granted, free of charge, to any person obtaining

* a copy of this software and associated documentation files (the

* "Software"), to deal in the Software without restriction, including

* without limitation the rights to use, copy, modify, merge, publish,

* distribute, sublicense, and/or sell copies of the Software, and to

* permit persons to whom the Software is furnished to do so, subject to

* the following conditions:

*

* The above copyright notice and this permission notice shall be

* included in all copies or substantial portions of the Software.

*

* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND

* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE

* LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION

* OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION

* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

*/

/*

* Copyright (c) 2004-2006, 2008, 2009, 2011 Apple Inc. All rights reserved.

*

* @APPLE_LICENSE_HEADER_START@

*

* This file contains Original Code and/or Modifications of Original Code

* as defined in and that are subject to the Apple Public Source License

* Version 2.0 (the 'License'). You may not use this file except in

* compliance with the License. Please obtain a copy of the License at

* <http://www.opensource.apple.com/apsl/> and read it before using this

* file.

*

* The Original Code and all software distributed under the License are

* distributed on an 'AS IS' basis, WITHOUT WARRANTY OF ANY KIND, EITHER

* EXPRESS OR IMPLIED, AND APPLE HEREBY DISCLAIMS ALL SUCH WARRANTIES,

* INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY,

* FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT OR NON-INFRINGEMENT.

* Please see the License for the specific language governing rights and

* limitations under the License.

*

* @APPLE_LICENSE_HEADER_END@

*/

Protocol Buffers - Google's data interchange format

Copyright 2013 Google Inc. All rights reserved.

<https://developers.google.com/protocol-buffers/>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common

control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,

work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.469 ehcache-xml 3.8.1

1.469.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright Terracotta, Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/BaseConfigParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/service/OffHeapDiskStoreConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/exceptions/XmlConfigurationException.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/JaxbHelper.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/provider/ThreadPoolServiceCreationConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/DomUtil.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/XmlModel.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/provider/WriteBehindProviderConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/ServiceConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/ServiceCreationConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/ResourceConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/CacheServiceConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/CoreCacheConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/CacheManagerServiceConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/service/DefaultCopierConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/CoreServiceConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/provider/CacheEventDispatcherFactoryConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/provider/DefaultSizeOfEngineProviderConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/service/DefaultCacheEventListenerConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/model/SizeOfEngineLimits.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/model/ListenersConfig.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/model/Expiry.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/multi/XmlMultiConfiguration.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-jar/org/ehcache/xml/provider/PooledExecutionServiceConfigurationParser.java
- * /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-

jar/org/ehcache/xml/service/DefaultSerializerConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/service/SimpleCoreServiceConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/service/DefaultCacheEventDispatcherConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/provider/DefaultCopyProviderConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/XmlConfiguration.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/service/DefaultCacheLoaderWriterConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/model/CacheTemplate.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/CoreServiceCreationConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/ConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/provider/DefaultSerializationProviderConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/service/DefaultResilienceStrategyConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/service/DefaultSizeOfEngineConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/provider/SimpleCoreServiceCreationConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/service/DefaultWriteBehindConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/provider/CacheManagerPersistenceConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/CacheResourceConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/model/CacheDefinition.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/provider/OffHeapDiskStoreProviderConfigurationParser.java
* /opt/cola/permits/1258059276_1643027393.71/0/ehcache-xml-3-8-1-sources-
jar/org/ehcache/xml/model/CacheSpec.java

1.470 jquery 3.5.1

1.470.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.471 gmp 6.2.0

1.471.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose

of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified

it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the

product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,

procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work,

for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an

organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means,

then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure

layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise

be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the

Library.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to

authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying,

distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require,

such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's

users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not

used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of

it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently

reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted

by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying

the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the

GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<https://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with

the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

1.472 javassist 3.24.0-GA

1.472.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Javassist, a Java-bytecode translator toolkit.
 * Copyright (C) 1999- Shigeru Chiba. All Rights Reserved.
 *
 * The contents of this file are subject to the Mozilla Public License Version
 * 1.1 (the "License"); you may not use this file except in compliance with
 * the License. Alternatively, the contents of this file may be used under
 * the terms of the GNU Lesser General Public License Version 2.1 or later,
 * or the Apache License Version 2.0.
 *
 * Software distributed under the License is distributed on an "AS IS" basis,
 * WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License
 * for the specific language governing rights and limitations under the
 * License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/rmi/StubGenerator.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/BinExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/SymbolTable.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/BadBytecode.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/web/Webserver.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/NestMembersAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/convert/TransformBefore.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/rmi/Proxy.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/analysis/SubroutineScanner.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/InstructionPrinter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/Callback.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/runtime/Inner.java
```

* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtNewWrappedConstructor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/DefineClassHelper.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/ByteArrayClassPath.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/DuplicateMemberException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/NewArray.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtBehavior.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ExceptionTable.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/ClassMetaobject.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/rmi/ObjectImporter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/stackmap/TypedBlock.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ProceedHandler.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ByteStream.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/stackmap/MapMaker.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/scopedpool/ScopedClassPoolFactoryImpl.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/MethodFilter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/Expr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/CannotCreateException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/KeywordTable.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/Parser.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/Loader.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/DoubleConst.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/ConstructorCall.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/Metalevel.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/IntQueue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/Dump.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/Symbol.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-

jar/javassist/bytecode/analysis/Frame.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/TokenId.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/rmi/AppletServer.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/CodeAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/InstanceOfExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/AccessFlag.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/ExprEditor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtClassType.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/analysis/Analyzer.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/Handler.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/AnnotationsAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/reflect/CannotInvokeException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/LongVector.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/reflect/Compiler.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/web/Viewer.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/FieldDecl.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/CtNewConstructor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/CastExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/SerialVersionUID.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/util/proxy/DefinePackageHelper.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/tools/reflect/Metaobject.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/convert/TransformAfter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/Descriptor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/JvstTypeChecker.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/AnnotationDefaultAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/Variable.java

* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/scopedpool/ScopedClassPoolFactory.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/LoaderClassPath.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ParameterAnnotationsAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/Instanceof.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/ASTree.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtNewMethod.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/Sample.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/NestHostAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/convert/TransformAccessArrayField.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ExceptionsAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/ClassPool.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/URLClassPath.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/TypeChecker.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/ArrayInit.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/ClassPath.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/Loader.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/convert/TransformFieldAccess.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/Lex.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/CondExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/Mnemonic.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/Keyword.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ConstPool.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/StackMapTable.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/rmi/RemoteRef.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/CompileError.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/MemberCodeGen.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/HotSwapper.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ConstantAttribute.java

* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/HotSwapAgent.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/Bytecode.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/FieldAccess.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/AccessorMaker.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/SerializedProxy.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/InnerClassesAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/runtime/Cflow.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/Subroutine.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/FactoryHelper.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/AnnotationImpl.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/NoFieldException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/convert/TransformNew.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/convert/Transformer.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/SyntheticAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/Reflection.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/SecurityActions.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/SyntaxError.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/reflect/CannotReflectException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/convert/TransformCall.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/AssignExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtNewWrappedMethod.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/SourceFileAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtPrimitiveType.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/NewExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/DeprecatedAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-

jar/javassist/compiler/ast/ASTList.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/stackmap/Tracer.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/ClassFilePrinter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/stackmap/BasicBlock.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/ClassPoolTail.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/CodeAnalyzer.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/convert/TransformWriteField.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/util/proxy/ProxyObjectOutputStream.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/scopedpool/ScopedClassPool.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/ClassMap.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/util/proxy/ProxyObjectInputStream.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/StackMap.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/Declarator.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/util/proxy/ProxyObject.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtArray.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/analysis/Util.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/rmi/Sample.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/analysis/ControlFlow.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/Cast.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtMethod.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtMember.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/CodeIterator.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/scopedpool/ScopedClassPoolRepository.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CodeConverter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/ast/Stmnt.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/bytecode/annotation/NoSuchClassError.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/ClassClassPath.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/convert/TransformNewClass.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-
jar/javassist/compiler/JvstCodeGen.java

* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/LineNumberAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/Visitor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ByteArray.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/IntConst.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/framedump.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/CallExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/ProxyFactory.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/MethodCall.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/SignatureAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ClassFileWriter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/convert/TransformReadField.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/web/BadHttpRequest.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/stackmap/TypeData.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtNewClass.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/EnclosingMethodAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/Modifier.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/Pair.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/FramePrinter.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/MethodInfo.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/NotFoundException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtClass.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/scopedpool/SoftValueHashMap.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtField.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/MemberResolver.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/CodeGen.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/Translator.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/Opcodes.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/NewExpr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/AnnotationsWriter.java

* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CtConstructor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/MethodHandler.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/Javac.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/LocalVariableTypeAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/LocalVariableAttribute.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/stackmap/TypeTag.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/Type.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/runtime/DotClass.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/runtime/Desc.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/StringL.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/scopedpool/ScopedClassPoolRepositoryImpl.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/Member.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/expr/Expr.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/Proxy.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/rmi/RemoteException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/Executor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/MultiType.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/compiler/ast/MethodDecl.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/ClassFile.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/analysis/MultiArrayType.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/CannotCompileException.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/util/proxy/RuntimeSupport.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/AttributeInfo.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/FieldInfo.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/tools/rmi/ObjectNotFoundException.java

No license file was found, but licenses were detected in source scan.

/*

* Javassist, a Java-bytecode translator toolkit.

* Copyright (C) 2004 Bill Burke. All Rights Reserved.
*
* The contents of this file are subject to the Mozilla Public License Version
* 1.1 (the "License"); you may not use this file except in compliance with
* the License. Alternatively, the contents of this file may be used under
* the terms of the GNU Lesser General Public License Version 2.1 or later,
* or the Apache License Version 2.0.
*
* Software distributed under the License is distributed on an "AS IS" basis,
* WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License
* for the specific language governing rights and limitations under the
* License.
*/

Found in path(s):

* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/MemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/AnnotationMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/StringMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/Annotation.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/MemberValueVisitor.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/ClassMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/DoubleMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/FloatMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/EnumMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/CharMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/ByteMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/BooleanMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/IntegerMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/ShortMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/ArrayMemberValue.java
* /opt/cola/permits/1135880377_1613624050.66/0/javassist-3-24-0-ga-sources-5-jar/javassist/bytecode/annotation/LongMemberValue.java

1.473 spring-expression 5.2.20.RELEASE

1.473.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2013 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ConstructorExecutor.java
- * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/common/TemplateParserContext.java
- * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ExpressionInvocationTargetException.java
- * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/MethodExecutor.java
- * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/MethodResolver.java

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2022 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- * See the License for the specific language governing permissions and
- * limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/SpelMessage.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/ast/ConstructorReference.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2018 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/DataBindingMethodResolver.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/common/CompositeStringExpression.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ExpressionException.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/SpelEvaluationException.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/StandardEvaluationContext.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/common/TemplateAwareExpressionParser.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/Operation.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/SimpleEvaluationContext.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/ReflectiveMethodResolver.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/ExpressionState.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/TypedValue.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/DataBindingPropertyAccessor.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/common/LiteralExpression.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/ReflectionHelper.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/SpelNode.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/StandardTypeConverter.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/StandardOperatorOverloader.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/BooleanTypedValue.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/CodeFlow.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/ReflectiveMethodExecutor.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/ast/FormatHelper.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/EvaluationContext.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2019 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/ast/OpModulus.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/ast/OpDec.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/standard/Tokenizer.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/ValueRef.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OperatorBetween.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/FunctionReference.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/LongLiteral.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/QualifiedIdentifier.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpAnd.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/support/StandardTypeComparator.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Assign.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Elvis.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Indexer.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OperatorNot.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpLE.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/RealLiteral.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/CompoundExpression.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpInc.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/SpelNodeImpl.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Projection.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Identifier.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/PropertyAccessor.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Ternary.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/TypeReference.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpPlus.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OperatorMatches.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/ast/InlineList.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/InlineMap.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/NullLiteral.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpOr.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpMultiply.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Operator.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpLT.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/VariableReference.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/TypeCode.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpEQ.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/BooleanLiteral.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/PropertyOrFieldReference.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpGT.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Literal.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OperatorPower.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/FloatLiteral.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpGE.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OperatorInstanceof.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/StringLiteral.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/standard/InternalSpelExpressionParser.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpDivide.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/Selection.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/OpNE.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/support/ReflectiveConstructorResolver.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/ast/OpMinus.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/ast/IntLiteral.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/ast/AstUtils.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/support/ReflectivePropertyAccessor.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/standard/SpelCompiler.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/ast/MethodReference.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-

jar/org/springframework/expression/spel/standard/SpelExpression.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2016 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/MethodFilter.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/EvaluationException.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ConstructorResolver.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/TypeLocator.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/standard/TokenKind.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2009 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ExpressionParser.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2012 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/InternalParseException.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2021 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/TypeComparator.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/ast/BeanReference.java

* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/BeanResolver.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2017 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

- * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/Expression.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/CompiledExpression.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/SpelParseException.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ParserContext.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/StandardTypeLocator.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/AccessException.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/TypeConverter.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/common/ExpressionUtils.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/standard/Token.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/ParseException.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/OperatorOverloader.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/SpelParserConfiguration.java
 - * /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-jar/org/springframework/expression/spel/support/ReflectiveConstructorExecutor.java
- No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2014 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):


```
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/SpelCompilerMode.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/standard/SpelExpressionParser.java
* /opt/cola/permits/1301486335_1649248826.65/0/spring-expression-5-2-20-release-sources-
jar/org/springframework/expression/spel/CompilablePropertyAccessor.java
```

1.474 junixsocket-native-common 2.3.2

1.474.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * junixsocket
 *
 * Copyright 2009-2020 Christian Kohlschütter
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1046144837_1589880123.03/0/junixsocket-native-common-2-3-2-sources-
jar/org/newsclub/lib/junixsocket/common/NarMetadata.java
```

1.475 libpcap 1.2.1

1.475.1 Available under license :

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

1.476 libbsd 0.10.0 1

1.476.1 Available under license :

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Files:

*

Copyright:

Copyright 2004-2006, 2008-2018 Guillem Jover <guillem@hadrons.org>

License: BSD-3-clause

Files:

man/arc4random.3bsd

man/tree.3bsd

Copyright:

Copyright 1997 Niels Provos <provos@physnet.uni-hamburg.de>

All rights reserved.

License: BSD-4-clause-Niels-Provos

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
This product includes software developed by Niels Provos.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,

INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files:

man/getprogname.3bsd

Copyright:

Copyright 2001 Christopher G. Demetriou

All rights reserved.

License: BSD-4-clause-Christopher-G-Demetriou

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
This product includes software developed for the NetBSD Project. See <http://www.netbsd.org/> for information about NetBSD.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files:

include/bsd/err.h

include/bsd/stdlib.h

include/bsd/sys/param.h

include/bsd/unistd.h

src/bsd_getopt.c

src/err.c

src/fgetln.c

src/progname.c

Copyright:

Copyright 2005, 2008-2012, 2019 Guillem Jover <guillem@hadrons.org>

Copyright 2005 Hector Garcia Alvarez

Copyright 2005 Aurelien Jarno

Copyright 2006 Robert Millan

Copyright 2018 Facebook, Inc.

License: BSD-3-clause

Files:

include/bsd/netinet/ip_icmp.h

include/bsd/sys/bitstring.h

include/bsd/sys/queue.h

include/bsd/sys/time.h

include/bsd/timeconv.h

include/bsd/vis.h

man/bitstring.3bsd

man/errc.3bsd

man/explicit_bzero.3bsd

man/fgetln.3bsd

man/fgetwln.3bsd

man/fpurge.3bsd

man/funopen.3bsd

man/getbsize.3bsd

man/heapsort.3bsd

man/nlist.3bsd

man/queue.3bsd

man/radixsort.3bsd

man/reallocarray.3bsd

man/reallocf.3bsd

man/setmode.3bsd

man/strmode.3bsd

man/strnstr.3bsd

man/strtoi.3bsd

man/strtou.3bsd

man/unvis.3bsd

man/vis.3bsd

man/wcsncpy.3bsd

src/getbsize.c

src/heapsort.c

src/merge.c

src/nlist.c

src/radixsort.c

src/setmode.c

src/strmode.c

src/strnstr.c

src/strtoi.c

src/strtou.c

src/unvis.c

Copyright:

Copyright 1980, 1982, 1986, 1989-1994

The Regents of the University of California. All rights reserved.

Copyright 2001 Mike Barcroft <mike@FreeBSD.org>

.

Some code is derived from software contributed to Berkeley by the American National Standards Committee X3, on Information Processing Systems.

.

Some code is derived from software contributed to Berkeley by Peter McIlroy.

.

Some code is derived from software contributed to Berkeley by Ronnie Kon at Mindcraft Inc., Kevin Lew and Elmer Yglesias.

.

Some code is derived from software contributed to Berkeley by Dave Borman at Cray Research, Inc.

.

Some code is derived from software contributed to Berkeley by Paul Vixie.

.

Some code is derived from software contributed to Berkeley by Chris Torek.

.

Copyright UNIX System Laboratories, Inc.

All or some portions of this file are derived from material licensed to the University of California by American Telephone and Telegraph Co. or Unix System Laboratories, Inc. and are reproduced herein with the permission of UNIX System Laboratories, Inc.

License: BSD-3-clause-Regents

Files:

src/vis.c

Copyright:

Copyright 1989, 1993

The Regents of the University of California. All rights reserved.

.

Copyright 1999, 2005 The NetBSD Foundation, Inc.

All rights reserved.

License: BSD-3-clause-Regents and BSD-2-clause-NetBSD

Files:

include/bsd/libutil.h

Copyright:

Copyright 1996 Peter Wemm <peter@FreeBSD.org>.

All rights reserved.

Copyright 2002 Networks Associates Technology, Inc.

All rights reserved.

License: BSD-3-clause-author

Files:

man/timeradd.3bsd

Copyright:

Copyright 2009 Jukka Ruohonen <jruohonen@iki.fi>

Copyright 1999 Kelly Yancey <kbyanc@posi.net>

All rights reserved.

License: BSD-3-clause-John-Birrell

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the author nor the names of any co-contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY JOHN BIRRELL AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files:

man/setproctitle.3bsd

Copyright:

Copyright 1995 Peter Wemm <peter@FreeBSD.org>

All rights reserved.

License: BSD-5-clause-Peter-Wemm

Redistribution and use in source and binary forms, with or without modification, is permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice immediately at the beginning of the file, without modification, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the

- documentation and/or other materials provided with the distribution.
3. This work was done expressly for inclusion into FreeBSD. Other use is permitted provided this notation is included.
 4. Absolutely no warranty of function or purpose is made by the author Peter Wemm.
 5. Modifications may be freely made to this file providing the above conditions are met.

Files:

include/bsd/stringlist.h
man/fmtcheck.3bsd
man/humanize_number.3bsd
man/stringlist.3bsd
man/timeval.3bsd
src/fmtcheck.c
src/humanize_number.c
src/stringlist.c
src/strtonum.c

Copyright:

Copyright 1994, 1997-2000, 2002, 2008, 2010, 2014

The NetBSD Foundation, Inc.

Copyright 2013 John-Mark Gurney <jmg@FreeBSD.org>

All rights reserved.

.
Some code was contributed to The NetBSD Foundation by Allen Briggs.

.
Some code was contributed to The NetBSD Foundation by Luke Mewburn.

.
Some code is derived from software contributed to The NetBSD Foundation by Jason R. Thorpe of the Numerical Aerospace Simulation Facility, NASA Ames Research Center, by Luke Mewburn and by Tomas Svensson.

.
Some code is derived from software contributed to The NetBSD Foundation by Julio M. Merino Vidal, developed as part of Google's Summer of Code 2005 program.

.
Some code is derived from software contributed to The NetBSD Foundation by Christos Zoulas.

.
Some code is derived from software contributed to The NetBSD Foundation by Jukka Ruohonen.

License: BSD-2-clause-NetBSD

Files:

include/bsd/sys/endian.h
man/byteorder.3bsd
man/closefrom.3bsd
man/expand_number.3bsd

man/flopen.3bsd
man/getpeereid.3bsd
man/pidfile.3bsd
src/expand_number.c
src/hash/sha512.h
src/hash/sha512c.c
src/pidfile.c
src/reallocf.c
src/timeconv.c

Copyright:

Copyright 1998, M. Warner Losh <imp@freebsd.org>

All rights reserved.

.

Copyright 2001 Dima Dorfman.

All rights reserved.

.

Copyright 2001 FreeBSD Inc.

All rights reserved.

.

Copyright 2002 Thomas Moestl <tmm@FreeBSD.org>

All rights reserved.

.

Copyright 2002 Mike Barcroft <mike@FreeBSD.org>

All rights reserved.

.

Copyright 2005 Pawel Jakub Dawidek <pjd@FreeBSD.org>

All rights reserved.

.

Copyright 2005 Colin Percival

All rights reserved.

.

Copyright 2007 Eric Anderson <anderson@FreeBSD.org>

Copyright 2007 Pawel Jakub Dawidek <pjd@FreeBSD.org>

All rights reserved.

.

Copyright 2007 Dag-Erling Codan Smrgrav

All rights reserved.

.

Copyright 2009 Advanced Computing Technologies LLC

Written by: John H. Baldwin <jhb@FreeBSD.org>

All rights reserved.

.

Copyright 2011 Guillem Jover <guillem@hadrons.org>

License: BSD-2-clause

Files:

src/flopen.c

Copyright:

Copyright 2007-2009 Dag-Erling Codan Smrgrav

All rights reserved.

License: BSD-2-clause-verbatim

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Files:

include/bsd/sys/tree.h

man/fparseln.3bsd

src/fparseln.c

Copyright:

Copyright 1997 Christos Zoulas.

All rights reserved.

.

Copyright 2002 Niels Provos <provos@citi.umich.edu>

All rights reserved.

License: BSD-2-clause-author

Files:

include/bsd/readpassphrase.h

man/readpassphrase.3bsd

man/strncpy.3bsd

man/strtonum.3bsd

src/arc4random.c

src/arc4random_linux.h

src/arc4random_openbsd.h

src/arc4random_uniform.c

src/arc4random_unix.h

src/arc4random_win.h

src/closefrom.c
src/getentropy_aix.c
src/getentropy_bsd.c
src/getentropy_hpux.c
src/getentropy_hurd.c
src/getentropy_linux.c
src/getentropy_osx.c
src/getentropy_solaris.c
src/getentropy_win.c
src/readpassphrase.c
src/reallocarray.c
src/strlcat.c
src/strncpy.c

Copyright:

Copyright 2004 Ted Unangst and Todd Miller

All rights reserved.

.

Copyright 1996 David Mazieres <dm@uun.org>

Copyright 1998, 2000-2002, 2004-2005, 2007, 2010, 2012-2015

Todd C. Miller <Todd.Miller@courtesan.com>

Copyright 2004 Ted Unangst

Copyright 2008 Damien Miller <djm@openbsd.org>

Copyright 2008 Otto Moerbeek <otto@drijf.net>

Copyright 2013 Markus Friedl <markus@openbsd.org>

Copyright 2014 Bob Beck <beck@obtuse.com>

Copyright 2014 Brent Cook <bcook@openbsd.org>

Copyright 2014 Pawel Jakub Dawidek <pjd@FreeBSD.org>

Copyright 2014 Theo de Raadt <deraadt@openbsd.org>

Copyright 2015 Michael Felt <aixtools@gmail.com>

Copyright 2015 Guillem Jover <guillem@hadrons.org>

License: ISC

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Files:

src/inet_net_pton.c

Copyright:

Copyright 1996 by Internet Software Consortium.

License: ISC-Original

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

.
THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Files:

src/setproctitle.c

Copyright:

Copyright 2010 William Ahern

Copyright 2012 Guillem Jover <guillem@hadrons.org>

License: Expat

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

.
The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

.
THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Files:

include/bsd/md5.h

src/hash/md5.c

Copyright:

None

License: public-domain-Colin-Plumb

This code implements the MD5 message-digest algorithm.

The algorithm is due to Ron Rivest. This code was

written by Colin Plumb in 1993, no copyright is claimed.

This code is in the public domain; do with it what you wish.

Files:

src/explicit_bzero.c

src/chacha_private.h

Copyright:

None

License: public-domain

Public domain.

Files:

man/mdX.3bsd

src/hash/md5hl.c

src/hash/helper.c

Copyright:

None

License: Beerware

"THE BEER-WARE LICENSE" (Revision 42):

<phk@login.dkuug.dk> wrote this file. As long as you retain this notice you can do whatever you want with this stuff. If we meet some day, and you think this stuff is worth it, you can buy me a beer in return. Poul-Henning Kamp

License: BSD-3-clause-Regents

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-3-clause-author

Redistribution and use in source and binary forms, with or without

modification, is permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-3-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-2-clause-NetBSD

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-2-clause-author

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License: BSD-2-clause

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright

notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.477 syslinux 4.07

1.477.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights.

These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to

exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt

otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that

system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
```

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
675 Mass Ave, Cambridge, MA 02139, USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Lua License

Lua is licensed under the terms of the MIT license reproduced below.
This means that Lua is free software and can be used for both academic
and commercial purposes at absolutely no cost.

For details and rationale, see <http://www.lua.org/license.html> .

=====

Copyright (C) 1994-2008 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====
(end of COPYRIGHT)

The Syslinux logo is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/3.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license.

libpng versions 1.2.6, August 15, 2004, through 1.2.44, June 26, 2010, are Copyright (c) 2004, 2006-2009 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux

Eric S. Raymond

Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the

library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane
Glenn Randers-Pehrson
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger
Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler
Kevin Bracey
Sam Bushell
Magnus Holmgren
Greg Roelofs
Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this

source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

A "png_get_copyright" function is available, for convenient use in "about" boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files "pngbar.png" and "pngbar.jpg (88x31) and "pngnow.png" (98x31).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson
glennrp at users.sourceforge.net
June 26, 2010

libcom32 and libutil are licensed under the MIT license:

```
## -----  
##  
## Copyright 2004-2009 H. Peter Anvin - All Rights Reserved  
## Portions Copyright 2009 Intel Corporation; author: H. Peter Anvin  
##  
## Permission is hereby granted, free of charge, to any person  
## obtaining a copy of this software and associated documentation  
## files (the "Software"), to deal in the Software without  
## restriction, including without limitation the rights to use,  
## copy, modify, merge, publish, distribute, sublicense, and/or  
## sell copies of the Software, and to permit persons to whom  
## the Software is furnished to do so, subject to the following  
## conditions:  
##  
##
```



```
## The above copyright notice and this permission notice shall
## be included in all copies or substantial portions of the Software.
##
## THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
## EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES
## OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
## NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT
## HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,
## WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
## FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR
## OTHER DEALINGS IN THE SOFTWARE.
##
## -----
```

The files in the sample, modules and libgpl directories are mostly under the GNU GPL (see the file COPYING in the directory above.)

In general gPXE files are licensed under the GPL. GPLed files are in general either from Linux or have been explicitly put under GPL by the authors. The license for a file is usually documented at the top of the file.

A few files are inherited from FreeBSD netboot and therefore can be used under BSD or GPL. Documented in this file are some of the non-GPL'ed files. If the internal documentation for a file disagrees with what is documented in this file, the internal documentation for the file shall be override this file.

File Copyright status

```
src/core/misc.c BSD
src/drivers/net/3c509.c BSD
src/drivers/net/3c509.h BSD
src/drivers/net/3c595.c BSD
src/drivers/net/3c595.h BSD
src/drivers/net/3c90x.c Open Source
src/drivers/net/epic100.c None
src/drivers/net/epic100.h None
src/drivers/net/ns8390.c BSD
src/drivers/net/ns8390.h BSD
src/arch/i386/include/bits/string.h None
```

The EFI headers contained herein are copied from the EFI Development Kit, available from <http://www.tianocore.org> and published under the following licence:

BSD License from Intel
Copyright (c) 2004, Intel Corporation
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This licence applies only to files that are part of the EFI Development Kit. Other files may contain their own licence terms, or may fall under the standard gPXE GPL licence.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

©2023 Cisco Systems, Inc. All rights reserved.